



JANUARY 2021

FINAL REPORT



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INTRODUCTION

THIS REPORT compiles the results of the 5th Street Corridor Study and includes:

- **Findings** from the study, which examined existing and future conditions for 5th Street between Harris Road in Charlottesville and Ambrose Commons Drive in Albemarle County
- **Recommendations** for:
 - Two signalized intersection improvements
 - One roundabout conversion
 - One restricted crossing u-turn (RCUT) conversion
 - Consistent, continuous bicycle and pedestrian facilities
 - A Project Development and Environment Study for a redesign of the 5th Street and I-64 interchange
 - Multimodal network connections at Sunset Avenue Extended Bridge, from Stribling Avenue to Sunset Avenue, and via the Biscuit Run Stream Valley Trail
- **Next steps** for implementing the recommendations

This effort is the product of collaboration between Virginia Department of Transportation (VDOT) and its regional and local partners. VDOT and its partners engaged the community at each stage of the study. Community input helped inform the vision for 5th Street as a complete street that supports development and provides safe and comfortable travel for all uses and users of the roadway.

THANK YOU to all the 5th Street stakeholders, community champions, and citizens for your participation in and support of the 5th Street Corridor Study! Your contributions will help transform 5th Street into an even more vibrant, accessible, and healthy corridor.



- City of Charlottesville
- Albemarle County
- The Thomas Jefferson Planning District Commission
- The Charlottesville-Albemarle Metropolitan Planning Organization
- Charlottesville Area Transit
- The 5th and Avon Community Advisory Committee

STUDY BACKGROUND

Questions this Section Answers:

- Why did VDOT conduct the 5th Street Corridor Study?
- Where did the study occur?
- Which regional partners supported VDOT during the study?

The purpose of the 5th Street (Route 631, 5th Street Extended, Old Lynchburg Road) corridor study was to identify and advance solutions that foster safe and comfortable travel for all roadway users, to arrive at a shared vision for the 5th Street corridor, and to better define how the corridor can evolve as development changes the street's character and travel demands along it.

The completed study provided a clear understanding of:

- Multimodal travel needs in the corridor
- The range of potential solutions and potential benefits and impacts of those solutions
- A preferred set of alternatives that are implementable and supported by VDOT and its partner agencies

KEY TAKEAWAYS FROM THIS SECTION:

- The study's purpose is to develop a shared vision for the corridor and transportation solutions to help 5th Street adapt to new development.
- The study covered 5th Street between Harris Road in Charlottesville and Ambrose Commons Drive in Albemarle County.
- Stakeholders from Charlottesville, Albemarle County, TJPDC, CA-MPO, CAT, and the 5th and Avon Community Advisory Committee participated.

Study Location and Timeline

The 5th Street corridor runs from Harris Road in the City of Charlottesville to Ambrose Commons Drive in Albemarle County, as shown in **Figure 1**. The street balances two roles as a regional crossroads via an interchange with Interstate 64 (I-64) and a shopping, employment, educational, and recreational destination for people living on and near the corridor.

VDOT conducted the study between October 2019 and August 2020 (see schedule in **Figure 2**).

A Regional Opportunity

VDOT, Charlottesville, and Albemarle County have advanced a number of transportation initiatives through Virginia's SMART SCALE funding program over the past three years, including the Route 250 roundabout in Albemarle County and the Route 29/Hydraulic Road intersection in Charlottesville. The 5th Street corridor presents another important opportunity for VDOT's partners to address regional mobility challenges.

VDOT convened a stakeholder group to represent local partners and serve as a sounding board for each step of the study. Stakeholder group members represented Charlottesville, Albemarle County, the Thomas Jefferson Planning District Commission (TJPDC), the Charlottesville-Albemarle Metropolitan Planning Organization (CA-MPO), Charlottesville Area Transit (CAT), and the 5th and Avon Community Advisory Committee. The stakeholder group guided the study and helped identify and evaluate alternatives that would best serve the communities living along 5th Street and the greater region.

Figure 1
Study Area Map

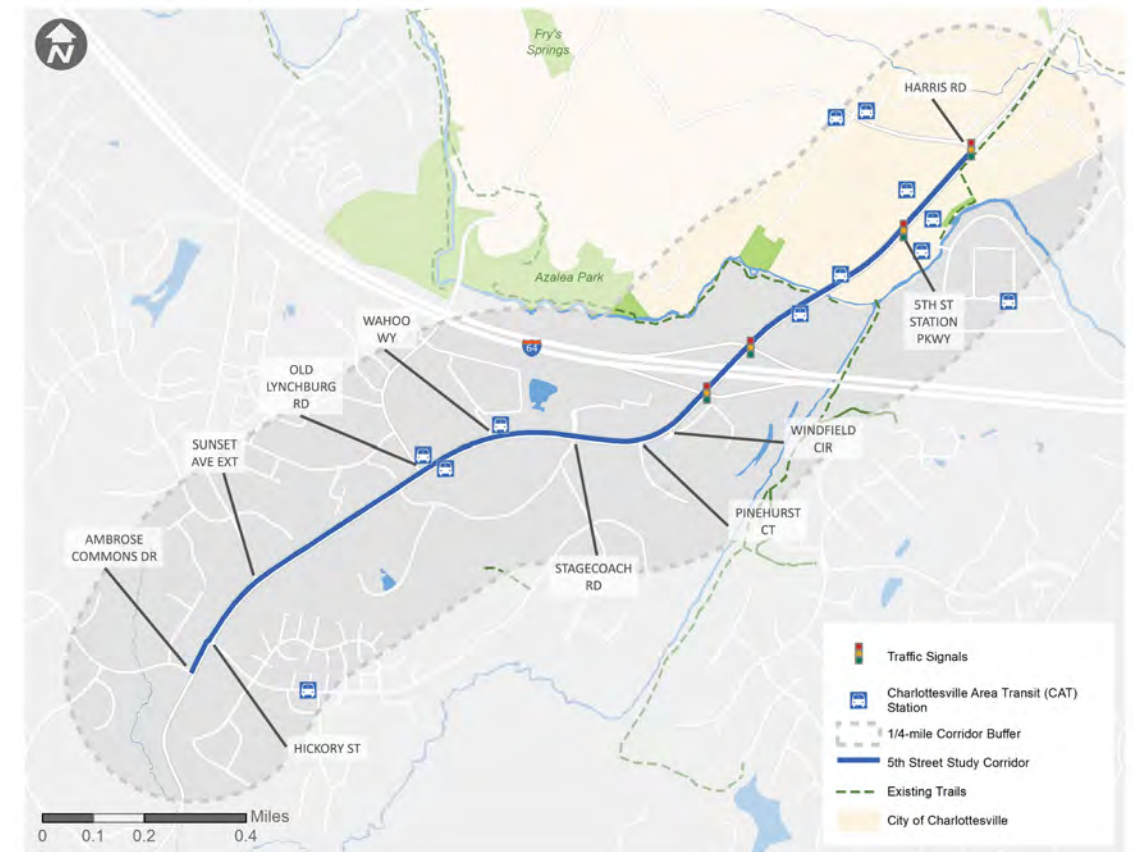
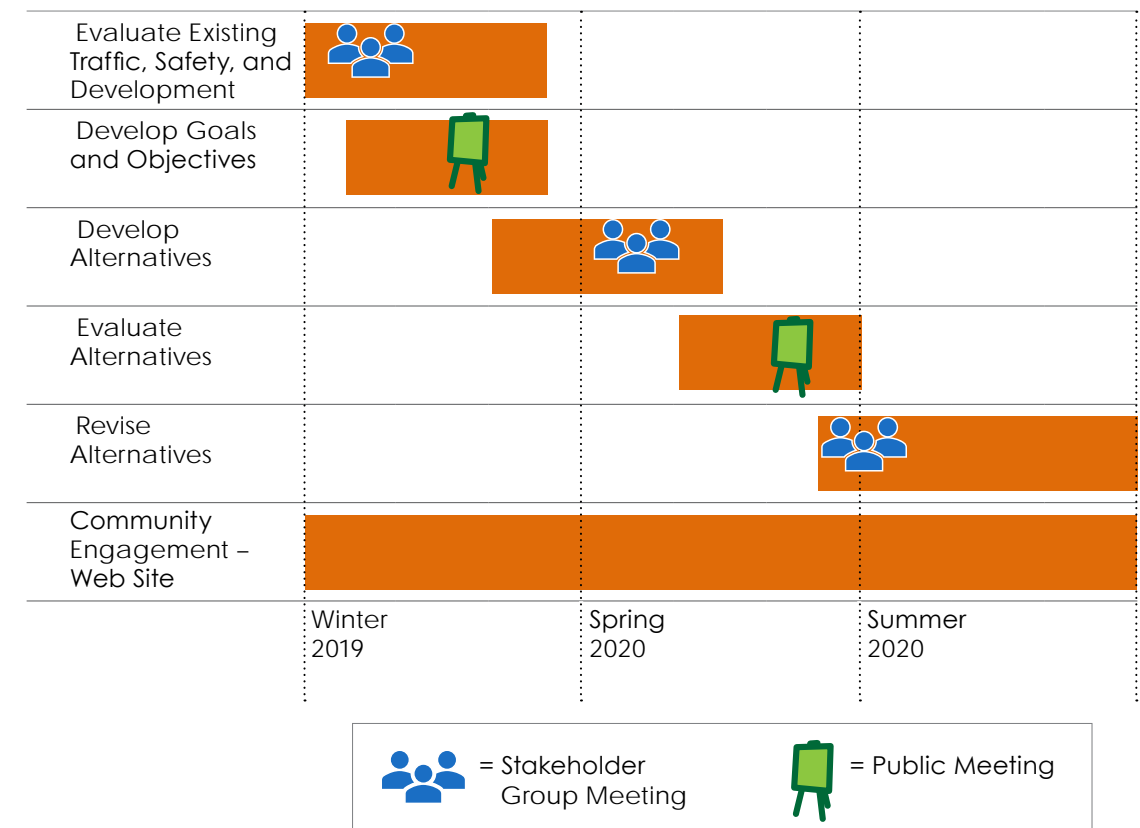


Figure 2
Study Schedule



A PUBLIC PROCESS

Questions this Section Answers:

- How did VDOT engage local and regional decision-making entities in the study?
- How did they engage community members?

VDOT established early and continuous engagement through the public involvement process. The process engaged a diverse group of community members through a variety of channels and opportunities. [The Phase 1 and Phase 2 Public Engagement Technical Memorandums](#) provide detailed summaries of each phase of the public engagement process.

Stakeholder Group Meetings

The study team met with the stakeholder group three times at key study milestones. The stakeholder group helped establish the study's vision, goals, and objectives; helped identify alternatives; and provided feedback during the alternatives analysis process. Members of the stakeholder group helped develop the final set of alternatives for the study. The stakeholder group meetings helped VDOT gather helpful feedback and provided an additional line of communication between the study team, 5th Street communities, and local leadership bodies.



Stakeholder Group field visit

Public Outreach

The study team gathered input and feedback from the public throughout the study through a mix of in-person and online outreach activities.

Community Meetings

The study team held community meetings at two key phases of the study. The first set of meetings were held to vet the study's draft vision, goals, and objectives. The second meeting gathered community feedback on the study alternatives.

Phase 1 Goals and Priorities Meetings

The study team conducted focused community engagement meetings with two key community groups: the 5th and Avon Community Advisory Commission and Southwood neighborhood residents. The goals for these meetings included reviewing and vetting the study planning process, vision, goals, and objectives, and issues and opportunities identified through existing conditions data collection and analysis. Both meetings were held in February 2020. Twenty people attended the 5th and Avon Community Advisory Commission meeting and ten people attended the Southwood meeting.

Phase 2 Alternatives Meeting

The study team conducted an online public meeting with community members in June 2020 to present and solicit feedback on the alternatives being considered. The public meeting format transitioned from in-person to online due to the COVID-19 pandemic and related restrictions on in-person gatherings. Seventy-nine people participated.



Goals and Priorities meeting

Study Website and Online Surveys

Study-related information, such as background, memoranda, and answers to frequently asked questions, were posted to a dedicated [website](#).

The study team developed two online interactive surveys to solicit public input on the study's goals, needs, and alternatives.

Phase 1 Goals and Priorities Survey

The goals and priorities survey opened in February 2020, coinciding with the Phase 1 goals and priorities meetings. The survey sought public feedback on the study goals and objectives, along with input on multimodal issues and opportunities on 5th Street. Over 1,200 people participated in the survey, and eighty percent of participants reported living in one of the two zip codes alongside the 5th Street study corridor. The results were used to finalize the study vision, goals, and objectives and to inform the initial study alternatives (discussed in greater detail in sections 4 and 5).

Phase 2 Alternatives Survey

The alternatives survey sought public feedback on the 5th Street corridor alternatives (discussed in greater detail in Section 6). The study team collected over 900 responses to this survey.

KEY TAKEAWAYS FROM THIS SECTION:

- A stakeholder group made up of local and regional agencies gave feedback at each stage of the study.
- VDOT gathered input on study goals, priorities, and alternatives through community meetings and online surveys.

COMMENTS ON EXISTING CONDITIONS

1,200+ Survey Responses

Fix it so a kid can ride from southwood to the downtown mall on a bike- we could do it if we really wanted to.

Too much speeding, too little of everything else (bus service, bike lanes, sidewalks, safe pedestrian crossings)

The single biggest improvement needed is crossing 64.

Many times I have seen pedestrians, including moms with baby strollers walking along the side of the street / no sidewalks. Scary!

I won't ride unless things are improved... too dangerous!

Roundabouts would be a welcome solution!

I love having the availability of 5th Street Station but hate all the congestion it has caused.

Many days I see people walking on the shoulder.

There is no safe way to walk from Ambrose Commons to 5th Street Station Parkway.

COMMENTS ON ALTERNATIVES

900+ Survey Responses

If multi-use is only one side, it isn't as clear that one is deemed acceptable for all users while one is prioritized for pedestrians. Clear signage needed to clarify and recommend multi-use path route.

As a bike commuter, I want the option of riding on the street so that I can follow the traffic rules. That ends up being more efficient.

Diverging Diamond may be a good long-term option for congestion reduction and bike-ped safety, but it sure looks like it will be confusing at the start.

There needs to be room for bikes and pedestrians that is separated from the cars.

Congestion [at 5th Street Station Parkway] is preferable, as it encourages people to choose walking and cycling, and slows down remaining motor traffic, which improves safety.

Good buffer between motorist and non-motorist and people on sidewalks. Good thing there is two sidewalks for people going in different directions.

Bike lanes should be protected from vehicular traffic where possible.

Leaving as is will prevent many people from using alternative transportation for safety fears.

This [Old Lynchburg Road] is a location where a roundabout would be helpful and more worth the expense.

Bicycles travel quietly and much faster than pedestrians — do not mix the two!

WHY 5TH STREET AND WHY NOW?

Questions this Section Answers:

- What are the land use and transportation challenges facing 5th Street today?
- What opportunities exist to address these challenges?

The study team reviewed existing conditions on 5th Street to understand land uses, multimodal travel patterns, and safety trends. [The Existing and Future No-Build Conditions Technical Memorandum](#) provides the full details of the existing and future no-build conditions analysis.

Corridor Challenges

As a key regional connector and a local destination, 5th Street serves dual roles—it faces unique challenges in balancing those roles:

- I-64 serves as a literal barrier on 5th Street and signifies the shift between the denser, more commercial northern half of the corridor and the more residential southern half of the corridor (see **Figure 3**).
- Sidewalks and bike lanes are inconsistent and incomplete along 5th Street, and do not provide the level of safety or comfort necessary to foster walking and biking on the street (see **Figure 4**).
- Angle crashes are the most common crash type on the corridor and resulted in a higher proportion of fatalities and injuries than other reported crash types (see **Figure 5**).

- 5th Street is the major north-south connection between Charlottesville and Albemarle County south of I-64. The only other connecting street is Old Lynchburg Road. Solutions that consider network-level connections are urgently needed (see **Figure 6**).
- The top four transportation problems survey participants observed along the study corridor included traffic congestion, location and quality of sidewalks, speeding, and location of pedestrian crossings (see **Figure 7**).

Figure 3
Land Use

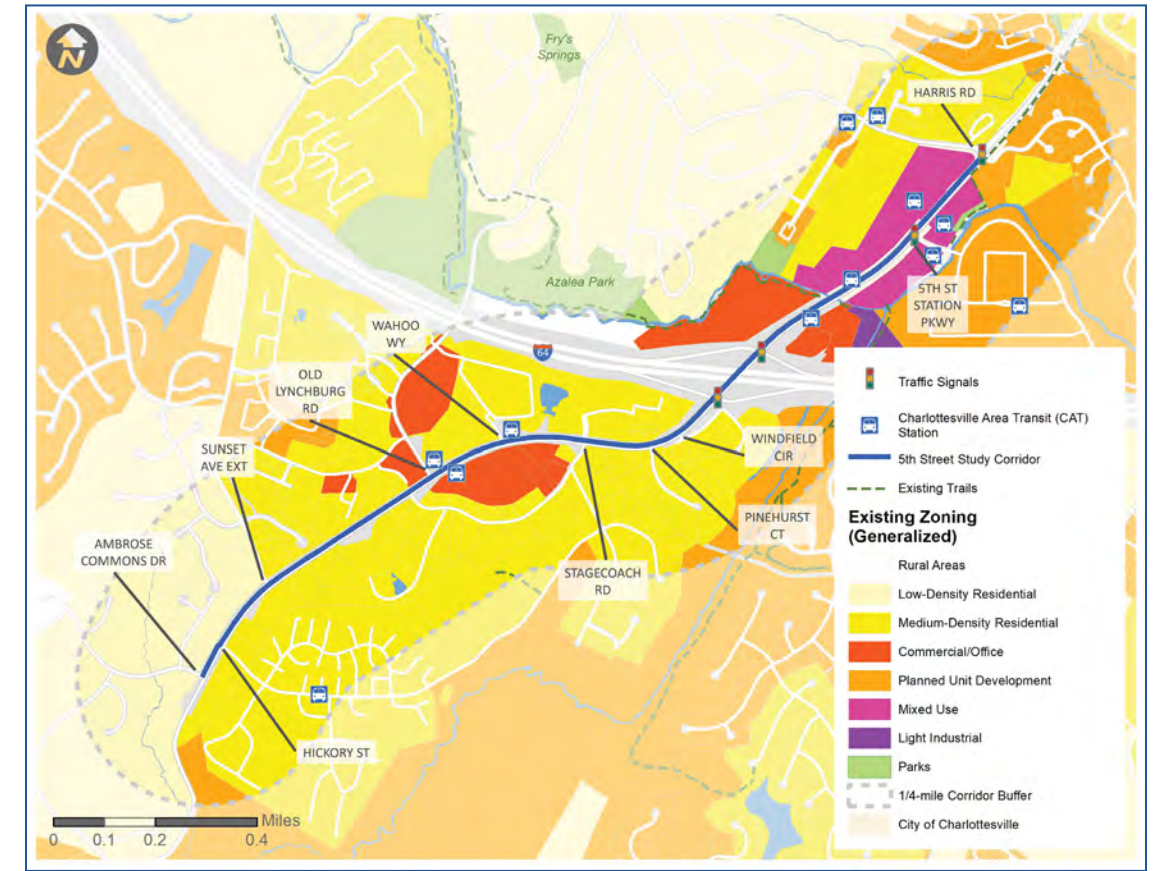


Figure 4
Bicycle and Pedestrian Facilities

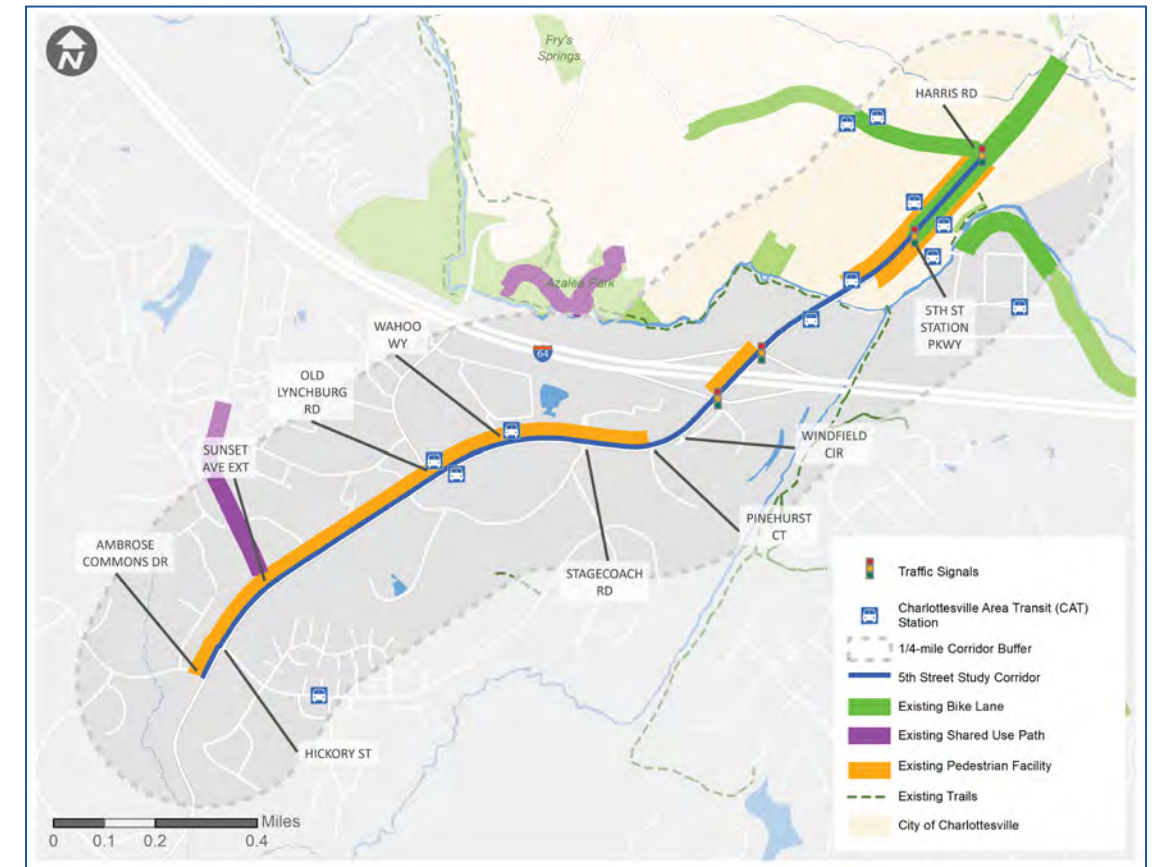


Figure 5
Crash Type/
Severity

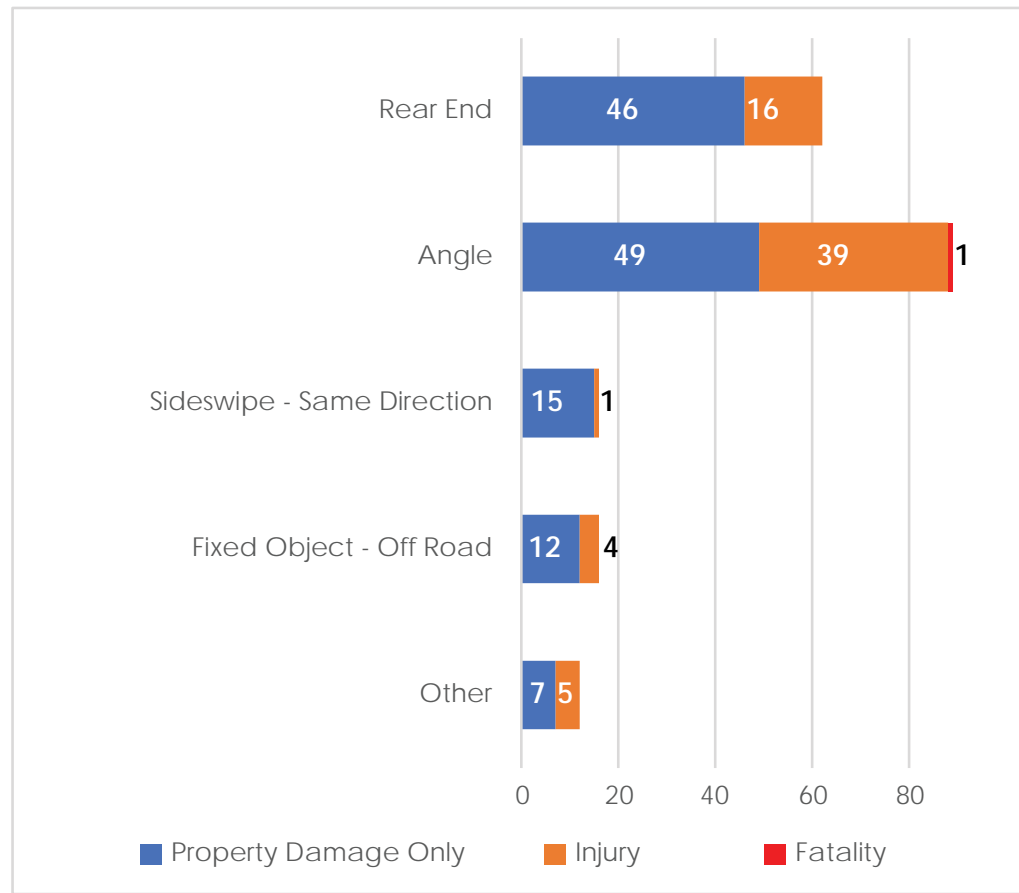


Figure 6
Effective
Network With
Parcels

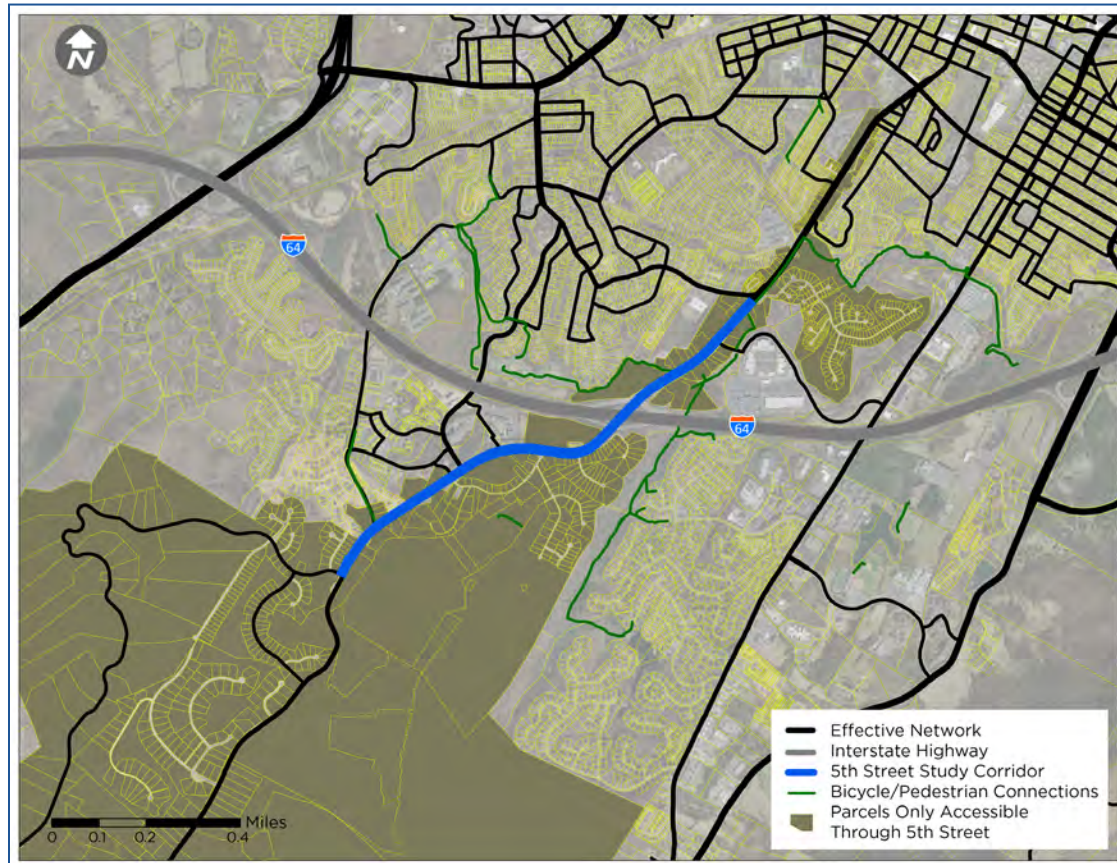
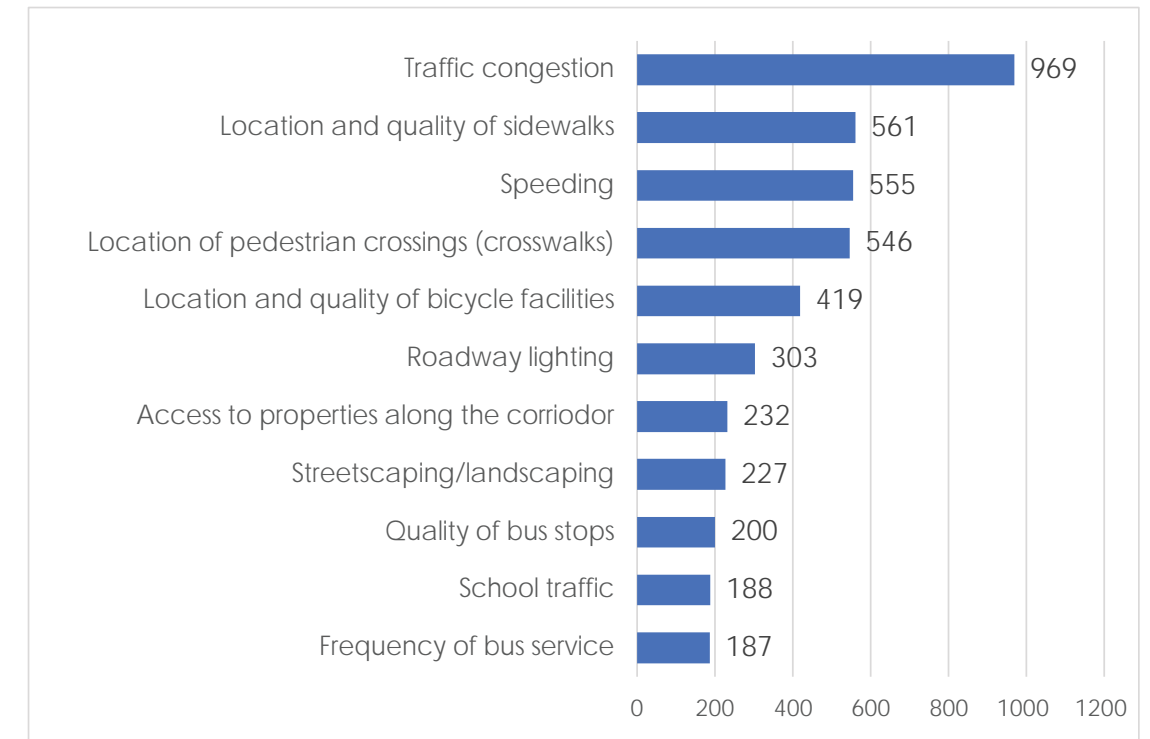


Figure 7
Transportation
Problems



Corridor Opportunities

The study team collected and analyzed various data to better understand the opportunities along the corridor. The data clarified shared stakeholder and community perceptions related to the 5th Street corridor.

- Despite inconsistent, incomplete sidewalks and bicycle facilities and long wait times at less comfortable transit stops, several corridor CAT stops experienced high weekday boardings in 2018 (see **Figure 8**).
- Thirty-four percent of survey participants reported that they walk and/or bike on 5th Street (see **Figure 9**).
- Nearly all (96%) corridor crashes over the past five years of available data occurred at intersections, and a majority of crashes occurred at signalized intersections (69%) (see **Figure 10**).

- With one notable exception (the intersection of 5th Street and 5th Street Station Parkway), excessive delay at corridor intersections is limited to three corridor intersections during either the weekday a.m. or p.m. rush hour (see **Figure 11**).
- The communities adjoining 5th Street have a higher percentage of households living below the poverty line than the Charlottesville Metropolitan Statistical Area (MSA), but a lower percentage of zero-car households than the Charlottesville MSA. This highlights an opportunity to provide increased multimodal options to households burdened by the combined cost of housing and transportation (see **Figure 12**).

Figure 8
Transit Ridership

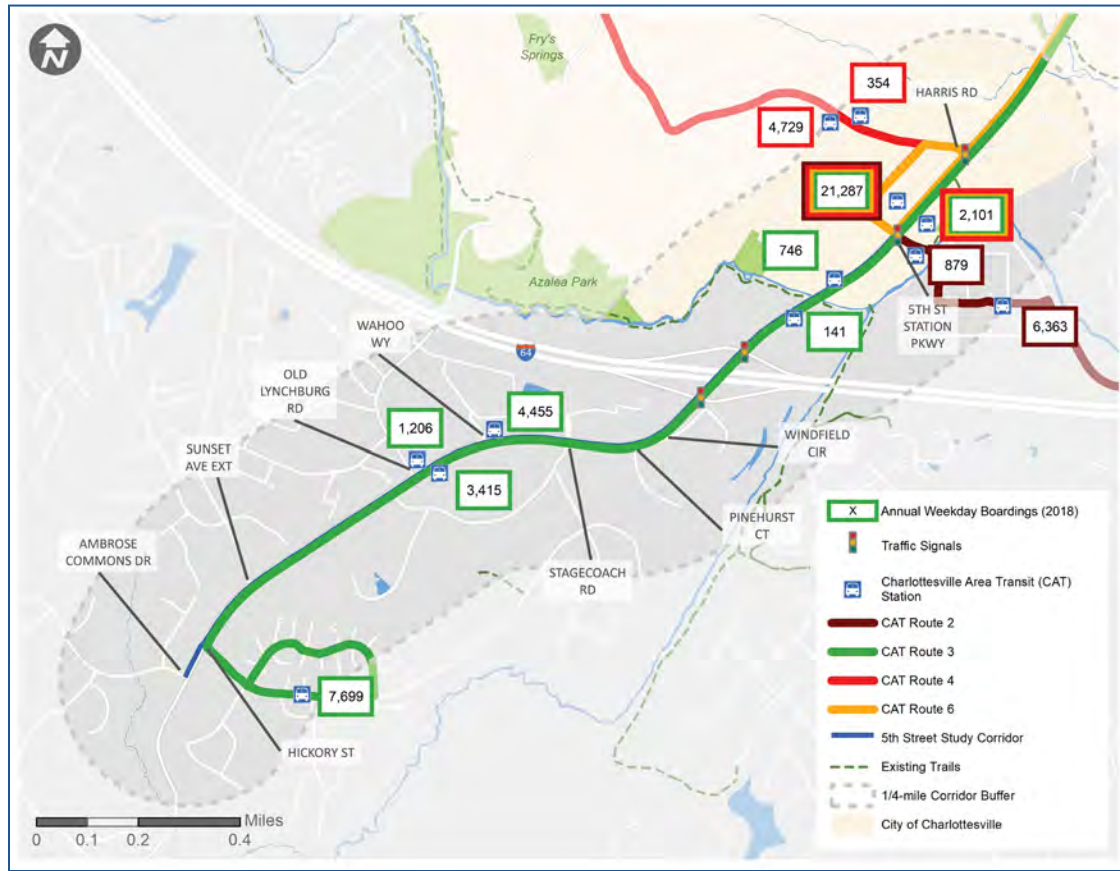


Figure 10
Crash Location

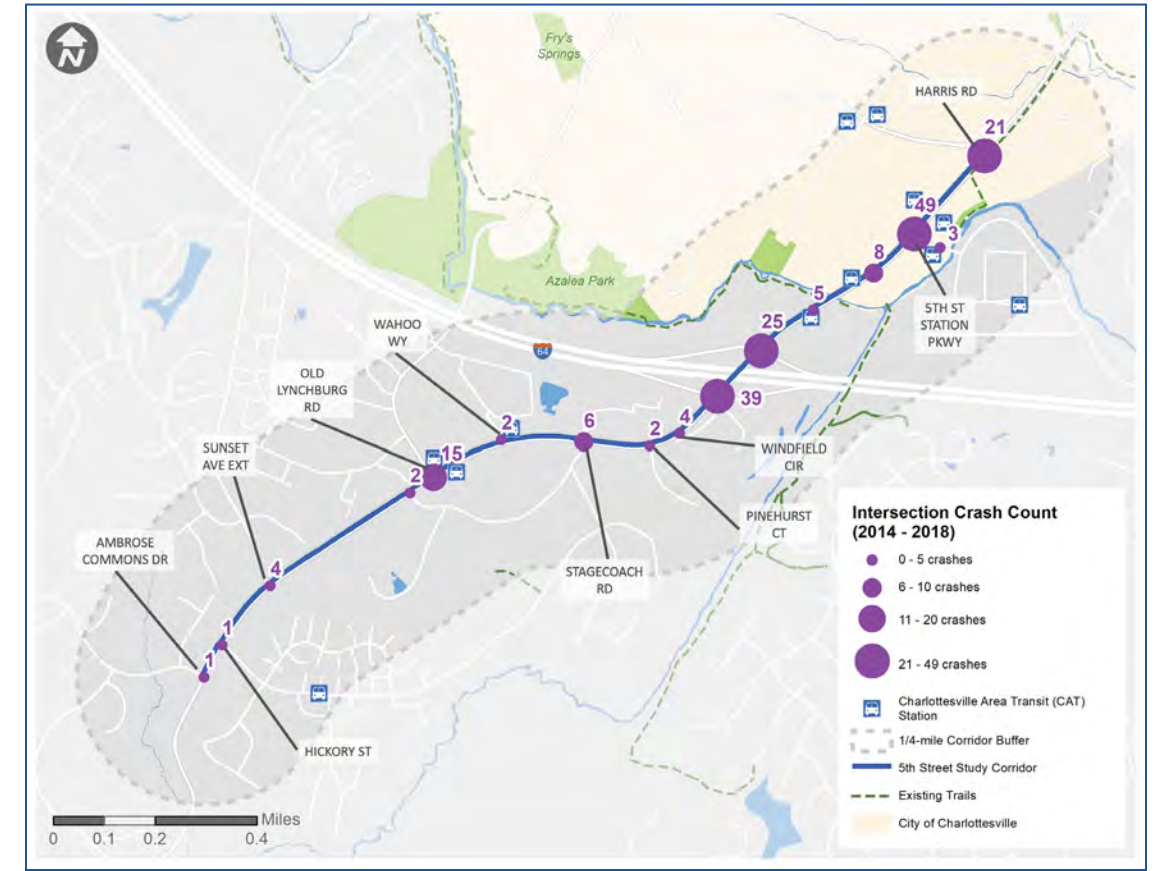


Figure 9
How Survey Respondents Travel Along 5th Street

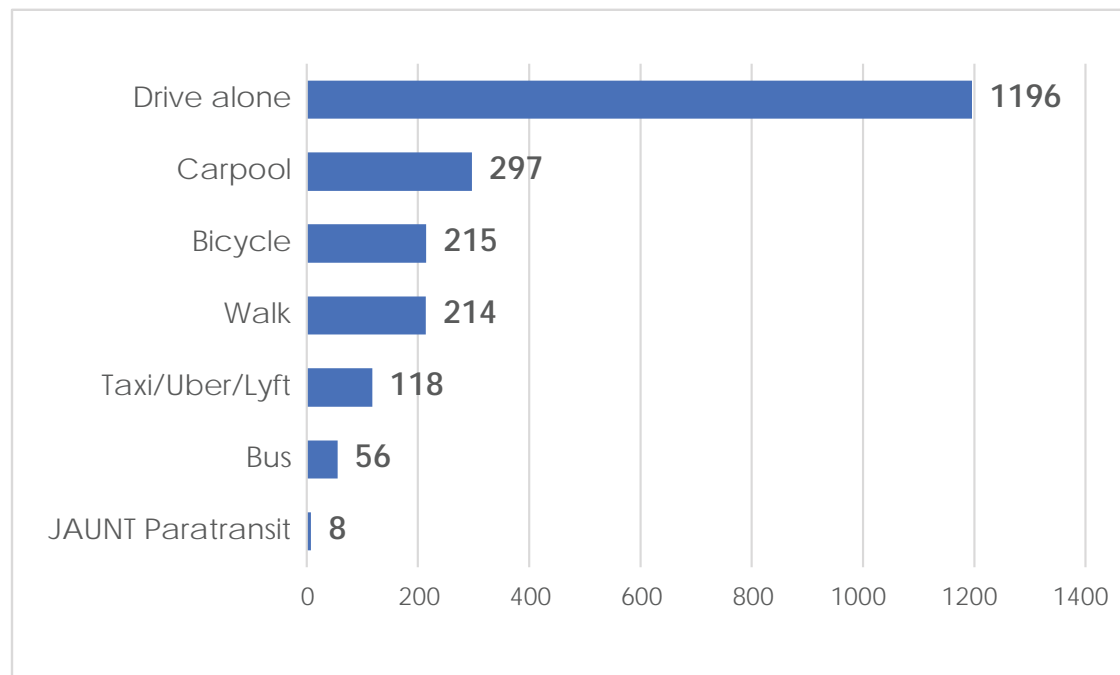


Figure 11
Existing Operational Conditions

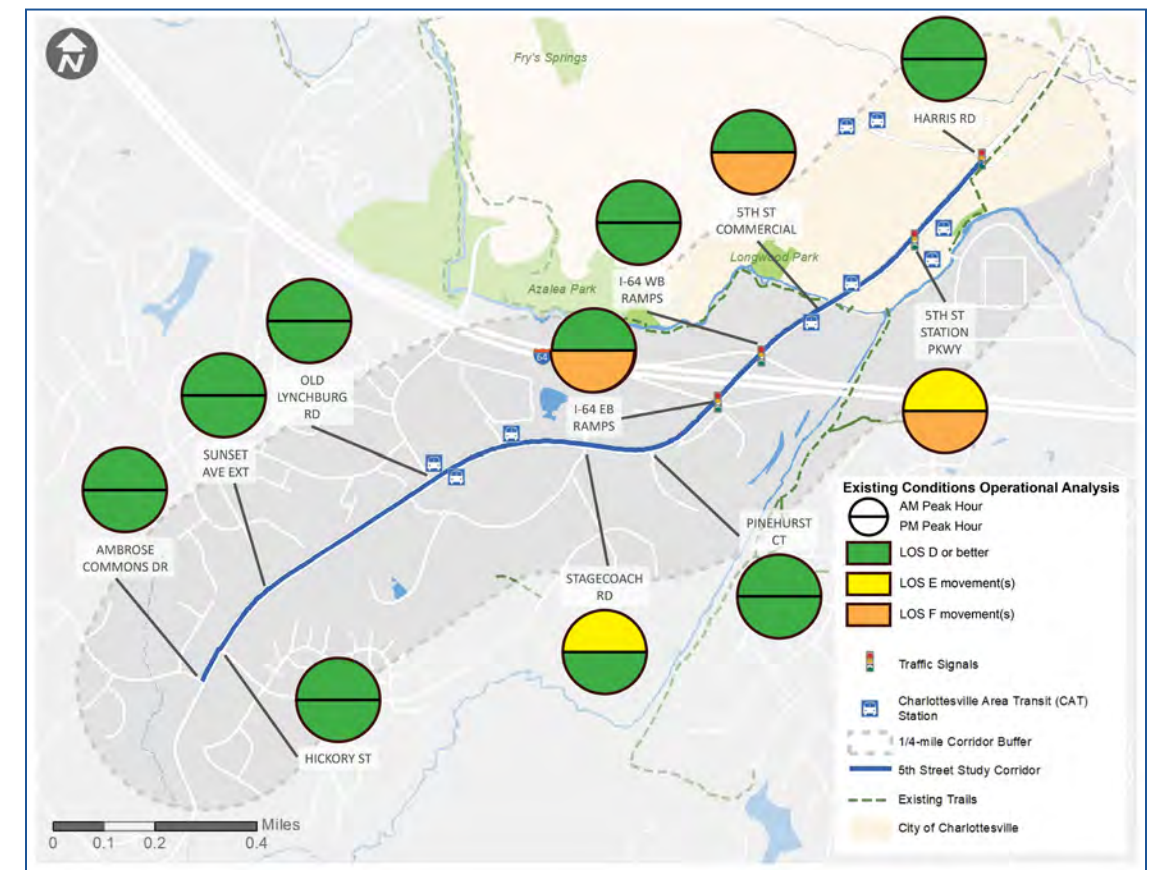


Figure 12
Demographics

	5th Street	Charlottesville MSA	Virginia
Zero Car Households ¹	4.40%	6.00%	6.20%
Households Living Below 100% of the Poverty Line ¹	15.50%	12.60%	11.00%

Source: American Community Survey, 5-Year Estimates 2018 (Census block group level)

KEY TAKEAWAYS FROM THIS SECTION:

- 5th Street has a rural-suburban cross-section and nearby communities are growing denser. This mismatch poses safety and mobility challenges.
- 5th Street and I-64 are the only major connectors serving communities on and south of the corridor, which places strain on 5th Street.
- Many challenges facing 5th Street relate to safety, comfort, and mobility.



Intersection of 5th Street and Old Lynchburg Road

HOW DID WE EVALUATE ALTERNATIVES?

Questions this Section Answers:

- How did VDOT develop the study vision, goals, and objectives?
- How was the alternatives analysis informed by them?

Goals and Objectives

The study team and stakeholder group developed a project vision, goals, and objectives based on the issues and opportunities identified through the existing conditions analysis. These goals and objectives formed the framework for measuring

the effectiveness of potential multimodal alternatives. **Figure 13** presents the project goals developed with the stakeholder group.

Figure 13
Vision and Goals Infographic

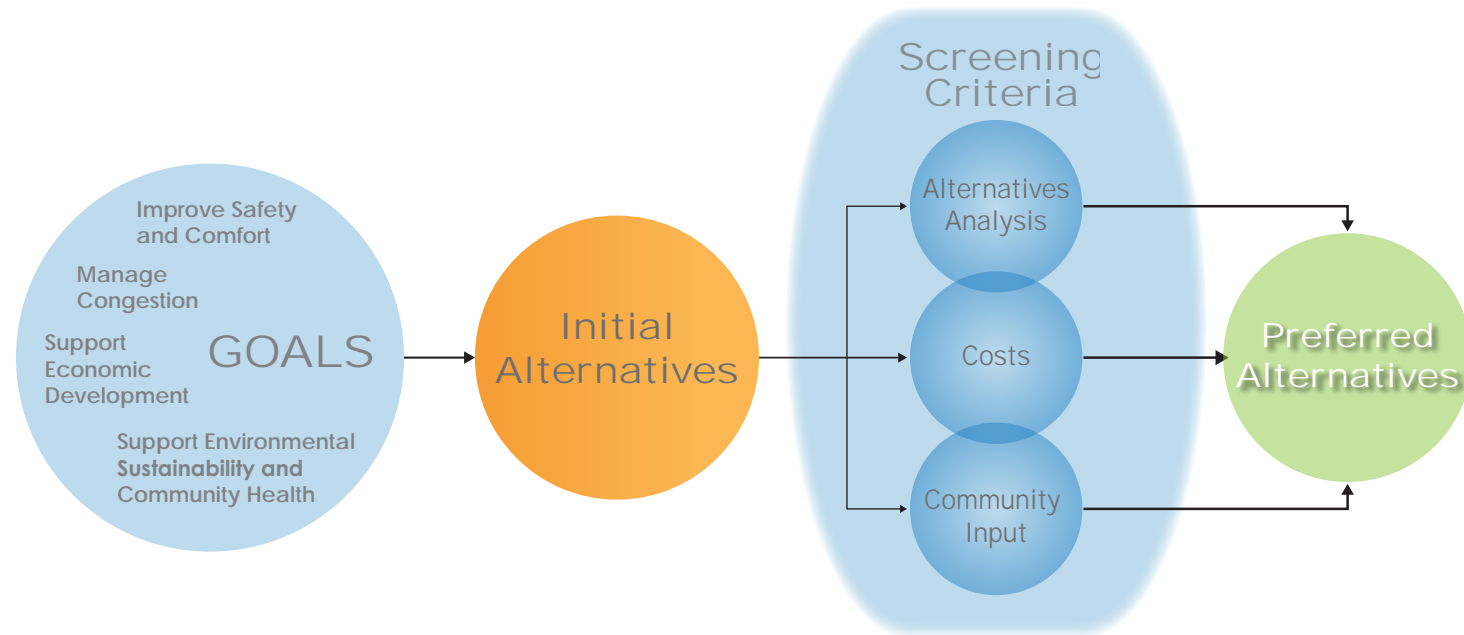
5th Street is a Complete Street that supports development and provides safe and comfortable travel for all uses and users of the roadway



Screening Criteria

The study team developed screening criteria and tied them to each of the project goals and objectives. The alternatives analysis was based primarily on the screening criteria, planning-level estimates of probable cost, and community feedback (see **Figure 14**).

Figure 14
Alternatives Evaluation Process



KEY TAKEAWAYS FROM THIS SECTION:

- Findings from the existing conditions analysis, stakeholder group, and community feedback shaped the study vision, goals, and objectives.
- Screening criteria related to each goal and its objectives informed alternatives analysis.

WHAT ARE THE ALTERNATIVES?

Questions this Section Answers:

- How did VDOT develop the alternatives for 5th Street?
- What are the alternatives for 5th Street?

This section describes the outcomes from the alternative development process. VDOT and the study team aimed to develop feasible alternatives that would be supported by stakeholders and meet the study's goals and objectives. [The Identification of Alternatives Technical Memorandum](#) provides full-size illustrations of all intersection and cross-section alternatives developed for the study.

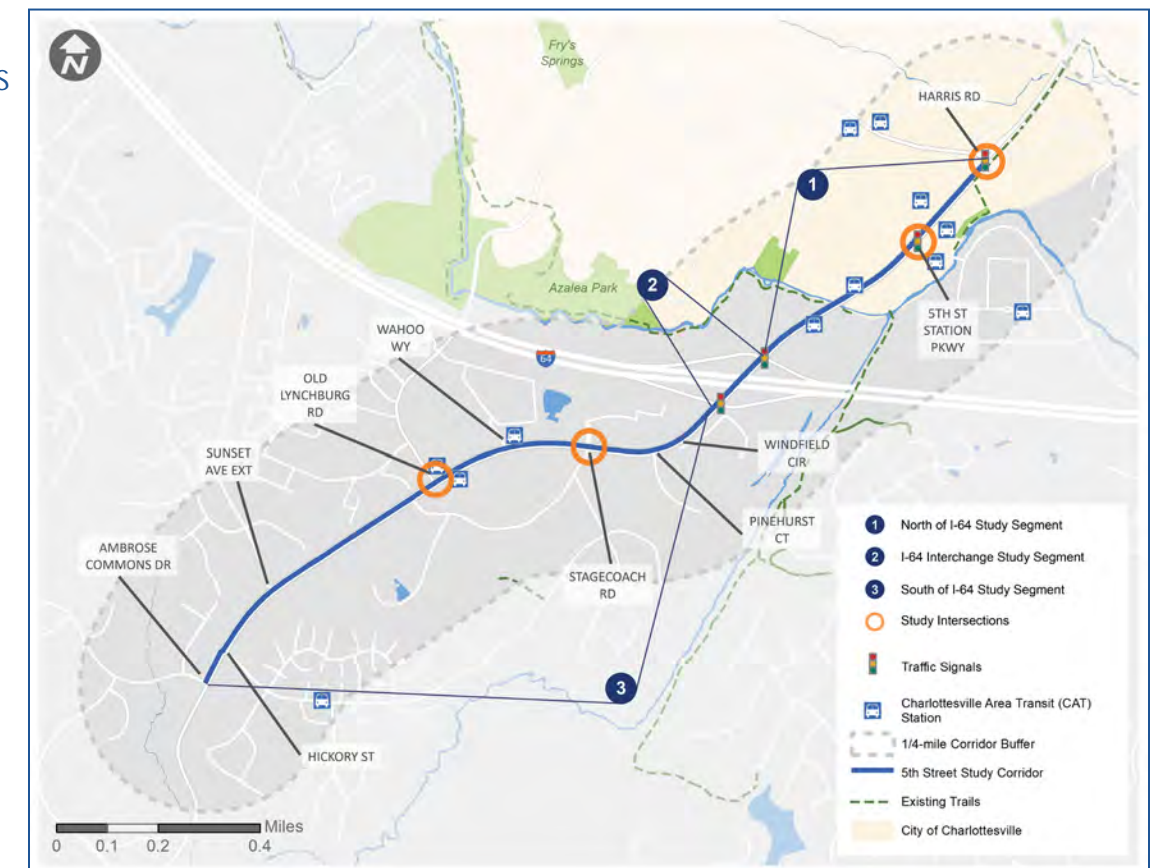
- 5th Street north of I-64 (suburban commercial)
- 5th Street at the I-64 interchange (highway commercial)
- 5th Street south of I-64 (suburban residential)

The team developed intersection-specific alternatives at key locations within each section. Alternatives related to the 5th Street cross-section were developed for 5th Street north of I-64 and 5th Street south of I-64.

Transportation Solutions for 5th Street

The study team divided the 5th Street corridor into three sections based on transportation and land use context (see **Figure 15**):

Figure 15
Corridor Sections



The study team also identified network alternatives that could bridge the gap in the bicycle and pedestrian network created by I-64.

5th Street North of I-64

Safety and congestion challenges at two signalized intersections result in substantial delays, heavy demand for turning vehicles, and long vehicle queues along this segment of 5th Street. Pedestrians experience long waits to cross at intersections, and bicycle and pedestrian facilities end south of 5th Street Station Parkway. There is currently no buffer between bicycle and pedestrian facilities and the roadway.

Harris Road and 5th Street

The intersection of Harris Road and 5th Street presents safety challenges for people driving, walking, biking, and waiting for the bus. The intersection has a higher proportion of angle and rear-end crashes than the corridor-wide average. Pedestrians experience delay at crossings and discomfort at the southbound channelized right-

Figure 16
Harris Road
Alternative



turn lane onto Harris Road. Existing bike lanes at the intersection are likely to be used by only the most experienced bicyclists.

The study team developed one alternative consistent with recommendations from the 5th-Ridge-McIntire Multimodal Corridor Study. The 5th Street and Harris Road Intersection Modification will:

- Close the southbound channelized right-turn lane and replace with a southbound right-turn lane.
- Replace the traffic signal equipment and make signal timing modifications for improved operations.
- Continue separated bicycle facilities through the intersection.

Figure 16 shows key elements of the Harris Road alternative.

5th Street Station Parkway and 5th Street

The intersection of 5th Street Station Parkway and 5th Street presents safety challenges for all intersection users and congestion challenges related to turning vehicles and long queues. The intersection experienced more crashes and more injury crashes than any other intersection on the 5th Street corridor. Over the past five years, one crash involving a pedestrian and one involving a bicyclist occurred at the intersection. The intersection is a key corridor bottleneck today, and experiences high levels of delay during the weekday a.m. and p.m. rush hours. Pedestrians experience long crossing delays at intersection crosswalks, and bike lanes at the intersection are likely to be used by only the most experienced bicyclists.

The study team developed two alternatives.

Expand Intersection

The first alternative increases capacity and improves bicycle circulation.

- Add turn lanes into and out of 5th Street Station Parkway.
- Make signal timing modifications for improved operations.
- Continue separated bicycle facilities through the intersection.

Left Turn Restrictions and Additional Turn Lane

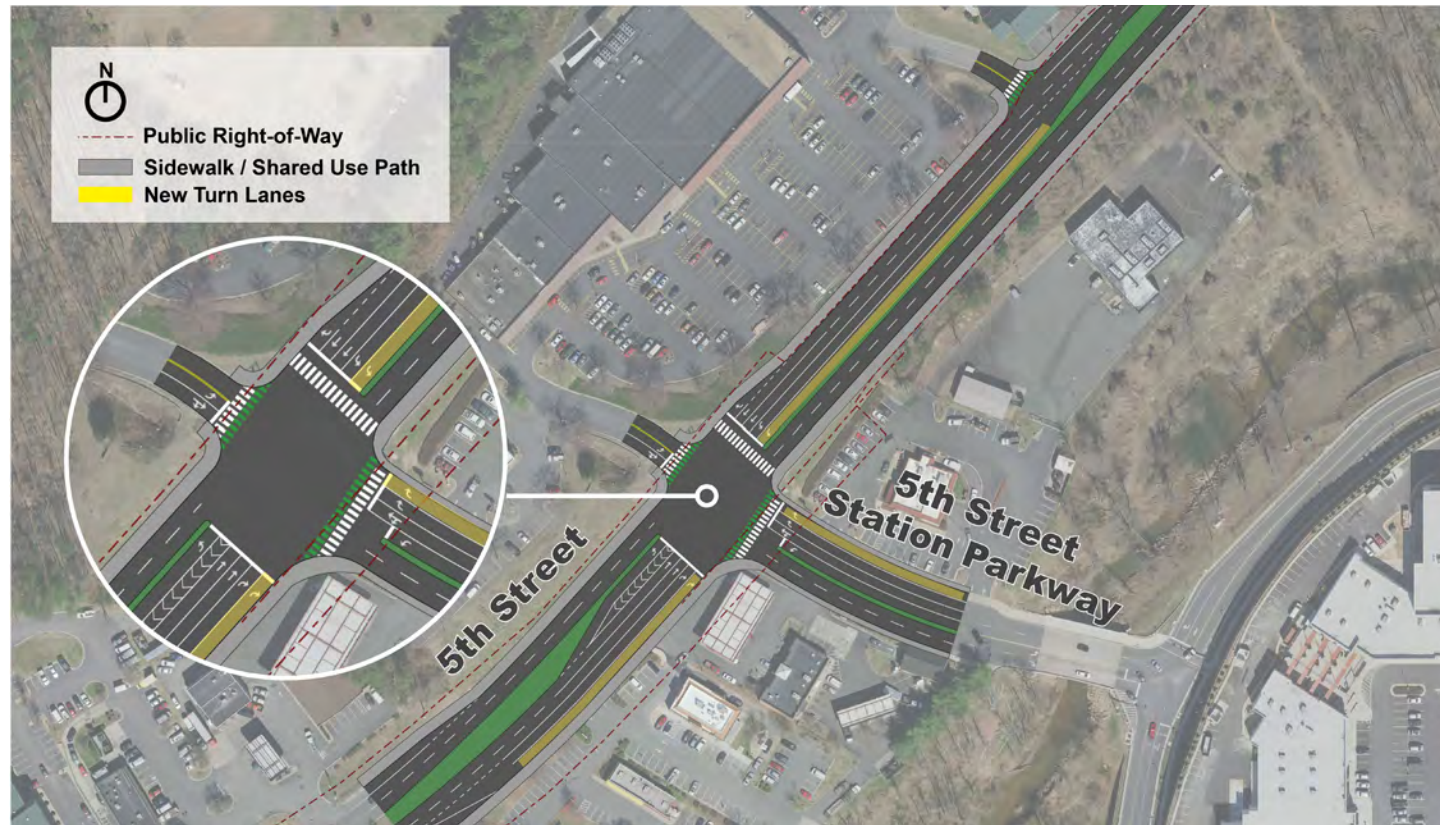
The second alternative reduces intersection delay and turning movement conflicts by implementing left-turn restrictions.

- Add southbound left- and northbound right-turn lanes into 5th Street Station Parkway.
- Eliminate northbound left-turn lanes into and out of Willoughby Square Shopping Center.
 - Northbound motorists exiting Willoughby Square Shopping Center use Harris Road to access 5th Street and drive north.
- Add a median opening and northbound left-turn lane into Willoughby Square Shopping Center north of 5th Street Station Parkway.
- Make signal timing modifications for improved operations.
- Continue separated bicycle facilities through the intersection.

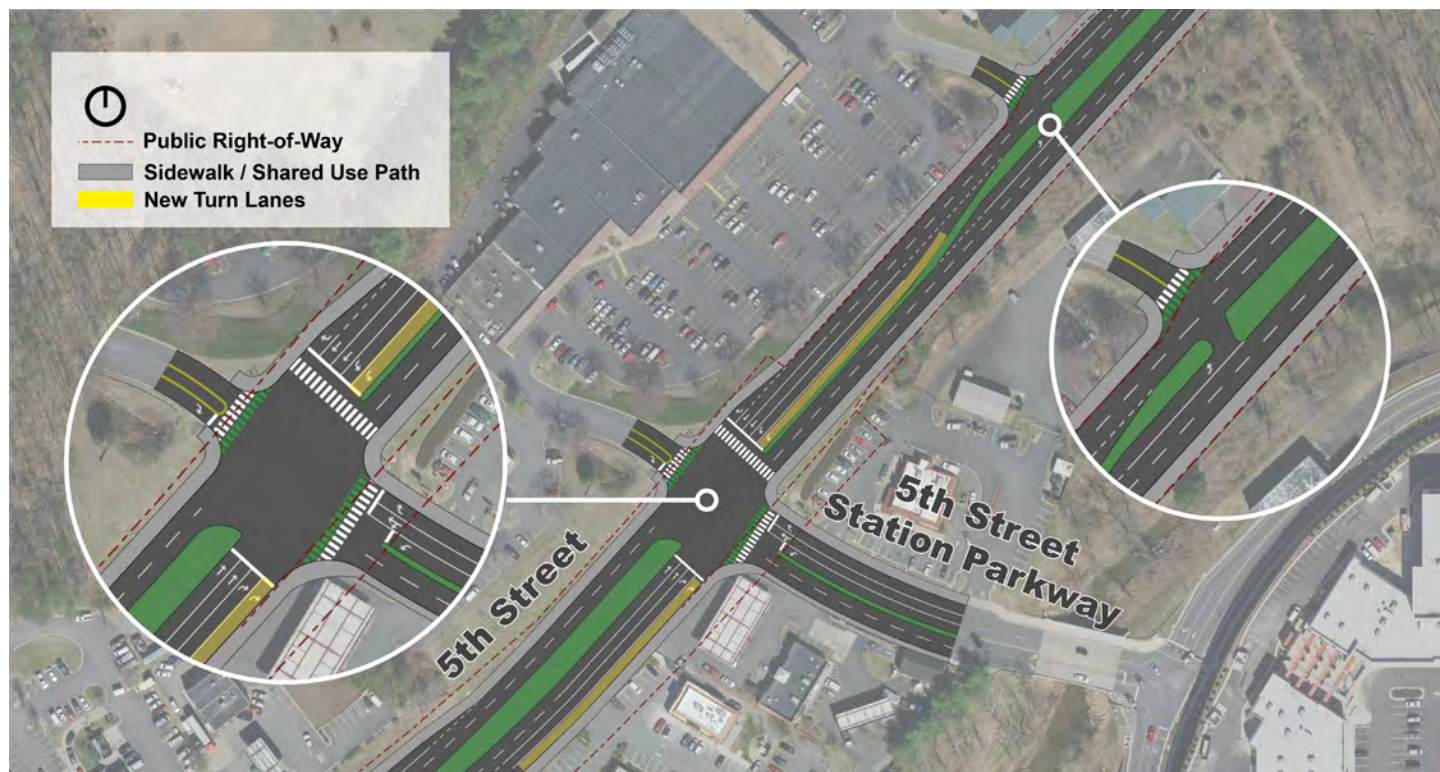
Figure 17 compares key elements of the 5th Street Station Parkway alternatives.

Figure 17
5th Street Station Parkway Alternatives

Expand Intersection



Left Turn Restrictions and Additional Turn Lane



Along 5th Street North of I-64

Today, sidewalks and bike lanes end south of 5th Street Station Parkway. The incomplete bicycle and pedestrian network is disconnected from trails, employment, and transit, discouraging bicycle and pedestrian use. Existing sidewalks and bike lanes do not include a buffer separating non-motorized users from motorists, further reducing comfort for non-motorized users.

The study team developed four alternatives to provide consistent, continuous walking and biking facilities along 5th Street:

- **Sidewalk (Both Sides):** Add an 8-foot sidewalk to both sides of 5th Street.

- **Shared Use Path (One Side):** Add a 12-foot shared-use path to the east side of 5th Street.
- **Sidewalk and Separated Bicycle Facility (Both Sides):** Add a 6-foot sidewalk and a 6-foot separated bicycle facility to both sides of 5th Street.
- **Sidewalk and Shared Use Path:** Add a 6-foot sidewalk to the west side of 5th Street and a 12-foot shared-use path to the east side of 5th Street.

Figure 18 compares key elements of the proposed 5th Street cross-section alternatives north of I-64.

Figure 18
5th Street Cross-section Alternatives North of I-64

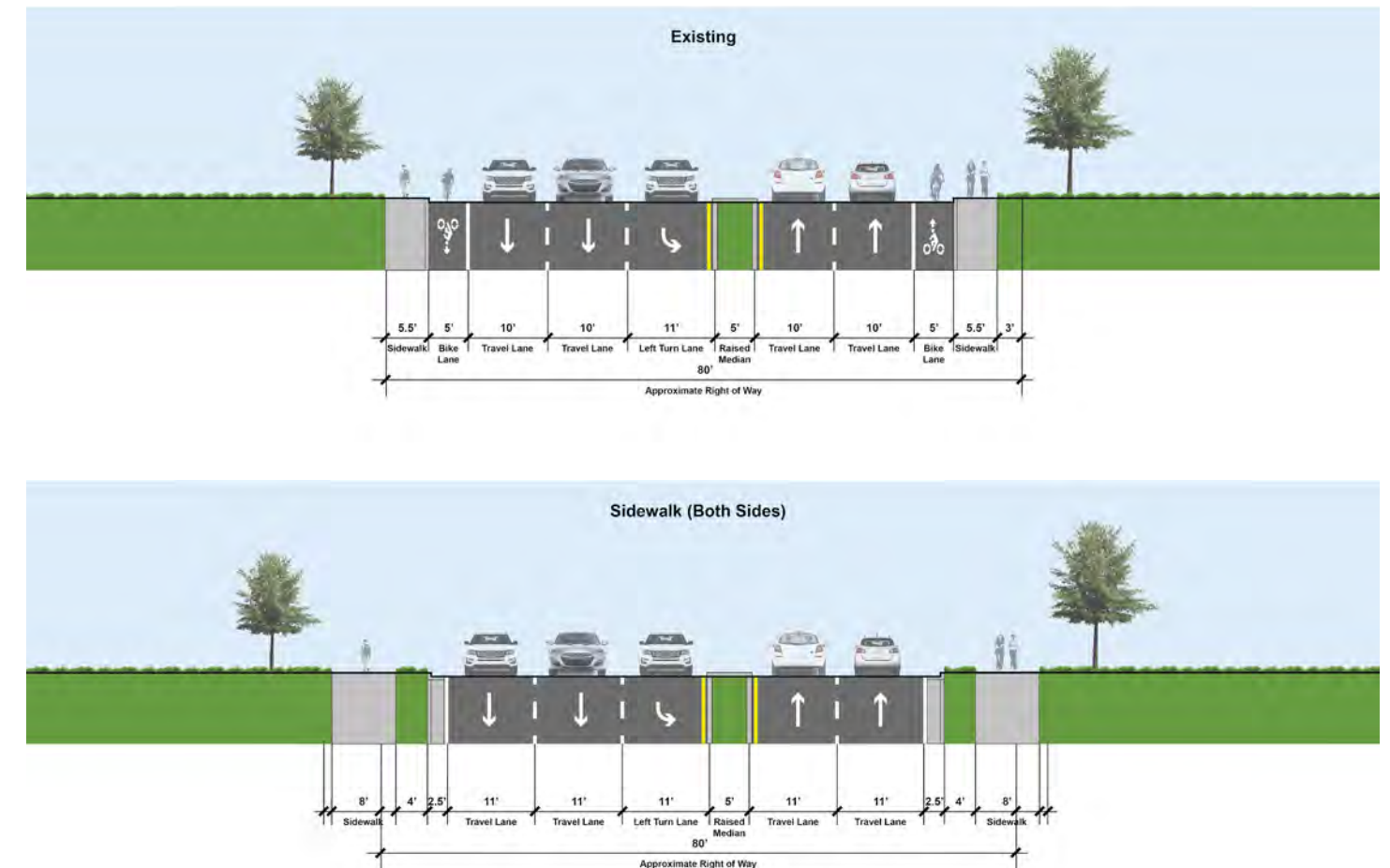
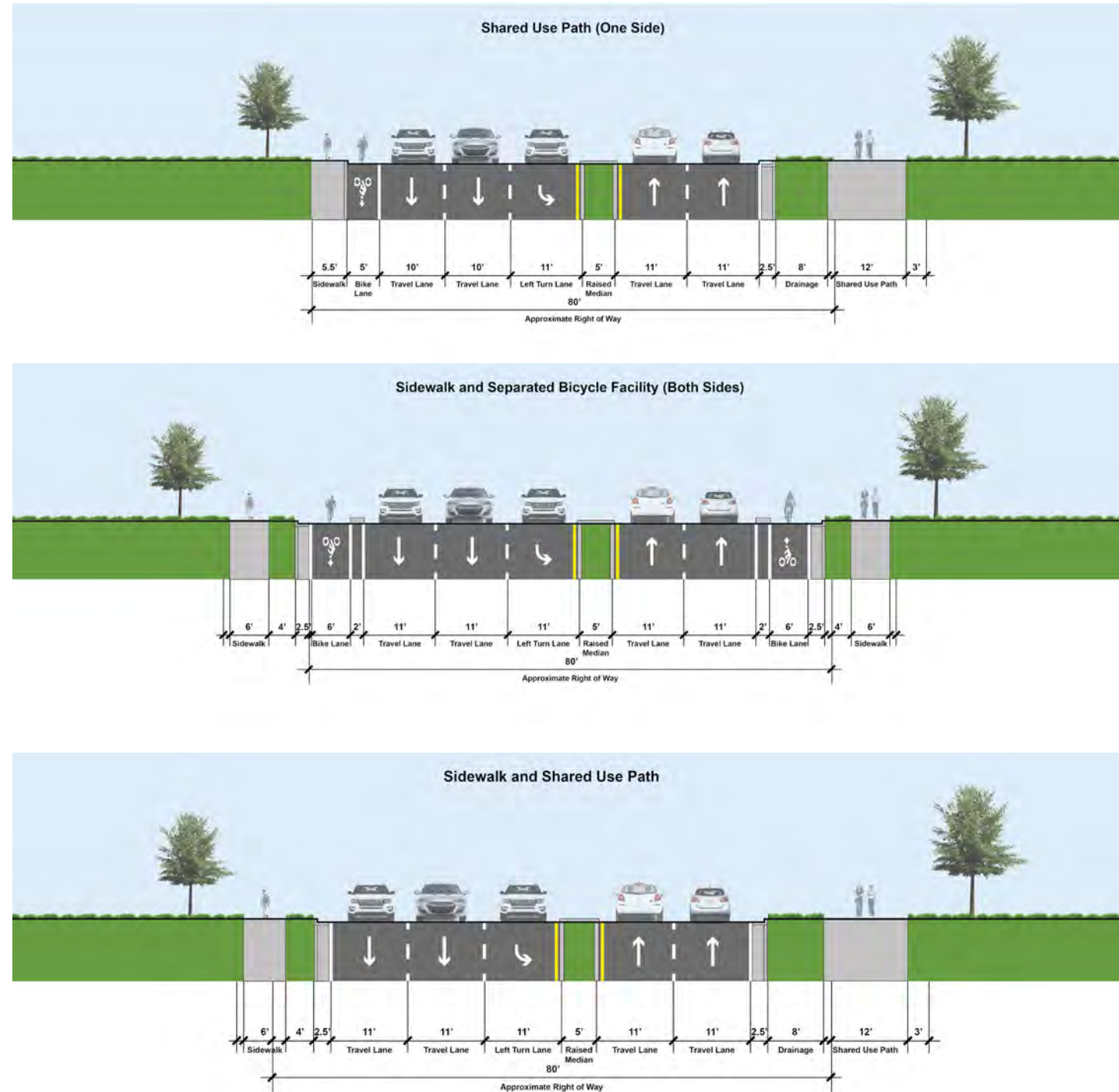


Figure 18 (continued)
5th Street Cross-section Alternatives
North of I-64



The I-64 Interchange

Safety challenges related to heavy vehicle demand occur at both signalized ramp intersections on 5th Street at the I-64 interchange. Long vehicle queues and high volumes of vehicles turning on and off of the I-64 interchange ramps contribute to rear-end and angle crashes, respectively. This section also faces congestion challenges at the 5th Street and the I-64 eastbound ramp. Neither of the traffic signals at the interchange have pedestrian accommodations, and a narrow concrete walkway on the bridge is the only option for bicyclists and pedestrians traveling on the bridge. With these limited facilities, bicyclists and pedestrians have trouble safely and comfortably crossing over I-64.

Near-Term Interchange Alternative

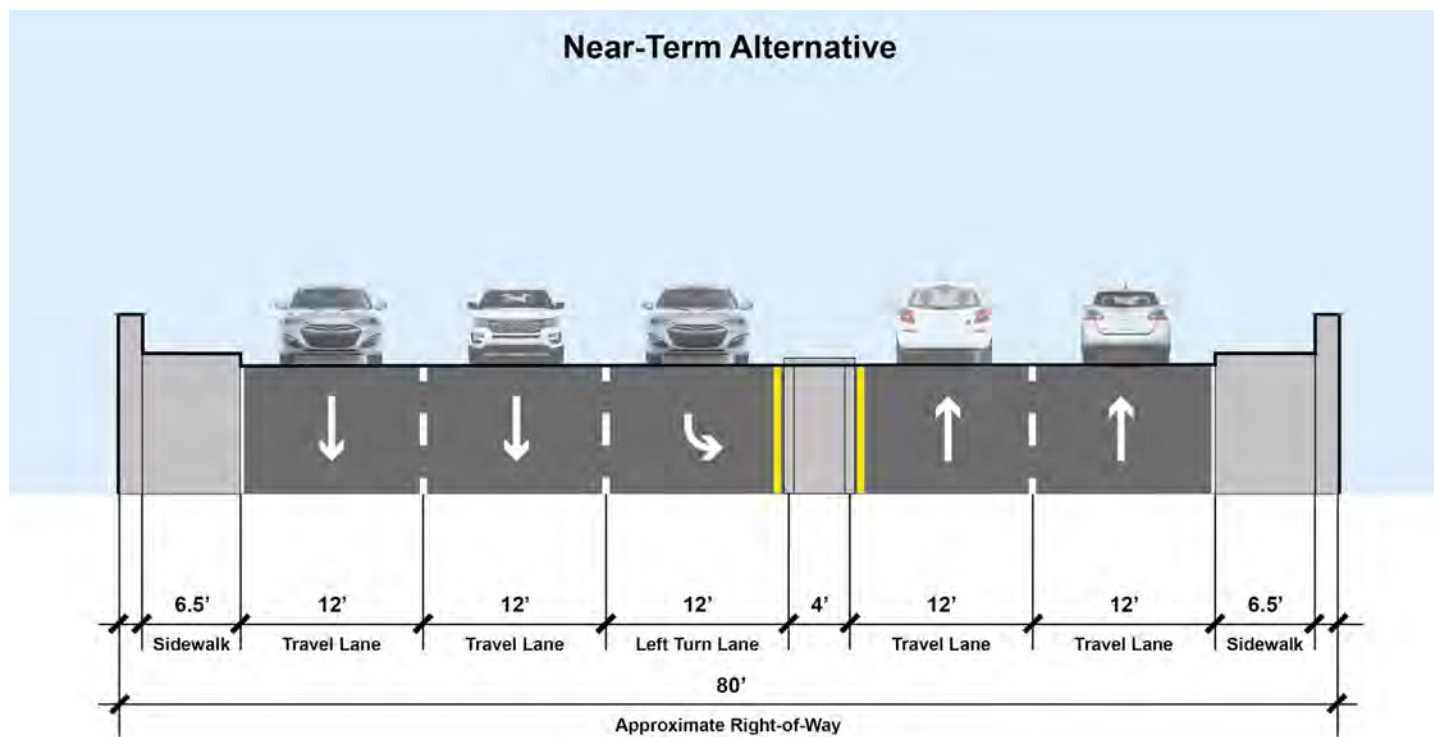
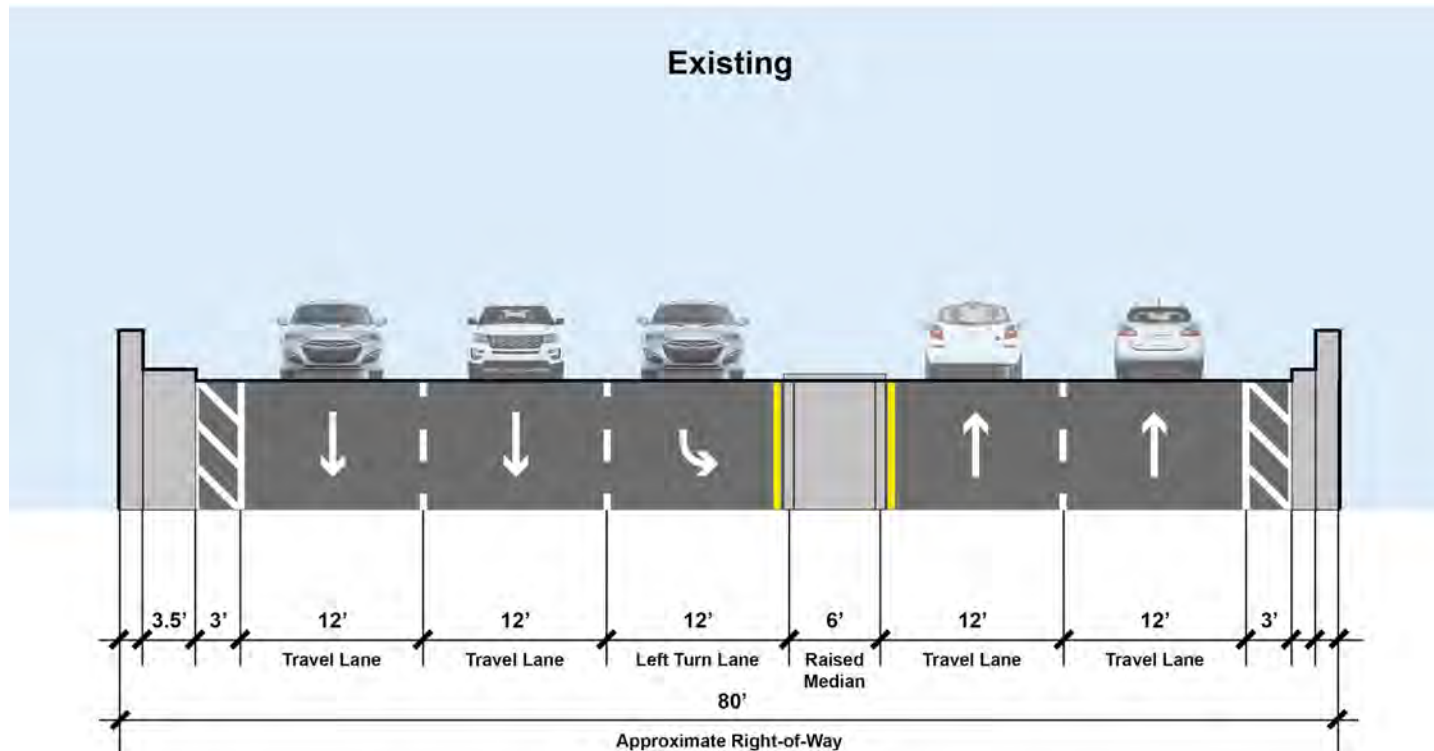
The study team developed one near-term interchange alternative to improve non-motorized safety and comfort.

- Add pedestrian crossings at interchange ramps.
- Add wider pedestrian walkways on both sides of the bridge (it is not possible to provide a buffer between the sidewalk and travel lanes due to space constraints).
- Cyclists using the sidewalk will be instructed to dismount and walk their bicycles across the bridge.

Since this option would require modifications to a bridge, it could take seven to 10 years from the time that a funding application is submitted to complete construction.

Figure 19 shows key elements of the near-term interchange alternative.

Figure 19
Near-term Interchange
Alternative



Long-Term Interchange Alternatives

The study team used the VDOT Junction Screening Tool (VJuST) to evaluate alternative interchange configurations at the I-64 interchange. The following configurations were evaluated to see how they would influence congestion, pedestrian accommodations, and safety.

- Contraflow Left Interchange
- Displaced Left-Turn Interchange
- Diverging Diamond Interchange
- Double Roundabout Interchange
- Michigan Urban Diamond Interchange
- Partial Cloverleaf Interchange
- Single Point Urban Interchange
- Single Roundabout Interchange

[VDOT's Innovative Intersections and Interchanges database](#) provides more information about each of interchange configurations evaluated by the study team.

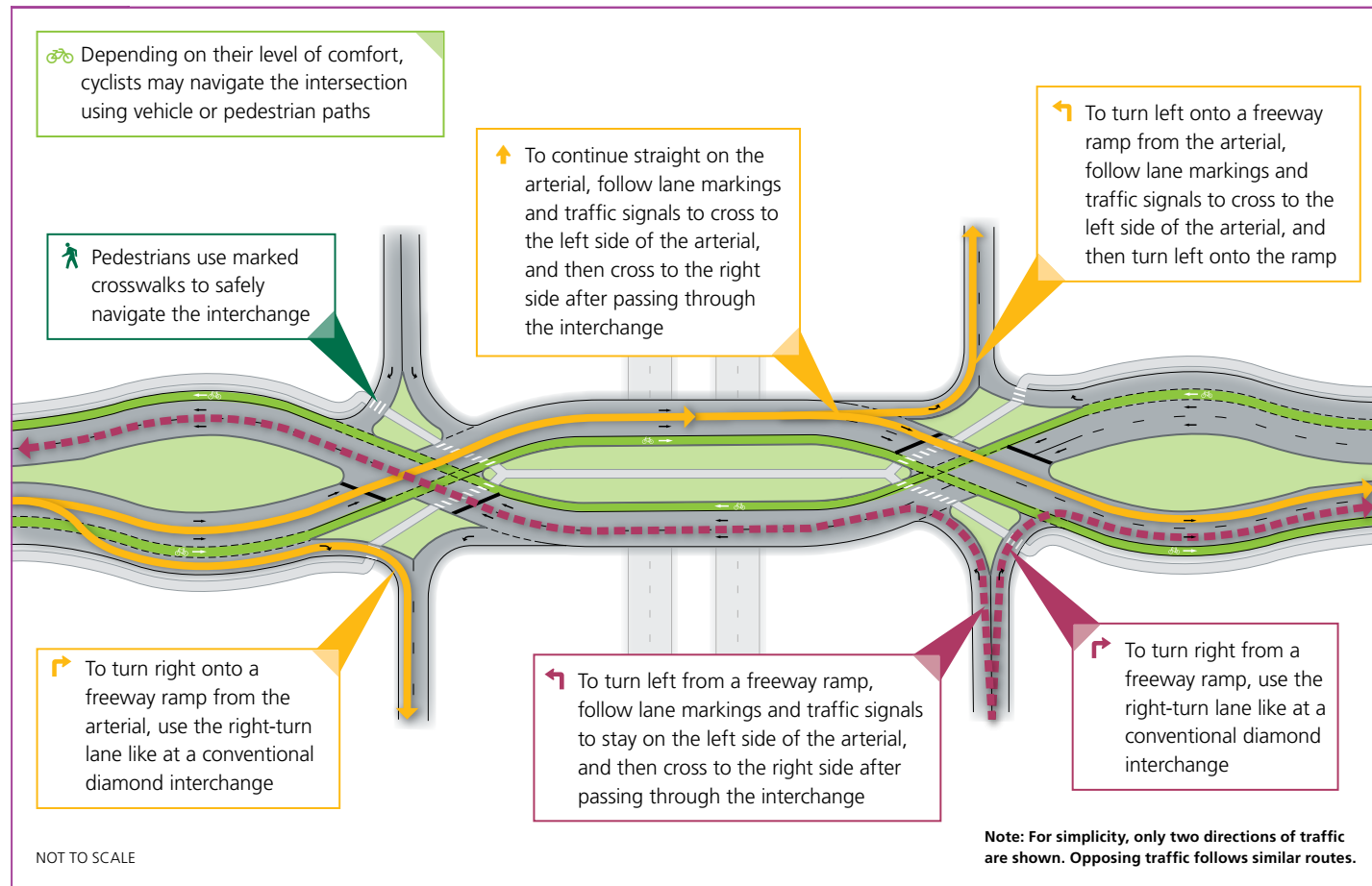
Preliminary analysis suggests that a diverging diamond interchange (DDI) may be a viable alternative. A DDI is a grade-separated interchange design where the major road, 5th Street, crosses to the other side of the roadway between freeway ramps. This design reduces vehicle conflict points, separates vehicle travel from bicycle and pedestrian travel, and reduces delay for cars and buses. It could take 14 to 16 years from the time that a funding application is submitted to complete construction.

Based on the results of the VJuST analysis, the study team recommends the following next step to identify a long-term alternative for the I-64 Interchange:

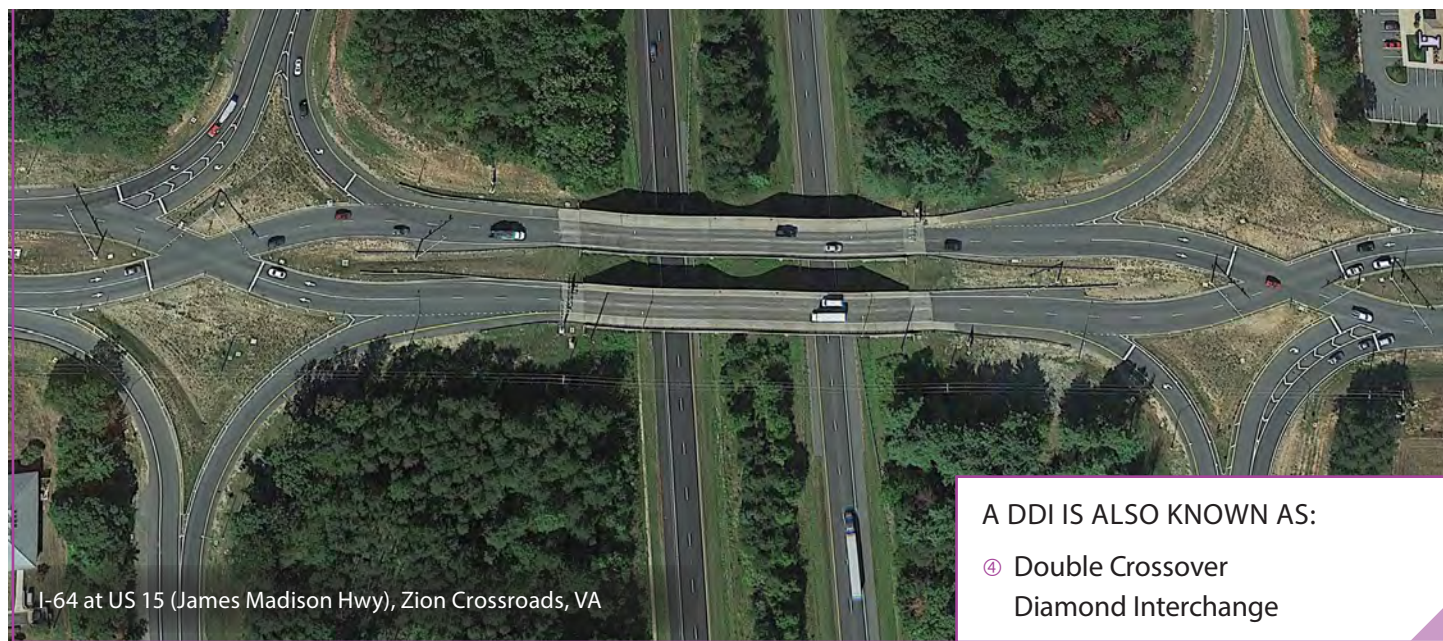
- Conduct a full Project Development and Environment study to vet and select a preferred interchange improvement.

Figure 20 shows key elements of a Diverging Diamond Interchange and an example of a constructed DDI at I-64 and US 15 (James Madison Highway) in Zion Crossroads, VA.

Figure 20
Diverging Diamond Interchange Components



Visit www.virginiadot.org/innovativeintersections to learn more.



5th Street South of I-64

Unsignalized intersections along 5th Street south of I-64 experience safety challenges due to the roadway alignment, vehicular speeds, the number of turning vehicles and traffic volumes. There are no designated pedestrian crossings on this section of the corridor, and bicycle and pedestrian facilities are missing from the south side of 5th Street. The existing pedestrian facility on the north side of 5th Street is a mix of paved and gravel path surfaces that are not accessible according to the Americans with Disabilities Act (ADA). The only buffer between the pedestrian facility and the roadway is a guardrail.

Stagecoach Road and 5th Street

The unsignalized intersection of Stagecoach Road and 5th Street experiences safety challenges and delay related to turning vehicles. The Albemarle County Police Department directs traffic at this intersection during the weekday a.m. rush hour so families can turn onto Stagecoach Road from 5th Street to drop off their children at the Covenant School. A new development on the north leg of the intersection will increase intersection delay and turning conflicts.

The study team developed two alternatives to improve these conditions.

Roundabout

The first alternative calms traffic, reduces delay, and reduces turning movement conflicts by converting the intersection into a roundabout.

- Convert unsignalized intersection to two-lane roundabout.
- Add pedestrian crossings on all four legs of the roundabout.

Restricted Crossing U-Turn

The second alternative reduces turning movement conflicts and reduces delay on 5th Street by converting the intersection into a restricted crossing U-turn.

- Convert unsignalized intersection to an unsignalized restricted crossing U-turn.
- Conversion includes adding U-turn locations east and west of the intersection.

The restricted crossing U-turn intersection (RCUT) is a design where all side street movements begin with a right turn. Side street left-turn and through vehicles turn right and make a U-turn at a dedicated downstream median opening to complete the desired movement.

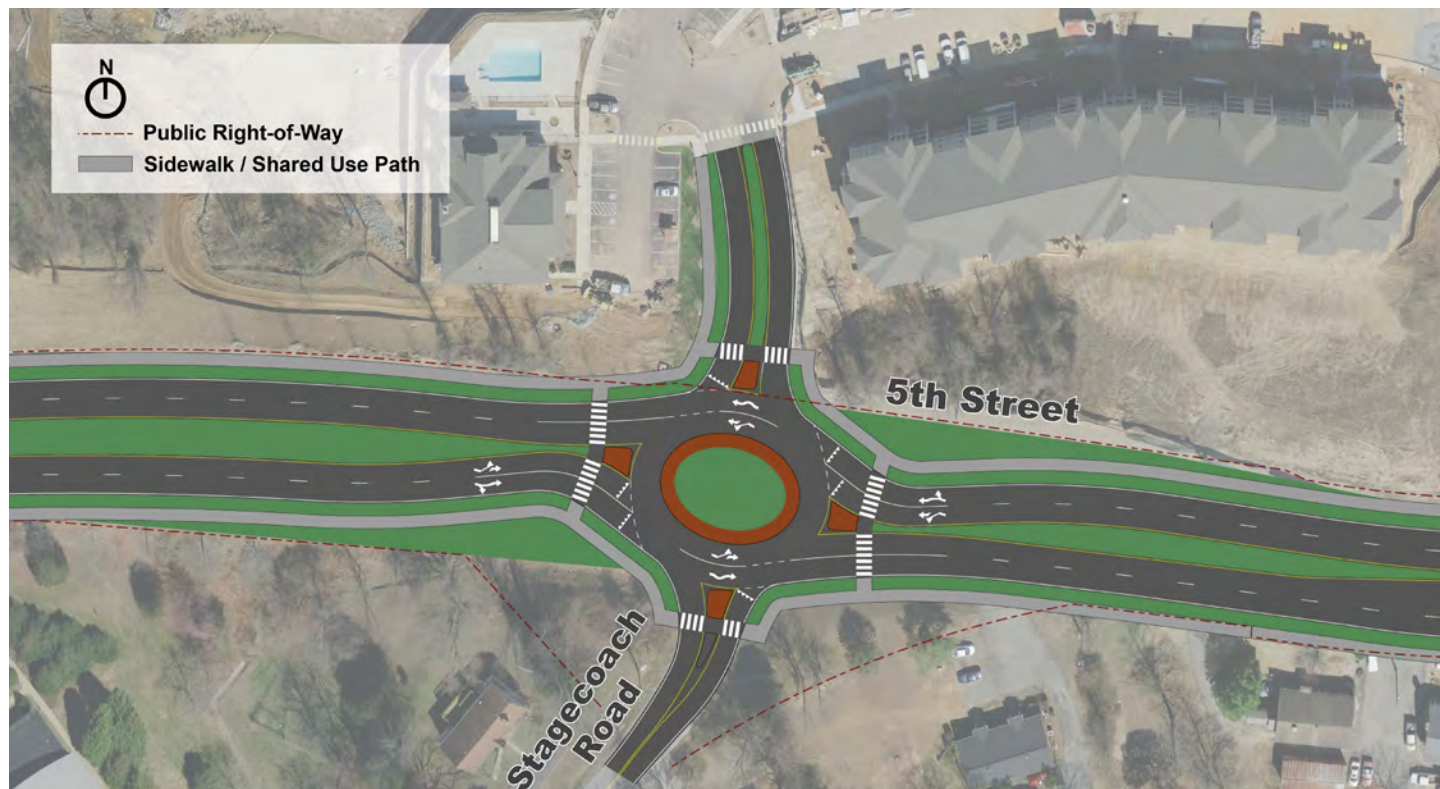
Figure 21 presents the two alternatives at Stagecoach Road.

Figure 21
Stagecoach Road Alternatives

Restricted Crossing U-Turn



Roundabout



Old Lynchburg Road and
5th Street

The unsignalized intersection of Old Lynchburg Road and 5th Street experiences safety challenges and delays due to turning vehicles. Old Lynchburg Road and 5th Street had the highest number of crashes at an unsignalized intersection on the corridor. Angle crashes make up a higher proportion of crashes at Old Lynchburg Road compared to the corridor-wide average. If current land use growth trends continue and no changes are made to the intersection aside from routine maintenance, it may experience high motor vehicle delay during the weekday a.m. and p.m. rush hours in 2040.

The study team developed two alternatives.

Roundabout

The first alternative calms traffic, reduces delay, and reduces turning movement conflicts by converting the intersection into a roundabout.

- Convert unsignalized intersection to two-lane roundabout.
- Add pedestrian crossings on all four legs of the roundabout.

Restricted Crossing U-Turn

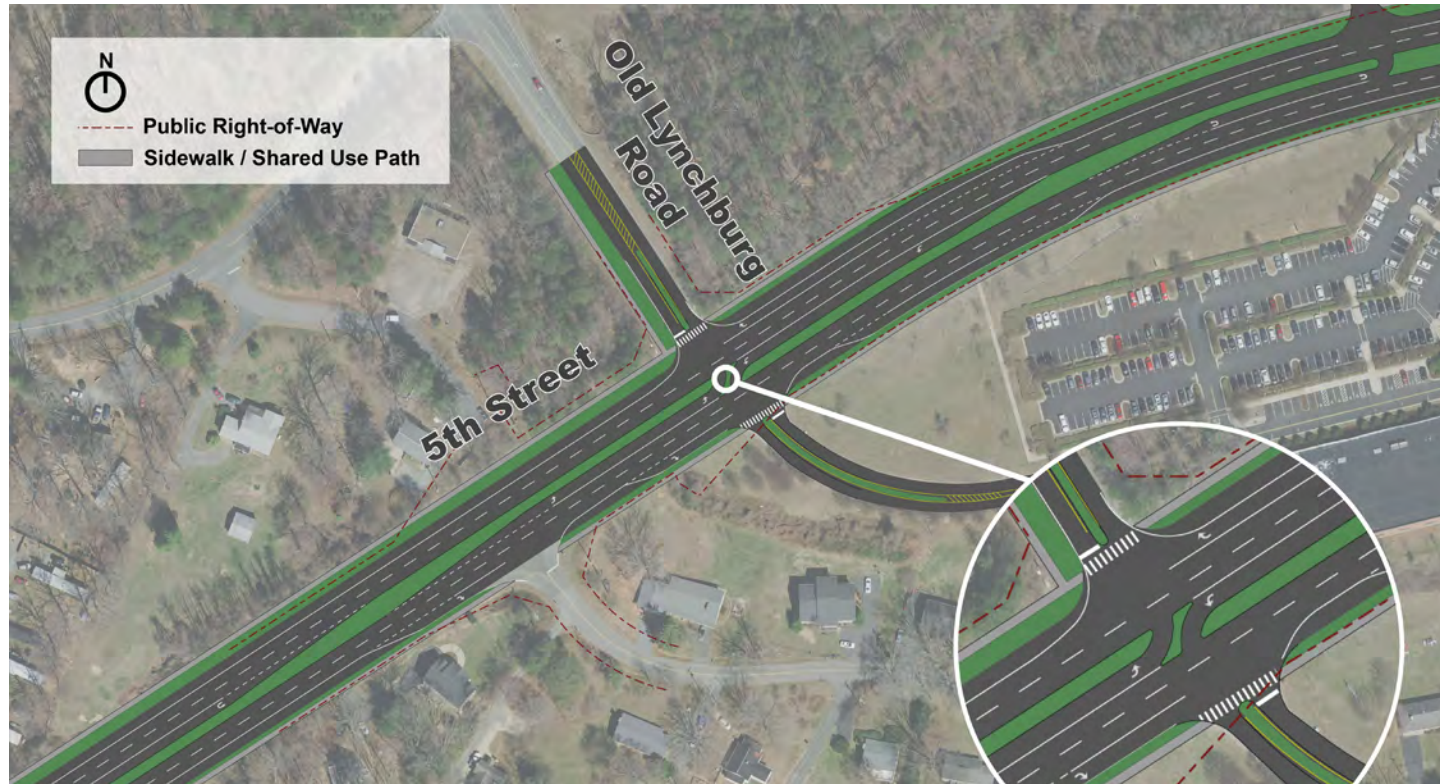
The second alternative reduces turning movement conflicts and reduces delay on 5th Street by converting the intersection into a restricted crossing U-turn.

- Convert unsignalized intersection to an unsignalized RCUT.
- Conversion includes adding U-turn locations east and west of the intersection.

Figure 22 presents the two alternatives at Old Lynchburg Road.

Figure 22
Old Lynchburg Road Alternatives

Restricted Crossing U-Turn



Roundabout



Along 5th Street South of I-64 to Old Lynchburg Road

Today, 5th Street south of I-64 has a mix of paved and gravel path surfaces on one side of the street. The incomplete bicycle and pedestrian network is disconnected from trails, employment, and transit, discouraging bicycle and pedestrian use. The existing pedestrian network does not include a buffer separating non-motorized users from motorists, further reducing comfort for non-motorized users.

The same four alternatives involving sidewalks, bike lanes, and shared-use paths north of I-64 could be applied along 5th Street South of I-64 to create continuous, consistent walking and biking facilities on 5th Street.

- **Sidewalk (Both Sides):** Add an 8-foot sidewalk to both sides of 5th Street.
- **Shared Use Path (One Side):** Add a 12-foot shared use path to the west side of 5th Street.
- **Sidewalk and Separated Bicycle Facility (Both Sides):** Add a 6-foot sidewalk and 6-foot separated bicycle facility to both sides of 5th Street.
- **Sidewalk and Shared Use Path:** Add a 6-foot sidewalk to the west side of 5th Street and a 12-foot shared-use path to the west side of 5th Street.

Figure 23 presents the 5th Street cross-section alternatives south of I-64 to Old Lynchburg Road.

Figure 23
5th Street Cross-section
Alternatives South of I-64 to Old Lynchburg Road



Along 5th Street South of Old Lynchburg Road

The study team's traffic analysis showed that a road diet is feasible along 5th Street south of Old Lynchburg Road. In this scenario, the outside travel lane on both sides of 5th Street would be reallocated to non-motorized uses. With the reallocation of a travel lane, all four alternative cross-sections described above could be implemented south of Old Lynchburg Road for a lower cost and with the added benefit of calming motor vehicle traffic.

Figure 24 presents key elements of the road diet cross-section alternative south of Old Lynchburg Road. It uses the widest cross-section (Sidewalk and Separated Bicycle Facility (Both Sides)) to show how all of the alternative cross-sections for 5th Street South of I-64 to Old Lynchburg Road would fit within the existing right-of-way limits.

Table 1 compares existing and projected future daily traffic for 5th Street south of Old Lynchburg Road. The Federal Highway Administration advises that roadways with daily traffic equal to or less than 20,000 vehicles per day may be good candidates for a road diet.

Table 1 Existing and Projected Average Annual Daily Traffic South of Old Lynchburg Road¹

	Year	AADT
Existing Daily Traffic	2018	6,600
Future Daily Traffic	2040	11,500

¹ Estimated using traffic counts and projections documented in the existing and future no-build conditions analysis.

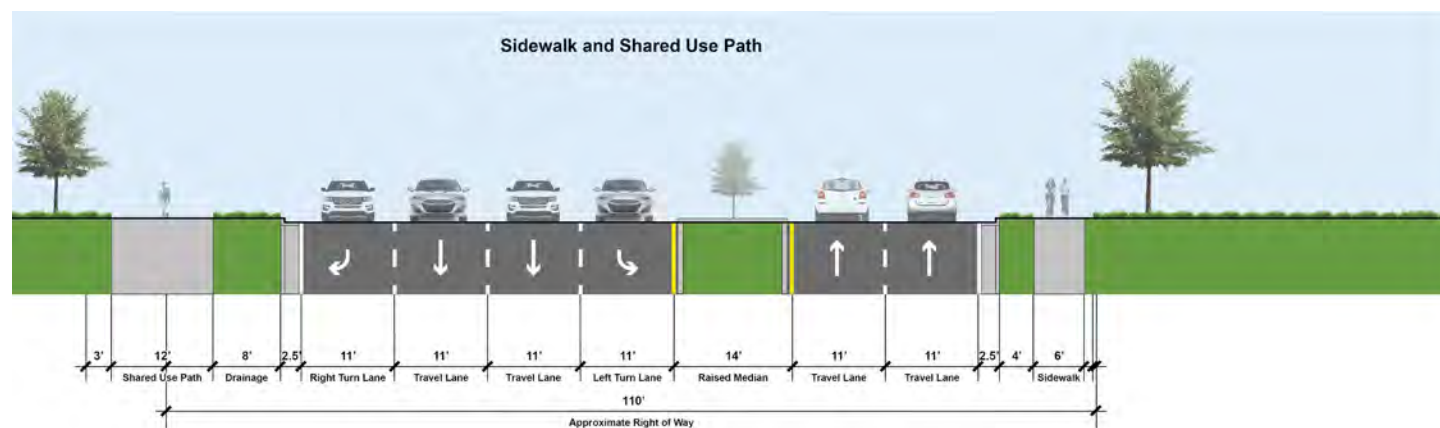
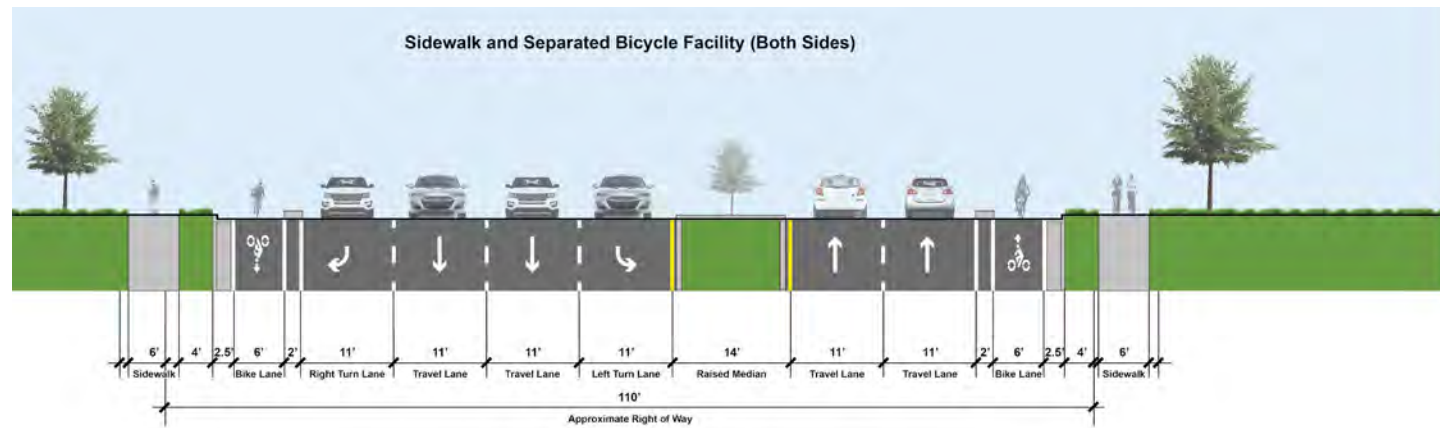
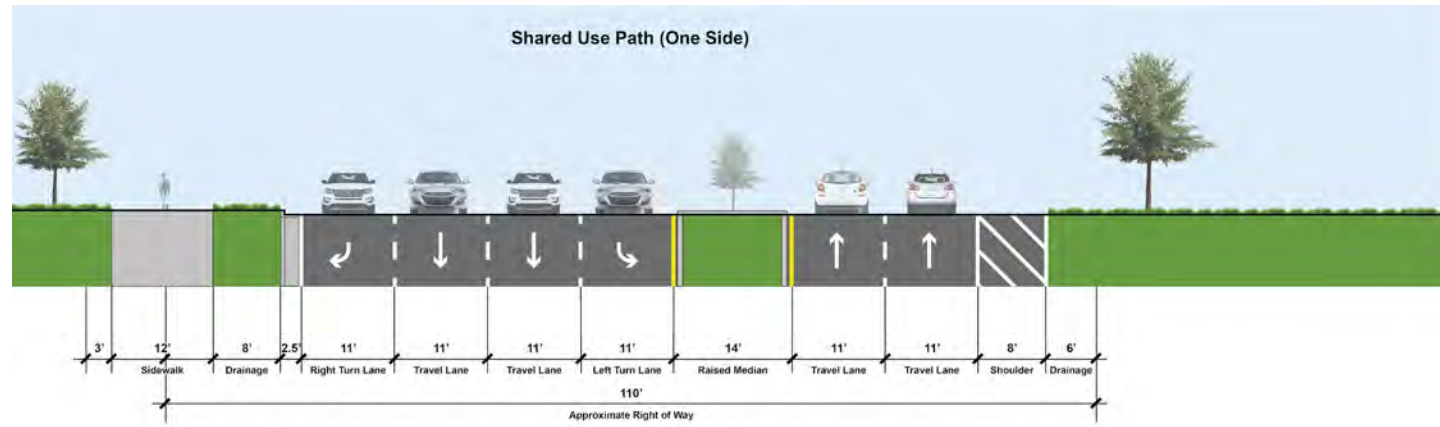
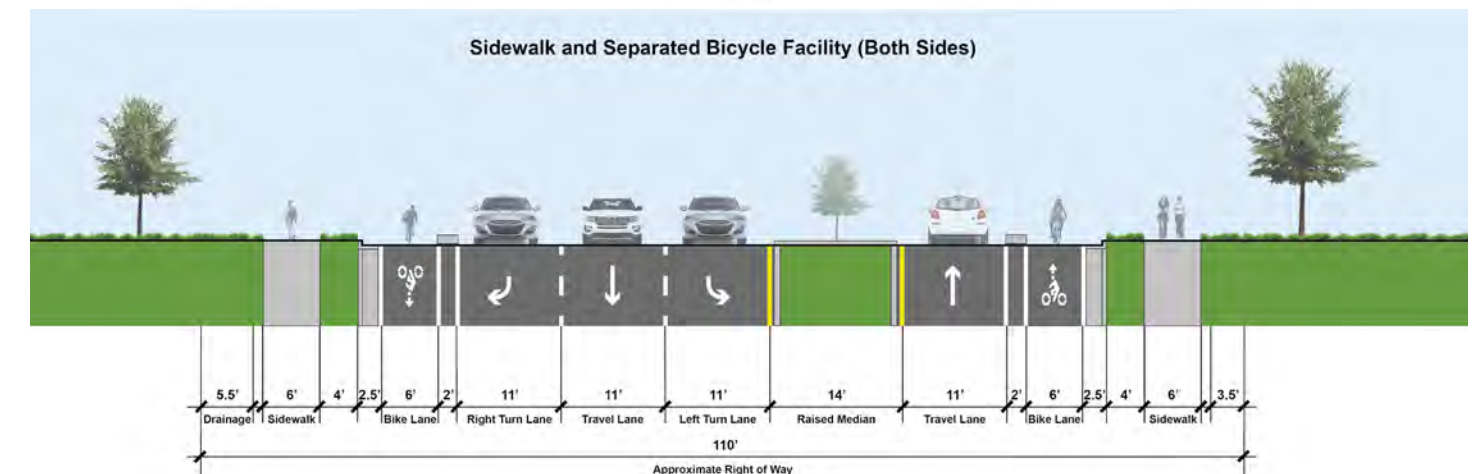
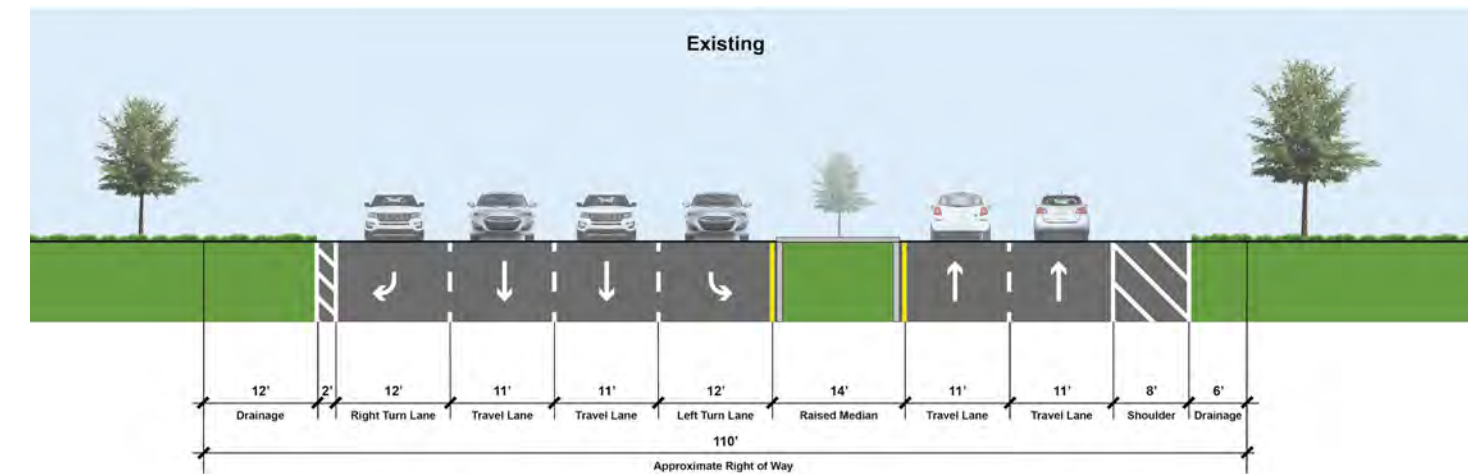


Figure 24
5th Street Cross-section Alternatives South of Old Lynchburg Road



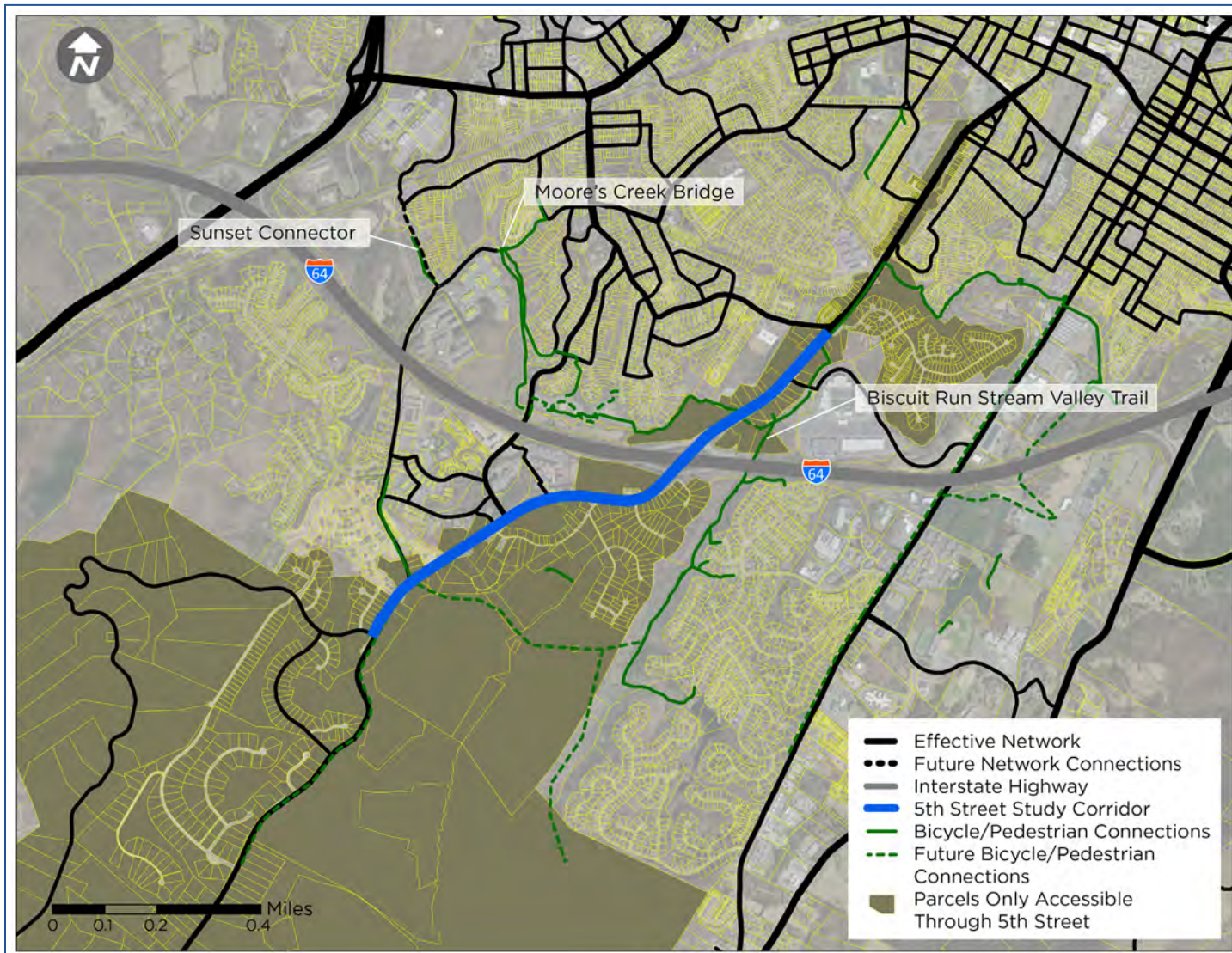
5th Street and Broader Transportation Network

Today, 5th Street serves as the major connector between City of Charlottesville and most of the development south of Interstate 64 in Albemarle County. The study team and stakeholder group identified one motorized connection and two non-motorized connections that could expand network connectivity in the 5th Street study area:

- Sunset Connector from Sunset Avenue to Stribling Road and Fontaine Avenue
- Sunset Avenue Extended – Moore’s Creek Bridge Connection
- Biscuit Run Stream Valley Trail

Figure 25 shows how the effective network for the 5th Street corridor could be expanded by each new network connection. The effective network is made up of streets that connect to other streets on both ends (i.e., not dead end streets). A more diverse effective network will reduce demand on 5th Street and help manage congestion.

Figure 25
Roadway and Trail Connection Recommendations



KEY TAKEAWAYS FROM THIS SECTION:

- Alternative improvements were developed using data and community input.
- Two signalized intersections (Harris Road, 5th Street Station Parkway) and two unsignalized ones (Stagecoach Road, Old Lynchburg Road) were analyzed.
- Four cross-section alternatives suggest how to improve non-motorized safety and comfort north and south of I-64.
- The cross-sections also show near- and long-term alternatives to connect the corridor at the I-64 interchange.
- A road diet on 5th Street south of Old Lynchburg Road could calm traffic and allow non-motorized users more space.
- Beyond 5th Street, three key network connections could reduce pressure on 5th Street and provide bicycle and pedestrian connections across I-64 in the short- or mid-term.

COMPARING THE ALTERNATIVES

Questions this Section Answers:

- How would each alternative advance the study goals?
- How did the community feel about each alternative?
- How much would each alternative cost?

The alternatives evaluation was used to compare the alternatives and provide decision-makers with the information they would need to select the best solutions to advance.

Each of the alternatives was evaluated using metrics related to the project's goals and objectives. In addition to the alternatives analysis process, the study team developed a planning-level estimate of probable cost and solicited community feedback on each alternative.

In this section, color-coded pie charts are used to aid in comparing the evaluation results. Darker blue pie slices represent better performance with respect to the screening criteria, while lighter blue pie slices reflect worse performance. The Identification of Alternatives Technical Memorandum provides a detailed summary of the alternatives analysis, supporting traffic analysis, and planning-level estimates of probable cost.

5th Street North of I-64

The study team identified intersection and street-level alternatives for 5th Street North of I-64:

- Intersection alternatives
 - Intersection modification at Harris Road and 5th Street
 - Expand 5th Street Station Parkway and 5th Street intersection
 - Implement left-turn restrictions and Additional Turn Lane at 5th Street Station Parkway and 5th Street intersection
- Street alternatives
 - Implement consistent, continuous bicycle and pedestrian facilities along 5th Street

Table 2 summarizes the alternatives analysis results, planning-level estimates of probable cost, and community feedback for the intersection and street options on 5th Street north of I-64.

Table 2
Evaluation of Alternatives North of I-64

		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking	Future Intersection Level of Service (AM/PM)
Harris Road	No-Build					N/A	2/5	C/C
	Intersection Modification					\$1,500,000	4/5	D/C
		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking	Future Intersection Level of Service (AM/PM)
5 th Street Station Parkway	No-Build					N/A	2/5	E/F
	Expand Intersection					\$2,900,000	3/5	C/D
	Left-Turn Restrictions and Additional Turn Lane					\$2,800,000	3/5	B/C
		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking	
Along 5 th Street 3,200 ft	No-Build					N/A	2/5	
	8' Sidewalk (Both Sides)					\$6,100,000	3/5	
	12' Multi-Use Path (East Side)					\$5,400,000	3/5	
	6' Sidewalk with 6' Bike Lane + 2' Buffer					\$8,100,000	4/5	
	6' Sidewalk with 12' Multi-Use Path					\$6,400,000	4/5	
	6' Sidewalk with 12' Multi-Use Path with 6' Bike Lane + 2' Buffer					\$13,000,000	N/A*	

* City of Charlottesville preferred alternative developed after survey was conducted

The I-64 Interchange

The study team identified near- and long-term alternatives for the I-64 interchange:

- Improve non-motorized safety and comfort with crosswalks and pedestrian walkways in the near-term.

- Conduct a Project Development and Environment study to vet the long-term feasibility of a full interchange redesign.

Table 3 summarizes the alternatives analysis results, planning-level estimates of probable cost, and community feedback for the options at the I-64 interchange.

Table 3
Evaluation of Alternatives at I-64 Interchange

		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking
I-64 Interchange	No-Build					N/A	2/5
	Near Term Sidewalk & Crossings					\$2,600,00	3/5
	Long-Term Interchange Redesign					\$9,400,000	3/5

5th Street South of I-64 to Old Lynchburg Road

The study team identified a range of alternatives for 5th Street South of I-64 to Old Lynchburg Road:

- Intersection alternatives
 - Roundabout at Stagecoach Road and 5th Street
 - RCUT at Stagecoach Road and 5th Street
 - Roundabout at Old Lynchburg Road and 5th Street
 - RCUT at Old Lynchburg Road and 5th Street
- Street alternatives
 - Implement consistent, continuous bicycle and pedestrian facilities along 5th Street

Table 4 summarizes the alternatives analysis results, planning-level estimates of probable cost, and community feedback for the intersection and street options on 5th Street south of I-64 to Old Lynchburg Road.

Table 4
Evaluation of Alternatives South of I-64 to Old Lynchburg Road

		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking	Future Intersection Level of Service (AM/PM)
Stagecoach Road	No-Build					N/A	2/5	F/F
	Roundabout					\$3,500,000	4/5	A/A
	Restricted Crossing U-Turn					\$3,600,000	3/5	D/B

		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking	Future Intersection Level of Service (AM/PM)
Old Lynchburg Road	No-Build					N/A	2/5	F/F
	Roundabout					\$5,200,000	4/5	A/A
	Restricted Crossing U-Turn					\$2,700,000	2/5	D/D

		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking
Along 5 th Street - I-64 to Old Lynchburg Road - 3,200 ft	No-Build					N/A	1/5
	8' Sidewalk (Both Sides)					\$5,600,000	3/5
	12' Multi-Use Path (West Side)					\$8,200,000	3/5
	6' Sidewalk with 6' Bike Lane + 2' Buffer					\$9,200,000	N/A*
	6' Sidewalk with 12' Multi-Use Path					\$8,700,000	4/5

* This option was developed after the alternatives survey was conducted.

5th Street South of Old Lynchburg Road

The study team identified the following street alternatives for 5th Street South of Old Lynchburg Road:

- Implement consistent, continuous bicycle and pedestrian facilities along 5th Street
- Road diet on 5th Street south of Old Lynchburg Road

Table 5 summarizes the alternatives analysis results, planning level cost estimates, and community feedback for the street options on 5th Street south of Old Lynchburg Road.

Table 5
Evaluation of Alternatives
South of Old Lynchburg Road

		Improve Safety and Comfort	Manage Congestion	Support Environmental Sustainability	Support Economic Development	Order of Magnitude Cost Estimates (2020 \$)	Survey Ranking
Along 5 th Street	No-Build					N/A	1/5
	8' Sidewalk (Both Sides)					\$7,800,000	3/5
Old Lynchburg Road to Ambrose Commons Drive	12' Multi-Use Path (West Side)					\$8,300,000	3/5
	6' Sidewalk with 6' Bike Lane + 2' Buffer					\$10,200,000	N/A*
3,200 ft	6' Sidewalk with 12' Multi-Use Path					\$8,900,000	4/5
	Road Diet with Sidewalk and Shared Use Path					\$6,200,000	N/A*

* This option was developed after the alternatives survey was conducted.

KEY TAKEAWAYS FROM THIS SECTION:

- Alternatives that best advance study goals and have the most community support are also the most expensive.
- Road diet advances all study goals and offers popular non-motorized facilities at a lower cost.
- Physical constraints at some locations limit near-term changes to meet the study goals.

5th Street and the Broader Roadway Network

The stakeholder group helped VDOT and the study team identify different network connections that could expand network connectivity in the 5th Street study area:

- Sunset Connector from Sunset Avenue to Stribling Road and Fontaine Avenue
- Sunset Avenue Extended – Moore's Creek Bridge Connection
- Biscuit Run Stream Valley Trail

The network connections identified by the stakeholder group have each been vetted through prior studies and community engagement.

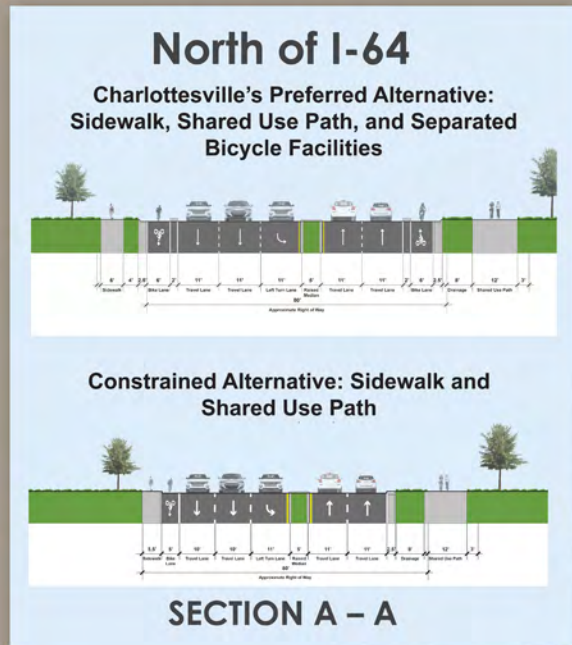
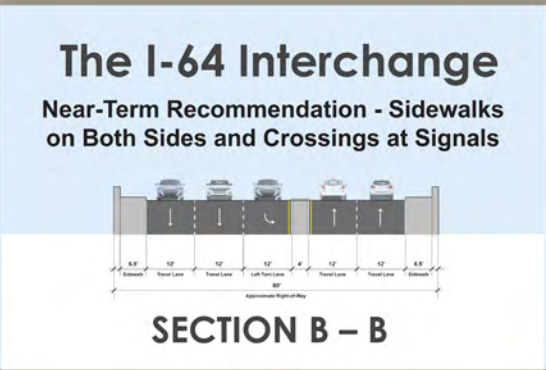
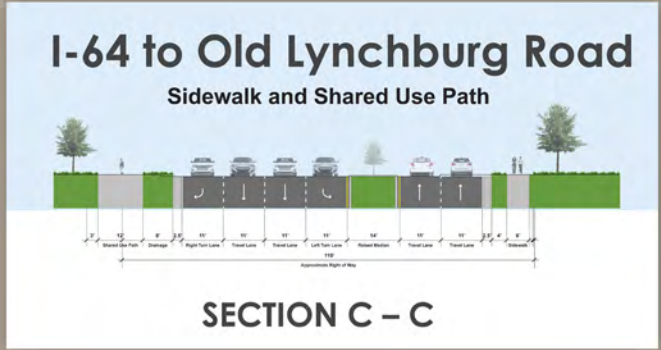
STUDY RECOMMENDATIONS

Questions this Section Answers:

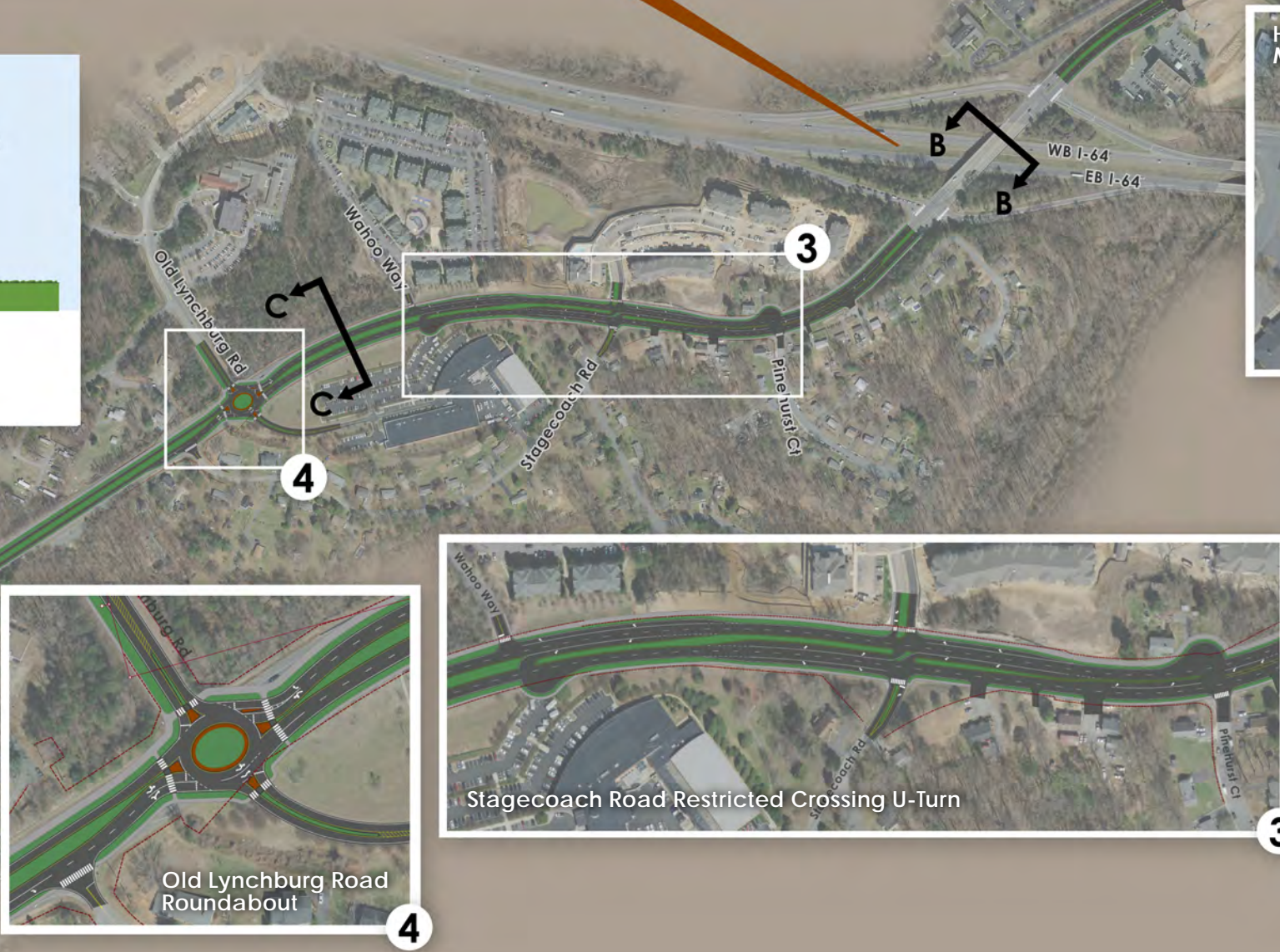
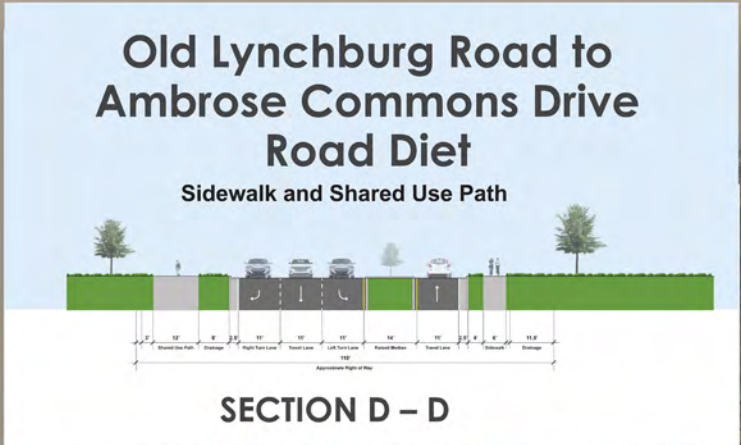
- What ongoing efforts align with the outcomes of the 5th Street corridor study?
- What are the study's short-term recommendations?
- What are the study's long-term recommendations?

The study concluded with a package of recommendations that can be advanced varying timeframes.

Figure 25 illustrates the recommended next steps by location and time frame.



Long-Term Recommendation:
Conduct a full Project Development and Environment Study to vet the feasibility of a full interchange redesign



Ongoing Recommendations

There were several concurrent efforts on 5th Street that aligned with the outcomes of this study. They include:

- Expanding network connectivity with Biscuit Run Stream Valley Trail
- Enhancing the surrounding pedestrian/bicycle network
- Implementing sections of a recommended long-term cross-section through ongoing private development projects along 5th Street

Figure 26 Land Use Opportunities

This is a planning level depiction of how parcels adjoining future planned trails could be redeveloped. Any future redevelopment at this location and elsewhere along 5th Street would need to meet City, County, and VDOT transportation and land use requirements.



Near-Term Recommendations

- 5th Street Intersection Projects
 - Harris Road Intersection Modification
 - 5th Street Station Parkway Left-Turn Restrictions and Additional Turn Lane
 - Stagecoach Road Roundabout
 - Old Lynchburg Road Roundabout
- Improve wayfinding and lighting
- Conduct a full Project Development and Environment study to vet the feasibility of a full interchange redesign

Long-Term Recommendations

The long-term recommendation is to connect corridor intersections with continuous, consistent bicycle and pedestrian facilities from Harris Road to Ambrose Commons Drive. Specific long-term recommendations include:

- North of I-64, consider:
 - A 6-foot sidewalk to the west side of 5th Street, a 12-foot shared-use path to the east side of 5th Street, and a 6-foot separated bicycle facility to both sides of 5th Street
 - Maintain existing sidewalk on the west side of 5th Street, and add a 12-foot shared-use path to the east side of 5th Street
- South of I-64, add a 6-foot sidewalk to the east side of 5th Street and a 12-foot shared-use path to the west side of 5th Street.

- Implement recommendations from the Project Development and Environment study on the feasibility of a full interchange redesign.
- Expand network connectivity with:
 - Sunset Connector from Sunset Avenue to Stribling Road and Fontaine Avenue
 - Sunset Avenue Extended—Moore's Creek Bridge Connection

Land Use Opportunities

The ongoing Biscuit Run Stream Valley Trail project offers an opportunity for the City and County to consider land development regulations that promote connections to existing and planned trails. **Figure 26** shows how parcels adjoining future planned trails could be redeveloped to connect trails with plaza spaces for seating and public enjoyment. Atlanta, Georgia's BeltLine is catalyzing a similar revitalization of trail-side properties on a larger scale.

Economic development associated with Atlanta's BeltLine amounted to \$6.2 billion in new private investment by the end of 2019¹.

KEY TAKEAWAYS FROM THIS SECTION:

- Ongoing City and County efforts are expanding 5th Street's effective bicycle and pedestrian network.
- Short-term recommendations increase safety, mobility, and access at four intersections: Harris Road, 5th Street Station Parkway, Stagecoach Road, and Old Lynchburg Road.
- Long-term recommendations enable people to walk, bike, or drive from Harris Road to Ambrose Commons Drive on a dedicated, comfortable facility.

¹ Atlanta Beltline, "Annual Report," [beltline.org](https://beltline.org/wp-content/uploads/2020/04/ABL-2019-Annual-Report-Web.pdf), Atlanta Beltline, accessed October 8, 2020.

IMPLEMENTING RECOMMENDATIONS ON 5TH STREET

Questions this Section Answers:

- What funding sources can be used to advance the study recommendations?
- Which agency partners will be involved in advancing each recommendation?

The 5th Street Corridor Study concluded with an evaluation of potential funding approaches and next steps.

Funding Sources

VDOT and the 5th Street stakeholder group can pursue a variety of funding sources to realize the recommendations identified by this study.

SMART SCALE Funding

VDOT's SMART SCALE program scores and allocates funding to projects submitted by regional and local entities. CA-MPO, TJPDC, CAT, Charlottesville, and Albemarle County can work with VDOT to select and submit projects for SMART SCALE funding. Projects that improve the Corridors of Statewide Significance, enhance the Regional Transportation Network, compliment an Urban Development Area, and address safety concerns are top priority for funding.

Transportation Alternatives Funding

VDOT administers Federal Transportation Alternatives (TA) funding for non-motorized transportation projects. CA-MPO, TJPDC, CAT, Charlottesville, and Albemarle County can submit projects for TA funding.

Local Funding Approaches

Regional and local agencies can incorporate study recommendations into their funding programs and budgets. CA-MPO's Transportation Improvement Program, Albemarle County Capital Improvement Program, and Charlottesville's Capital Improvement Plan are local funding programs that could incorporate study recommendations.

Albemarle County and Charlottesville can also work with private developers to incorporate some study recommendations into new development projects along 5th Street.

KEY TAKEAWAYS FROM THIS SECTION:

- A mix of state and local funding sources can be used to fund the study recommendations.
- Agency partners that will be involved in submitting funding applications include VDOT, CA-MPO, TJPDC, Albemarle County, and Charlottesville.
- Agency partners that can roll study recommendations into their funding programs and budgets include CA-MPO, TJPDC, Albemarle County, and Charlottesville.

BE A CHAMPION FOR 5TH STREET!

Questions this Section Answers:

- What can community leaders, agency staff, and citizens do to advance the 5th Street Corridor Study recommendations?

The 5th Street corridor is a diverse area that serves as the gateway to Charlottesville, Albemarle County, and the surrounding region. 5th Street serves an important regional role, connecting local jurisdictions with regional and statewide destinations via the I-64 interchange. Major activity centers along the corridor include the 5th Street Station Shopping Center, Albemarle County's 5th Street offices, and the future site of the Biscuit Run State Park. Bustling commercial shopping centers, single-family neighborhoods, pockets of medium-density and student housing, local schools, and recreational destinations such as Azalea Park can be found along the length of the corridor.

Through the recommendations of the 5th Street Corridor Study, VDOT and its partners can advance the study's goals and achieve a safer, more livable, and complete street for 5th Street's residents and workers.

Moving from vision to reality can be challenging. As community leaders, transportation professionals, or citizens of Charlottesville and Albemarle County, we can all take steps to make these projects happen.

To see how you can help, please read on and visit:

<https://www.virginiadot.org/projects/culpeper/5th-st-corridor-study.asp>

How You Can Help

- **Executives/community leaders**
 - Secure funds for preliminary engineering.
 - Support ongoing recommendations.
 - Contribute to short-term recommendations.
- **Agency staff**
 - Incorporate study recommendations into your work.
 - Engage the community as you begin refining, designing, and implementing the short- and long-term recommendations.
- **Citizens**
 - Tell your elected officials that you want 5th Street to become a complete street.
 - Follow VDOT at <https://www.virginiadot.org/projects/culpeper/default.asp> for updates.
 - Get involved with the 5th and Avon Community Advisory Committee.

KEY TAKEAWAYS FROM THIS SECTION:

- The study recommendations will require support from community members, including leaders, transportation professionals, and citizens.
- You can share the information in this section with others to explain how the 5th Street Study recommendations meet its vision and goals.

WHAT CAN THE 5TH STREET STUDY RECOMMENDATIONS ACHIEVE?

Ongoing Recommendations

- ✓ Expanding network connectivity with Biscuit Run Stream Valley Trail
- ✓ Enhancing the surrounding pedestrian/bicycle network
- ✓ Implementing sections of a recommended long-term cross-section through ongoing private development projects along 5th Street

Near-Term Recommendations

- ✓ **5th Street Intersection Projects**
 - ▼ Harris Road Intersection Modification
 - ▼ 5th Street Station Parkway Left-Turn Restrictions and Additional Turn Lane
 - ▼ Stagecoach Road Roundabout
 - ▼ Old Lynchburg Road Roundabout
- ✓ **Improve wayfinding and lighting**
- ✓ **Conduct a full Project Development and Environment study to vet the feasibility of a full interchange redesign**

Long-Term Recommendations

- ✓ **North of I-64, consider:**
 - ▼ A 6-foot sidewalk to the west side of 5th Street, a 12-foot shared-use path to the east side of 5th Street, and a 6-foot separated bicycle facility to both sides of 5th Street
 - ▼ Maintain existing sidewalk on the west side of 5th Street, and add a 12-foot shared-use path to the east side of 5th Street
- ✓ **South of I-64, add a 6-foot sidewalk to the east side of 5th Street and a 12-foot shared-use path to the west side of 5th Street**
- ✓ **Implement recommendations from the Project Development and Environment study on the feasibility of a full interchange redesign**
- ✓ **Expand network connectivity with:**
 - ▼ Sunset Connector from Sunset Avenue to Stribling Road and Fontaine Avenue
 - ▼ Sunset Avenue Extended—Moore's Creek Bridge Connection