

STAPLES MILL ROAD SMALL AREA PLAN

Staples Mill Road Small Area Plan Phase 2

Stakeholder Group Meeting 2
March 23, 2022

Agenda

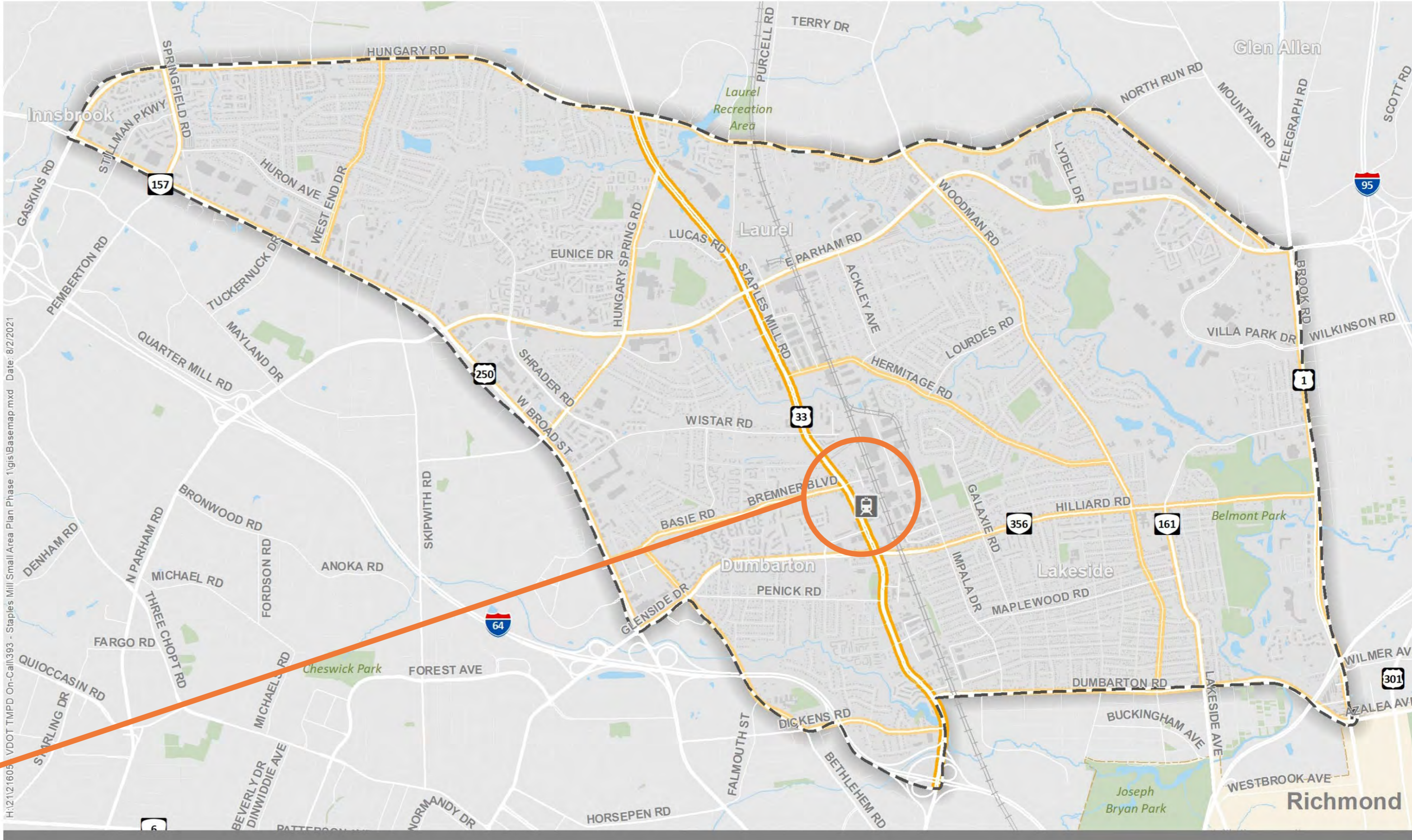
- Phase 1 Public Engagement
- Transportation Options
 - Staples Mill Road Corridor
 - Priority Intersections
 - Effective Network
- Evaluating Options
- Phase 2 Public Engagement
- Next Steps

Study Overview



Study Area

- 3.7 miles of Staples Mill Road
- 12 square miles of Henrico County
- Connects Henrico County and the city of Richmond
- Regional crossroads via interchanges with I-64 and I-295
- **Staples Mill TOD Concept at the Amtrak Station**



Staples Mill Road Study Corridor	Parks
Small Area Plan Boundary	Water
Railroad	Study Streets
Richmond City Boundary	



Study Approach and Goals

Approach

- Engage stakeholders and the public
- Confirm goals and objectives
- Develop measures of effectiveness
- Evaluate and select solutions to address long-term needs

Goals:

1. Improve safety and comfort
2. Manage congestion
3. Support economic development
4. Foster community and environmental health
5. Reflect community character

Phase 2 Schedule

- ▼ Stakeholder Group Meeting
- ▼ Public Meeting
- ▼ Community Stakeholder Meetings



Phase 2 Scope

1 - Online Community Outreach Website, community stakeholder interviews, surveys

2 - Existing and Future No-build Evaluation



Analysis

- Land use
- Traffic
- Multimodal access
- Safety

3 - Goals/ Objectives



Analysis

- Refine goals/ objectives
- Develop evaluation measures

Feedback
Stakeholder Group #1
Public Meeting #1

4 - Develop Alternatives



Analysis

- Intersections
- Cross-sections
- Network

Feedback
Stakeholder Group #2

5 - Refine Alternatives




Analysis

- Concept sketches
- Operational analyses
- Alternatives evaluation matrix

Feedback
Stakeholder Group #3
Public Meeting #2

6 - Small Area Plan Report



Analysis

- Refine alternatives
- Document recommendations

Phase 1 Public Engagement



Phase 1 Public Engagement

- Survey Highlights
- Public Meeting #1
- Community Meetings
- Study Website

PLAN DE ÁREA PEQUEÑA DE STAPLES MILL ROAD

ENCUESTA DE PROBLEMAS Y OPORTUNIDADES

¿Cuáles son tus prioridades de transporte?

The Virginia Department of Transportation (VDOT) y sus socios están llevando a cabo un plan de estudio de área pequeña a lo largo de Staples Mill Road (Ruta 33) en el condado de Henrico que explora la oportunidad de desarrollo orientado al transporte público alrededor de la estación de Richmond Staples Mill de Amtrak. Las recomendaciones del plan soportarán un concepto existente para el área de la estación de Amtrak, que ha sido desarrollado por el condado de Henrico y el departamento de transporte ferroviario y público de Virginia (DRPT). Staples Mill Road une el condado de Henrico con la ciudad de Richmond. También brinda acceso a la estación de Staples Mill Road de Amtrak, un importante centro ferroviario con conexiones a destinos a lo largo y ancho de la costa este.

Ayúdenos a identificar soluciones de transporte para el área de Staples Mill Road respondiendo esta breve encuesta.

SOCIOS DEL PROYECTO

- Henrico County
- Greater Richmond Transit Company
- The City of Richmond
- Richmond Regional Transportation Planning Organization
- Federal Highway Administration
- Virginia Department of Rail and Public Transportation

VDOT Virginia Department of Transportation

STAPLES MILL ROAD SMALL AREA PLAN

OPPORTUNITIES AND ISSUES SURVEY

What are your transportation priorities?

Virginia Department of Transportation (VDOT) and its partners are conducting a small area plan along Staples Mill Road (Route 33) in Henrico County that explores the opportunity for transit-oriented development (TOD) surrounding the Richmond Staples Mill Road Amtrak station. The plan recommendations will support an existing TOD concept developed by Henrico County and Virginia Department of Rail and Public Transportation for the Amtrak station area. Staples Mill Road links Henrico county and the City of Richmond. It also provides access to the Staples Mill Road Amtrak Station, a rail hub with connections to destinations up and down the eastern seaboard.

Help us identify transportation solutions for the Staples Mill Road area by answering this short survey.

PARTNERS

- Henrico County
- Greater Richmond Transit Company
- The City of Richmond
- Richmond Regional Transportation Planning Organization
- Federal Highway Administration
- Virginia Department of Rail and Public Transportation

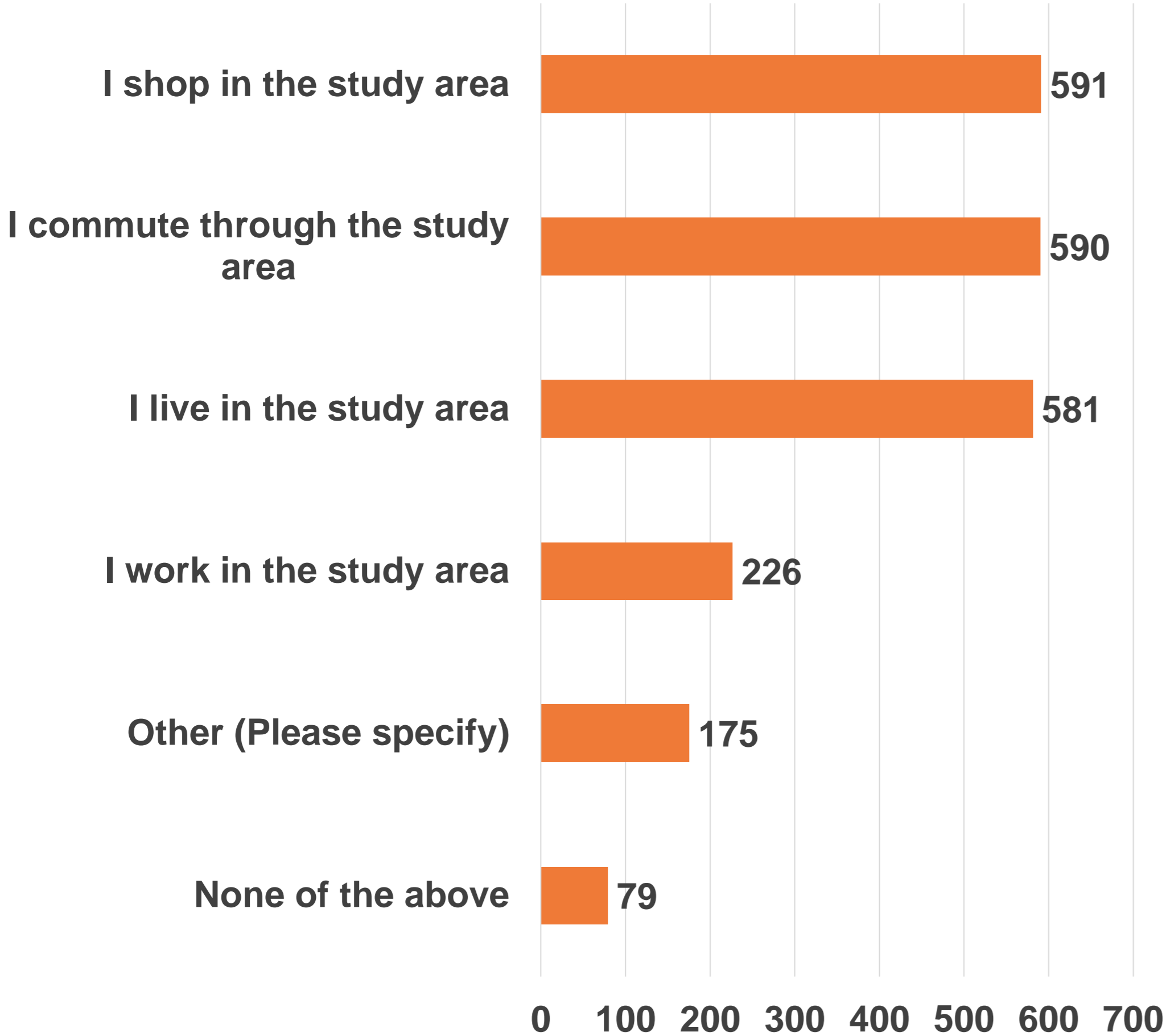
VDOT Virginia Department of Transportation

Phase 1 Public Engagement

1,200+

Responses

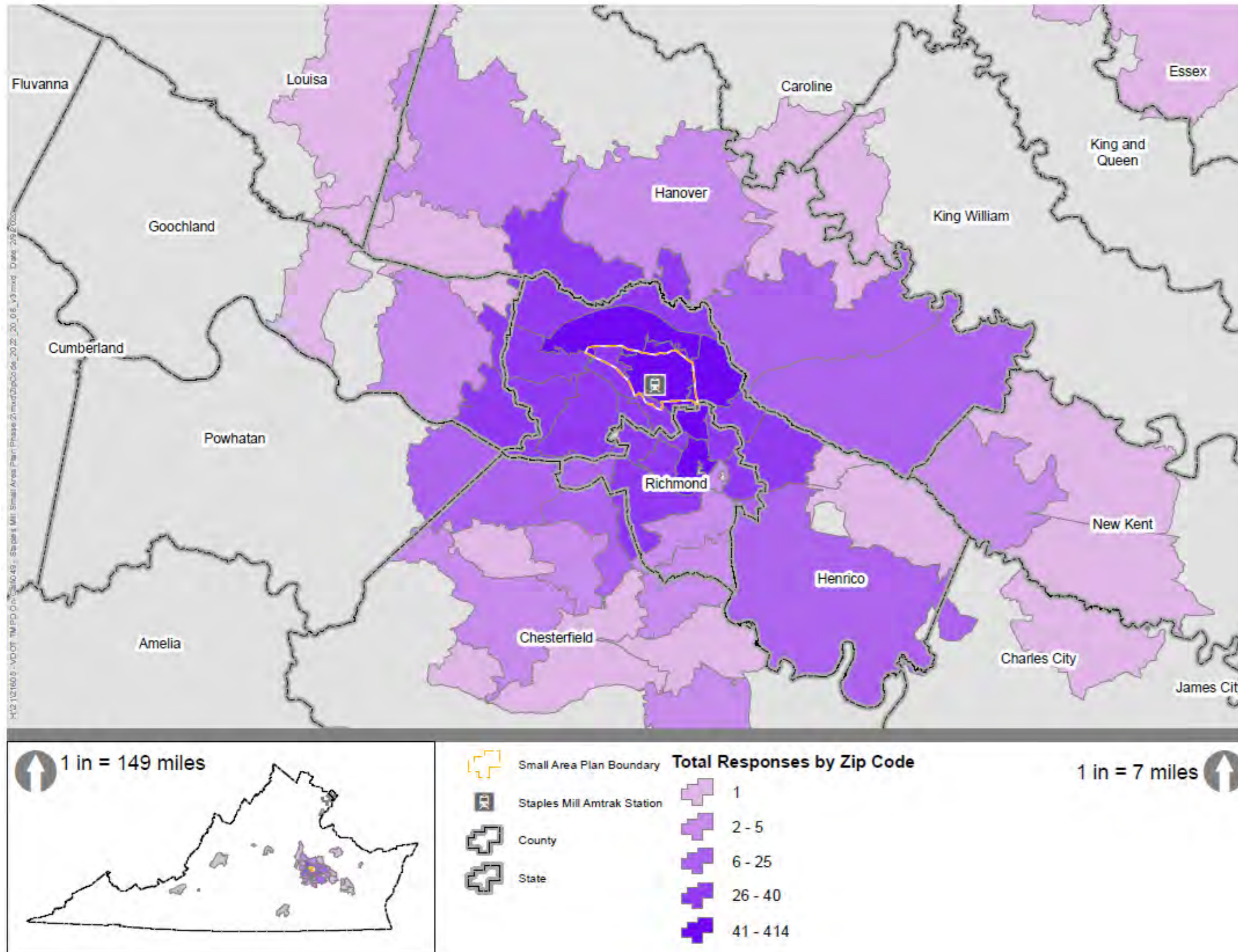
What's your relationship to Staples Mill Road?



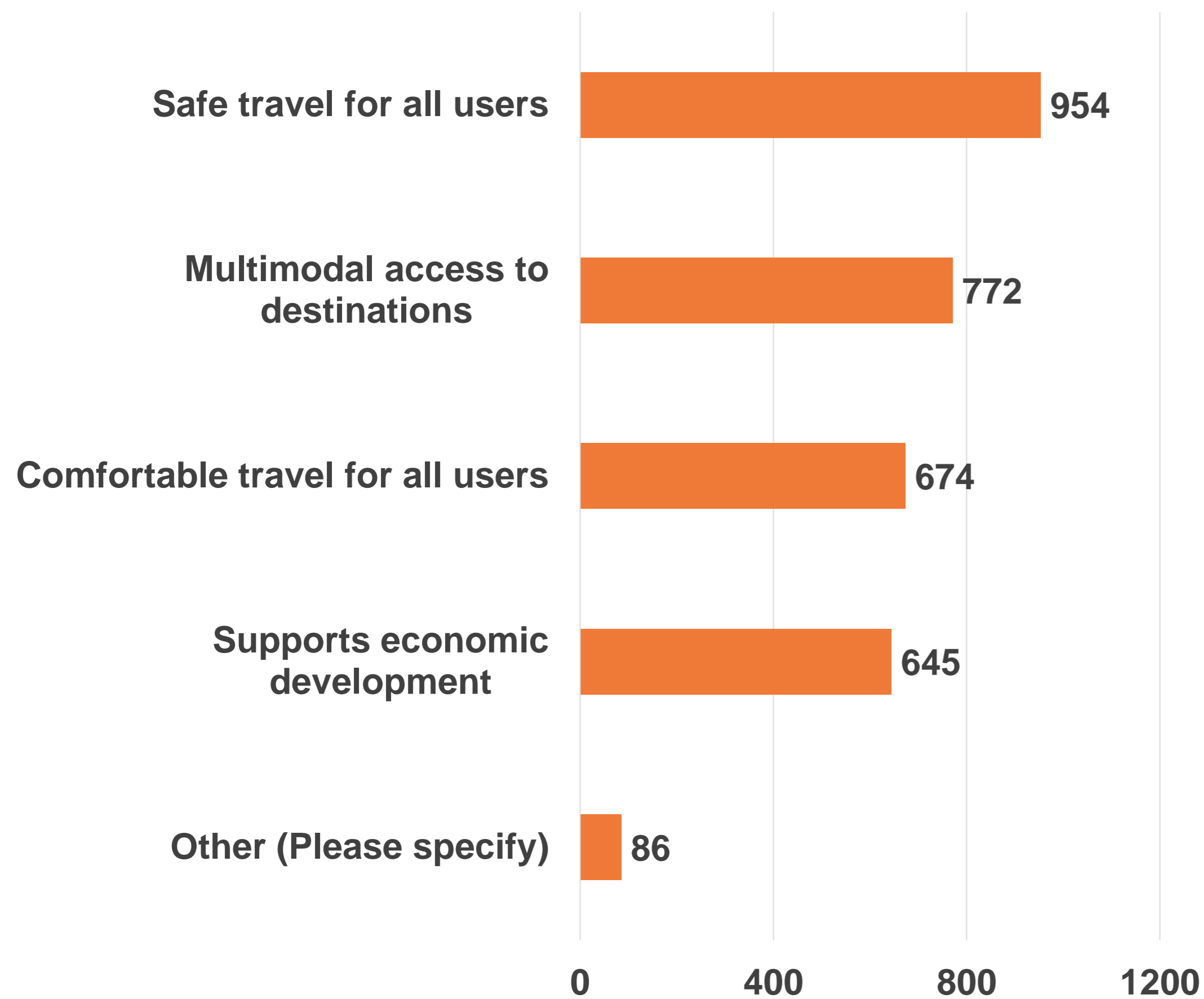
- Survey respondents primarily interact with the study area as **shoppers, commuters, and residents.**

What's your home ZIP code?

- Most respondents live within 10 miles of the Staples Mill Amtrak Station (**83%**).

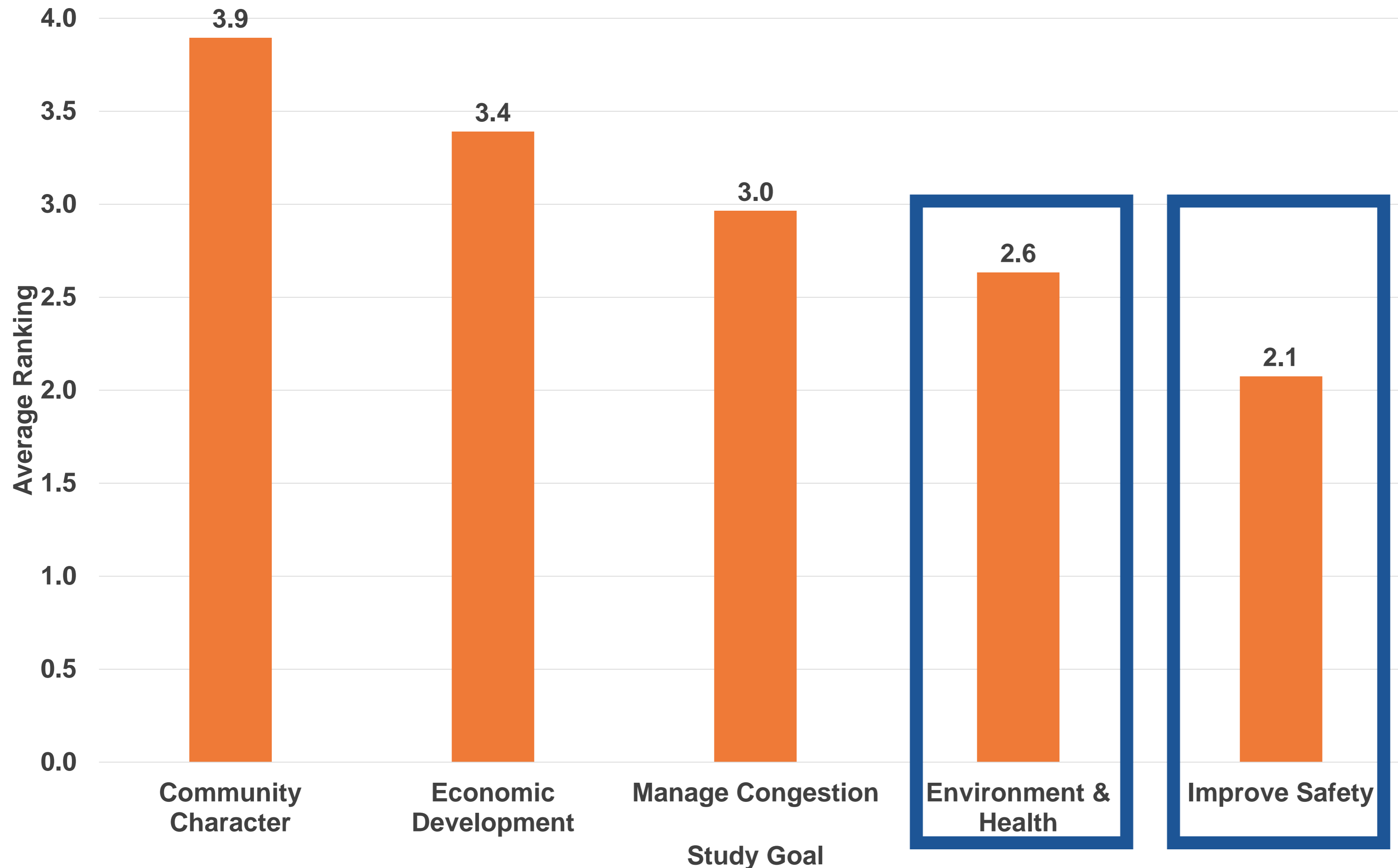


What considerations would you like to see included in the long-term vision for the Staples Mill area?



- **Over half** of all survey respondents agreed with **core components** of the Study Vision.

What are the most important goals of the study?



- Participants ranked goals by most important (1) to least important (4).

Top 3 Problems and Investments

- **Top 3** transportation problems in the study area are associated with **accessibility**
 - Inadequate sidewalks, poor crosswalk locations, inadequate bike facilities
- **Top 3** choices for transportation investments are associated with **accessibility**
 - Complete sidewalk network, complete bicycle network, more crosswalks



Interest in Amtrak

- Of respondents who live in the study area (47%), most live less than 2 miles away from the Staples Mill Amtrak Station (66%)
- 71% of respondents reported riding Amtrak to/from the Staples Mill Station
- **Half** of respondents said that they would like **enhanced connectivity to Amtrak.**



Source: Final TOD Concept Plan | Staples Mill Rd Station, 2020, DRPT

Public Meeting #1

- Presentation on existing conditions, goals and objectives
- Question and Answer Session



Public Meeting #1

“ Is there going to be consideration given to adding a protected bike lane to Lakeside Ave between the Richmond/Henrico line up to Hilliard and Lakeside? ”

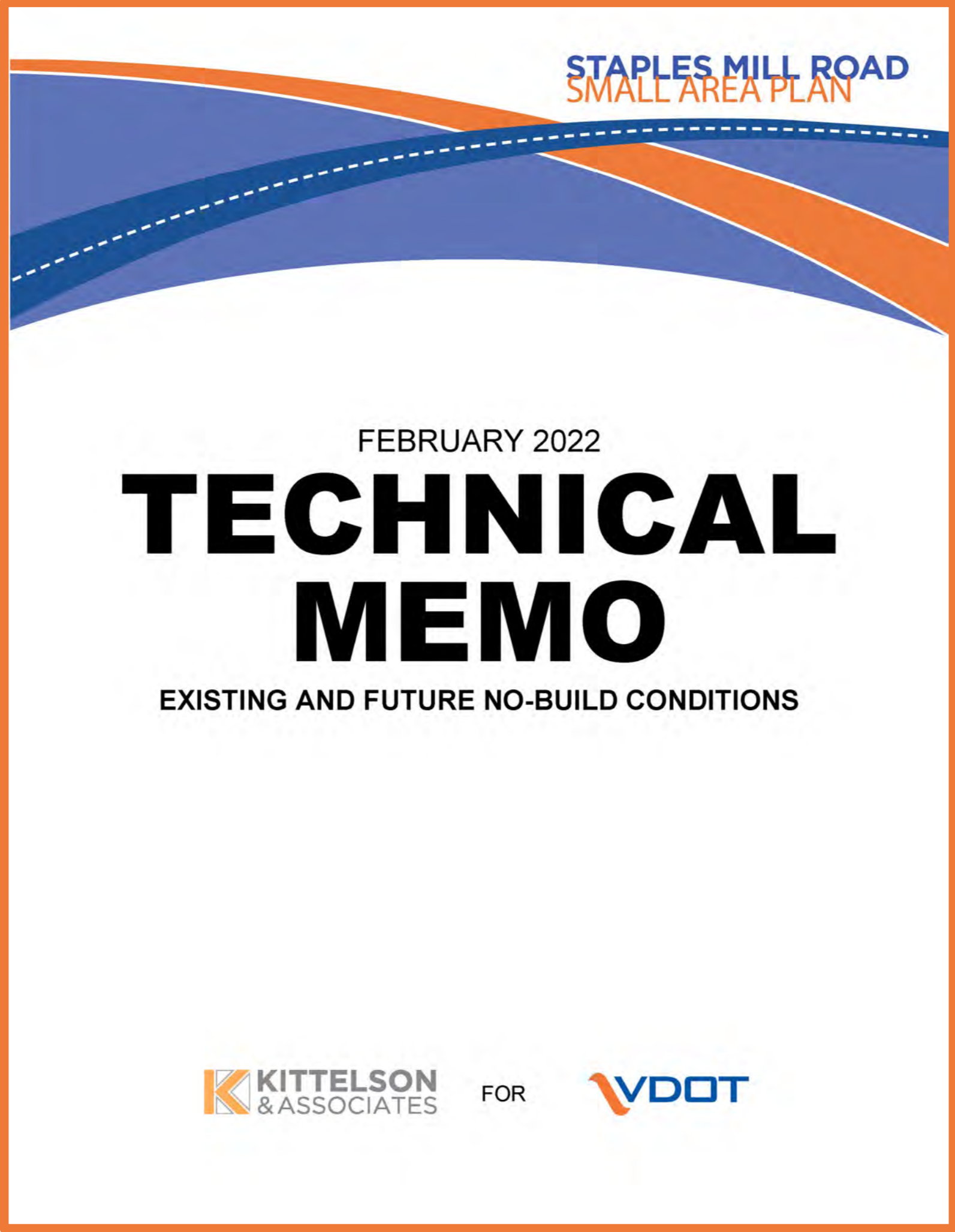
“ Any consideration to utilize the rail corridor for a rail with trail facility to connect Staples Mill Station to downtown and Main Street Station? ”

“ What incentives are there for businesses to improve the shopping centers near the train station? They appear to be lacking occupants and declining. ”

“ Linking The Amtrak with the fall line trail might encourage folks outside of this area to bike to Amtrak. ”

Study Website

- New Documents
 - Existing and Future No-Build Conditions Memorandum
- Stay tuned!
 - Phase 1 Public Engagement Memorandum



6.0 Transit Facilities

Transit Facilities

includes 47 transit stops, 11 of which are on Staples Mill Road. The stops are primarily located along the study area (i.e., W. Broad Street) shopping centers such as Costco, Shopping Mall, Merchant's Walk, Target/Lowe's, Tuckernuck Plaza, and Square Shopping Center. **Table 9** summarizes bus stop siting and characteristics for GRTC stops on Staples Mill Road.

Road Bus Stop Characteristics—

Characteristic	Count	Percentage
Opportunity	10	91%
Opportunity is Signalized	1	9%
Lighting	5	45%
Shelter	5	45%
Seating	1	10%
Trash can	10	91%
Other	1	9%

9, passengers at these stops often find it difficult to move quickly, especially if traffic is moving 45 mph or faster, as indicated on the curb or along the road sidewalks (**Figure 35**).

Figure 35. Substandard Sidewalk with Loose Gravel

At almost half of all Staples Mill Road stops (45%), the nearest opportunity to cross the corridor is not at a signalized crossing. Even signalized crossings have poor facilities, shown in **Figure 36**, where a signal exists but a crosswalk does not. As shown in **Table 10**, nearly all bus stops on the corridor have neither lighting, seating, nor shelter.

Table 10. Staples Mill Road Bus Stop Characteristics – Amenities

Characteristic	Yes (% of corr. stops)	No (% of corr. stops)
Lighting	3 (27%)	8 (73%)
Shelter	0 (0%)	11 (100%)
Seating	1 (10%)	10 (90%)
Trash can	2 (18%)	9 (82%)

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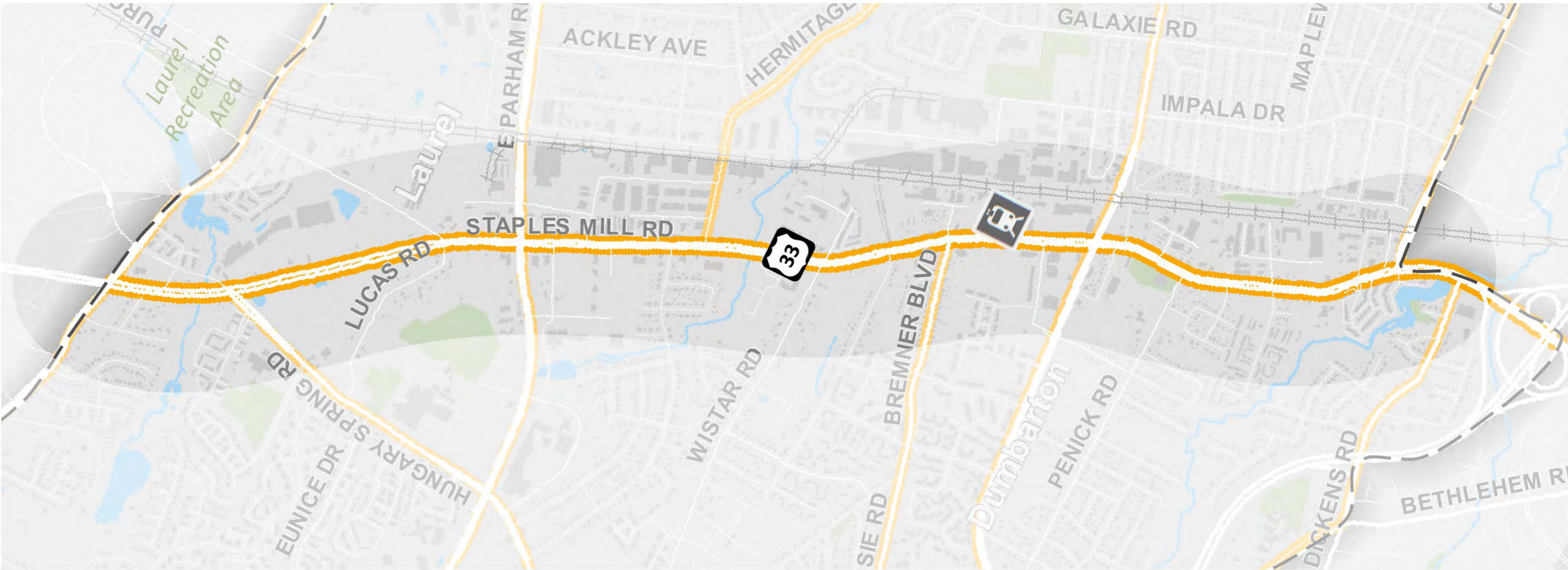
59 | Staples Mill Road Small Area Plan – Existing and Future No-Build Conditions Technical Memorandum

Transportation Options



Staples Mill Road Corridor

- Reviewed corridor conditions to identify defining characteristics
- Developed cross-section options for alternatives analysis process



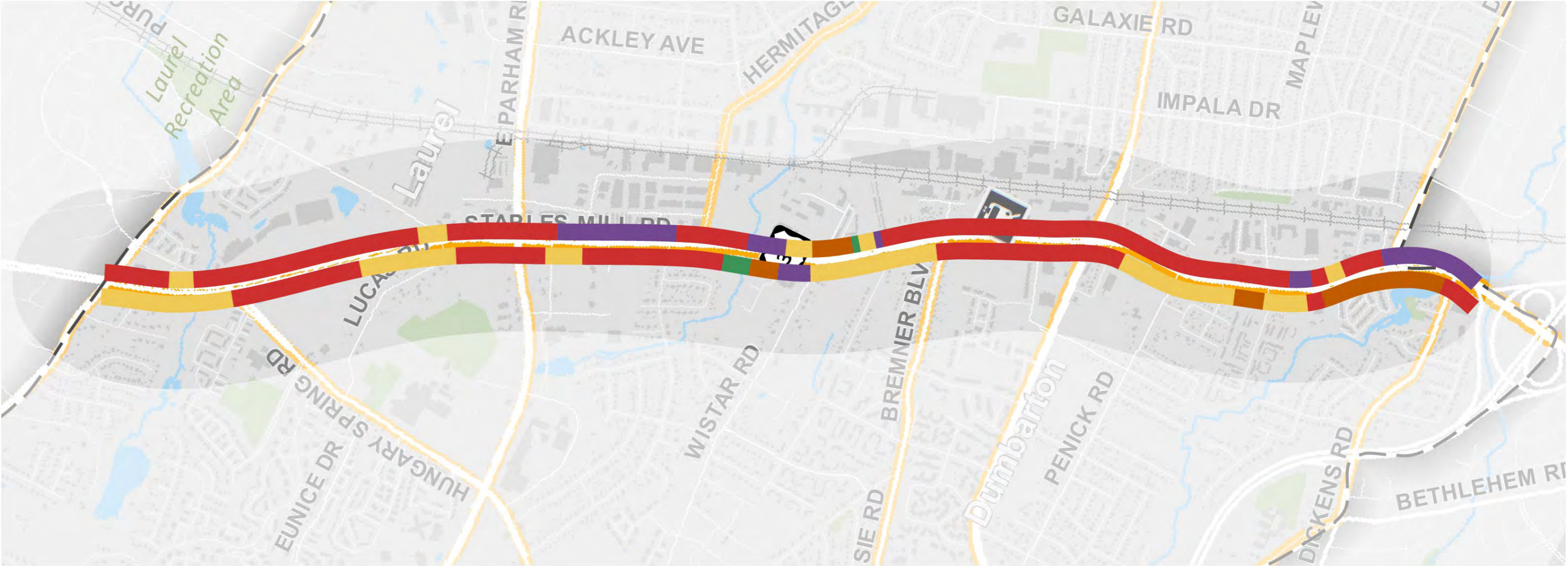
Legend:

- Staples Mill Road Study Corridor
- Small Area Plan Boundary
- Railroad
- Richmond City Boundary
- Parks
- Water
- Study Streets

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Zoning

- People live, work, and shop along Staples Mill Road
 - Mix of commercial, residential, and industrial zoning



Legend:

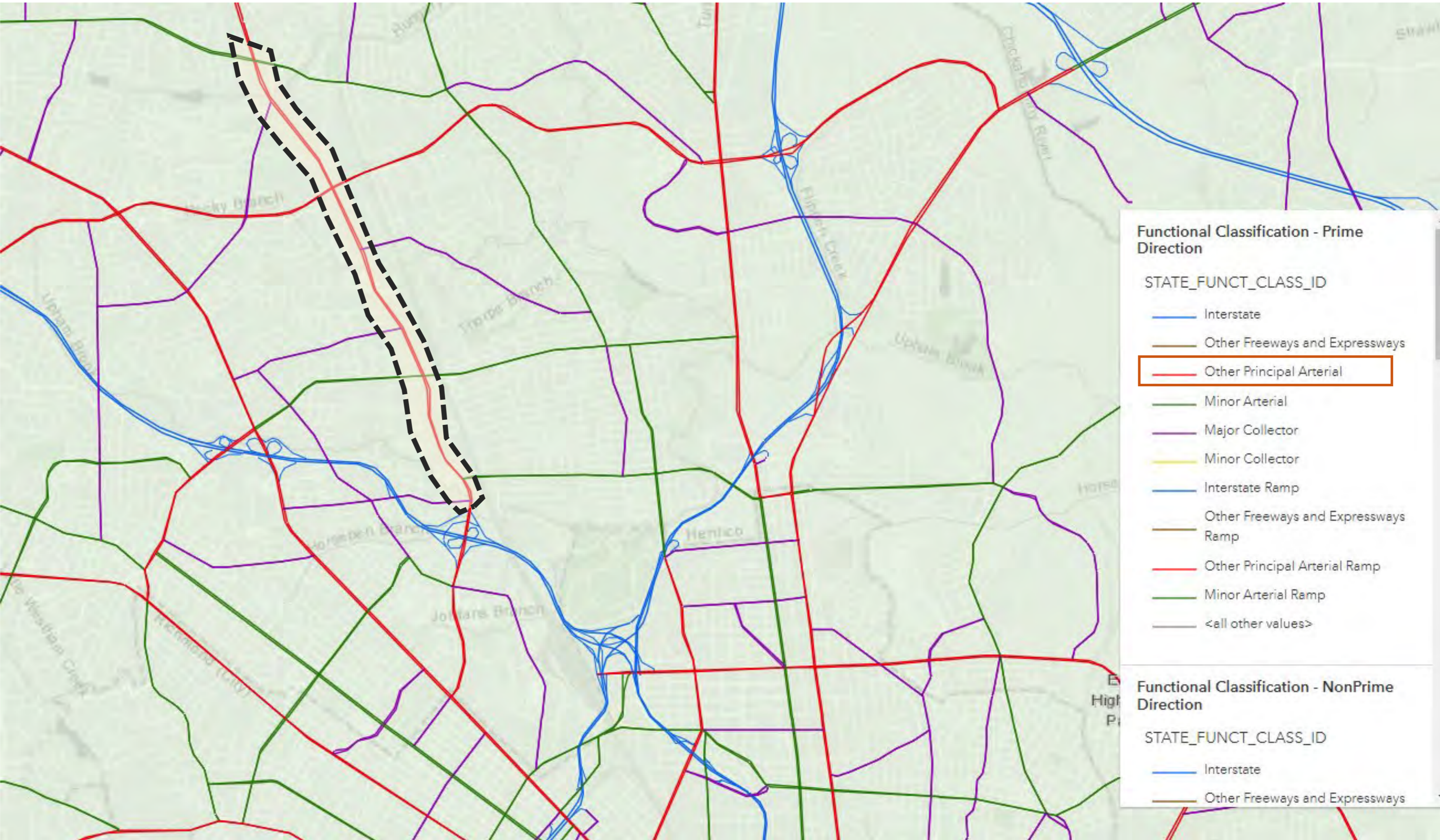
- Commercial
- Conservation
- Industrial
- Multi Family Residential
- Single Family Residential

0 1 Miles

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& ASSOCIATES

Functional Class, Speeds, and AADT

- Provides significant regional connection between Henrico and Richmond
- Functional Class **(Principal Arterial)**
- Speed limit **(45 mph)**
- AADT **(22,000-30,000)**

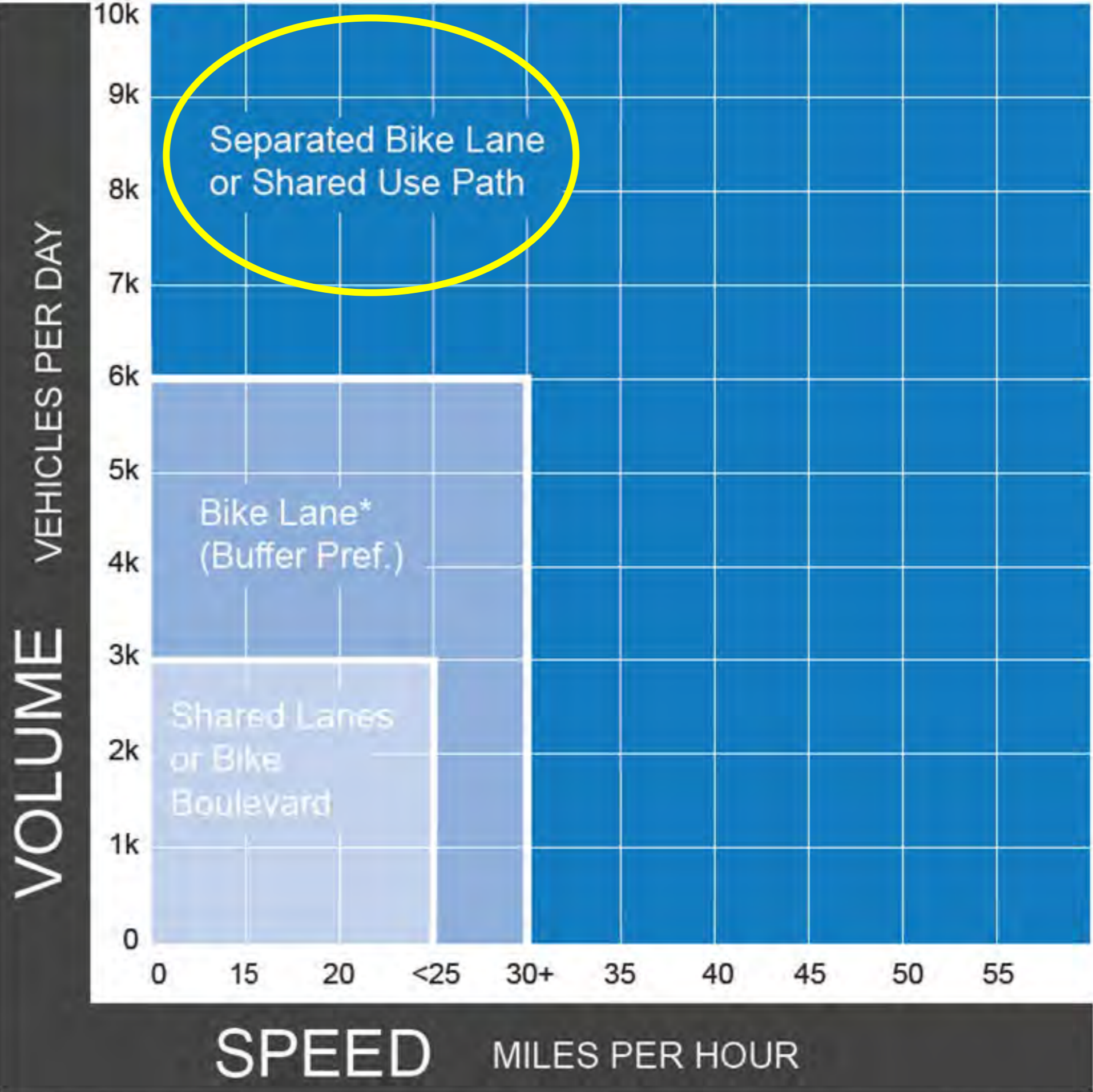


Recommended Bicycle Facilities

	Average Annual Daily Traffic (AADT)	Posted Speed (MPH)
Staples Mill Road	22K – 30K	45

Best practice for vulnerable users:

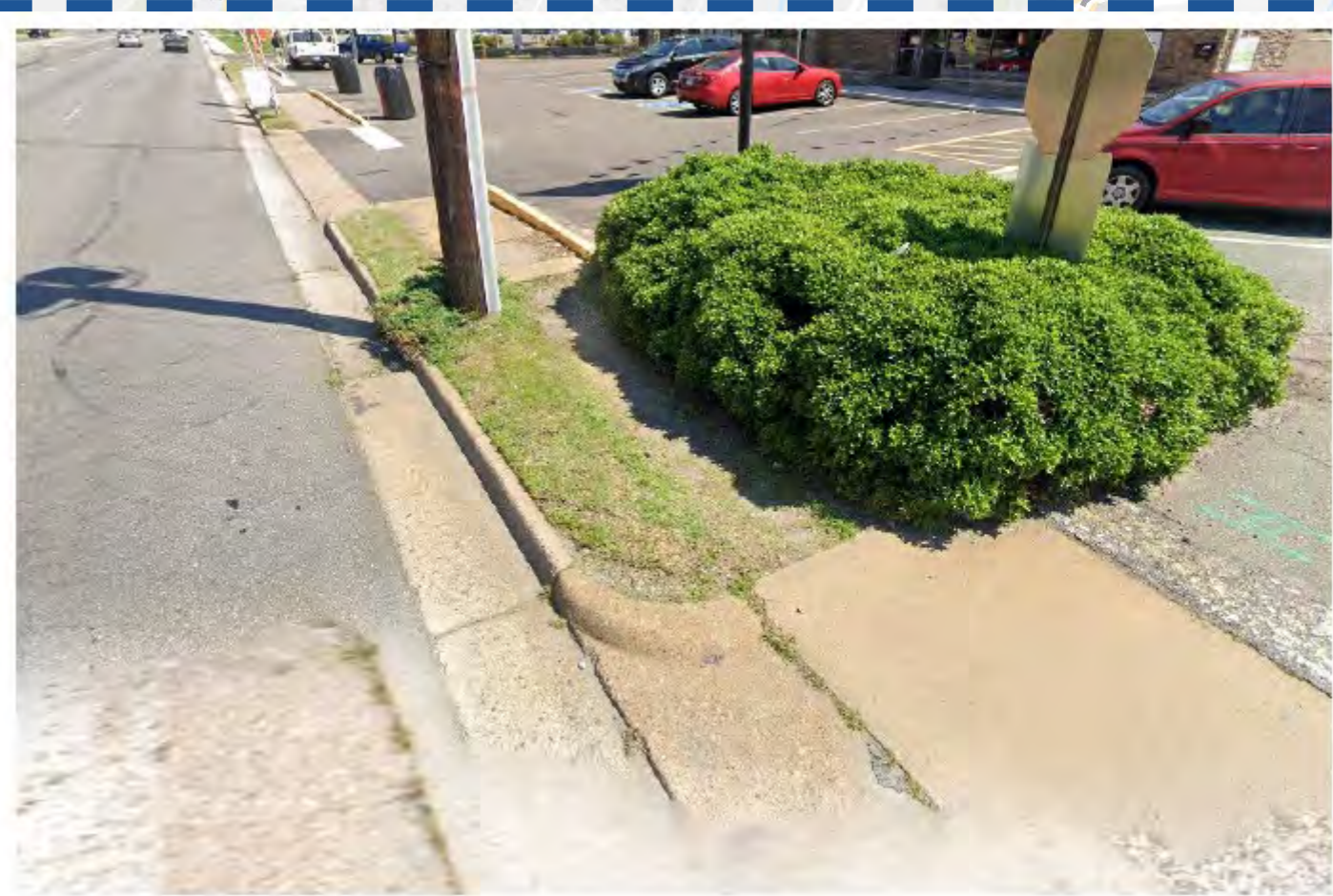
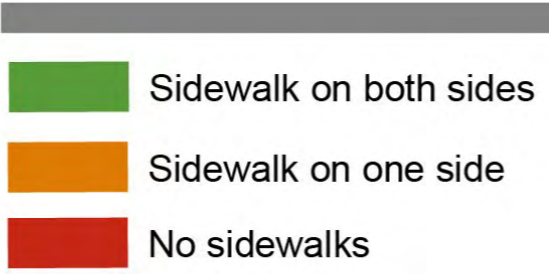
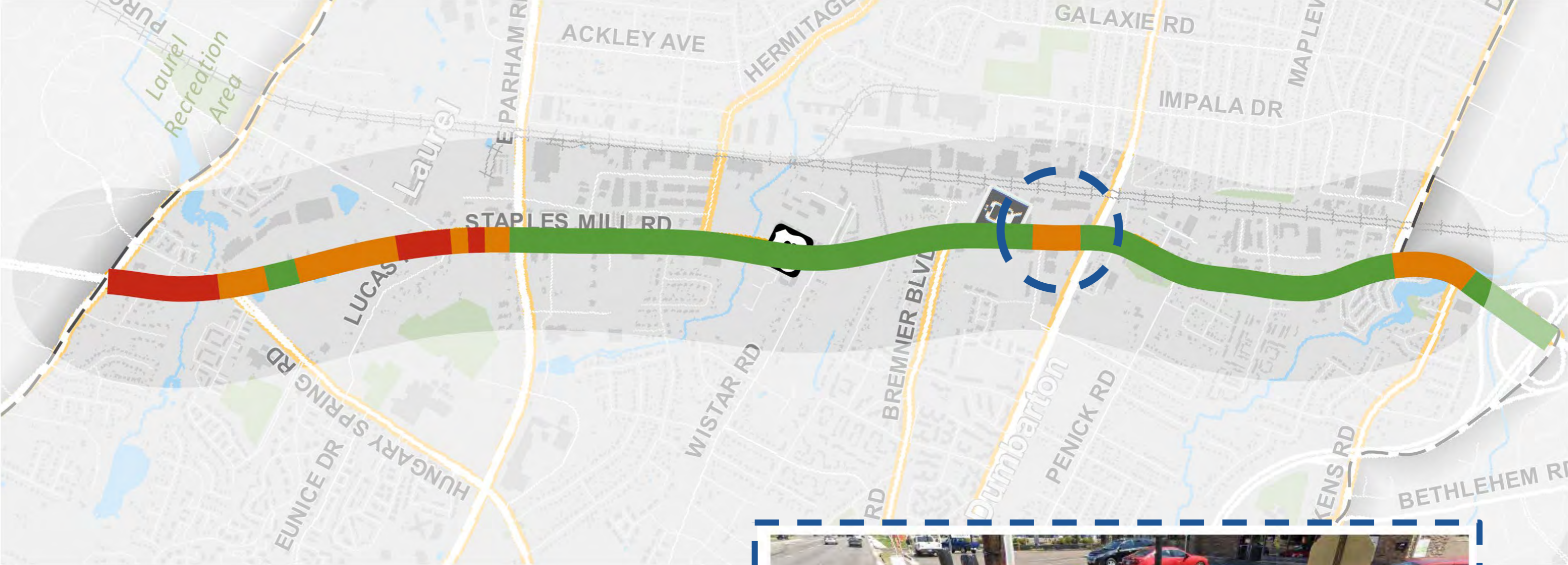
- Physically separated bicycle facility
- Wide, connected sidewalks



*advisory bike lanes may be an option where traffic volume < 6k ADT

Sidewalk Gaps

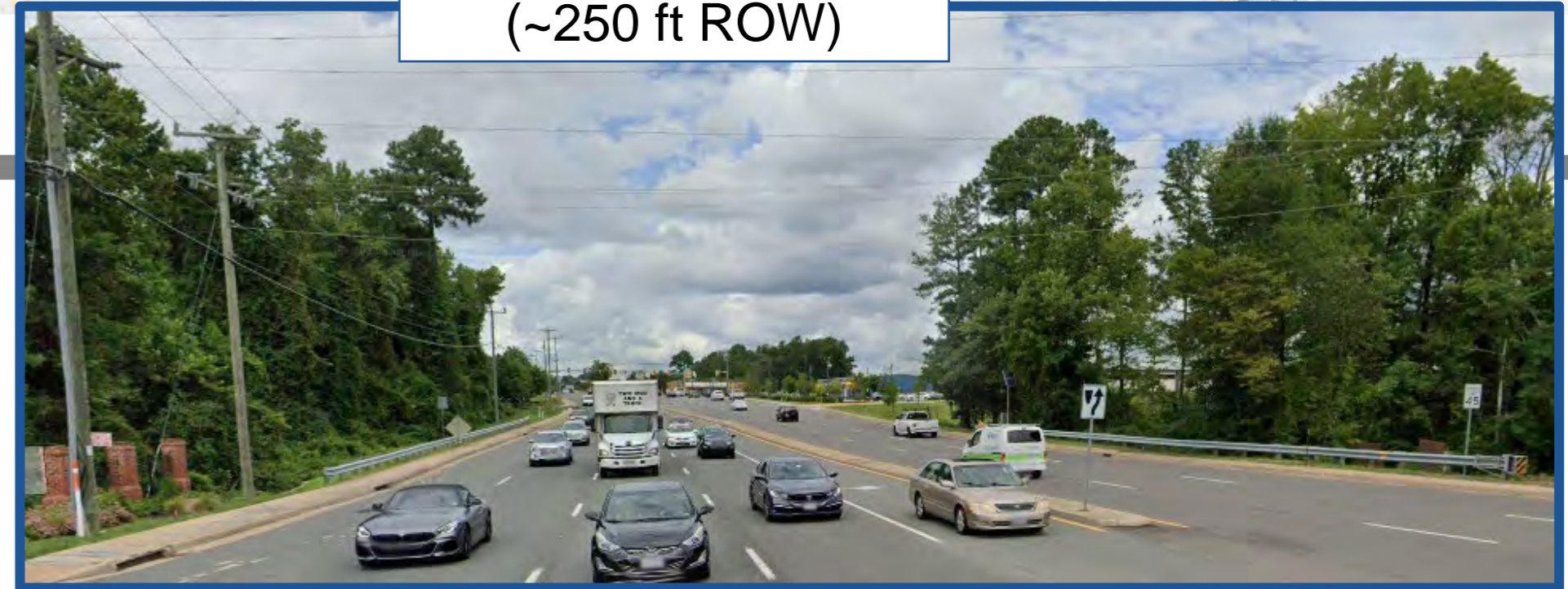
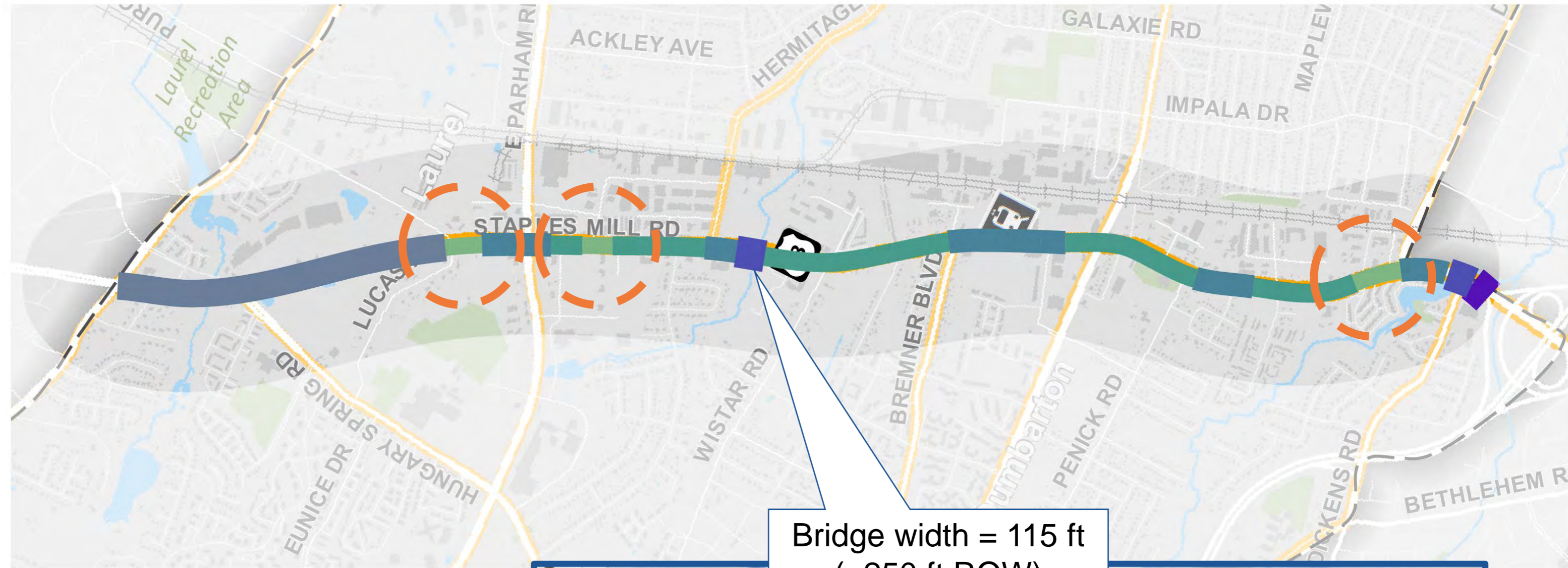
- Sidewalks are provided along most of Staples Mill Road **south** of E Parham Road
- Sidewalks are mostly missing on one or both sides of the road **north** of E Parham Road
- Many existing sidewalks could benefit from maintenance and ADA improvements



Source: Google Maps

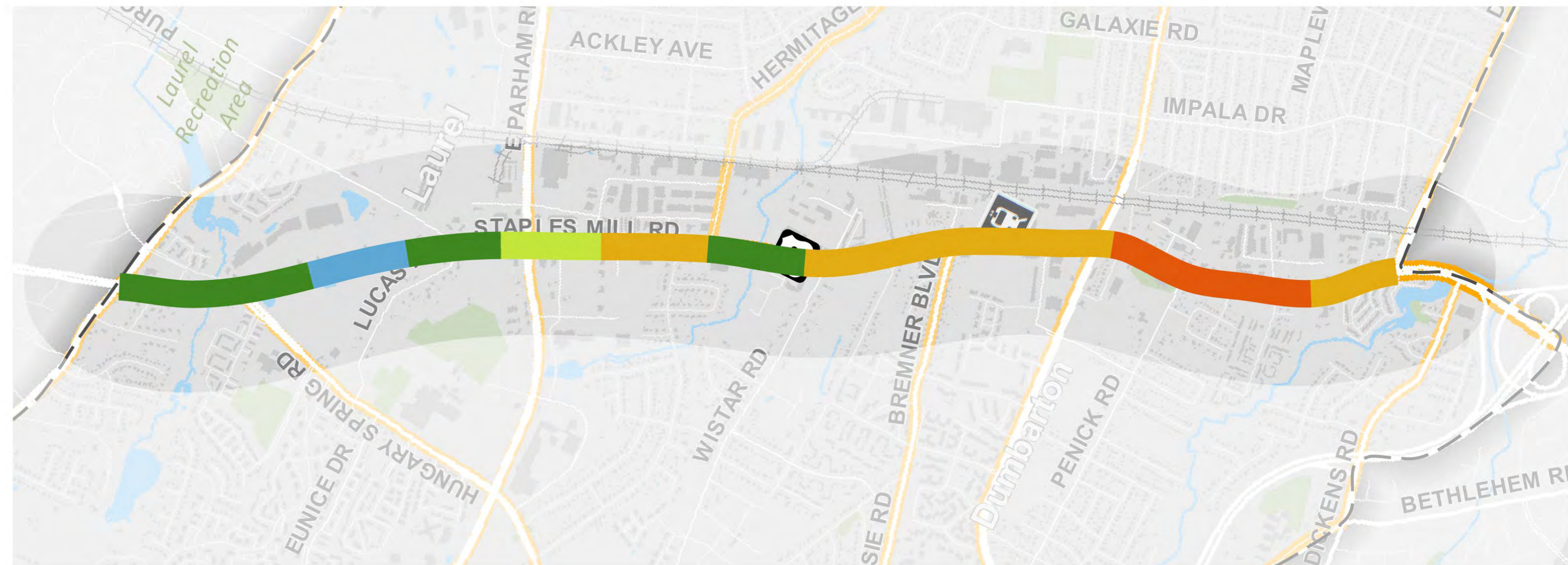
Available Right of Way

- The right of way varies from 300+ feet at the south end, near I-64, to approximately 90 feet.
- Pinch points:
 - North of Dumbarton Road
 - South of Old Staples Mill Road
 - Near Landmark Road



Access Points and Driveways

- Access points per quarter mile (VDOT Pathways for Planning)
- Fewer curb cuts and access points **north** of E Parham Road



Utilities and Drainage

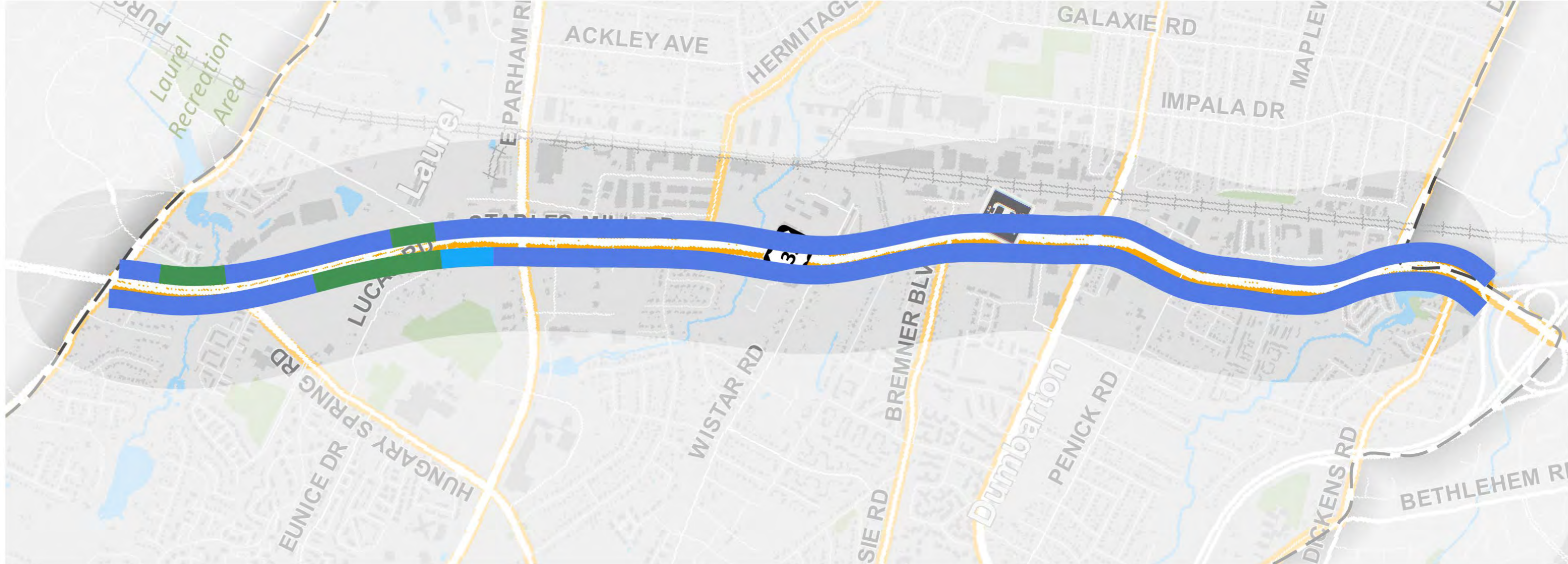
- Most of the corridor has a complete curb and gutter
- *Example: Curb and Gutter near Bremner Boulevard*



- Small sections of Staples Mill Road **north** of E Parham Road lack curb and gutter
- *Example: Shoulder/ditch drainage near Old Staples Mill Road*

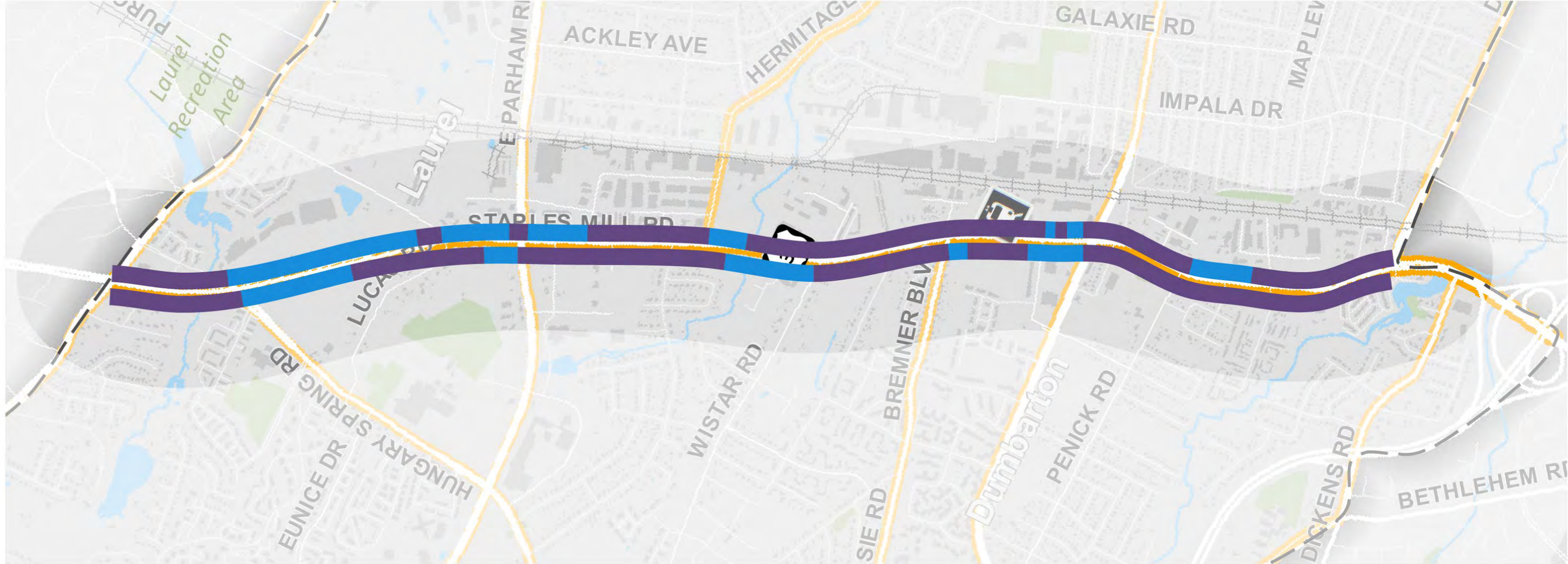


Source: Google Maps



Continuous Right Turn Lanes

- Continuous right turn lanes are provided along several segments of Staples Mill Road
- **Analysis need:** can right-turn lanes be repurposed?
- *Example of Continuous Right Turn Lane : Near Staples Mill Square*

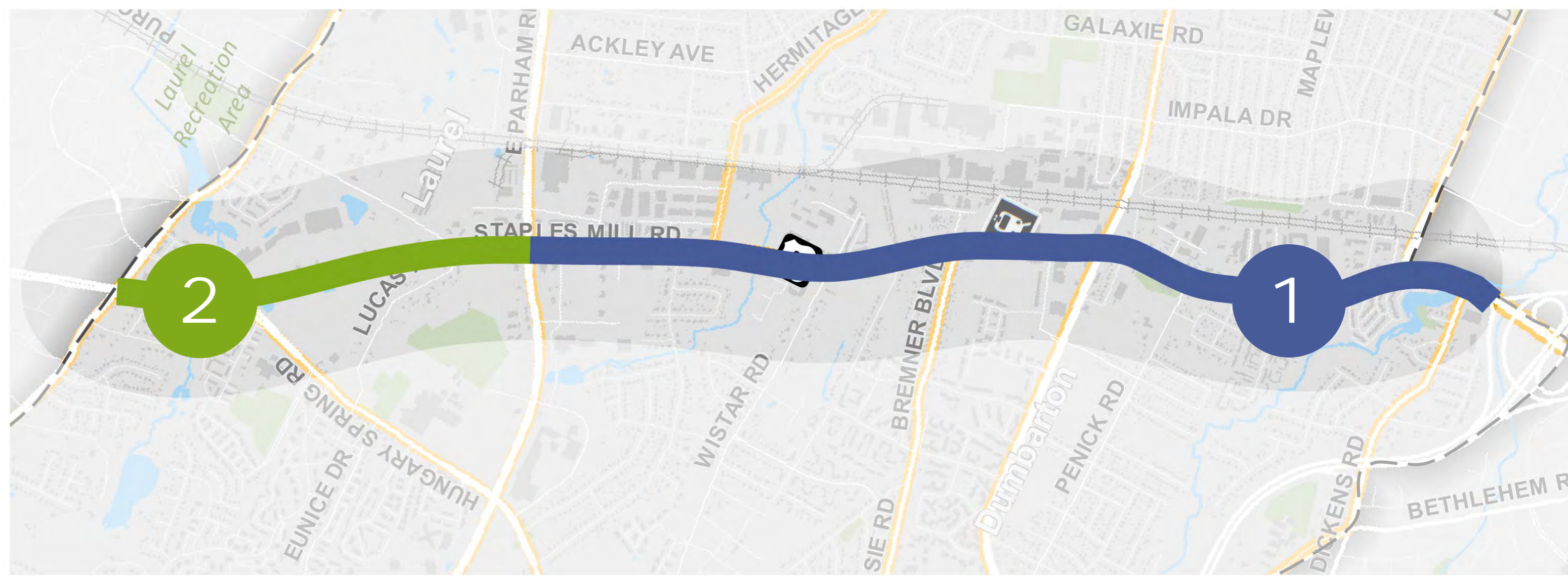


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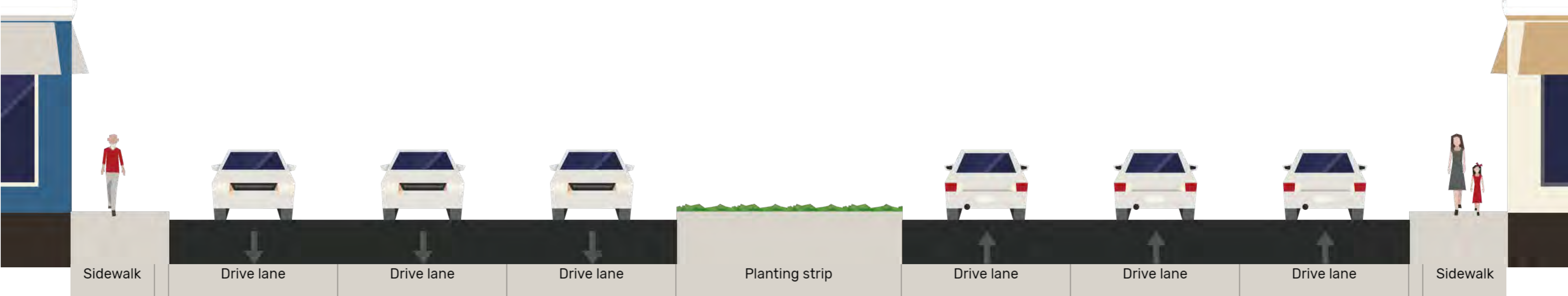
Existing Cross Sections

- 1. **South of E Parham Road:** Three through lanes with median separation.
- 2. **North of E Parham Road:** Two through lanes with median separation.
- Turn lanes are provided at intersections and major driveways.



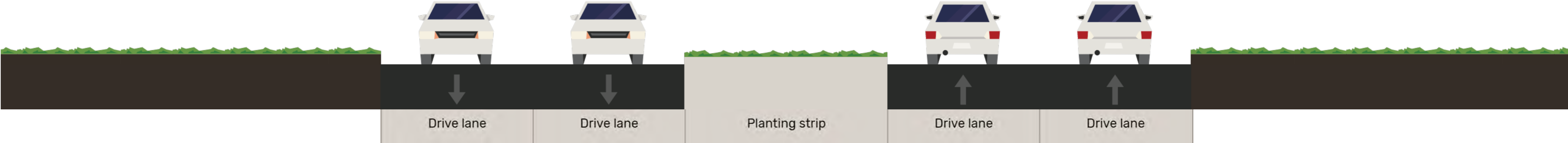
Existing Cross Section: 1

- South of E Parham Road: three through lanes both northbound and southbound, separated by a median (or turn lane) that varies in width
- Additional turn lanes are provided at intersections and at major establishment entrances/exits
- 6-foot sidewalks are present throughout most this segment



Existing Cross Section: 2

- North of E Parham Road: two through lanes both northbound and southbound, separated by a median (or turn lane) that varies in width
- Additional turn lanes are provided at intersections and at major establishment entrances/exits
- Sidewalks are not present along most of this segment



Cross Section Options

Cross Section 1

Transit Options
Center Running
or
Curbside



Bike and Pedestrian
Options
Raised separated bike lanes and
sidewalks
or
Shared use path (both sides)

- Fewer options feasible in constrained areas - with potential impacts to vehicle lane, sidewalk, bicycle facility, and buffer widths

Cross Section Elements

Shared Use Path



Curbside Transit



Center Running Transit



Shared Use Path



Wide Sidewalks



Raised, separated Bike Lane



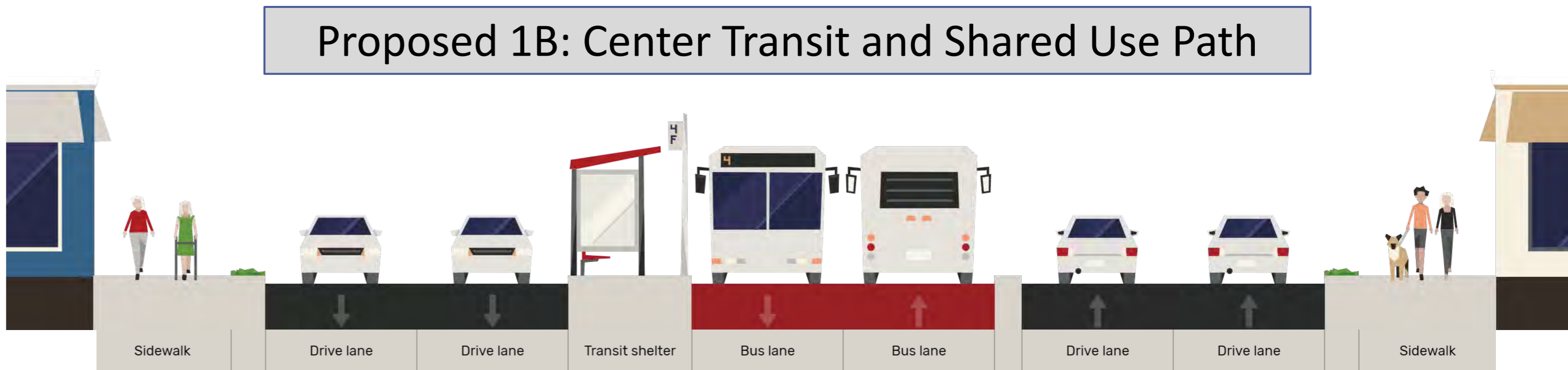
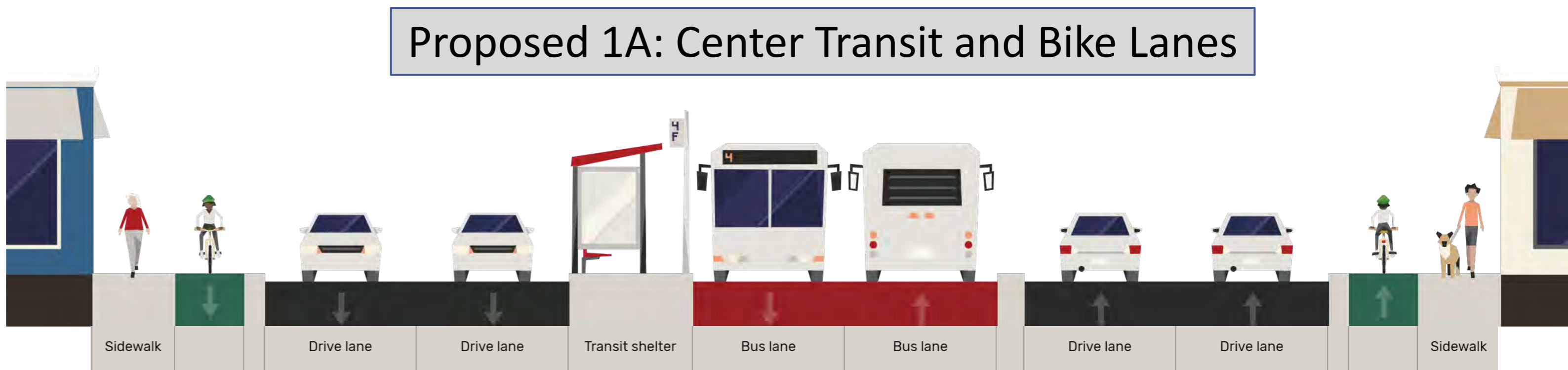
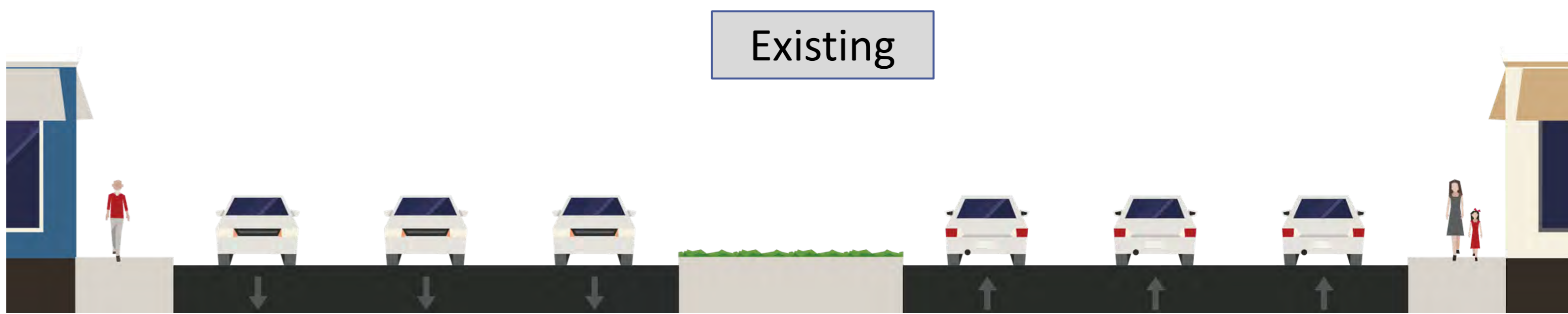
Cross Section Options: 1A & 1B

Center Running Transit

- Reallocate through travel lane to center running bus lane
- Reallocate median for stations, turn lanes
- 11' Vehicle travel lanes

Bicycle and Pedestrian:

- Raised bicycle lane and sidewalk OR
- Shared use path



Source: Streetmix

Cross Section Options: 1C & 1D

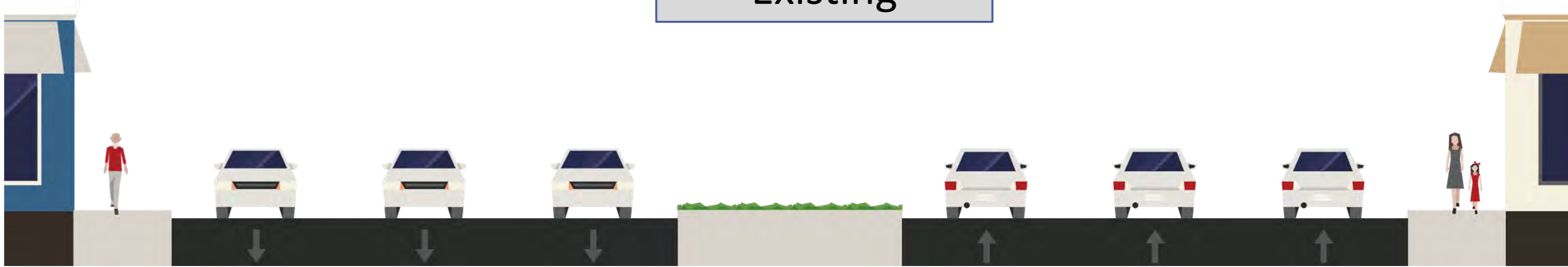
Curbside Transit

- Reallocate through travel lane to bus-only lane
- Maintain median, turn lanes
- 11' Vehicle travel lanes

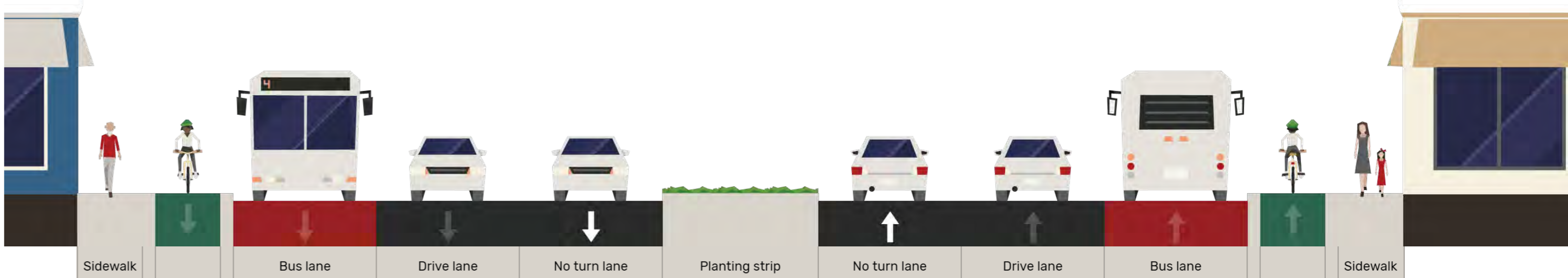
Bicycle and Pedestrian:

- Raised bicycle lane and sidewalk OR
- Shared use path

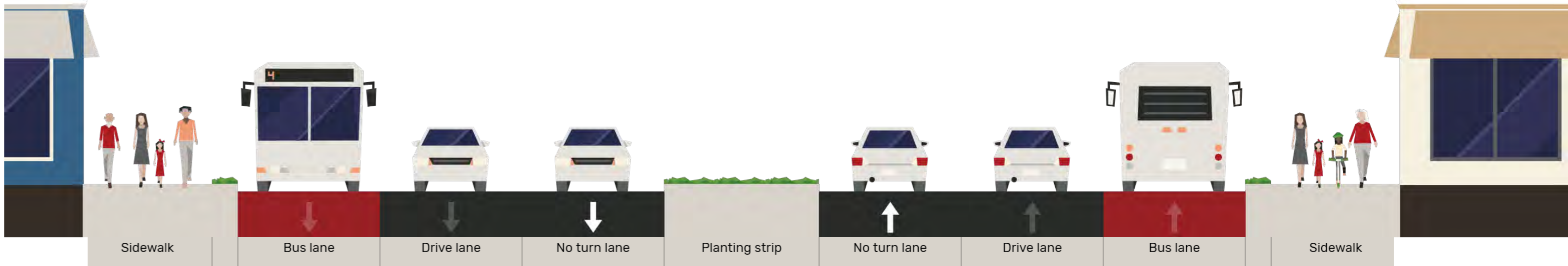
Existing



Proposed 1C: Curbside Transit and Bike Lanes



Proposed 1D: Curbside Transit and Shared Use Path



Source: Streetmix

Cross Section Options

Cross Section 2

Bike and Pedestrian Options
Raised separated bike lanes and sidewalks
or
Shared use path (both sides)

Shared Use Path



Greater Greater Washington

Wide Sidewalks



City of Asheville

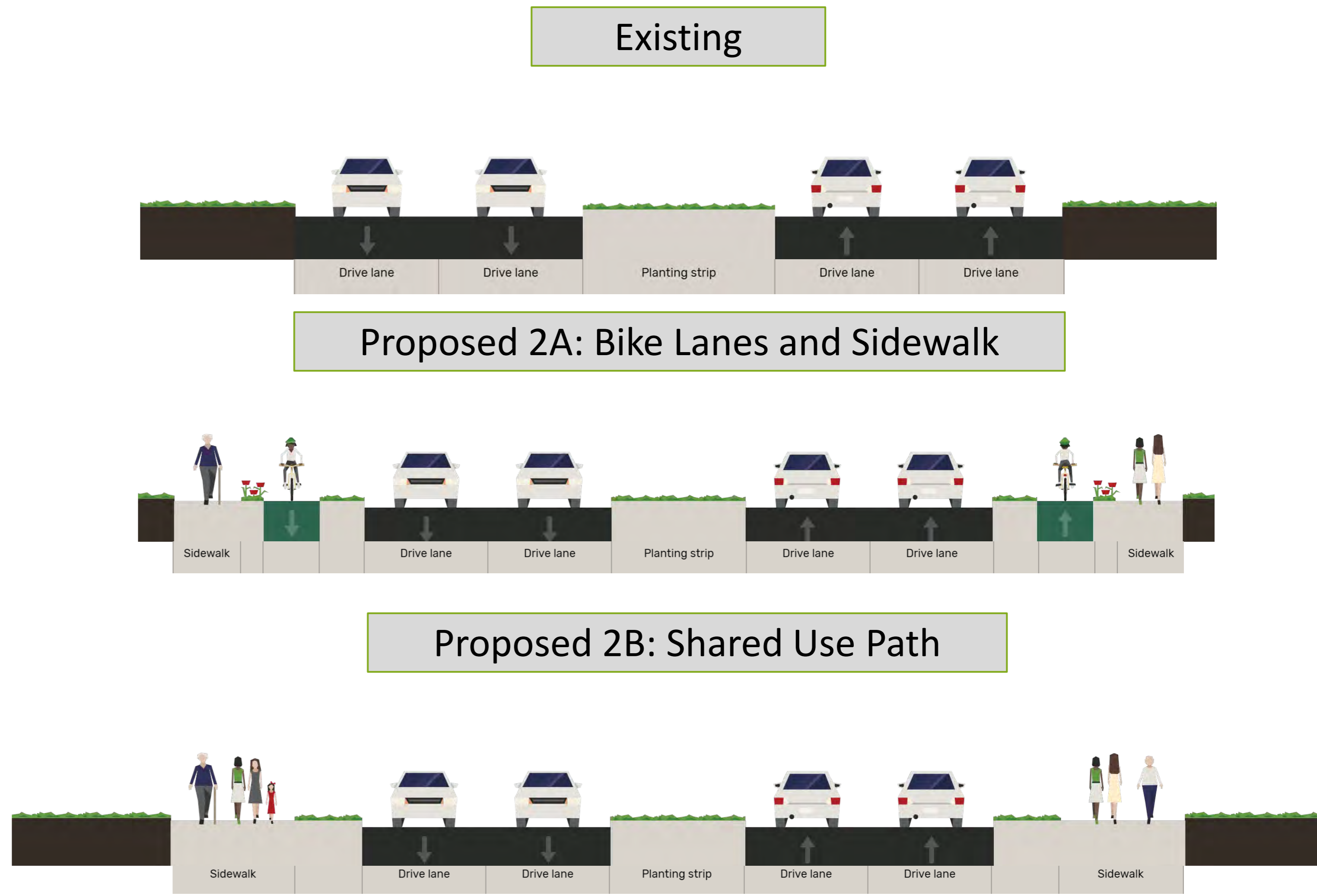
Raised, separated Bike Lane



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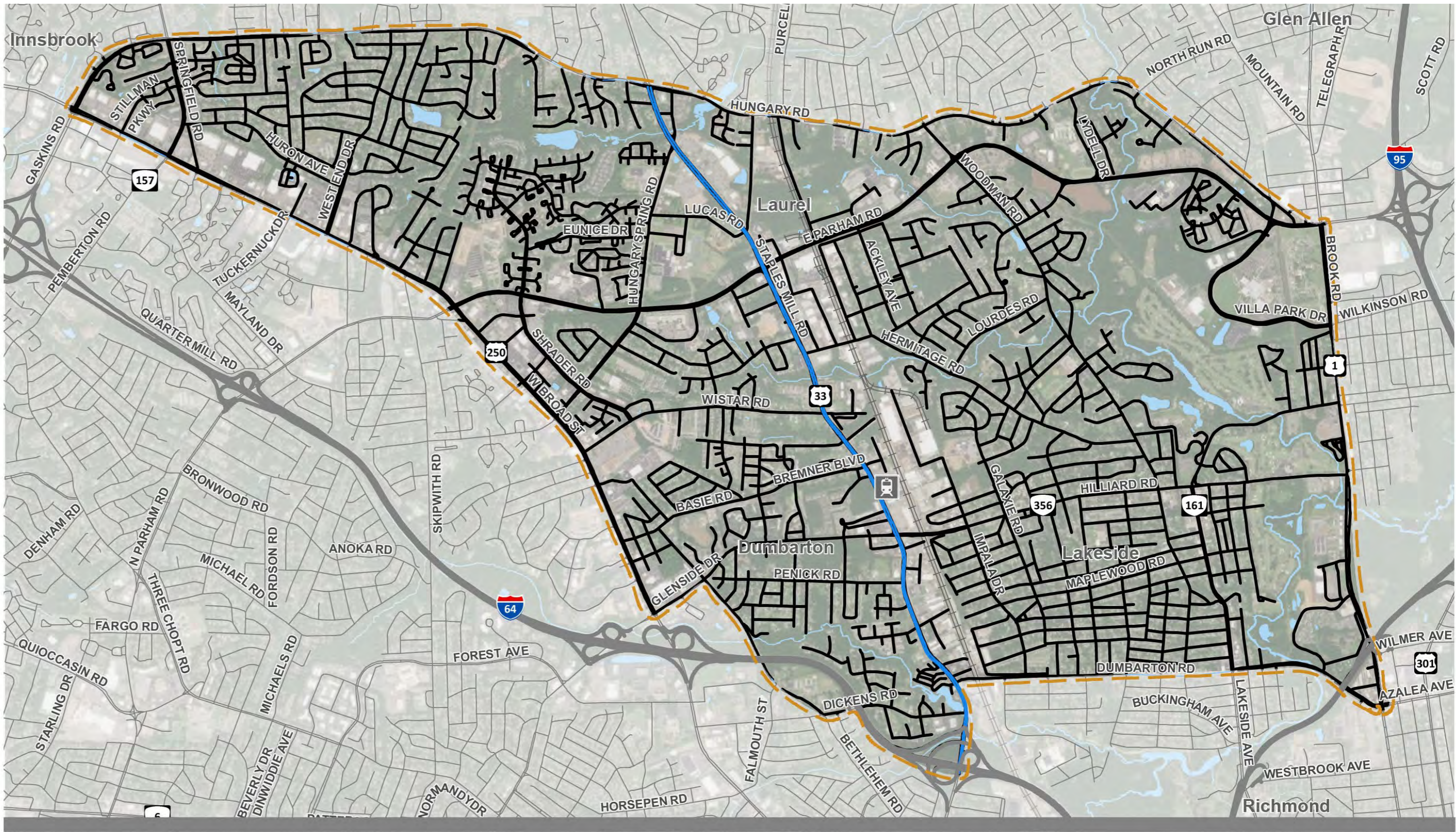
Cross Section Options: 2A and 2B

- 11' Vehicle travel lanes
- Bicycle and Pedestrian:**
- a. Raised bicycle lane and sidewalk OR
 - b. Shared use path



Effective Network

- Staples Mill Road is a key connector between Henrico County and Richmond

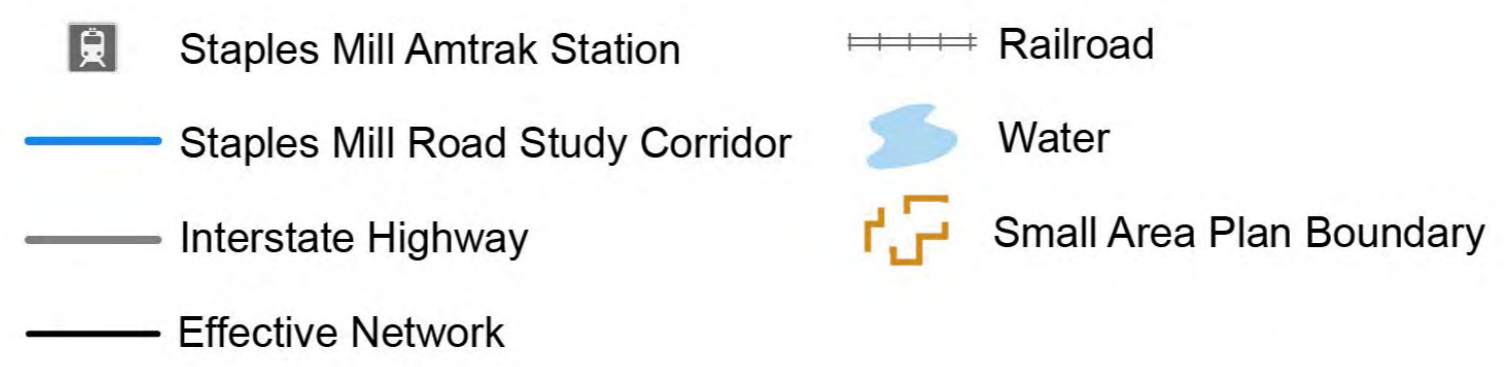
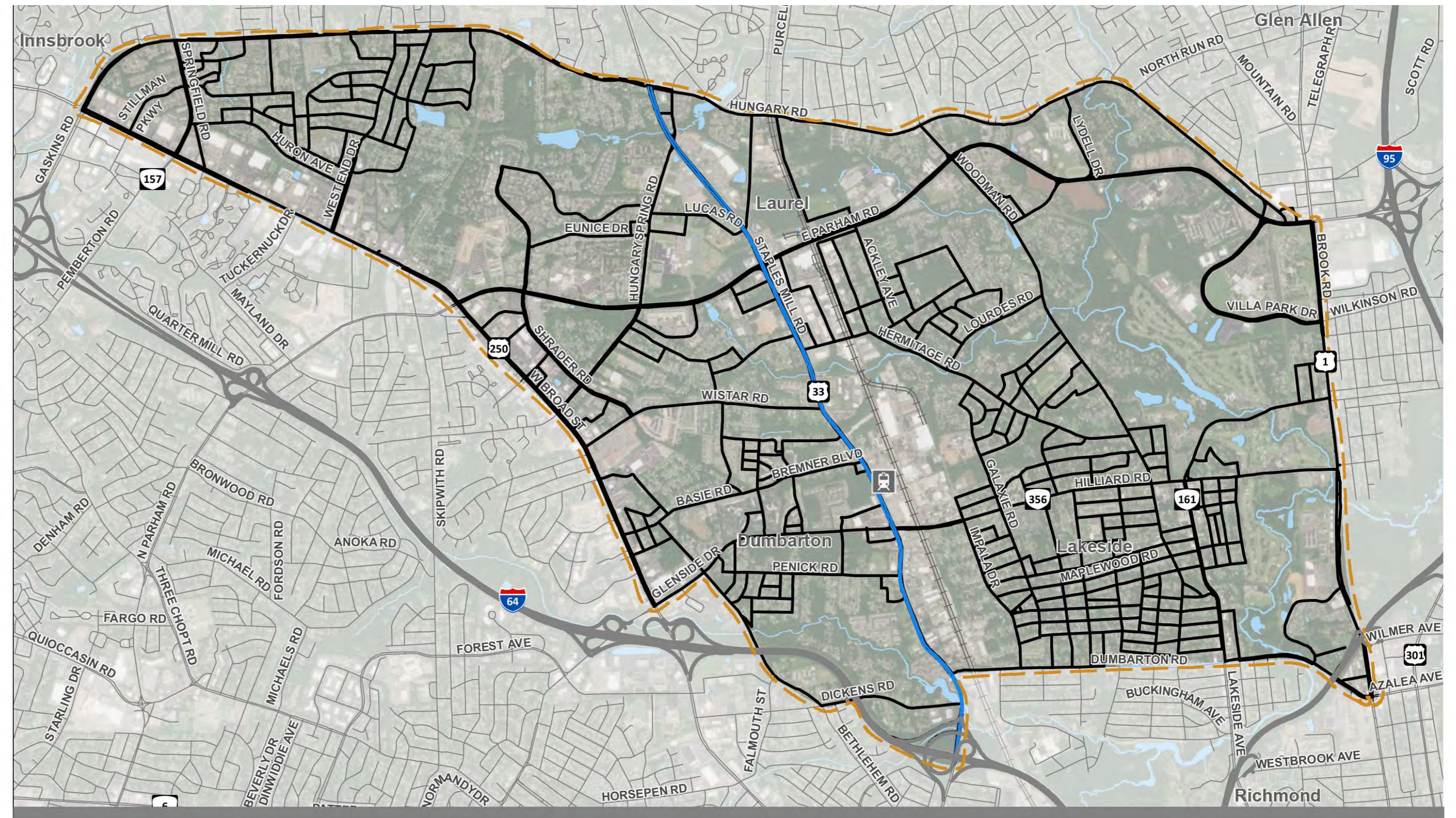


Staples Mill Amtrak Station	Railroad
Staples Mill Road Study Corridor	Water
Complete Network	Small Area Plan Boundary
Interstate Highway	



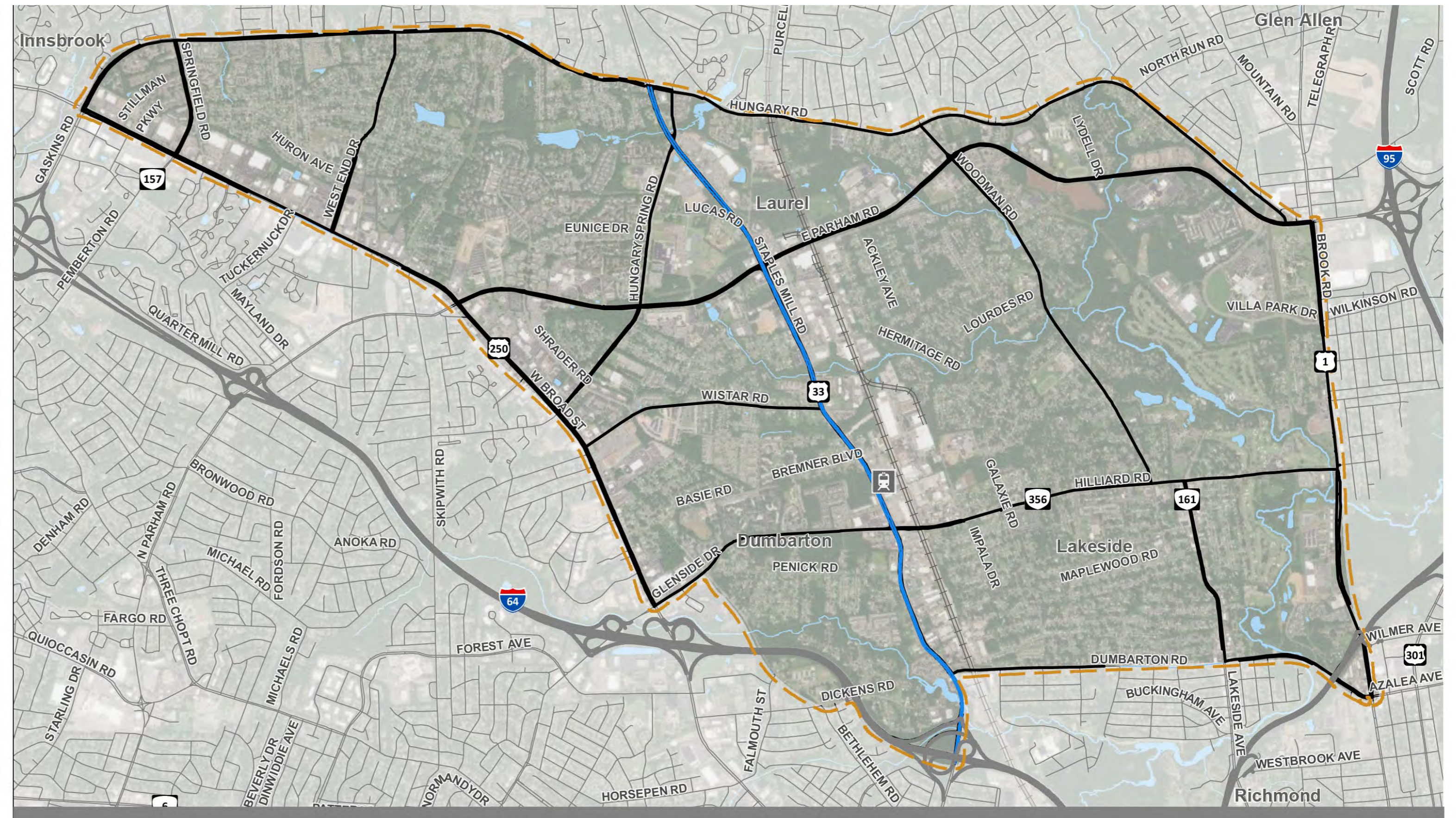
Effective Network

- Many streets in the network are dead ends or circles, contributing to traffic and intersection stress on Staples Mill Road



Effective Network

- Few major streets in the effective network can be used to get to and from the study area

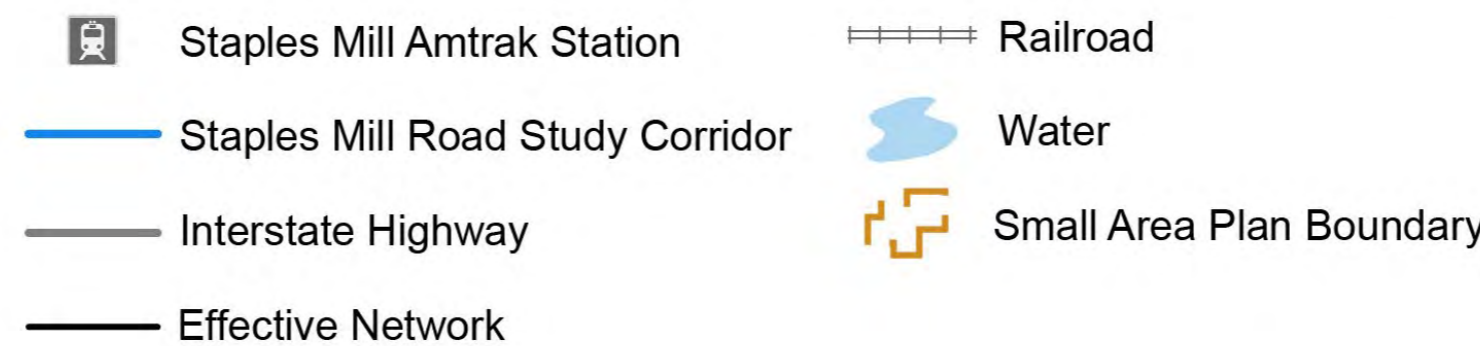
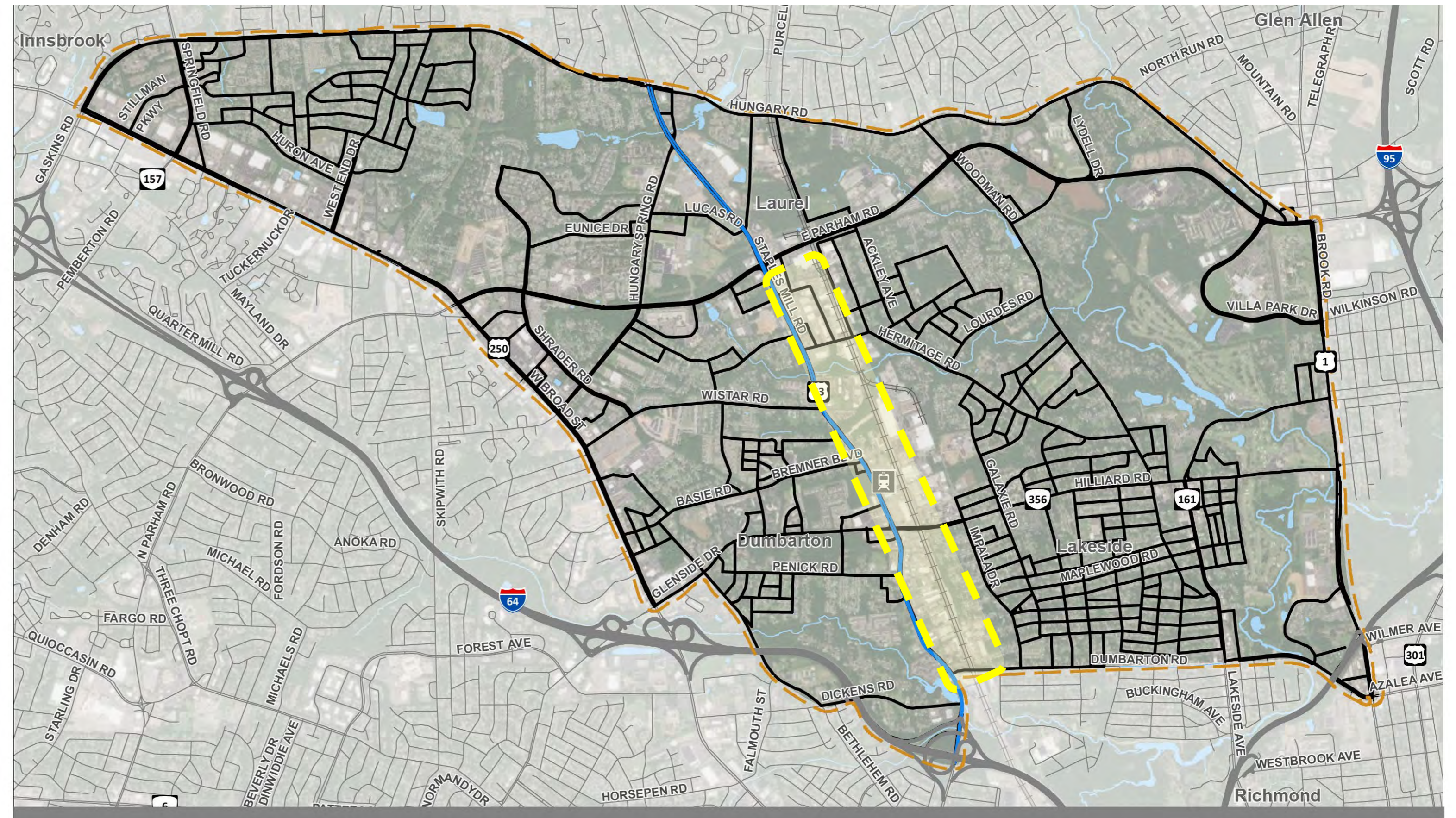


Staples Mill Amtrak Station	Railroad
Staples Mill Road Study Corridor	Water
Interstate Highway	Small Area Plan Boundary
Major Street	



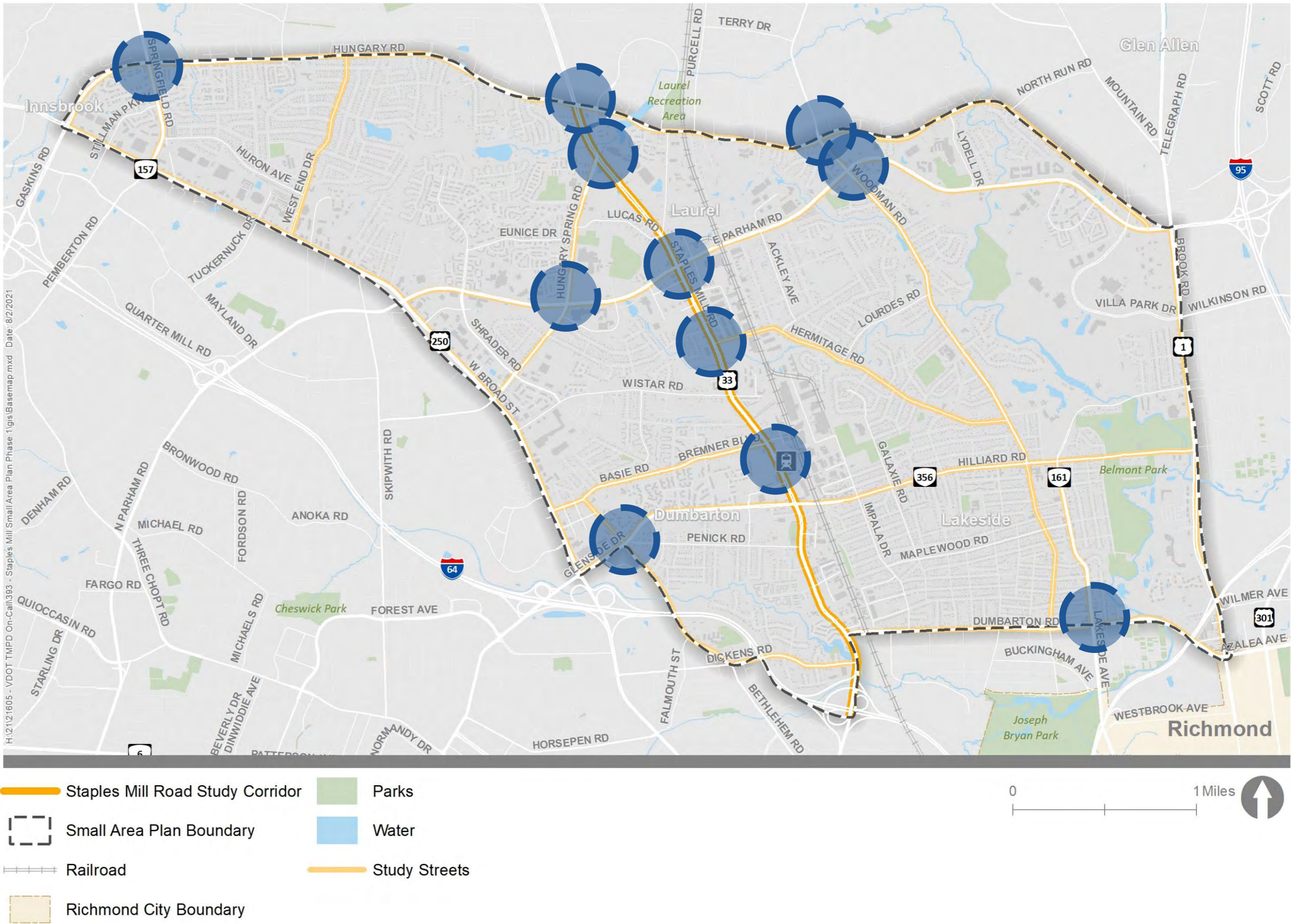
Effective Network

- Staples Mill Road serves as the only access route for many businesses and homes along Staples Mill Road, particularly:
 - Between Staples Mill Road and train tracks



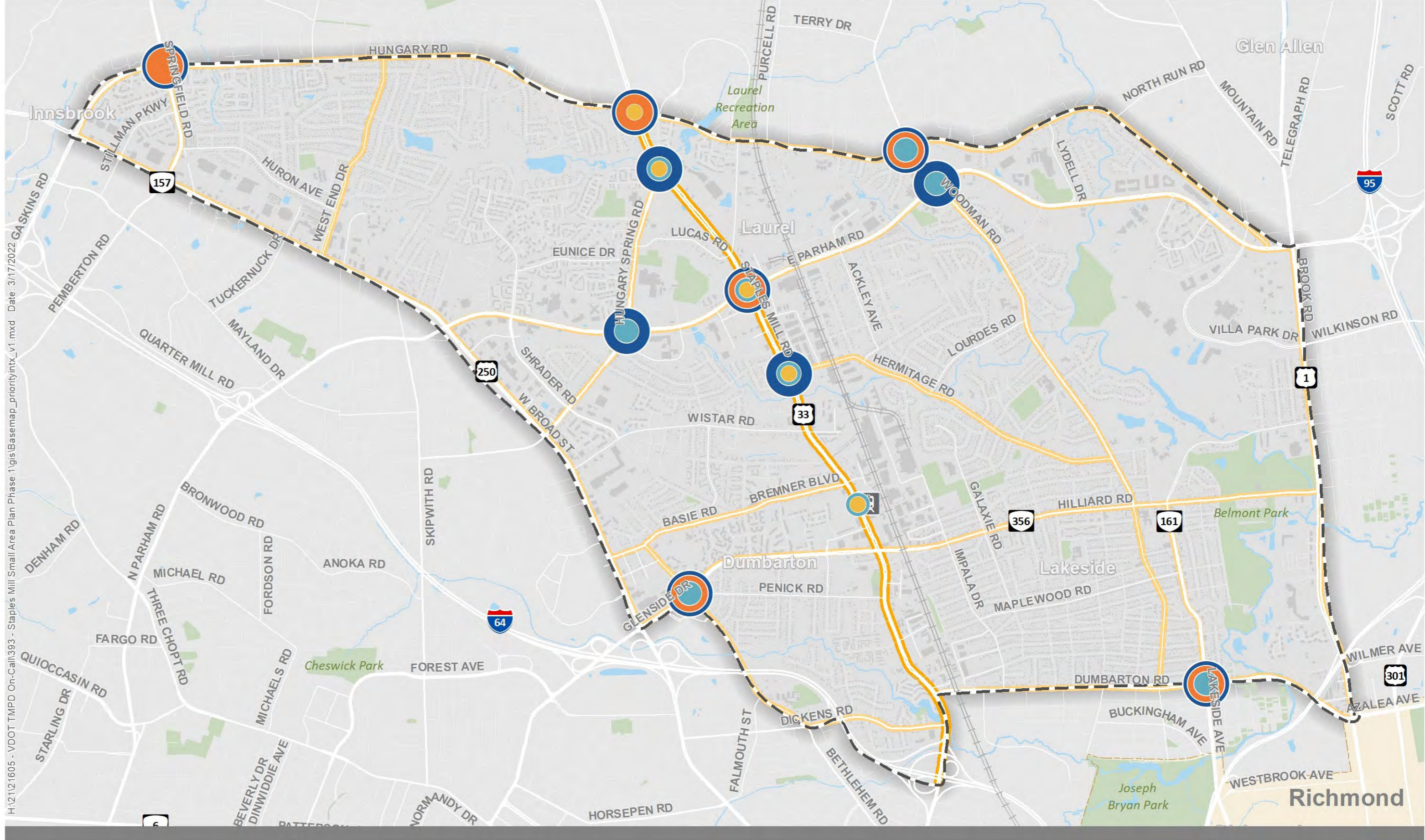
Priority Intersections

- Identified 11 intersections
- Conducted intersection alternative screening
- Will develop, and refine, and recommend intersection concepts



Selecting Priority Intersections

- 2040 Congestion
- Safety
- TOD Proximity
- Community Feedback

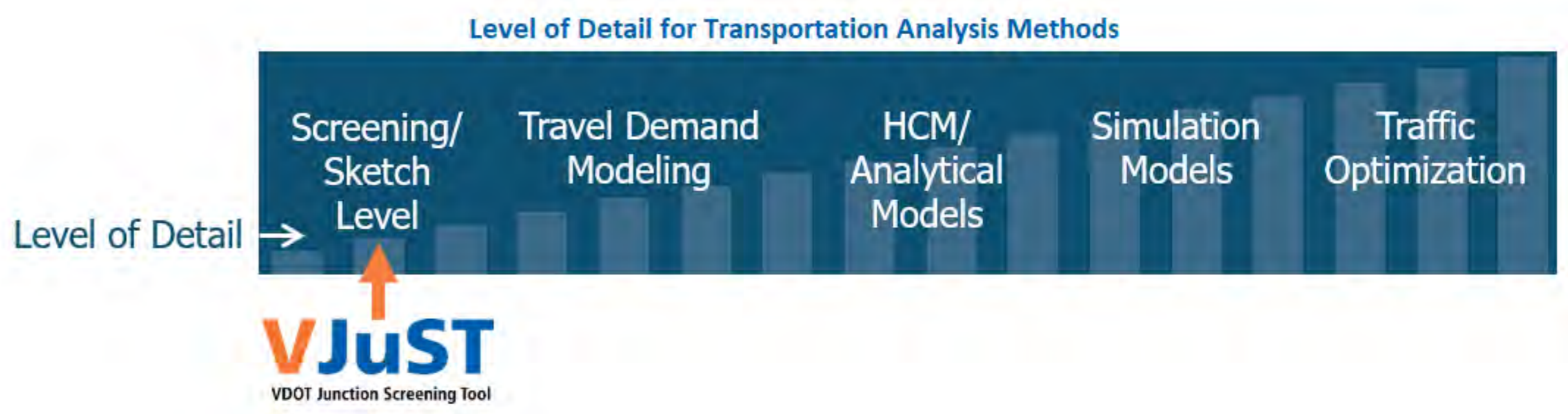
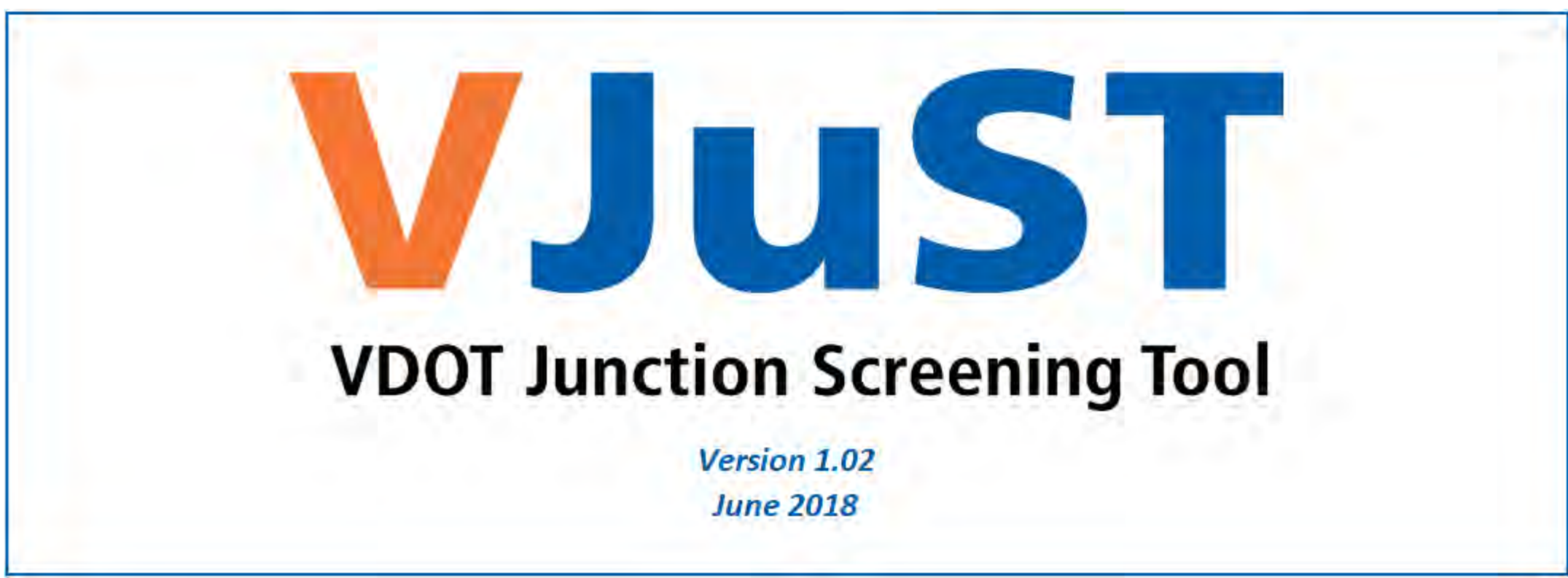


Priority Intersections by Issue

- Community Interest
- Future Congestion (2040)
- TOD Proximity
- Safety Concerns





















Intersection Alternative Screening

- Future (2040) Intersection Volumes
- High level analysis – 3 components
 - **Congestion** – volume/capacity by movement
 - **Pedestrian** – accommodation compared to conventional signal
 - **Safety** – conflict points











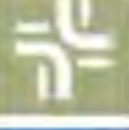











VJuST Overview

- **29** total intersection configuration types
 - Intersection types that are not feasible or appropriate for the location should not be considered
- **Analysis factors**
 - Congestion – critical lane volume method
 - Pedestrian – qualitatively compared to conventional signalized intersection
 - Safety – conflict points

Intersections	
 Bowtie	 Restricted Crossing U-Turn (RCUT)
 Center Turn Overpass	 Roundabout
 Continuous Green-T (CGT)	 Mini Roundabout
 Displaced Left Turn (DLT)	 Single Loop
 Echelon	 Split Intersection
 Median U-Turn (MUT)	 Thru-cut
 Quadrant Roadway (QR)	
Interchanges	
 Contraflow Left	 Michigan Urban Diamond (MUD)
 Displaced Left Turn (DLT) Interchange	 Single-Point Urban Interchange (SPUI)
 Diverging Diamond Interchange (DDI)	 Single Roundabout
 Double Roundabout	

VJuST Overview

- **29** total intersection configuration types
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 - Safety – conflict points

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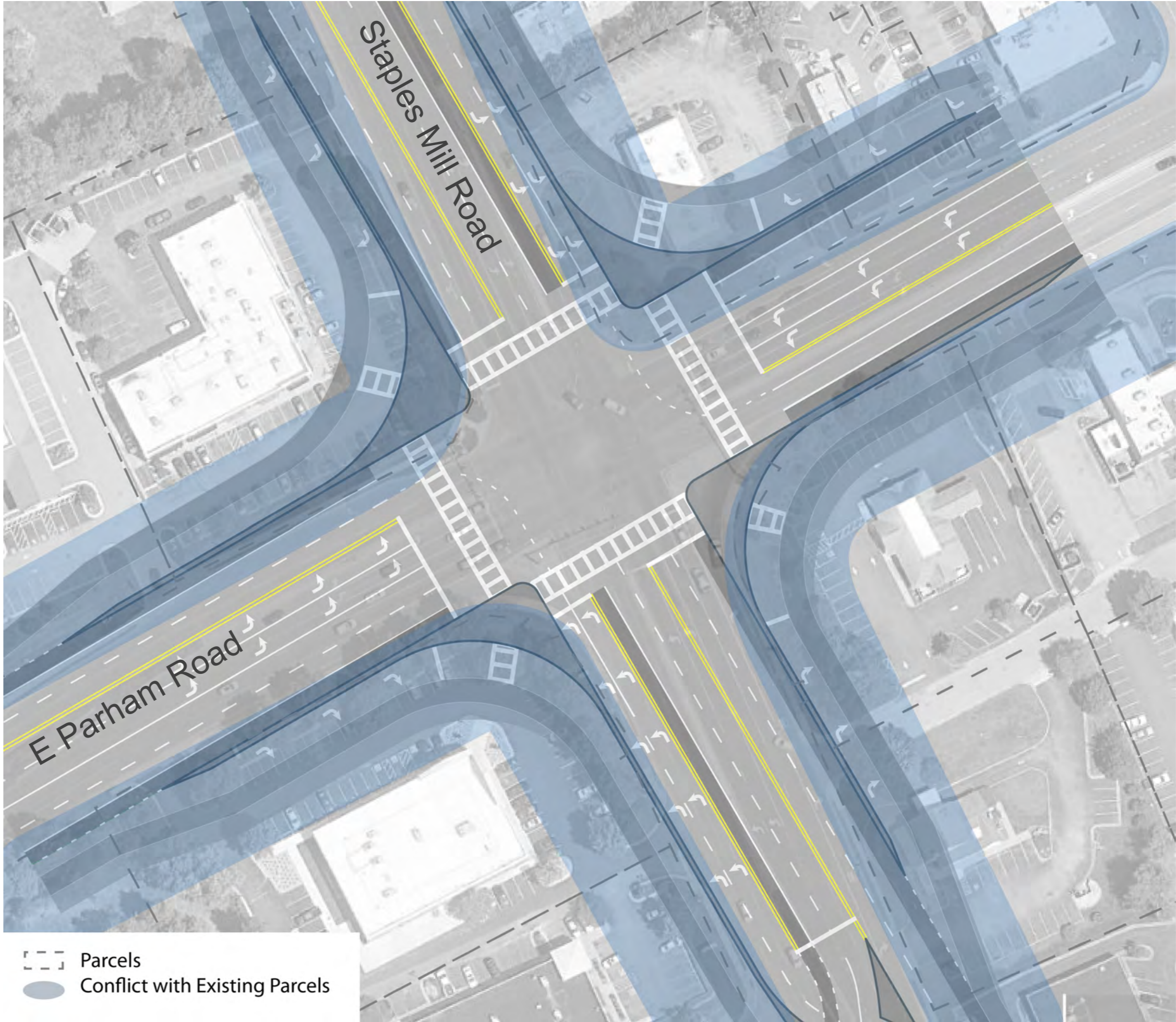
Constraints on Innovative Intersections

- Intersections of high-volume, high-speed roads
- Right-of-way, utilities, and buildings
- Upstream/downstream intersections



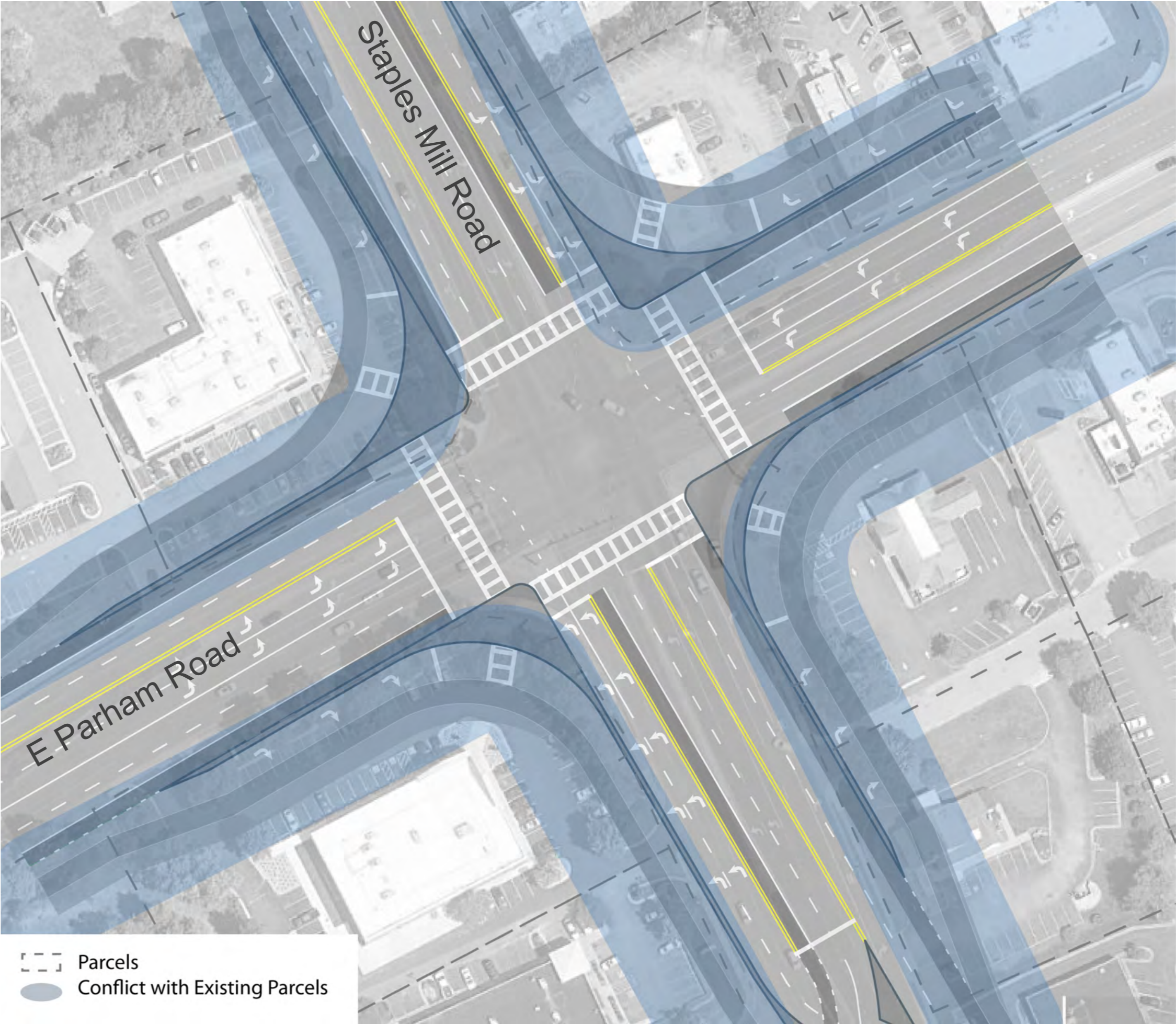
Constraints on Innovative Intersections

- Intersections of high order roads
- Right-of-way, utilities, and buildings
- Upstream/downstream intersections

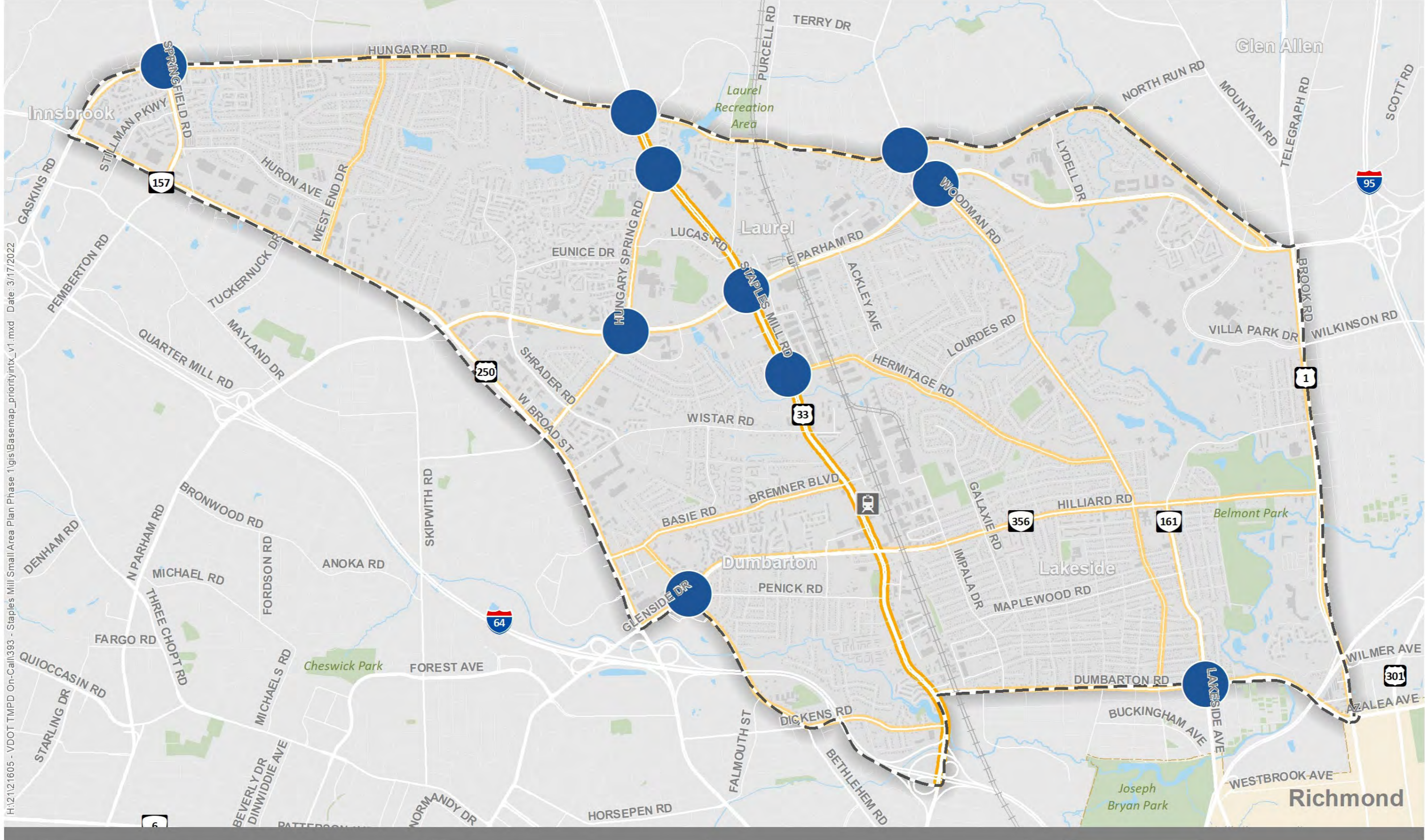


Constraints on Innovative Intersections

- **Next step:** Improve safety and operations through conventional intersection redesign



Intersections with Safety Concerns



Priority Intersections by Issue

● Safety Concerns



Pedestrian Safety Treatment Options

- Crosswalk Visibility Enhancements
- Pedestrian Refuge Island
- Signalized Intersection Treatments



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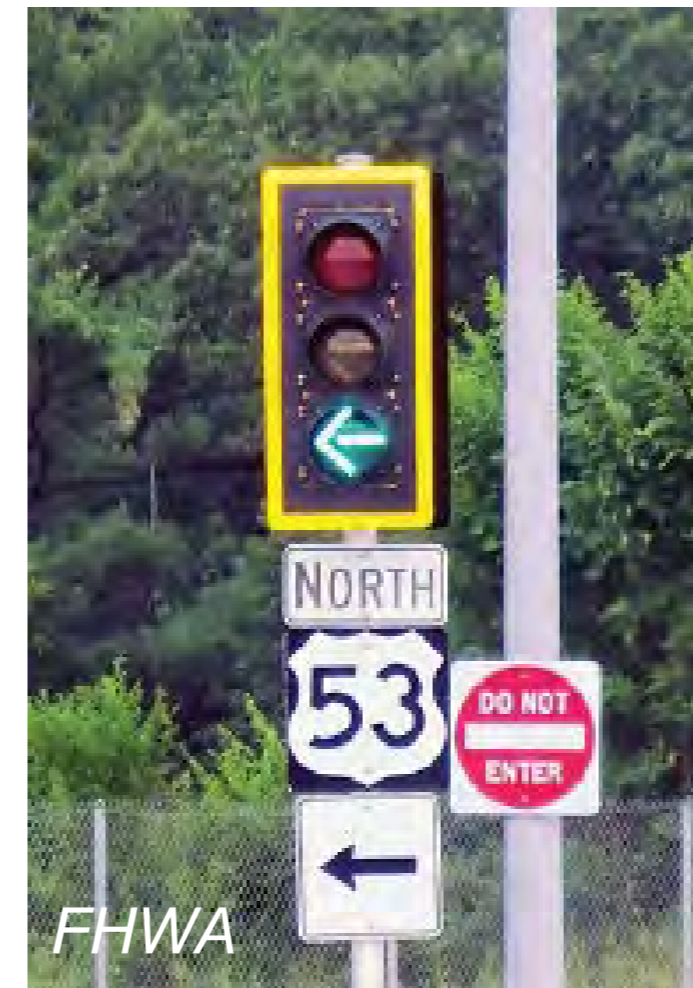
Bicycle Safety Treatment Options

- Bike Lane Extension Through Intersections
- Bike Boxes
- Two-Stage Left-Turn Boxes
- Protected intersection elements



Signalized Intersection Safety Treatment Options

- Improve signal hardware: lenses, and back-plates with retroreflective borders
- Provide Protected Left Turn Phase/Lane
- Install Raised Medians on Approaches
- Install or Upgrade Signing and Pavement Markings



FHWA



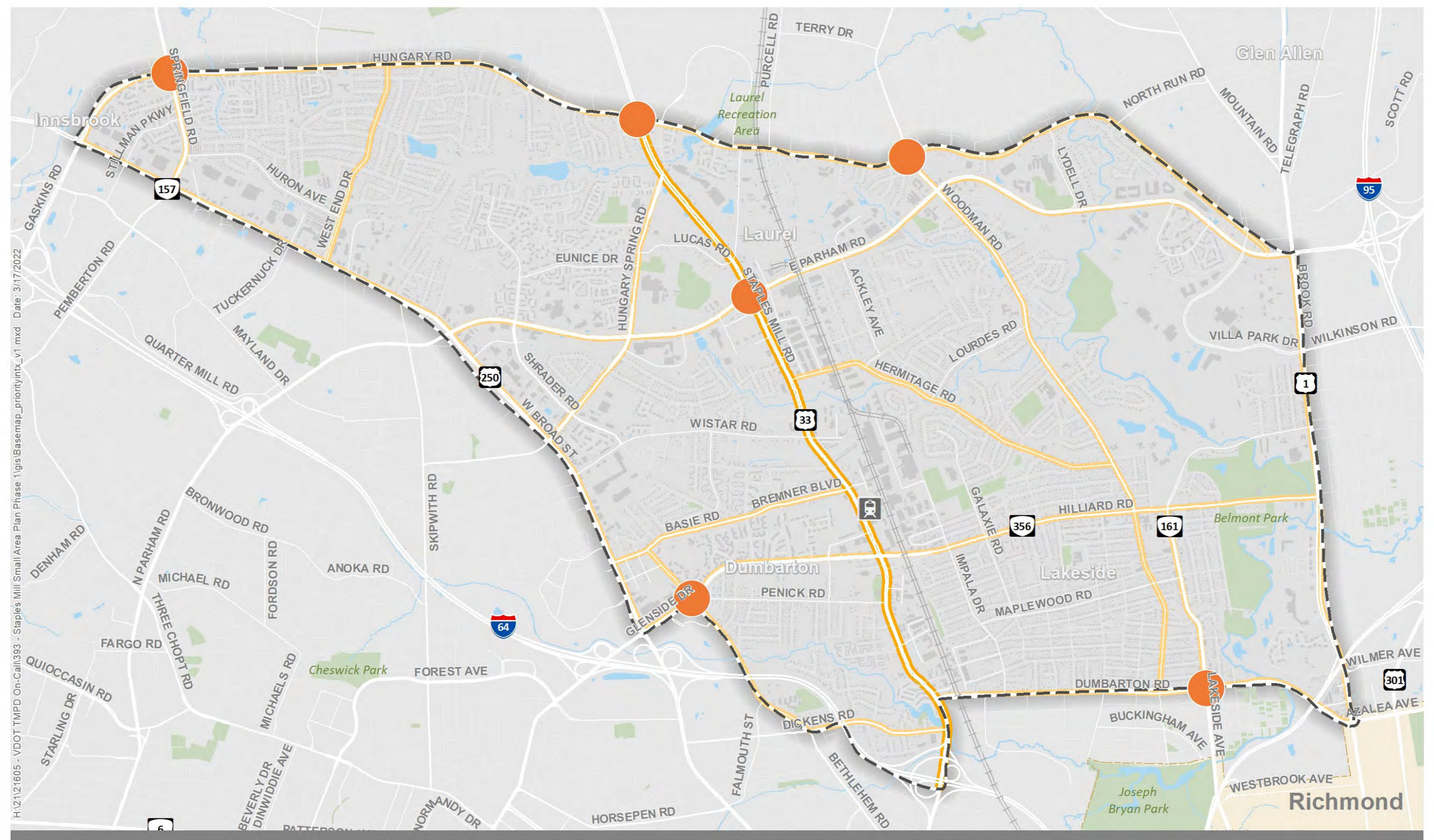
Google Earth

Google Earth



Google Earth

Intersections with Operational Concerns



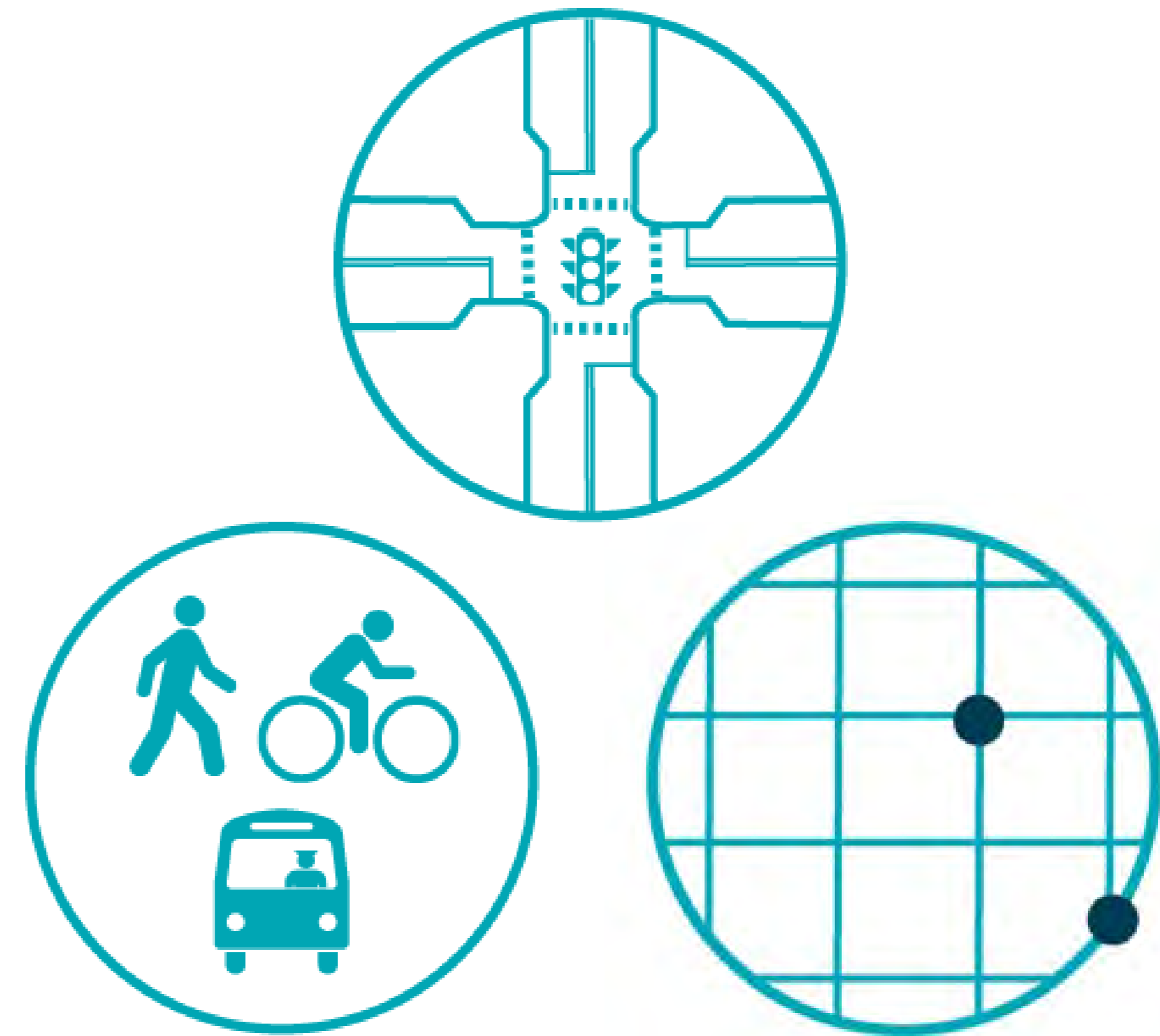
Priority Intersections by Issue

- Future Congestion (2040)



Redesign Options for Conventional Intersections

- Adjust signal timing
- Realign or add turn lanes
- Encourage mode shift through safety improvements and cross-section options
- Reduce strain on effective network

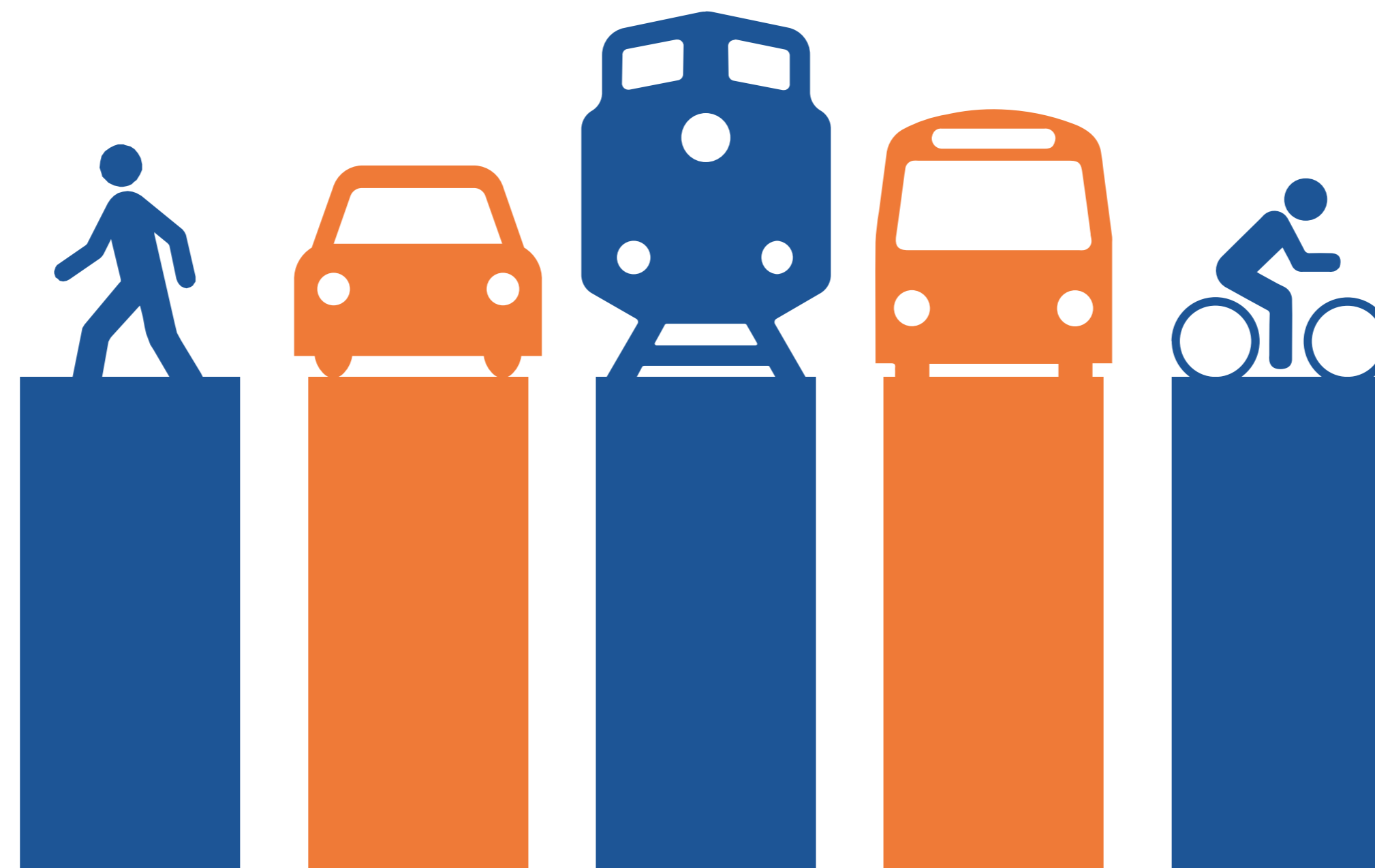


Evaluating Options




Study Vision


Staples Mill Road is a *Complete Street* that supports development and provides safe and comfortable travel for all uses and users of the roadway




Screening Criteria

Goals	Objectives	Screening Criteria
<p>Improve Safety and Comfort</p> 	Reduce/manage vehicular conflict points	<ul style="list-style-type: none"> • Number of curb cuts and driveways • Number of high visibility crosswalks • Number of context-sensitive speed management strategies • Miles of continuous bicycle and pedestrian facilities • Number of protected pedestrian crossing opportunities • Pedestrian crossing distance curb to curb
	Manage and encourage reduction in vehicular travel speeds	
	Provide continuous, consistent, separated bicycle and pedestrian facilities	
	Provide protected pedestrian crossing opportunities	


Screening Criteria

Goals	Objectives	Screening Criteria
<p>Manage Congestion</p> 	<p>Increase person throughput capacity</p>	<ul style="list-style-type: none"> • Potential to increase daily transit ridership • Travel times for representative trips • Physical improvements that promote consistent transit run times • Potential to increase bicycle and pedestrian activity on the corridor • Potential to impact intersection delay at intersections that will be congested in the future no-build condition • Physical improvements that support transportation demand management (TDM) strategies
	<p>Reduce travel time variability</p>	
	<p>Make efficient use of right-of-way for all users</p>	


Screening Criteria

Goals	Objectives	Screening Criteria
<p>Support Economic Development</p> 	<p>Provide access to jobs for users with a range of abilities</p>	<ul style="list-style-type: none"> • Number of households accessible by connected bike, pedestrian, and transit facilities • Jobs accessible by connected bike, pedestrian, and transit facilities • Transit stops accessible by connected bike and pedestrian facilities • Potential to increase landscaping • Potential to increase lighting • Potential to improve signage/wayfinding
	<p>Provide mode choice in access to employment opportunities</p>	
	<p>Support implementation of the TOD Concept Plan for Staples Mill Road Station</p>	
	<p>Accommodate a higher intensity of development</p>	

Screening Criteria

Goals	Objectives	Screening Criteria
<p>Foster Community and Environmental Health</p> 	<p>Encourage mode shift by providing bicycle and pedestrian facilities that connect to existing and future generators</p>	<ul style="list-style-type: none"> • Miles of separated bicycle facilities that connect to existing generators • Increase in ADA-accessible facilities • Zero-car and low-income neighborhoods accessible by interconnected bike, pedestrian, and transit facilities
	<p>Encourage mode shift by providing ADA accessible transit stops</p>	
	<p>Prioritize multimodal investments to and near mixed and low-income housing developments</p>	

Screening Criteria

Goals	Objectives	Screening Criteria
<p>Reflect Community Character</p> 	<p>Develop transportation alternatives based on community input</p>	<ul style="list-style-type: none"> • Number of survey responses that inform initial alternatives • Number of survey responses that support revised alternatives • Participation in public meetings • Diversity of community feedback (age, race, zip code, etc.)
	<p>Solicit community feedback on transportation alternatives</p>	

Evaluating Options

- **Staples Mill Road Cross-Sections**
 - Evaluate using objectives-based screening criteria
 - Examine network impacts of cross-sectional reallocation at all study intersections
- **Priority Intersections**
 - Evaluate using objectives-based screening criteria

Phase 2 Public Engagement



Public Meeting 2

- **Meeting purpose**
 - Share transportation options and gather community input
- **Meeting format**
 - Live online webinar with Q&A following presentation
 - Option for community members without access to a home computer to use smart phone app
- **Supplemental public engagement**
 - Online and paper survey
 - Recording of public meeting posted to web site after event
 - FAQ document

Public Meeting 2

- **Advertising/recruitment**
 - E-mail Survey #1 Participants (395 e-mail addresses)
 - E-mail community-based organizations (94 groups)
 - VDOT Social Media accounts
 - Mail to corridor neighborhoods and businesses
 - Link through stakeholder group social media accounts
 - Other stakeholder group contacts?

Phase 2 Schedule

- ▼ Stakeholder Group Meeting
- ▼ Public Meeting
- ▼ Community Stakeholder Meetings



Next Steps

- Survey No. 2 in June
- Public Meeting No. 2 in June
- Phase 2 Public Engagement document
- Next Stakeholder Group meeting in June/July
 - Alternatives analysis and refinement
 - Sketch concepts at specific locations
 - Opinion of probable cost
 - Draft recommendations

Thank you!

For more information

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