



STAPLES MILL ROAD SMALL AREA PLAN

Staples Mill Road Small Area Plan Alternatives Public Meeting

June 30, 2022

Today's Agenda

1. Study goals and objectives
2. Existing conditions overview
3. Public outreach summary
4. Preliminary alternatives
5. Next steps
6. Questions and discussion



Today's Speakers



Nicole Mueller

Planning Specialist



Rob Vilak

District Traffic Engineer



Meredyth Sanders

Project Manager



Caitlin Mildner,
AICP

Planner



Kaitlyn Schaffer

Moderator

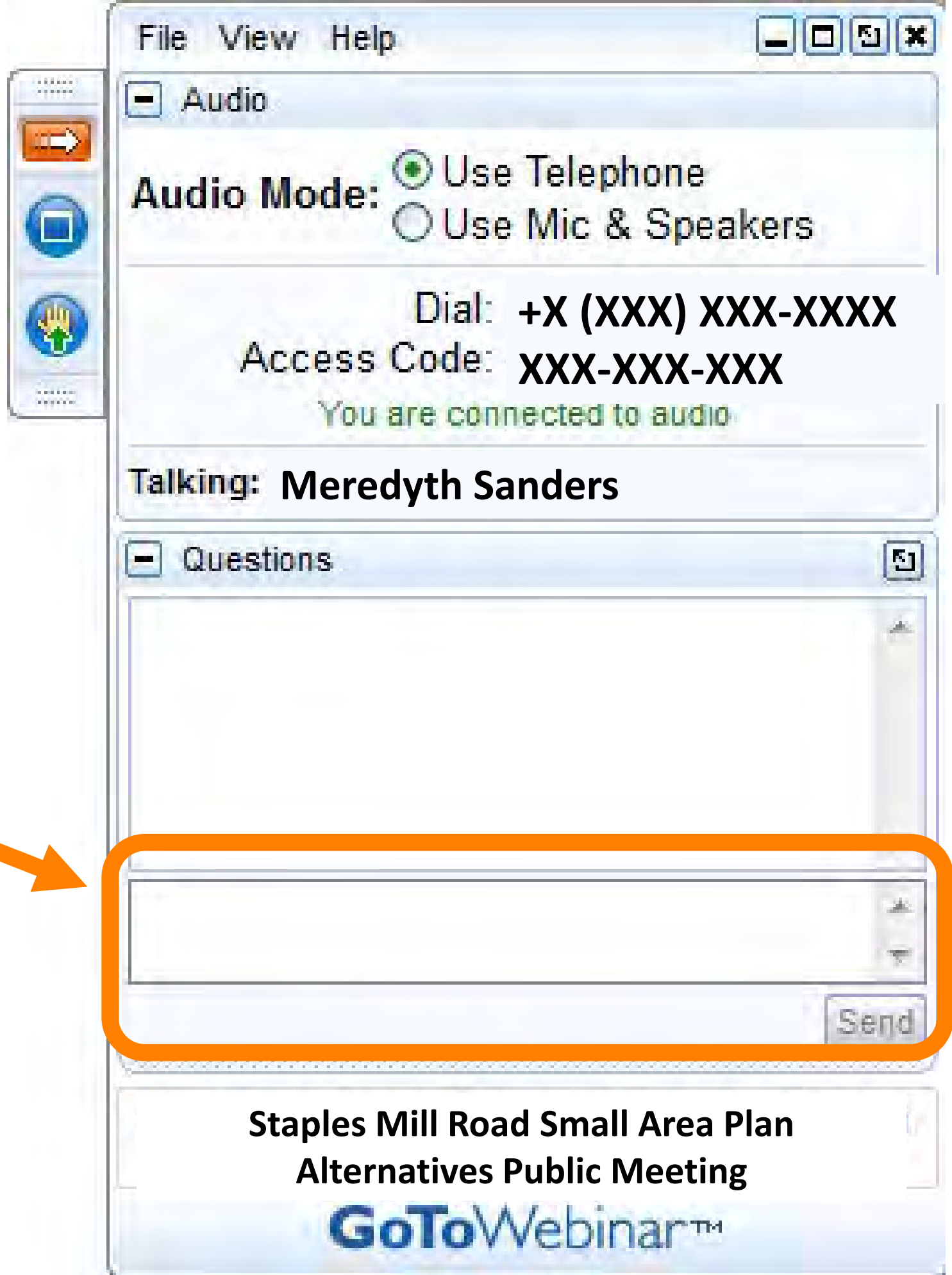
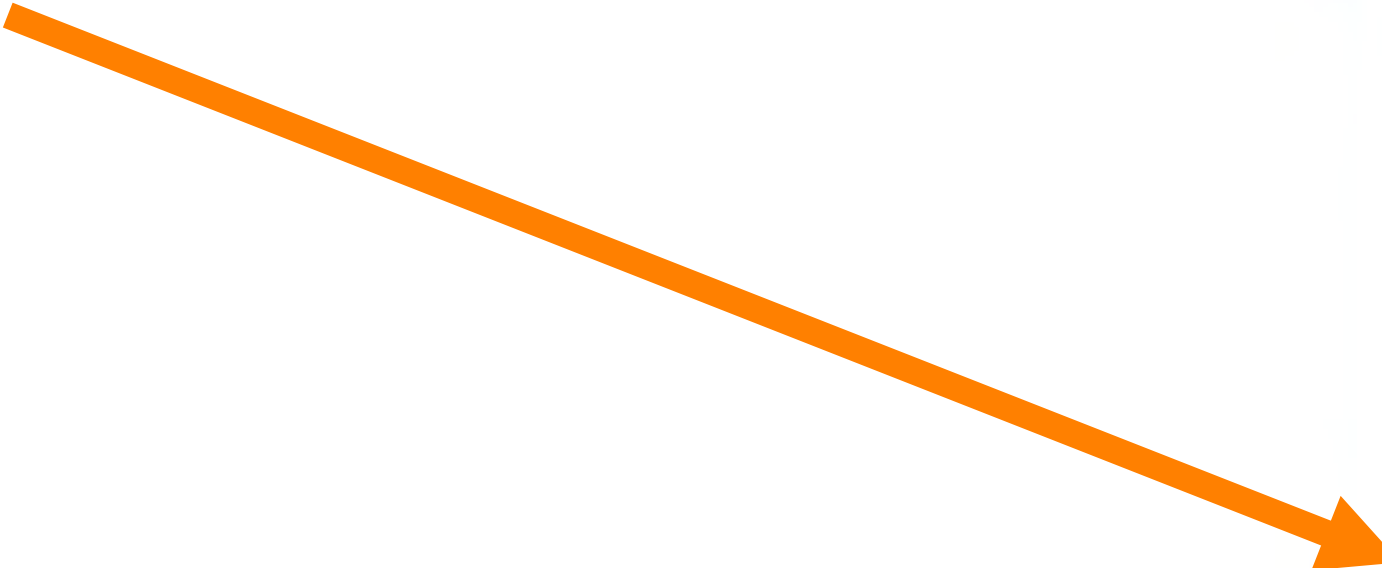
Agency Stakeholders

- Henrico County
- City of Richmond
- Richmond Regional Transportation Planning Organization (RRTPO)
- Greater Richmond Transit Company (GRTC)
- Virginia Department of Rail and Public Transportation (DRPT)
- Federal Highway Administration



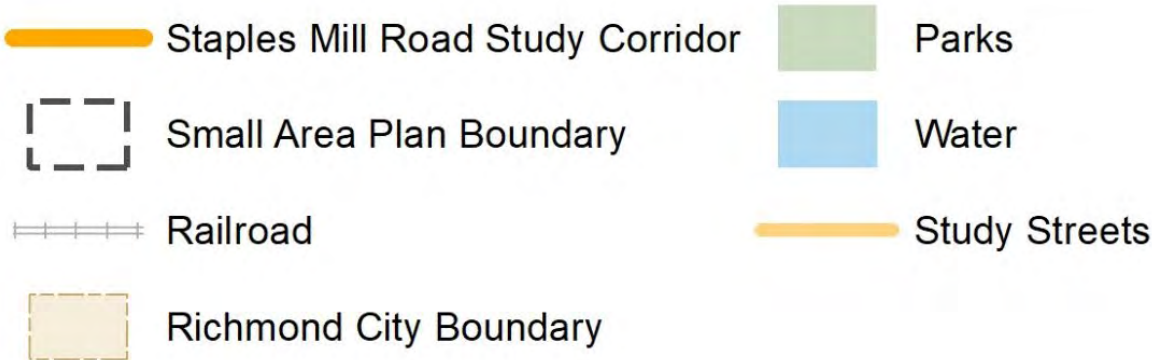
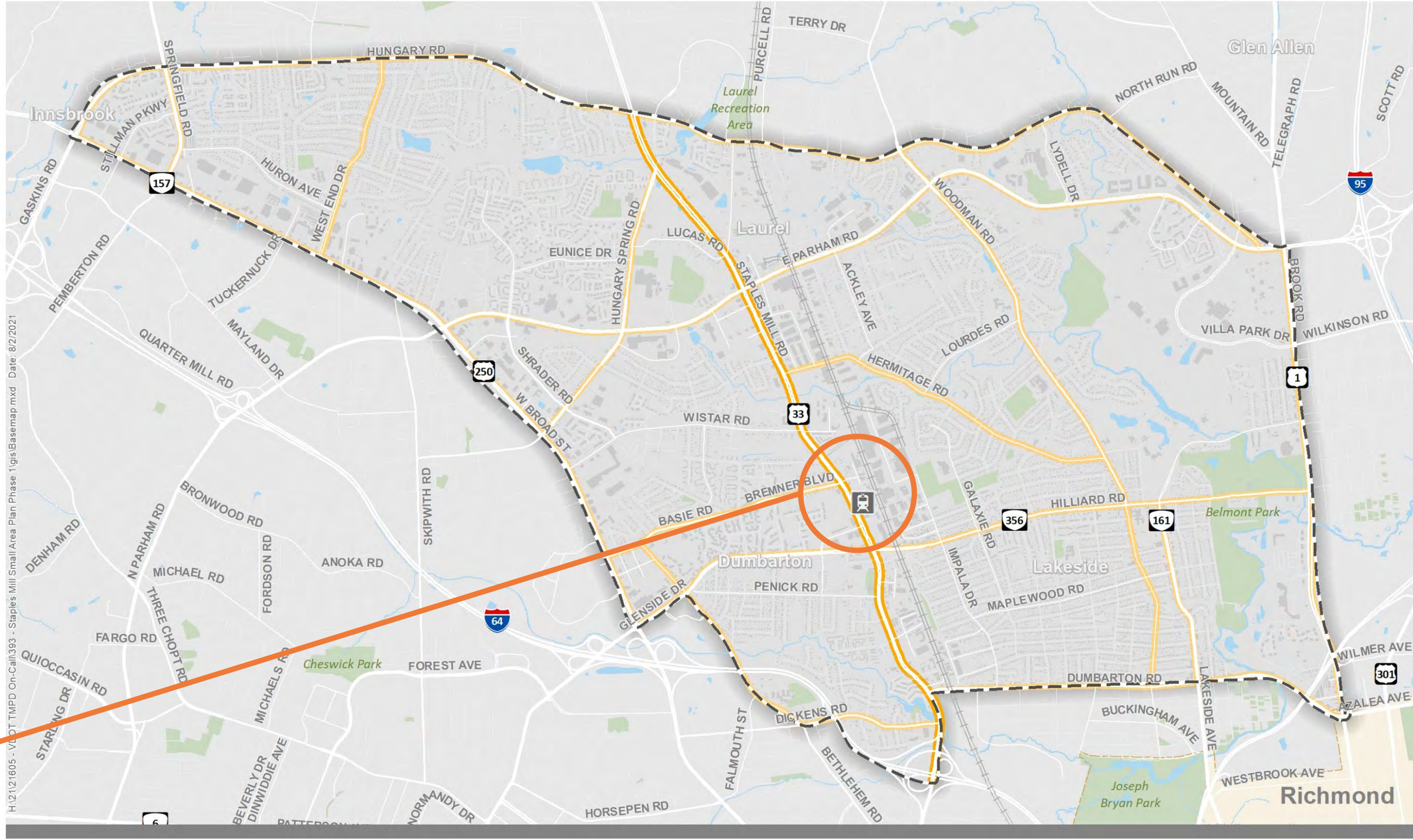
Navigating GoToWebinar

Send questions about the presentation and project through “Questions” Box



Study Area

- 3.7 mi of Staples Mill Road
- 12 sq. mi 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**



Study Purpose

- Evaluate existing automobile, transit, bicycle, and pedestrian conditions
- Assess future travel projections and development patterns
- Generate alternatives
- Evaluate alternatives against goals and through community input
- Recommend a system of investments

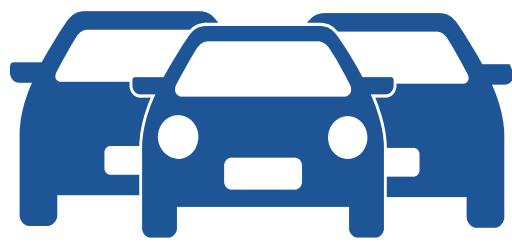
Study Vision and Goals

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



Improve Safety and Comfort



Manage Congestion



Support Economic Development



Foster Community and Environmental Health



Reflect Community Character

Study Schedule

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

1 – Online Public Outreach



2 – Existing and Future No-Build Conditions Analysis



3 – Vision, Goals, Objectives, and Evaluation Criteria



4 – Conceptual Multimodal Improvements and Alternatives Analysis



5 – Revise Alternatives



6 – Small Area Plan Report



2021

Aug

Sep

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

Jun

July

Aug

2022

INTRODUCTION

EXISTING CONDITIONS & OUTREACH

PRELIMINARY OPTIONS

NEXT STEPS

Overview of Existing Conditions & Outreach



Existing Conditions Overview



- Compared to the Greater Richmond Region, **fewer** people walk and/or bike to work in Henrico County
- Just **2** of 34 study intersections have marked crosswalks



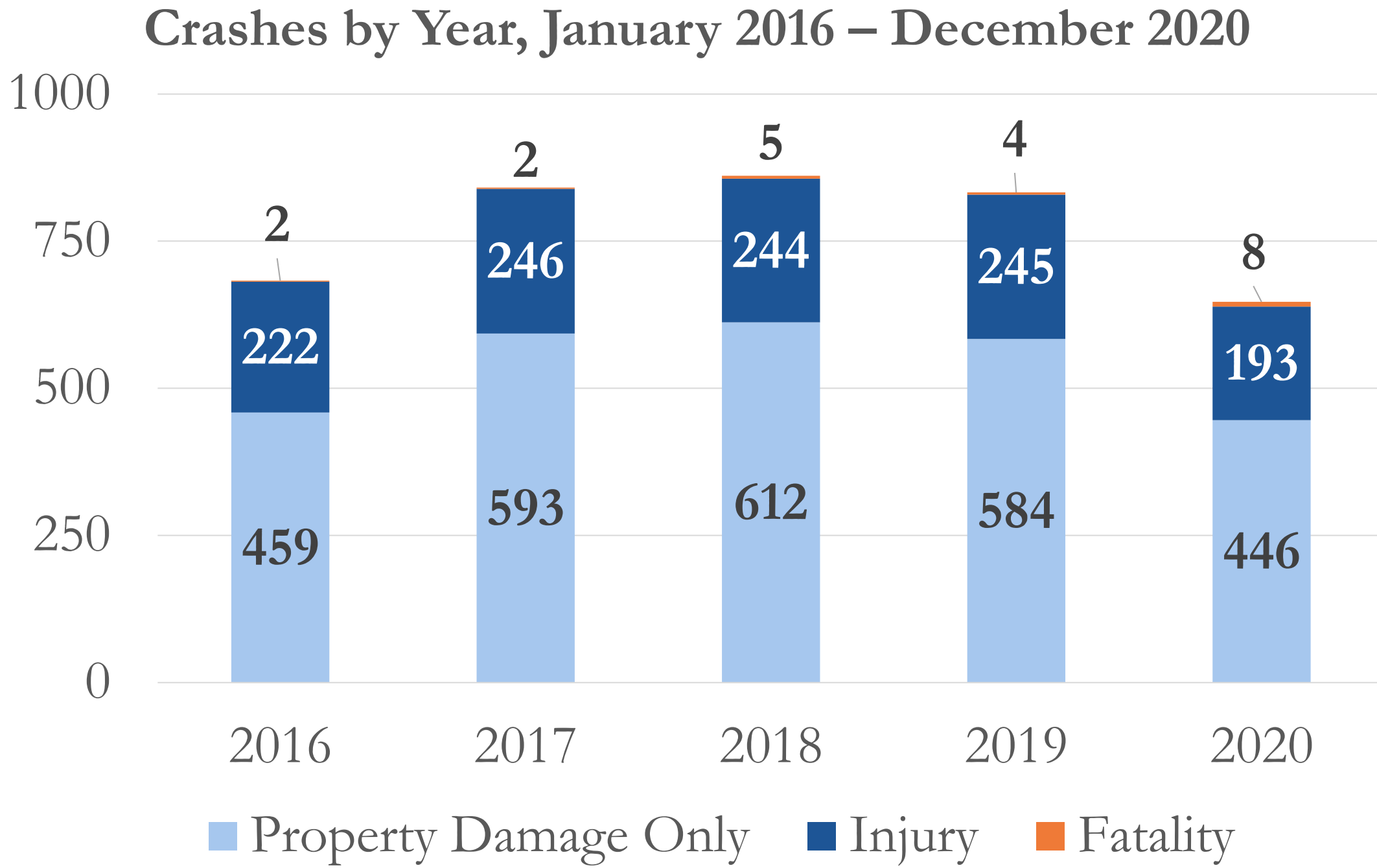
- There are **9** transit routes in the study area
- Long transit commutes (**37** minutes on average)



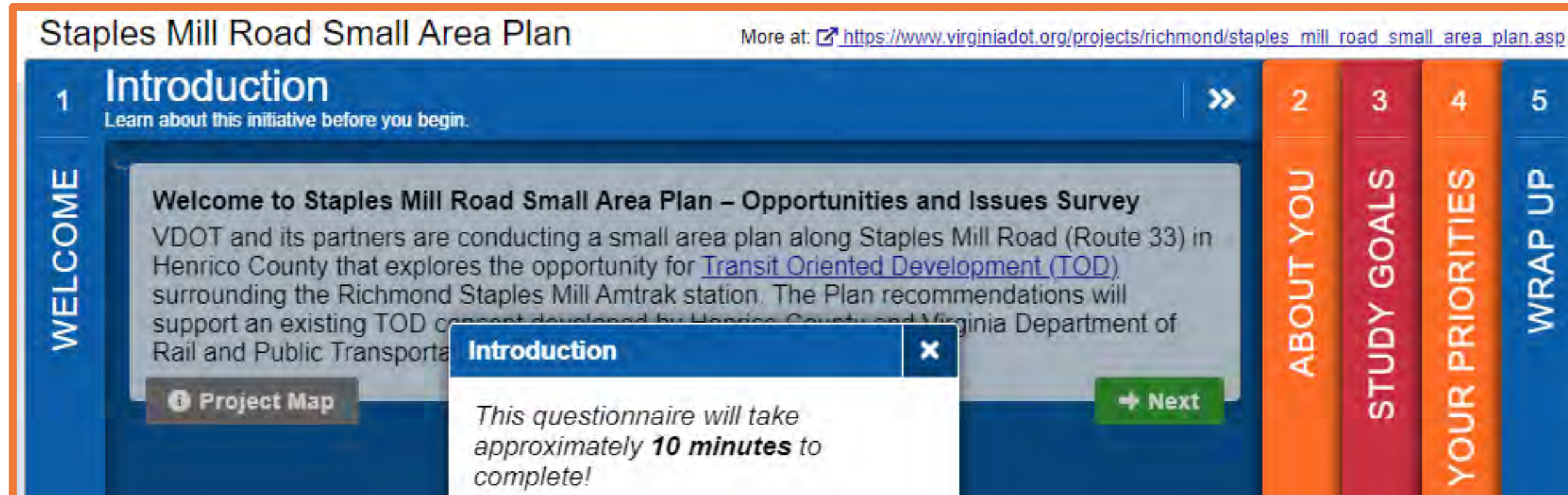
- Intersections experience moderate to high delay during weekday rush hours in future no-build conditions. Primarily located on:
 - West Broad Street, Staples Mill Road, Gaskins/Hungary Road, Dumbarton Road, Parham Road, and Glenside Drive/Hilliard Road

Existing Conditions: Safety

- 88%** of crashes occur at intersections
- 64** total reported pedestrian crashes
- 100%** of pedestrian crashes resulted in injuries/fatalities
- 30%** reported crashes were injuries or fatalities



Previous Community Engagement



1,200+
Survey Responses



1
Virtual Public Meeting

3
Stakeholder Group Meetings

Previous Community Engagement

- **Top 3** transportation problems and opportunities for investment in the study area are associated with **accessibility**
 - Complete sidewalk network
 - Complete bicycle network
 - More crosswalks
- **Half** of respondents said that they would like **enhanced connectivity to Amtrak**



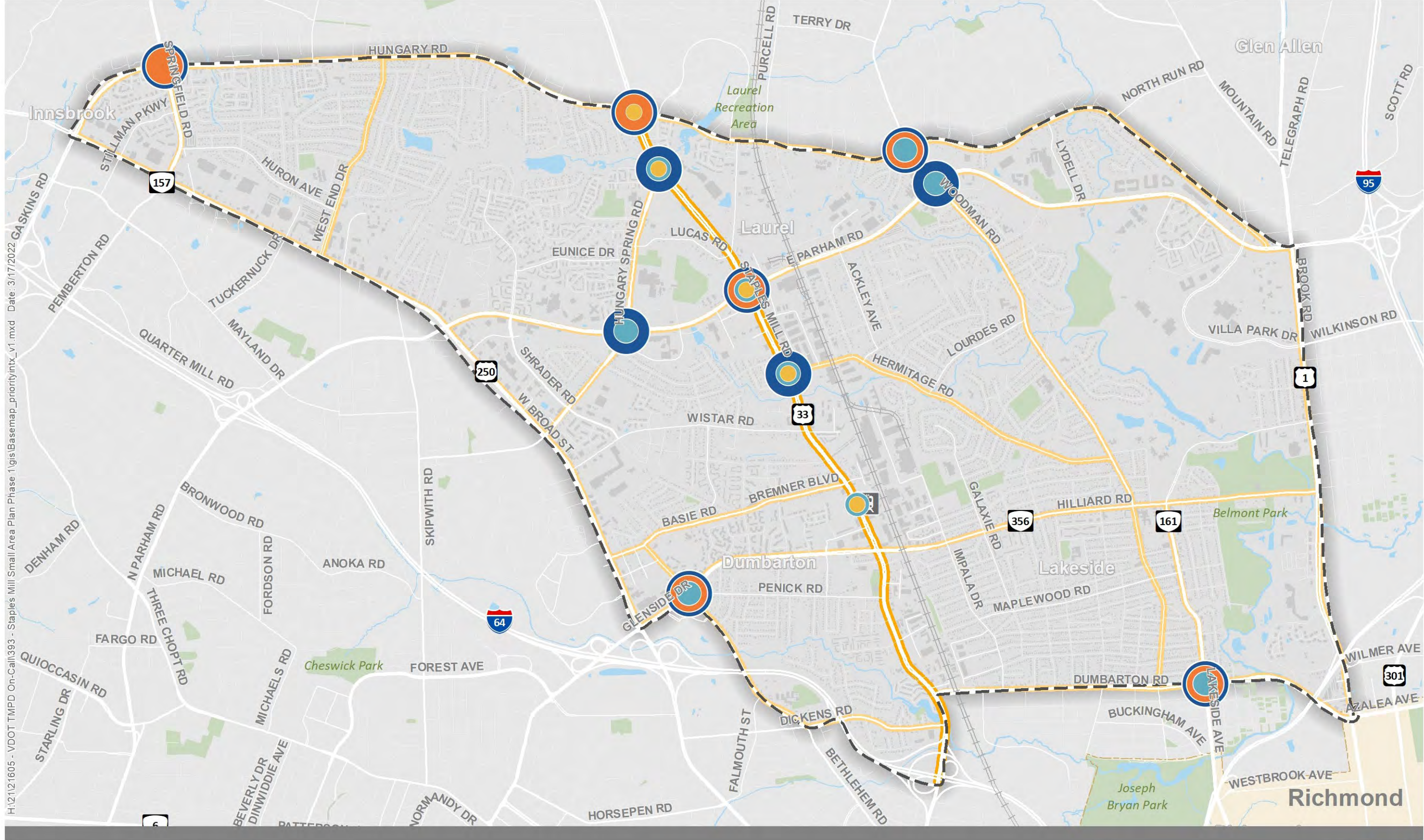
Preliminary Options



Priority Intersections

11 intersections were selected based on:

- Future Congestion
- Safety Concerns
- TOD Proximity
- Community interest



Priority Intersections by Issue

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

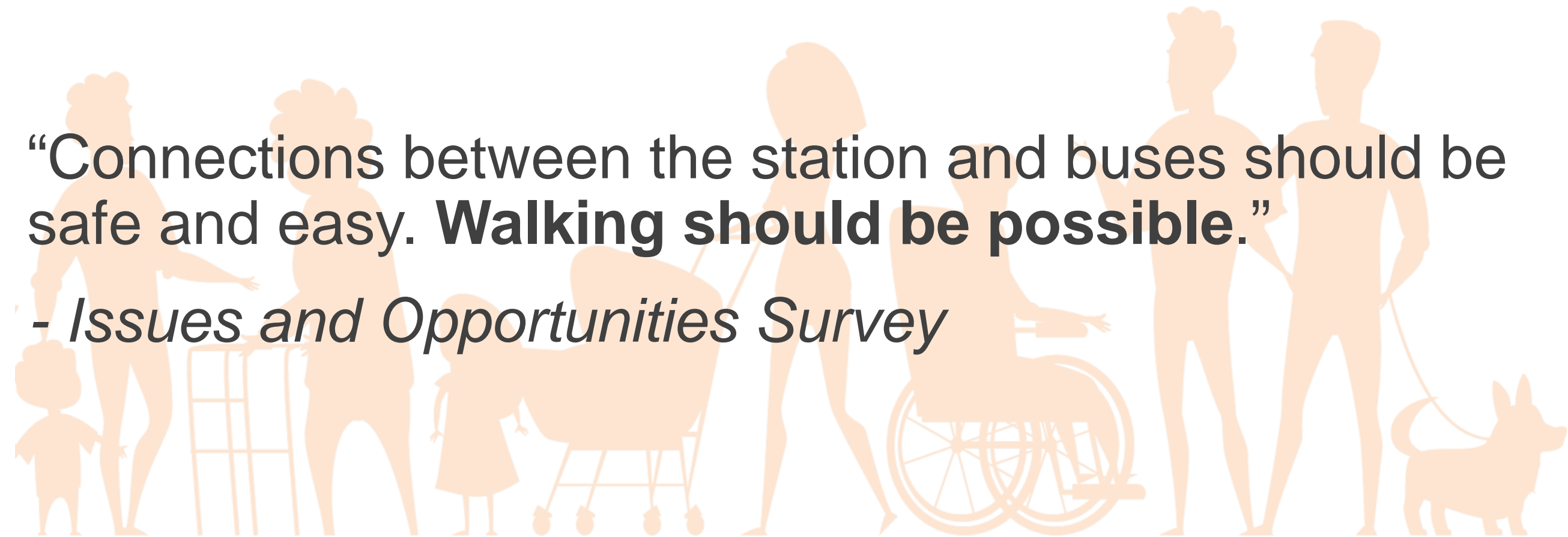


Intersection Issues and Opportunities

“**Streetlighting** is needed badly along this corridor. The bright lights from commercial properties distract and make it **hard to see pedestrians** along the roadway.”
– *Issues and Opportunities Survey*

“There is **a lot of foot traffic** on this road and there is not crosswalks or crosswalk signals at the intersections. Some of the sidewalks along Staples Mill need to connect to one another.”
- *Issues and Opportunities Survey*

“Connections between the station and buses should be safe and easy. **Walking should be possible.**”
- *Issues and Opportunities Survey*



Pedestrian Safety Treatment Options

- Upgrade curb ramps and sidewalks
- Add crosswalks
- Provide pedestrian refuge islands
- Modify signal timing
 - Pedestrian signal heads
 - No right-turn on red
 - Head start with leading pedestrian interval



Kittelson & Associates, Inc.



Kittelson & Associates, Inc.



NACTO

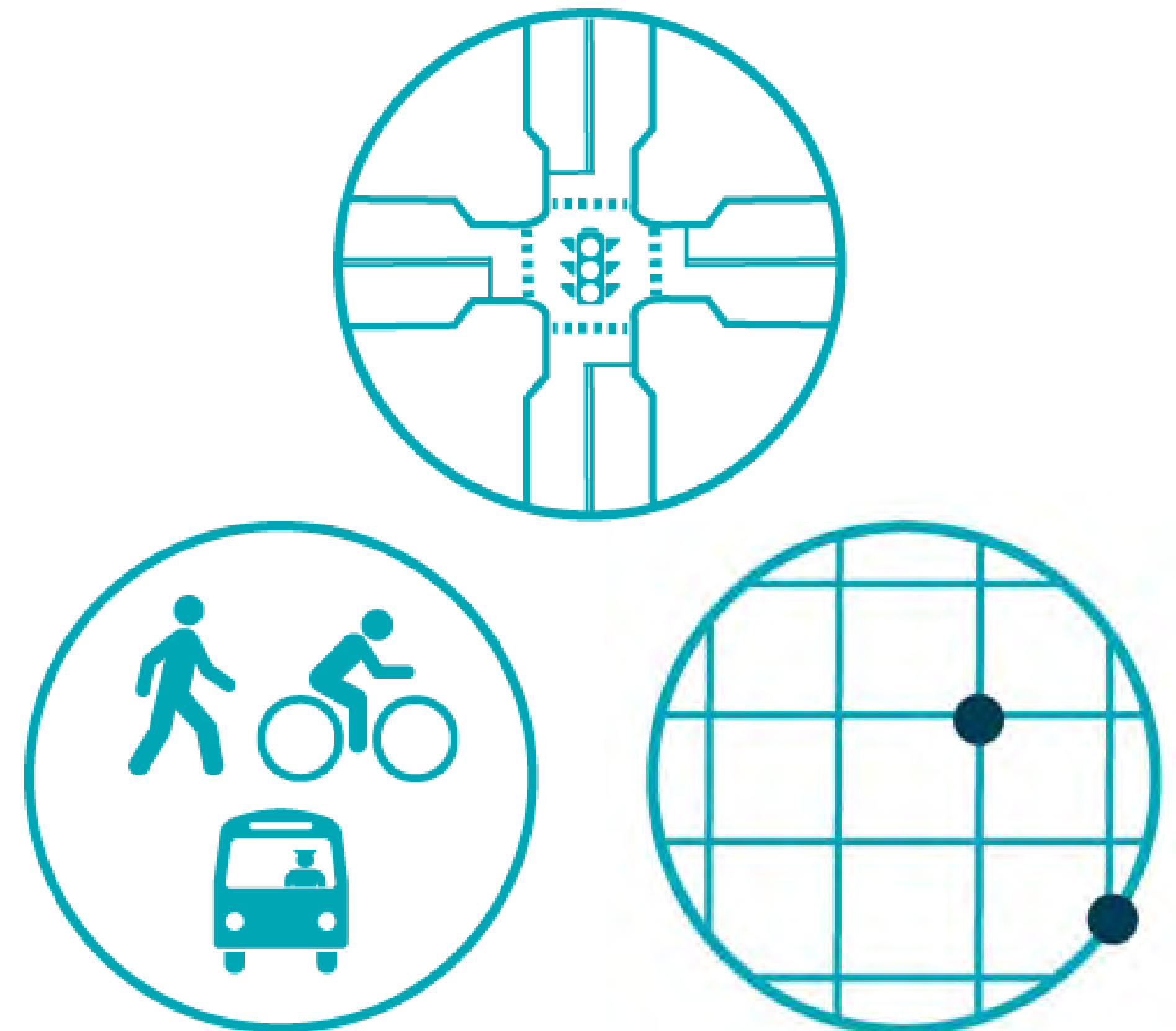
Signalized Intersection Safety Treatment Options

- Add intersection lighting
- Improve signal hardware
- Install raised medians on approaches
- Add traffic signal mast arm
- Modify signal timing
 - Provide protected left-turns

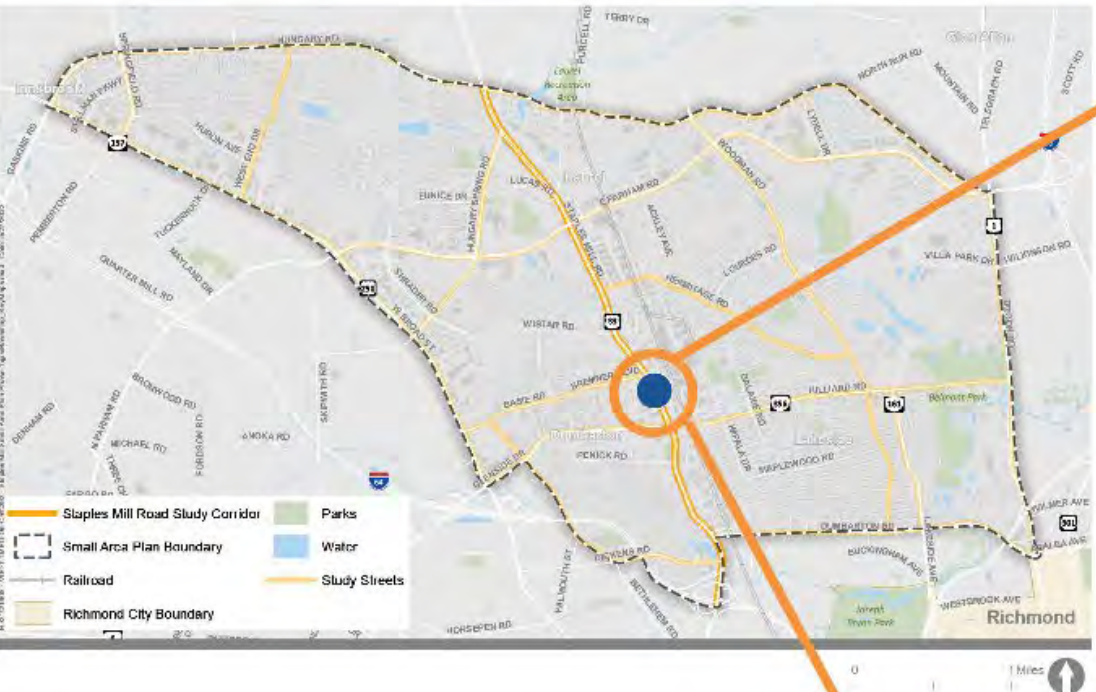


Signalized Intersection Operations Options

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



Staples Mill Road and Amtrak Station: Existing



Performance Measures

●●●● Better

●●●○

●●○○

●○○○ Worse

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●○○</p> <p>No pedestrian crossings.</p>	<p>●●○○</p> <p>Motorists generally don't experience delays. Pedestrians experience delay all day.</p>	<p>●○○○</p> <p>Intersection has many missing facilities for people walking and biking.</p>	<p>●●○○</p> <p>Multimodal facilities are disconnected from employment and transit.</p>	<p>●●●●</p> <p>No right-of-way impacts or drainage impacts.</p>

Staples Mill Road and Amtrak Station: Concept



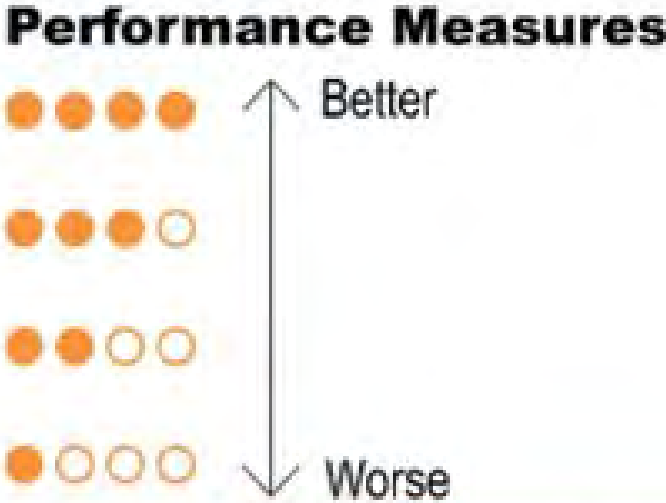
N
Not To Scale



- Intersection Elements**
- IMPLEMENT LEADING PEDESTRIAN INTERVAL
 - ADD INTERSECTION LIGHTING
 - ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD NO RIGHT-TURN ON RED
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

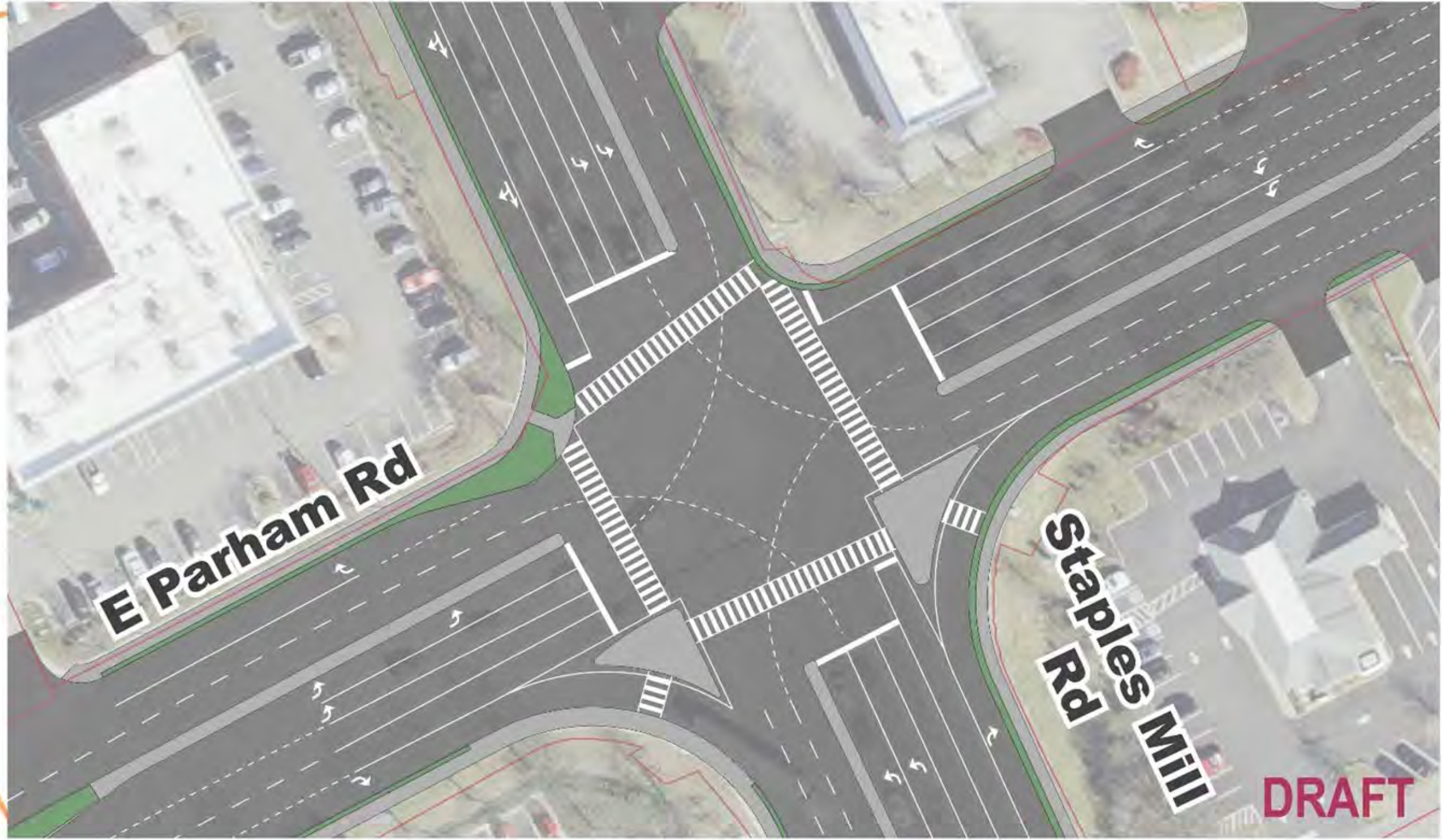
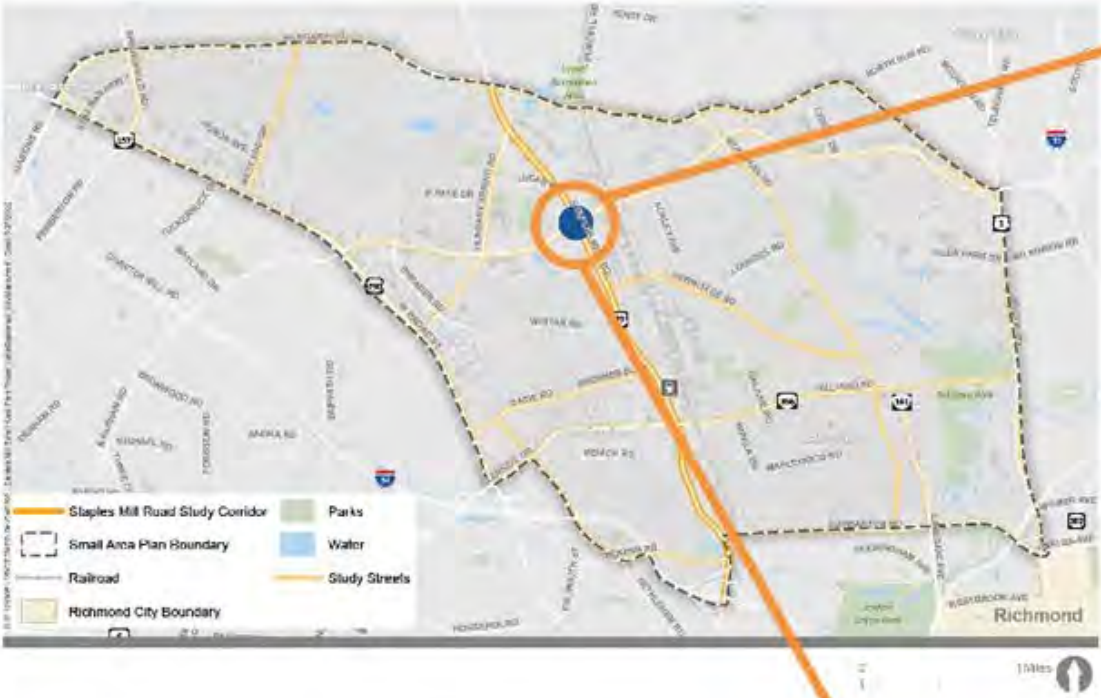
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p>●●●○</p> <p>Maintains travel time for cars and buses, and reduces pedestrian delay with signal timing.</p>	<p>●●●●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p>●●●●</p> <p>Provide multimodal facilities connected to employment and transit.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

Staples Mill Road and East Parham Road: Existing



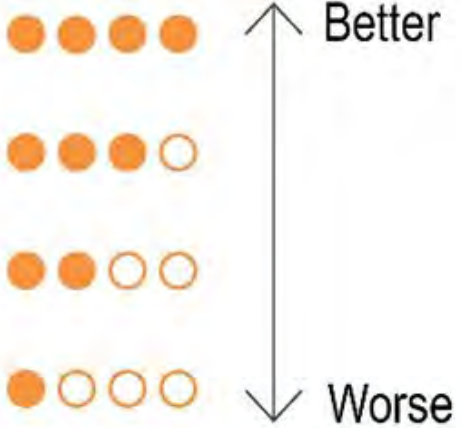
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
●○○○	●○○○	●●○○	●●○○	●●●●
High crash intersection with no pedestrian crossings.	Motorists experience delays during rush hour. Pedestrians experience delay all day.	Intersection has missing facilities for people walking and biking.	Multimodal facilities are disconnected from employment and transit.	No right-of-way impacts or drainage impacts.

Staples Mill Road and East Parham Road: Concept



N
Not To Scale

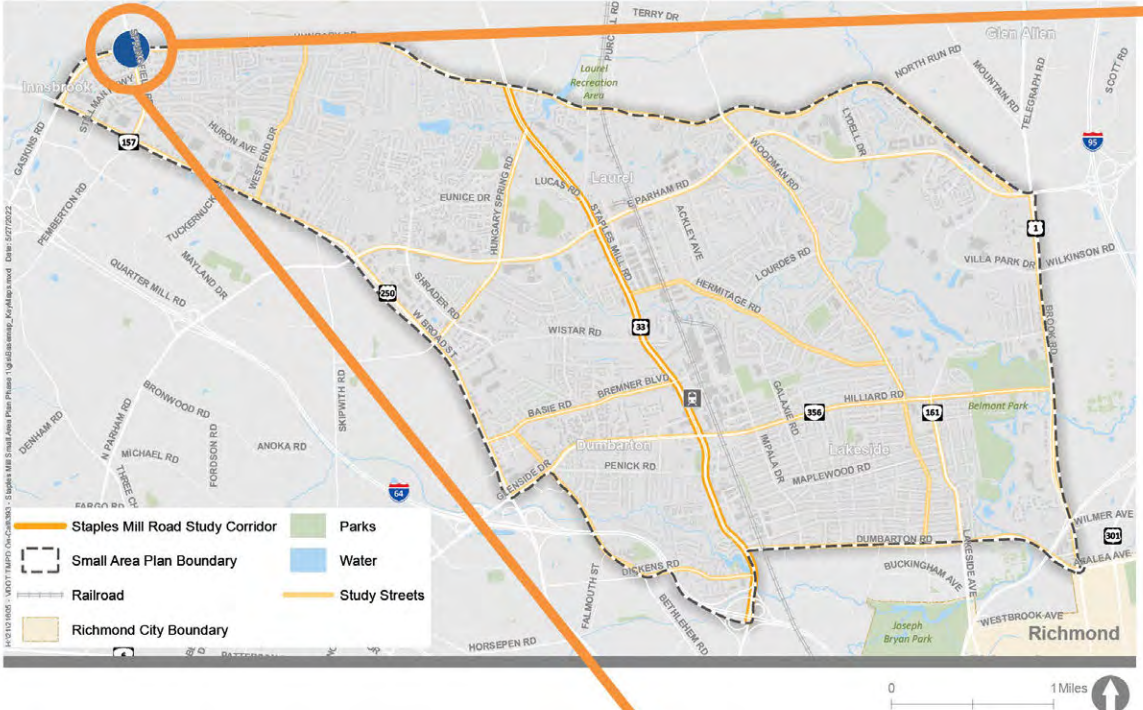
Performance Measures



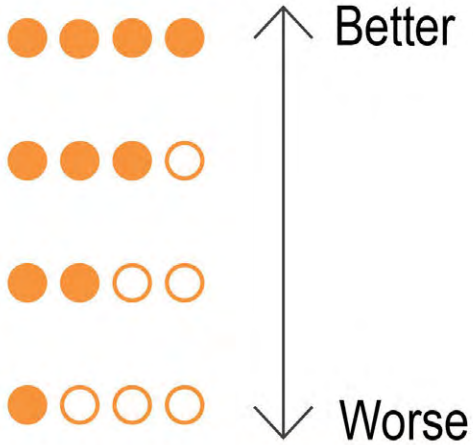
- Intersection Elements**
- ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD NO RIGHT-TURN ON RED
 - ADD INTERSECTION LIGHTING
 - IMPLEMENT LEADING PEDESTRIAN INTERVAL
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ● ● ●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Maintains travel time for cars and buses, and reduces pedestrian delay with signal timing.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Provides multimodal facilities connected to employment and transit.</p>	<p style="text-align: center;">● ● ● ○</p> <p>No right-of-way impacts and minor drainage impacts.</p>

Springfield Road and Gaskins Road/Hungary Road: Existing

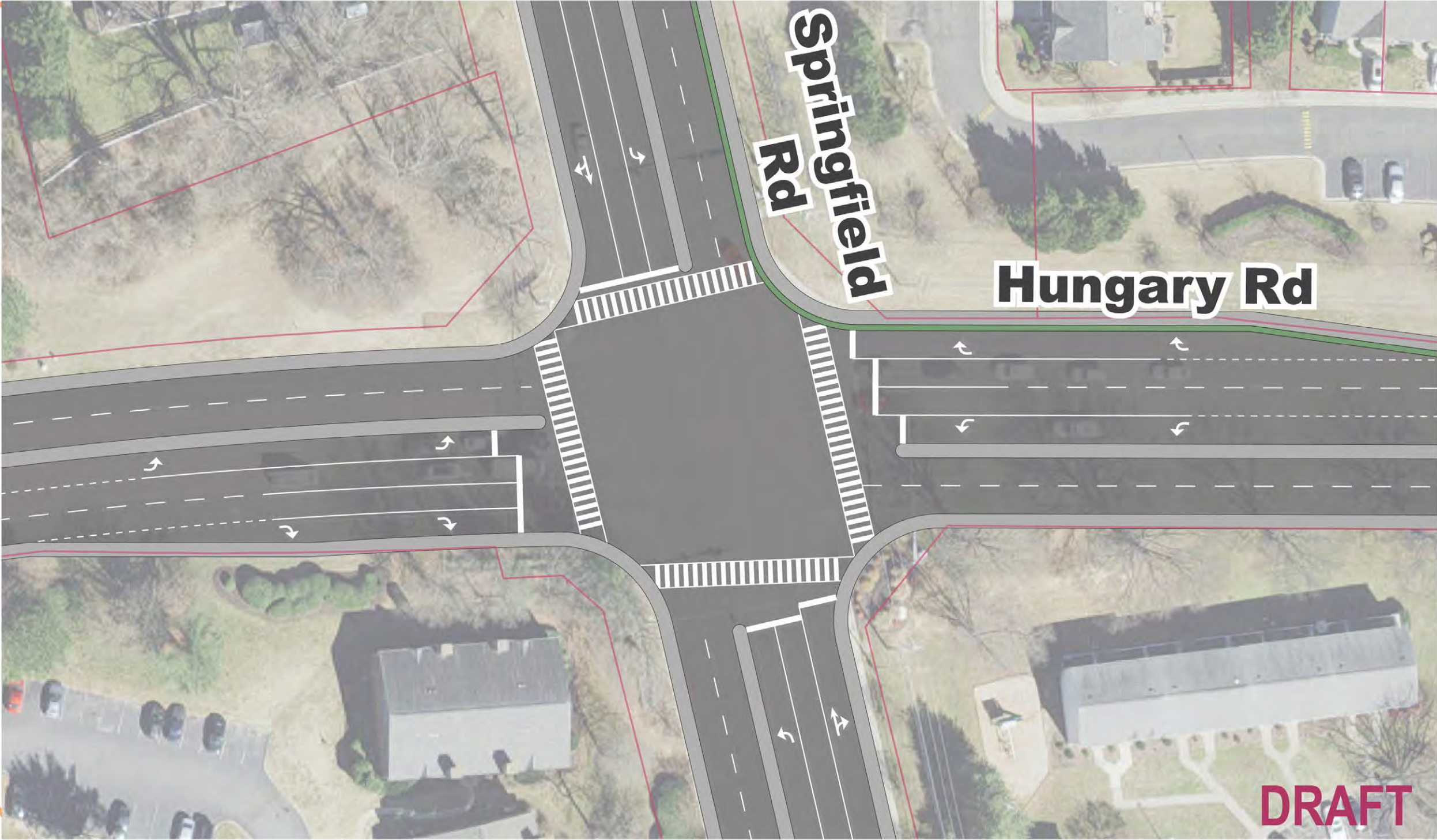
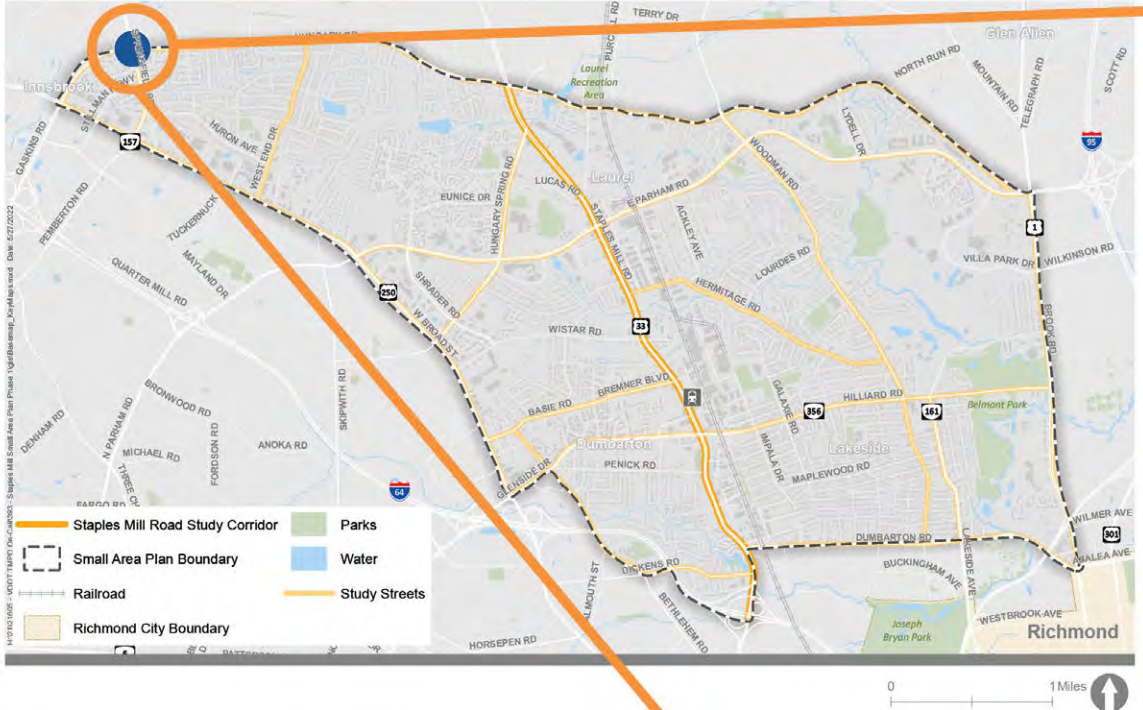


Performance Measures



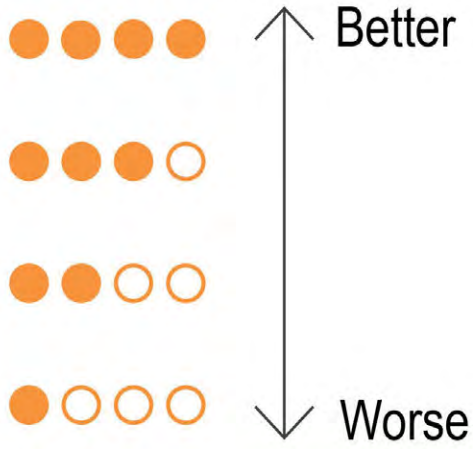
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>● ○ ○ ○</p> <p>High crash intersection with no pedestrian crossings.</p>	<p>● ○ ○ ○</p> <p>Motorists experience delays during rush hour. Pedestrians experience delay all day.</p>	<p>● ○ ○ ○</p> <p>Intersection has many missing facilities for people walking and biking.</p>	<p>● ● ○ ○</p> <p>Multimodal facilities are disconnected from employment.</p>	<p>● ● ● ●</p> <p>No right-of-way impacts or drainage impacts.</p>

Springfield Road and Gaskins Road/Hungary Road: Concept



N
Not To Scale

Performance Measures



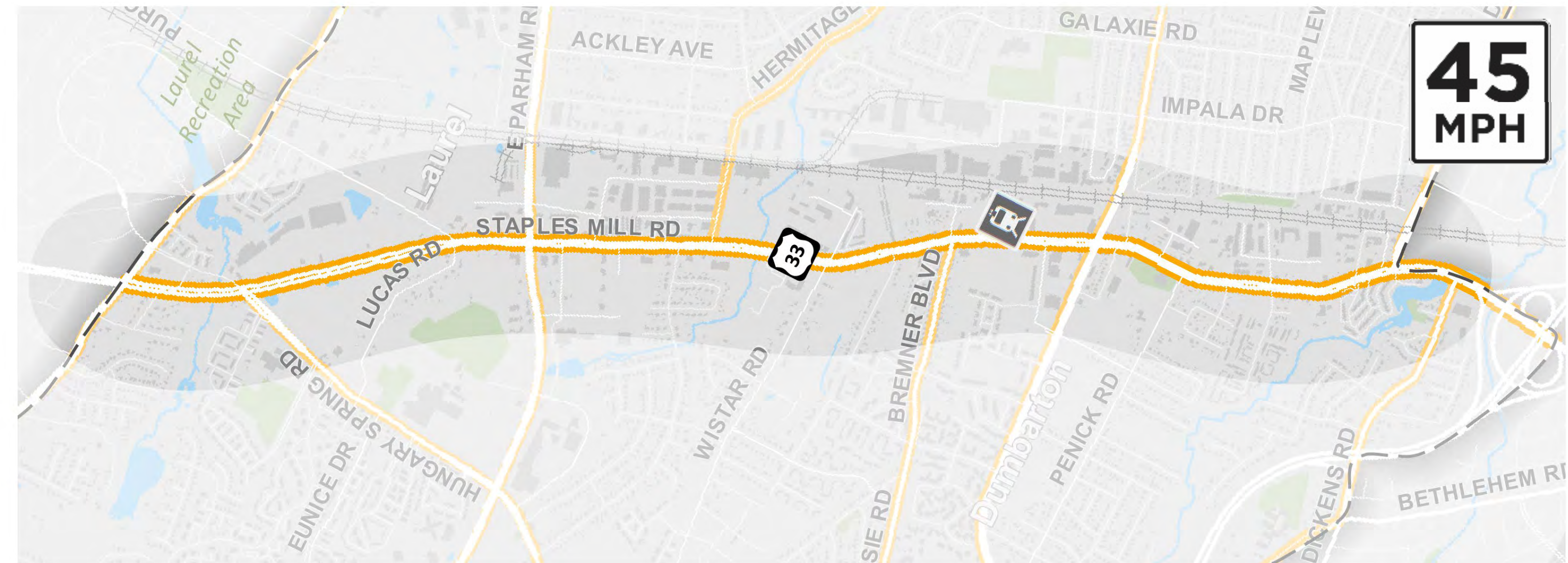
- Intersection Elements**
- IMPLEMENT LEADING PEDESTRIAN INTERVAL
 - ADD INTERSECTION LIGHTING
 - ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD NO RIGHT-TURN ON RED
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ● ● ●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Maintains travel time for cars and reduces pedestrian delay with signal timing.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Provides multimodal facilities connected to employment.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Minor right-of-way and drainage impacts.</p>

Staples Mill Road Corridor

Corridor alternatives were developed based on:

- Land use context
 - Existing land use and zoning
- Transportation context
 - Functional class
 - Speed limit
 - Daily traffic volumes
 - Existing and recommended walking and biking facilities
- Available space
 - Right-of-way
 - Utilities and drainage



Corridor Issues and Opportunities

“It is extremely unsafe to walk to Broad Street or Staples Mill where some of the buses are. Should be sidewalks along these roads or some type of **multi-use trail to get around.**”

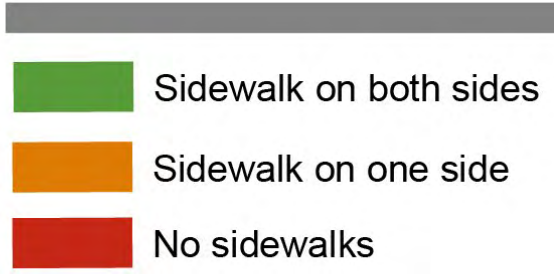
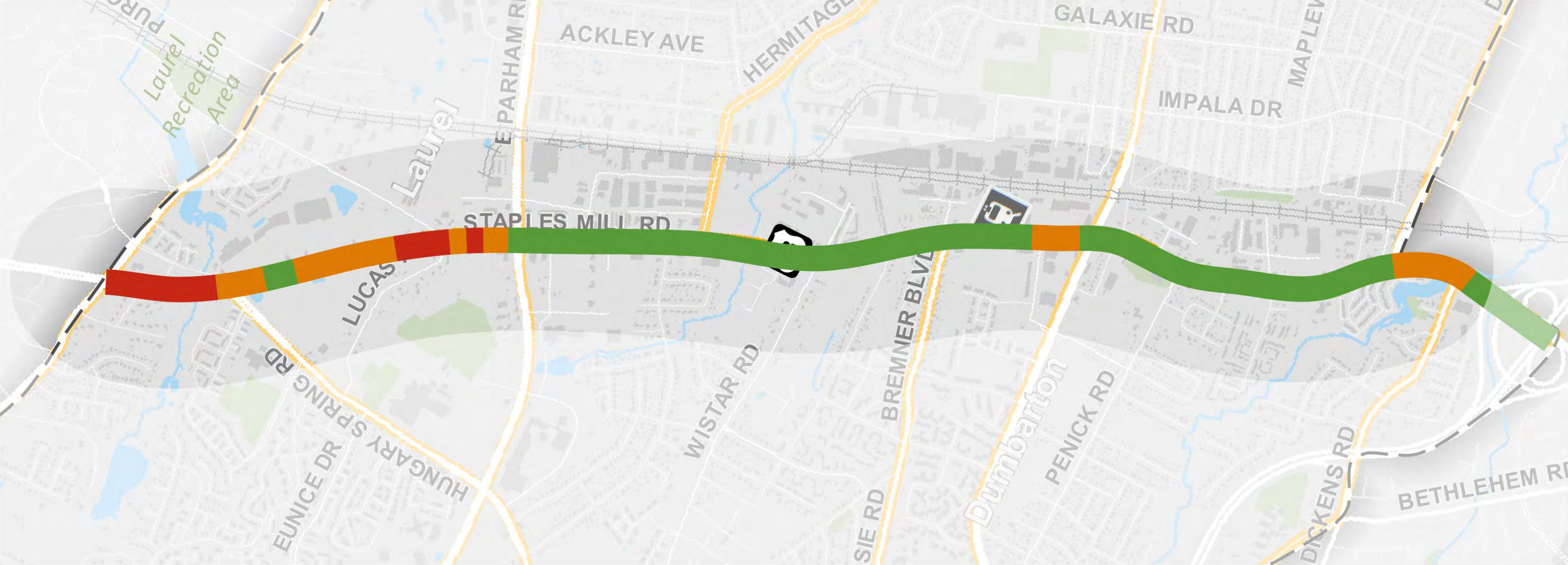
– *Issues and Opportunities Survey*

“Current community character lacks actual community. This area is built for cars, not people.”

– *Issues and Opportunities Survey*

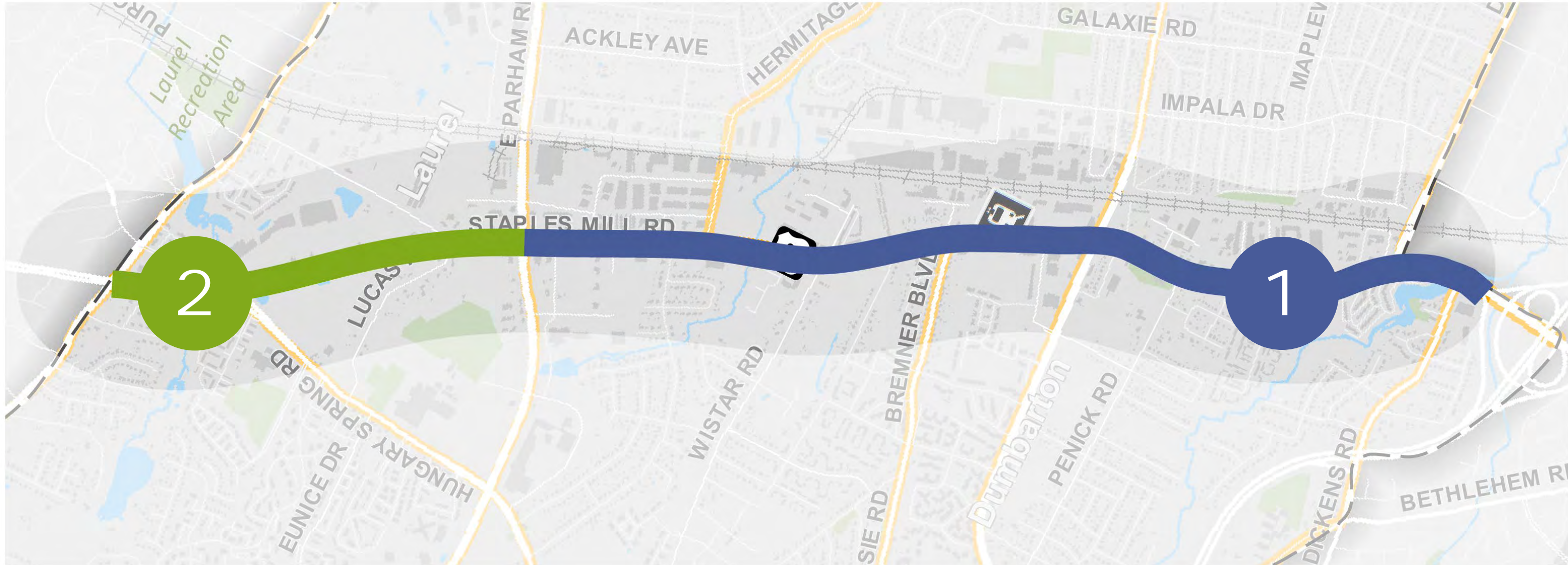
“Creating a safe connection for bike/ped users would **improve job access...**”

– *Issues and Opportunities Survey*



Cross Sections: Existing

- 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.



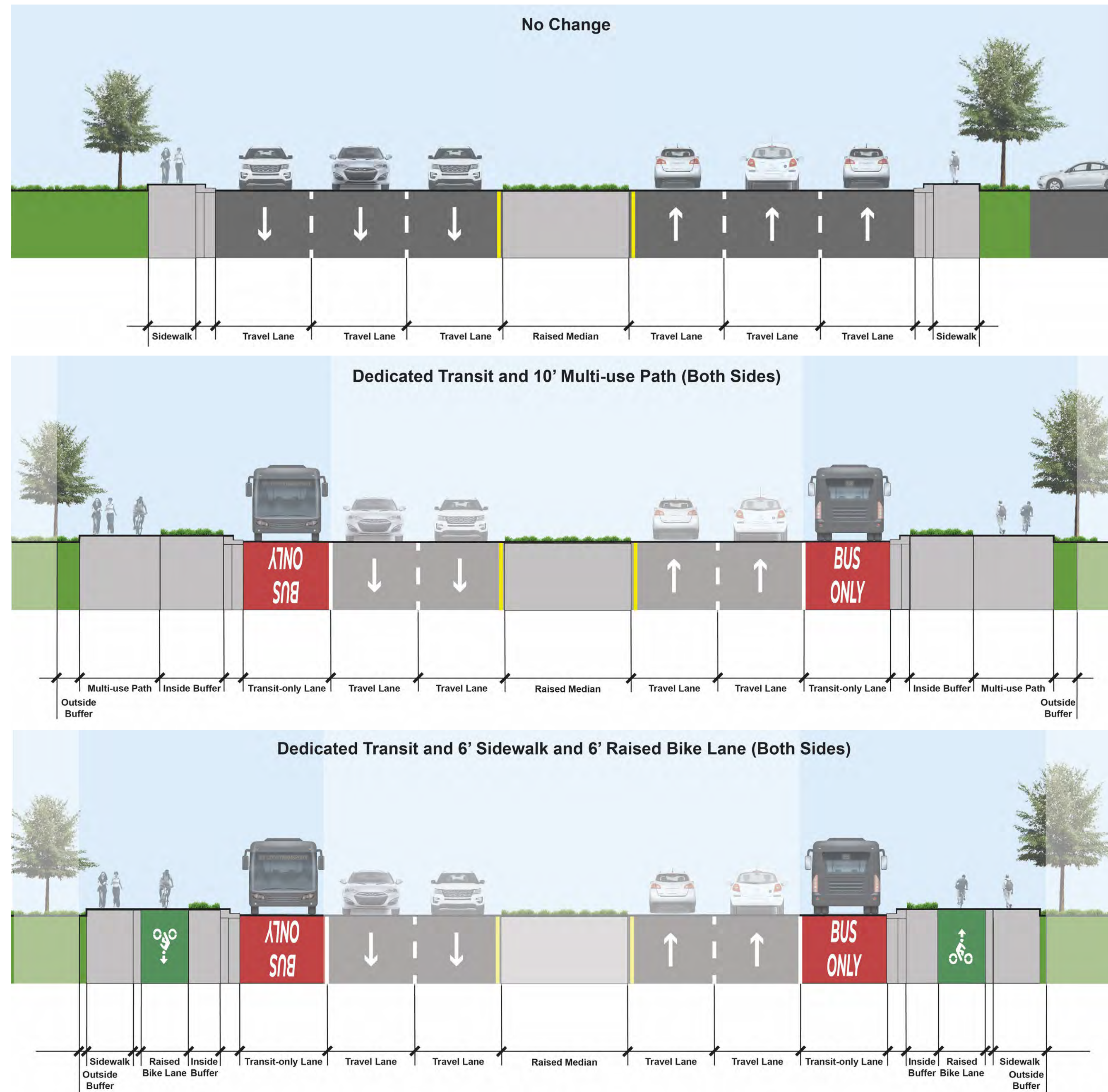
Cross Section Options: Curbside Transit (South of E Parham)

1. Curbside Transit

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

Bicycle and Pedestrian:

- A. Shared use path
- B. Raised bicycle lane and sidewalk



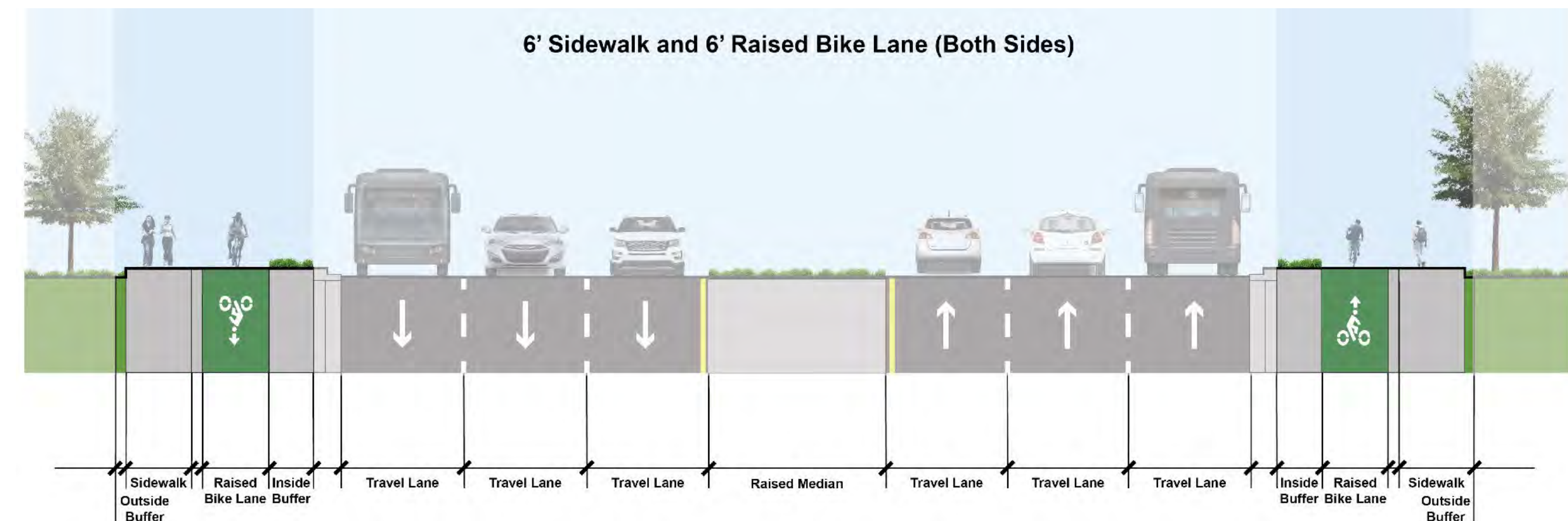
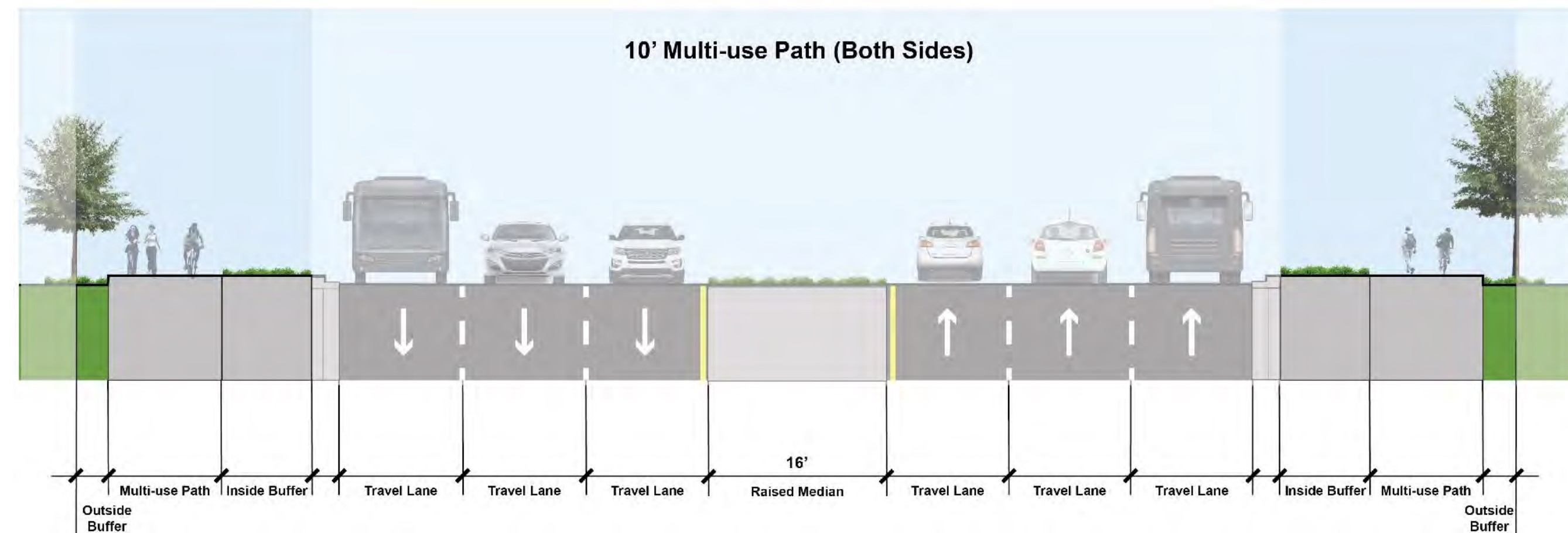
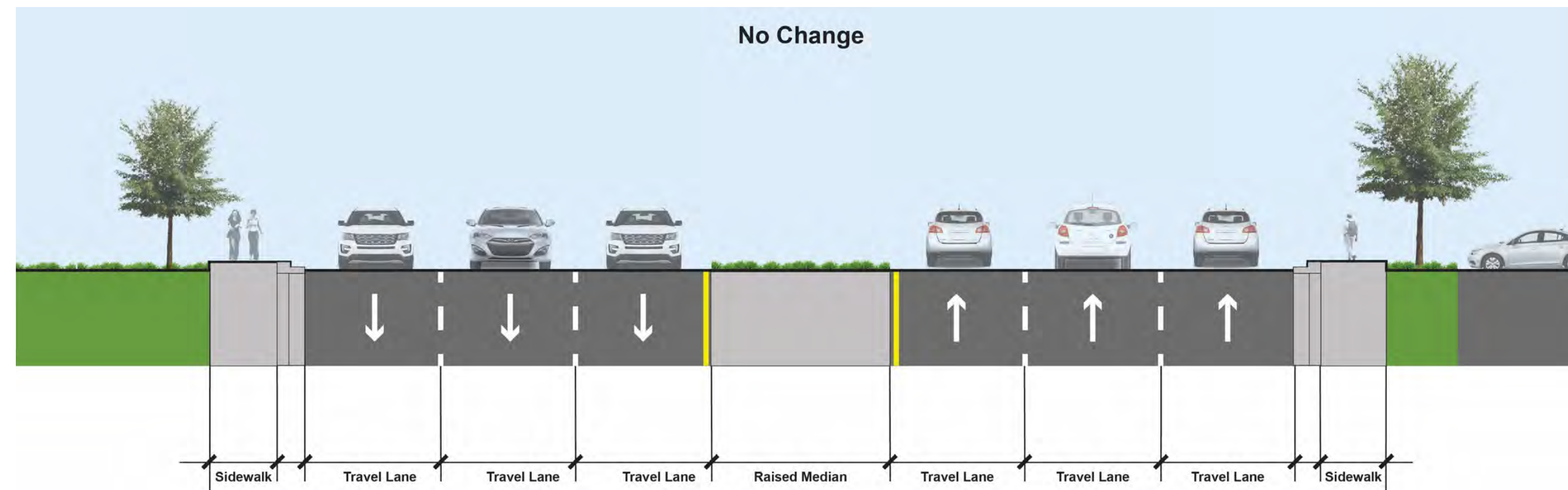
Source: Streetmix

Cross Section Options: Mixed Transit (South of E Parham)

2. Mixed Transit

Bicycle and Pedestrian:

- A. Shared use path
- B. Raised bicycle lane and sidewalk

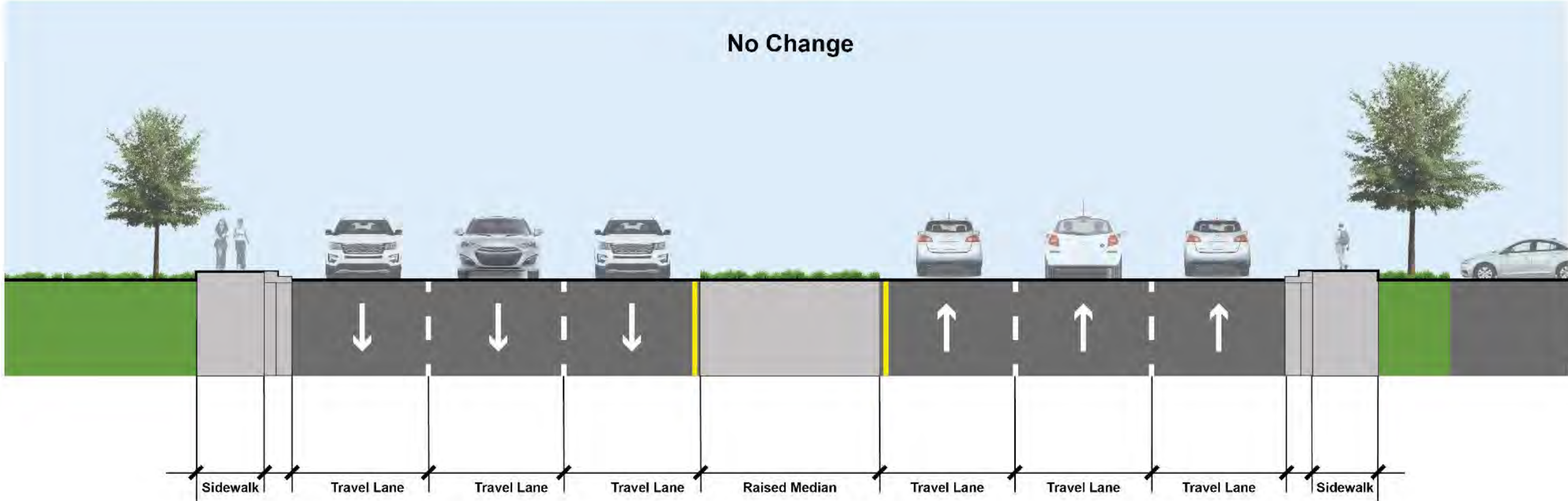
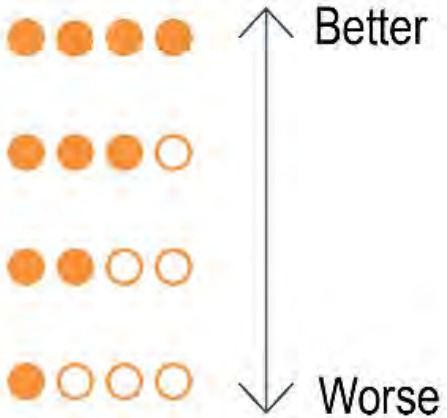


Source: Streetmix

Cross Section Option: No Change

South of E Parham Road: Existing

Performance Measures

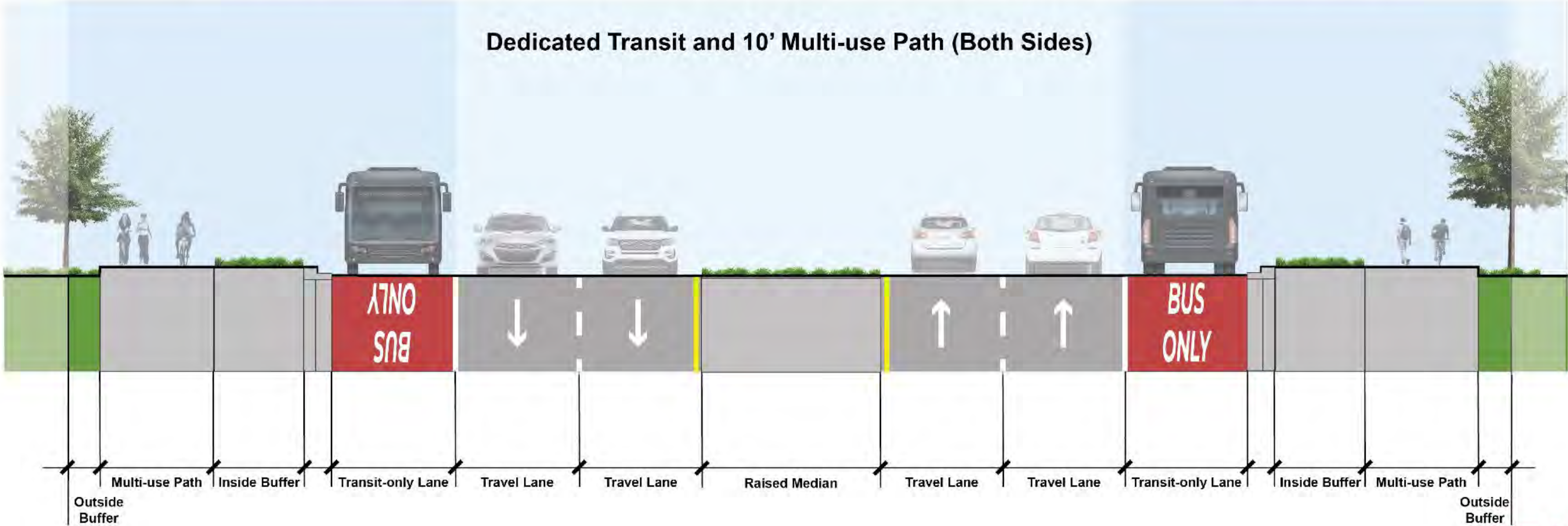
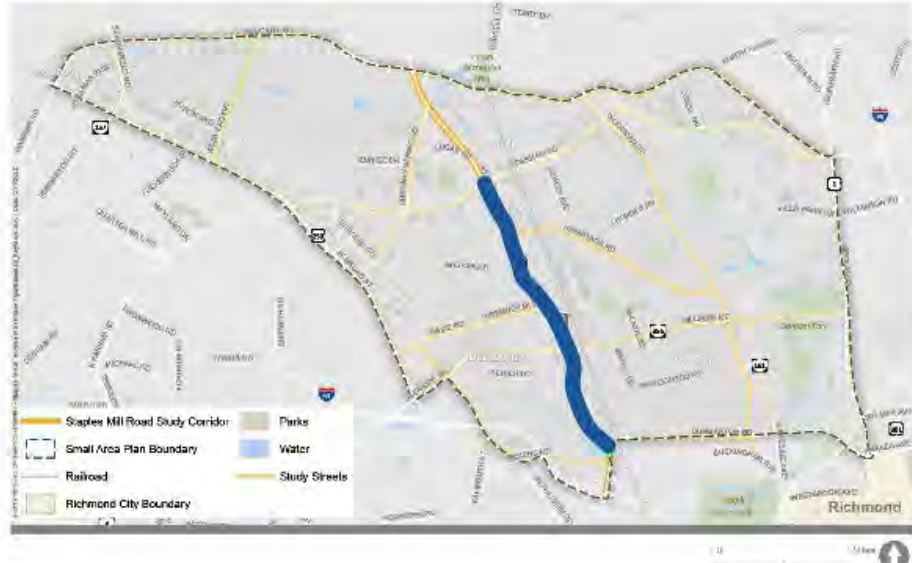
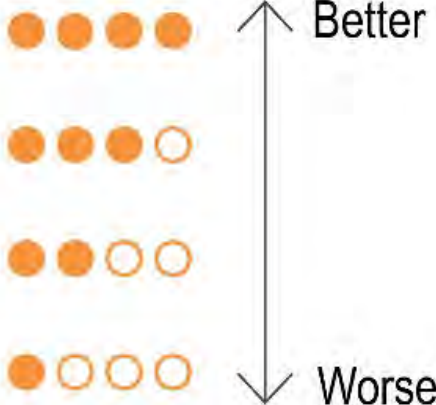


Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
● ○ ○ ○	● ○ ○ ○	● ● ○ ○	● ○ ○ ○	● ● ● ●
No buffer between non-motorized users and motorists.	Buses experience slower travel times in general purpose lanes.	ADA-accessible facilities are missing on one or both sides of the street.	Sidewalk is disconnected from employment and transit.	No right-of-way impacts or drainage impacts

Cross Section Option 1A: Curbside Transit

South of E Parham Road: Shared Use Path and Curbside Transit Lane

Performance Measures



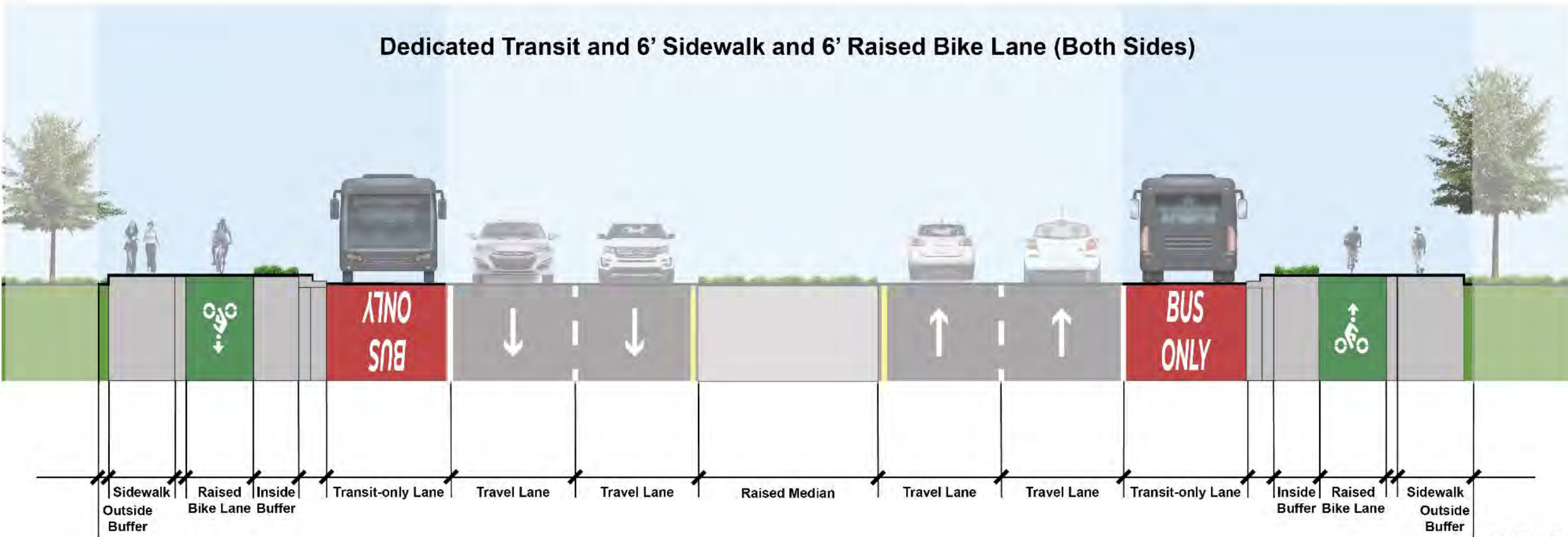
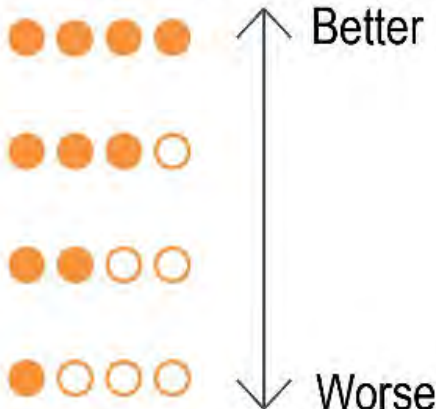
DRAFT

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●●</p> <p>Exclusive curbside transit lane separates non-motorized users from motorists.</p>	<p>●●●●</p> <p>Buses experience reliable, faster travel times in dedicated lanes, and motorists experience increased travel times during rush hour.</p>	<p>●●●●</p> <p>ADA-accessible facilities are present on both sides of the street.</p>	<p>●●●●</p> <p>Shared-use path is connected to employment and exclusive curbside transit lane in both directions.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

Cross Section Option 1B: Curbside Transit

South of E Parham Road: Sidewalk, Bike Lane, and Curbside Transit Lane

Performance Measures



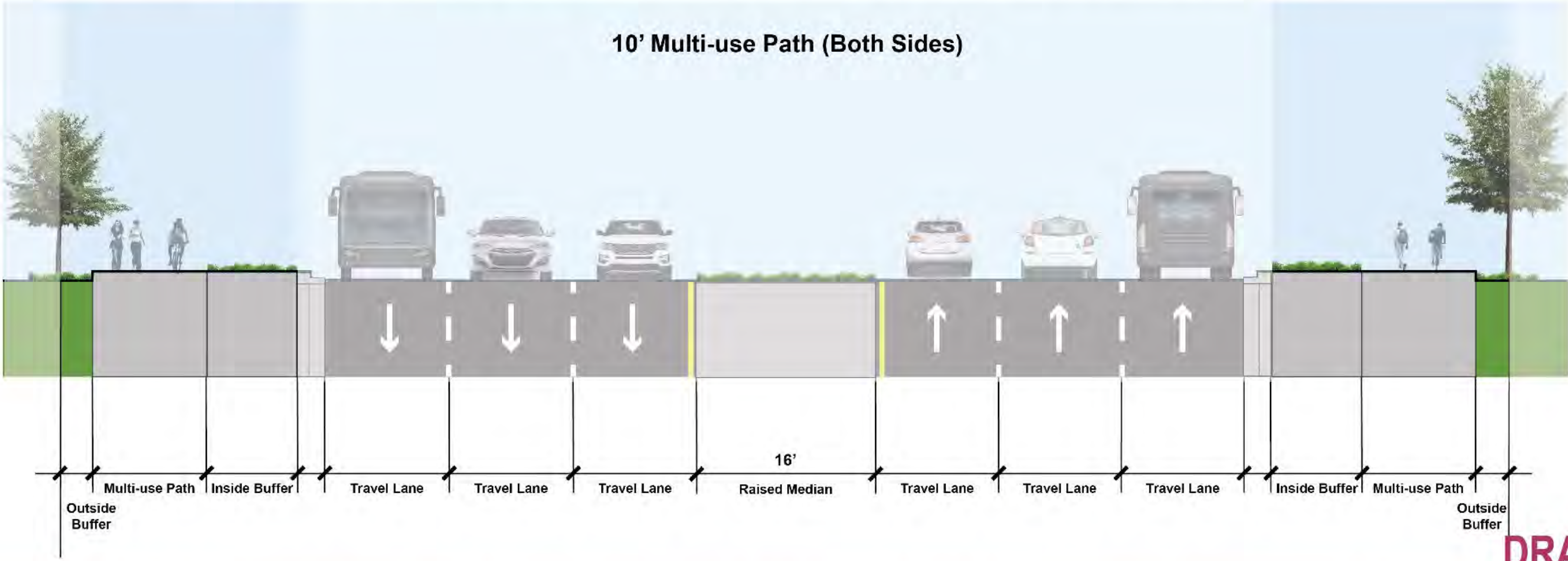
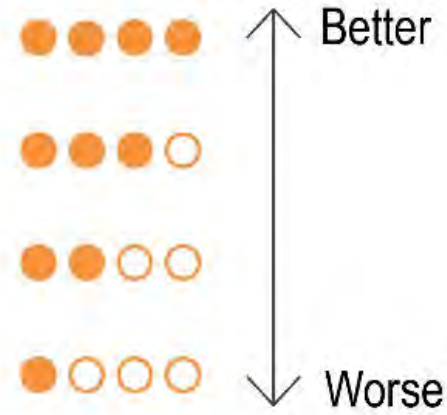
DRAFT

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●●</p> <p>Exclusive curbside transit lane separates non-motorized users from motorists.</p>	<p>●●●●</p> <p>Buses experience reliable, faster travel times in dedicated lanes, and motorists experience increased travel times during rush hour.</p>	<p>●●●●</p> <p>ADA-accessible facilities are present on both sides of the street.</p>	<p>●●●●</p> <p>Sidewalk and bike lanes are connected to employment and exclusive curbside transit lane in both directions.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

Cross Section Option 2A: Mixed Transit

South of E Parham Road: Shared Use Path and Mixed Transit Lane

Performance Measures



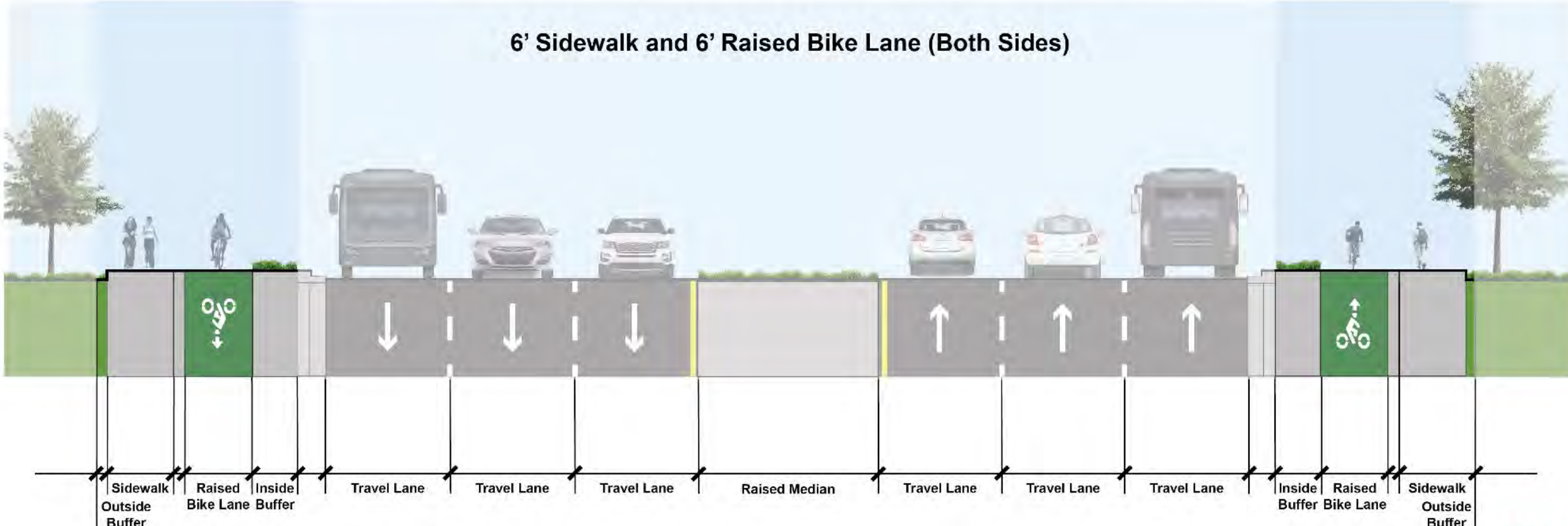
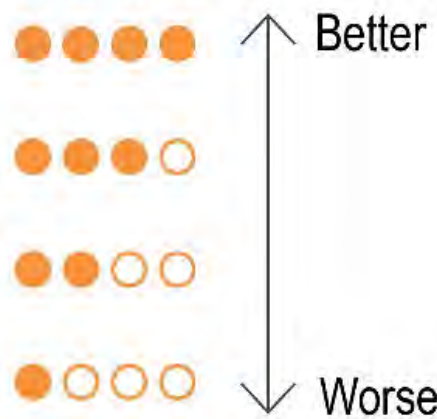
DRAFT

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●○</p> <p>Buffer between non-motorized users and motorists for some of street segment.</p>	<p>●●●○</p> <p>Shared-use path encourages bicycle and pedestrian use.</p>	<p>●●●●</p> <p>ADA-accessible facilities are present on both sides of the street.</p>	<p>●●●○</p> <p>Shared-use path is connected to employment and curbside mixed bus-traffic lane in both directions.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

Cross Section Option 2B: Mixed Transit

South of E Parham Road: Sidewalk, Bike Lane, and Mixed Transit Lane

Performance Measures

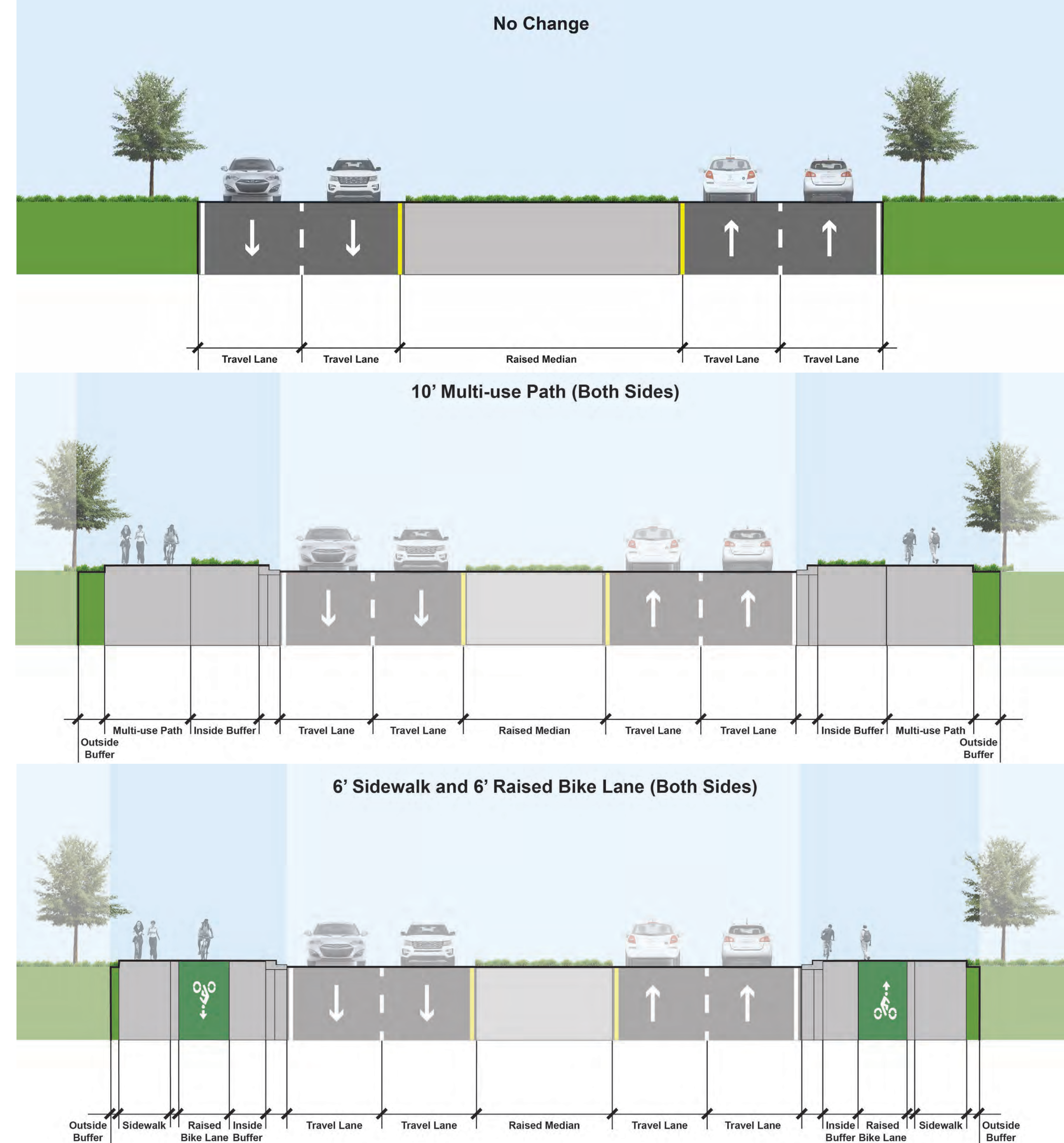


DRAFT

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●○</p> <p>Buffer between non-motorized users and motorists for some of street segment.</p>	<p>●●●○</p> <p>Continuous sidewalk and separated bicycle facility encourage bicycle and pedestrian use.</p>	<p>●●●●</p> <p>ADA-accessible facilities are present on both sides of the street.</p>	<p>●●●○</p> <p>Sidewalk and bike lanes are connected to employment and curbside mixed bus-traffic lane in both directions.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

Cross Section Options: (North of E Parham)

- 11' Vehicle travel lanes
- ## Bicycle and Pedestrian:
- A. Shared use path
 - B. Raised bicycle lane and sidewalk

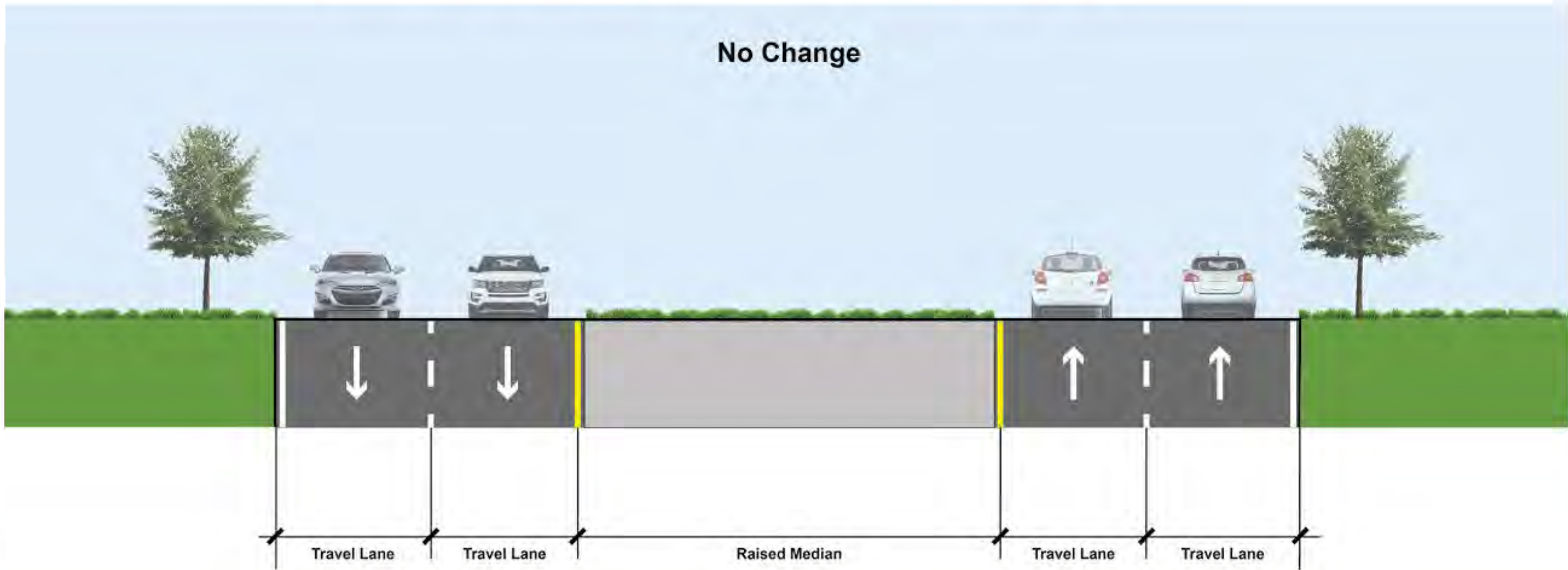
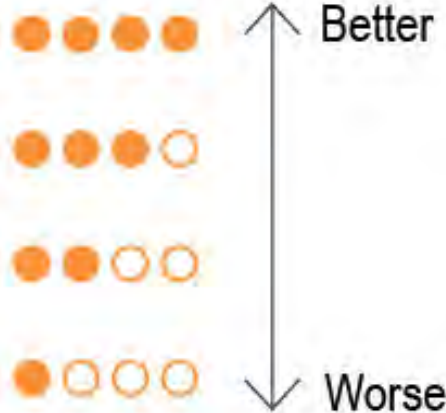


Source: Streetmix

Cross Section: No Change

North of E Parham Road: Existing

Performance Measures

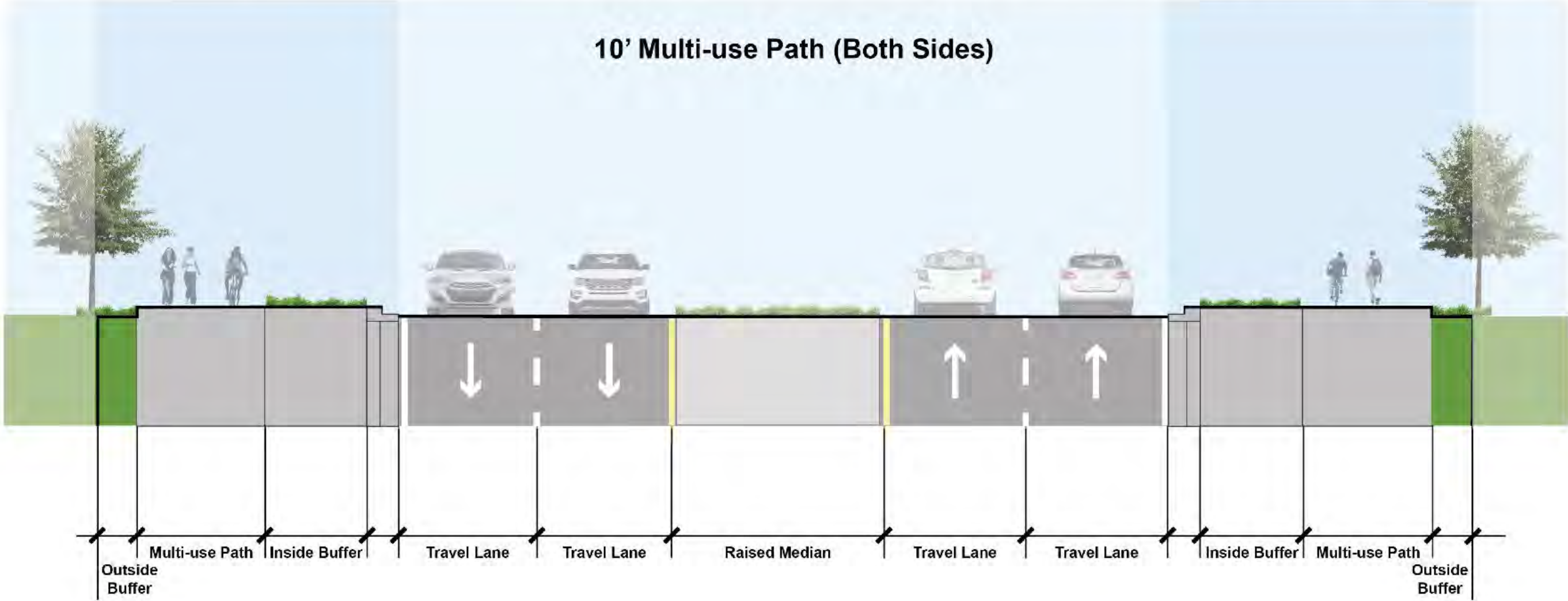
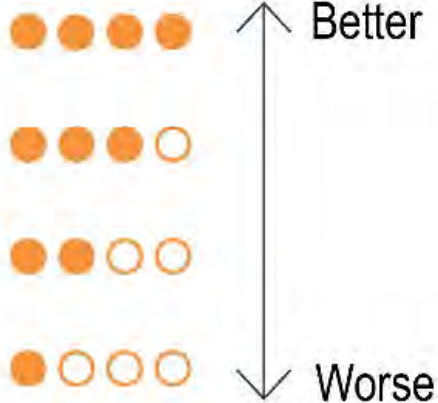


Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>● ○ ○ ○ ○</p> <p>No buffer between non-motorized users and motorists.</p>	<p>● ○ ○ ○ ○</p> <p>Incomplete sidewalk discourages bicycle and pedestrian use. Buses experience slower travel times in general purpose lanes.</p>	<p>● ● ○ ○ ○</p> <p>ADA-accessible facilities are missing on one or both sides of the street.</p>	<p>● ○ ○ ○ ○</p> <p>Sidewalk is disconnected from employment and transit.</p>	<p>● ● ● ● ●</p> <p>No right-of-way impacts or drainage impacts</p>

Cross Section Option A

North of E Parham Road: Shared Use Path and Mixed Transit Lane

Performance Measures



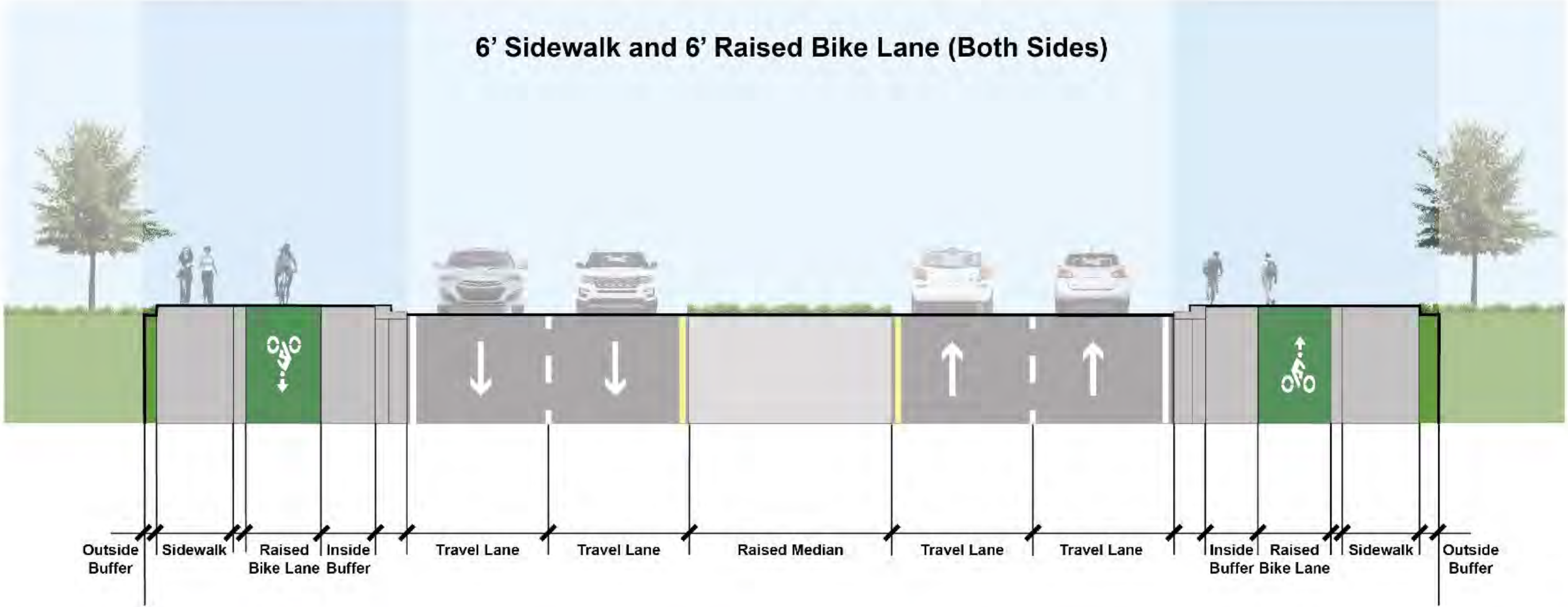
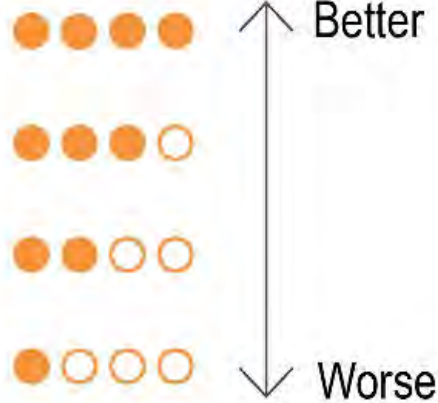
DRAFT

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●○</p> <p>Buffer between non-motorized users and motorists for some of street segment.</p>	<p>●●●○</p> <p>Shared-use path encourages bicycle and pedestrian use.</p>	<p>●●●●</p> <p>ADA-accessible facilities are present on both sides of the street.</p>	<p>●●●●</p> <p>Shared-use path is connected to employment and transit.</p>	<p>●●●○</p> <p>No right-of-way impacts and minor drainage impacts.</p>

Cross Section Option B

North of E Parham Road: Sidewalk, Bike Lane, and Mixed Transit Lane

Performance Measures



DRAFT

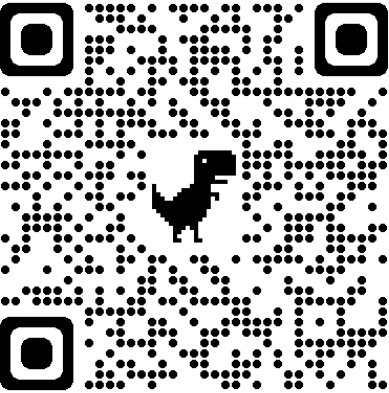
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>● ● ● ○</p> <p>Buffer between non-motorized users and motorists for some of street segment.</p>	<p>● ● ● ○</p> <p>Continuous sidewalk and separated bicycle facility encourage bicycle and pedestrian use.</p>	<p>● ● ● ●</p> <p>ADA-accessible facilities are present on both sides of the street.</p>	<p>● ● ● ●</p> <p>Sidewalk and bike lanes are connected to employment and transit.</p>	<p>● ● ● ○</p> <p>No right of way impacts and minor drainage impacts.</p>

Next Steps

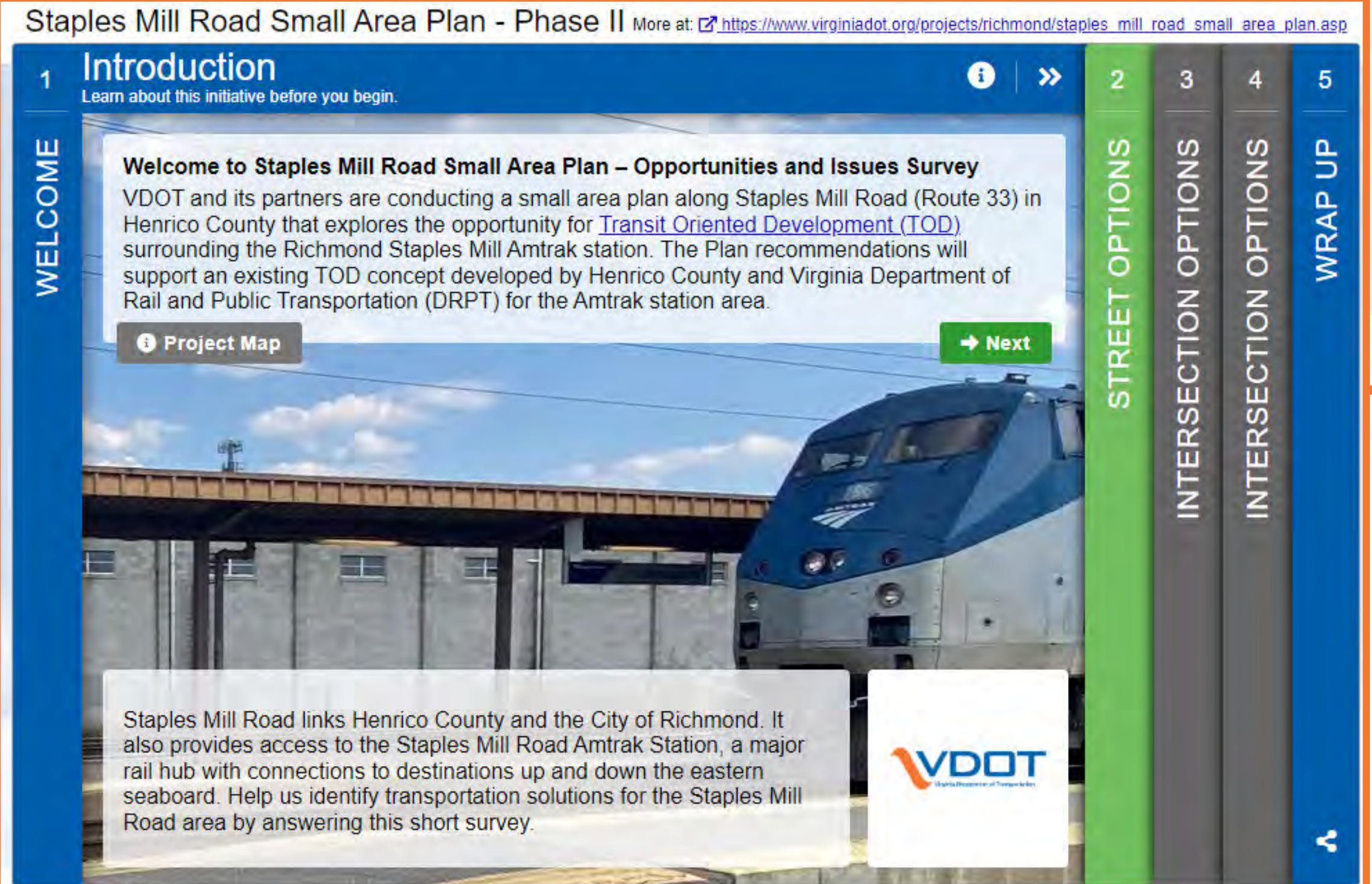


Share your input!

- Visit and share our website: bit.ly/VDOTStaplesMillProject
- Fill out our survey (closes July 31, 2022) bit.ly/StaplesMillSurvey2



- Download and read study documents



Next Steps

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

1 – Online Public Outreach



2 – Existing and Future No-Build Conditions Analysis



3 – Vision, Goals, Objectives, and Evaluation Criteria



4 – Conceptual Multimodal Improvements and Alternatives Analysis



5 – Revise Alternatives



6 – Small Area Plan Report

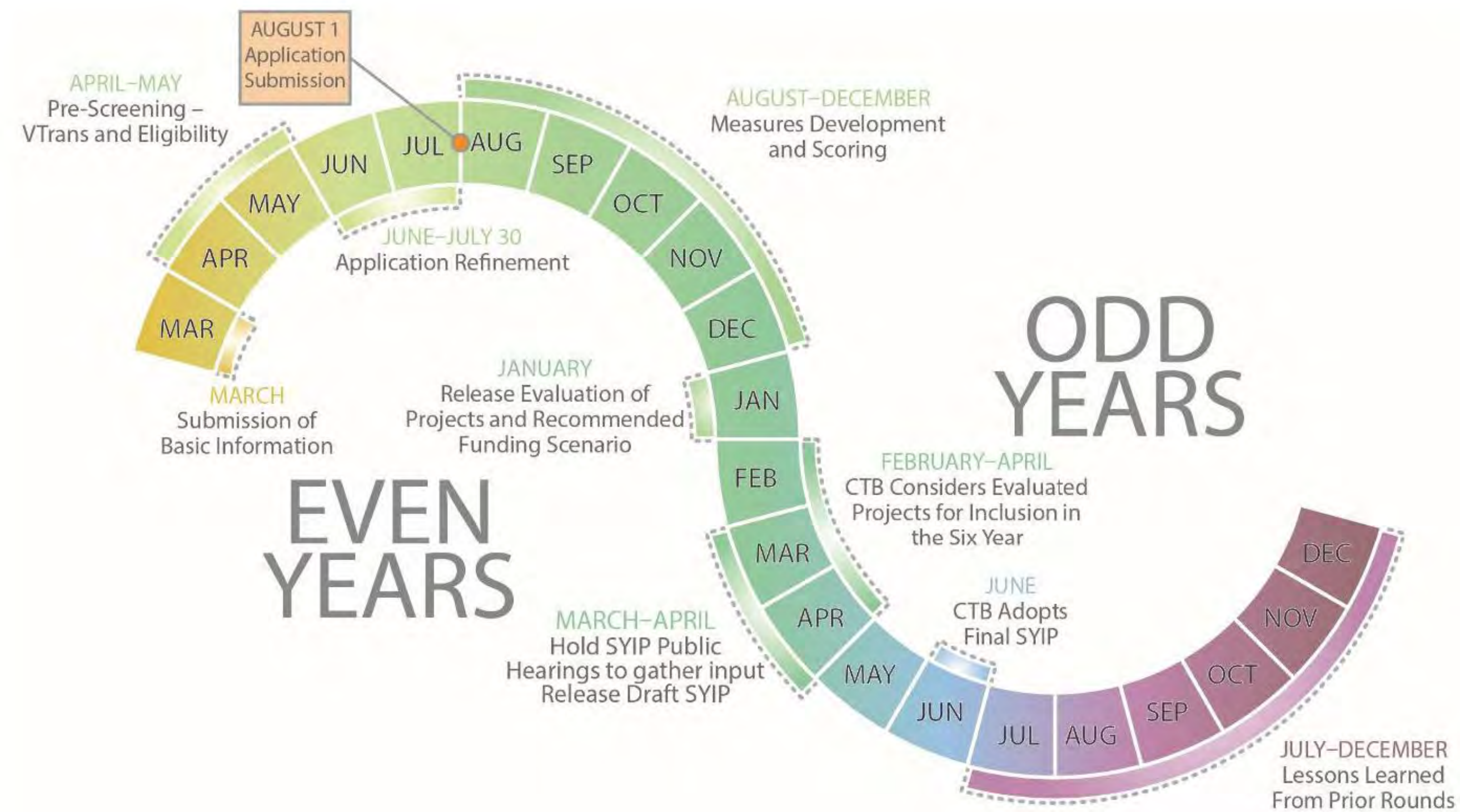


2021 Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun July Aug 2022

After the Study

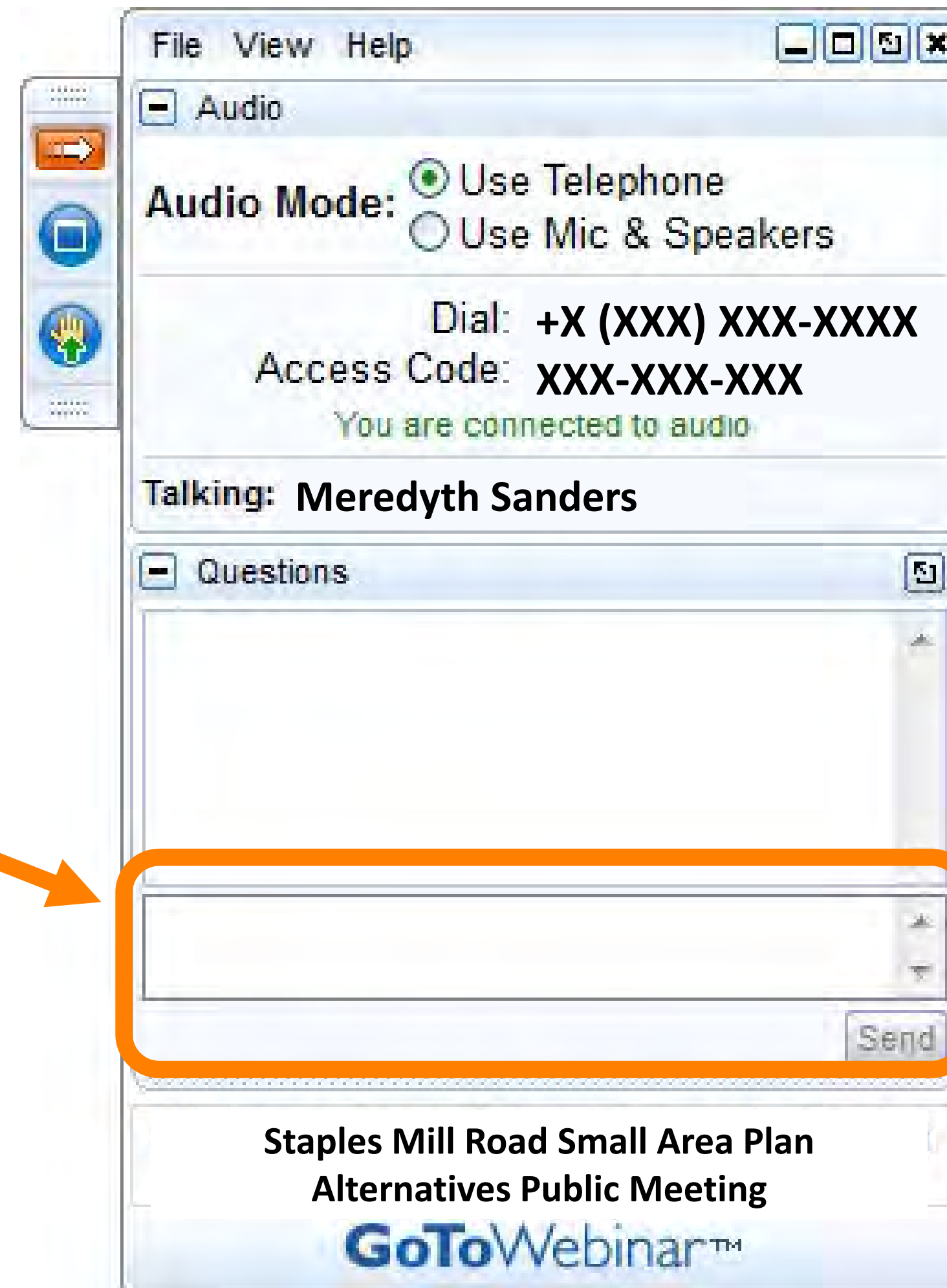
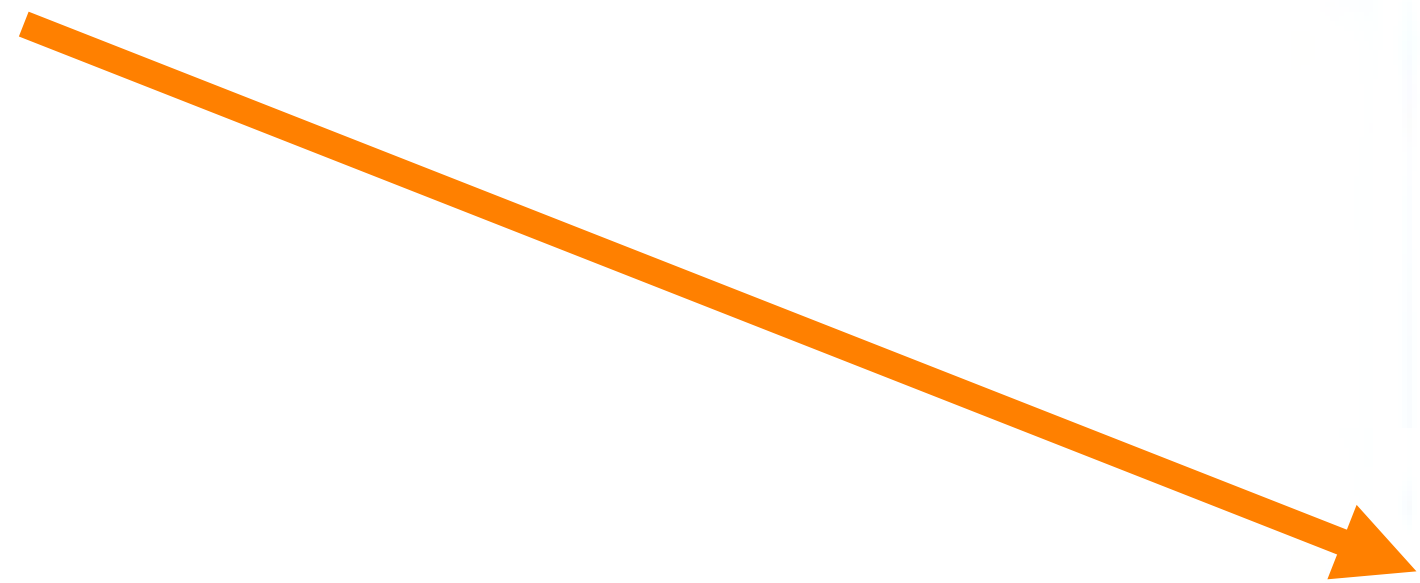
1. Secure funding for project(s)
 - Available VDOT funds
 - SMART SCALE program
2. Alternative refinement
 - Design
 - Environmental analysis
 - Community engagement
3. Construction (timeline varies)

SMART SCALE Biennial Cycle



Question & Answer

Send questions about the presentation and project through “Questions” Box



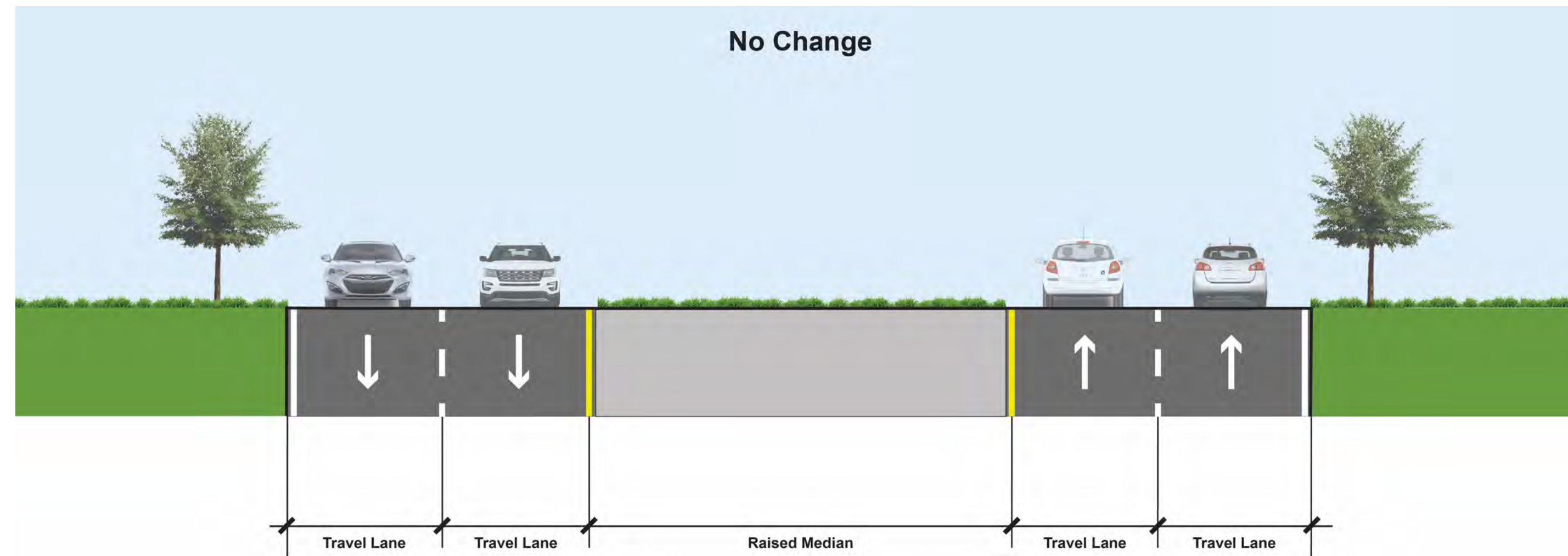
Q&A Discussion



Cross Section Options – Feedback & Discussion

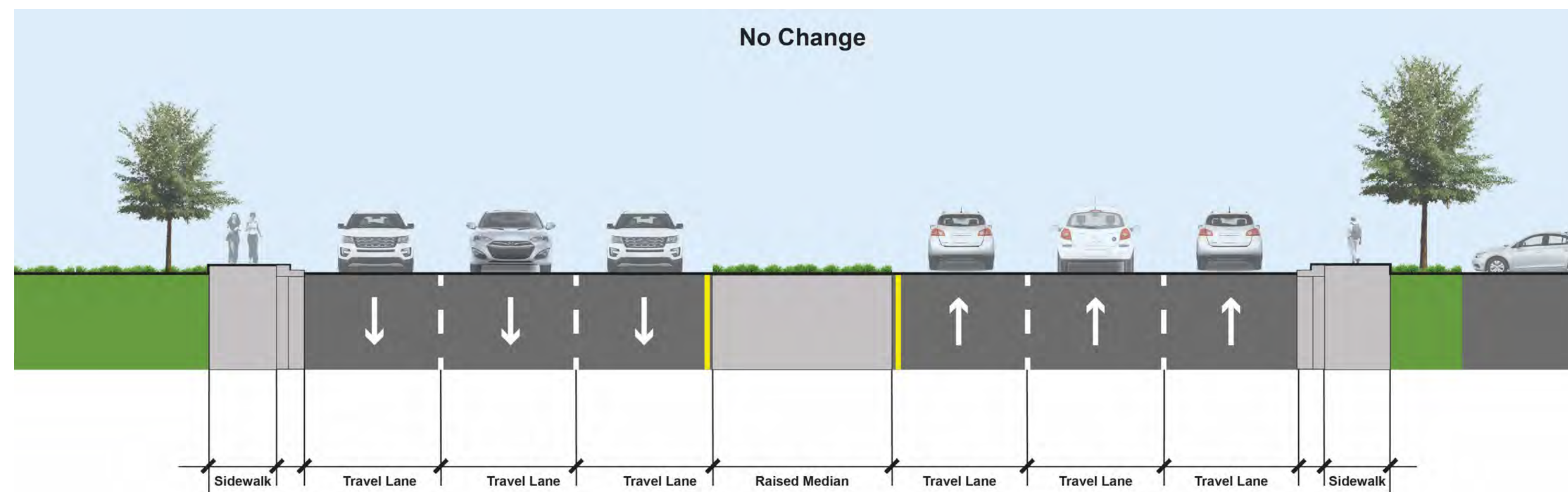
North of E Parham Road

- A. Shared use path
- B. Raised bike lane and sidewalk



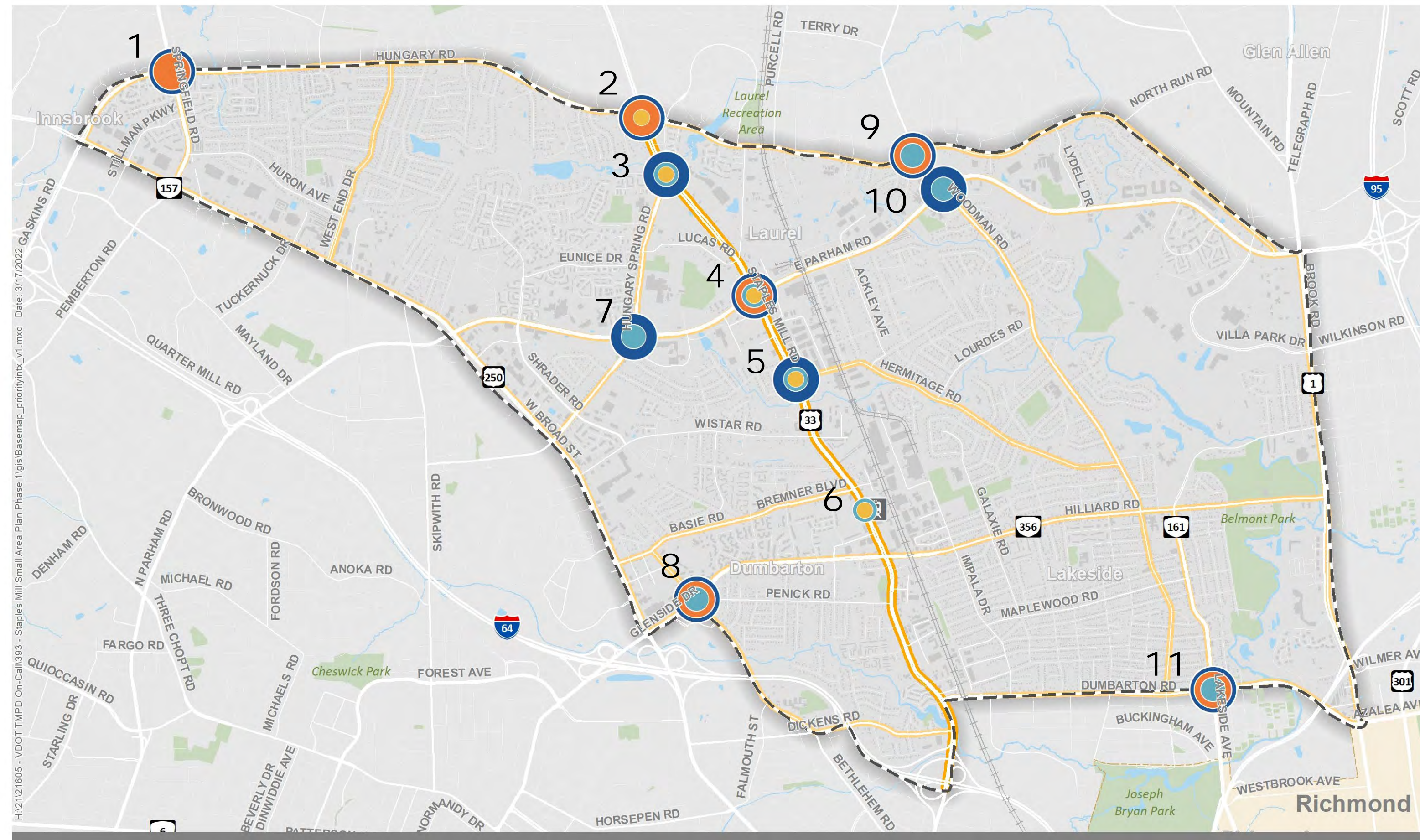
South of E Parham Road

- 1. Curbside Transit
 - A. Shared use path
 - B. Raised bike lane and sidewalk
- 2. Mixed Transit
 - A. Shared use path
 - B. Raised bike lane and sidewalk



Intersection Options – Feedback & Discussion

1. Springfield Rd and Gaskins Rd/Hungary Rd
2. Staples Mill Rd and Hungary Rd
3. Staples Mill Rd & Hungary Spring Rd
4. Staples Mill Rd & E. Parham Rd
5. Staples Mill Rd & Hermitage Rd/Commercial Ent.
6. Staples Mill Rd & Amtrak Station
7. E. Parham Rd & Hungary Spring Rd
8. Glenside Dr & Bethlehem Rd
9. Hungary Rd and Woodman Rd
10. E. Parham Rd and Woodman Rd
11. Lakeside Ave and Dumbarton Rd



Priority Intersections by Issue



Thank you!

For more information

Contact

Nicole Mueller

Planning Specialist

VDOT Richmond District

Nicole.Mueller@VDOT.Virginia.gov

804-774-1624

Intersection Options

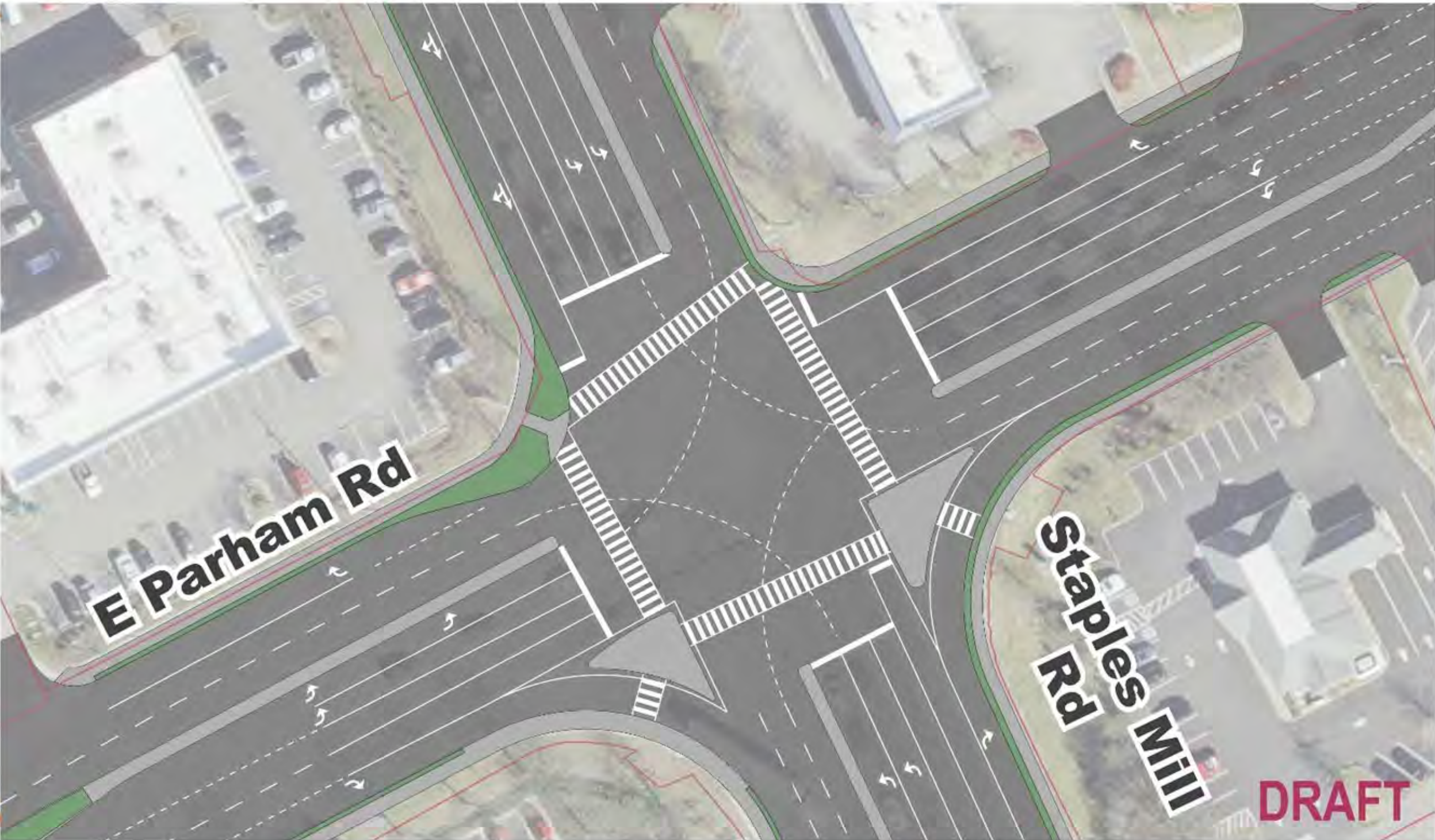
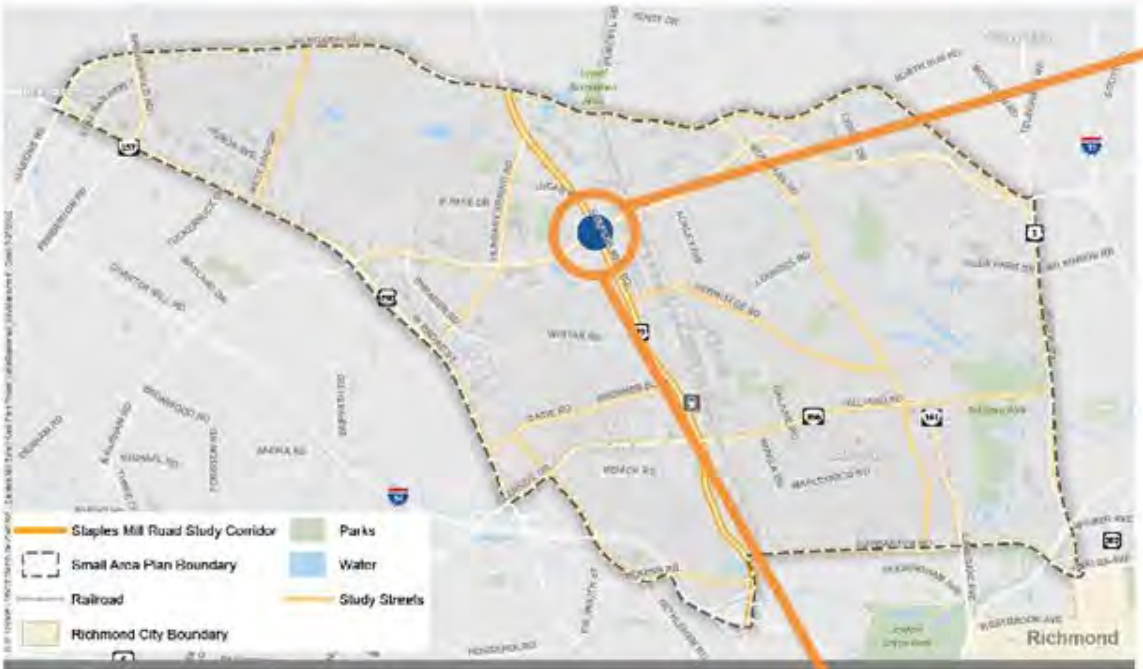


Staples Mill Road and East Parham Road: Existing



Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ○ ○ ○</p> <p>High crash intersection with no pedestrian crossings.</p>	<p style="text-align: center;">● ○ ○ ○</p> <p>Motorists experience delays during rush hour. Pedestrians experience delay all day.</p>	<p style="text-align: center;">● ● ○ ○</p> <p>Intersection has missing facilities for people walking and biking.</p>	<p style="text-align: center;">● ● ○ ○</p> <p>Multimodal facilities are disconnected from employment and transit.</p>	<p style="text-align: center;">● ● ● ●</p> <p>No right-of-way impacts or drainage impacts.</p>

Staples Mill Road and East Parham Road: Concept



N
Not To Scale

Performance Measures

●●●● Better

●●●○

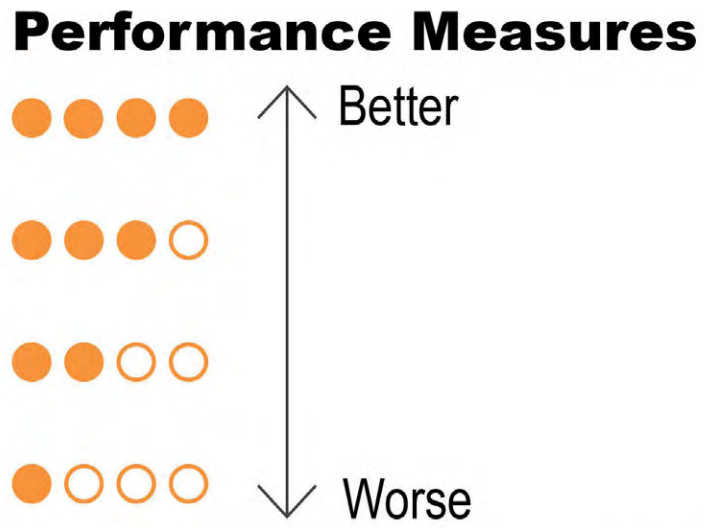
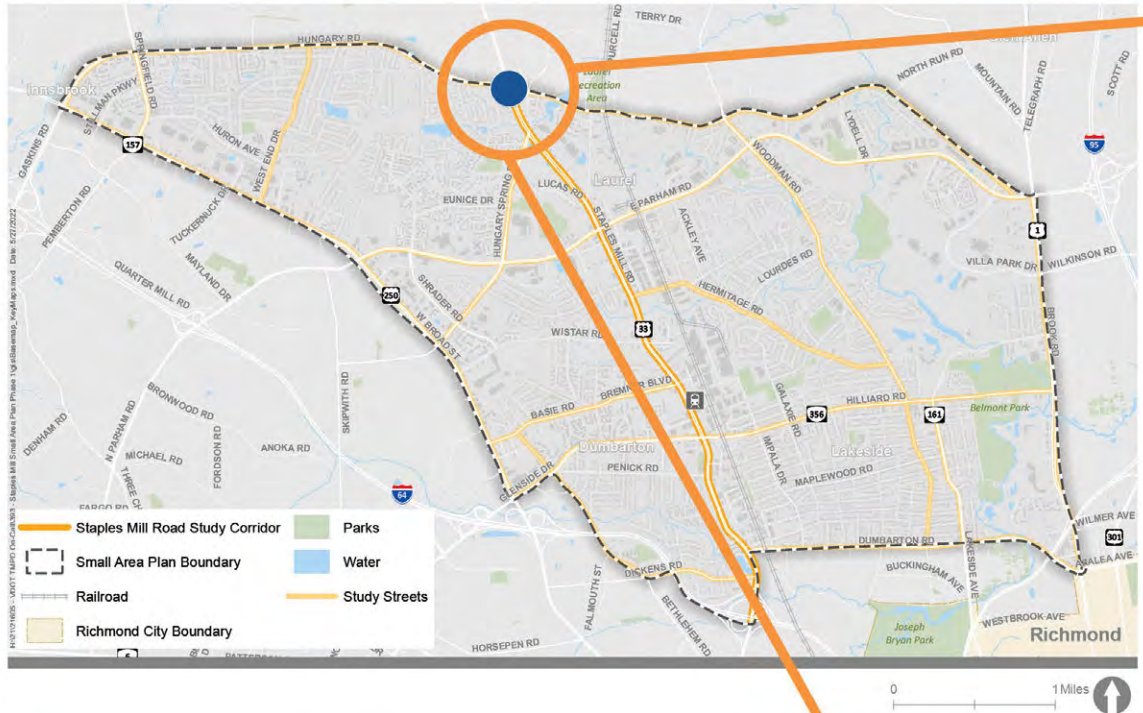
●●○○

●○○○ Worse

- Intersection Elements**
- ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD NO RIGHT-TURN ON RED
 - ADD INTERSECTION LIGHTING
 - IMPLEMENT LEADING PEDESTRIAN INTERVAL
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

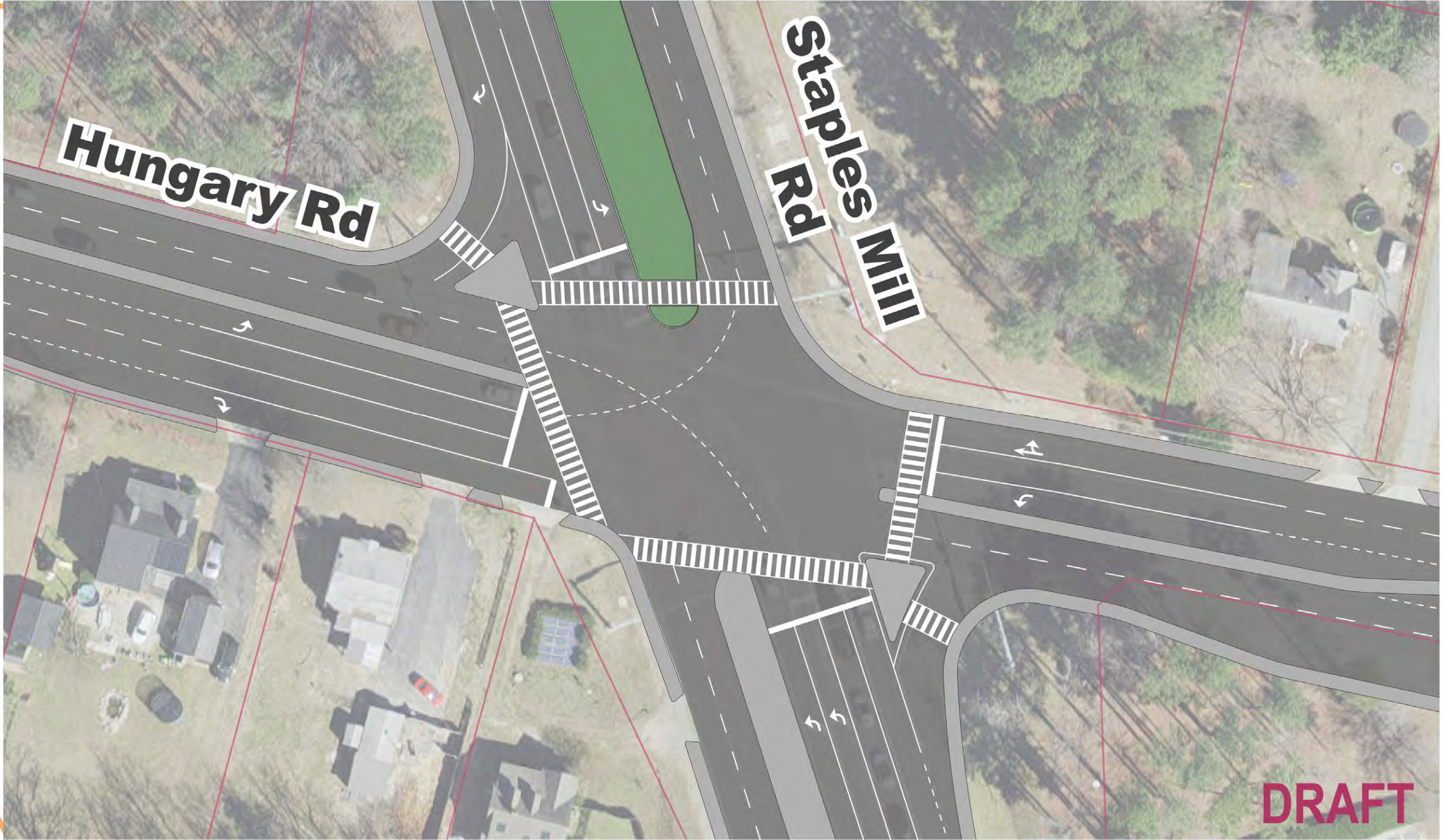
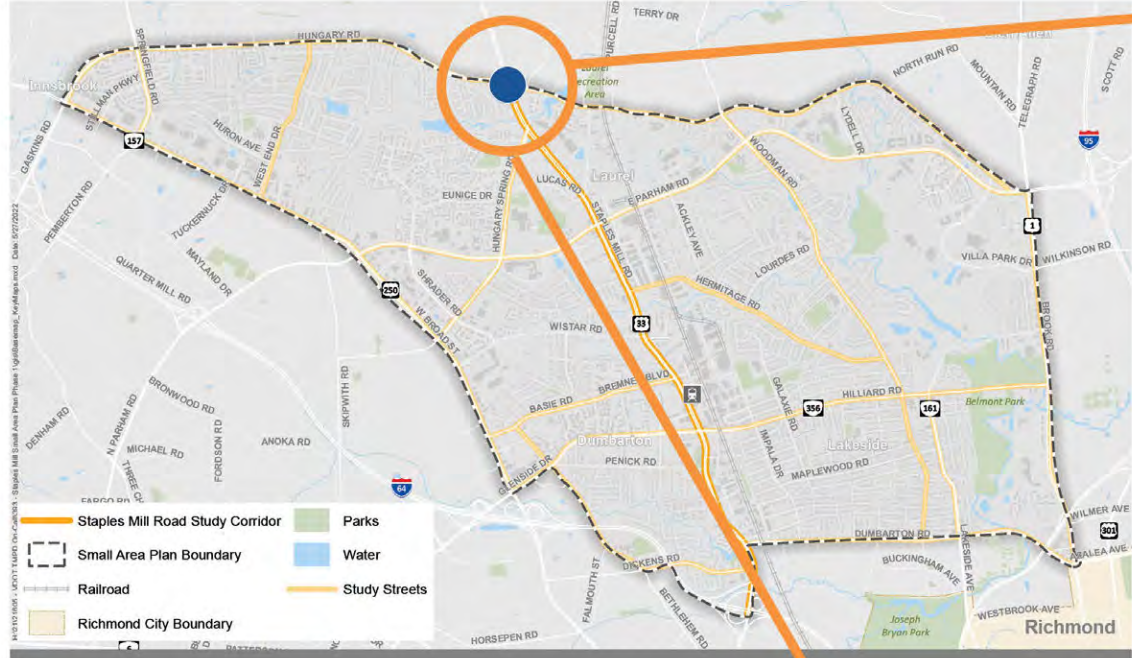
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p>●●●○</p> <p>Maintains travel time for cars and buses, and reduces pedestrian delay with signal timing.</p>	<p>●●●●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p>●●●●</p> <p>Provides multimodal facilities connected to employment and transit.</p>	<p>●●●○</p> <p>No right-of-way impacts and minor drainage impacts.</p>

Staples Mill Road and Hungary Road: Existing

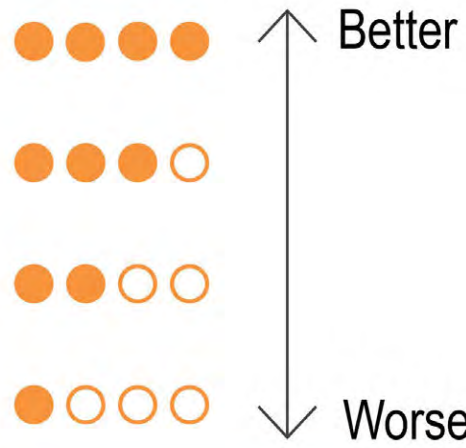


Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●○○○</p> <p>High crash intersection with no pedestrian crossings.</p>	<p>●○○○</p> <p>Motorists experience delays during rush hour. Pedestrians experience delay all day.</p>	<p>●○○○</p> <p>Intersection has no multimodal facilities for people walking and biking.</p>	<p>●○○○</p> <p>No multimodal facilities connected to employment.</p>	<p>●●●●</p> <p>No right-of-way impacts or drainage impacts.</p>

Staples Mill Road and Hungary Road: Concept



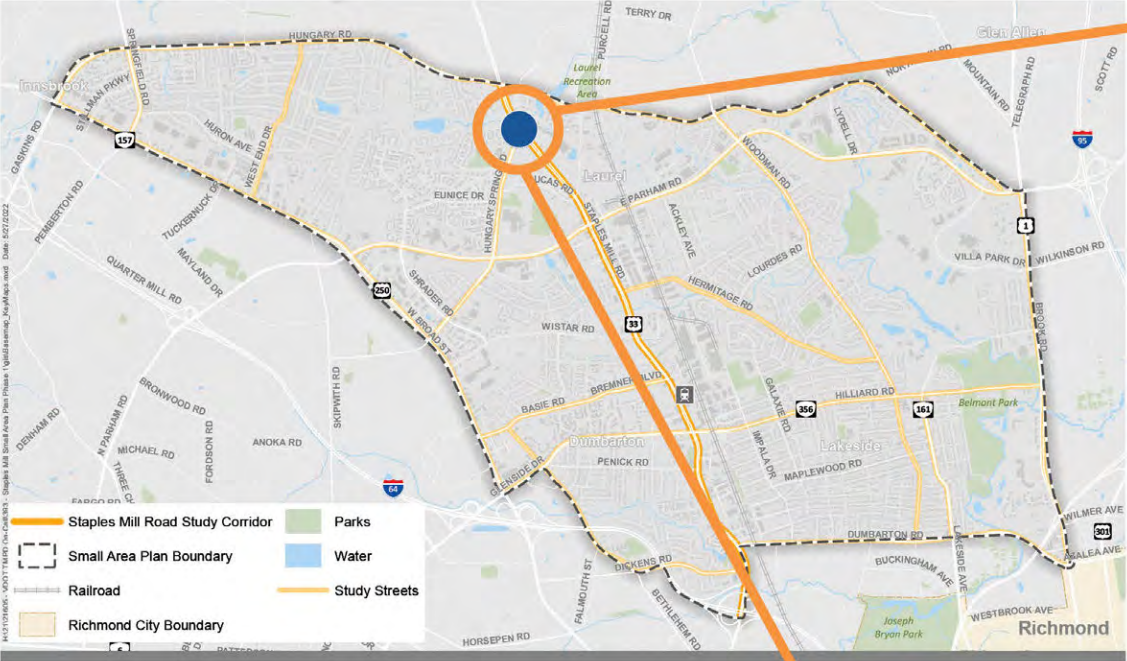
Performance Measures



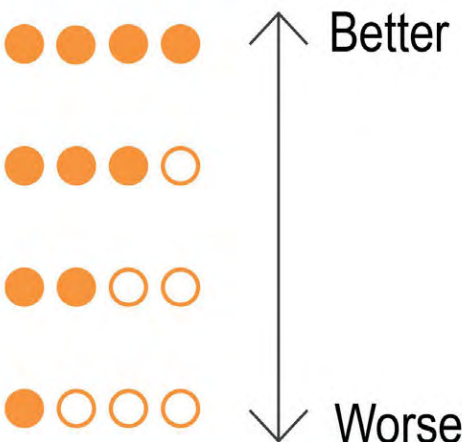
- Intersection Elements**
- ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD INTERSECTION LIGHTING
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ● ● ○</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Reduces crossing distance for pedestrians. Improves nighttime visibility with intersection lighting.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Maintains travel time for cars and reduces pedestrian delay with signal timing.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Provides multimodal facilities connected to employment.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Minor right-of-way and drainage impacts.</p>

Staples Mill Road and Hungary Spring Road: Existing

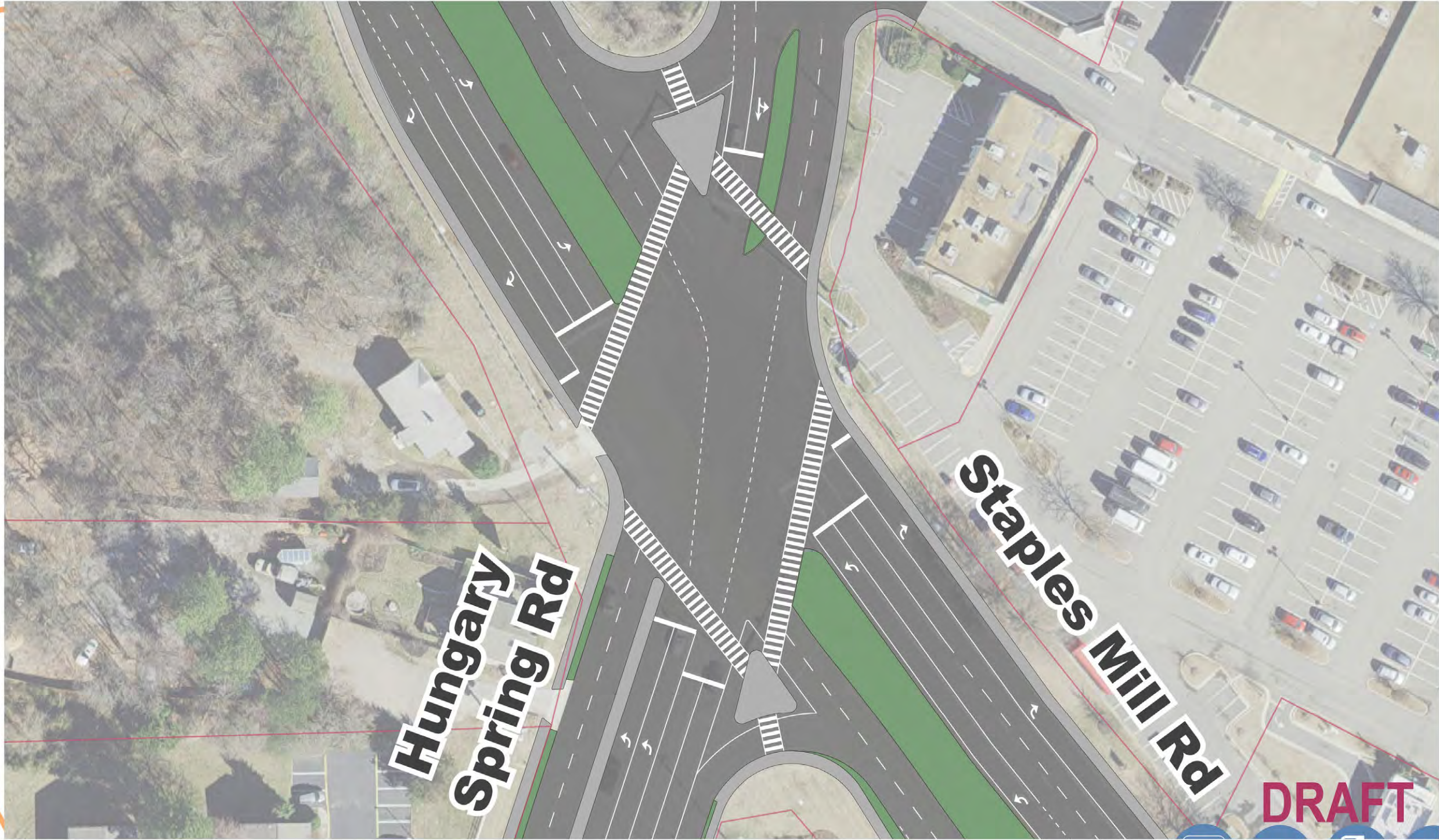
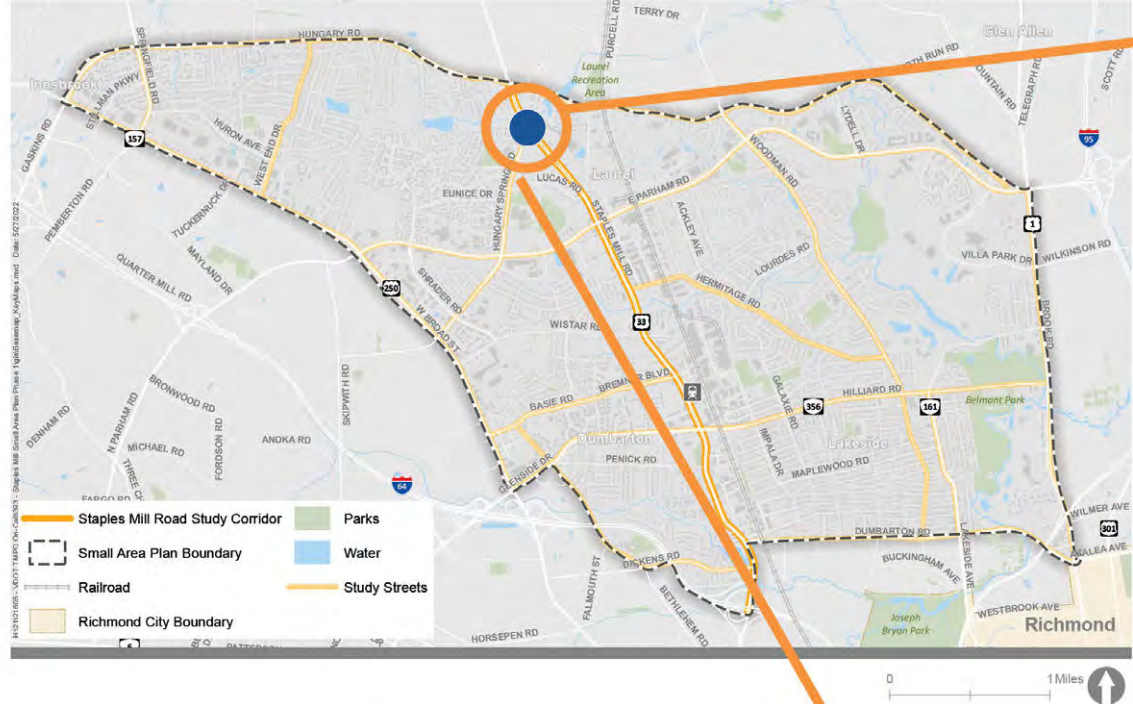


Performance Measures



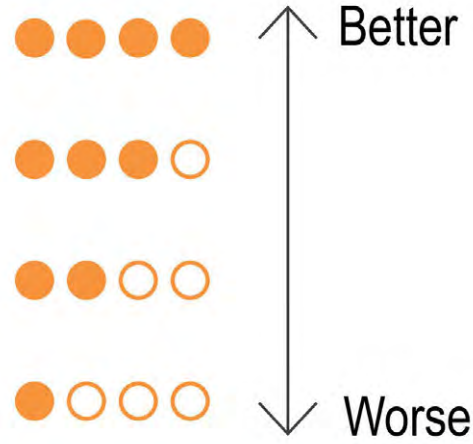
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>● ○ ○ ○ ○</p> <p>High crash intersection with no pedestrian crossings.</p>	<p>● ● ○ ○ ○</p> <p>Motorists generally don't experience delays. Pedestrians experience delay all day.</p>	<p>● ○ ○ ○ ○</p> <p>Intersection has many missing facilities for people walking and biking.</p>	<p>● ● ○ ○ ○</p> <p>Multimodal facilities are disconnected from employment.</p>	<p>● ● ● ● ●</p> <p>No right-of-way impacts or drainage impacts.</p>

Staples Mill Road and Hungary Spring Road: Concept



N
Not To Scale

Performance Measures

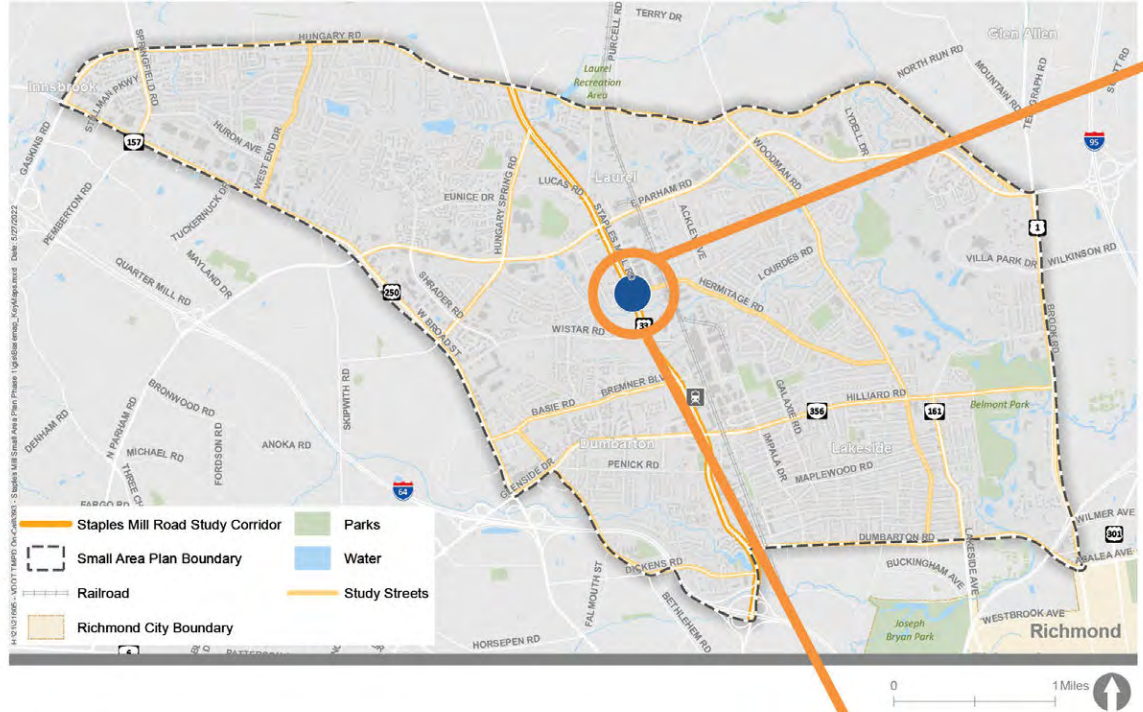


Intersection Elements

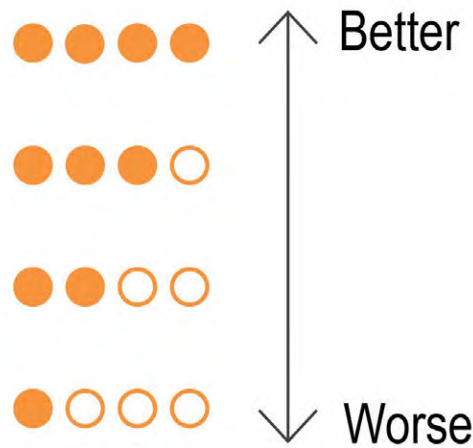
- ADD TRAFFIC SIGNAL MAST ARM
- ADD INTERSECTION LIGHTING
- ADD PEDESTRIAN SIGNAL HEADS
- UPGRADE CURB RAMP
- ASPHALT
- SIDEWALK/MEDIAN
- LANDSCAPE
- PARCEL LINES

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ● ● ○</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Maintains travel time for cars and reduces pedestrian delay with signal timing.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Provides multimodal facilities connected to employment.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Minor right-of-way and drainage impacts.</p>

Staples Mill Road and Hermitage Road: Existing

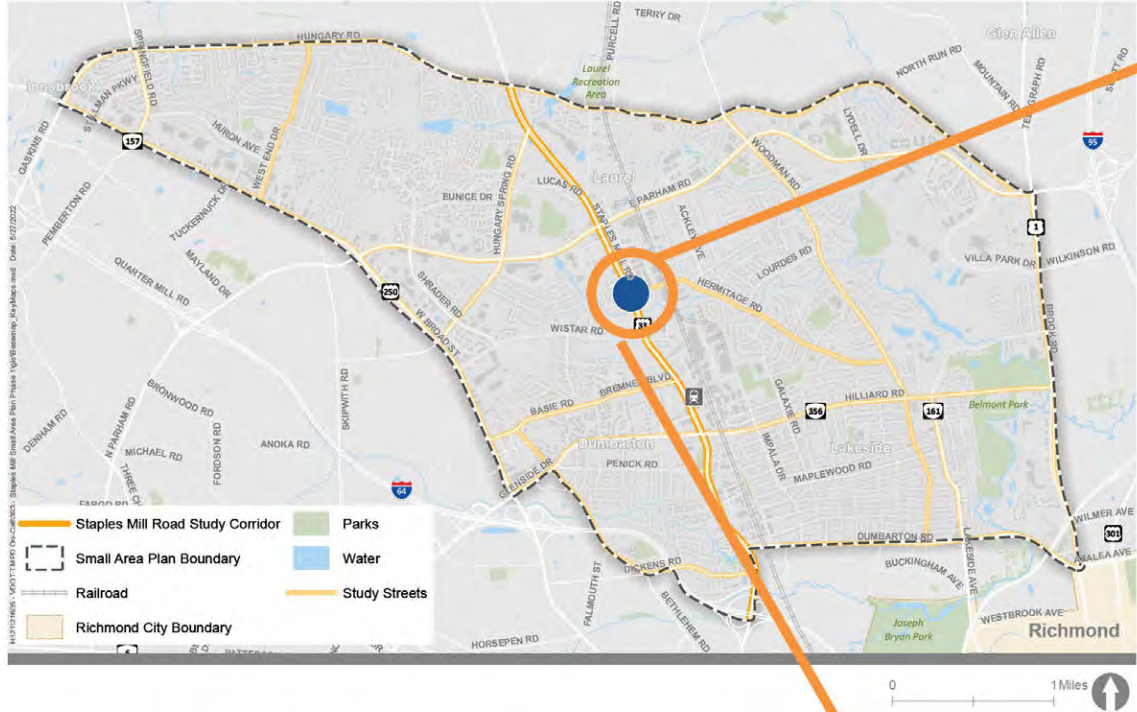


Performance Measures



Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>● ○ ○ ○</p> <p>Intersection experiences safety challenges and narrow sidewalks.</p>	<p>● ● ○ ○</p> <p>Motorists generally don't experience delays. Pedestrians experience delay all day.</p>	<p>● ● ○ ○</p> <p>Intersection has missing facilities for people walking and biking.</p>	<p>● ● ○ ○</p> <p>Multimodal facilities are disconnected from employment and transit.</p>	<p>● ● ● ●</p> <p>No right-of-way impacts or drainage impacts.</p>

Staples Mill Road and Hermitage Road: Concept



N
Not To Scale

Performance Measures

●●●● Better
 ●●●○
 ●●○○
 ●○○○
 ○○○○ Worse

- Intersection Elements**
- IMPLEMENT LEADING PEDESTRIAN INTERVAL
 - ADD INTERSECTION LIGHTING
 - ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD NO RIGHT-TURN ON RED
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p>●●○○</p> <p>Slightly increases travel time for cars and buses, and reduces pedestrian delay with signal timing.</p>	<p>●●●●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p>●●●●</p> <p>Provide multimodal facilities connected to employment and transit.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

Glenside Drive and Bethlehem Road: Existing



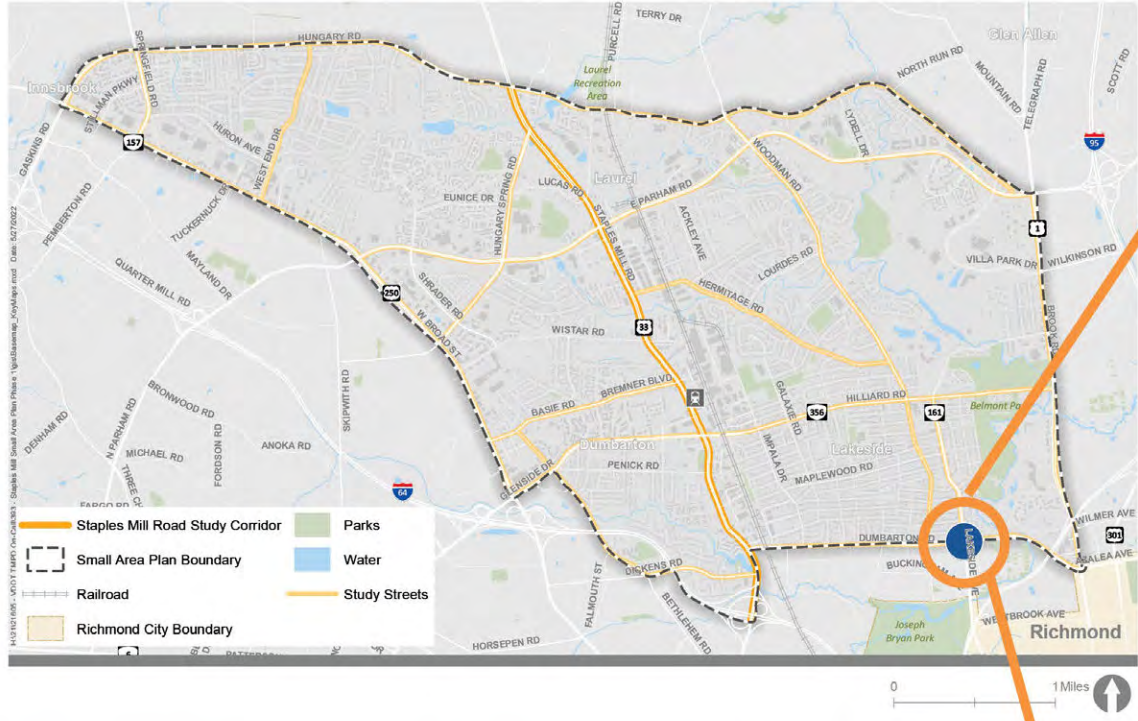
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●○○○</p> <p>High crash intersection with no pedestrian crossings.</p>	<p>●○○○</p> <p>Motorists experience delays during rush hour. Pedestrians experience delay all day.</p>	<p>●○○○</p> <p>Intersection has many missing facilities for people walking and biking.</p>	<p>●●○○</p> <p>Multimodal facilities are disconnected from employment.</p>	<p>●●●●</p> <p>No right-of-way impacts or drainage impacts.</p>

Glenside Drive and Bethlehem Road: Concept



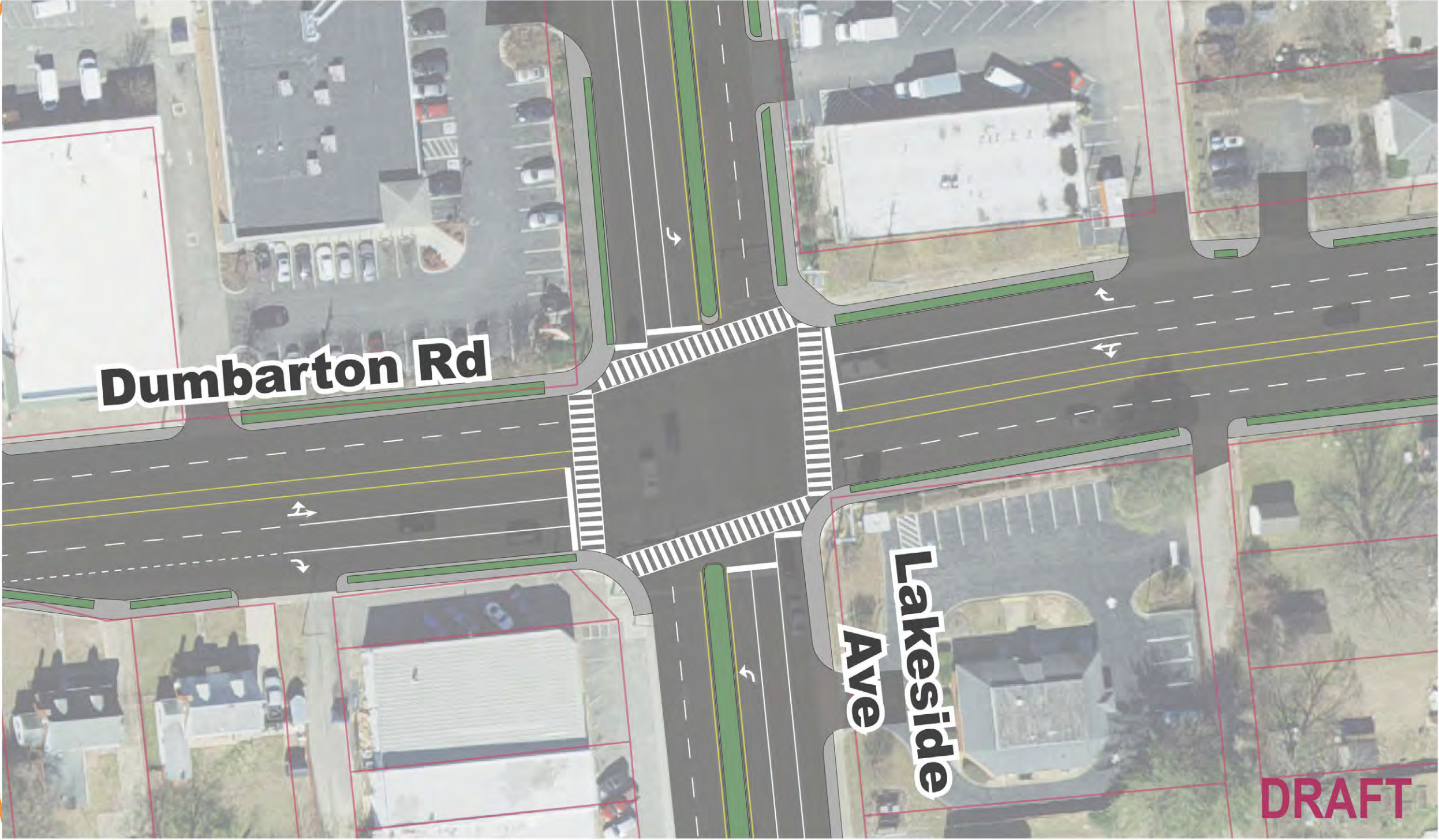
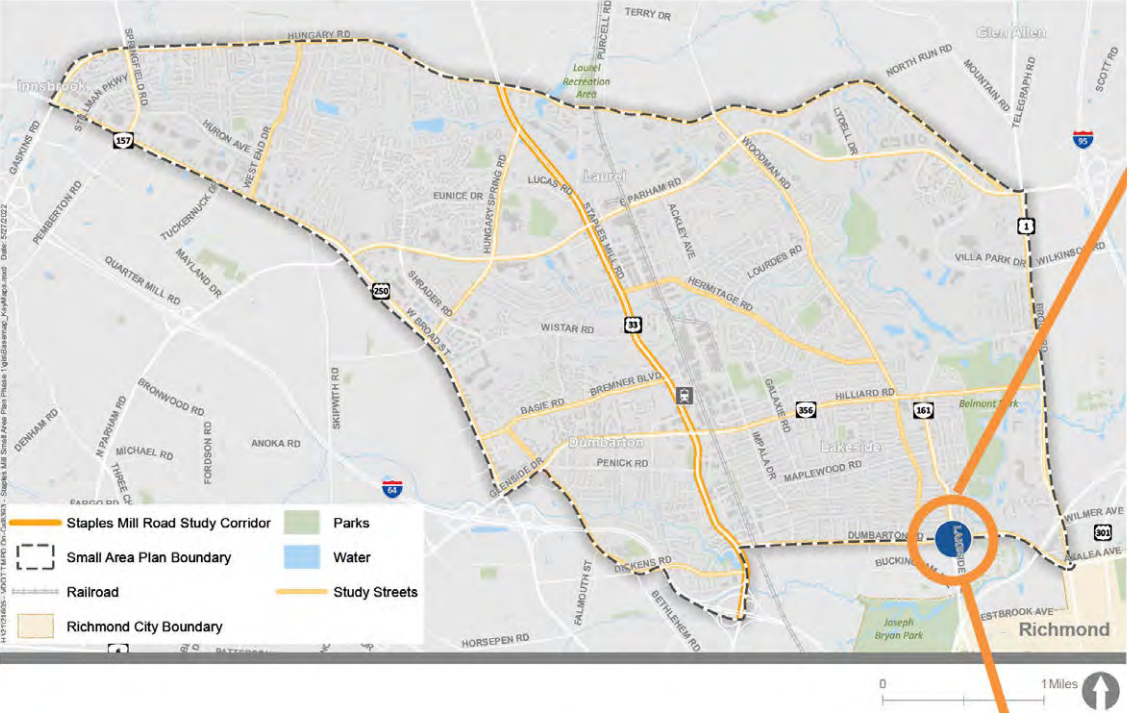
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Reduces crossing distance for pedestrians. Addresses motorist crashes with travel lane and signal timing adjustments.</p>	<p>●●●●</p> <p>Improves travel time for cars and reduces pedestrian delay with signal timing.</p>	<p>●●●●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p>●●●●</p> <p>Provide multimodal facilities connected to employment.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

Lakeside Drive and Dumbarton Road: Existing



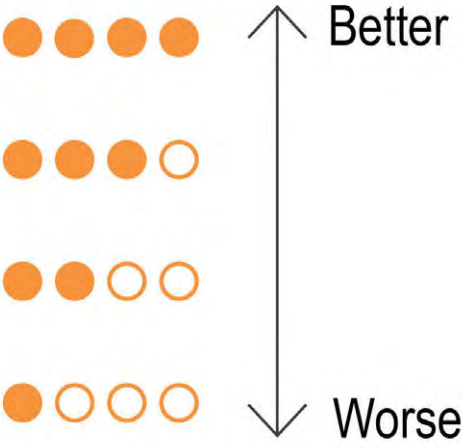
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ○ ○ ○</p> <p>High crash intersection.</p>	<p style="text-align: center;">● ○ ○ ○</p> <p>Motorists experience delays during rush hour. Pedestrians experience delay all day.</p>	<p style="text-align: center;">● ● ○ ○</p> <p>Intersection has missing facilities for people walking and biking.</p>	<p style="text-align: center;">● ● ○ ○</p> <p>Multimodal facilities are disconnected from employment.</p>	<p style="text-align: center;">● ● ● ●</p> <p>No right-of-way impacts or drainage impacts.</p>

Lakeside Drive and Dumbarton Road: Concept



Not To Scale

Performance Measures

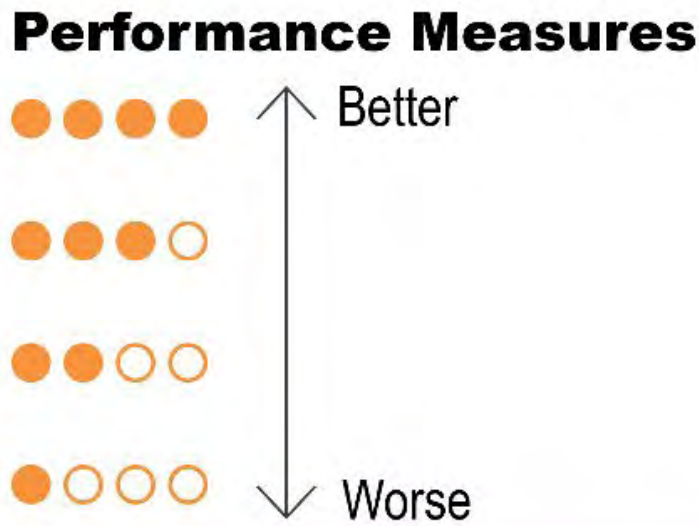
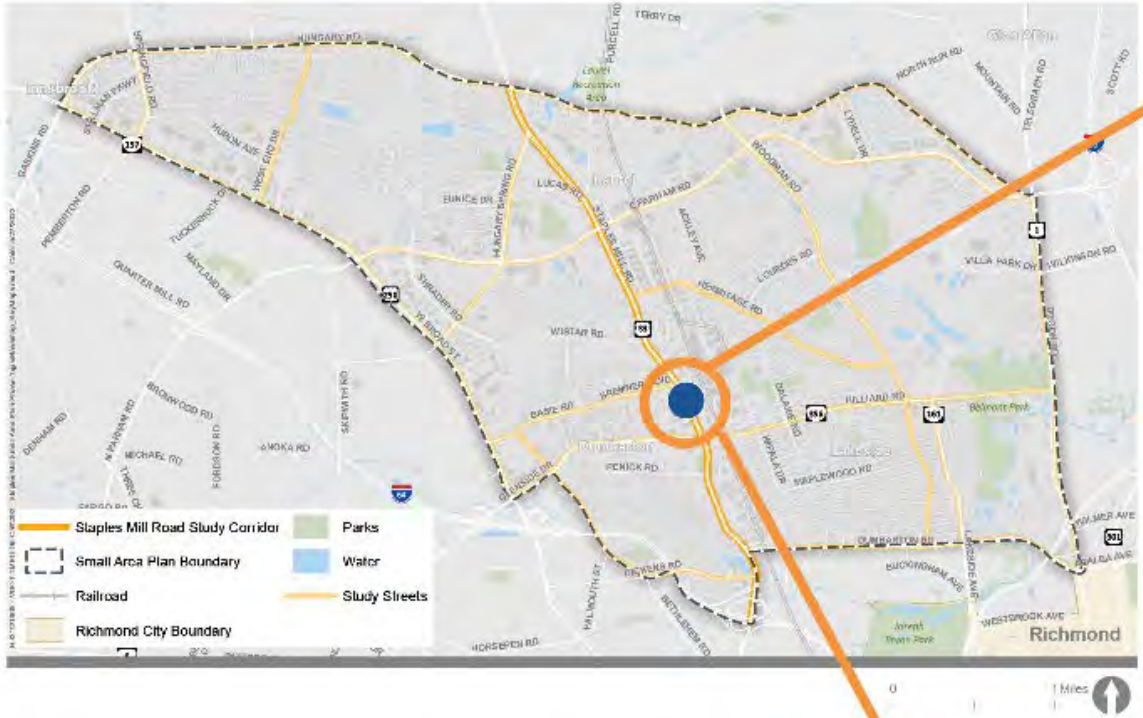


Intersection Elements

- IMPLEMENT LEADING PEDESTRIAN INTERVAL
- UPGRADE CURB RAMPS
- ADD NO RIGHT-TURN ON RED
- ASPHALT
- SIDEWALK/MEDIAN
- LANDSCAPE
- PARCEL LINES

<p>Improve Safety and Comfort</p>	<p>Manage Congestion</p>	<p>Foster Community and Environmental Health</p>	<p>Support Economic Development</p>	<p>Impacts</p>
<p>●●●●●</p> <p>Increases pedestrian visibility with enhanced crosswalks and signal timing. Reduces crossing distance for pedestrians.</p>	<p>●●●○</p> <p>Maintains travel time for cars and reduces pedestrian delay with signal timing.</p>	<p>●●●●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p>●●●●</p> <p>Provides multimodal facilities connected to employment.</p>	<p>●●●○</p> <p>No right-of-way impacts and minor drainage impacts.</p>

Staples Mill Road and Amtrak Station: Existing



Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●○○</p> <p>No pedestrian crossings.</p>	<p>●●○○</p> <p>Motorists generally don't experience delays. Pedestrians experience delay all day.</p>	<p>●○○○</p> <p>Intersection has many missing facilities for people walking and biking.</p>	<p>●●○○</p> <p>Multimodal facilities are disconnected from employment and transit.</p>	<p>●●●●</p> <p>No right-of-way impacts or drainage impacts.</p>

Staples Mill Road and Amtrak Station: Concept



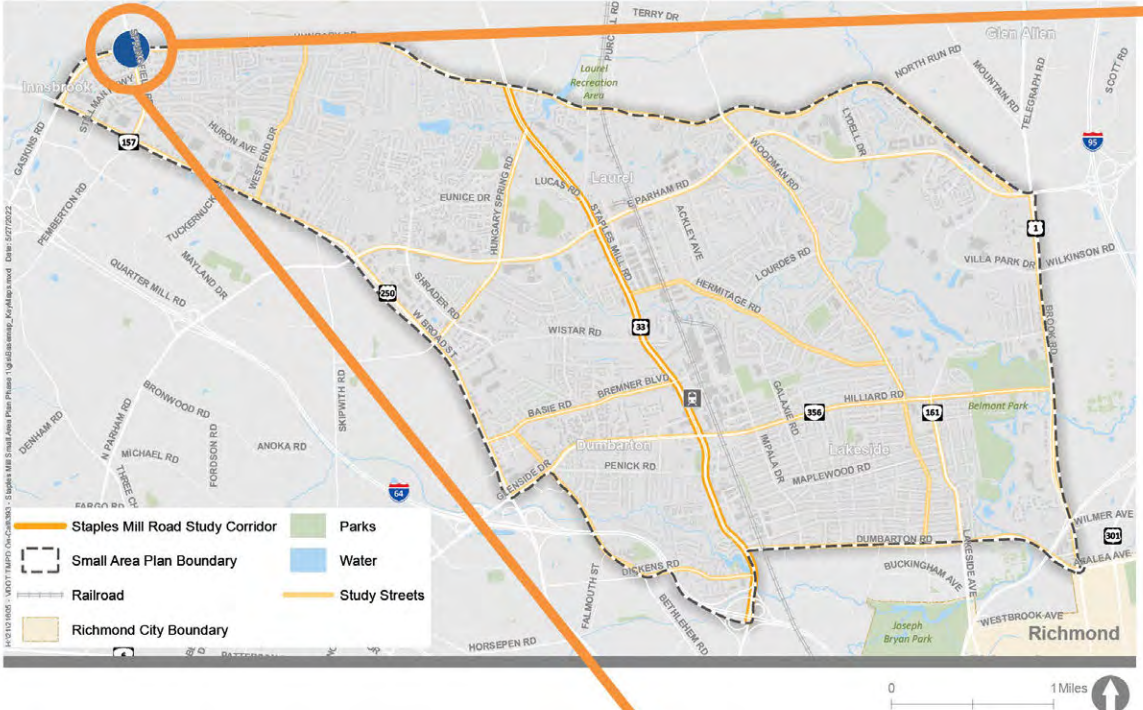
N
Not To Scale



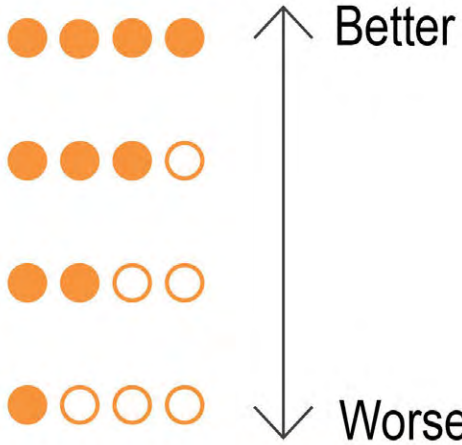
- Intersection Elements**
- IMPLEMENT LEADING PEDESTRIAN INTERVAL
 - ADD INTERSECTION LIGHTING
 - ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD NO RIGHT-TURN ON RED
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ● ● ●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Maintains travel time for cars and buses, and reduces pedestrian delay with signal timing.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Provide multimodal facilities connected to employment and transit.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Minor right-of-way and drainage impacts.</p>

Springfield Road and Gaskins Road/Hungary Road: Existing

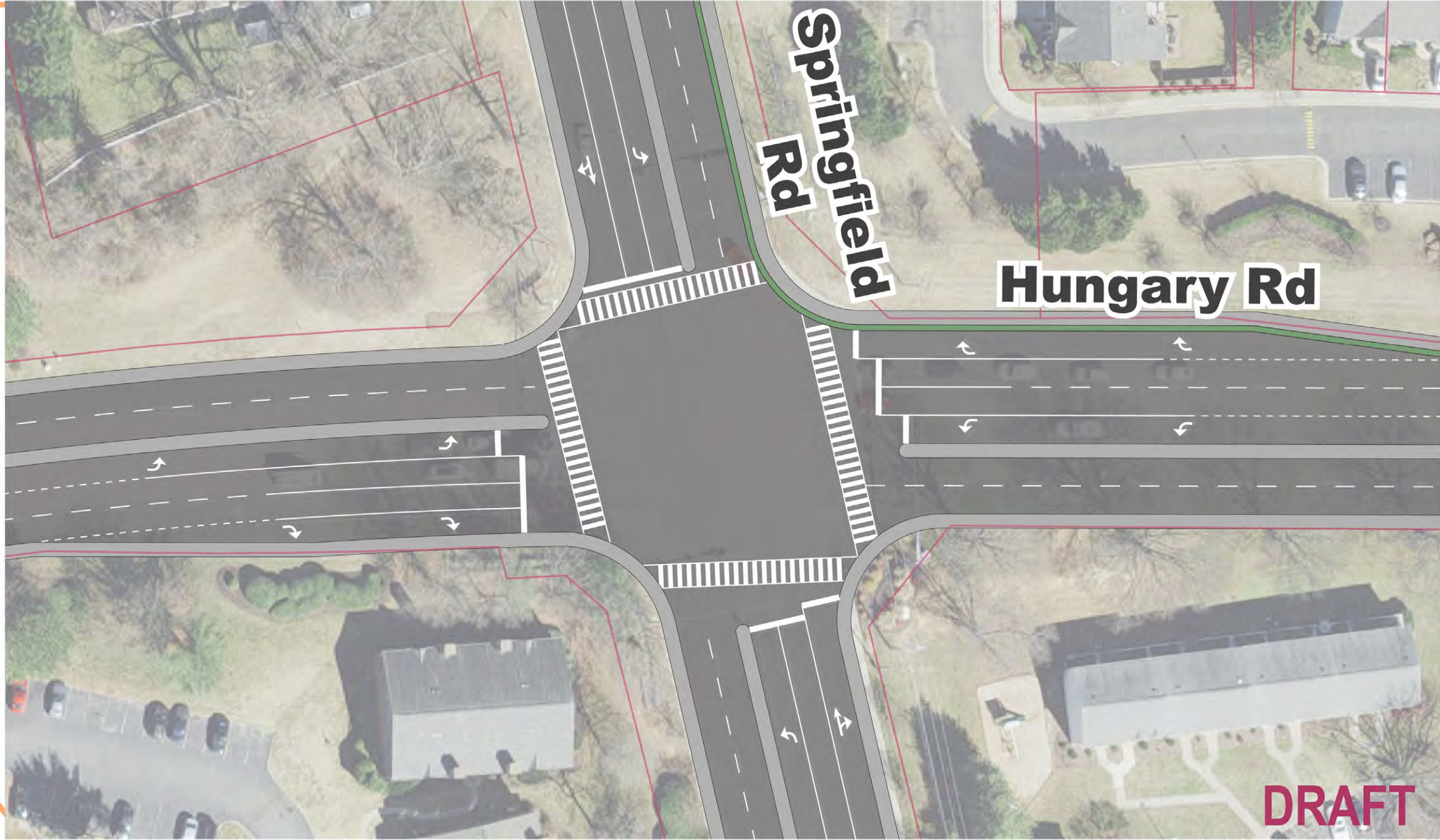
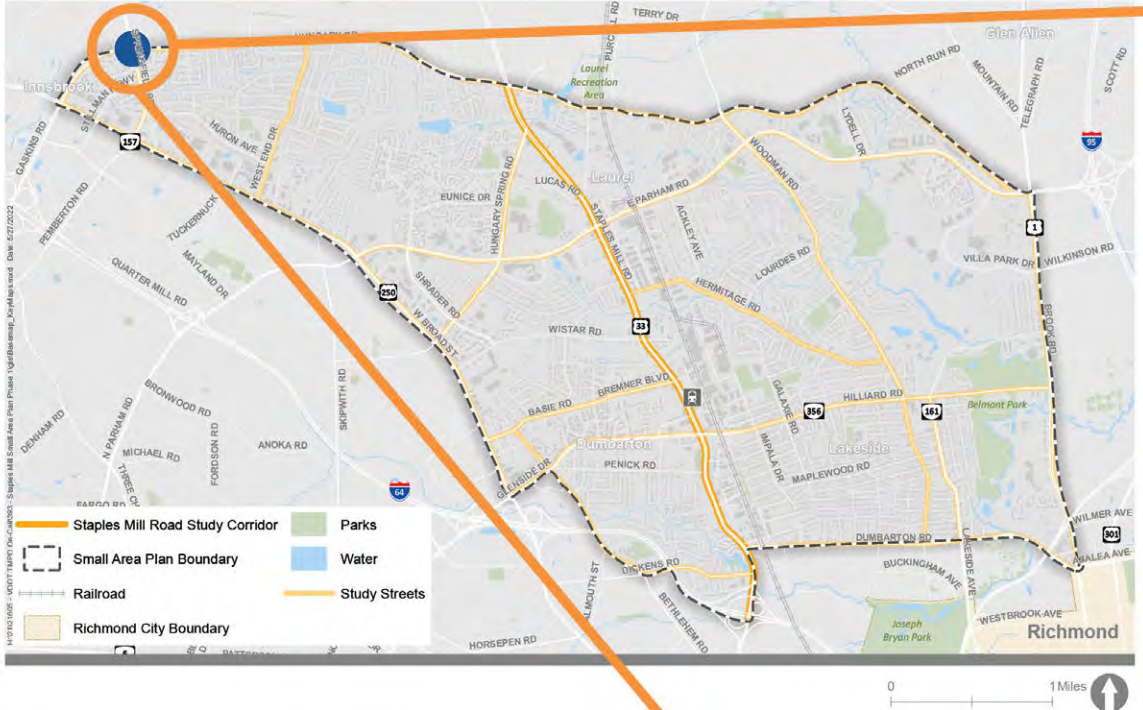


Performance Measures



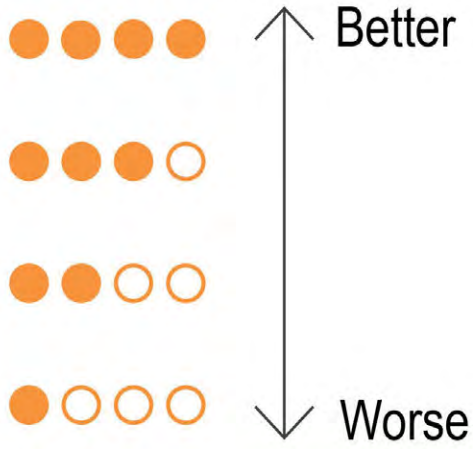
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>● ○ ○ ○</p> <p>High crash intersection with no pedestrian crossings.</p>	<p>● ○ ○ ○</p> <p>Motorists experience delays during rush hour. Pedestrians experience delay all day.</p>	<p>● ○ ○ ○</p> <p>Intersection has many missing facilities for people walking and biking.</p>	<p>● ● ○ ○</p> <p>Multimodal facilities are disconnected from employment.</p>	<p>● ● ● ●</p> <p>No right-of-way impacts or drainage impacts.</p>

Springfield Road and Gaskins Road/Hungary Road: Concept



North Arrow
Not To Scale

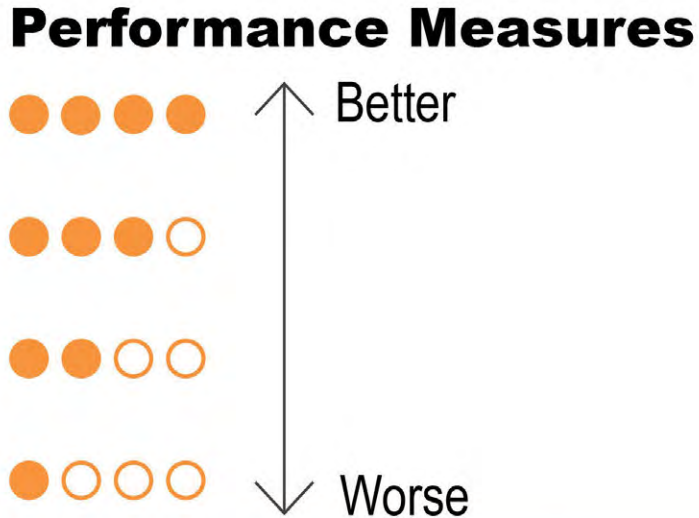
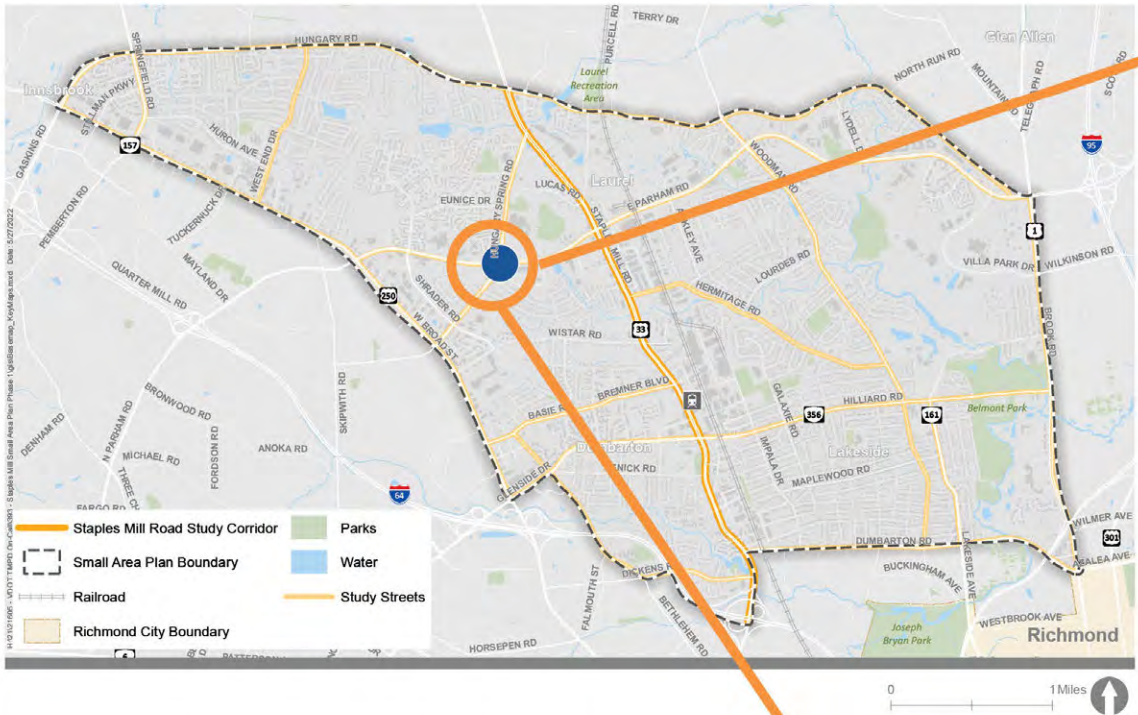
Performance Measures



- Intersection Elements**
- IMPLEMENT LEADING PEDESTRIAN INTERVAL
 - ADD INTERSECTION LIGHTING
 - ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ADD NO RIGHT-TURN ON RED
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

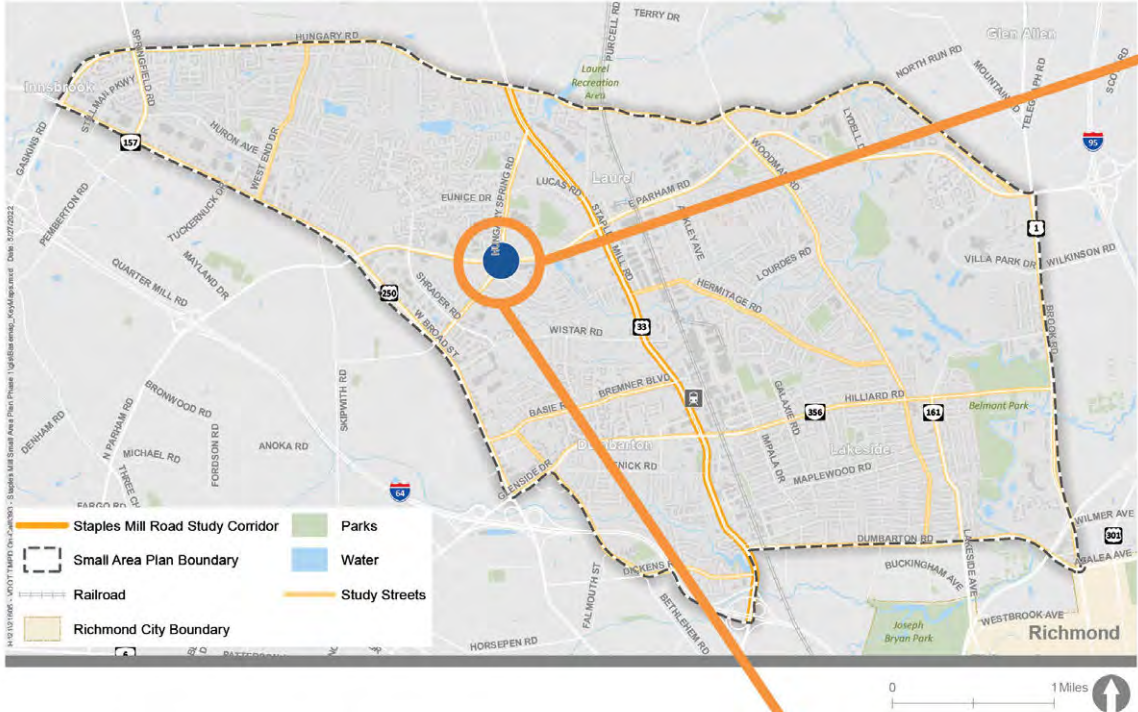
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p style="text-align: center;">● ● ● ●</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Improves nighttime visibility with intersection lighting.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Maintains travel time for cars and reduces pedestrian delay with signal timing.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p style="text-align: center;">● ● ● ●</p> <p>Provides multimodal facilities connected to employment.</p>	<p style="text-align: center;">● ● ● ○</p> <p>Minor right-of-way and drainage impacts.</p>

East Parham Road and Hungary Spring Road: Existing



Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●○○○</p> <p>High crash intersection and outdated pedestrian crossings.</p>	<p>●●○○</p> <p>Motorists generally don't experience delays. Pedestrians experience delay all day.</p>	<p>●●○○</p> <p>Intersection has missing facilities for people walking and biking.</p>	<p>●●○○</p> <p>Multimodal facilities are disconnected from employment and transit.</p>	<p>●●●●</p> <p>No right-of-way impacts or drainage impacts.</p>

East Parham Road and Hungary Spring Road: Concept



N
Not To Scale

Performance Measures

●●●● Better

●●●○

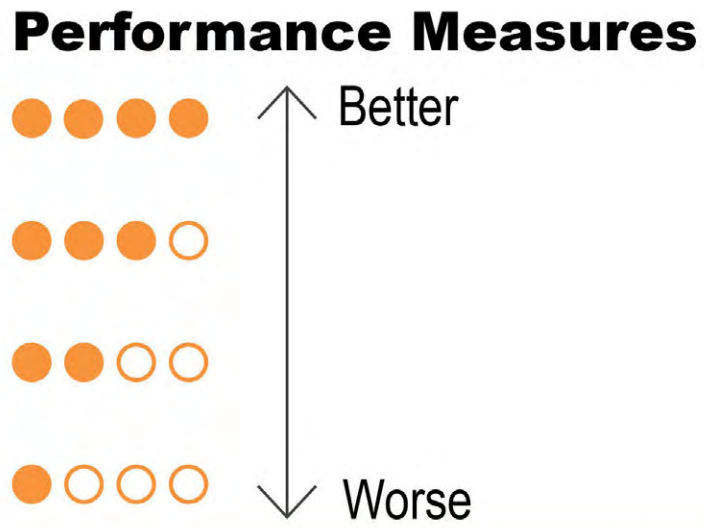
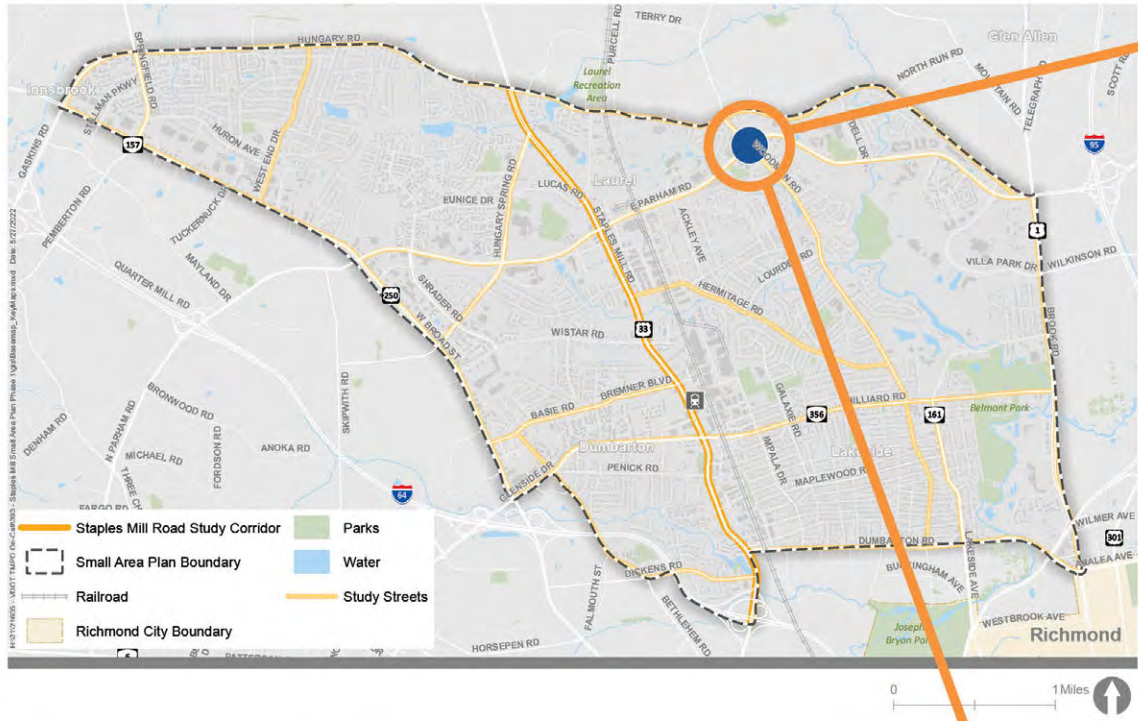
●●○○

●○○○ Worse

- Intersection Elements**
- UPDATE SIGNAL HARDWARE
 - ADD INTERSECTION LIGHTING
 - ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

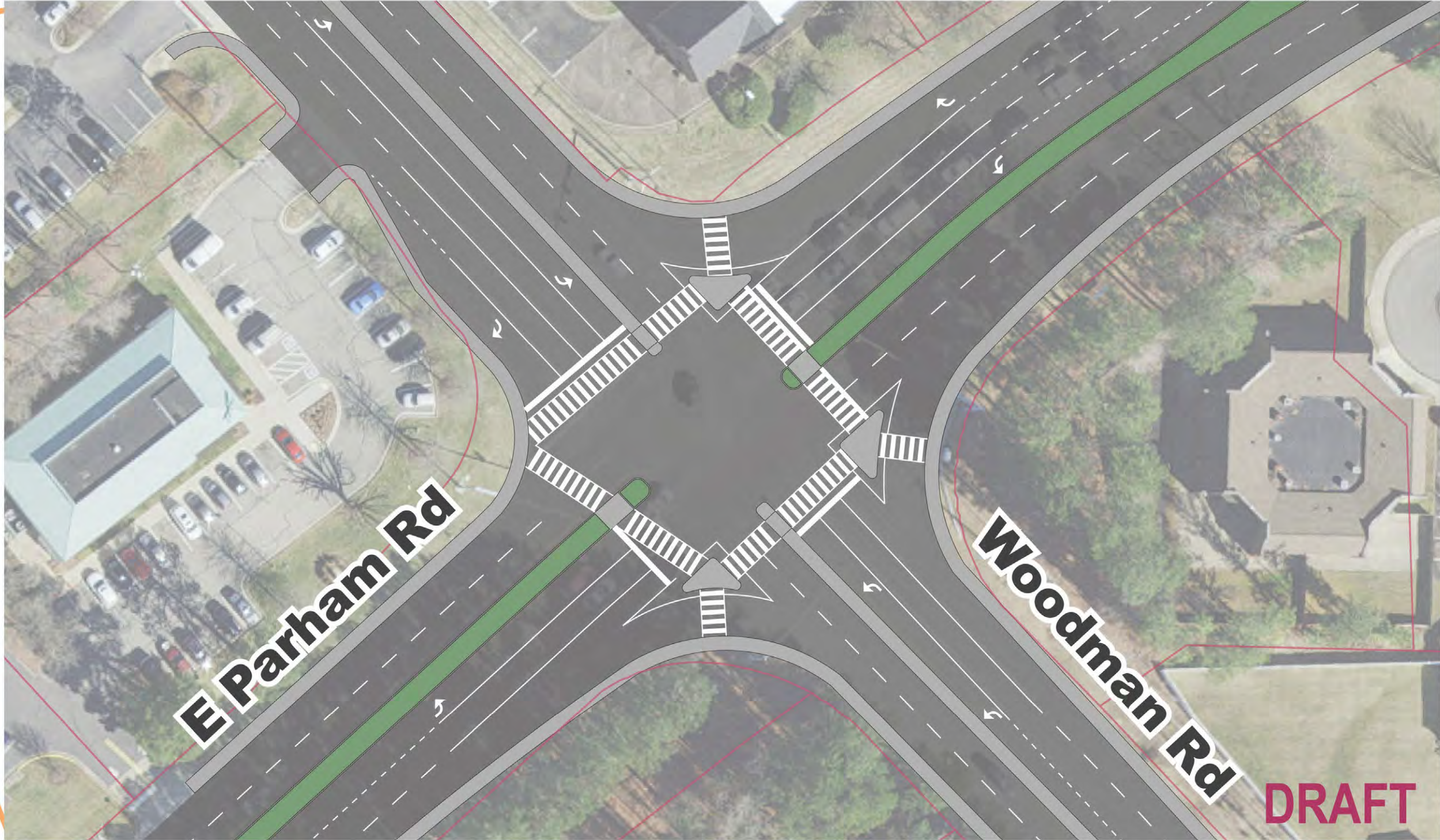
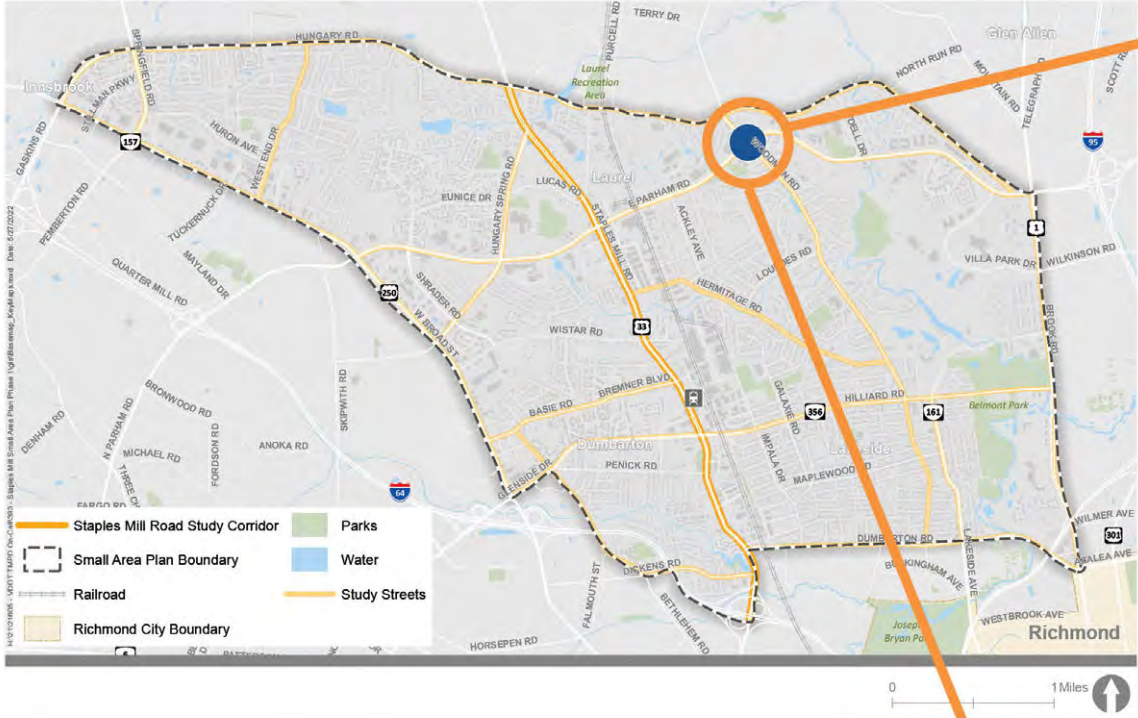
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●●●○</p> <p>Increases pedestrian visibility with enhanced crosswalks and signal timing. Reduces crossing distance for pedestrians. Improves nighttime visibility with intersection lighting.</p>	<p>●●●○</p> <p>Maintains travel time for cars and buses, and reduces pedestrian delay with signal timing.</p>	<p>●●●●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p>●●●●</p> <p>Provide multimodal facilities connected to employment and transit.</p>	<p>●●●○</p> <p>Minor right-of-way and drainage impacts.</p>

East Parham Road and Woodman Road: Existing



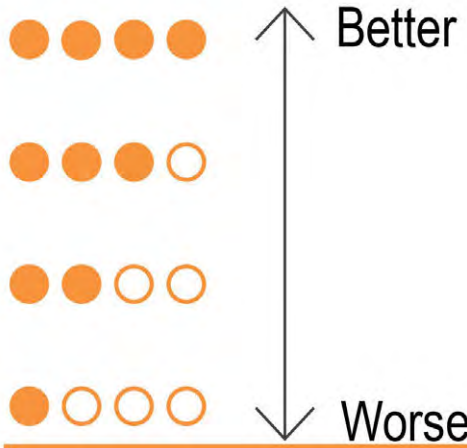
Improve Safety and Comfort	Manage Congestion	Foster Community and Environmental Health	Support Economic Development	Impacts
<p>●○○○</p> <p>High crash intersection with no pedestrian crossings.</p>	<p>●●○○</p> <p>Motorists generally don't experience delays. Pedestrians experience delay all day.</p>	<p>●○○○</p> <p>Intersection has no multimodal facilities for people walking and biking.</p>	<p>●○○○</p> <p>No multimodal facilities connected to employment.</p>	<p>●●●●</p> <p>No right-of-way impacts or drainage impacts.</p>

East Parham Road and Woodman Road: Concept



N
Not To Scale

Performance Measures



- Intersection Elements**
- UPDATE SIGNAL HARDWARE
 - ADD PEDESTRIAN SIGNAL HEADS
 - UPGRADE CURB RAMPS
 - ASPHALT
 - SIDEWALK/MEDIAN
 - LANDSCAPE
 - PARCEL LINES

<p>Improve Safety and Comfort</p>	<p>Manage Congestion</p>	<p>Foster Community and Environmental Health</p>	<p>Support Economic Development</p>	<p>Impacts</p>
<p>● ● ● ○</p> <p>Increases pedestrian visibility with crosswalks and signal timing. Reduces crossing distance for pedestrians.</p>	<p>● ● ● ○</p> <p>Maintains travel time for cars and reduces pedestrian delay with signal timing.</p>	<p>● ● ● ●</p> <p>Improves ADA-accessible crossings for bicyclists and pedestrians.</p>	<p>● ● ● ●</p> <p>Provides multimodal facilities connected to employment.</p>	<p>● ● ● ○</p> <p>Minor right-of-way and drainage impacts.</p>