

# Final Plan Presentation

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Baltimore Metropolitan Council  
Bicycle and Pedestrian Advisory  
Group  
March 15, 2023

## Walk & Roll Anne Arundel!



# Executive Summary



## Anne Arundel County, "The Best Place – For All!"

Anne Arundel County is known as the heart of Maryland. It is home to Annapolis, the state capital. Residents and visitors alike enjoy its plentiful shoreline, idyllic rural areas, and lively city and town centers. Throughout these various sceneries of Anne Arundel County, a safe, accessible, and enjoyable environment for walking and bicycling is key to a high quality of life.

Today, many parts of the County can be challenging to navigate on foot or by bicycle, as the network of sidewalks and bicycle infrastructure is incomplete and, in many places, not comfortable or appealing to people of all ages and abilities.

*Walk & Roll Anne Arundel!*, the County's updated pedestrian and bicycle master plan, seeks to improve these transportation conditions. Anne Arundel County leaders, residents, and stakeholders can use *Walk & Roll Anne Arundel!* to advance active transportation infrastructure. The recommendations in this plan will enable more people to walk and bicycle safely, comfortably, and efficiently.

## Goals of this Plan

This plan builds on recommendations established in *Move Anne Arundel!*, the County's first Transportation Functional Master Plan.

Specifically, the goals and strategies in *Walk & Roll Anne Arundel!* are to:

- Prioritize a safe and comfortable – low-stress – walking and rolling network between essential destinations throughout the County.
- Ensure that vulnerable populations have access to active transportation infrastructure.
- Recommend infrastructure proven to reduce crashes, especially at intersections and along corridors with high rates of crashes resulting in death or serious injury.
- Identify policy recommendations to promote the construction of safe, accessible, and direct walking and rolling infrastructure.

*Walk & Roll Anne Arundel!* also works to address transportation challenges detailed in *Plan2040*, the County's General Development Plan. This plan is organized by the nine Regional Planning Areas established by *Plan2040*.

## Relationship to the City of Annapolis

This plan considers the relationship and connectivity of the proposed network to the network to the City of Annapolis. However, *Walk & Roll Anne Arundel!* does not evaluate or make recommendations within the City. The City has its own Bicycle Master Plan.

## Shared-use paths



Figure 2: Pedestrians and bicyclists both use a shared-use path.  
Source: Toole Design Group.

## Bicycle lanes



Figure 3: A bicyclist using a standard bicycle lane.  
Source: Toole Design Group.

## Separated bicycle lanes

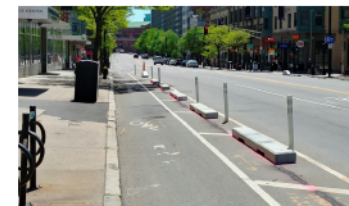


Figure 4: A separated bicycle lane located in Boston, MA.  
Source: Toole Design Group.

## What is a Low-stress Network?

Anne Arundel County residents of all ages and abilities should feel comfortable traveling in a low-stress network that meets their needs in all phases of life: from getting to school, commuting to work, and participating in recreational activities.

In a low-stress network:

- Sidewalks are continuous and meet accessibility requirements. They are also characterized by wider sidewalks that are buffered from the roadway by either grass strips, street trees, parked cars, or other barriers.
- Bicycle facilities provide separation from fast-moving motor vehicle traffic.
- Trails are designed to accommodate the anticipated number of trail users.
- At intersections and crossings, people have a clear, well-marked place to cross without risk of a crash.
- Multimodal transit opportunities will seamlessly allow travelers to complete their trips using a combination of modes.

To the left are some of the low-stress facilities recommended in the plan.

# *Walk & Roll Anne Arundel!* Goals

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- Safe and comfortable walking and rolling network for all ages and abilities
- Continuous connections to essential destinations
- Increase access for vulnerable people





# Safe Bicycling Infrastructure



*Separated bike lane*



*Shared use path*



*Buffered bike lane*



# Safe Walking Infrastructure



*Rapid flashing beacon*



*PHB*



*Curb extension*



*Ped refuge island*

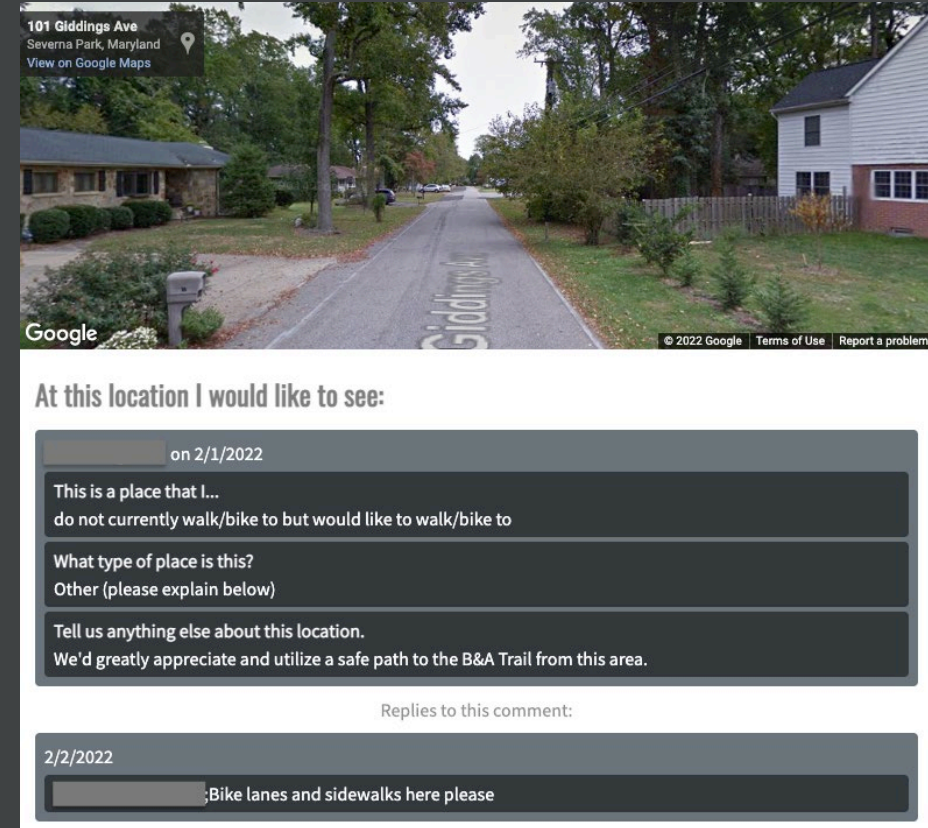
# Community Involvement

A scenic view of a large suspension bridge, likely the Chesapeake Bay Bridge-Tunnel, spanning a wide body of water. In the foreground, a paved path runs along the water's edge. Several people are walking and cycling on this path. A person in a bright yellow-green cycling jacket is prominent in the foreground, riding away from the camera. Other people are visible further along the path, some walking and some on bicycles. The sky is blue with scattered white clouds. The overall scene suggests a community activity or a recreational outing.



# Online survey and interactive webmap

- Over 800 comments
- Common themes:
  - Connections to trails
  - Need for protected or buffered bicycle lanes
  - Direct neighborhood connections
- 140 comments: lack of shoulder on high-volume roads



101 Giddings Ave  
Severna Park, Maryland  
[View on Google Maps](#)

Google

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At this location I would like to see:

on 2/1/2022

This is a place that I...  
do not currently walk/bike to but would like to walk/bike to

What type of place is this?  
Other (please explain below)

Tell us anything else about this location.  
We'd greatly appreciate and utilize a safe path to the B&A Trail from this area.

Replies to this comment:

2/2/2022

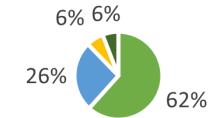
;Bike lanes and sidewalks here please

# Online survey and interactive webmap

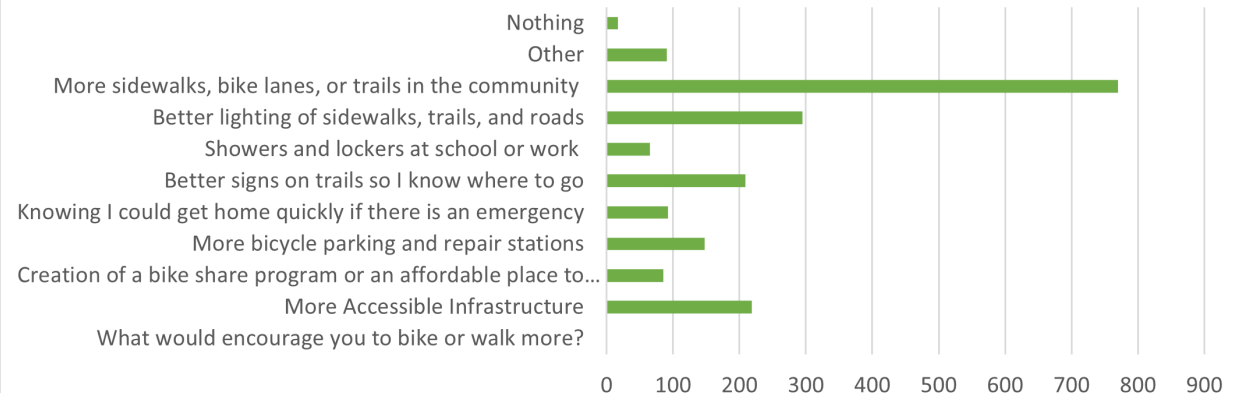
- 96.5% - use a vehicle on a regular basis
- 96% - having more sidewalks, bike lanes or trails = more walking and bicycling

Bicycle Comfort Levels

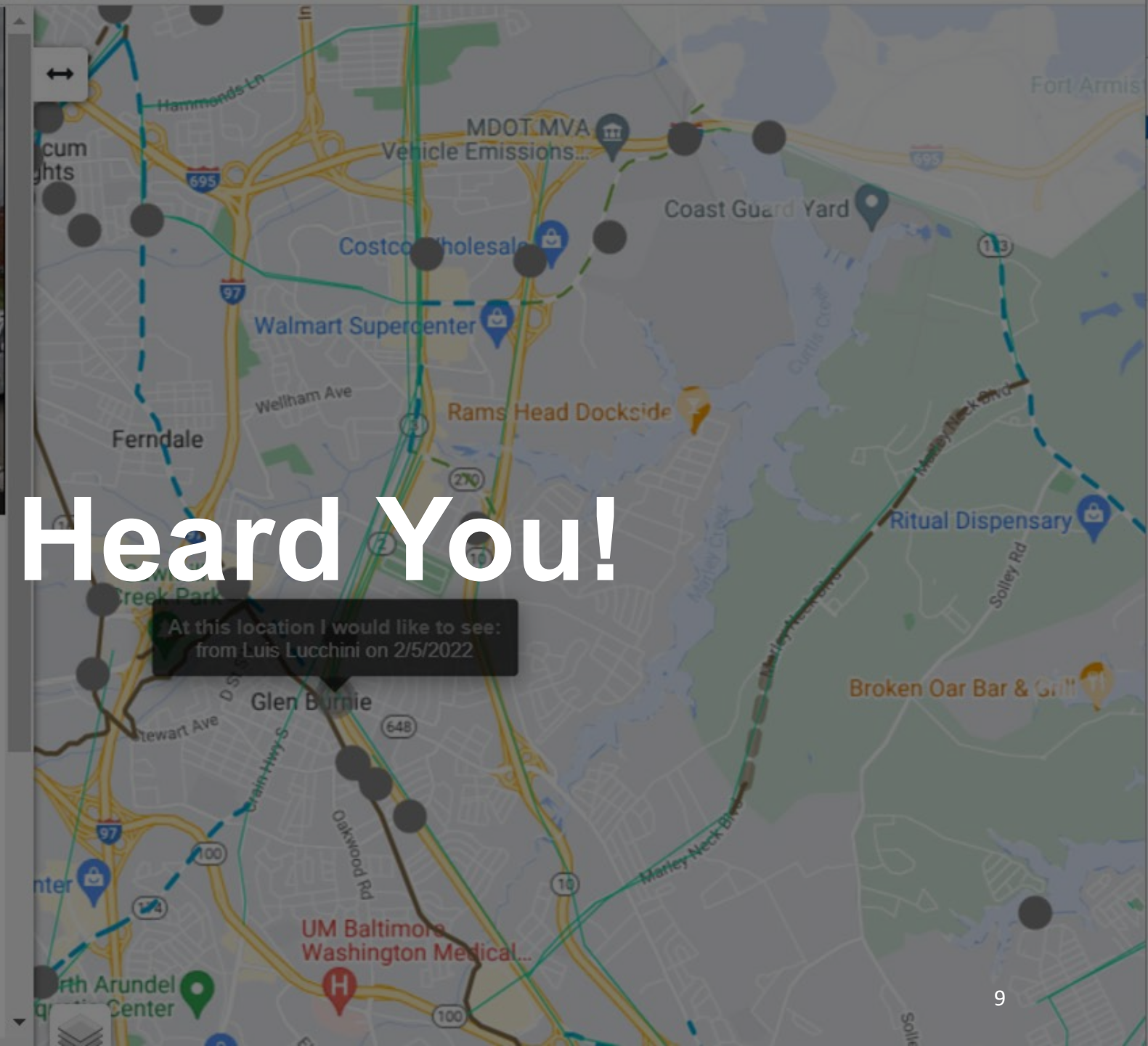
- I'm interested, but there are things preventing me
- I ride sometimes, but wish I was more comfortable
- Not interested
- I feel comfortable traveling most places by bicycle



What would encourage you to walk or bicycle more?







# We Heard You!

like to see:

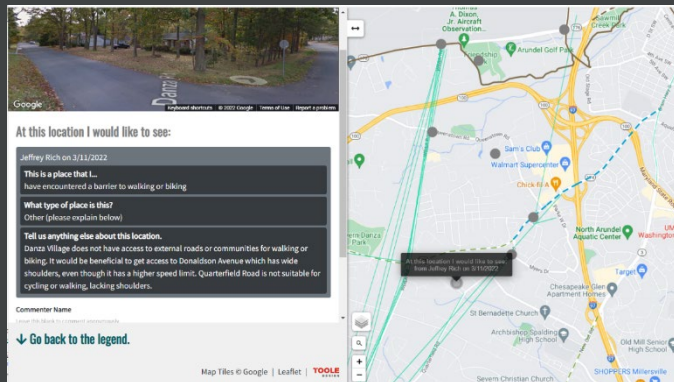
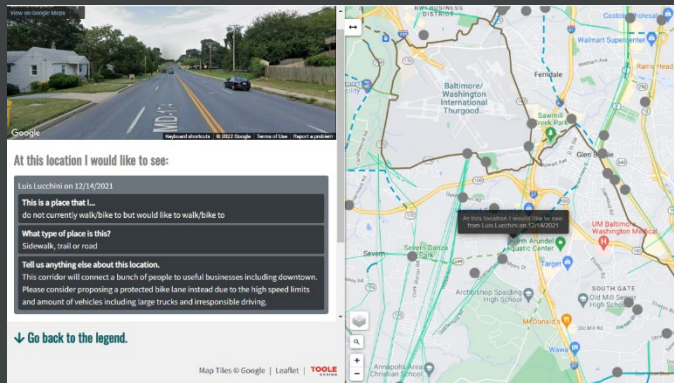
to walking or biking

this location.

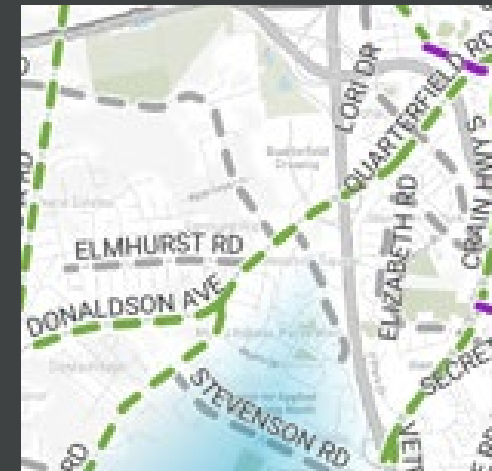
people from the neighborhoods on the east will be better

# Quarterfield Rd

## Public comment



## Plan recommendation



### Facility Types

#### Proposed

- Shared-use Path
- Separated Bike Lane
- Bike Lane
- Low Stress Connection
- Secondary Network

#### Areas for Future Study

- Key Trail Intersections

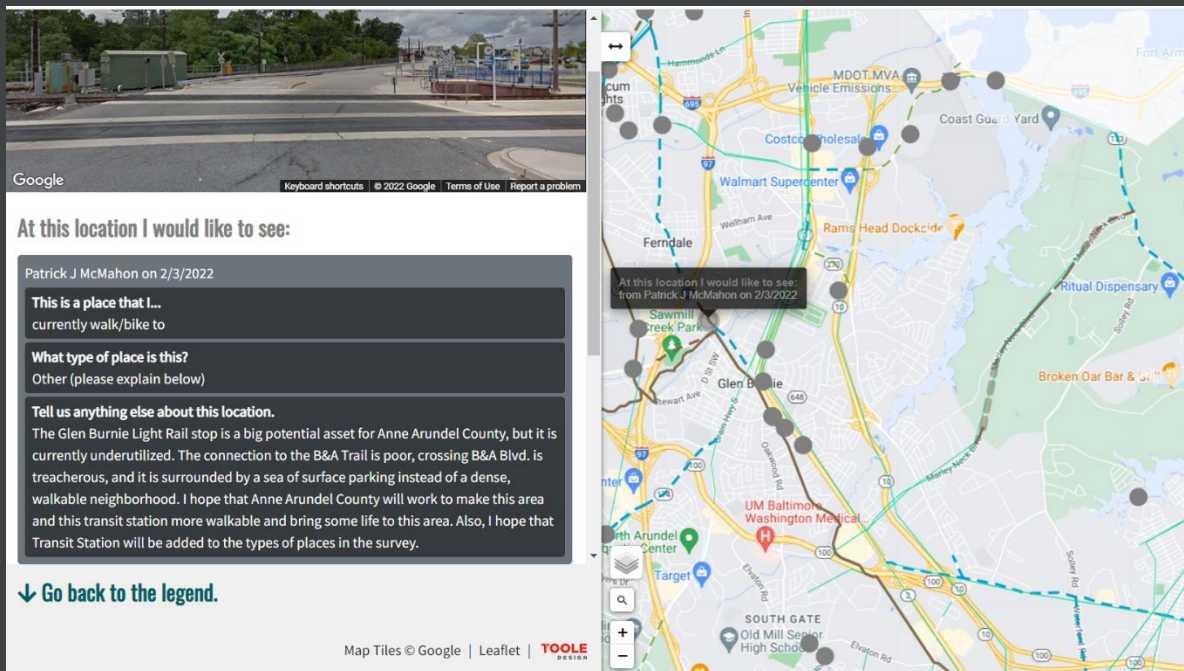
#### Existing

- Shared-use Path
- Bike Lane



# B&A Trail – Glen Burnie Light Rail

## Public comment



## Plan recommendation



Facility Types	
<b>Proposed</b>	Areas for Future Study
Shared-use Path	Key Trail Intersections
Separated Bike Lane	<b>Existing</b>
Bike Lane	Shared-use Path
Low Stress Connection	Bike Lane
Secondary Network	



# Deale Rd/MD-256 – Deale

## Public comments

At this location I would like to see:

4/25/2022  
Lisa on 4/25/2022

This is a place that I...  
do not currently walk/bike to but would like to walk/bike to

What type of place is this?  
Other (please explain below)

Tell us anything else about this location.  
Many of us would walk this road if it were safe. And I see people walking to the grocery store, using the shoulder, even with little kids with them. A sidewalk on 256 from 468 to at least Franklin Manor Rd would improve the health of residents and encourage business growth.

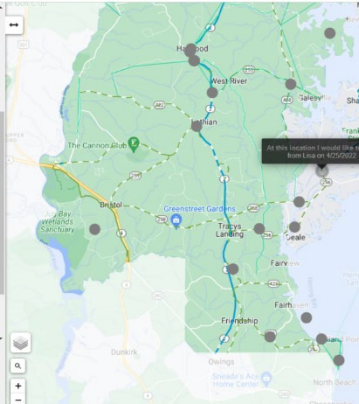
Replies to this comment:

4/26/2022  
Jackie Savitzj agree.

4/26/2022  
Jackie Savitzj agree

Commenter Name  
Leave this blank to comment anonymously.

Go back to the legend.



At this location I would like to see:

4/20/2022  
Mike Shay on 3/16/2022

This is a place that I...  
do not currently walk/bike to but would like to walk/bike to

What type of place is this?  
Other (please explain below)

Tell us anything else about this location.  
Deale area from Herrington Harbor to Deale Circle needs SIDEWALKS!

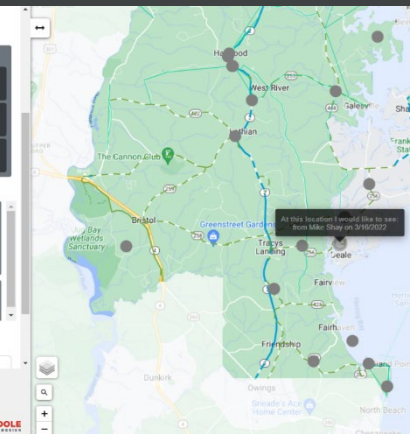
Replies to this comment:

4/20/2022  
Vanessa Cullenj have lived in Deale since 1979. Growing up we used to bike and walk everywhere! Now there is too much traffic through our small town and we need sidewalks to make walking and biking safe.

4/26/2022  
Jackie Savitzj Yes, and from Deale Circle to Christophers Food Store as well.

Commenter Name  
Leave this blank to comment anonymously.

Go back to the legend.

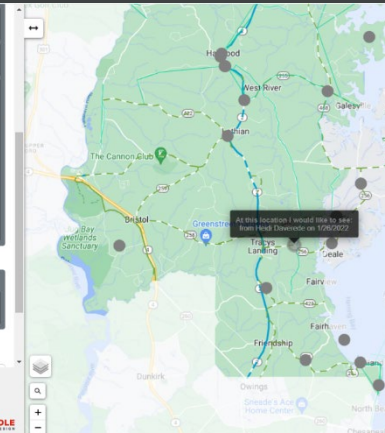


At this location I would like to see:

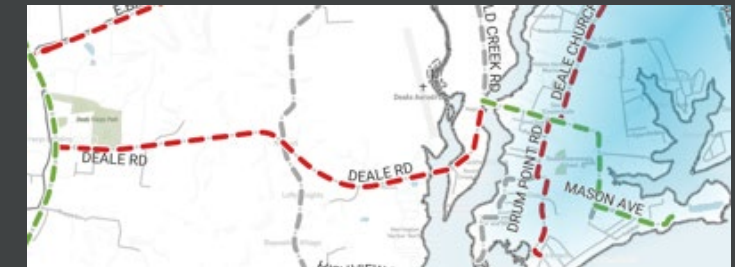
4/26/2022  
Jackie Savitzj agree, 256 is a great road to bike and go to Bristol and the Glendenning preserve, but needs a better bike/walking option.

Commenter Name  
Leave this blank to comment anonymously.

Go back to the legend.



## Plan recommendations



### Facility Types

#### Proposed

- Shared-use Path
- Separated Bike Lane
- Bike Lane
- Low Stress Connection
- Secondary Network

#### Areas for Future Study

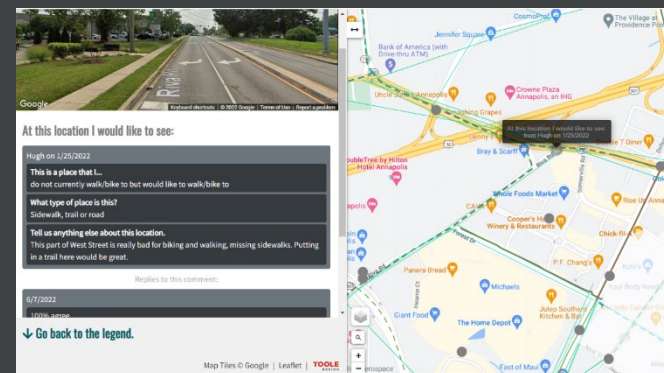
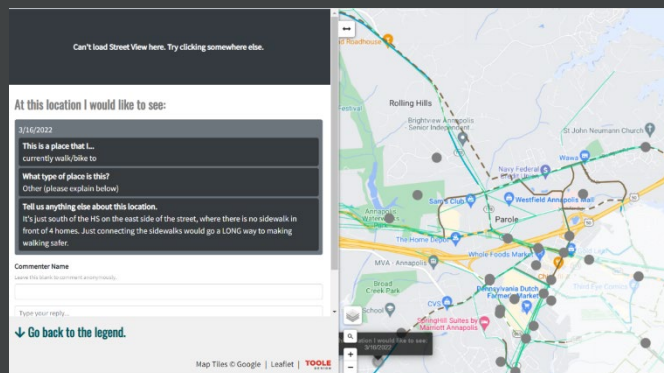
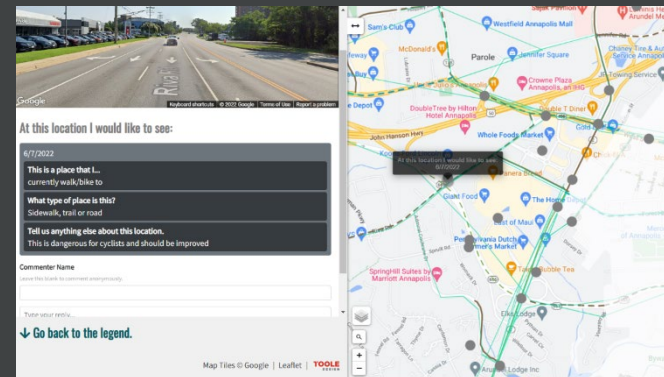
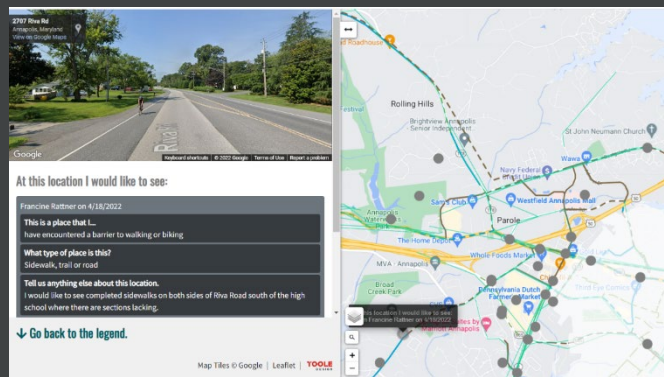
- Key Trail Intersections

#### Existing

- Shared-use Path
- Bike Lane

# Riva Rd –Parole Town Center

## Public comments



## Plan recommendations



### Facility Types

#### Proposed

- Shared-use Path
- Potential Multimodal Connection
- New Sidewalk

#### Existing

- Shared-use Path
- Sidewalk
- Town Center Boundary

#### Proposed Crossing Improvements

- Upgrade Pedestrian Crossing Elements
- Upgrade Pedestrian and Bike Crossing Elements
- New Pedestrian and Bike Crossing



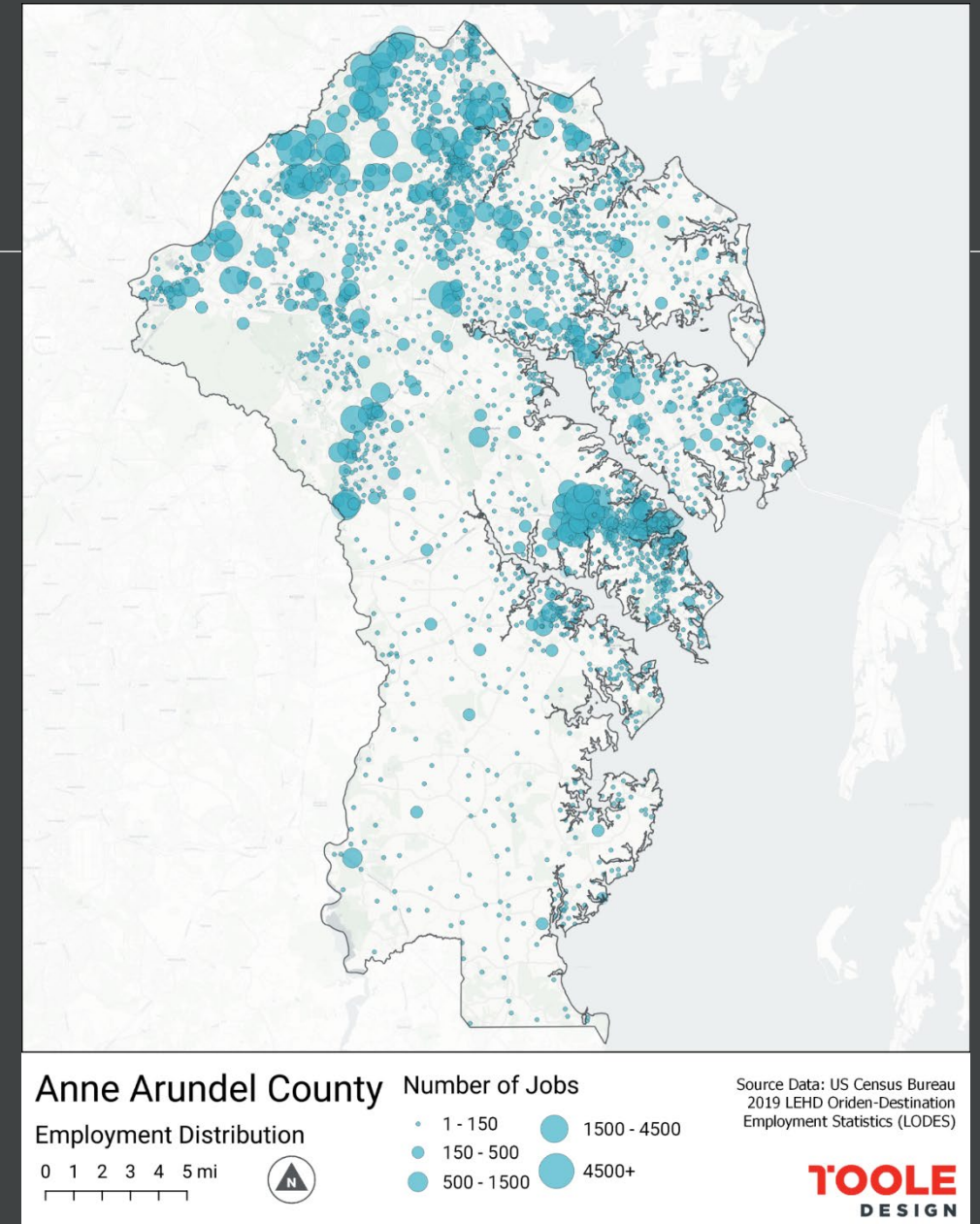
# The Low-Stress Network



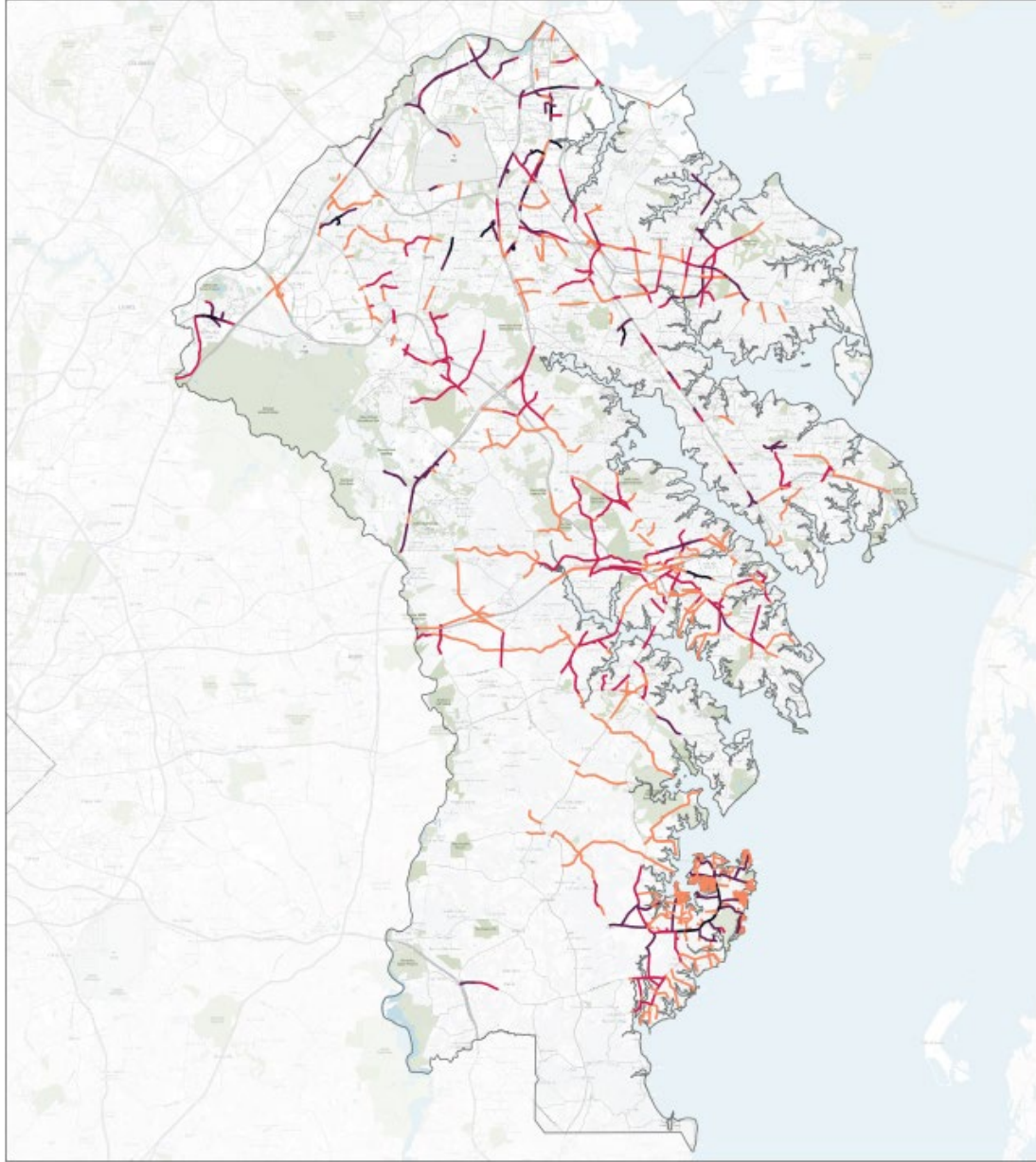


# Building the Network

- Public comments
- Crash analysis
- Access to destinations (jobs/shopping centers, schools, transit, health care, libraries, parks, residences)
- Vulnerable people (e.g., seniors, people with lower incomes, households without a car)
- Connectivity to walking & bicycling infrastructure
- Previous transportation or comprehensive plans and studies
- Cost and feasibility
- Level of traffic stress



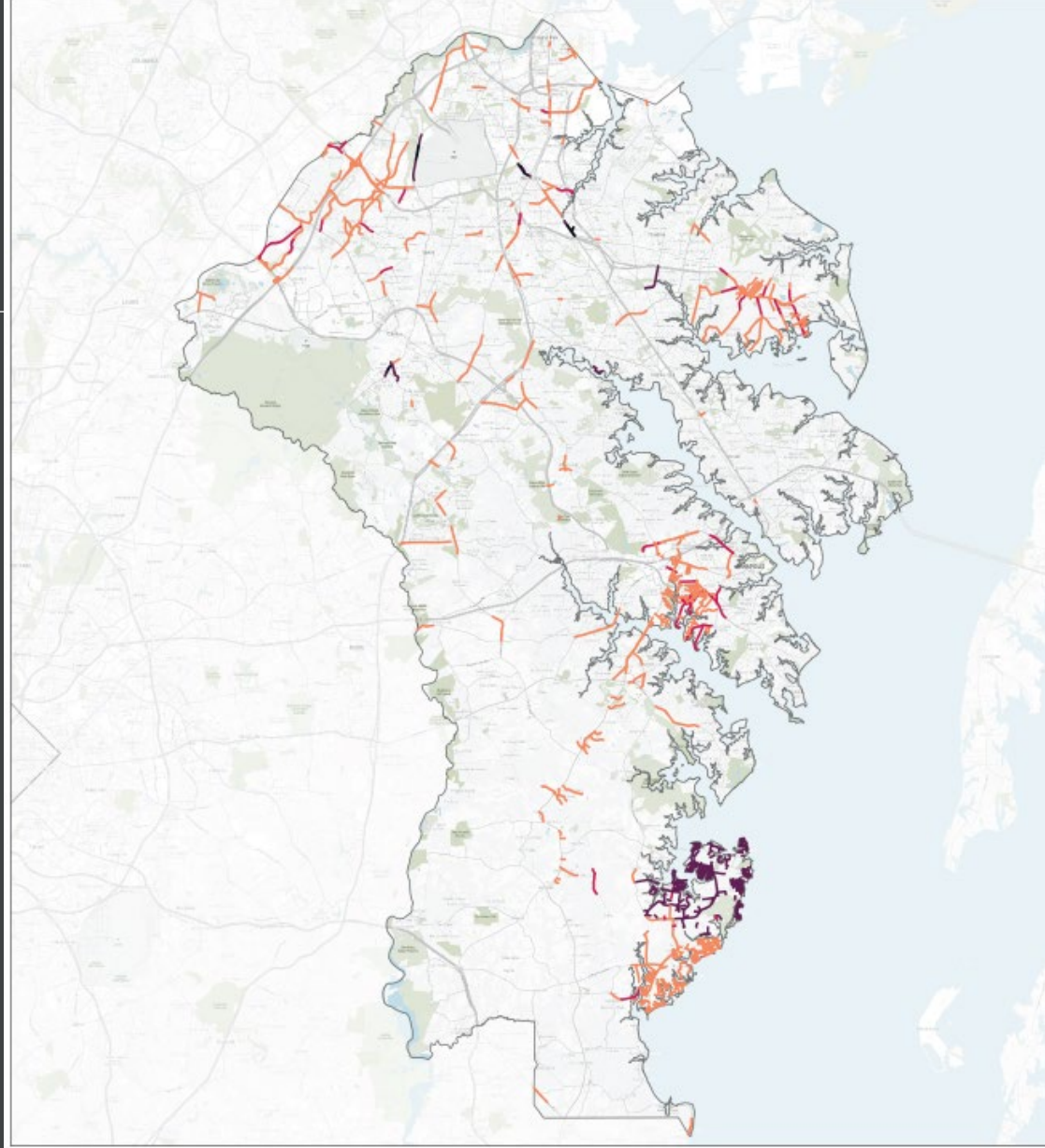
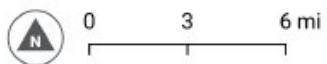
# Safety and Crash Reduction



Anne Arundel County  
SSPF Pedestrian Crash Risk

**Pedestrian Crash Risk**  
— Lower  
— Higher

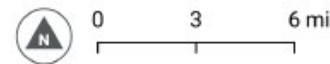
Map generated using the Safer Streets Priority Finder  
and Anne Arundel County 2016-2020 crash data.



Anne Arundel County  
SSPF Bicycle Crash Risk

**Bike Crash Risk**  
— Lower  
— Higher

Map generated using the Safer Streets Priority Finder  
and Anne Arundel County 2016-2020 crash data.





# Level of Traffic Stress (LTS)

## Bicycle Comfort Levels

- I'm interested, but there are things preventing me
- I ride sometimes, but wish I was more comfortable
- Not interested
- I feel comfortable traveling most places by bicycle

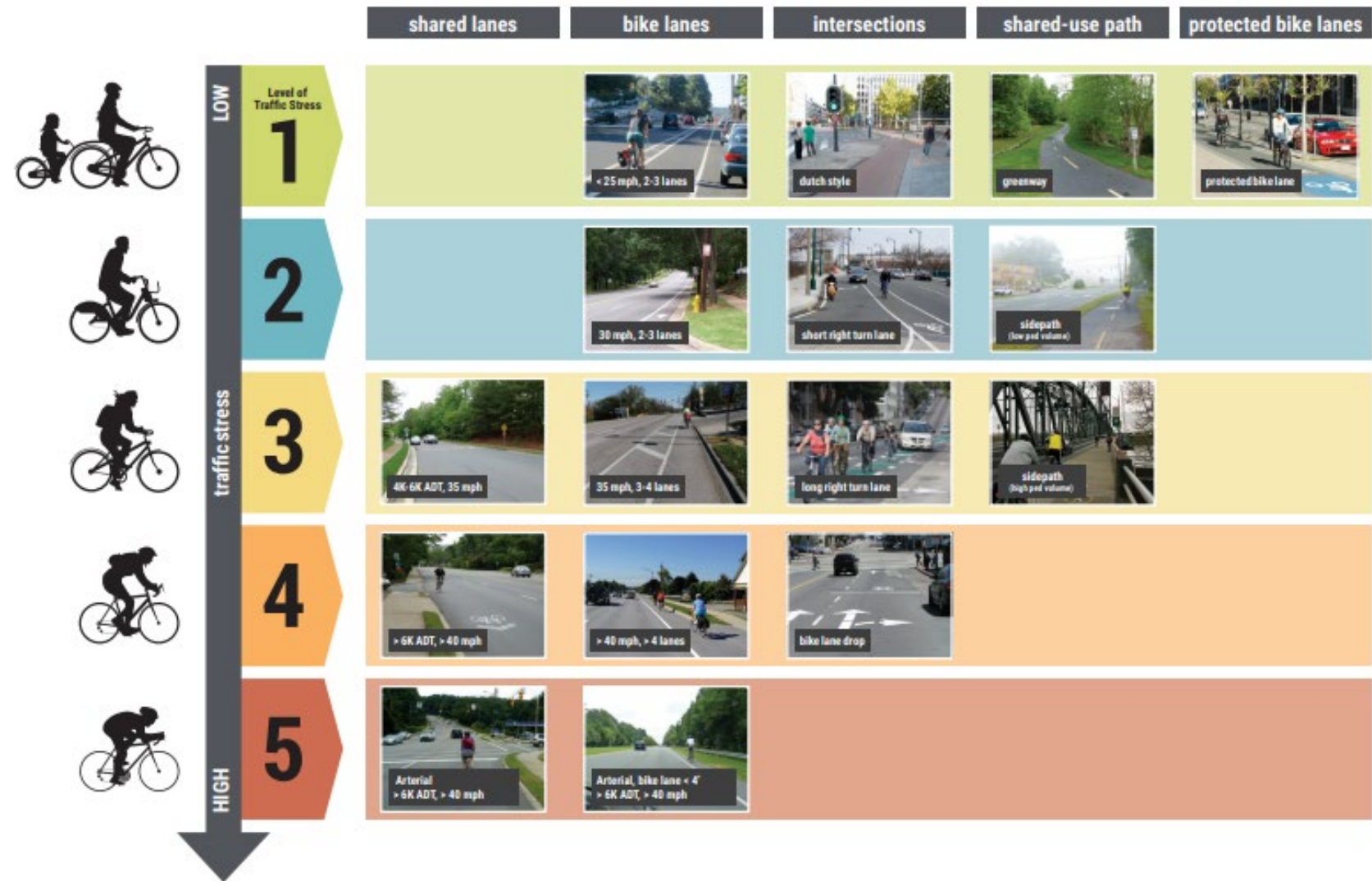
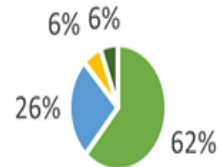
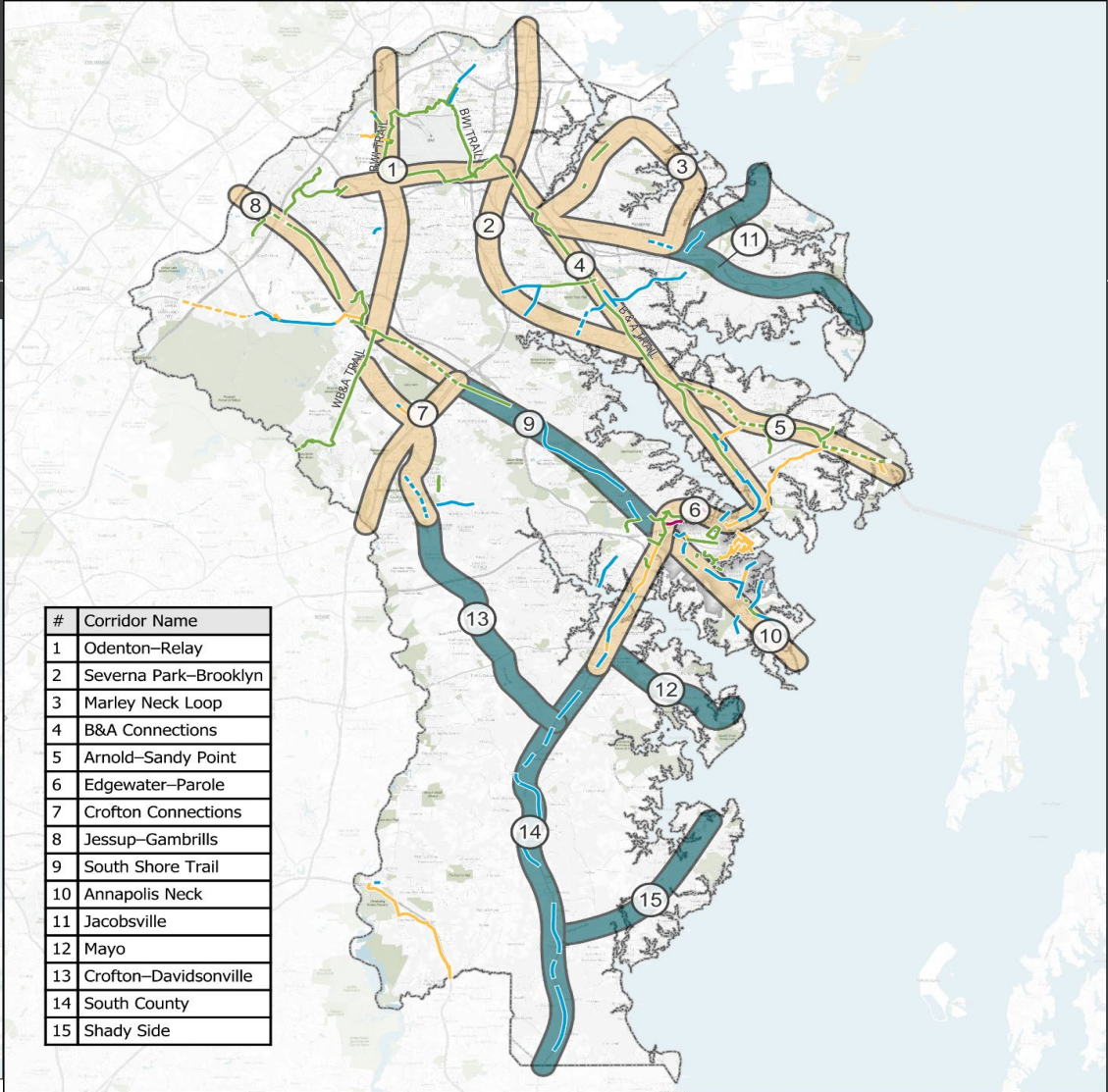
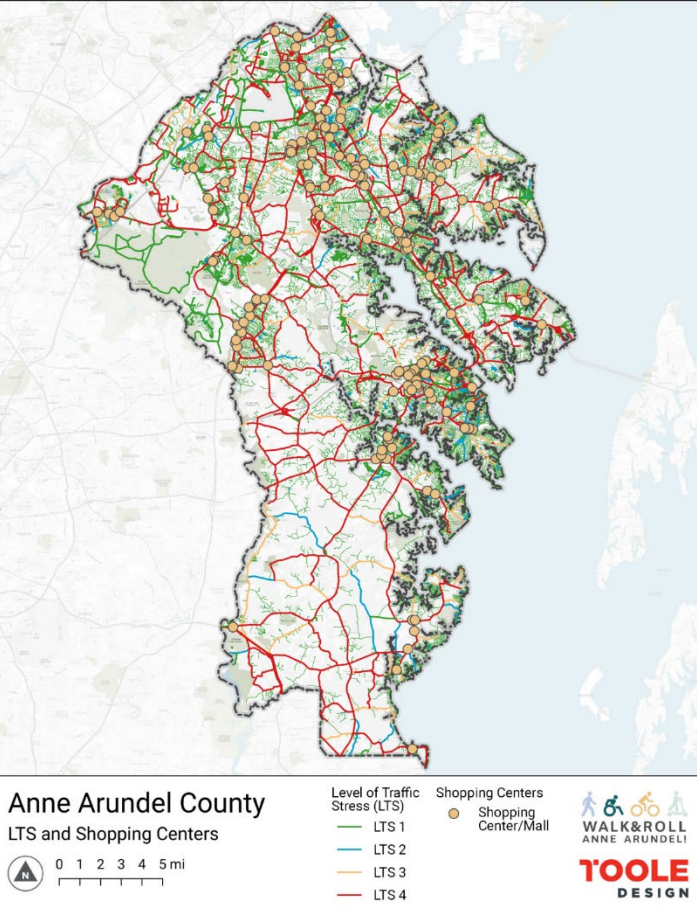


Figure 21: Levels of Traffic Stress are determined by these roadway characteristics and bicycle infrastructure facility types on those roadways.



# Priority Improvement Areas

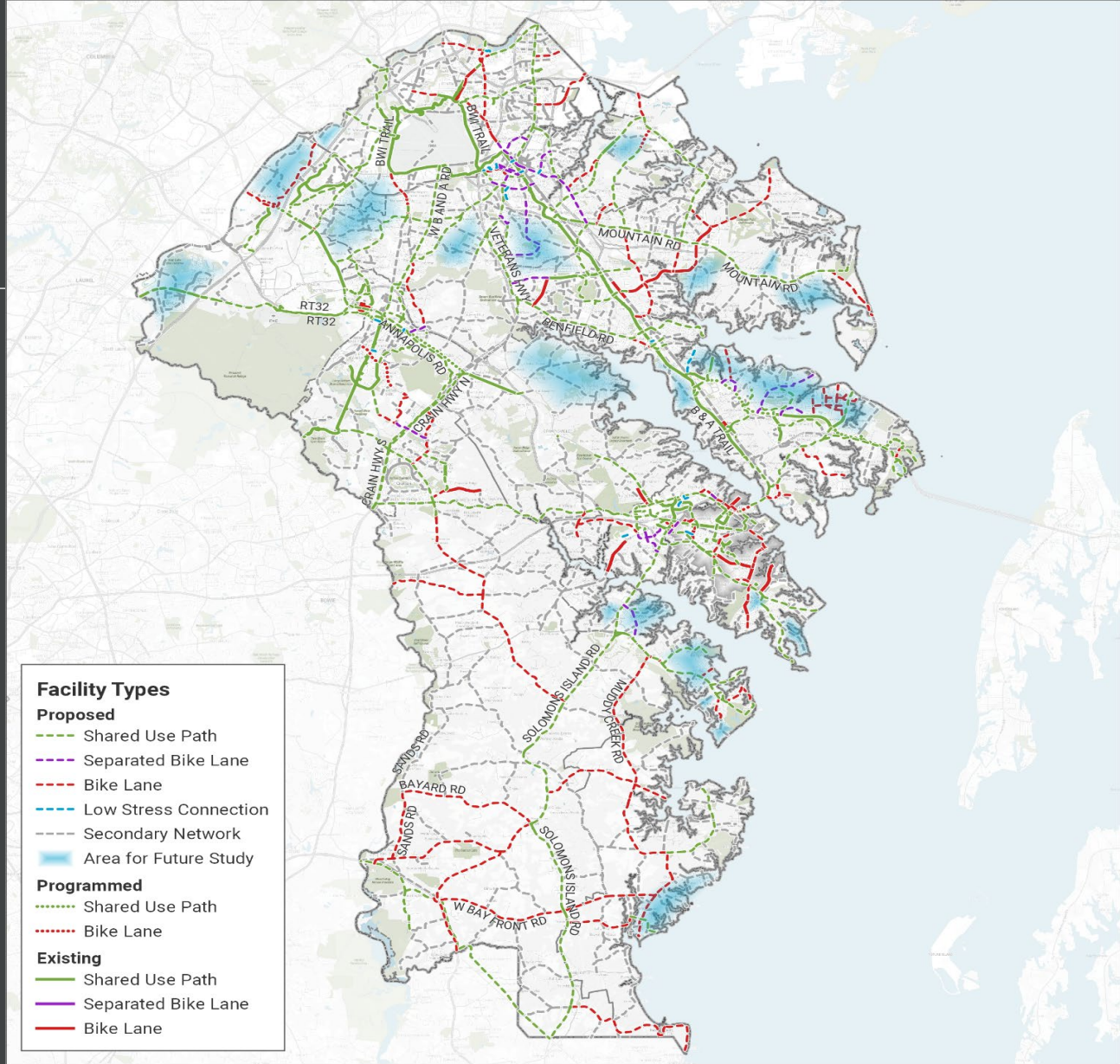




# Proposed Bicycle/ SUP Network

## Facility Mileage

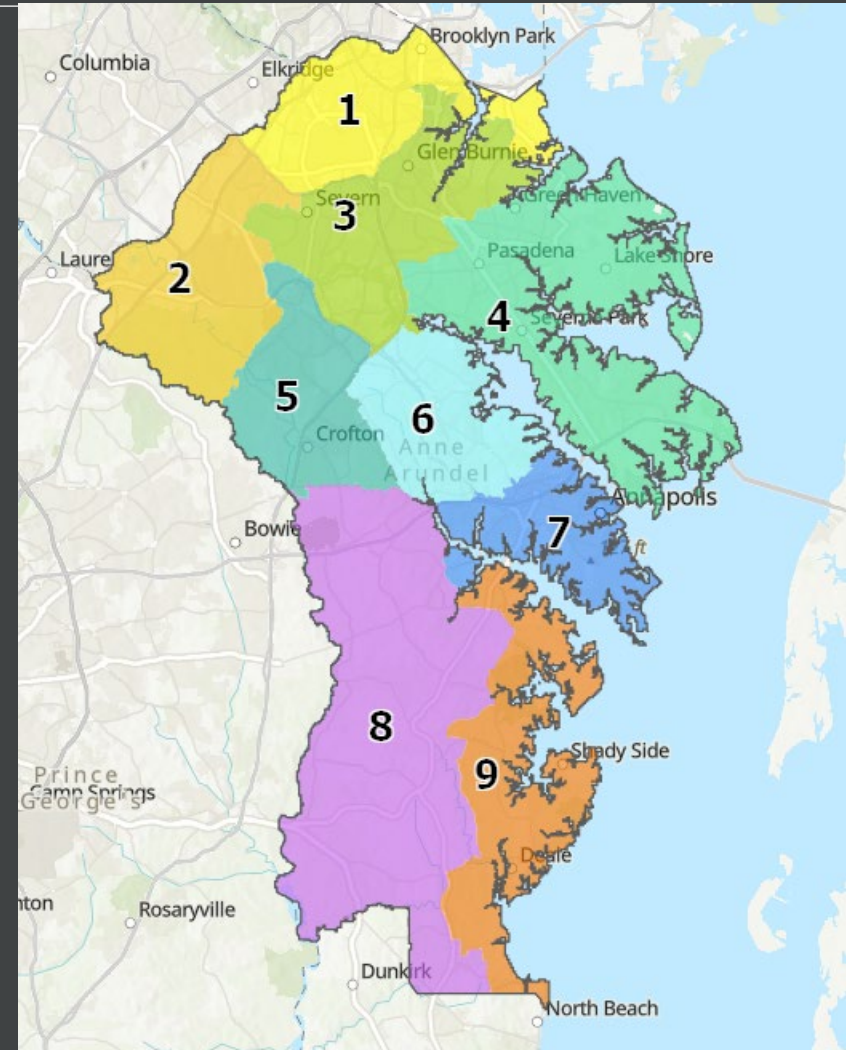
	Existing	Programmed	Proposed	Total
Bike Lanes	26.9	4.0	130.4	161.3
Protected Bike Lanes	0.5	-	22.4	22.9
Shared-use Paths	55.2	10.9	248.5	314.6
Low Stress Connections	-	-	3.6	3.6



Anne Arundel County  
Proposed Bike Network

# Regional Planning Areas (RPA)

- The network is organized by the nine Regional Planning Areas established by *Plan2040*.
- For each RPA:
  - Map of the proposed bike network
  - Priority projects with facility type and cost estimate

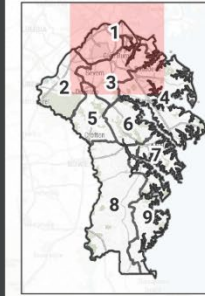




# For example: RPA 1

Street Name	Facility Type	Start	End	Estimated Cost
Ritchie Hwy	Shared-use Path	Northern County Line	MD 3 (Crain Hwy)	\$18,980,762
8th Ave NW	Separated Bike Lane	8th Ave NE, MD 3 (Crain Hwy N)	MD 648 (Baltimore Annapolis Blvd)	\$557,025
MD 648 (Baltimore Annapolis Blvd)	Separated Bike Lane	Nursery Rd	MD 177 (Mountain Rd)	\$3,619,476
Belle Grove Rd (Baybrook Connector)	Shared-use Path	Gibbons Ave	Potee St, S Hanover St, Jack St Intersection	\$963,226
MD 713 (Ridge Rd) and New Ridge Rd	Shared-use Path	MD 175 (Annapolis Rd) & Ridge Rd	Stoney Run Rd & Ridge Rd	\$12,400,000
WB & A Rd	Shared-use Path	BWI Trail	Old Mill Rd	\$8,423,415
Ridge Rd	Shared-use Path	New Ridge Rd	Teague Rd	\$3,400,000
Church St	Bike Lane	Ritchie Hwy	County Line	\$439,499

\*Projects are not in order of priority and need further study by the County



Anne Arundel Region 1  
Proposed Bike Network



0 1 2 mi

## Facility Types

### Proposed

- Shared-use Path
- Separated Bike Lane
- Bike Lane
- Low Stress Connection
- Secondary Network

### Existing

- Shared-use Path
- Separated Bike Lane
- Bike Lane

- Areas for Future Study
- Key Trail Intersections



# Odenton Town Center



Odenton Town Center  
Proposed Bike Network



0 0.3 0.6 mi

## Facility Types

### Proposed

- Shared Use Path
- Separated Bike Lane
- Bike Lane
- Low Stress Connection
- Secondary Network

### Programmed

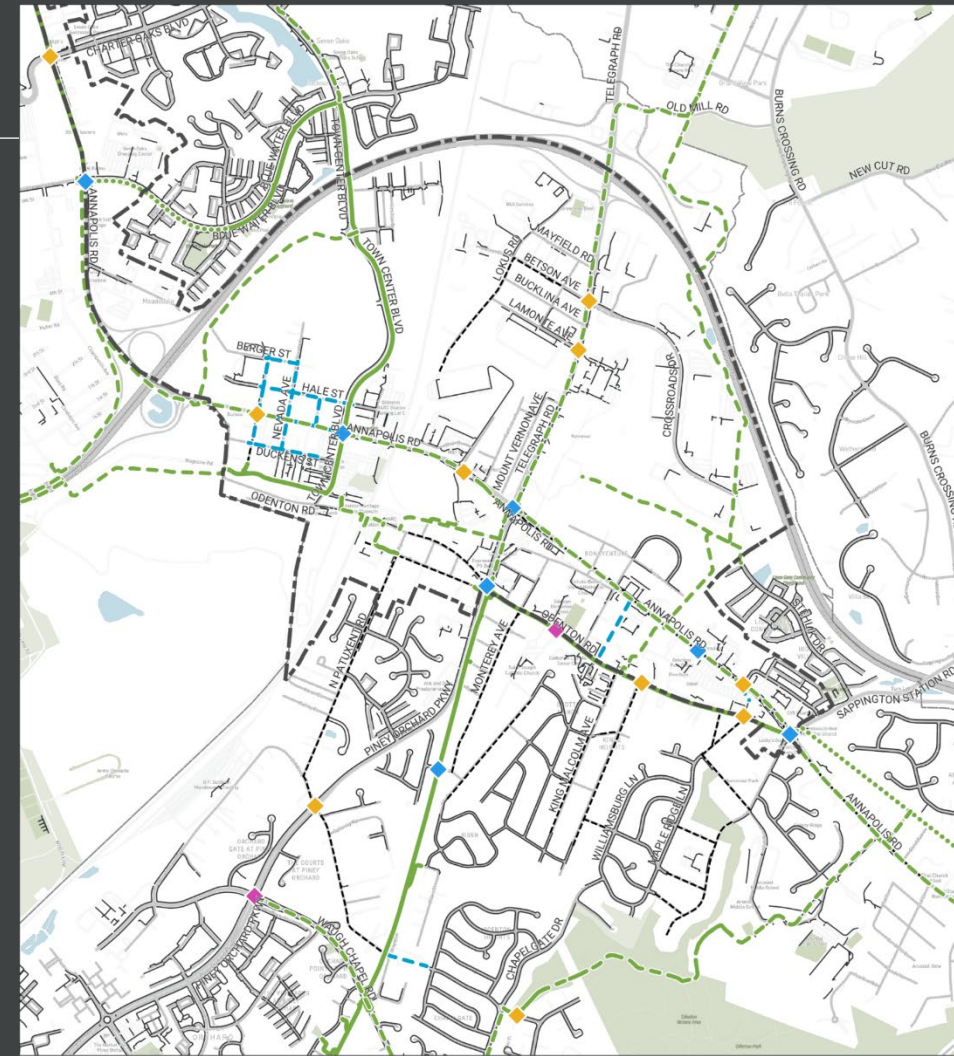
- Shared Use Path
- Bike Lane

### Existing

- Shared Use Path
- Bike Lane

### Proposed Crossing Improvements

- Upgrade Pedestrian and Bike Crossing Elements
- New Pedestrian and Bike Crossing
- Town Center



Odenton Town Center  
Proposed Pedestrian Network



0 0.3 0.6 mi

## Facility Types

### Proposed

- Shared Use Path
- Potential Multimodal Connection
- New Sidewalk

### Programmed

- Shared Use Path
- Sidewalk

### Existing

- Shared Use Path
- Sidewalk

### Proposed Crossing Improvements

- Upgrade Pedestrian Crossing Elements
- Upgrade Pedestrian and Bike Crossing Elements
- New Pedestrian and Bike Crossing



# Prioritizing Improvements

A photograph of a residential street with a central median, trees, and a clear sky. The text 'Prioritizing Improvements' is overlaid in the center.

# The 4 Criteria

Factor	Description	Weight
Potential demand	Promotes bikeways within areas of high employment, destination, and population density	25%
Connectivity	Prioritizes projects that connect to existing bikeways or transit stops	25%
Safety	Prioritizes projects in areas with high crash risk rate	25%
Equity	Promotes bikeways within areas where people are more likely to rely on them to meet transportation needs	25%



# Incorporating Equity

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- Vulnerable Populations Index (VPI): score generated by weighing 7 determinants of transportation vulnerability equally:

1. Poverty
2. People of Color (i.e., non-white, non-Hispanic)
3. Hispanic
4. Limited English Proficiency
5. Disabled
6. Elderly
7. Carless

A photograph of a street scene, likely in a suburban or urban area. In the foreground, a blue and white bus is stopped at a crosswalk. A pedestrian in a red dress is walking across the street. To the left, there's a utility pole with a traffic light and a sign for 'WOODS APARTMENTS' with a phone number '710.265.8649'. The background shows more trees, a building, and other cars. The text 'Beyond the Network' is overlaid in large white letters.

# Beyond the Network

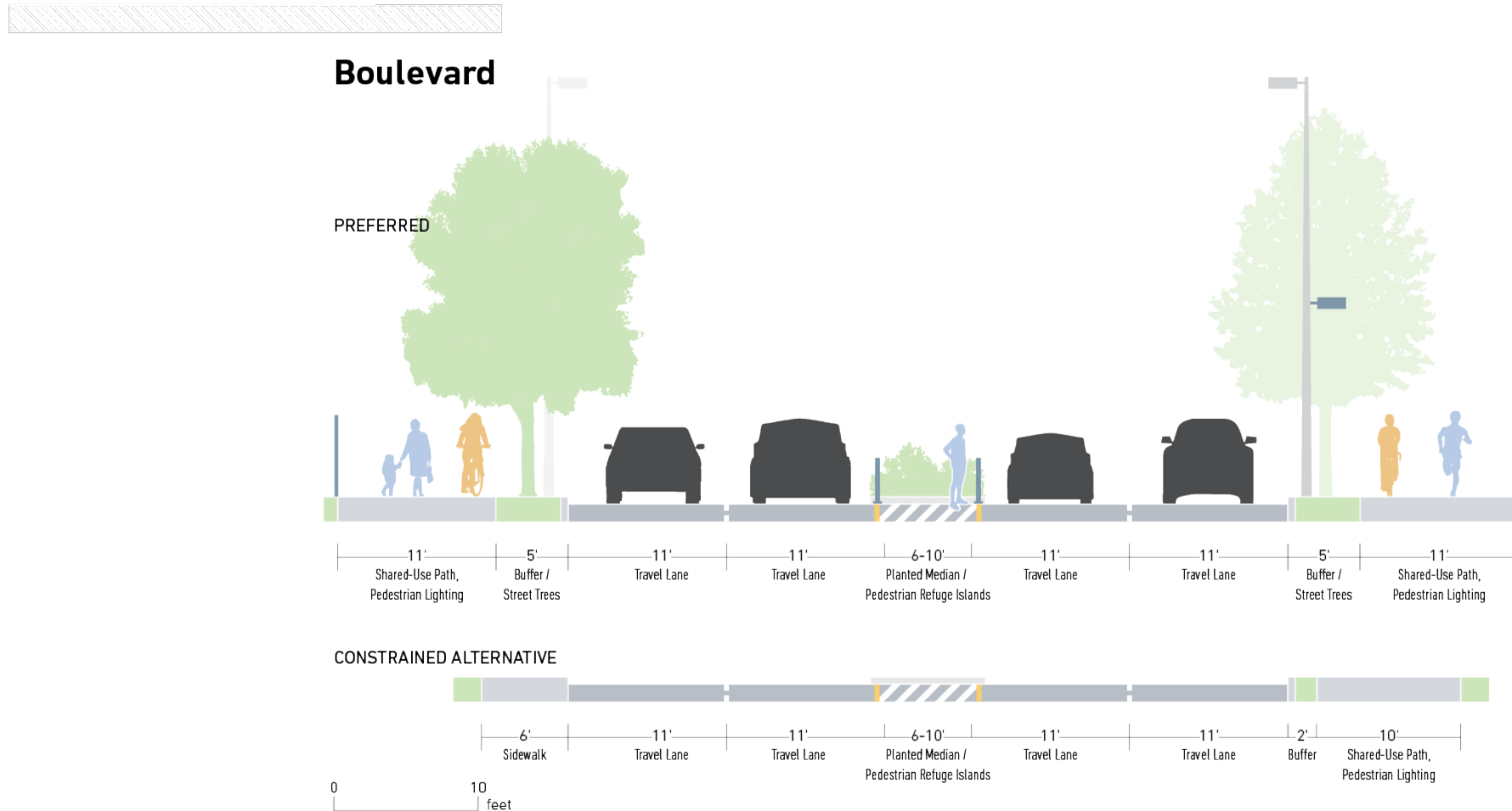


# Policy Recommendations

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- Increase funding for pedestrian and bicycle infrastructure
- Coordinate with the state on State owned facilities and when competing for federal and state funding
- Update County design standards
  - Sidewalks and bicycle infrastructure
  - Revised Complete Streets guidelines
  - Development and frontage zone requirements
- Improve access for people with disabilities
- Improve safety for students to walk and bike to school

# Street Design – Boulevard






# Performance Measures

- To track progress on the development of the active transportation network
- 13 performance measures for:
  - Connectivity and Access
  - Equity
  - Safety
  - Strategic Growth and Mode Shift
  - Investment

Table 14: Plan Performance Measures.

Category	Performance Measure
Connectivity and Access	One bicycle and one pedestrian capital project per year is constructed for smaller jurisdictions (population 30,000 or less) and two of each project type is constructed for larger jurisdictions (population 30,000 or more).
	The mileage of new shared-use paths, separated bicycle facilities, standard bicycle lanes, sidewalks, trails, and sidewalks increases 5% each year.  By 2040, 75% of residents live within ¼ mile of protected walking and bicycling facilities.
Equity	One bicycle capital project and one pedestrian capital project per year is constructed in Vulnerable Population Areas.  By 2040, 75% of residents in Vulnerable Population Areas live within ¼ mile of protected walking and bicycling facilities.
Safety	By 2030, decrease fatal and serious injury crashes for all road users by 50%*.
	Increase the percentage of existing walking and bicycling facilities in good condition by 2.5% per year.  By 2040 provide sidewalks to 85% of County schools and provide separated bicycle infrastructure to 65% of County schools. Safe walking and bicycling routes should be constructed within a 1-mile radius of elementary schools and a 1.5-mile radius of middle and high schools.
Strategic Growth and Mode Shift	By 2050, 50% of the County's population will be able to reach the County's Targeted Development, Redevelopment and Revitalization Areas within 30 minutes by foot, bicycle, or transit using protected pedestrian or bicycle facilities.
	By 2050, 75% of County residents will be able to access at least three destinations that serve daily needs (such as schools, grocery stores, health care facilities, or transit stops) within a two mile bicycle ride or 1 mile walk.  By 2050, the number of trips made by walking, bicycling, and transit will increase five fold.

A photograph of a street scene with a blue and white bus stopped at a crosswalk. A pedestrian in a red dress is walking on the sidewalk. There are trees and a sign for 'Woods Apartments' in the background. The text 'Questions and Comments' is overlaid in white.

# Questions and Comments