

Final Plan Presentation

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

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



**WALK & ROLL
ANNE ARUNDEL!**

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

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



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.

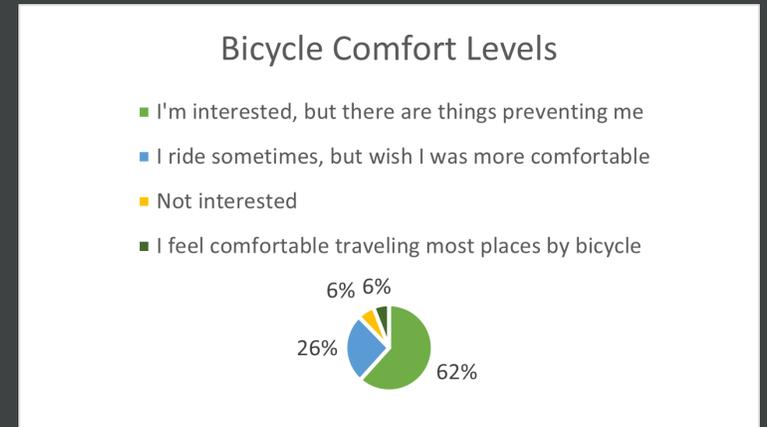
Replies to this comment:

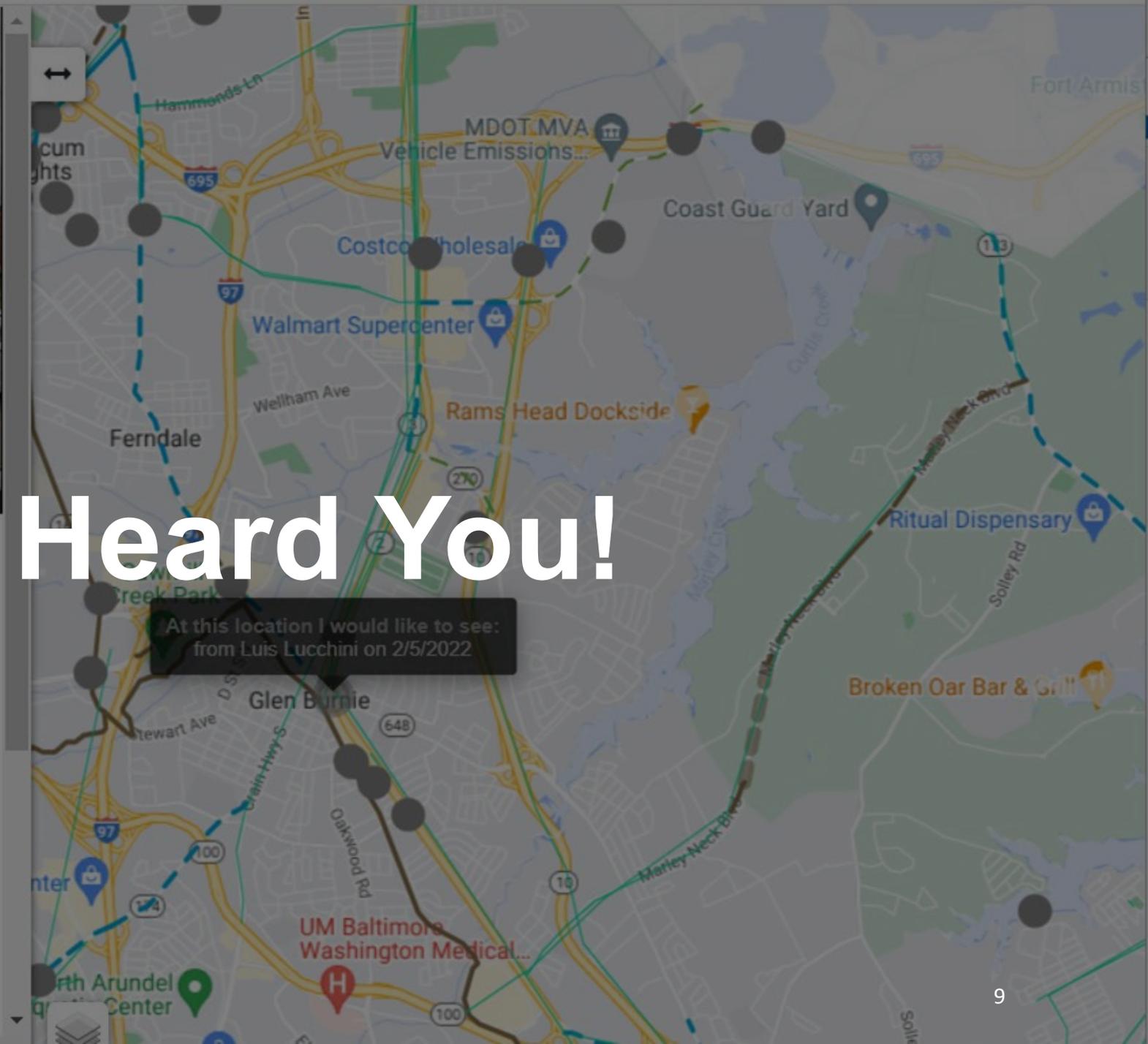
2/2/2022

;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





We Heard You!

like to see:

to walking or biking

his location.

people from the neighborhoods on the east will be better

er

Quarterfield Rd

Public comment

At this location I would like to see:

Luis Lucchietti on 12/14/2021

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?
Sidewalk, trail or road

Tell us anything else about this location.
This corridor will connect a bunch of people to useful businesses including downtown. Please consider proposing a protected bike lane instead due to the high speed limits and amount of vehicles including large trucks and irresponsible driving.

Go back to the legend.

At this location I would like to see:

Jeffrey Rich on 3/11/2022

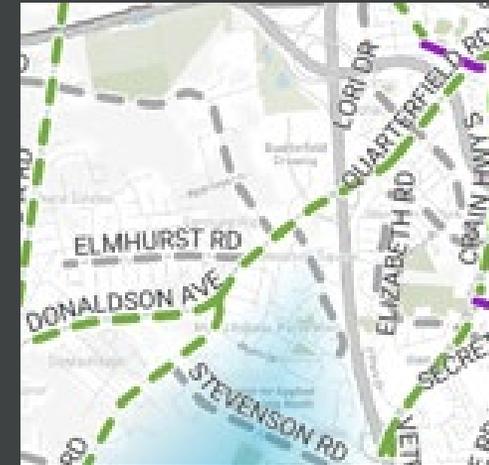
This is a place that I have encountered a barrier to walking or biking

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

Tell us anything else about this location.
Dance Village does not have access to external roads or communities for walking or biking. It would be beneficial to get access to Donaldson Avenue which has wide shoulders, even though it has a higher speed limit. Quarterfield Road is not suitable for cycling or walking, lacking shoulders.

Go back to the legend.

Plan recommendation



Facility Types

Proposed

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

Existing

- Shared-use Path
- Bike Lane

Areas for Future Study

- Key Trail Intersections

B&A Trail – Glen Burnie Light Rail

Public comment

At this location I would like to see:

Patrick J McMahon on 2/3/2022

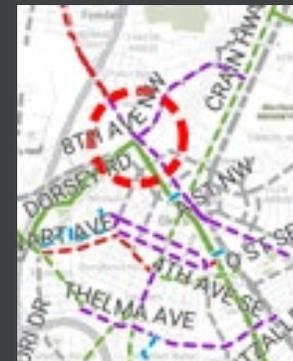
This is a place that I...
currently walk/bike to

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

Tell us anything else about this location.
The Glen Burnie Light Rail stop is a big potential asset for Anne Arundel County, but it is currently underutilized. The connection to the B&A Trail is poor, crossing B&A Blvd. is treacherous, and it is surrounded by a sea of surface parking instead of a dense, walkable neighborhood. I hope that Anne Arundel County will work to make this area and this transit station more walkable and bring some life to this area. Also, I hope that Transit Station will be added to the types of places in the survey.

Go back to the legend.

Plan recommendation



Facility Types

Proposed	Areas for Future Study
Shared-use Path	Key Trail Intersections
Separated Bike Lane	Existing
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:

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

Go back to the legend.

At this location I would like to see:

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

Go back to the legend.

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. Route 256 is very hilly and curvy. Some stretches have side medians where you can safely walk or bike, but it's not consistent in the stretch between route 2 and Route 258. I live on the street and would walk or bike to the park by the elementary school and to the restaurants towards Deale and Herrington harbor. This is a beautiful stretch of road. Traffic volumes have increased with cars and commercial trucks speeding through. Not safe to walk or bike. If you bike and can't complete the climb up a hill, you could easily get hit by a car if you lose your balance or dismount your bike to walk the hill. Walk-in and biking is not for the faint of heart right now. Living so close to the water, it's a shame you have to use a car to travel 1/4 mile to enjoy the sights and opportunities.

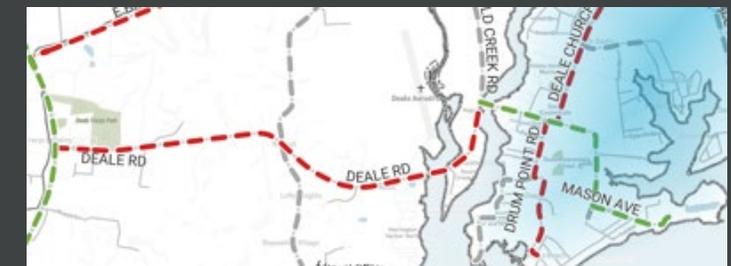
Replies to this comment:

4/26/2022 Jackie Savitzj agree, 258 is a great road to bike and go to Bristol and the Glendening preserve, but needs a better bike/walking option.

Commenter Name

Go back to the legend.

Plan recommendations



Facility Types

Proposed

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

Existing

- Shared-use Path
- Bike Lane

Legend

- Areas for Future Study
- Key Trail Intersections

Riva Rd –Parole Town Center

Public comments

At this location I would like to see:

Francine Rather on 4/18/2022

This is a place that I have encountered a barrier to walking or biking

What type of place is this?
Sidewalk, trail or road

Tell us anything else about this location.
I would like to see completed sidewalks on both sides of Riva Road south of the high school where there are sections lacking.

Go back to the legend.

At this location I would like to see:

4/7/2022

This is a place that I currently walk/bike to

What type of place is this?
Sidewalk, trail or road

Tell us anything else about this location.
This is dangerous for cyclists and should be improved

Commenter Name

Go back to the legend.

Can't load Street View here. Try clicking somewhere else.

At this location I would like to see:

3/16/2022

This is a place that I currently walk/bike to

Other (please explain below)

Tell us anything else about this location.
It's just south of the HS on the east side of the street, where there is no sidewalk in front of 4 homes. Just connecting the sidewalks would go a LONG way to making walking safer.

Commenter Name

Go back to the legend.

At this location I would like to see:

Hughan 1/25/2022

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?
Sidewalk, trail or road

Tell us anything else about this location.
This part of West Street is really bad for biking and walking, missing sidewalks. Putting in a trail here would be great.

Replies to this comment:

5/7/2022

Go back to the legend.

Plan recommendations



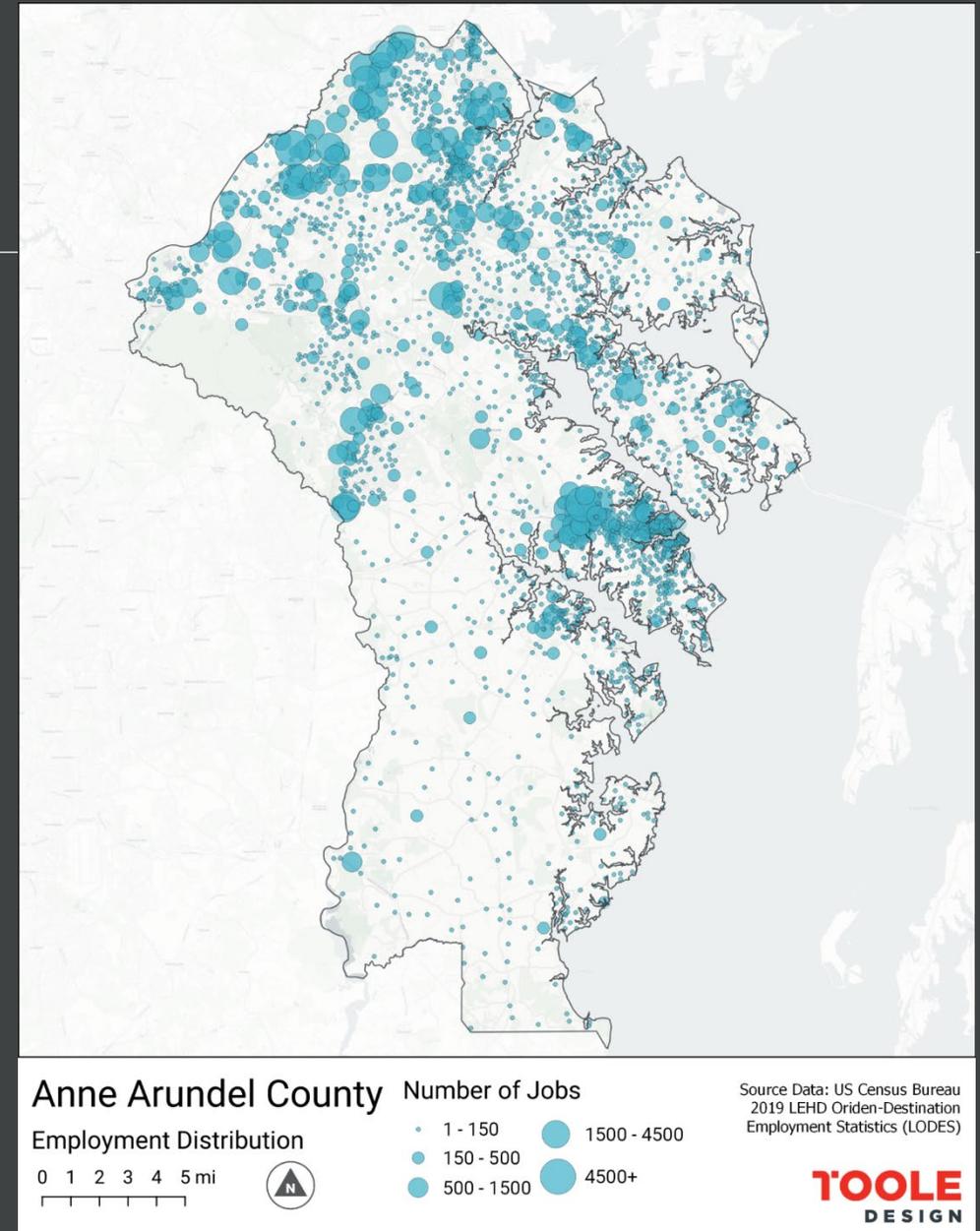
Facility Types		Proposed Crossing Improvements	
Proposed	Existing	Shared-use Path	Shared-use Path
Shared-use Path	Shared-use Path	Potential Multimodal Connection	Sidewalk
Potential Multimodal Connection	Town Center Boundary	Upgrade Pedestrian Crossing Elements	Upgrade Pedestrian and Bike Crossing Elements
New Sidewalk		New Pedestrian and Bike Crossing	

The Low-Stress Network

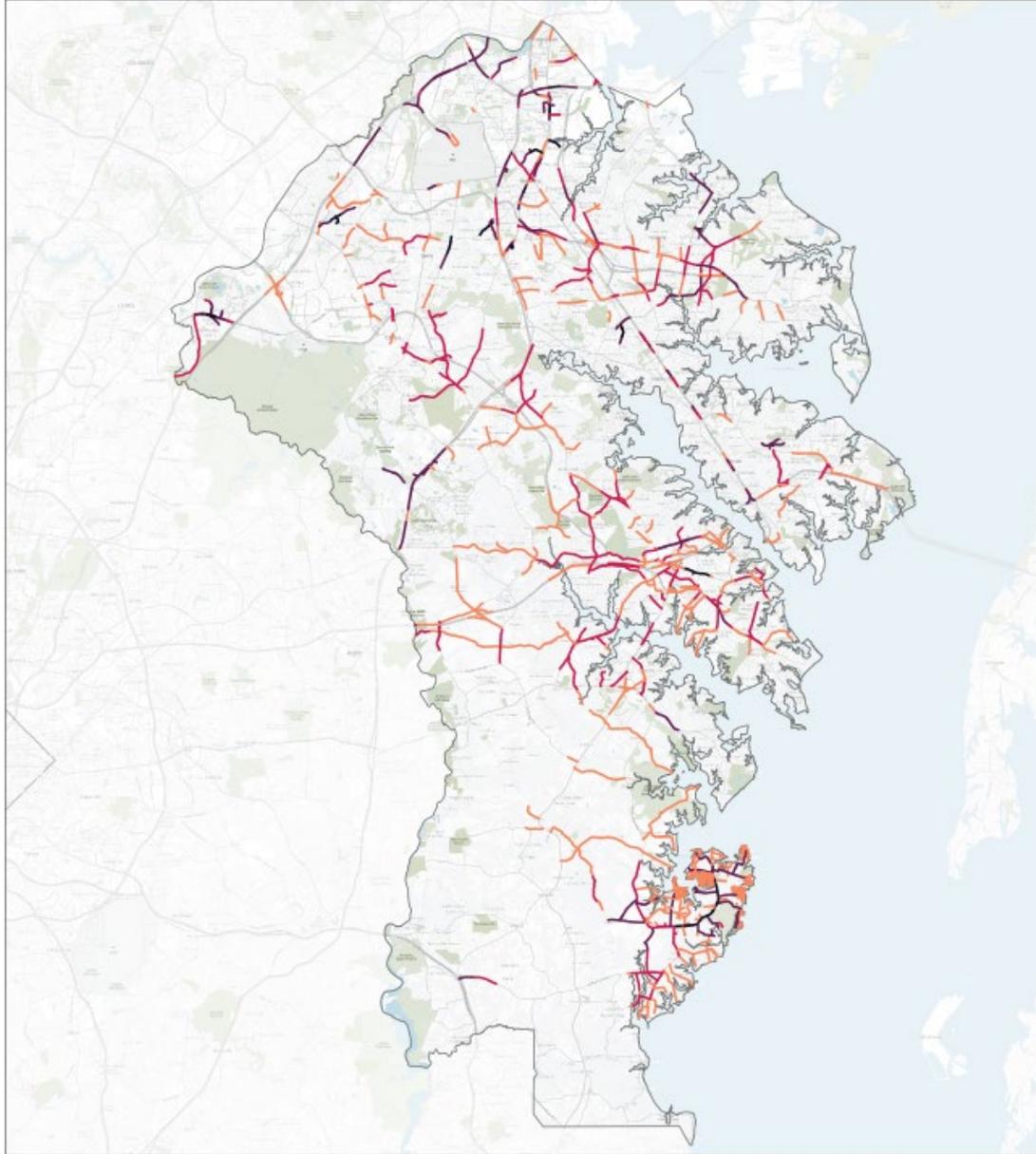
A photograph of a busy highway with a cyclist in a green shirt riding through traffic. A large white pickup truck is prominent in the foreground. The text "The Low-Stress Network" is overlaid in white on the image.

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



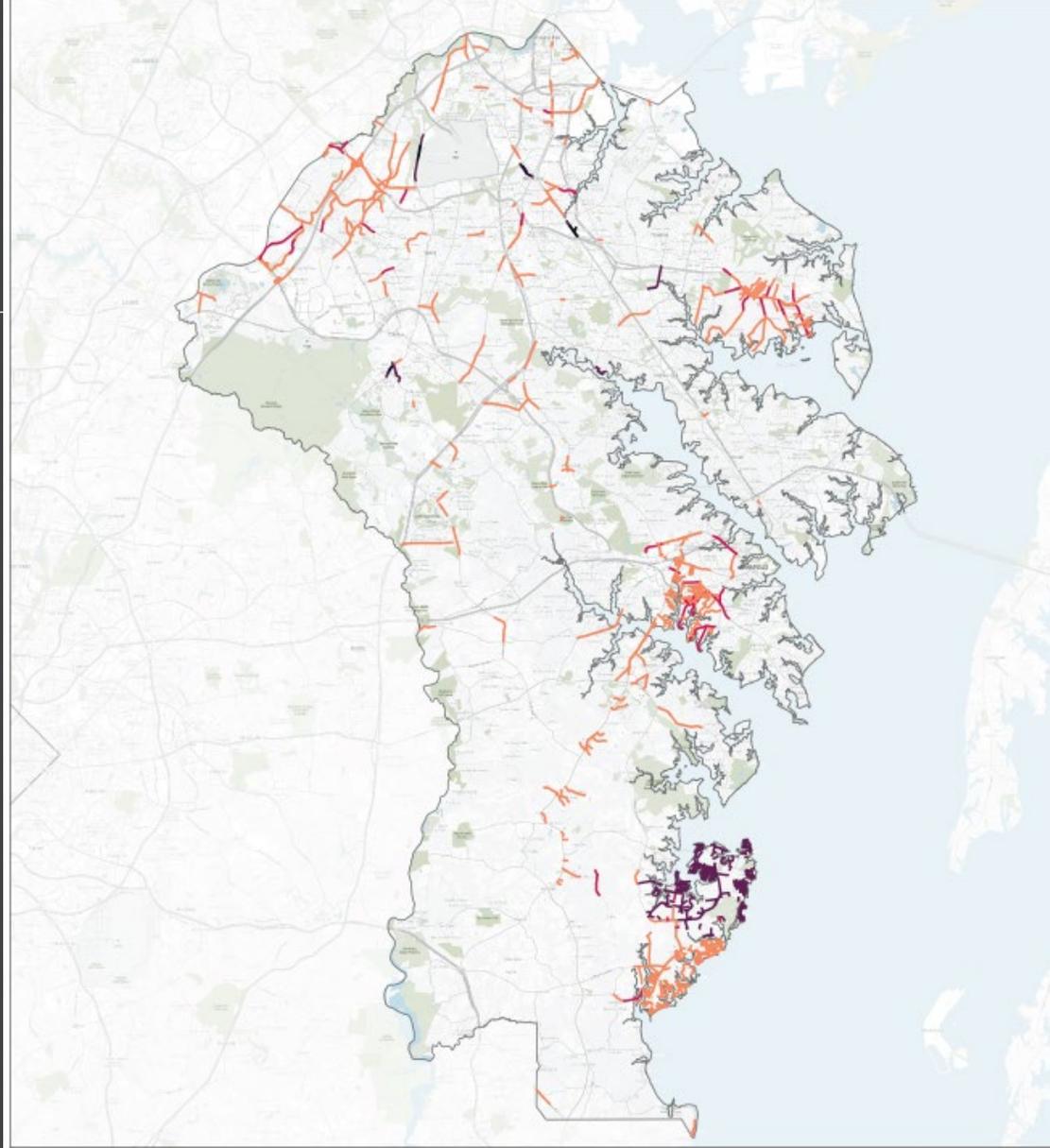
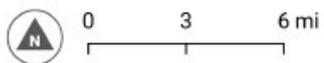
Safety and Crash Reduction



Anne Arundel County
SSPF Pedestrian Crash Risk



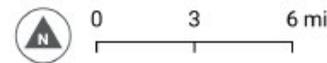
Map generated using the Safer Streets Priority Finder and Anne Arundel County 2016-2020 crash data.



Anne Arundel County
SSPF Bicycle Crash Risk



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

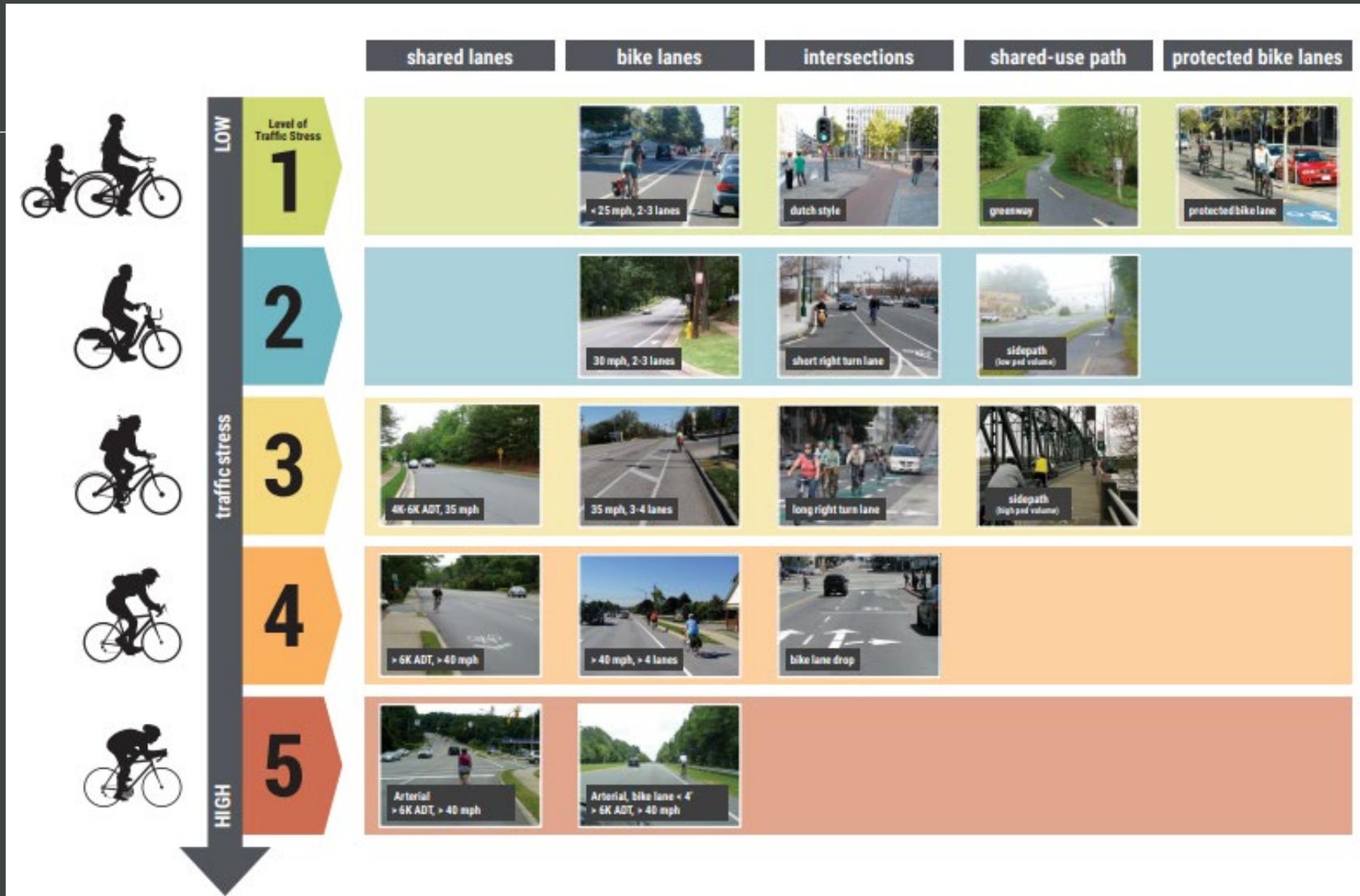
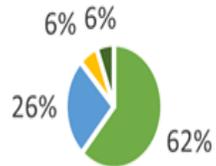
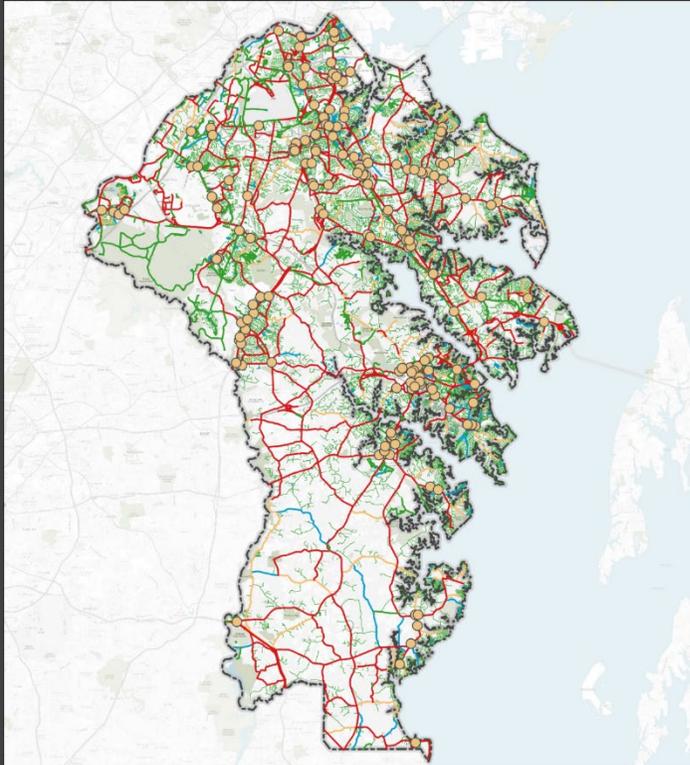


Figure 21: Levels of Traffic Stress are determined by these roadway characteristics and bicycle infrastructure facility types on those roadways.

Priority Improvement Areas



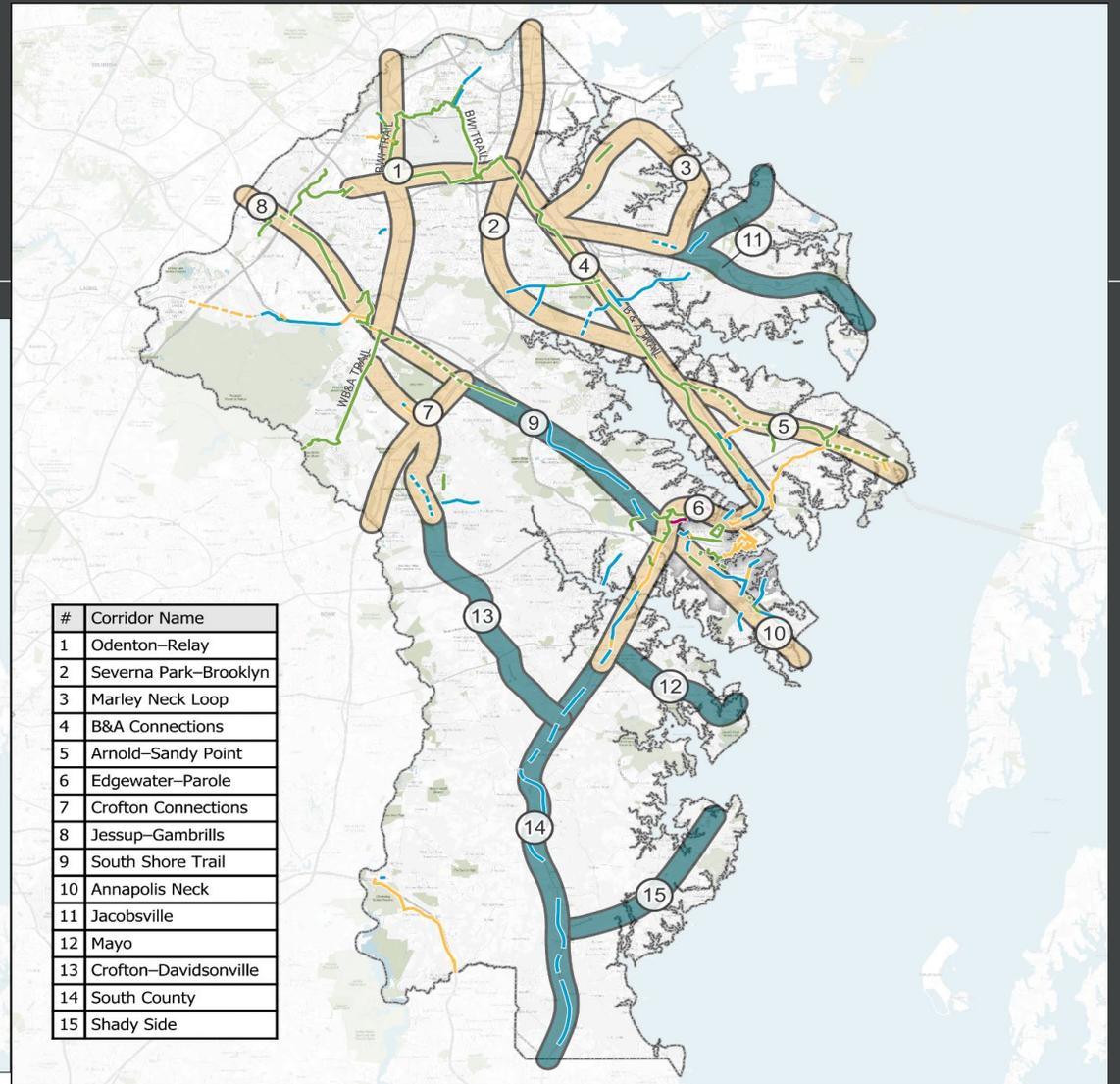
Anne Arundel County
LTS and Shopping Centers

Level of Traffic Stress (LTS)
 — LTS 1
 — LTS 2
 — LTS 3
 — LTS 4

Shopping Centers
 ● Shopping Center/Mall

0 1 2 3 4 5 mi

TOOLE DESIGN
WALK & ROLL ANNE ARUNDEL!



#	Corridor Name
1	Odenton–Relay
2	Severna Park–Brooklyn
3	Marley Neck Loop
4	B&A Connections
5	Arnold–Sandy Point
6	Edgewater–Parole
7	Crofton Connections
8	Jessup–Gambrills
9	South Shore Trail
10	Annapolis Neck
11	Jacobsville
12	Mayo
13	Crofton–Davidsonville
14	South County
15	Shady Side

Anne Arundel County
Bike Network Vision

Existing
 — Shared Use Path
 — Separated BL
 — Bike Lane
 — Sharrow/Shoulder

In Design/Construction
 - - Shared Use Path
 - - Separated BL
 - - Bike Lane
 - - Sharrow/Shoulder

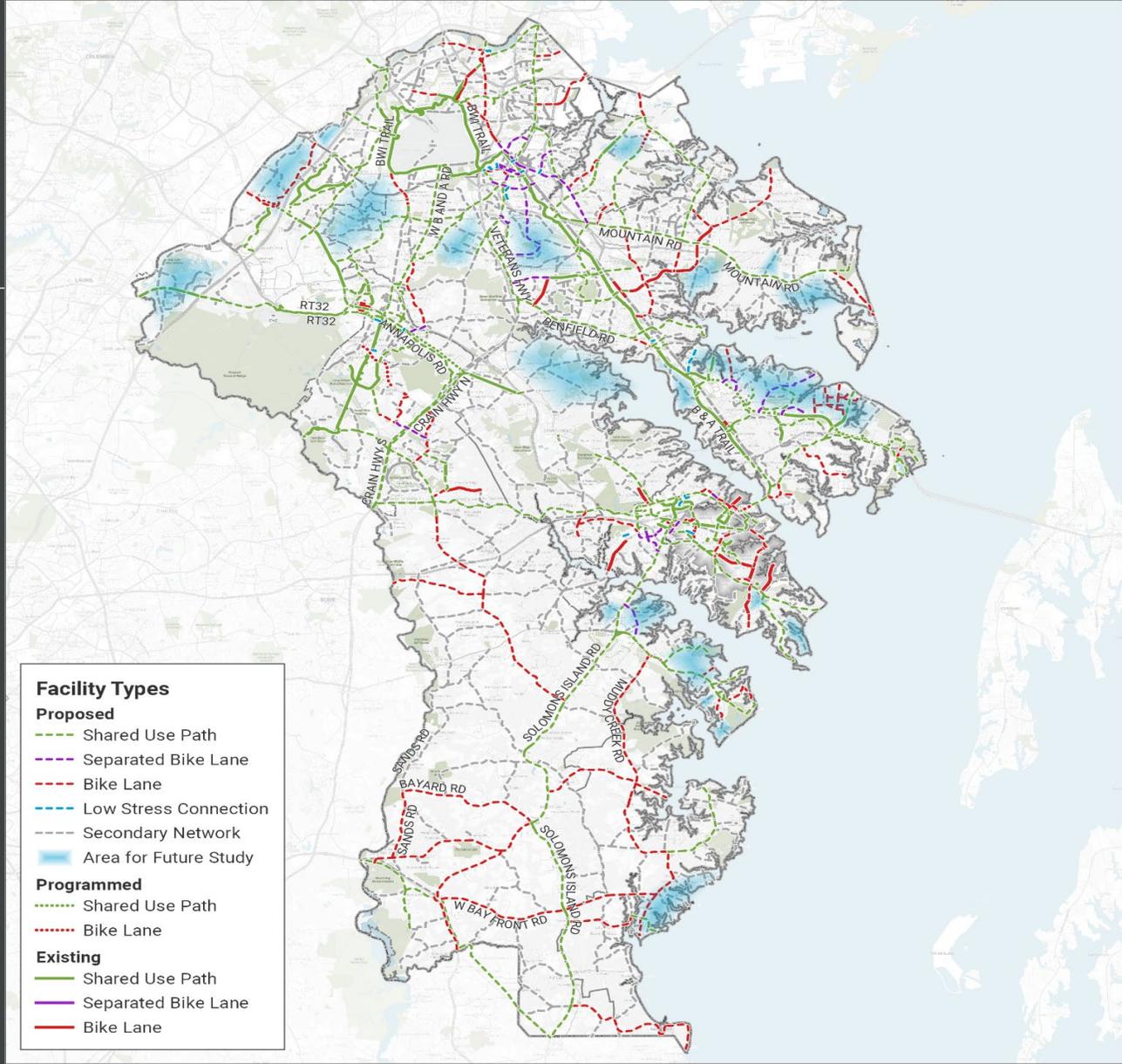
Proposed Corridors
 — Urban/Suburban
 — Rural/Peninsular
 — Sharrow/Shoulder

0 3 6 mi

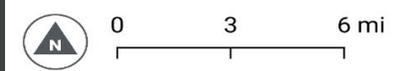
Proposed Bicycle/ SUP Network

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

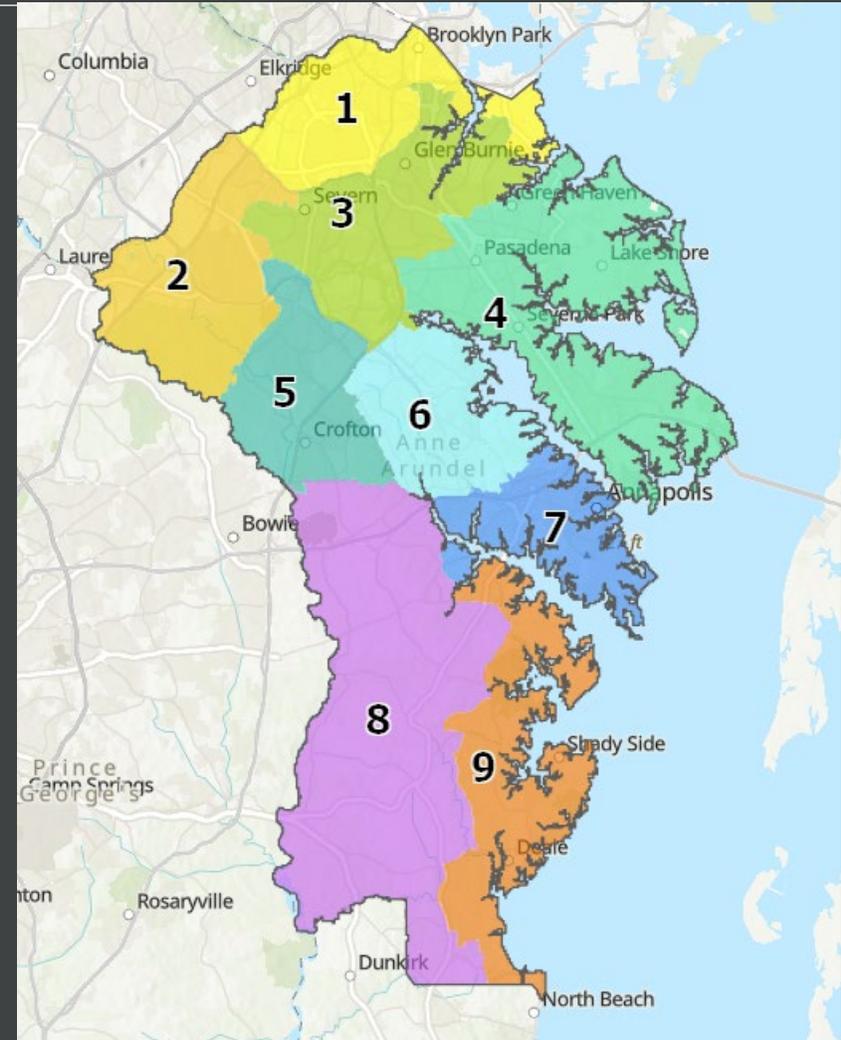


Anne Arundel County
Proposed Bike Network

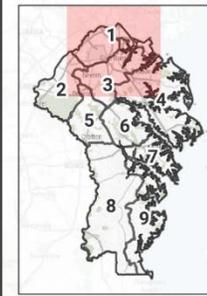


Regional Planning Areas (RPA)

- 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



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

Facility Types

Proposed

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

Programmed

- Shared Use Path
- Bike Lane

Existing

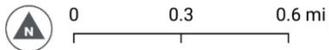
- Shared Use Path
- Bike Lane

Proposed Crossing Improvements

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

Town Center

- Town Center



Odenton Town Center
Proposed Pedestrian Network

Facility Types

Proposed

- Shared Use Path
- Potential Multimodal Connection
- New Sidewalk

Programmed

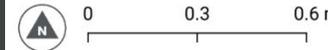
- Shared Use Path

Existing

- Shared Use Path
- Sidewalk

Proposed Crossing Improvements

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



A photograph of a residential street with a central median and a signpost. The text "Prioritizing Improvements" is overlaid in white. The street has a central median with yellow bollards and a signpost with a left-turn arrow and an up arrow. The street is lined with trees and sidewalks. The sky is clear and blue.

Prioritizing Improvements

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

- 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 street scene with a bus, pedestrians, and a sign for Woods Pharmacy. The scene is captured from a street-level perspective, looking down a road. In the foreground, a grey utility pole stands on the left. A pedestrian in a red dress is walking on a sidewalk. A blue and white bus is driving on the road. In the background, there is a building and a sign for Woods Pharmacy with a phone number 70.265.8649. The text "Beyond the Network" is overlaid in the center of the image.

Beyond the Network

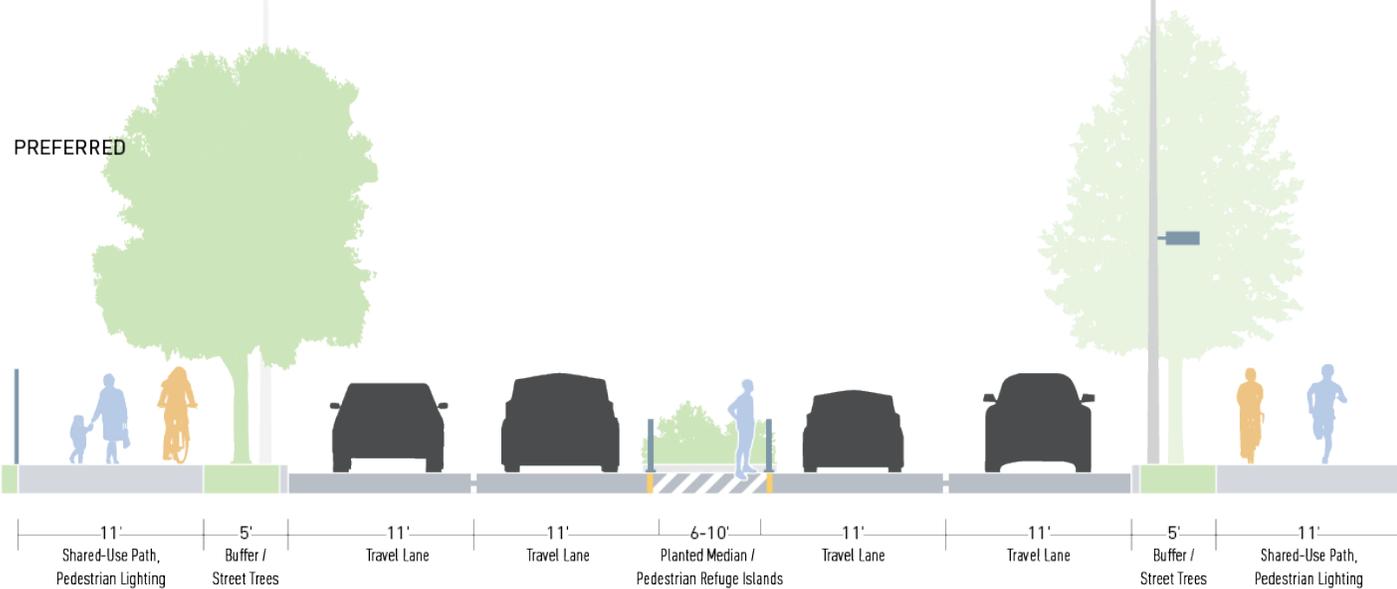
Policy Recommendations

- 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

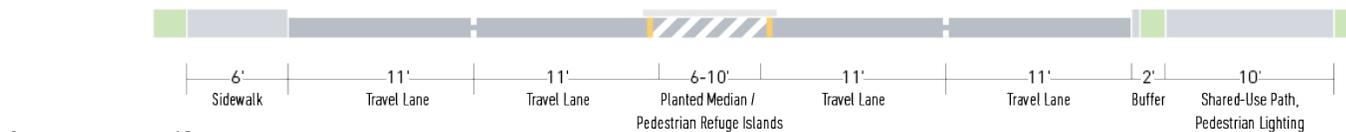
Street Design – Boulevard



Boulevard



CONSTRAINED ALTERNATIVE



0 10 feet

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.
	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.
Safety	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.
	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.
Strategic Growth and Mode Shift	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.

Questions and Comments