



# City Council Transportation Committee

## Comprehensive Plan + Micromobility Update

July 12, 2023





# Bird in Annapolis

City Council Transportation Committee  
Program Update

July 12, 2023







# What is Bird?

Dockless electric micro-mobility vehicle sharing company.

**Our mission is make cities and campuses more livable and bring communities together by providing affordable, environmentally-friendly transportation.**



**Solve last-mile problem and connect more residents to transit options**



**Reduce congestion and over-reliance on cars**



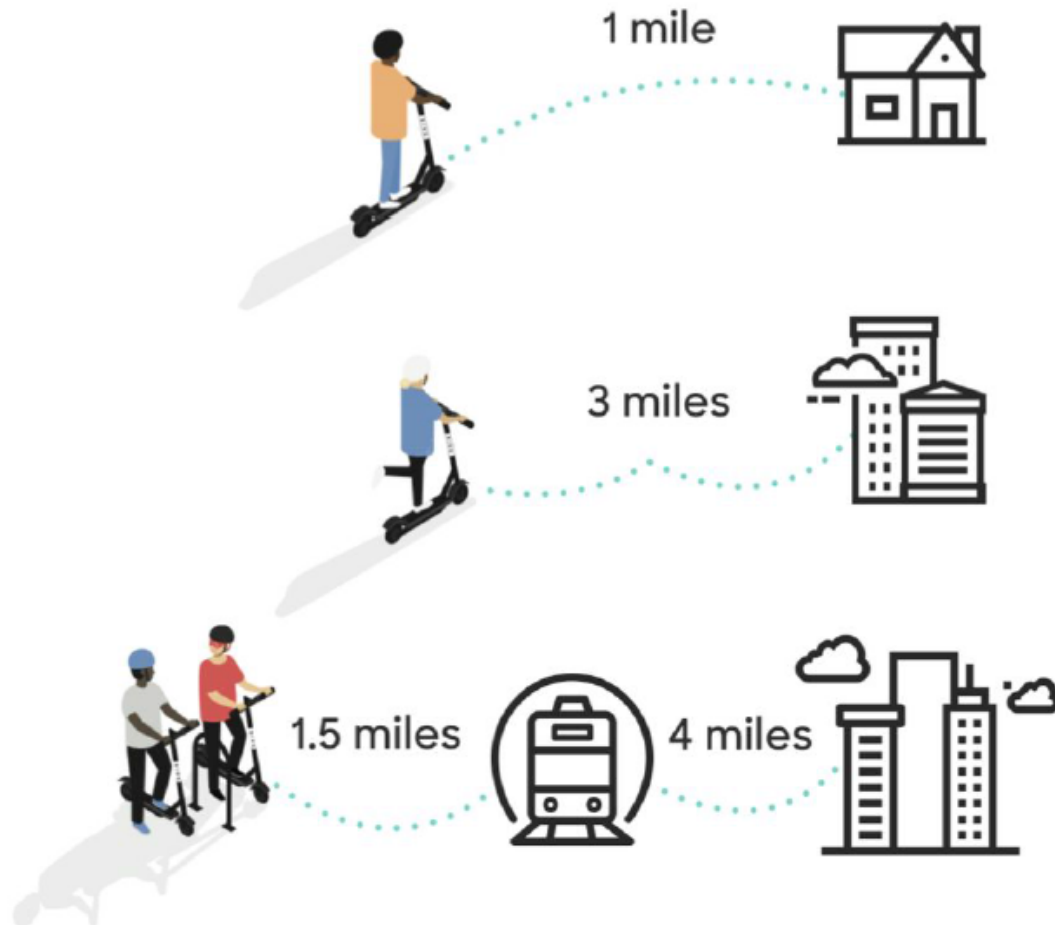
**Improve air quality and reduce GHG emissions**



**Improve the overall quality of life on campus**

# First Mile Last Mile

Great solution for quick trips



Get to School or Work

Don't hassle to re-park

Connect to transit or go one way

# Community Pricing

Bird Community Pricing provides eligible riders, including US Veterans and senior citizens with 50%.

BIRD



**RIDE FOR 50% OFF**



**ARE YOU...**

- A non-profit employee?
- In a state or federal assistance program?
- A Pell Grant recipient?
- A senior citizen?
- A US Veteran?

We're committed to helping to provide safe, reliable and environmentally friendly transportation for everyone.

Download the Bird App to create an account and email your proof of eligibility to [access@bird.co](mailto:access@bird.co).

Fine print: Approval takes 2-3 business days. Rides of up to 30 minutes qualify. Program subject to change. Terms apply.





# Monthly Ridership Snapshot (1/10/23-7/9/23)

Month	Rides	Rides Per Scooter	Distance Traveled (Mi)	Average Distance Traveled (Mi)	Average Ride Duration	Average scooters in PROW	Unique Users	Rides Per User
Jan	1812	16.5	1651	0.91	7.7	110	644	2.8
Feb	2435	22.5	2507.8	1.03	8.7	108	823	3
March	2594	32	2676.7	1.03	9.3	81	944	2.7
April	3585	39	4818.1	1.34	11.4	92	1142	3.1
May	5608	52.4	7379.3	1.32	11.1	107	1636	3.4
June	5822	56	8157.8	1.4	11.9	104	1674	3.5
July	1993	20.1	2586.5	1.3	11.1	99	767	2.6
Total	23849	34.1	29777.1	1.19	10.2	100.1	7630	3.01



# Ridership Snapshot (1/10/23-7/9/23)

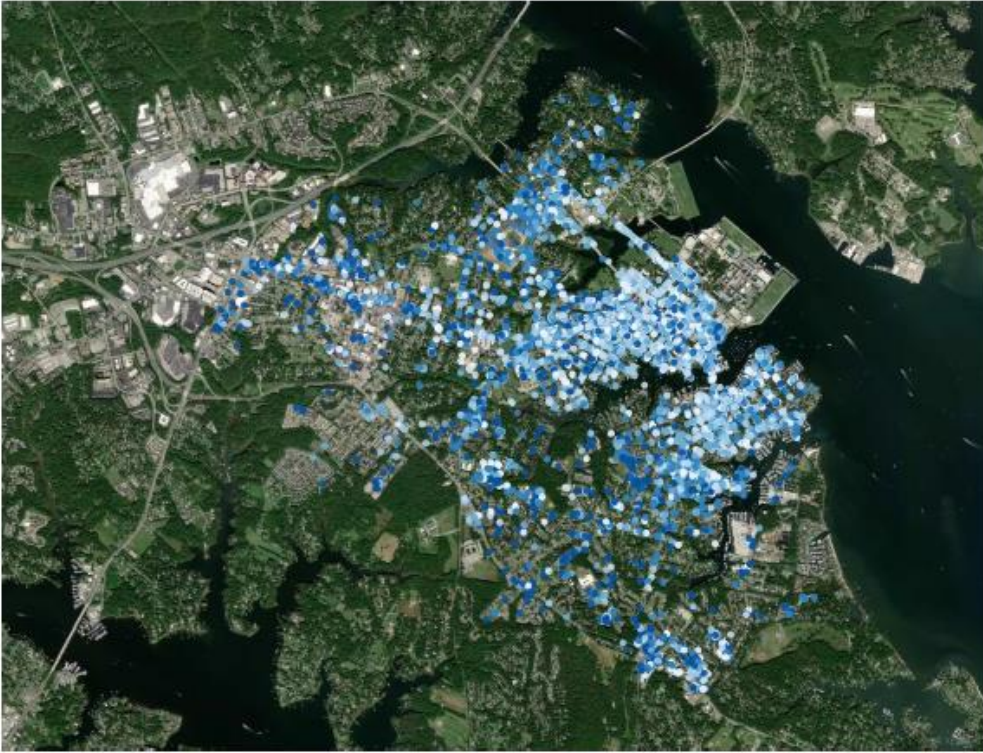
Day	Avg Rides	Avg Ride Dis (mi)	Avg Ride Duration (min)
Sun	155	1.2	10.5
Mon	92	1.3	11.3
Tue	113	1.2	9.7
Wed	107	1.2	10.2
Thu	133	1.1	9.6
Fri	156	1.1	10.1
Sat	215	1.2	10.4
<b>Total</b>	<b>971</b>	<b>1.18</b>	<b>10.25</b>

## Notable findings:

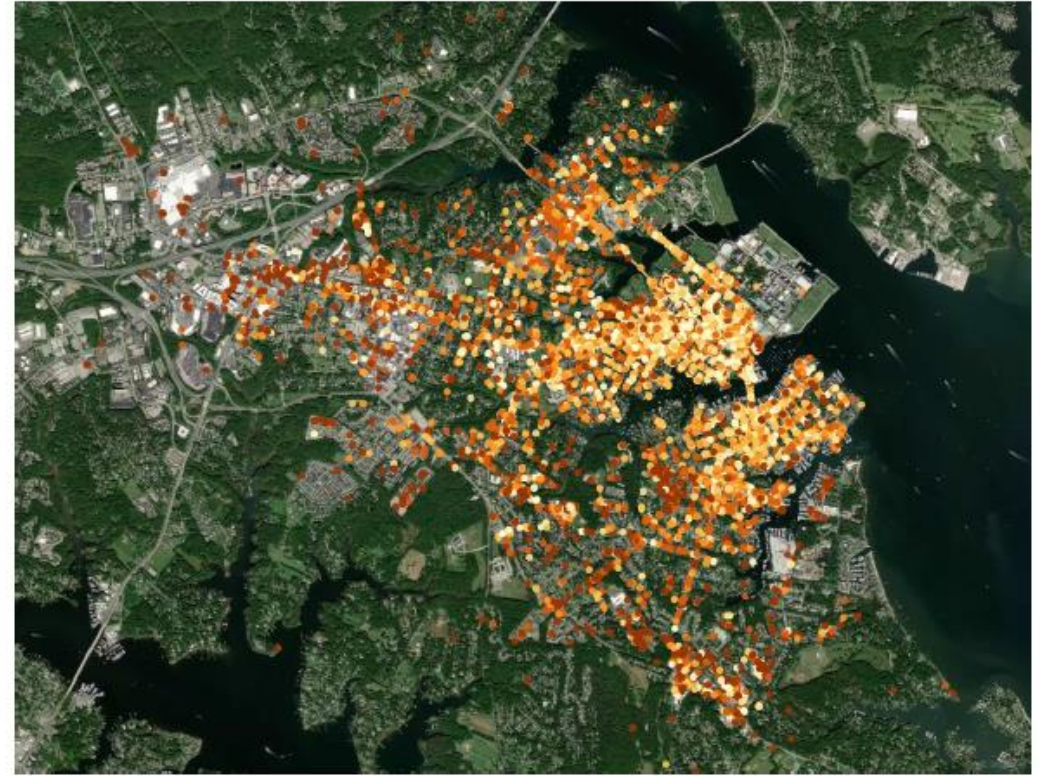
- Highest average rides on Saturdays
- Average ride around a mile (last-mile solution)



# Heat Map of Start and End Locations (Jan10 - July 9)

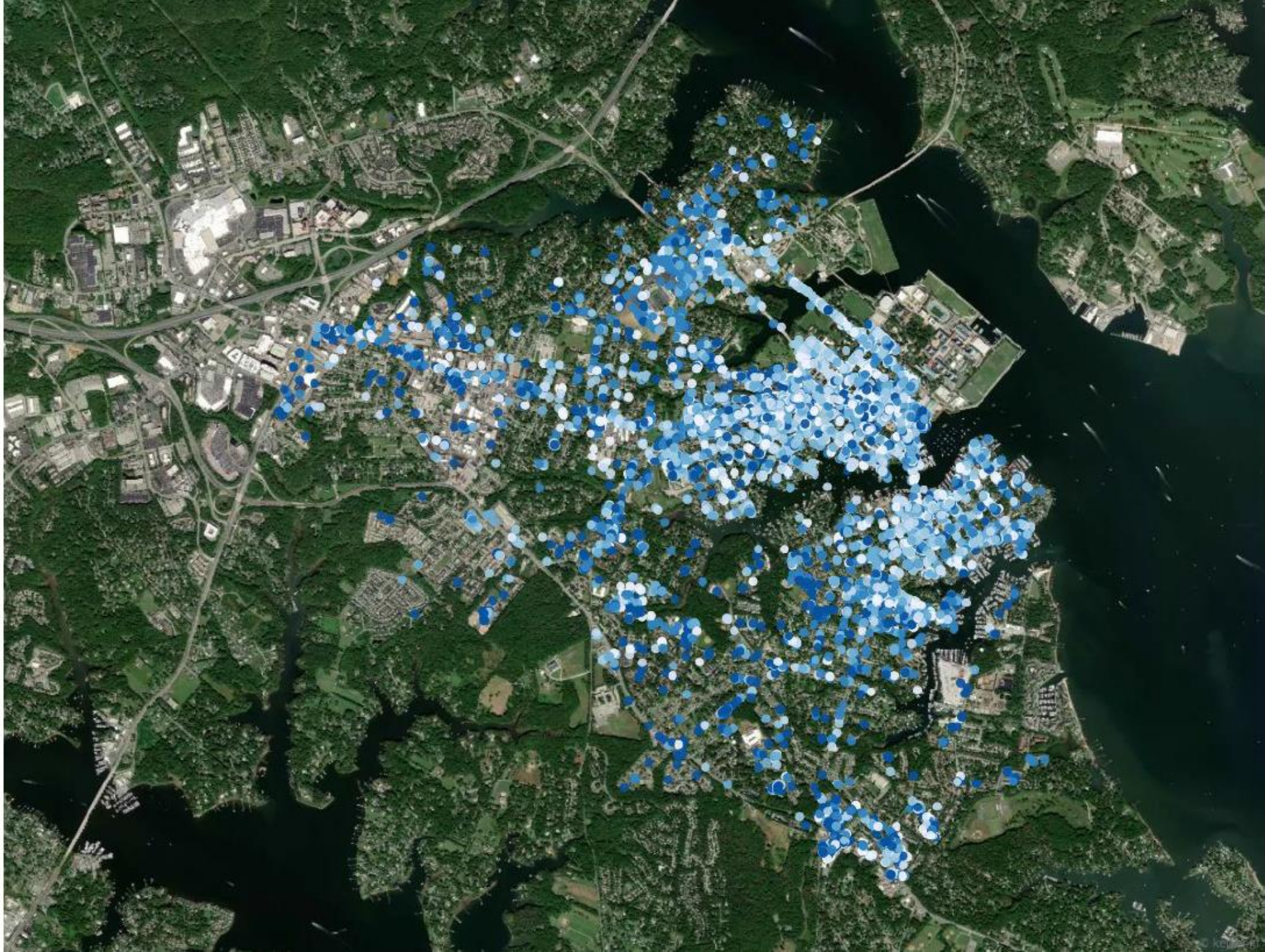


- The start map is more indicative of where the Fleet Manager stages the Birds in the morning.
- Darker blue indicators a longer ride (w/r/t time)

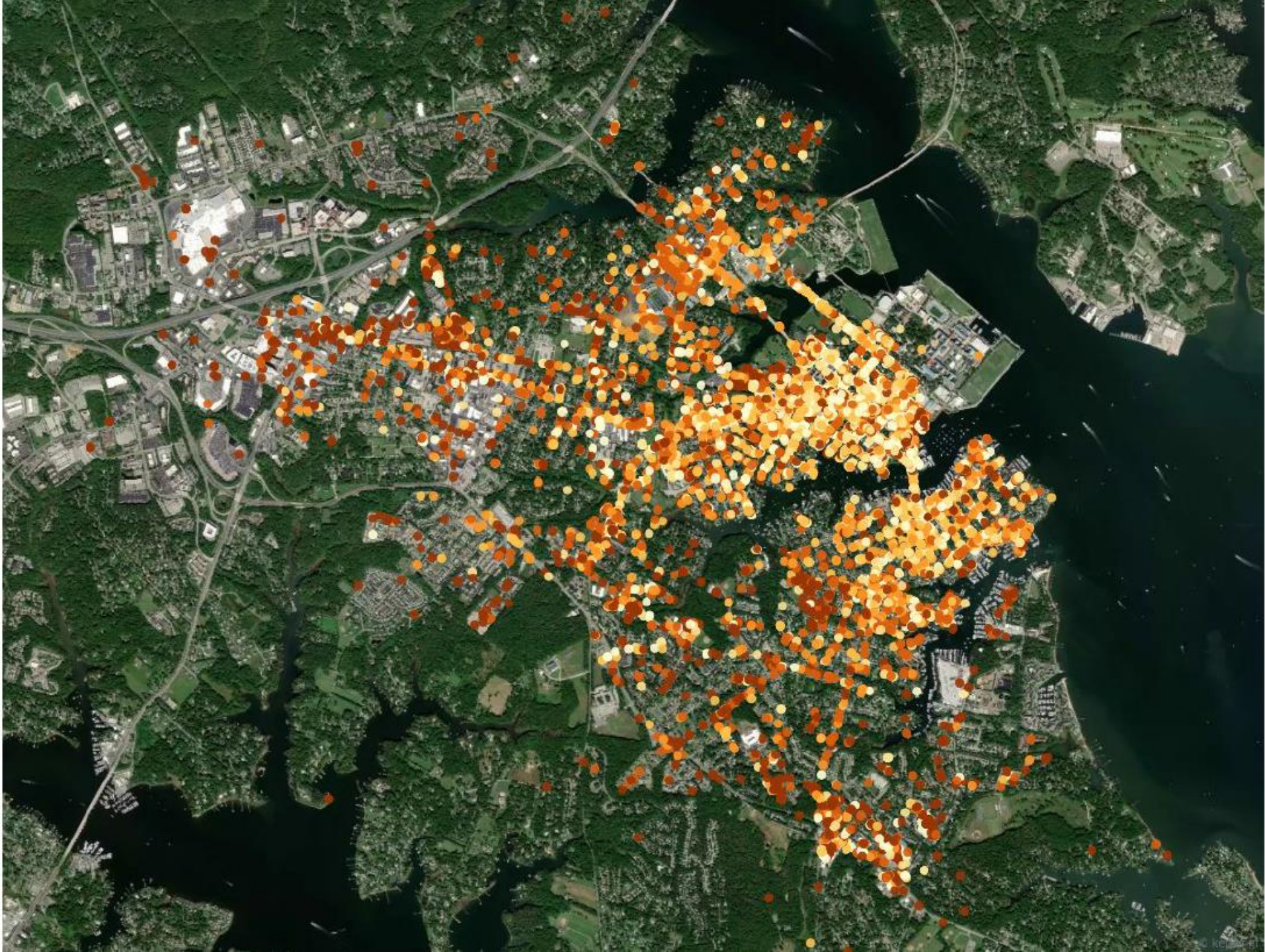


- The end map is more indicative of where they're ending up after the trip.
- Darker orange indicates a longer ride (w/r/t time)











# Notable Metrics

(1/10/23-7/9/23)

**Miles Ridden**

**29777.12**

**Rides**

**23849**

**Average Rides/Rider**

**3.01**

**Unique Users**

**7630**

**Commuter rides**

**2152**

# Expansion into Anne Arundel County

## Anne Arundel County Launch, May 18

On May 18, Bird took a significant step by expanding its services to Anne Arundel County. This expansion demonstrates Bird's dedication and investment in the vibrant Maryland community. Through forging strong partnerships and building relationships with the County and Annapolis, we are thrilled to continue our growth in the region. As such, Bird has recently deployed services in Parole and is actively seeking opportunities for further expansion within the county.

<https://www.cbsnews.com/baltimore/news/bird-plans-to-expand-its-e-scooters-and-e-bikes-across-anne-arundel-county/>

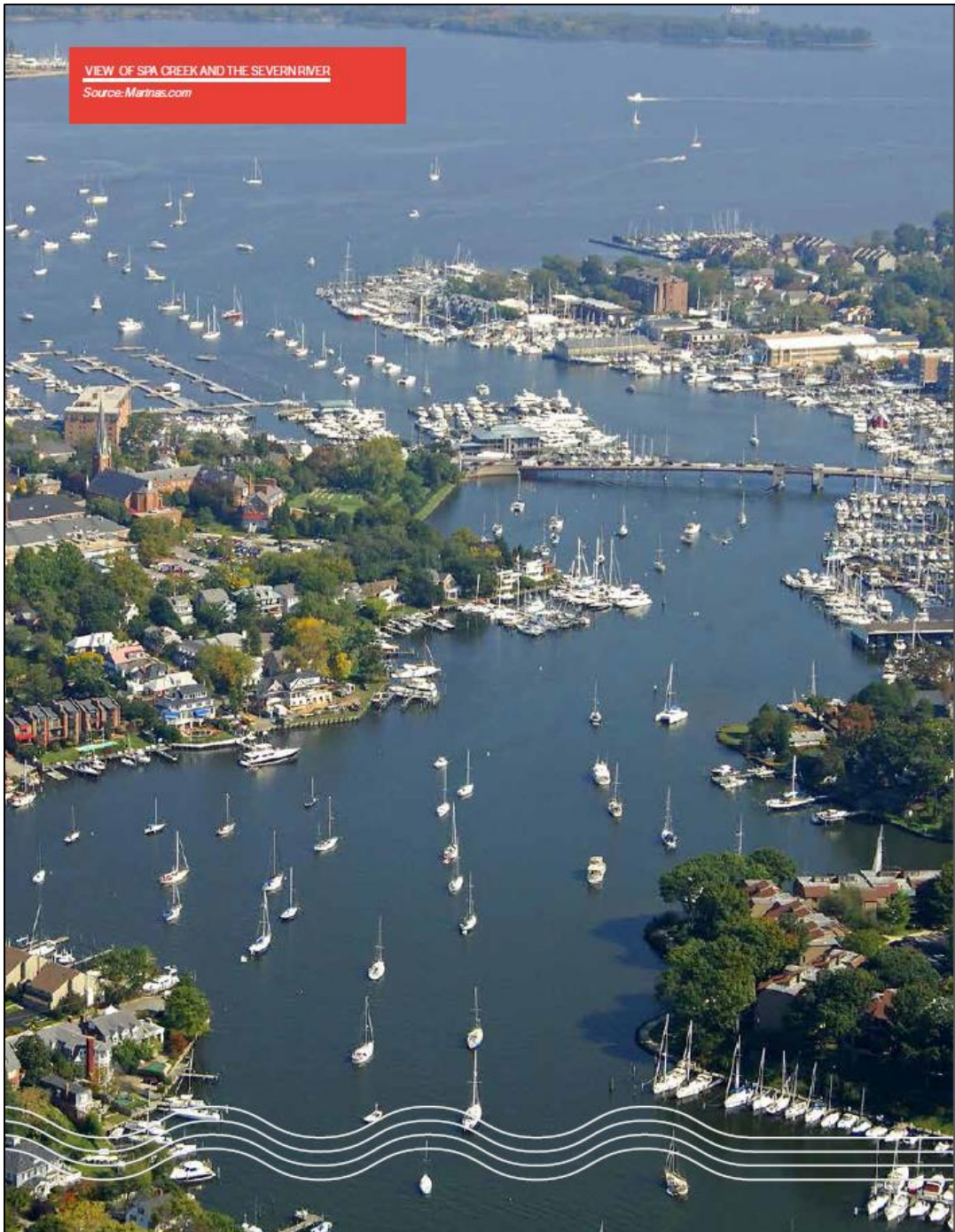




**ANNAPOLIS AHEAD 2040  
COMPREHENSIVE PLAN**

VIEW OF SPA CREEK AND THE SEVERN RIVER

Source: Marinas.com



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Bridging barriers.  
Connecting communities.





# 1. INTRODUCTION

## ANNAPOLIS AHEAD

Annapolis Ahead 2040 is the City of Annapolis' Comprehensive Plan update, a citywide plan required by Maryland Land Use Code to be updated approximately every ten years following the release of new Census data. Like previous plans, this plan's essential purpose is to bring about the careful development of the City and conservation of what is most exceptional about it. As a general and city-wide Plan, it does this by guiding public and private decisions that work toward achieving the vision set forth by the City and its residents over the use of land, water and other natural resources; streets and other infrastructure; parks, open spaces and other community facilities; and many other aspects of the city related to development through the year 2040. The guidance within this Plan is a representation of the agreement that Annapolis, as a whole, has come to over long-range goals and outcomes. With it, the City's government has a roadmap to make wise and popular decisions on development proposals, the expenditure of public funds, the City's development code, cooperative efforts, and issues of pressing concern. Likewise, the Plan provides city residents, property owners, business owners, and those looking to invest in the city with a clear view of the city's direction.

This Plan explores conditions as they are today, how these conditions may have changed since the last comprehensive plan, and anticipates what the future may hold. From this analysis, the Plan provides goals, performance metrics, and recommended actions that will guide Annapolis toward a healthy, balanced and harmonious future over the next 20 years.

There are many features of this Plan that distinguish it from prior comprehensive plans and reinforce its

relevance to the Annapolis of today. The most important of these features are the following three themes which are interrelated and guide all goals, performance metrics, and recommended actions of the Plan.

### Equity

The Plan's focus on equity is guided by an awareness of longstanding racial inequities in how public and private resources are invested in Annapolis communities. The Plan includes many goals, metrics, and recommended actions aimed at reversing these decades long trends and ensuring that all residents and communities have access to the opportunities and resources they need to be successful.

### Health

The Plan's focus on health is grounded in an appreciation for how the built and natural environment of the city plays an influential role in the physical and mental health of the city's residents and communities. The Plan offers many goals, metrics, and recommended actions aimed at ensuring that our surroundings are designed to improve our health.

### Resilience

The Plan's focus on resilience is based on the fact that Annapolis will continue to face challenging environmental conditions driven by climate change which in turn have economic and social consequences. The Plan offers goals, metrics, and recommended actions designed to help the city better prepare for, respond to, and adapt to more frequent storms, increasing flooding, extreme heat, and other climate driven conditions.



FIGURE 1-1: ANNAPOLIS' FIRST ANNUAL JUNETEENTH PARADE IN 2022  
Source: Paul W. Gillespie / Capital Gazette





## THE FUNCTIONAL CITY

### 6. TRANSPORTATION

Overview  
Existing Conditions  
Goals, Performance Measures, and  
Recommended Actions

### 7. COMMUNITY FACILITIES

Overview  
Existing Conditions  
Goals, Performance Measures, and  
Recommended Actions

### 8. ARTS AND CULTURE

Overview  
Existing Conditions  
Goals, Performance Measures, and  
Recommended Actions

Bridging barriers.  
Connecting communities.





## 6. TRANSPORTATION

### OVERVIEW

Few aspects of the public realm are as important to as many people as transportation; fewer still are controlled by so few public sector entities. Local, state, and federal governments have created a transportation system in the United States that has been the standard of excellence for nearly every other country in the world. The development of the Eisenhower Interstate System beginning in the late 1950's propelled the economy forward for millions of people.

Times change. While other countries have moved ahead on high speed passenger rail or separated bicycle networks, for example, the U.S. lags far behind. More importantly, cultural shifts building on smart growth and walkable places, greater awareness of historic transportation inequities, changing family structures, increasing construction costs, declining rates of driver licensing for younger people, aging populations, and concerns about environmental degradation from vehicle emissions have shifted the goals for many cities in the United States, including Annapolis. Congestion levels on public roadways, parking management, and a greater desire for streets that offer a complete set of mobility options are at the forefront of a new transportation paradigm. Overlaying these changes are advances in micromobility and enhanced technologies that may make some systems less important or in need of innovative redesigns to remain relevant. Many of these 21st century considerations became the foundation for the Infrastructure Investment and Jobs Act (IIJA), the most significant investment in America's infrastructure in nearly fifty years.

Annapolis today is at a crossroads in shaping its transportation policies in response to these rapidly changing urban needs and preferences. These policies will in turn shape the transportation modes that residents and visitors will use in the future to move more efficiently, safely, comfortably, and with less environmental impact. Transportation policy changes and infrastructural investments can have far reaching positive impacts on the broader environment of the city.

**“Almost no matter what you want to do with cities, transportation is the fastest and most cost-effective way of achieving your goals. If you want to reduce CO2 emissions, if you want to advance social equity, if you want to foster small business success, if you want to increase land value, if you want to increase public health, if you want to reduce fatalities and injuries—transport is the place to do it.”**

**- Jeff Tumlin, San Francisco MTA**

The following chapter will outline the current context of Annapolis both internally and with respect to the external changes and challenges mentioned. Reviews of this information and future amendments will address recommendations to meet the most pressing transportation needs of Annapolis' residents, businesses, and visitors.

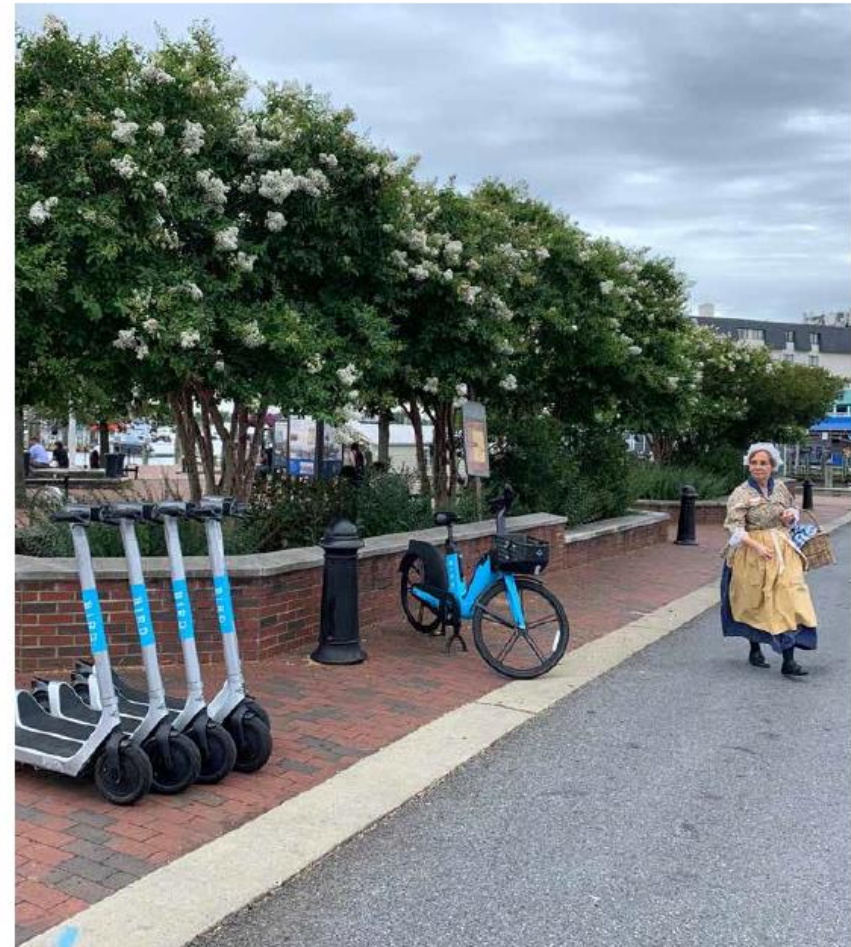


FIGURE 6-1 AN ELECTRIC BIKE SHARE AND SCOOTER SHARE PROGRAM IS ONE OF THE WAYS THAT ANNAPOLIS IS ADAPTING TO CHANGING TIMES

Source: City of Annapolis



## Other Roadway Functions

### Emergency Evacuation

Being a coastal community, emergency evacuations are an omnipresent possibility in Annapolis, and the evacuation routes as well as roadways that connect directly to them are of great importance. The designated routes are MD 2 and US 50, but other secondary roadways create a northern system of connectors to these primary roads.

### Freight Movement

While the port and peninsula no longer serve as origins or destinations for major freight movements, Forest Drive and US 50 are critical routes. The MDOT 2017 Maryland Strategic Goods Movement Plan identified US 50 from Solomon's Island Road to Ritchie Highway as a top-ten congested road segment.

### Urban Character

The Annapolis Historic District is an example of how the design of roadways can reinforce the identity and character of a place. The Historic District Design Guidelines (2007) provides for specific features of streetscaping, including lighting, mobility aids, fencing, street trees, street furniture, and sidewalks. "The intersections of radiating streets with rectilinear streets contained in the Nicholson plan created unusual triangular shaped lots, dramatic visual axes and vistas." While the rest of Annapolis need not emulate the Historic District's design details, the design of streets in other ways can have a dramatic effect on commerce, safety, and comfort, and environmental benefits.

### Economic and Community Development

Investment in the public realm, specifically roadways that are critical to a community's livelihood, is a proven means of sparking broader investments in the community. The transformation of Inner West Street over many years is an example of how the redesign of an important roadway corridor coupled with community support can accelerate other investments from the private sector as perceived risk is minimized.

## 231

The number of times the word "street" is mentioned in the 2007 Annapolis Historic District Design Manual: Building in the Fourth Century.

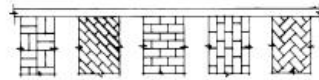


FIGURE 6-8: BRICK PAVING PATTERNS ALLOWED IN THE ANNAPOLIS HISTORIC DISTRICT

source: *Annapolis Historic District Design Manual, 2007*



FIGURE 6-9: STREETScape IMPROVEMENTS MADE BY THE CITY TO INNER WEST STREET ARE A VIVID EXAMPLE OF HOW TRANSPORTATION INFRASTRUCTURE CAN HAVE A DRAMATIC IMPACT ON ECONOMIC DEVELOPMENT.

Source: *City of Annapolis*



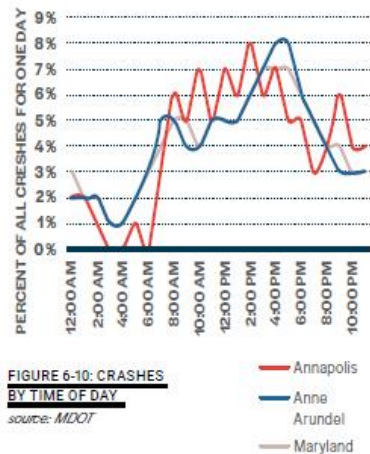
## Safety

### Crashes and transportation injuries

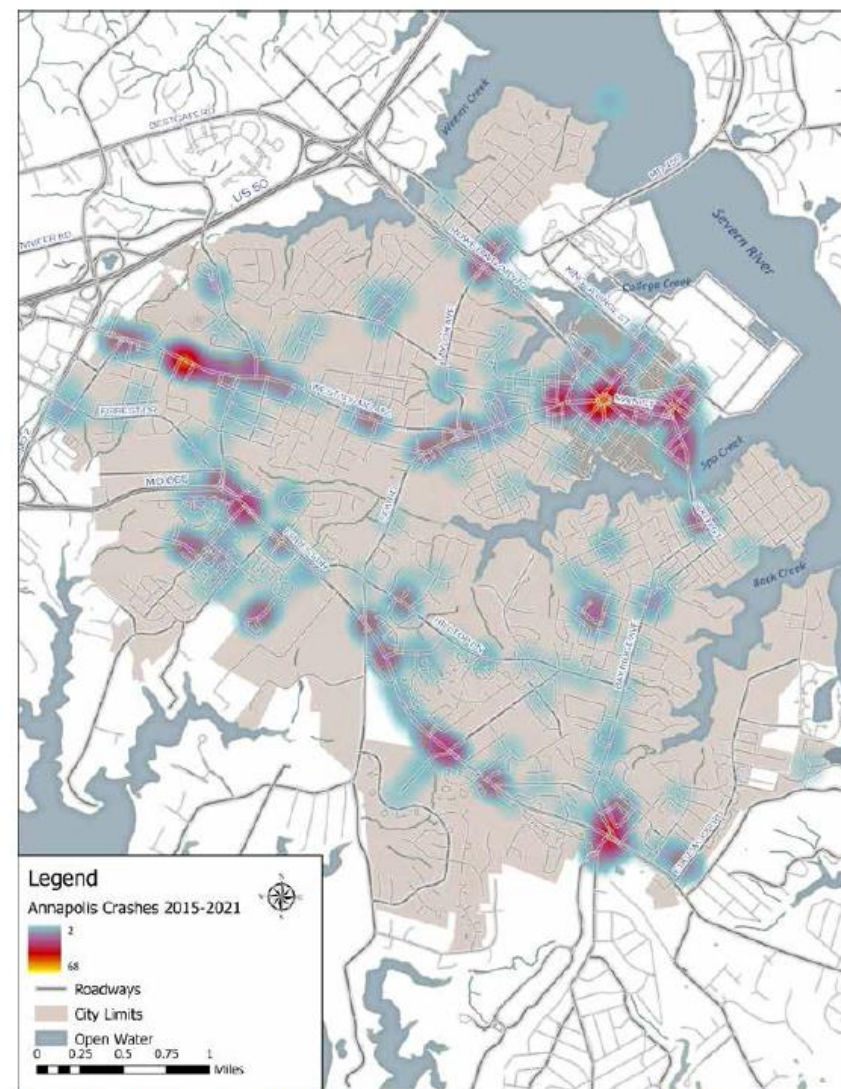
The negative consequences of vehicular crashes in the lives of Annapolis residents, drivers, and the economy is substantial. About 93% of crashes are caused by driver error: these events should be called “crashes,” not “accidents,” since almost all of them are preventable. A ban on texting while driving has been in effect in Maryland since 2009, and roadway design changes can also make a tremendous difference in the number and severity of crashes. Controlling access points along major roadways, improving sight distance, separating bicycle / pedestrian traffic from cars, and managing speeds are important components of safety programming. Crashes, especially in urban areas, are a major source of vehicular delay (25% to 40% of all delay), and this is delay that is felt particularly keenly since it is unexpected and cannot be anticipated.

Understanding crash data includes several considerations. For example, a large number of pedestrian-related crashes or injuries likely means that the location has a large pedestrian generator of traffic (like a shopping area nearby or is in a generally favorable area for walking). Crashes should be considered against the volume of traffic, since larger number of vehicles moving around translate into more collisions - note the cluster of crashes at the high-volume intersections around US 50 and MD 2. On the opposite page is a “heat map” of the crashes in Annapolis between 2015 and 2021, and on this page is a chart showing the distributions of crashes by time of day in comparison to trends across the county and state.

Finally, it should be kept in mind that the number of reported crashes doesn't represent all crashes: estimates suggest that 30% of all crashes go unreported, mostly property damage-only but some injury crashes as well (source: USDOT National Highway Safety Administration, Report DOT HS 812 183, July 2015).



**FIGURE 6-11: CRASHES BY TIME OF DAY**  
source: MDOT



**FIGURE 6-12: ANNAPOLIS VEHICLE CRASH MAP (2015-2021)**  
source: City of Annapolis

## Active Transportation

As previously noted, Annapolis’ location on a peninsula and being largely built-out means that it has fewer tools than other places for improving mobility. One tool that it does have, but has yet to fully leverage, is active transportation, which refers to walking and biking as a primary means of transportation. In fact, dollar for dollar, active transportation is the best investment the City can make in improving mobility. When more people choose to walk or bike, not only do they lessen the vehicles on the road, thereby reducing traffic and vehicle pollution, they also improve their own health, stimulate the economy, and make streets safer simply by being present and providing “eyes on the street”.

As a relatively flat and compact city, and one which welcomes millions of visitors each year who come to enjoy the city by foot or bike, Annapolis should have a far more developed active transportation network than it currently does. The city’s bicycle network is fragmented and poorly marked, and many of the city’s sidewalks are too narrow, blocked by utilities, or otherwise not ADA compliant. Of course many of these conditions are due to the City being hundreds of years old and not designed to contemporary standards. But at the same time, the City has not until recently prioritized active transportation and the significant investment it requires.

Using the Walkscore methodology which analyzes the urban features of the city, the “walkability” of Annapolis varies dramatically from the historic downtown core with a Walkscore of 84 to the edges of the City with Walkscores in the 30s (the overall Walkscore of Annapolis is 50 - “Somewhat Walkable”); The image above is a citywide “heat map” of the walkability scores.

The app Strava records travel by bicycle and on foot by its users for the prior two years to produce compelling maps of where people are travelling. While downtown ranks highly again for walking and biking, it is noteworthy that other, higher-level roads are used by cyclists and pedestrians, like Rowe Boulevard, Forest Drive, West Street, Spa Road, and Bay Ridge Avenue. However, in many cases, those who walk or bike as a

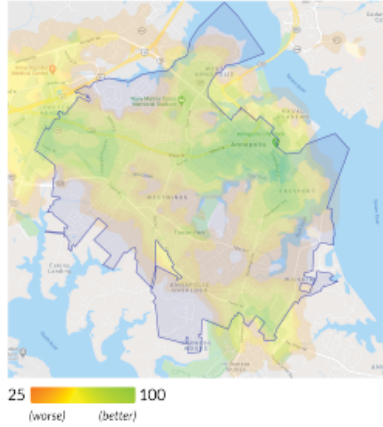


FIGURE 6-17: ANNAPOLIS WALKSCORE HEAT MAP  
source: *Walkscore.com*

\*The Walkscore metric is used broadly to compare relative “walkability” between cities and neighborhoods, but actually measures the proximity and number of destinations within a 5-(high score) to 30-minute (low score) walk, population density, and block sizes to calculate these reported values - barriers like sidewalk gaps aren’t a factor.

primary means of transportation do not have a choice which street they take to get to their destination. They simply take the most direct route. If more people do choose to walk or bike, the national data is clear that roads become dramatically safer for walking and biking. There is “safety in numbers” as drivers become more aware of other road users and their behavior adjusts accordingly. The chart above clearly shows how cities with more bicycle commuters on their streets see a dramatic reduction in traffic fatalities.

In 2022, Annapolis launched its first “Micromobility Program” as a means of offsetting the impacts of the Hillman Garage reconstruction and providing alternative ways to get into and around Downtown



FIGURE 6-18: BICYCLING PATTERNS IN ANNAPOLIS BASED ON 2-YEAR DATA FROM THE APP STRAVA (LIGHTER LINES INDICATE MORE HEAVILY USED STREETS)  
source: *Strava*



FIGURE 6-19: WALKING PATTERNS IN ANNAPOLIS BASED ON 2-YEAR DATA FROM THE APP STRAVA (LIGHTER LINES INDICATE MORE HEAVILY USED STREETS)  
source: *Strava*

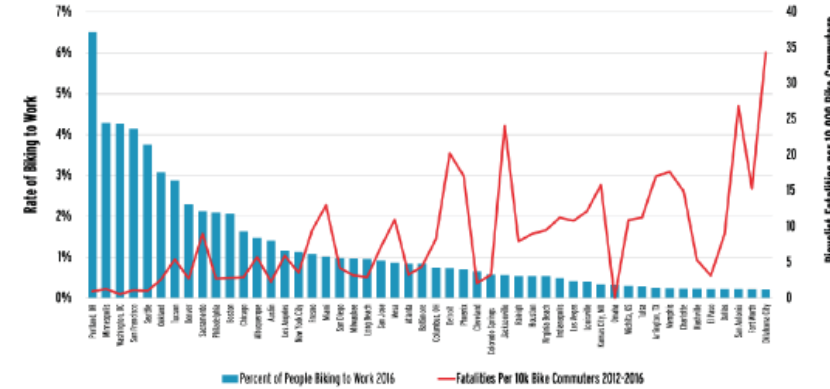


FIGURE 6-20: DATA FROM CITIES ACROSS THE U.S. SHOWS A STRONG TREND THAT WHEN THERE ARE MORE BICYCLE COMMUTERS, BICYCLIST FATALITIES REDUCE DRAMATICALLY  
source: *League of American Bicyclists*



## Complete Streets

Policies which guide street improvements that benefit the safety of all street users— particularly those most vulnerable such as pedestrians— are a critical tool for creating a safe transportation network. In recent years, municipalities all over the United States have adopted “Complete Street” policies as a way to standardize and prioritize the types of improvements that will have the most impact on safety. The U.S. Department of Transportation has helped to expand these policies by promoting best practices and dramatically increasing the funding to state and local governments looking to create Complete Street plans and implement the improvements. The State of Maryland’s “Context-Driven” program initiative is another example of how Complete Street policy has become the standard approach to roadway planning and design.

The exact look and feel of a Complete Street will vary by community context, but the idea is always the same: provide design features that improve the safety and comfort for all street users such as wider sidewalks, street parking, and bike lanes; improve the environmental functions of the street through features such as street trees and rain gardens; and enhance the identity of the street through features such as wayfinding signage and public art. All of these features can be scaled up or down depending on the available space and specific community needs.

While Annapolis has not yet established a policy for implementing Complete Streets, Anne Arundel County did adopt a policy in 2014 through Resolution 45-14 which established guiding principles and a framework for ensuring that future roadway improvements would follow a Complete Street approach.

Unlike Anne Arundel County, Annapolis builds very few new or widened roadways, and the roads which the City already maintains are generally constrained for space. Therefore, any Complete Street policy tailored to Annapolis will need to first acknowledge that future improvements in many cases will be highly strategic and surgical— a particular project might only improve an intersection or an individual segment of a longer

street. That being said, there are streets in Annapolis that could benefit from Complete Street makeovers, namely Upper West Street and Forest Drive. These are streets where a high concentration of crashes occur, where vehicles drive at high speeds, and where walking is usually a last resort because it does not feel safe or comfortable.

**“Complete Streets are streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders. The concept of Complete Streets encompasses many approaches to planning, designing, and operating roadways and rights of way with all users in mind to make the transportation network safer and more efficient.”**

**- U.S. Department of Transportation**

For Annapolis to establish a Complete Street policy that is specific to the unique conditions of the city, it needs two essential things: it needs the support of City Council to recognize that improvements to streets should be treated as a major investment in the health and character of the city and not simply basic road repairs; and Annapolis needs a Complete Street design manual that will help staff, property owners, developers, and community stakeholders make decisions on context-sensitive improvements that will add value to the city.



FIGURE 6-14: RENDERING OF A PROTOTYPICAL NEIGHBORHOOD COMPLETE STREET FROM THE ‘URBAN STREET DESIGN GUIDE’ BY THE NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS (NACTO)

source: NACTO



FIGURE 6-15: THIS RECENT INTERSECTION IMPROVEMENT ON CHESAPEAKE AVENUE SHORTENS THE CROSSING DISTANCE FOR PEDESTRIANS, CALMS VEHICULAR TRAFFIC, AND ADDS PLANTINGS.

source: City of Annapolis



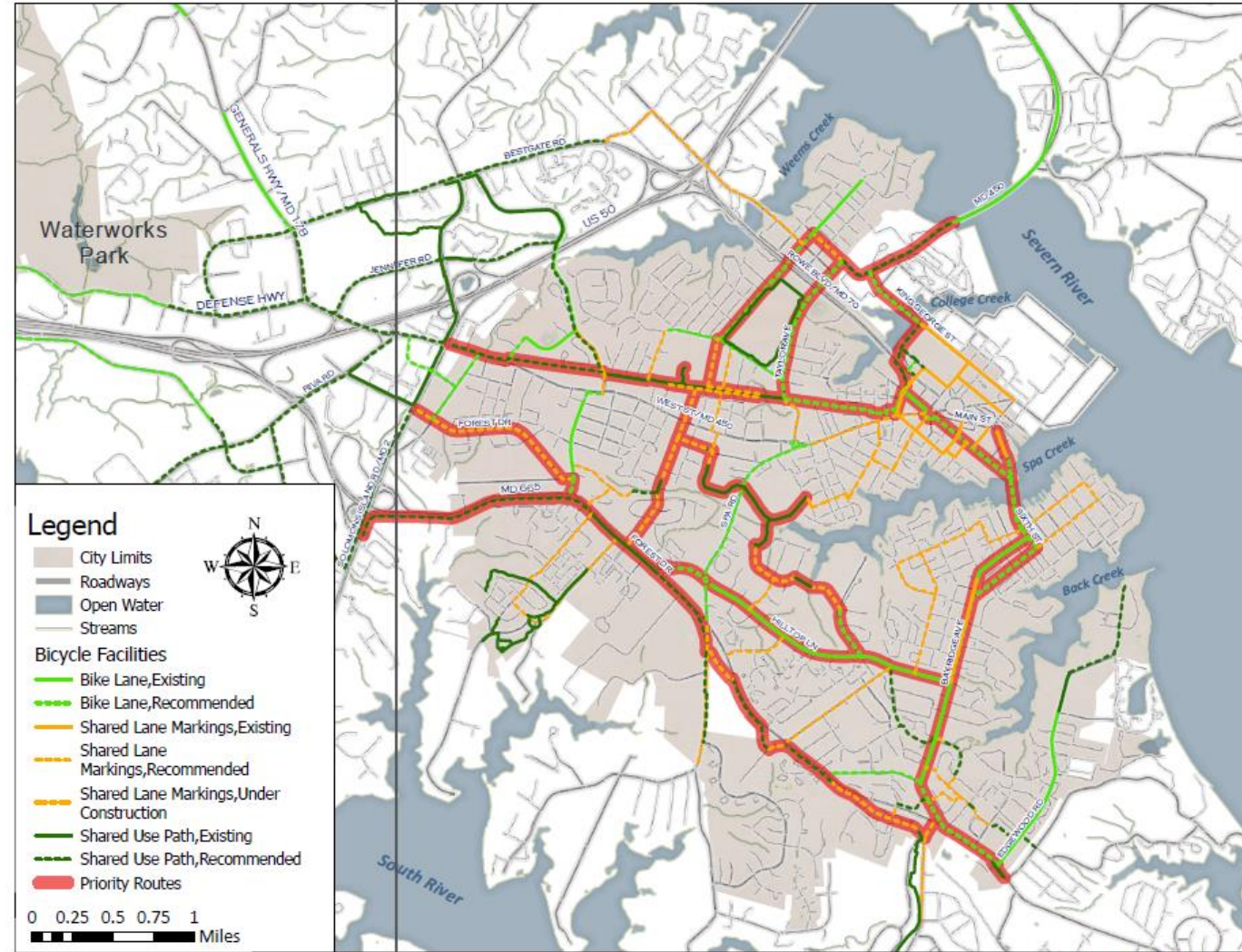
### Bicycle Network

Annapolis' bicycling infrastructure network includes a variety of different facilities including off-street shared use paths, striped bike lanes, and shared lane markings, but the network overall is extremely fragmented and not serving the city well. Similar to the pedestrian network described on the previous pages, bicycling is great exercise but for many residents, it is the primary means of getting around the city whether to a job, to services, or another destination. And just like a walkable city, a bikeable city is one in which someone does not need to think twice about whether biking will put them in danger or will be less pleasant than driving. Along with walking, a safe and connected bike network unlocks a range of related benefits from improved health outcomes, to public safety, to community investment, economic vitality, and reduced traffic and vehicle emissions. Indeed, for many residents and visitors to Annapolis, biking has even more potential to replace trips that would typically require a personal vehicle trip in today's Annapolis because the roadways are either not safe for bicycling or adequate bike infrastructure is not available.

Annapolis adopted its first Bicycle Master Plan in 2011 which provided direction on how to better invest in this key component of the city's mobility network. However until recently, very little was done to improve safety and connectivity for cyclists in the city. Beginning in 2018, the City launched a new initiative to prioritize the bicycle network based on recommendations from the 2011 Master Plan as well as new strategies. Over the last five years, the City has focused on investments into major bike corridors such as the West East Express, College Creek Connector, and Spa Creek Trail, as well as more straightforward lane marking improvements when streets are repaved. With this renewed focus, the City has raised over \$5 million in funds through State and Federal grants, the most funding dedicated to bike network improvements in the City's history.

**FIGURE 6-27: MAP OF EXISTING AND RECOMMENDED BICYCLE FACILITIES INCLUDING PRIORITY ROUTES.**

source: City of Annapolis





### Major Trail Initiatives

In recent years, the City has made headway on several major trail initiatives that will each have a substantial impact on connecting the city's-- and the region's-- bicycle and pedestrian network, improving safety, and providing more options for residents and visitors to get around. Primarily funded by State and Federal grants, these trails are being designed in close coordination with adjacent communities and property owners.

#### West East Express (WEE)

The most important of the major trail initiatives is the West East Express, or the WEE as it is commonly known. The project extends the existing and heavily used Poplar Trail in two directions, east to Downtown, and west to Parole, to create a 2.4 mile bike and pedestrian corridor along the former WB&A railroad. The trail will safely connect many diverse neighborhoods-- including areas with highest social vulnerability in the city--to parks, schools, the library, jobs, community services, shopping, and other destinations.

#### College Creek Connector

The College Creek Connector will provide water access, and a pedestrian and biking trail, along College Creek, one of our most under-utilized waterways. Situated at a key gateway to the city, the trail connects King George Street to Calvert Street along the shoreline of College Creek. Along the way, it passes significant cultural sites including St. John's College and St. Anne's Cemetery. This will be the city's first boardwalk trail and allow pedestrians and cyclists new access to the creek's riparian habitat. The project also connects to another important trail project underway which will provide a safer route between the B&A Trail and downtown Annapolis, bringing significant mobility and recreational tourism benefits.

#### Forest Drive Trail

This project will create a continuous trail running the full length of Forest Drive, Annapolis' longest major corridor and currently one of the most dangerous roadways in Anne Arundel County. The trail extends



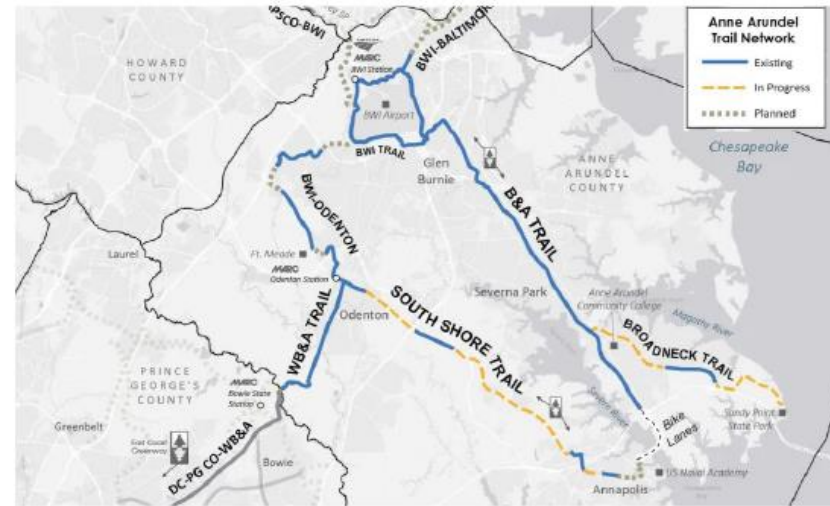
**FIGURE 9. THE COLLEGE CREEK CONNECTOR TRAIL WOULD HELP CYCLISTS MORE SAFELY ACCESS DOWNTOWN VIA COLLEGE CREEK.**

Source: City of Annapolis



**FIGURE 9. RENDERING OF THE WEST EAST EXPRESS (WEE) AS IT APPROACHES PLEASANT STREET FROM THE PARKING LOT OF THE GRADUATE HOTEL.**

Source: City of Annapolis



**FIGURE 9. ANNAPOLIS IS A CRITICAL LINK IN A REGIONAL TRAIL NETWORK WHICH MEANS THAT ACTIVE TRANSPORTATION IMPROVEMENTS HERE WILL BENEFIT A MUCH LARGER REGIONAL POPULATION. IMPLEMENTING THE WEST EAST EXPRESS AND COLLEGE CREEK CONNECTOR TRAILS (ILLUSTRATED ON THE FACING PAGE) WILL ADDRESS MUCH OF THIS MISSING LINK.**

Source: Bicycle Advocates for Annapolis and Anne Arundel

the existing shared use path between Bywater Road and Hilltop Lane to connect with Peninsula Park and Quiet Waters Park at the edge of the city limits. The trail will provide safe access to three elementary schools, a middle school, and is recommended by the Forest Drive Safety Study completed by Anne Arundel County in 2023.

#### Hilltop Lane Connector

The Hilltop Lane Connector is a relatively short trail segment but fills a critical gap in the city's bike network between the existing bikeway on Hilltop Lane and the existing shared use path on Forest Drive. The trail will dramatically improve a corridor that is already widely

used by cyclists but is extremely unsafe, with one cyclist fatality in 2023.

#### Bay Ridge Avenue Bikeway

This project will create a safer trail connection between Downtown and Quiet Waters Park along Sixth Street, Chesapeake Avenue, Bay Ridge Avenue, and Hillsmere Drive. While corridor already has some bike facilities, they do not provide adequate safety and do not connect the full corridor. The trail will improve access to two major shopping centers, two elementary schools, and improve active transportation along one of the city's most heavily used north-south corridors.



### Pedestrian Network

A city's sidewalk network is the best indicator of just how accessible and equitable the larger transportation network is. Indeed walking may be a great form of exercise but for many residents it is the only means of getting where they need to go, often in combination with public transit. A walkable city is one in which someone does not need to think twice about whether walking will put them in danger or will be less pleasant than driving. A walkable city unlocks a range of related benefits from improved health outcomes, to public safety, to community investment, and economic vitality.

For these reasons, cities aspire to have a completely connected sidewalk network that allows someone to walk safely and comfortably wherever they need to go. This means sidewalks of adequate width (the Annapolis City Code requires 5' width for new sidewalks), free of barriers such as utility poles, with ramps at the corners compliant with the American Disabilities Act (ADA), and crosswalks at major intersections. These are the basic criteria for a connected sidewalk network. Street trees which provide shade and managed curb cuts that limit how often the sidewalk is interrupted for a driveway are among other features that can make a sidewalk network truly comfortable for all users.

In 2022, to help analyze gaps in the city's sidewalk network and help prioritize improvements, Annapolis participated in the development of a Pedestrian Infrastructure Assessment Tool (PIAT) led by a team from the Baltimore Metropolitan Council. As part of the tool development, Annapolis was one of two jurisdictions in the Baltimore region which served a test location. The PIAT uses highly precise sidewalk infrastructure data – including locations of barriers, ramps, and crosswalks – combined with Geographic Information Systems analysis tools to identify where adequate sidewalks exist and where they do not.

The map on the facing page is an outcome of the PIAT's analysis and is combined with the city's Social

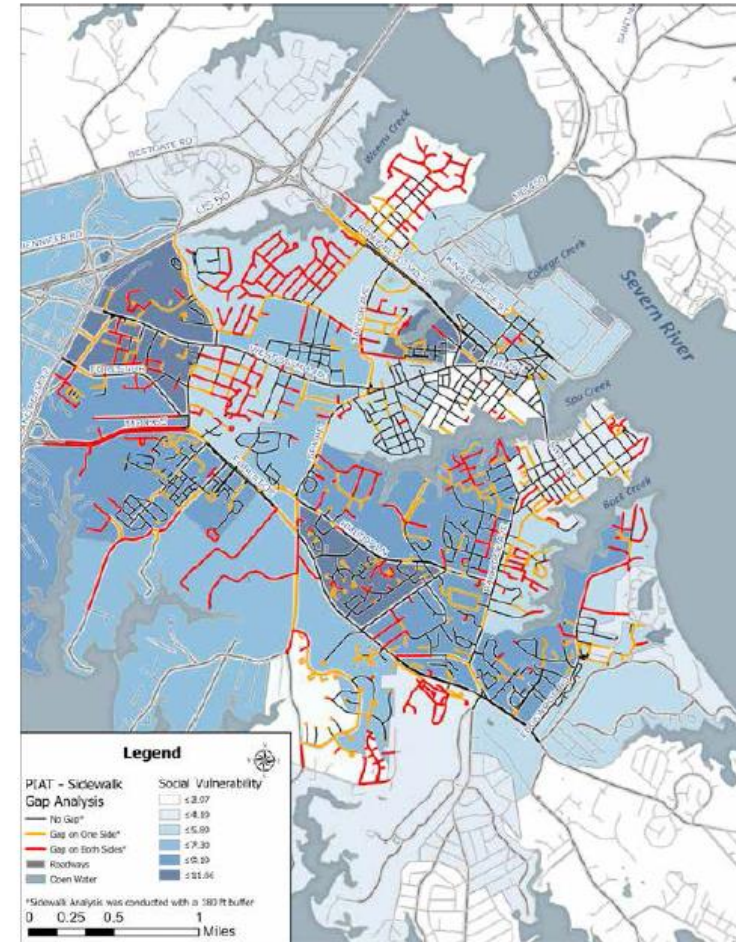


**FIGURE 6-25: SIDEWALK CONDITIONS IN ANNAPOLIS VARY WIDELY AND ARE RARELY ABLE TO BE IMPROVED WITHOUT IMPACTING OTHERS PARTS OF THE STREET SUCH AS PARKING, DRIVE LANE, OR ADJACENT PROPERTY WHICH REQUIRES COMPROMISE.**

source: City of Annapolis

Vulnerability data to understand where sidewalk improvements could have the most impact. There are several neighborhoods adjacent to Forest Drive that score poorly on the sidewalk analysis and have high social vulnerability.

Improving sidewalk connectivity is often more challenging than it might seem and frequently involves balancing multiple needs that might all seem equally important. With Annapolis' streets generally very constrained for space, widening a sidewalk might impact an adjacent parking lane, a vehicular lane, or might require using part of an adjacent property. It might require the relocation of a utility pole or a tree. All of these scenarios add time, cost, and complexity. Regardless of these challenges, this Plan seeks to make Annapolis a more walkable city and to do this the City must recognize that improving the sidewalk network – to make it truly connected – requires commitment and often difficult compromises. However, the return on investment will be substantial in terms of social, environmental, and economic value.



**FIGURE 6-26: MAP OF EXISTING GAPS IN THE SIDEWALK NETWORK COMBINED WITH SOCIAL VULNERABILITY DATA TO HELP PRIORITIZE FUTURE IMPROVEMENTS.**

source: City of Annapolis



## Educational Facilities

While the City does not own or operate any of the public schools located within its jurisdiction, it does maintain a partnership with Anne Arundel County Public Schools (AACPS) in using their facilities for recreational and other programs. Schools, with their playgrounds, athletic fields, and other community spaces, serve a critical role doubling as community recreational facilities as well as providing space for community events.

Just as accessibility to parks and other recreational amenities is important to residents, so too is accessibility to schools and not just for students. Safety and accessibility within close proximity of these educational and recreational facilities adds another layer of emphasis on implementing bicycle and pedestrian infrastructure, to which Annapolis does have the authority to direct policy and investment. For example, the City's Poplar Trail currently connects several neighborhoods to local schools. As the trail is improved in the coming years with extensions both east and west to become the *West East Express* (see Chapter 6: Transportation for more detail about this project) the trail will connect to even more schools and communities. Along Forest Drive however, neighborhoods and schools currently have limited options for safe bike and pedestrian access. A recent Forest Drive Safety Study advanced by Anne Arundel County in partnership with the City provides numerous recommendations for improvements including the extension of the shared use path that currently ends at Hilltop Lane.

To better coordinate investments for bicycle and pedestrian infrastructure serving schools, the map on the facing page shows a half mile trip zone around each school within the City. Using this map, corridor enhancements can be prioritized based on their service area and this can also facilitate funding requests from State and Federal sources such as the Safe Routes to School grant program. In 2022, Anne Arundel County initiated Safe Routes to School planning at two schools within Annapolis, Tyler Heights Elementary and Georgetown East Elementary.



FIGURE X: PUBLIC SCHOOL FACILITIES, SUCH AS THIS PLAYGROUND AT EASPORT ELEMENTARY, PROVIDE VALUABLE COMMUNITY FACILITIES FOR RECREATION EVEN WHEN SCHOOL IS NOT IN SESSION

Source: City of Annapolis



FIGURE X: SAFE ROUTES TO SCHOOL PLANNING IS AN INITIATIVE TO PRIORITIZE SAFETY IMPROVEMENTS TO STREETSCAPES CLOSE TO SCHOOLS

Source: Toole Design

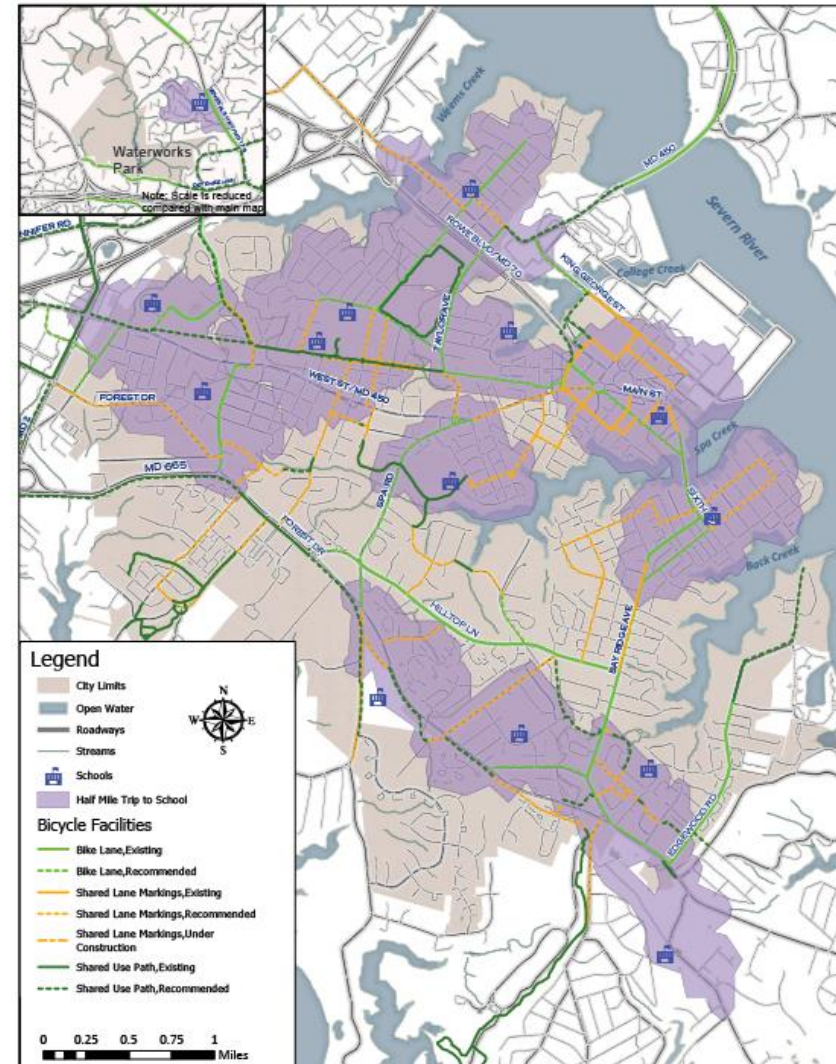


FIGURE X: MAP OF THE 1/2 MILE WALK ZONE AROUND EACH PUBLIC SCHOOL WITHIN THE CITY THAT SHOULD PROVIDE SAFE PEDESTRIAN AND BIKE ACCESS.

Source: City of Annapolis



### Electric Mobility

Transitioning the Annapolis Transit bus fleet from conventional diesel buses to zero-emissions electric vehicles is another means of improving efficiency and ridership. The transition can also have a dramatic impact on reducing the city's carbon footprint given that the transportation sector is the largest emitter of greenhouse gas emissions in the city (Chapter 8: Environmental Sustainability addresses the broader goal of carbon reduction). However, transitioning the bus fleet requires more than simply purchasing new vehicles. New maintenance facilities and equipment, new staff capacity and expertise, and new scheduling based on electric charge durations and requirements are all aspects of a successful transition.

In 2022, to jumpstart this effort, a conceptual plan was created to envision an initial investment in an electric transit system. The plan focused on three primary electric modes: transitioning the successful Downtown Circulator buses to an electric vehicles, creating new 10-minute trolley service in the Downtown and Eastport areas with small General Electric Motor (GEM) vehicles, and creating a new electric passenger ferry that would connect Eastport to Downtown. Separate from this plan, the privately-operated Annapolis GO service, designed and operated by Via, was created in conjunction with the Hillman Garage reconstruction and offers on-demand service for \$2 per ride using electric SUVs. The City also launched its first e-bike and e-scooter share program operated by Bird. Both of these programs have proven to be successful and expanded since their inception which shows that there is both strong public support for and significant value in electric mobility in Annapolis. However, there needs to be far more coordination and integration among the various programs as they evolve. Currently each service operates on its own platform through a proprietary app which is neither efficient nor serving the broader goal of providing more convenient and connected service.

Investing in and promoting electric mobility is a huge opportunity for the City, and specifically Annapolis

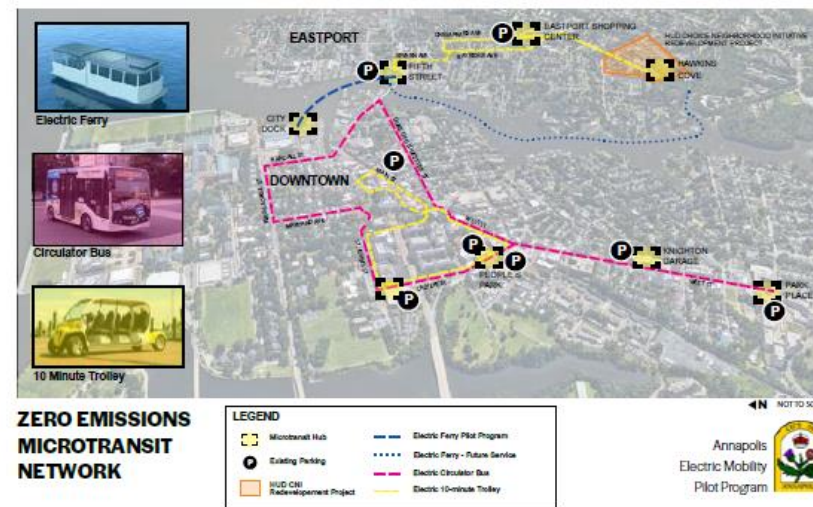


FIGURE 6-35: AN ADVERTISEMENT FOR ANNAPOLIS GO, THE PRIVATELY-MANAGED ON-DEMAND TRANSIT SERVICE THAT WAS LAUNCHED IN CONJUNCTION WITH THE HILLMAN GARAGE RECONSTRUCTION. THE NEW SERVICE HAS BEEN POPULAR AND IS A MODEL FOR EXPANDED SERVICE BY ANNAPOLIS TRANSIT.

Source: City of Annapolis

Transit, to promote the value of public transit and to reimagine public transit for the 21st century. There are clear lessons to be learned from the success of the privately managed transportation services--the ease of use, the real-time information provided to users, the reliability, the branding, and the visibility of their marketing efforts. In fact, these are precisely the areas of improvement for Annapolis Transit recommended in the City's Transit Development Plan.

It is difficult to imagine public transit in Annapolis becoming a more viable transportation option without embracing current technologies. To fully update its technology will require additional investment but Annapolis Transit is well positioned to take on more of a leadership role for a greener and cleaner Annapolis.



### ZERO EMISSIONS MICROTRANSIT NETWORK

FIGURE 6-36: THE MAP ABOVE SHOWS A CONCEPT PLAN FOR THE ANNAPOLIS ELECTRIC MOBILITY PILOT PROGRAM WHICH PROPOSES A SUITE OF ELECTRIC MOBILITY PUBLIC TRANSIT OPTIONS.

Source: City of Annapolis



FIGURE 6-37: AS PART OF THE ANNAPOLIS ELECTRIC MOBILITY PILOT PROGRAM, THE CITY LAUNCHED TWO GEM ELECTRIC VEHICLES AND BRANDED THEM THE 'ANNAPOLIS CURRENT'.

Source: City of Annapolis



## Public Transit

Public transit, like active transportation, is an available but under-invested tool that could be far better leveraged to improve mobility in Annapolis. The city has no shortage of existing public transportation services which connect residents to destinations within the city as well as the larger metropolitan region. These services include transit lines operated by the City, Anne Arundel County, Maryland Transit Administration (MTA), as well as private operators. In fact, 80% of Annapolis residents are within a quarter-mile of a public transit stop as illustrated by the graphic on this page, and the most socially vulnerable communities in the city are all served by public transit, as illustrated in the map on the following pages. However, despite all of the existing service, transit is not considered a viable option by many city residents and is not growing ridership. Moreover, although the various transit services are coordinated between City, County, and State agencies, they still lack a unified resource for providing route information across all systems which is needed to create a truly efficient and seamless regional transit system.

The foundation of the city's transit services is Annapolis Transit which operates six fixed-bus routes within the City, referred to as the "Rainbow Routes", and two downtown shuttles. Since 2019, two routes historically operated by Annapolis Transit are now operated by Anne Arundel County: the Gold which services Edgewater and Arnold and the Yellow which services Riva Road. Frequencies for Annapolis Transit range from 30 minutes during peak hours to 120 minutes during off-peak hours, with a base fare of \$2.00. Senior, student, and disabled-eligible fares are \$1.00, while 7-day, 30-day, 90-day passes, and annual passes are available at reduced prices. On regular school days Annapolis students K-12 ride for free from 6am to 6pm. Annapolis Transit also offers complimentary on-demand service known as "paratransit" for seniors and those with disabilities unable to use the normal fixed-route service.

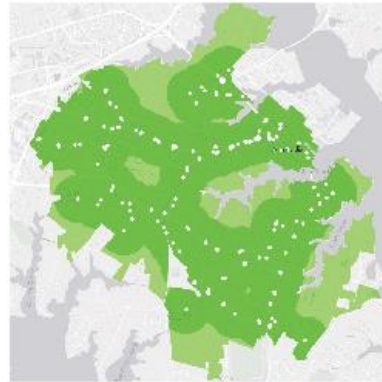


FIGURE 6-31: SHOWN IN DARK GREEN ON THIS MAP ARE THE PERCENT OF ANNAPOIS RESIDENTS (82%) AND WORKERS (93%) WITHIN 0.25-MILES OF A TRANSIT STOP

Source: City of Annapolis

**"Much of the input collected from riders, stakeholders, and the general public focused on improvements that would make service more reliable and convenient. These improvements included changes to existing services, new services, more information and marketing, and capital needs. Improved services would benefit existing riders and attract new transit users – subsequently resulting in ridership growth and contributing to service performance improvements (though the latter also depends on the amount and costs of services provided)."**

- Annapolis Transit Development Plan (2019)



FIGURE 6-32: ANNAPOIS TRANSIT'S FREE DOWNTOWN CIRCULATOR SHUTTLE WAS REBRANDED AND ITS SERVICE SCHEDULE EXPANDED IN 2022 TO INCREASE RIDERSHIP DURING THE HILLMAN GARAGE RECONSTRUCTION. THE CHANGES HAVE PROVEN TO BE SUCCESSFUL AND PROVIDE A POTENTIAL MODEL OF IMPROVED SERVICE IN OTHER AREAS OF THE CITY.

Source: City of Annapolis

MTA requires Annapolis Transit to update its Transit Development Plan every five years and the most recent plan was completed in 2019. The top issues that emerged from the analyses, reviews of existing documents, and public inputs through surveys and stakeholder interviews were:

- The need to increase ridership, and
- More reliable and convenient service

It is important to note that these issues are related and became more dominant following the Annapolis Transit service reduction in November 2014. Annapolis Transit lost about one-quarter of its ridership in the first year following the cuts and an additional 13% in the second year. A ridership loss of 36% between 2017 and 2019 has resulted in lower productivity on every route.

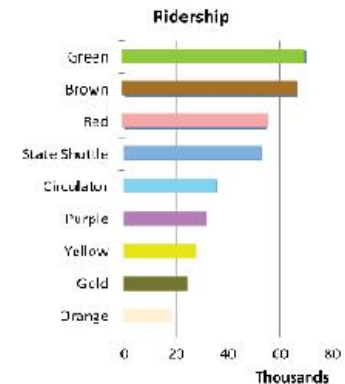


FIGURE 6-33: RIDERSHIP RANKING BY ANNAPOIS TRANSIT ROUTE. THE GOLD AND YELLOW ROUTES WERE CONSISTENTLY AMONG THE LOWEST PERFORMING ROUTES BUT ARE NOW OPERATED BY ANNE ARUNDEL COUNTY WITH MODIFICATIONS AND PERFORMING BETTER.

Source: Annapolis Transit Development Plan (2020)

## Regional Transit

Annapolis is fortunate to be located within a metropolitan region that includes two major cities, multiple airports, multiple commuter train lines, and Amtrak's Northeast Corridor service, which is the most heavily used rail corridor in the U.S. Proximity to these connections adds value to the city for economic development, quality of life, and sustainable transportation options. At the same time, it has been over sixty years since Annapolis was directly served by passenger rail, and traffic congestion along the major highways linking Annapolis to the region has increased over time. Annapolis should be far better connected to the region via improved transit options which include rail and bus rapid transit (BRT).

Annapolis coordinates with Anne Arundel County, Maryland Department of Transportation (MDOT) / Maryland Transit Administration (MTA), and the Baltimore Metropolitan Council (BMC) on regional transit plans, and there have been three significant plans completed in recent years that affect Annapolis with both short-term and longer-term recommendations.

### Move Anne Arundel!

Anne Arundel County's Transportation Functional Master Plan, *Move Anne Arundel!*, was adopted in 2019 and recommends improved commuter bus service along US-50 connecting Annapolis to College Park, Silver Spring, and Bethesda to complement existing service to downtown Washington, D.C. The plan also stresses the importance of establishing an Annapolis Transit Center near the interchange of US-50 and I-97 as a regional multimodal transportation hub which could accommodate City, County, MTA and private bus services, with the potential for a future rail connection. A site selection study was completed in 2020 which identified a site at the intersection of Bestgate Road and Generals Highway as the preferred site. As of 2022, this project is in the design phase and fully funded.

### Maximize 2045

*Maximize2045: A Performance-Based Transportation Plan* was completed in 2019 is the regional long-range transportation plan (LRTP) that is produced every four years by the Baltimore Metropolitan Council (BMC). BMC is the metropolitan planning organization representing the Baltimore region which includes the City of Annapolis, seven nearby counties, and the City of Baltimore. A key component of the plan is a list of priority capital transportation projects totaling \$12 billion, which the region expects to implement from 2024 to 2045 and while there are no projects within the City of Annapolis limits, there are several within Anne Arundel County that will have direct benefit to Annapolis. These include a new BRT service on US-50 between Parole and the New Carrollton METRO station, roadway improvements to MD-2 to accommodate improved bus service between Annapolis and Baltimore, and improvements to US-50 between I-97 and MD-2 that will support improved bus service.

### Connecting Our Future

*Connecting Our Future* is the regional transit plan (RTP) for Central Maryland completed in 2020 by MDOT/MTA. Short-term improvements recommended by this plan that will benefit Annapolis include improvements to fixed route bus service to/from Parole (Westfield Annapolis Mall), new local or express bus service between Annapolis and Crofton, and the planned Annapolis Transit Hub at Parole. The plan also advances two long-term recommendations benefitting Annapolis and illustrated in the map on the facing page: dedicated transit corridors between Annapolis and Glen Burnie, and Annapolis and Union Station in Washington, D.C.

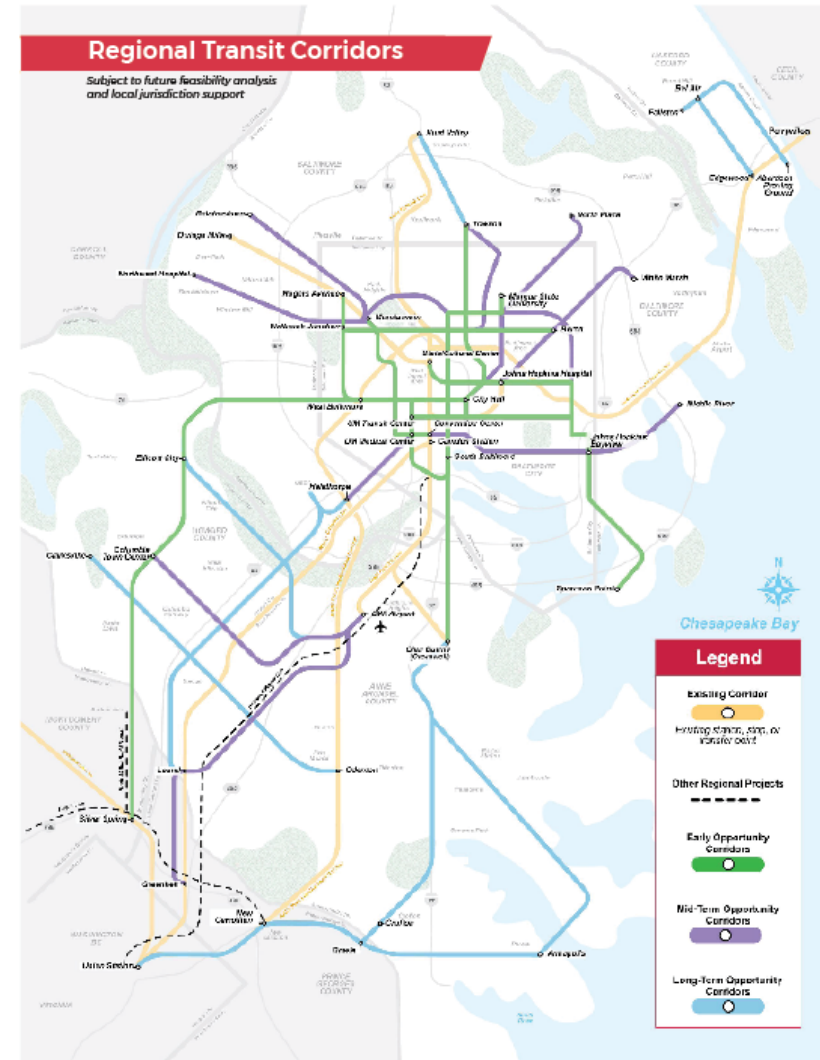


FIGURE 6-38: MAP OF RECOMMENDED REGIONAL TRANSIT CORRIDORS FOR CENTRAL MARYLAND AS IDENTIFIED IN THE 2020 REGIONAL TRANSIT PLAN (RTP) FOR CENTRAL MARYLAND *CONNECTING OUR FUTURE*.  
source: MDOT/MTA



## Ferry Service

Although passenger ferry service, like train service, no longer connects Annapolis to the region, it warrants attention in this Plan as it remains a viable alternative form of transportation, and a return of ferry service is currently in the planning stages.

Prior to the construction of the Bay Bridge, ferry terminals at the City Dock and later at the future location of Sandy Point State Park provided service to the Eastern Shore and Kent Island. The service ended in 1962 with the completion of the bridge and ferry service elsewhere on the Chesapeake Bay would soon become obsolete.

Renewed interest in ferry travel service both within Annapolis and regionally is spurred by a few different factors. First, the redevelopment of the City Dock has aimed to improve mobility into and around Downtown Annapolis and it set in motion several new mobility options addressed in this chapter and together form the City's vision for an electric mobility plan. Among these new options, the City conceived a new fixed route electric ferry service that would run between Easport and the City Dock and similar to the downtown circulator, it would be fare-free to make it truly accessible. The ferry was conceived as a way to expand the city's existing water taxi service that is privately operated and services many locations on Spa Creek and Back Creek. The route for the planned service can be seen in the section of this chapter focusing on Electric Mobility. Funding for these types of innovative mobility solutions increased dramatically with the passage of the Infrastructure Investment and Jobs Act (IIJA) by the Federal government and in 2021. The next year, Annapolis was awarded a \$3 million grant from the Federal Transit Administration's newly established Electric or Low Emitting Ferry Pilot Program to implement the electric ferry project.

The City Dock redevelopment has also brought new thinking about the role of Annapolis as a gateway to the broader Chesapeake Bay region. The National Park Service reconceived its role in the Chesapeake



**FIGURE 6-39: POSTCARD OF THE ANNAPOLIS TO CLAIBORNE FERRY SERVICE WHICH THRIVED DURING THE YEARS PRIOR TO THE BAY BRIDGE CONSTRUCTION. FERRY SERVICE FROM ANNAPOLIS MAY SOON RETURN AS A FACET OF THE REGION'S EVOLVING TOURISM ECONOMY AND AN INTEREST IN ALTERNATIVE MODES OF TRAVEL.**

source: N/A

region and developed a new vision for its longtime Chesapeake Gateways program. The Chesapeake National Recreation Area (CNRA), with Annapolis as a major hub, was proposed by Sen. Chris Van Hollen and Rep. John Sarbanes as a way to elevate protection and appreciation of the Chesapeake Bay watershed in a model similar to the San Francisco's Golden Gate National Recreation Area. Although passage of the Federal legislation needed to authorize the CNRA is still pending, the proposal has triggered a wave of enthusiasm for new tourism opportunities across the Chesapeake.

With this in mind, in 2022, Visit Annapolis and Anne Arundel County (VAAAC) was awarded a grant from the U.S. Economic Development Administration (EDA) for a feasibility study of new cross-bay ferry service that would operate between Annapolis and many other locations on both sides of the Chesapeake Bay. The study is being led by VAAAC alongside a five-county consortium that includes many locations—Kent Island, Crisfield, Chesapeake Beach, Solomons—which were once served by passenger ferries before the prevalence of the automobile.



**FIGURE 6-40: WITH OVER 60,000 DAILY TRIPS AND MANY MORE ON BUSY HOLIDAY WEEKENDS, THE BAY BRIDGE PROVIDES ENORMOUS ECONOMIC BENEFIT TO ANNAPOLIS AS WELL AS TRAFFIC CONGESTION. AS MDOT/SHA ADVANCES THE BRIDGE EXPANSION, ANNAPOLIS HAS A VESTED INTEREST IN DESIGNS THAT WILL IMPROVE TRAFFIC MANAGEMENT AND PROMOTE MORE ALTERNATIVE MODES OF CROSSING.**

source: MDOT/SHA

## Bay Bridge Expansion

Ironically, although the construction of the Bay Bridge essentially ended ferry service across the Chesapeake Bay, current plans for expanding the bridge may help to bring ferry service back.

Following a nearly six-year study of eight different corridor alternatives for improving traffic flow across the Bay in central Maryland, adding a third span to the current bridge alignment was determined to be the best option. In 2023, MDOT/SHA will commence the Tier 2 Study of this preferred option which will explore a wide range of design options for new span that will ultimately have great bearing on the Annapolis area.

The City has much to gain from being an active participant in the planning process for the bridge expansion. It is an important gateway to the Annapolis area and despite the challenges from summer traffic,

the bridge generates significant economic benefits as well. With the expansion, the City and region have an opportunity to gain new options for crossing the Bay that could both offset the impact of the current design and provide new ways of experiencing the Bay.

These options could include ferry service, but also bus rapid transit, a future rail connection, and of course a dedicated trail for safe crossing by bike or foot. While these alternative modes of travel may not all have a sizable impact on vehicular traffic, they could have a dramatic impact on how visitors experience the region. For example, at the approach to the bridge, a ferry landing at Sandy Point State Park could provide visitors improved access from Annapolis to the park without a car. From there, new trail connections could connect Sandy Point State Park to Holly Beach Farm and across the Bay to connect with Kent Island's Cross Island Trail. This type of experience could be integral to the reimagined Bay Bridge.



THANK YOU

