LINKING HAMPTON ROADS

A REGIONAL ACTIVE TRANSPORTATION PLAN

the heartbeat of HAMPTON ROADS TPO
TRANSPORTATION PLANNING ORGANIZATION

T20-02

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ABSTRACT
In the summer of 2017, the Hampton Roads Transportation Planning Organization (HRTPO) began developing a regional active transportation (bicycle and pedestrian) plan for the Hampton Roads region. The purpose of this regional plan is to provide a clear structure for the development of new facilities, programs, and policies that will link our region by developing greater active transportation facilities and promote active and healthy lifestyles throughout the region. The region includes the localities of Chesapeake, Franklin, Gloucester County, Hampton, Isle of Wight County, James City County, Newport News, Norfolk, Poquoson, Portsmouth, Southampton County, Suffolk, Surry County, Virginia Beach, Williamsburg, and York County.

ACKNOWLEDGMENT & DISCLAIMERS
Prepared in cooperation with the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), and Virginia Department of Transportation (VDOT). The contents of this report reflect the views of the Hampton Roads Transportation Planning Organization (HRTPO). The HRTPO is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the FHWA, VDOT, or Hampton Roads Planning District Commission. This report does not constitute a standard, specification, or regulation. FHWA or VDOT acceptance of this report as evidence of the fulfillment of the objectives of this planning study does not constitute endorsement/approval of the need for any recommended improvements, nor does it constitute approval of their location and design or a commitment to fund any such improvements. Additional project-level environmental impact assessments and/or studies of alternatives may be necessary.

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ACKNOWLEDGEMENTS

SPECIAL THANKS

Thank you to the many people who participated in the development of this plan through public comment forms, social media, outreach events, and meetings.

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Chickahominy River, Virginia Capital Trail, James City County

CHAPTER ONE: INTRODUCTION

PROJECT OVERVIEW

In the summer of 2017, the Hampton Roads Transportation Planning Organization (HRTPO) began developing a regional active transportation (bicycle and pedestrian) plan for the Hampton Roads region. The purpose of this regional plan is to provide a clear structure for the development of new facilities, programs, and policies that will link our region by developing greater active transportation facilities and promote active and healthy lifestyles throughout the region. The region includes the localities of Chesapeake, Franklin, Gloucester County, Hampton, Isle of Wight County, James City County.,Newport News, Norfolk, Poquoson, Portsmouth, Southampton County, Suffolk, Surry County, Virginia Beach, Williamsburg, and York County.

Active Transportation can be defined as all forms of human-powered transportation, including connections to transit. Biking and walking are the most common forms of active transportation. Active Transportation provides an alternative transportation choice and may provide a necessary link to transit, while also contributing to a healthy, active lifestyle.

Encouraged by the successes of the Virginia Capital Trail, which was completed in 2015, the Hampton Roads Transportation Planning Organization, with funding from the Virginia Department of Transportation (VDOT), undertook a regional study to determine the feasibility of connecting the existing Virginia Capital Trail to the Hampton Roads region. That effort entitled the *Birthplace of America Trail Study*, investigated many routes, with the goal of traversing and connecting Hampton Roads localities and terminating at Fort Monroe in Hampton and the Oceanfront in Virginia Beach.

The Virginia Capital Trail is a separated shared-use path that is generally 10' wide, parallels historic Route 5 for approximately 52 miles and connects Richmond with Virginia's former capitals of Jamestown (1607-1699) and Williamsburg (1699-1780).

The *Birthplace of America Trail Study*, which was completed in the summer of 2017, recommends connecting the southern end of the Virginia Capital Trail near Williamsburg to Historic Fort Monroe on the Peninsula and to the western end of the South Hampton Roads Trail system in Suffolk (which follows former rail right-of-way to the Virginia Beach oceanfront).

The development of this regional active transportation plan included an open public participation process, with residents providing input through online surveys, public events, stakeholders meetings,

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advocacy group input, and the Active Transportation Subcommittee.
This plan includes the following items:

- A regional analysis of current conditions and existing facilities
- A comprehensive, recommended active transportation network
- Recommended Design Guidelines for the development of active transportation facilities

STUDY AREA

The study boundary includes the member localities of the Hampton Roads Transportation Planning Organization and the locality of Surry County, included in this study due to being connected via regional trails.

The region is naturally separated by the James River into the "Peninsula" and "Southside". The two subregions currently have no active transportation facilities connecting them but multiple options exist to travel from one side to the other including the Jamestown/Scotland ferry, the Hampton Roads Bridge Tunnel (HRBT), the Monitor Merrimac Memorial Bridge Tunnel (MMMBT), and the James River Bridge (Route 17). The HRBT and MMMBT routes have multiple regional express buses, including MAX Routes 961, 965, 966, and 967, which are equipped with bike racks.

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VISION STATEMENT & GOALS

The Hampton Roads region is consistently ranked nationally as one of the healthiest and fittest region's in the country. Being a coastal region, with subtropical climate, state and local parks, beaches, and having the largest naval base in the world, Hampton Roads has a very active community.

In November 2017, the HRTPO provided the public with a short survey on the Linking Hampton Roads study's vision statement and goals. The survey was open for public comments for two weeks and was sent to all stakeholders. More than 600 people responded to the survey. Public input from the survey was used to define the vision statement and goals of the study.

The following vision statement guides the Hampton Roads Regional Active Transportation Plan:

The Hampton Roads region is an **Active Destination for the world** where roadways, trails, and parks **comfortably accommodate all modes of transportation**. Non-vehicular opportunities exist for residents and tourists to safely and efficiently travel for both transportation and recreation. Active transportation is a preferred means of **commuting and recreation** that improves our community's **economy and health**.

The purpose of this plan is to make this vision a reality. Specific goals and objectives derived from this vision are listed on the following page. The following objectives explain what must be done to achieve each goal. The plan's recommendations and implementation strategy will build upon the Hampton Roads region's existing active transportation infrastructure and community to achieve these objectives and ultimately accomplish the plan's vision.

Virginia Capital Trail, Jamestown

IMPROVE SAFETY FOR ALL USERS INCLUDING PEOPLE WITH ACCESS AND FUNCTIONAL NEEDS

- REDUCE BICYCLE AND PEDESTRIAN CRASHES
- PROVIDE SAFE FACILITIES FOR ALL USERS IN ALL ENVIRONMENTS
- ENGAGE LAW ENFORCEMENT IN BICYCLE AND PEDESTRIAN SAFETY
- EDUCATE BICYCLISTS, PEDESTRIANS AND DRIVERS ABOUT TRAFFIC LAWS

LINK THE REGION THROUGHOUT WITH ACTIVE TRANSPORTATION FACILITIES

- INCREASE CONNECTIONS BETWEEN DESTINATIONS, RESOURCES, NEIGHBORHOODS, SCHOOLS, PARKS AND BUSINESSES
- INCREASE BICYCLE LANES, SIDEWALKS, MULTI-USE PATHS, AND ALL ACTIVE TRANSPORTATION FACILITIES
- ENCOURAGE AND SUPPORT REGIONAL, SUB-REGIONAL AND LOCAL ACTIVE TRANSPORTATION CONNECTIONS

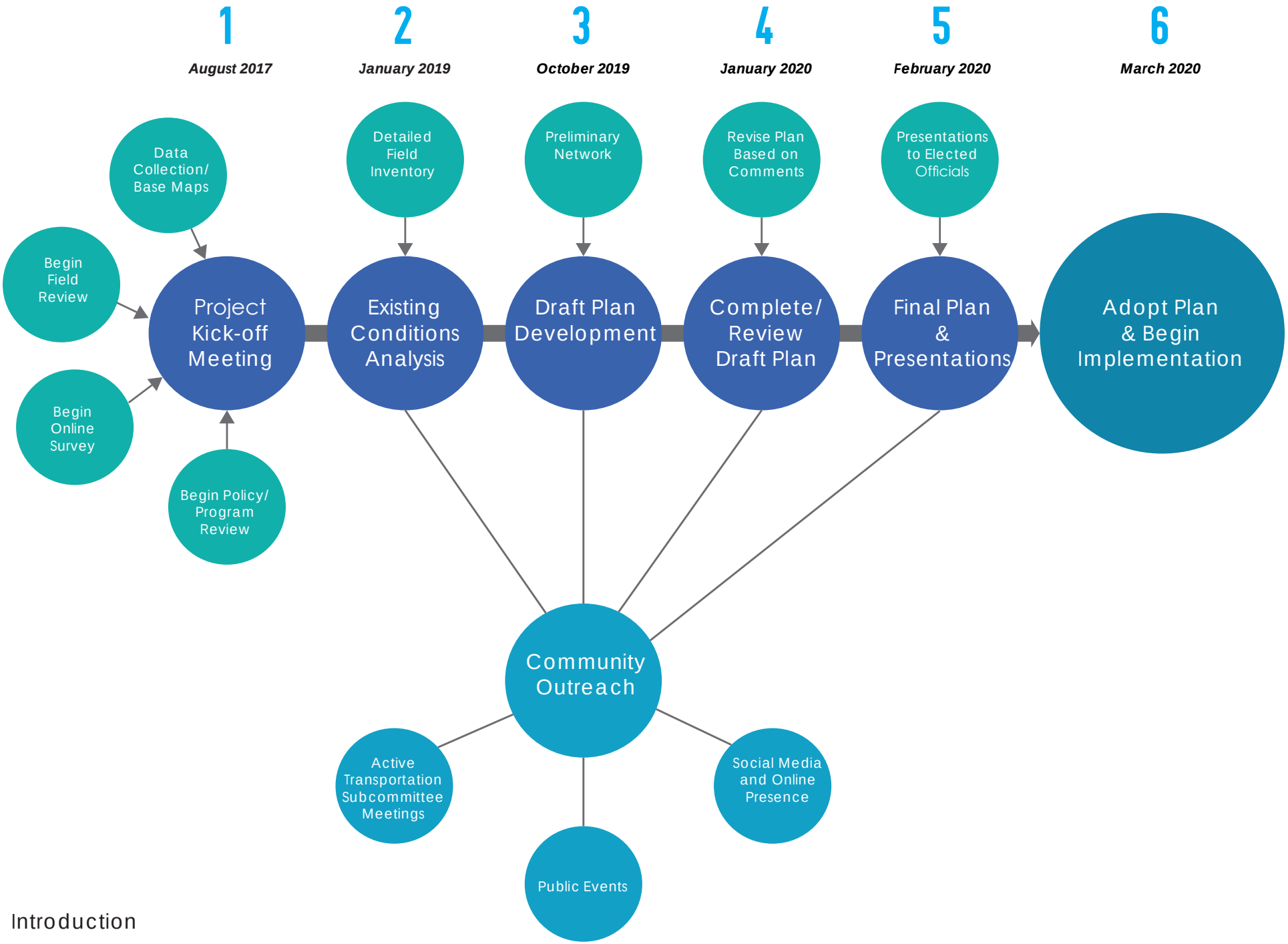
IMPROVE HEALTH OUTCOMES IN THE REGION

- INCREASE ACCESS TO ACTIVE TRANSPORTATION FACILITIES
- INCREASE ACCESS AND CONNECTIONS TO PARKS, SCHOOLS, OPEN SPACE, AND REGIONAL TRAILS
- INCREASE ACTIVE TRANSPORTATION EXERCISE AND ACTIVITY RATES FOR ALL CITIZENS

PROMOTE AND ENCOURAGE THE GROWTH OF THE REGION'S ECONOMY AND TOURISM

- INCREASE ECONOMIC GROWTH AND JOB CREATION BY PROMOTING AND ENCOURAGING BETTER LINKED COMMUNITIES AND BUSINESSES
- INCREASE TOURISM REVENUE THROUGH ACTIVE TRANSPORTATION
- PROMOTE ACTIVE TRANSPORTATION AS AN INVESTMENT TO ENHANCE SHOPPING DISTRICTS, AND COMMUNITIES, AND SUPPORT BUSINESSES

PLANNING PROCESS



THE VALUE OF A REGIONALLY CONNECTED COMMUNITY

A region with a fully connected active transportation system can bring a wide range of benefits to a community and its residents. Active transportation provides many benefits to Hampton Roads communities, including improving public health, providing a boost to the local economy, reducing air pollution and traffic congestion, and contributing to a better quality of life.

HEALTH IMPACT

The health benefits of active transportation are being recognized by health professionals, urban planners, and policy makers. The Center for Disease Control and Prevention (CDC) recommends at least thirty minutes a day of moderate physical activity (USDHHS, 2016). Many people do not meet this recommendation due to a built environment that does not facilitate nor encourage active transportation. The Virginia Modeling, Analysis & Simulation Center (VMASC) at Old Dominion University in Suffolk reports that the health benefits of a half mile bike path can reduce the surrounding community's healthcare costs by over $600,000 (Gore, 2017).

Dependence on the automobile, nationwide and here in Hampton Roads, in large part due to the layout of the built environment. This has led to a lack of activity in the United States and here locally. After World War II the Hampton Roads region like the rest of the country expanded further into the rural areas. However, research has shown that more residents would increase their level of physical activity if they had better access to walking and biking facilities, such as sidewalks and trails.

National Prevention Strategy, 2011

ONLY 13 PERCENT OF CHILDREN WALK OR BIKE TO SCHOOL, COMPARED WITH 44 PERCENT A GENERATION AGO

Office of Surgeon General, 2016

TOURISM IMPACT

The Hampton Roads region is a popular historical destination because of locations like Jamestown, Yorktown, and Williamsburg and a tourist destination because of its beaches and its location at the confluence of many waterways, including the James River, Chesapeake Bay, and the Atlantic Ocean. Investment in walking and bicycle facilities tends to attract visitors and elevate tourism revenues. Additional investment has the opportunity to further increase recreation destination based tourism. According to a 2004 study by the North Carolina Department of Transportation, a one-time investment of $6.7 Million in bicycling improvements resulted in $60 Million in annual tourism revenue (Albemarle Rural Planning Organization, 2013). Such investments have the potential to positively affect localities across the region spanning from Virginia Beach to the Historic Triangle, and everything in between.

Research has shown that visitors are more likely to revisit an area based on the quality of bicycle facilities. Families are more likely to return if they have safe environments for recreational and active transportation (North Carolina State University's Institute for Transportation Research and Education, 2004). With more walking and biking facilities, tourists are able to expand their footprint to different destinations including museums, aquariums, retail establishments and much more.

"THE ANNUAL ECONOMIC IMPACT OF CYCLISTS IS ALMOST 9X TIMES AS MUCH AS THE ONE-TIME EXPENDITURE OF PUBLIC FUNDS USED TO CONSTRUCT SPECIAL BICYCLE FACILITIES"

Pathways to Prosperity Report (North Carolina State University's Institute for Transportation Research and Education, 2004)

ECONOMIC IMPACT

Bicycle and Pedestrian facilities such as bike lanes and multi-use trails are popular amenities according to a survey by the National Association of Homebuilders. In that survey, trails ranked second most important amenity to home buyers, ahead of above golf courses, ball fields, parks, and security services. A recent study by the HRTPO, *Signature Paths in Hampton Roads,* reported a significant increase in the value of homes within a half mile of the Monon Trail in Indianapolis, Indiana. The increase in property value was estimated to be 14%, growing the overall value in property along the trail by over $115 Million (HRTPO, 2016).

In addition to the increased home values, businesses in close proximity to bicycle and pedestrian facilities tend to see an increase in business due to their location. According to the Virginia Capital Trail Foundation, small businesses have been able to stay open during shoulder seasons in communities such as Charles City, Virginia due to the influx of users along the trail. Locally, another example of the positive effect of pedestrian and bicycle facilities on economic development can be seen in the neighborhood of Chelsea in Norfolk, Virginia. Chelsea has seen an influx of new businesses over the last ten years, including multiple breweries, restaurants and shops, due to its location on the Elizabeth River Trail, a 10.5 mile shared use path.

"THE INCREASE OF PROPERTY VALUES FOR HOMES ALONG THE TRAIL WAS ESTIMATED AT 14%"

Signature Paths in Hampton Roads (HRTPO, 2016)

TYPES OF BICYCLE USERS

There is a wide range of bicycle users in the Hampton Roads region. One of the main goals of *Linking Hampton Roads* is building a complete active transportation system for all users. For the purposes of this plan, the four types of users described in Figure 1 below were taken into account. A framework for understanding these types of users is crucial to developing this complete active transportation system.

Note: For pedestrians, a linked completed network of sidewalks and shared use paths encourages walking for both transportation and recreational purposes.

Figure 1

STRONG AND FEARLESS (EXPERIENCED) 1%

- Approximately 1% of population
- Willing to ride anywhere regardless of roadway conditions
- Prefer direct routes

ENTHUSED AND CONFIDENT (MODERATE) 5-10%

- 5-10% of population
- Comfortable riding on all types of facilities but prefer using dedicated bike facilities
- May stray from a more direct route in favor of a dedicated bike facility

INTERESTED BUT CONCERNED 60%

- Approximately 60% of population
- Prefers biking on trails or other facilities separated from roadway

NO WAY, NO HOW 30%

- Approximately 30% of population
- Not interested or not comfortable biking in most conditions

Portland Bureau of Transportation

FACILITY SELECTION

Selecting a facility type is a physical environment-sensitive choice that involves a detailed planning and engineering process. Identifying the desired facility related to its physical environment is key to the quality of the active transportation network. The quality of the facility chosen will impact the level of comfort and the number of users in the community that will use it.

The Federal Highway Administration's (FHWA) *Bikeway Selection Guideline* provides additional resources for transportation practitioners for use in the consideration and selection of active transportation facilities.

URBAN, URBAN CORE, SUBURBAN, AND RURAL TOWN CONTEXT

The typical user type for urban, urban core, suburban, and rural town land use contexts are the "Interested but Concerned" type of bicycle users in Figure 1.

Generally, the higher the volumes and speeds of a roadway, the greater the desire for a more protected facility. As mentioned previously, the goal of the recommendations this study provides is to have appropriate facilities for all user types. Facilities that provide the appropriate user comfort level tend to have higher ridership numbers.

Figure 2 provides practitioners with desired facility types within the context of the specified speeds and volumes of the roadway.

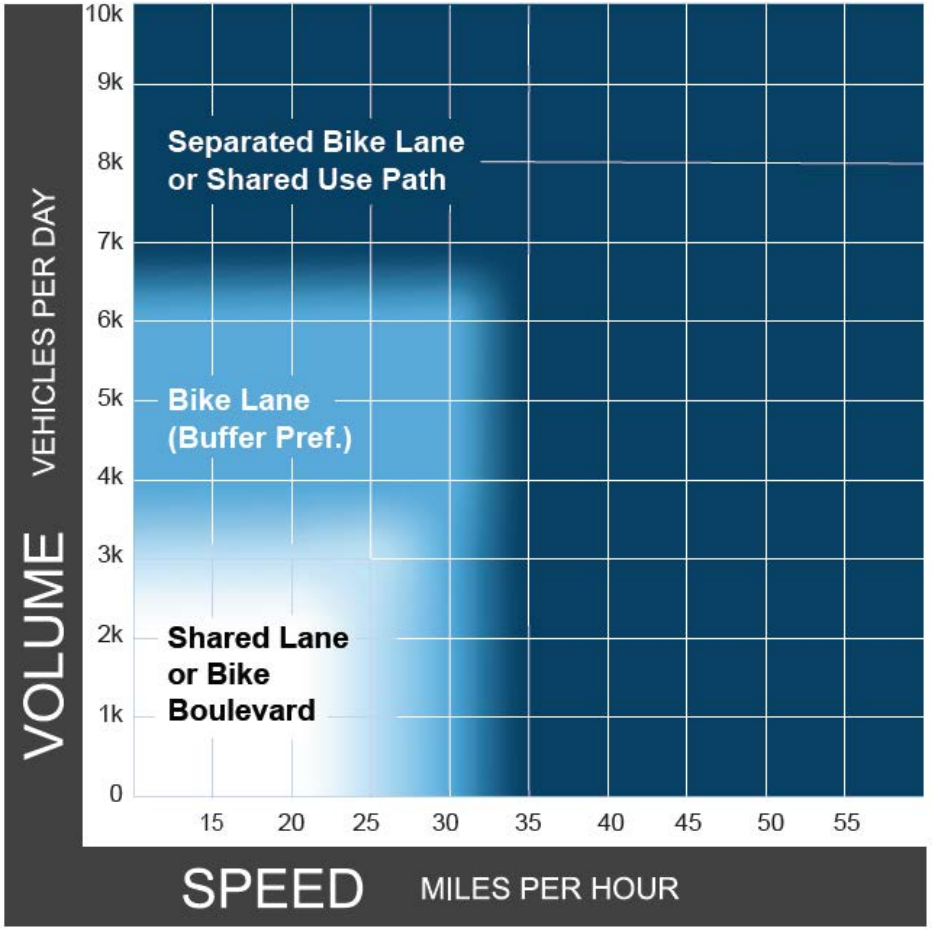


Figure 2: Preferred Bikeway Type for Urban, Urban Core, Suburban, and Rural Town Contexts
FHWA Bikeway Selection Guide, 2019

FACILITY SELECTION

RURAL CONTEXT

The typical user type in rural land use contexts is the recreational bicyclist, who often fits the "Highly Confident or Somewhat Confident" type of bicycle users from Figure 1. Shared lanes, paved shoulders, and shared use paths are the desired facility type on rural roadways. Shoulder width is a critical consideration to accommodate users in rural areas based on traffic volumes and speeds.

Figure 3 provides the preferred shoulder width for accommodations based on volumes and posted speeds in a rural setting. In highly constrained conditions, like many in rural Hampton Roads where the desired shoulder width is not available, it is preferable to provide a narrow shoulder rather than no shoulder.

Other key considerations in the facility type selection process include the following:

- Unusual motor vehicle peak hour volumes
- Traffic volume mix
- Driveway/intersection frequency
- Direction of active transportation operations (one-way facility on each side of the road, a two-way facility on one side of the road, or as two-way facilities on both sides of the road)
- Degrees of disadvantaged communities (refer to Chapter Two: Existing Conditions)

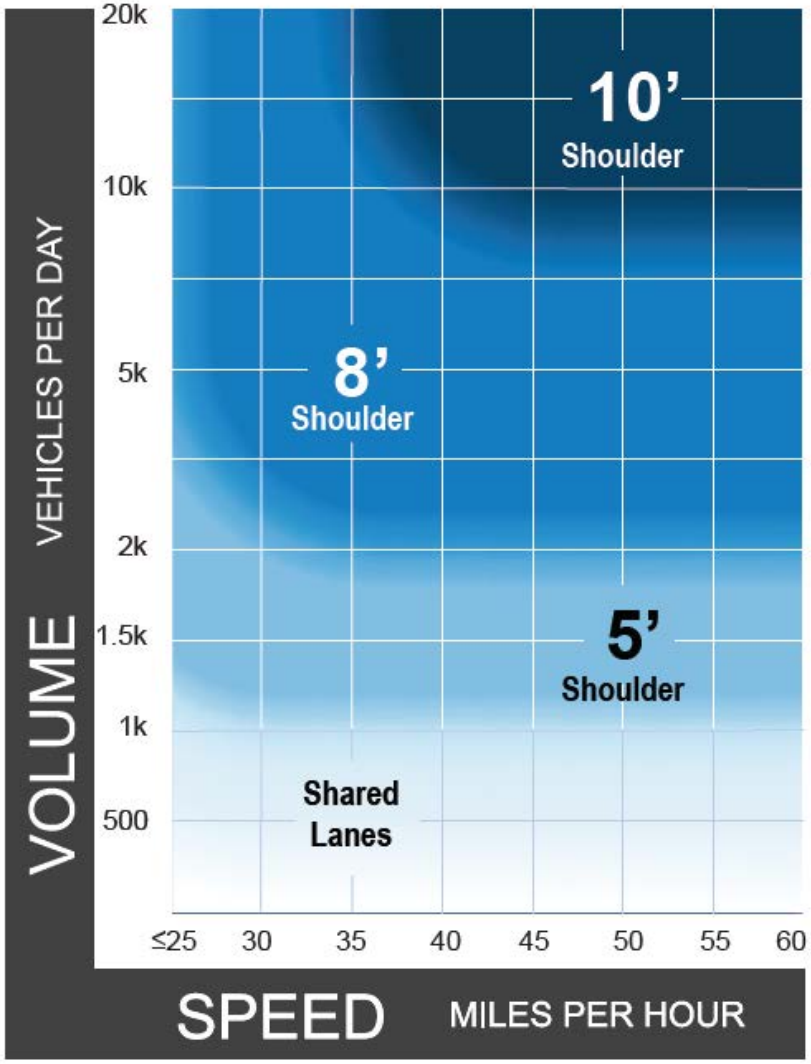


Figure 3: Preferred Shoulder Widths for Rural Roadways
FHWA Bikeway Selection Guide, 2019

BIKE FACILITIES TYPES

OVERVIEW

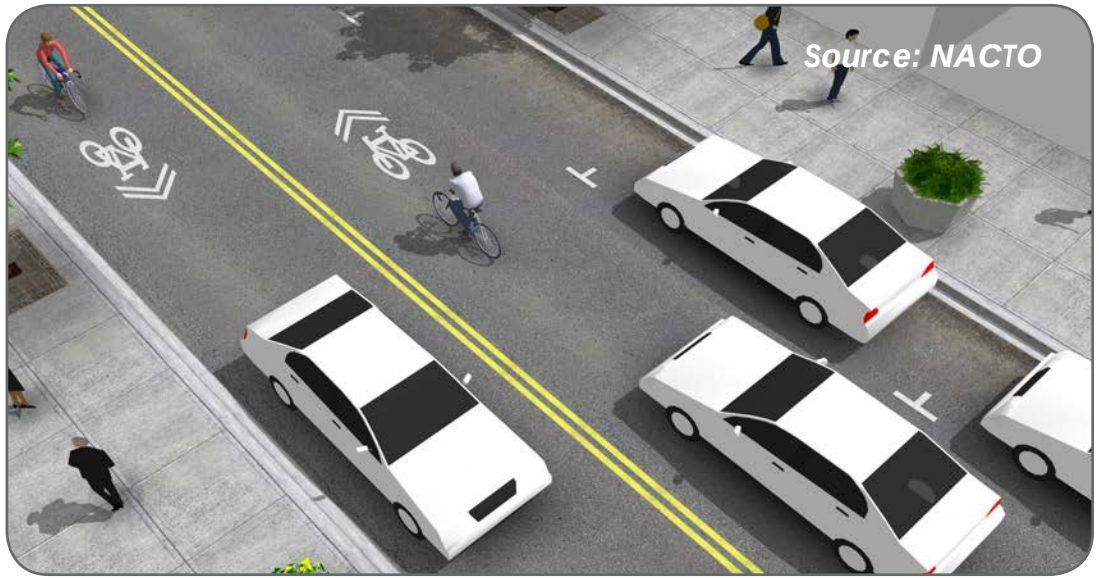
The bike facility types recommended in this plan were determined as most appropriate by roadway conditions and right-of-way accessibility. These facility types are designed for all users including people with access and functional needs. The recommendations in this plan may be divided into three categories: on-road facilities (bicycle only), multi-use facilities (shared use path), and combination type facilities (both sidewalk and on-road facilities).

These recommendations are based on best practices including, but not limited to, the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, FHWA's Manual on Uniform Traffic Control Devices (MUTCD) and the American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide.

Considerations must be given to how new facilities can fit into the existing right-of-way. In some cases, where conditions are constrained, a less preferred facility may be used in order to fill a gap in the overall system.

SHARROWS (SHARED-LANE MARKINGS)

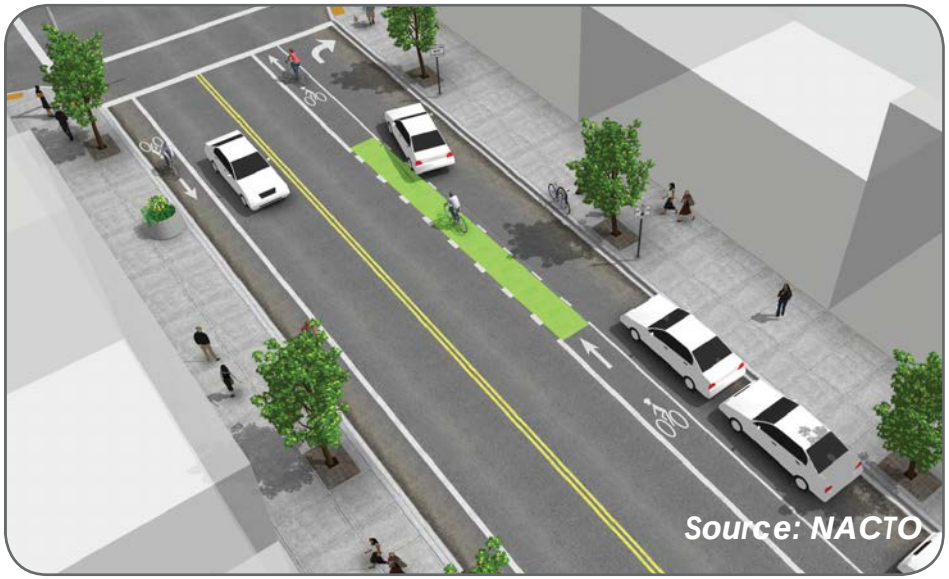
Colley Avenue, Norfolk



Source: NACTO

- On-road markings designate roadway as shared by bicycles and vehicles
- Appropriate for streets with low-speed (≤25 mph) and low-volume traffic
- Can be used where limited road width cannot accommodate other bike facilities
- Preferred Placement: center of travel lane

BIKE LANE



- Striping separates marked bicycle lane from vehicular traffic
- Appropriate for streets with posted traffic speeds of 25-35 mph and low-moderate traffic volumes
- Desired width minimum: 6 feet

BUFFERED BIKE LANE

- Painted buffer zone separates bike lane from vehicular traffic
- Provides greater separation from traffic than standard bike lane
- Appropriate for streets with high speeds (30-45 mph) and/or high-volume traffic
- Desired minimum buffer width: 2 feet
- Desired bicycle travel area width: 7 feet

ONE-WAY PROTECTED CYCLE TRACK

- Dedicated and protected space for bicyclists
- More attractive to a wide range of bicyclists of all levels and ages
- Desired minimum lane width: 5 to 7 feet
- Desired minimum buffer: 3 feet
- Alternative Protection Strategies include: bollards, movable planters, parking lanes, and a raised curb

TWO-WAY CYCLE TRACK

- Dedicated and protected space for bicyclists
- More attractive to a wide range of bicyclists of all levels and ages
- Desired minimum lane width: 12 feet
- Desired minimum buffer: 3 feet

BICYCLE BOULEVARDS

Source: www.pedbikeimages.org

Source: NACTO

Bicycle boulevards are streets with low motorized traffic volumes and speeds, designed to give bicycle travel priority. Bicycle boulevards use signs, pavement markings, and speed and volume management measures to discourage through trips by motor vehicles and create safe, convenient bicycle crossings of busy arterial streets.

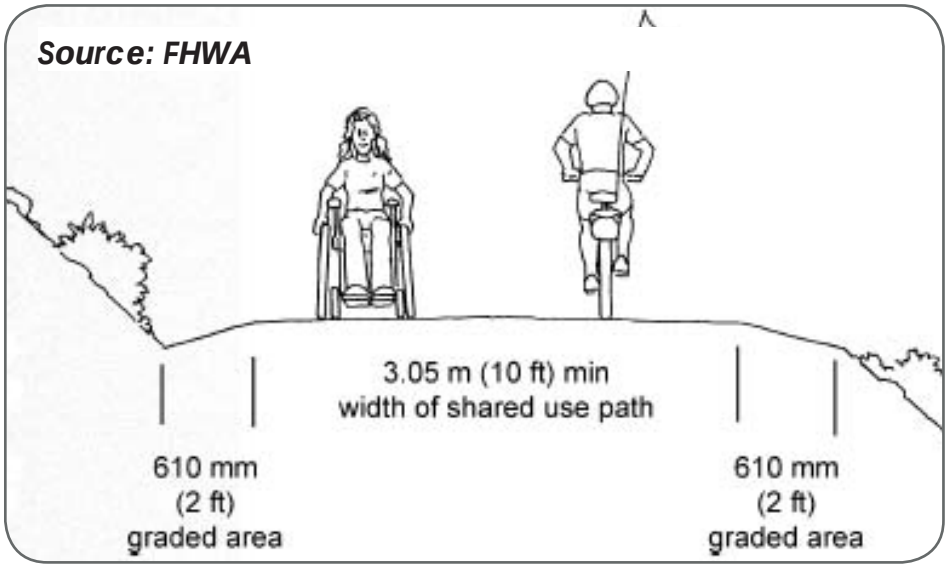
Many local streets with low existing speeds and volumes offer the basic components of a safe bicycling environment. These streets can be enhanced using a range of design treatments, tailored to existing conditions and desired outcomes, to create bicycle boulevards. Design treatments (and their benefits) include:

- Route Planning: Direct access to destinations
- Signs and Pavement Markings: Safety
- Speed Management: Slow motor vehicle speeds
- Volume Management: Low or reduced motor vehicle volumes
- Minor Street Crossings: Minimal bicyclist delay
- Major Street Crossings: Safe and convenient crossings
- Offset Crossings: Clear and safe navigation
- Green Infrastructure: Enhancing environments

A bicycle boulevard should be considered where local streets offer a continuous and direct route along low-traffic streets. A candidate route can be enhanced with other active transportation facilities.

PAVED SHARED-USE PATH

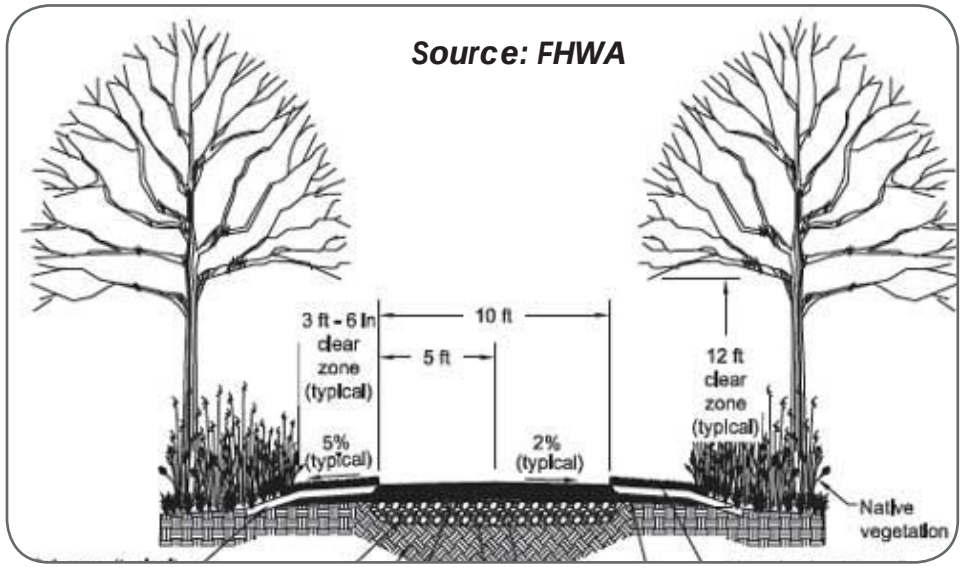
Suffolk Seaboard Trail, Suffolk



- Two-way path is shared by bikes and pedestrians
- For trails along roads, the trail is separated from the road by a curb and may include plant buffer strip between trail and roadway
- Desired width: 10 feet
- Desired minimum shoulder from roadway: 2 feet

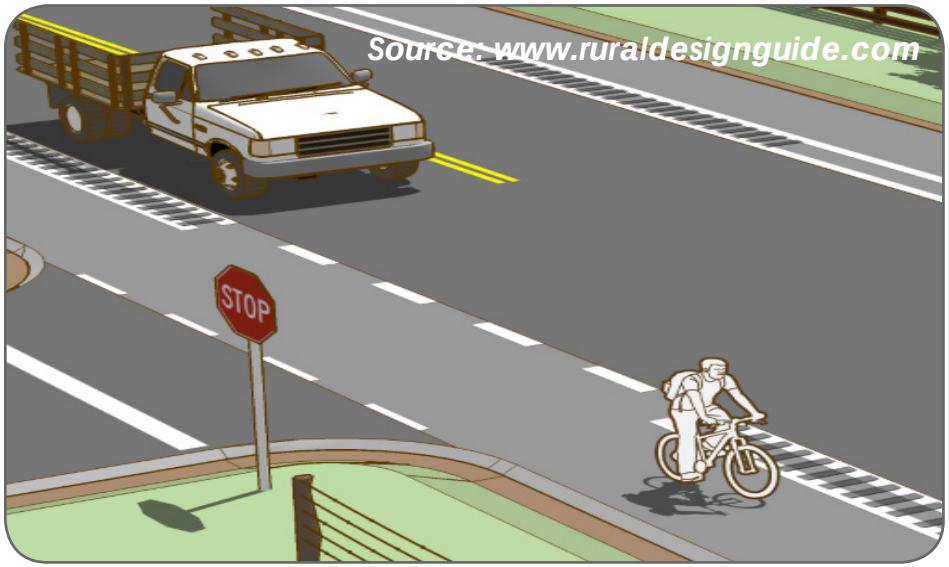
UNPAVED SHARED-USE PATH

First Landing State Park, Virginia Beach



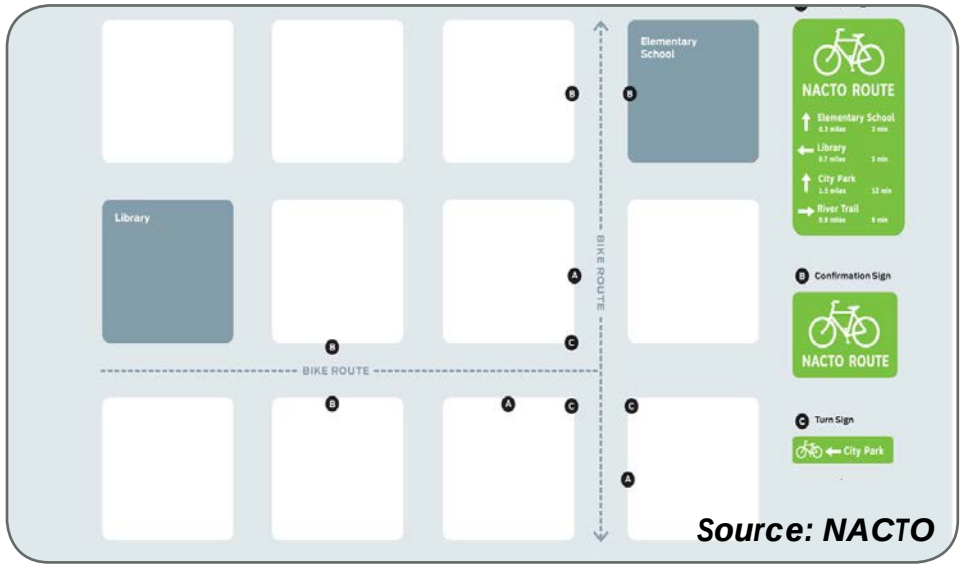
- Two-way path shared by bikes and pedestrians
- Typically not along roadways
- More attractive to a wide range of users of all levels and ages
- Desired minimum width: 12 feet

WIDE PAVED SHOULDER



- On the edge of roadways
- Appropriate on roads with low to moderate volumes and speeds
- Serves long-distance and rural regional travel
- Desired minimum width: 4 feet with buffer

SIGNED BIKE ROUTE



- Appropriate along more lightly traveled residential, secondary and rural roads
- Utilized to direct bicyclists to less-congested roadways
- Suggested route to get to specific destinations

ACTIVE TRANSPORTATION AUXILIARY FACILITIES TYPES

The following facilities may be useful in appropriate locations. Due to the regional scale of this active transportation plan, these facility types will not be included in this plan. Rather, these facilities should be used by localities to provide a complete and safe active transportation network.

HIGH-VISIBILITY CROSSWALK

- On-road pavement marking to indicate appropriate location to cross a street
- Connects to sidewalks at intersection or mid-block locations
- Bold, reflective striping improves visibility of crosswalk for pedestrians and drivers

PEDESTRIAN-SCALE LIGHTING

- Street lighting that use shorter lampposts and is directed toward the sidewalk instead of the roadway
- Improves pedestrian visibility and safety
- Special lighting treatments can be used to improve specific locations such as underpasses

RAISED CROSSWALK

- High visibility crosswalk raised from street level to sidewalk level
- Increases visibility of pedestrians crossing street
- Raised crossing acts as speed table to reduce vehicle speeds
- May be placed mid-block or at an intersection

CURB EXTENSION

- Sidewalk and curb space extended into roadway to reduce roadway width
- Slows motor vehicle turning speed
- Visually narrows roadway to help reduce vehicle speeds
- Reduces crossing distance for pedestrians
- Provides more space for pedestrians waiting to cross the street

CURB RAMP

- ADA-compliant curb ramps provide ramped access to sidewalks
- Detectable warning surface on curb ramp provides warning for physically impaired
- Should be located to place users in line with crosswalk across intersection leg

MEDIAN ISLAND

- Curb separated space for pedestrians in center of roadway
- Allows pedestrians to cross wide streets in two stages
- Visually narrows roadway to help reduce vehicle speeds
- Best used on multi-lane roadways with high motor vehicle traffic volumes

ACTIVE TRANSPORTATION AUXILIARY FACILITIES TYPES

LEADING PEDESTRIAN INTERVAL

- Intersection signalization programmed to provide pedestrians additional time to cross the intersection before the "green" signal for motor vehicles
- Pedestrians crossing at an intersection have a head start and are more visible to turning motorists

BIKE BOX

- Space for bicyclists to wait at intersection in front of waiting motor vehicles
- Indicated with pavement markings
- Gives bicyclists a head start by positioning them in front of motor vehicles

RECTANGULAR RAPID FLASHING BEACON

- On demand pedestrian or bicyclist activated signal with push button
- Bright LED flashing beacons increase motorist awareness of pedestrians or bicyclists crossing
- May be used in conjunction with median islands or high visibility crossings
- May be used at mid-block crossings or intersections

BICYCLE PARKING

- Bicycle parking provides bicyclists with secure location to store a bicycle
- Conveniently located, covered, and well-designed bike parking can increase bicycle security
- Abundant bicycle parking will reduce instances of bicycles being locked to sign posts, gates, and trees
- Variety of types include sidewalk racks, on-street bike corrals, and bicycle lockers

HAWK SIGNAL

- On demand signal with push button activated by pedestrian or bicyclist
- Red signal requires motor vehicles to stop while pedestrian crosses the road
- Generally used at mid-block crossings
- Best used on multi-lane roadways or roads with higher motor vehicle speeds

INTERSECTION STRIPING

- Bicycle lane striping continues through intersection
- Improves visibility of bicyclist
- May include green pavement, shared lane markings and/or bicycle lane lines

LEVEL OF PROTECTION

Least Separation — Most Separation

SIGNED ROUTES (NO PAVEMENT MARKINGS)

A roadway designated as a preferred route for bicycles.

SHARROWS/ BICYCLE BOULEVARDS

A shared roadway with pavement markings providing wayfinding guidance to bicyclists and alerting drivers that bicyclists are likely to be operated in mixed traffic.

ON-STREET BIKE LANES

An on-road bicycle facility designated by striping, signing, and pavement icons.

ON-STREET BUFFERED BIKE LANES

Bike lanes with painted buffer increase lateral separation between bicyclists and motor vehicles.

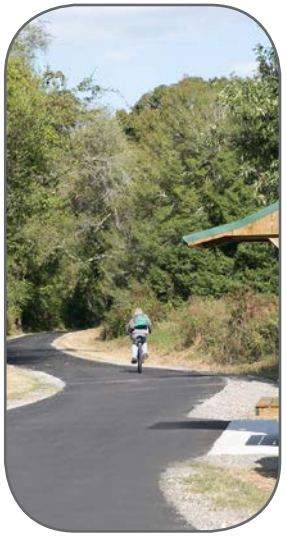
ONE WAY/TWO WAY PROTECTED CYCLE TRACKS

A separated bike lane is an exclusive facility for bicyclists that is located between or directly adjacent to auto lanes and that is separated from motor vehicle traffic with a vertical element.

SHARED USE PATH IN RIGHT-OF-WAY

Active transportation facilities physically separated from traffic but within road right-of-way intended for shared use by a variety of groups including pedestrians, bicyclists, joggers, and people with access and functional needs.

OFF-ROAD SHARED USE PATH



A two-way trail shared by bikes and pedestrians not along roadways and more attractive to a wide range of users of all levels and ages.

ENDNOTES

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CHAPTER TWO: EXISTING CONDITIONS

OVERVIEW

Multiple environmental, physical, and social features impact the quality and quantity of active transportation facilities in the Hampton Roads region. The existence of active transportation facilities, the arrangement of land uses, transportation road network connectivity, and the social pattern of "share the road" mentalities are among a few. These features will guide the recommendations of this plan.

Chapter Two provides a brief overview of these features across the Hampton Roads region. These environmental, physical, and social features are relevant today and also for the potential recommendations for active transportation in the future. Chapter Two includes a series of detailed maps with brief descriptions.

Overall analysis of existing conditions include the following:

- Regional Land Use
- Environmental Features
- Major Active Transportation Routes
- Schools
- Regional Transit
- Population Density
- Employment Density
- Degrees of Disadvantaged Communities
- Active Transportation Commute Mode Share
- Crash Analysis
- STRAVA Metro Data Analysis
- Previous Local and Regional Plans

The existing conditions analysis will be used to help HRTPO staff identify regional active transportation corridors to be the focus of the plan's recommendations. The regional corridors will be selected based on the existing conditions analysis and with the goal of connecting neighborhoods, regional activity centers, employment, tourist attractions and creating a comprehensive regional active transportation network. Once selected, the regional corridor's recommendations shall be prioritized using the data from the existing conditions analysis.

CHAPTER CONTENTS

REGIONAL LAND USE

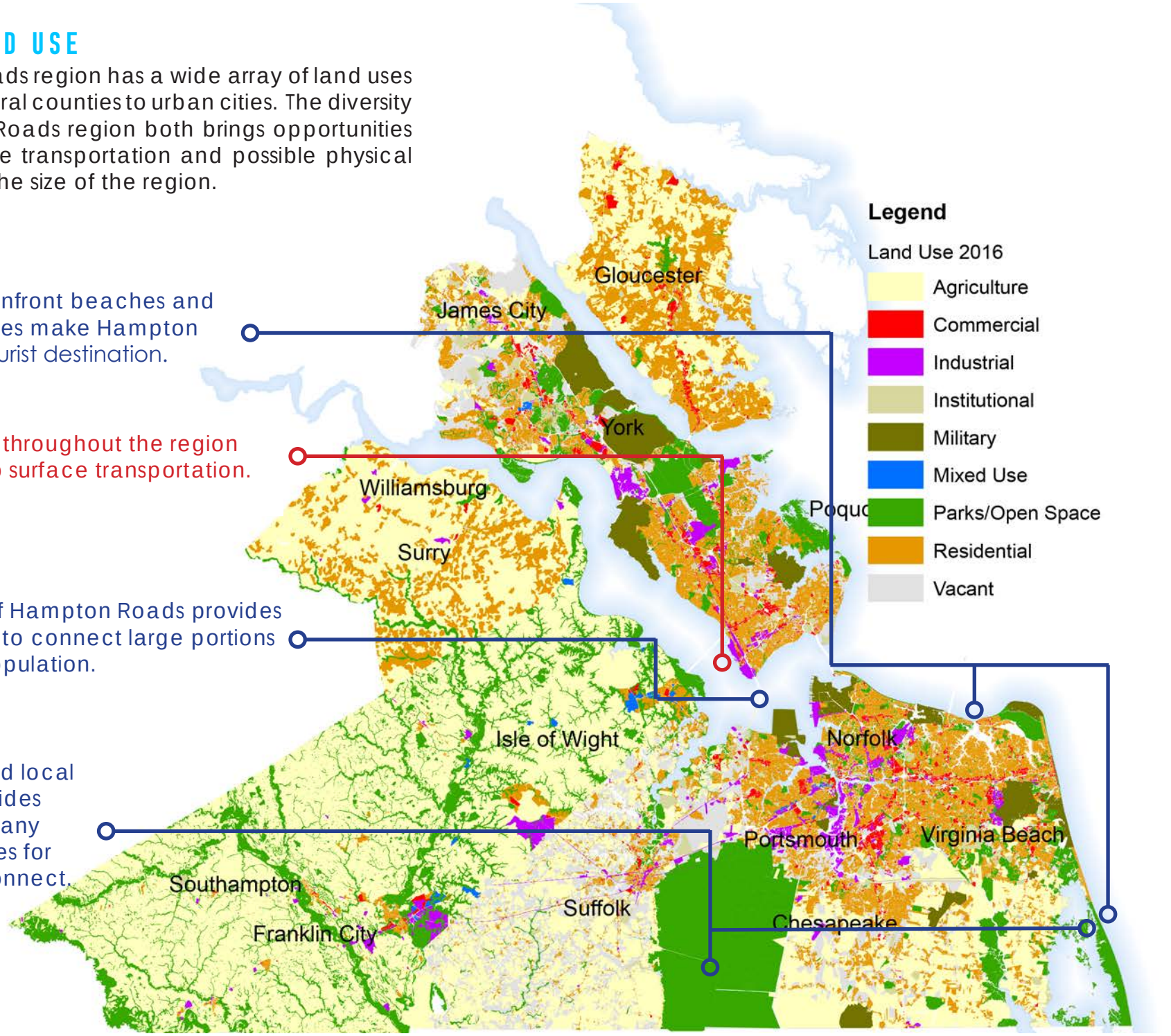
The Hampton Roads region has a wide array of land uses that range from rural counties to urban cities. The diversity of the Hampton Roads region both brings opportunities for regional active transportation and possible physical restraints due to the size of the region.

The miles of oceanfront beaches and many historical sites make Hampton Roads a major tourist destination.

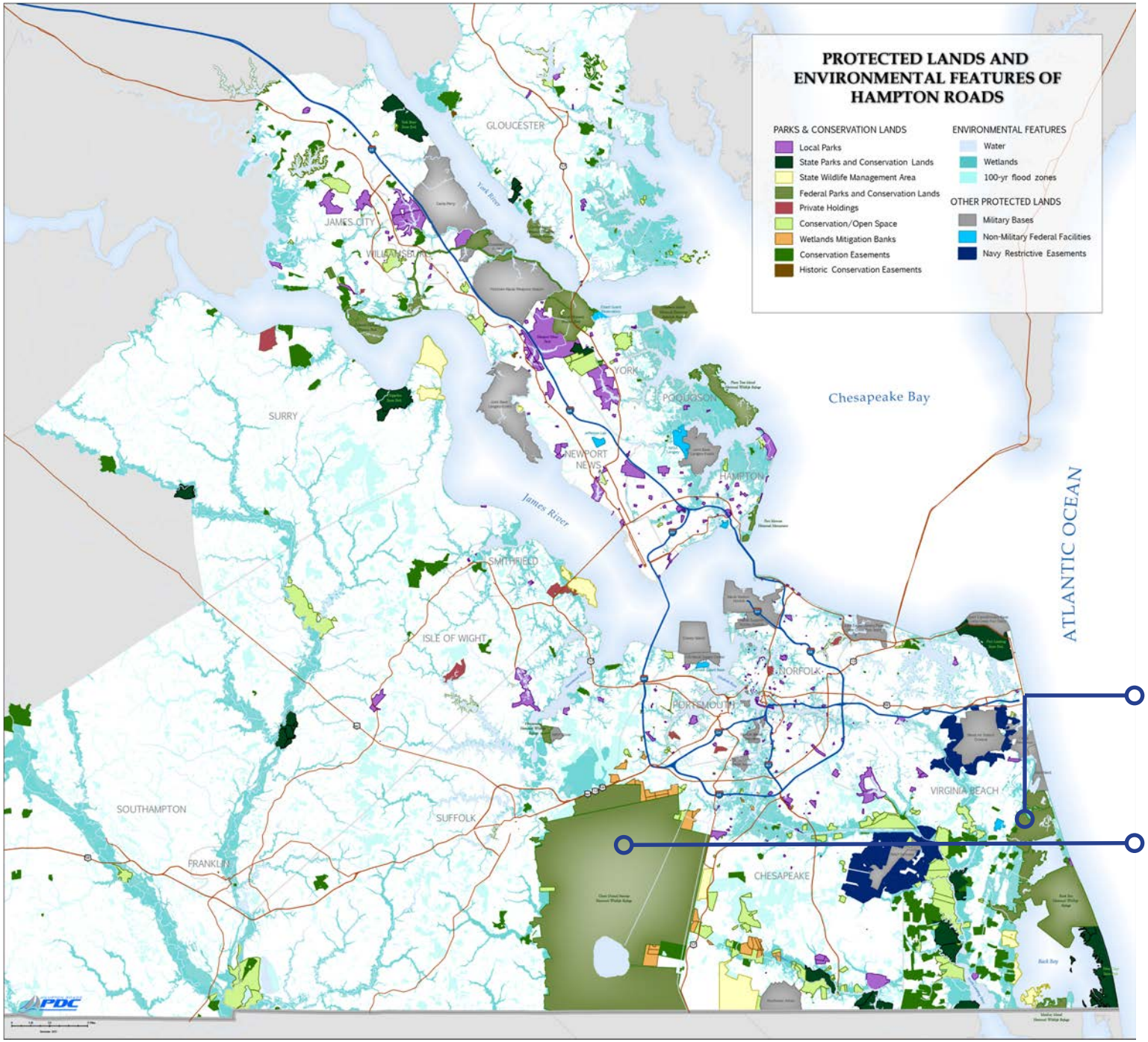
The water bodies throughout the region can be barriers to surface transportation.

The urban core of Hampton Roads provides key opportunities to connect large portions of the region's population.

Federal, state, and local open space provides the region with many great opportunities for destinations to connect.



ENVIRONMENTAL FEATURES



The Hampton Roads region has expansive public lands at state and federal levels ranging from state parks to national wildlife refuges. The region also has an extensive amount of military lands throughout. These public lands provide both a prospect for partnerships and barriers to the development of active transportation facilities.

Military facilities become major barriers to connecting key areas.

The Back Bay National Refuge provides trails for biking, hiking, surfing, and paddle boarding.

The Great Dismal Swamp National Refuge produces multiple internal and external opportunities for active transportation facilities in the area.

MAJOR ACTIVE TRANSPORTATION ROUTES

An assortment of regional, state, and national active transportation routes are currently designated throughout the Hampton Roads region.

- East Coast Greenways (ECG) is a 3,000 mile biking and walking route linking the major cities on the Atlantic coast. The historic coastal route follows the Virginia Capital Trail (VCT) into James City County and heads south to the northern terminus of the Dismal Swamp Canal Trail where it leads into North Carolina.
- The Virginia Capital Trail is a 53 mile shared use path heading from downtown Richmond to Jamestown following historic Route 5.
- The Birthplace of America Trail is a recommended trail linking the Virginia Capital Trail in Jamestown to Fort Monroe in Hampton and to the South Hampton Roads Trail western terminus in Suffolk.
- The South Hampton Roads Trail is a regional trail connecting downtown Suffolk to the Oceanfront in Virginia Beach. Most of the trail uses former rail right-of-way. This trail has multiple sections recently built or funded and would connect five of the Southside localities.
- The Elizabeth River Trail is a 10.5 mile long trail in Norfolk running along the riverfront from Harbor Park Stadium to Terminal Boulevard.

- The Dismal Swamp Canal Trail in Chesapeake is a shared use path using former US Route 17 right-of-way paralleling the Great Dismal Swamp National Wildlife Refuge and Dismal Swamp Canal. It is also the southern terminus of the East Coast Greenway heading into North Carolina.

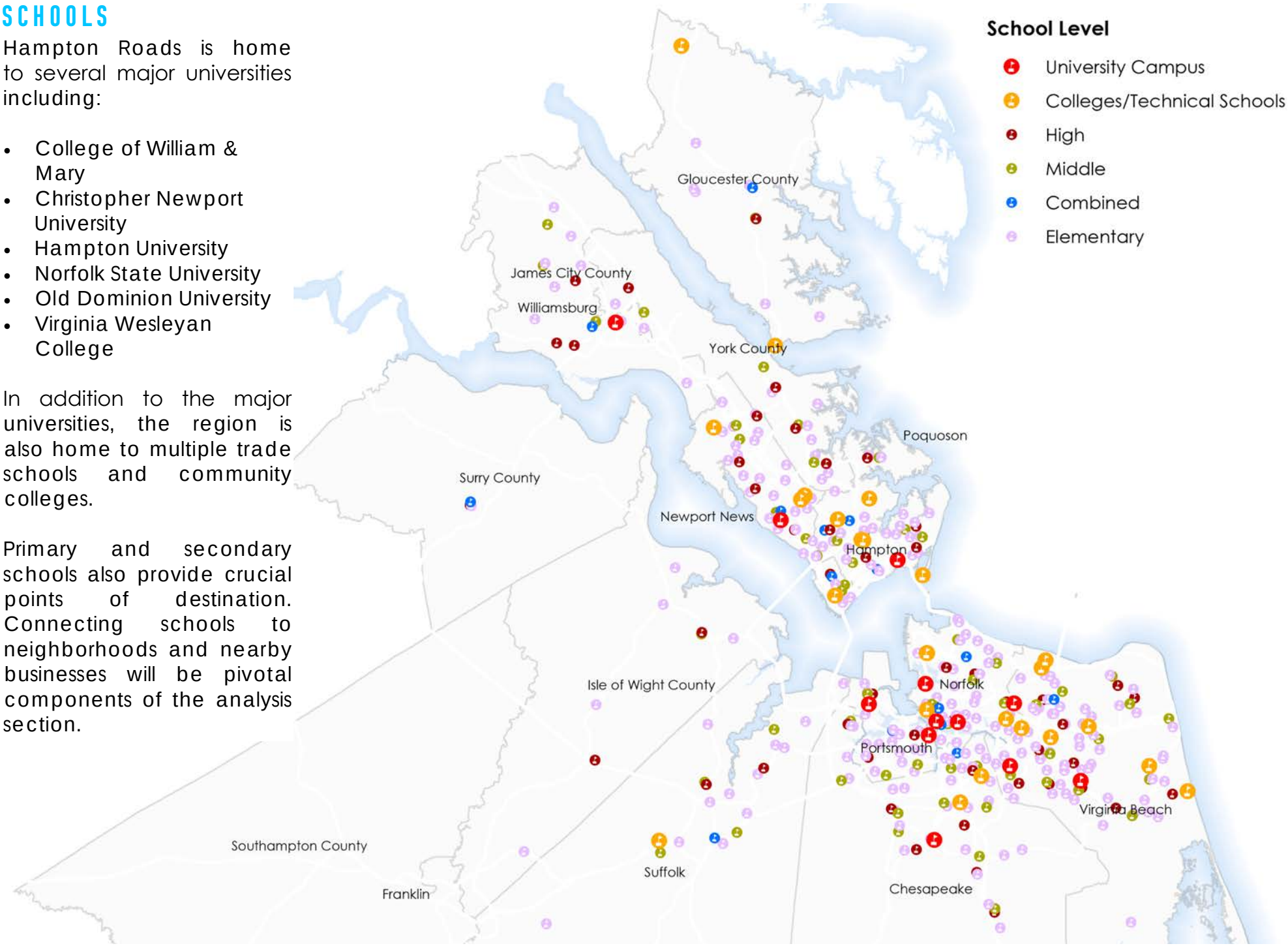
SCHOOLS

Hampton Roads is home to several major universities including:

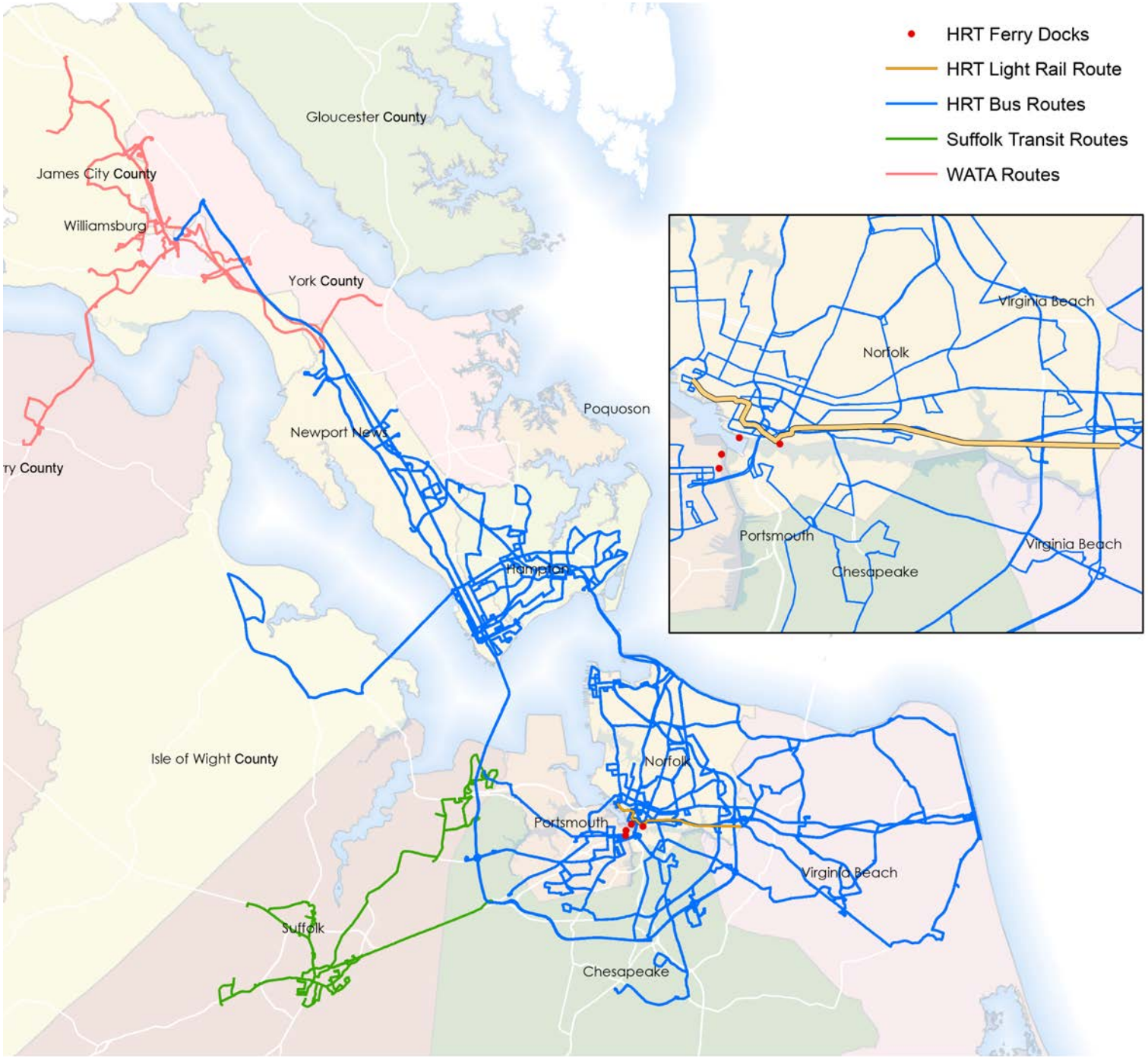
- College of William & Mary
- Christopher Newport University
- Hampton University
- Norfolk State University
- Old Dominion University
- Virginia Wesleyan College

In addition to the major universities, the region is also home to multiple trade schools and community colleges.

Primary and secondary schools also provide crucial points of destination. Connecting schools to neighborhoods and nearby businesses will be pivotal components of the analysis section.



REGIONAL TRANSIT



The Hampton Roads region has three transit operators that provide alternative transportation throughout the region.

Hampton Roads Transit (HRT) provides bus, light rail and ferry services in Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach.

Suffolk Transit provides bus transit services in that city.

Williamsburg Area Transit Authority (WATA) is the regional transit authority for James City County, York County, and the City of Williamsburg. The WATA Board includes representatives from the College of William & Mary and the Colonial Williamsburg Foundation.

POPULATION DENSITY

REGIONAL OVERVIEW

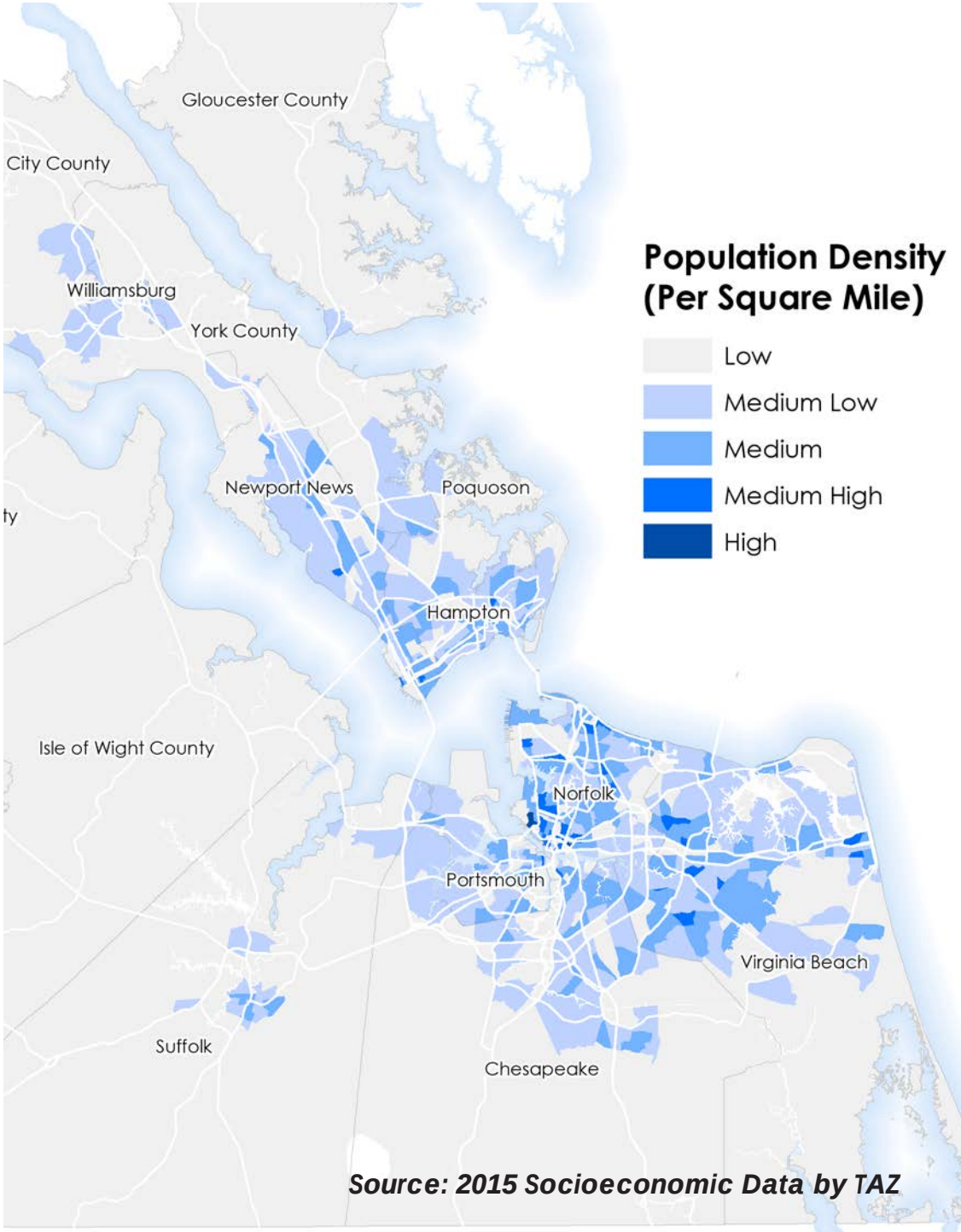
Using the analysis from the Hampton Roads 2015 Socioeconomic Data, the following population density maps provide the latest snapshot into the Hampton Roads population. This data is 2015 transportation analysis zone (TAZ) data from the *Hampton Roads 2045 Long Range Transportation Plan*.

The analysis in the following series of maps are based on TAZ employment numbers and calculated to the number of employees per square mile.

The urban core population is highest near the downtown areas of Norfolk, Hampton, and Virginia Beach. The population developed along major exits along the I-64 and I-664 corridors in Chesapeake and along the I-64 Corridor on the Peninsula. In Virginia Beach, high density exists along the I-264 Corridor. There are also small patches of denser populations in the Western Branch section of Chesapeake and near downtown Suffolk.

The northern half of the Peninsula has several moderate areas of population in York County, James City County, and Williamsburg along the I-64 Corridor. Poquoson and Gloucester County also have small pockets of moderate density.

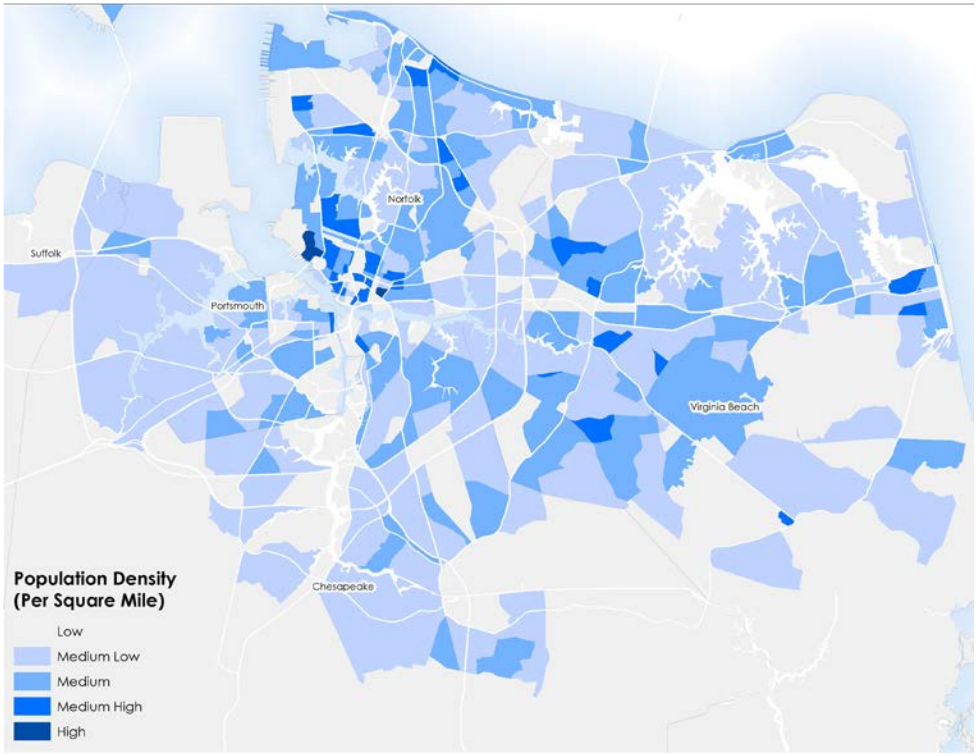
As land use has developed in the region, population density decreases as you move away from the urban cores. Also, due to the land use practices of Virginia Beach and Chesapeake, population densities drop significantly south of their perspective green lines (urban growth boundaries).



Source: 2015 Socioeconomic Data by TAZ

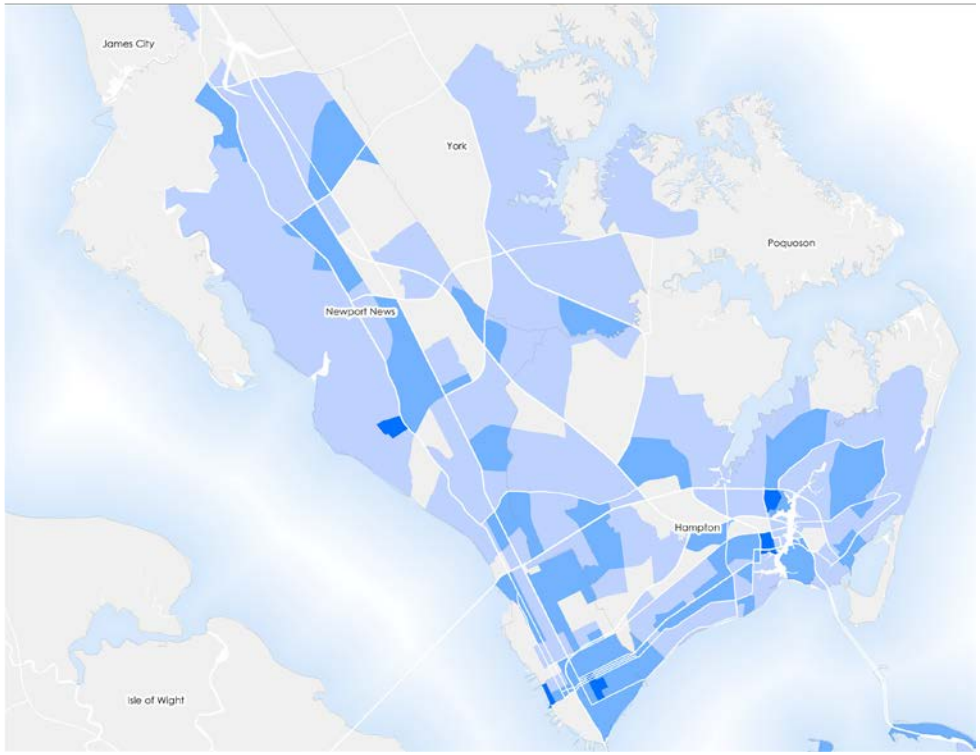
POPULATION DENSITY

SOUTHSIDE



Population growth on the Southside of Hampton Roads follows patterns typical of post-World War II development. As in other regions, many people from Norfolk moved into surrounding areas. Much of this suburban population was spread throughout Chesapeake, Portsmouth and Virginia Beach, where the density levels are fairly evenly spread. Higher densities are found in downtown Norfolk and surrounding inner ring suburbs and a few other areas of the Southside. Denser areas exist near Ocean View in Norfolk and Chicks Beach, Shore Drive, and the Oceanfront in Virginia Beach due to the attractiveness of living near the beach.

PENINSULA



The Peninsula has evenly spread population through its southern half, except for a few pockets of higher density in Hampton and Newport News. For Newport News, the pocket of density is near the major employment center of Newport News Shipbuilding. Hampton has two pockets of higher density near the Downtown area. Population levels in York County rise along Route 17 (George Washington Highway), whereas in Newport News, higher density exists near the Warwick Boulevard and Jefferson Avenue corridors.

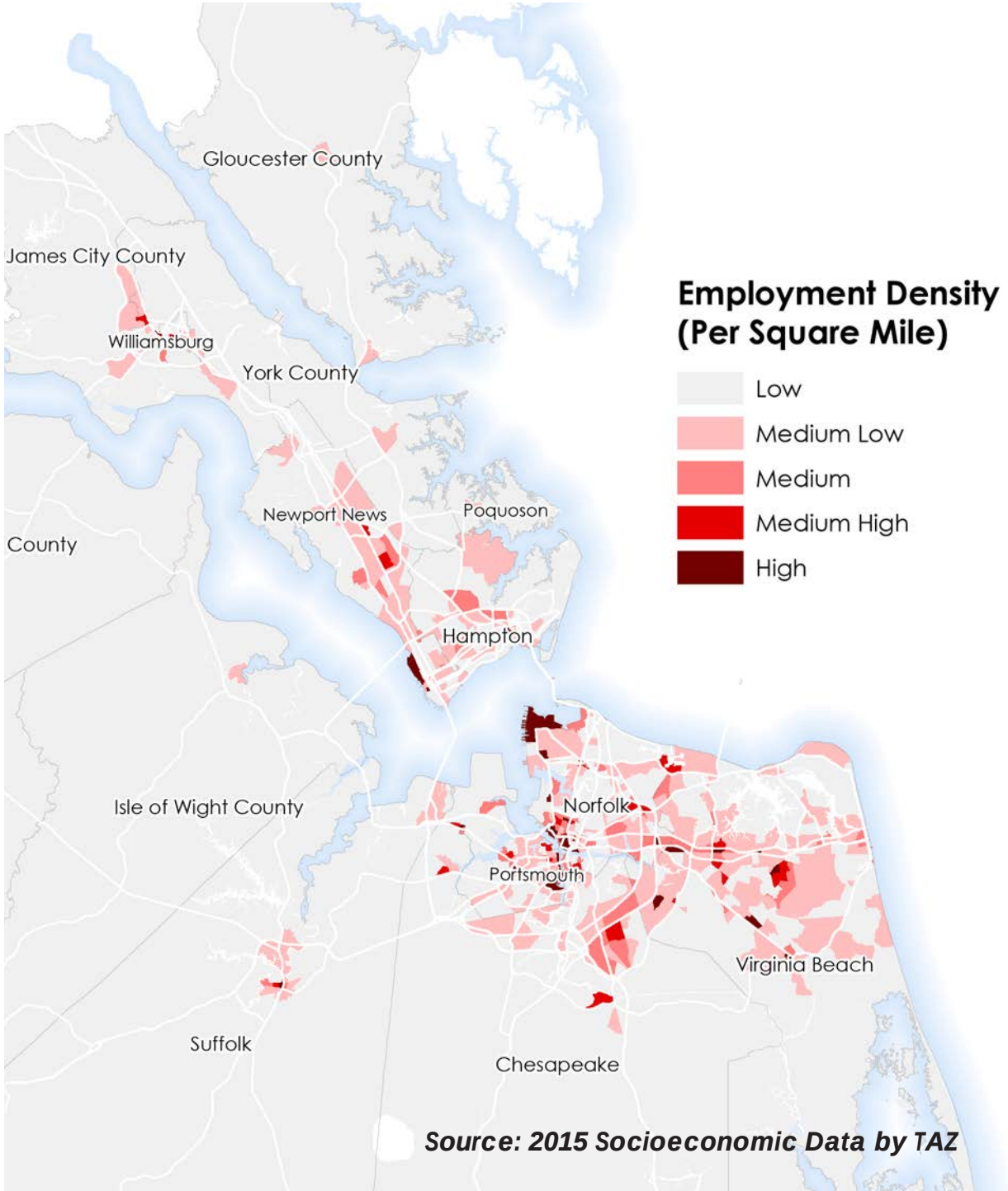
EMPLOYMENT DENSITY

REGIONAL OVERVIEW

Using the latest statistics from the Hampton Roads 2015 Socioeconomic Data, the employment density maps on the following pages show where the employment was concentrated in Hampton Roads in 2015. Employment is largely concentrated along the I-64 & I-264 Corridors on the Southside and along I-64 on the Peninsula. The highest concentrated areas of employment in the region are in downtown Norfolk, Portsmouth and Newport News.

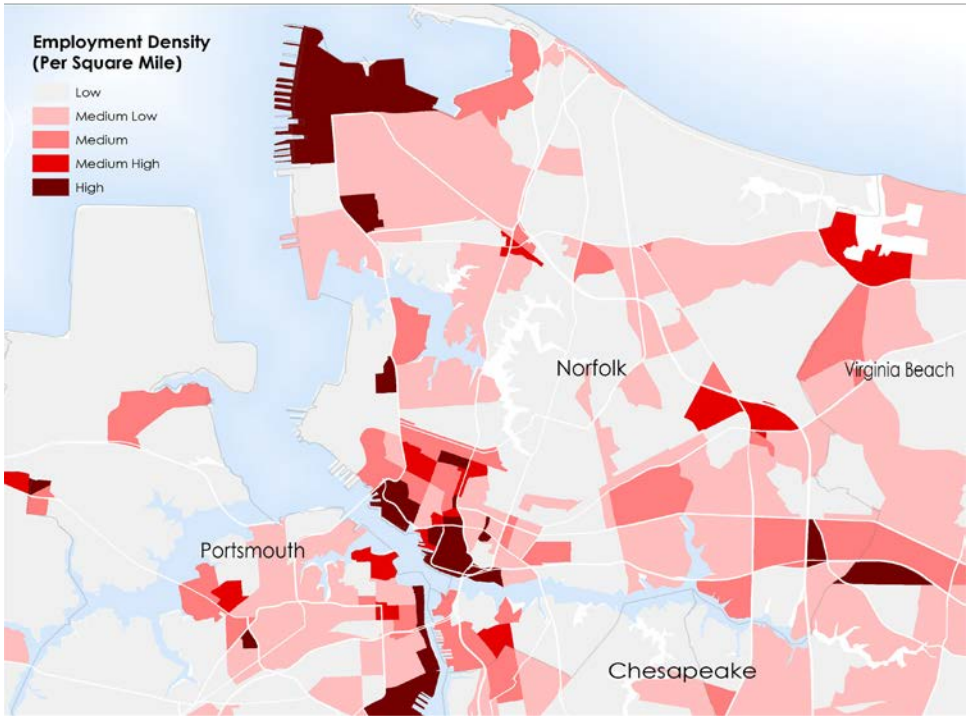
Much of Hampton Road's economy is based on the military, port, or tourism industries. On the Peninsula, the top employment areas include tourism in Colonial Williamsburg and ship building and port-related industries in Newport News. On the Southside, the top employment areas include Naval Station Norfolk, downtown Norfolk, the watersides of Portsmouth and Norfolk, and business districts along the I-264 corridor.

The following map series provide a more detailed look at some of the denser employment areas in the region.



EMPLOYMENT DENSITY

DOWNTOWN NORFOLK/PORTSMOUTH

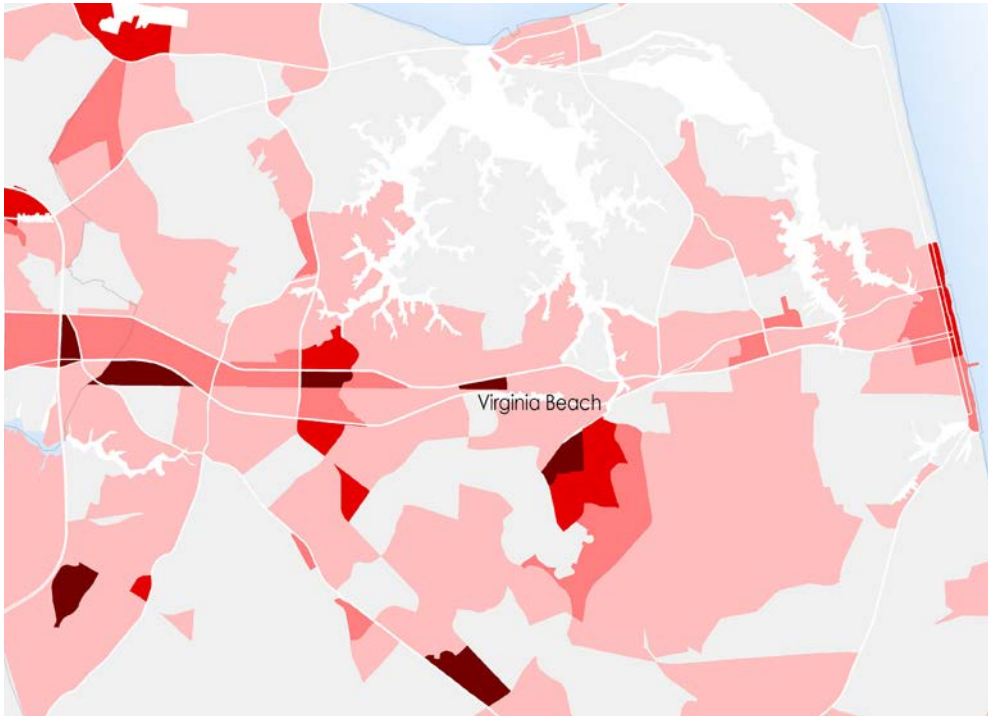


The key employment areas in Norfolk and Portsmouth are found along the waterfronts of both cities. Downtown Norfolk is a high employment zone. Other significant areas of relevance in Norfolk are Old Dominion University, the Sentara Norfolk General Hospital, Naval Station Norfolk, and the Ghent area around 23rd Street and Monticello Ave.

Significant areas in Portsmouth include the Portsmouth Naval Medical Center and other businesses in downtown Portsmouth. The Portsmouth waterside also includes major employers connected to the Norfolk Naval Yard.

Many regional businesses, including port and defense related industries have multiple employment centers at different places along the waterfronts.

VIRGINIA BEACH



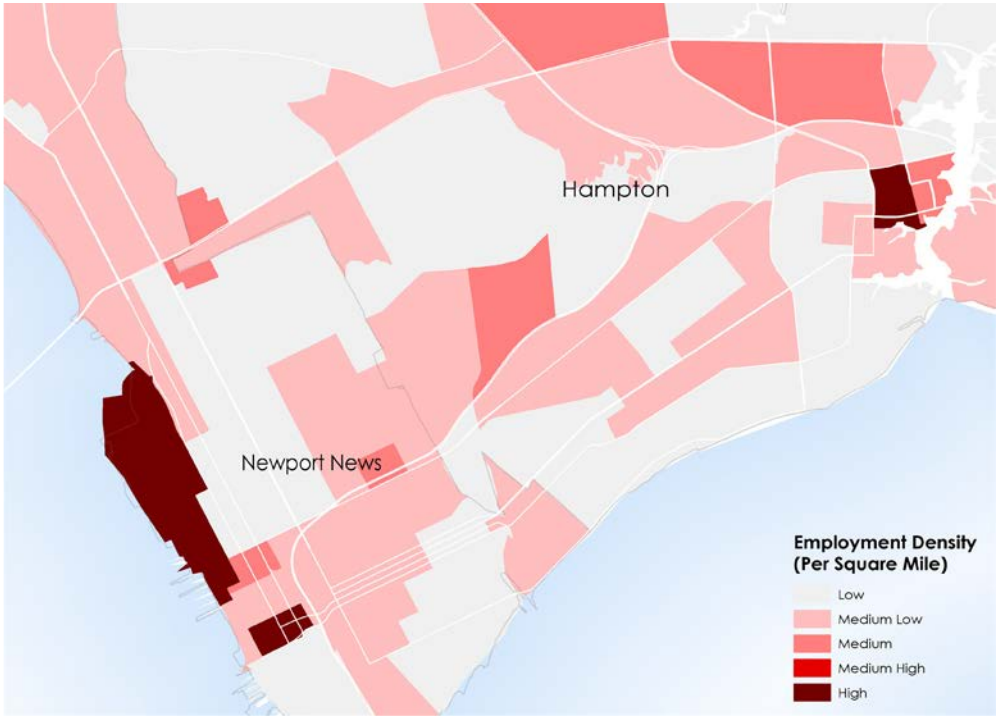
The key employment areas in Virginia Beach are mostly along the I-264 corridor and at the Oceanfront, such as retail and business destinations like Lynnhaven Mall and Town Center and their surrounding business/office areas.

The Virginia Beach Oceanfront is a major destination for tourism in the region, state, and nation. Virginia Beach has been a destination for beach-goers for many years. Key businesses in the oceanfront area include hotels, restaurants and retail businesses catering to the tourism industry.

The Virginia Beach Boulevard and Laskin Road Corridors are also major business areas. Land use and businesses range from major big-box retail businesses, office space, and shopping centers.

EMPLOYMENT DENSITY

DOWNTOWN NEWPORT NEWS/HAMPTON

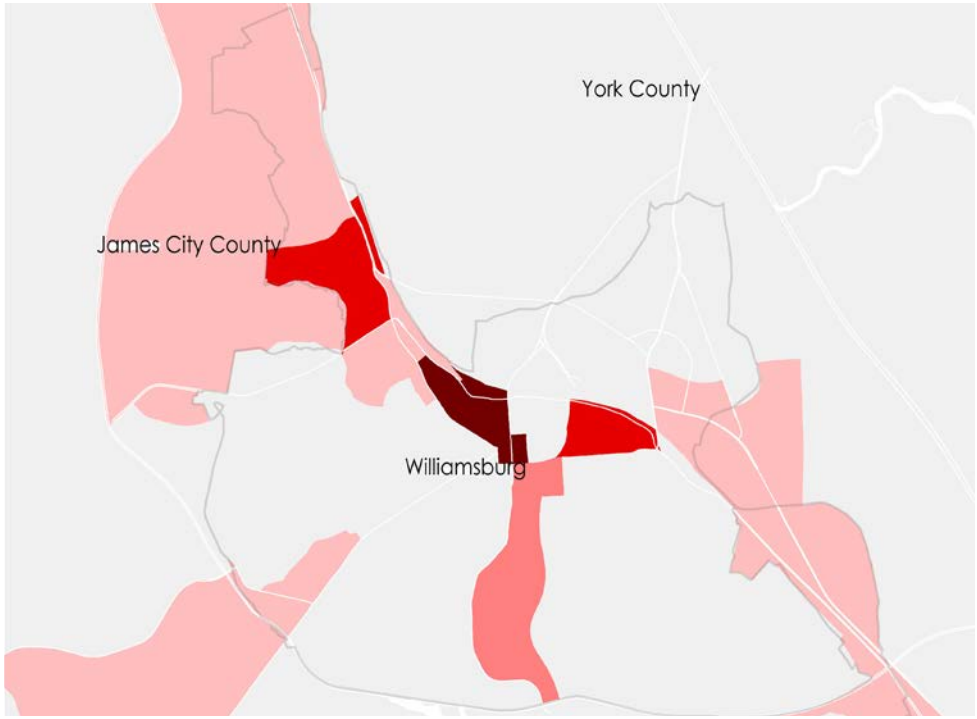


Downtown Newport News and Newport News Shipbuilding have been major employment centers for the Hampton Roads region for many years. Huntington Ingalls is not only the largest employer in Newport News, but it is also the largest employer in the state of Virginia. The other key employer in this area is Dominion Terminal, which is a major coal terminal that empties coal from the CSX train terminal into coal ships that carry the cargo to destinations around the world.

Both Newport News and Hampton government offices and their surrounding downtown areas have high population densities.

One drawback to these major employment centers is the separation from residential areas due to CSX rail lines and I-664.

HISTORIC TRIANGLE



Jamestown, Williamsburg, and Yorktown, commonly referred as The Historic Triangle, is home to another major tourism destination in Hampton Roads. The Historic Triangle area contains Historic Jamestowne, Jamestown Settlement, Colonial Williamsburg, the Yorktown Battlefield, and the Yorktown Victory Center. The area is home to many tourist related businesses including hotels, retail, and restaurants.

The Historic Triangle is home to the College of William and Mary, a nationally recognized research university. Busch Gardens is located in James City County and Water Country USA are located in York County and are nationally known theme parks. Anheuser Busch InBev has a brewery and distribution center housed in James City County.

DEGREES OF DISADVANTAGED COMMUNITIES

Utilizing HRTPO's Title VI/Environmental Justice (EJ) Methodology, the following map series identifies communities in the region that are above the regional average for environmental justice indicators (see table).

The HRTPO developed the Title VI/Environmental Justice Methodology to best determine the potential impacts of transportation projects on environmental justice communities. The first step in the Methodology is recognizing the environmental justice indicators which identify populations that could potentially experience barriers to mobility and access.

This analysis uses the same "degrees of disadvantaged" indicators that were used in the evaluation of candidate projects for the 2040 LRTP:

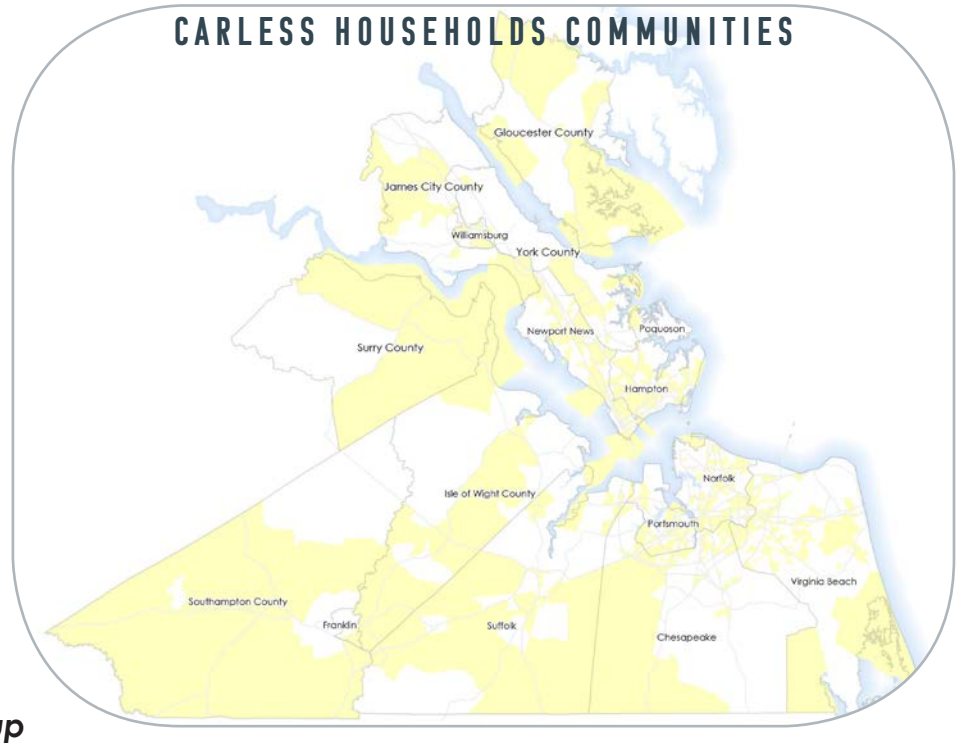
- Carless Populations
- Households Receiving Cash Public Assistance
- Households Receiving Food Stamps
- Female Heads of Households
- Households Below Poverty
- Limited English Proficiency Households
- Minority Populations (A person who is black, Hispanic, American Indian and Alaskan Native or Asian American)
- Disabled Populations
- Elderly Populations (65 and older)

The Census' American Community Survey 5-year estimates at the block group level was the data set of choice due to it being the smallest geographic data type for identifying environmental justice indicators.

The following maps displaying environmental justice communities reveal which ones are above the following regional thresholds:

Degrees of Disadvantage	Regional Average Percentage
Carless Populations	5.83%
Households Receiving Cash Public Assistance	2.61%
Households Receiving Food Stamps	9.97%
Female Head of Households	15.34%
Households Below Poverty	8.40%
Limited English Proficiency Households	1.43%
Minority Populations	38.89%
Disabled Populations	9.52%
Elderly Populations	13.50%

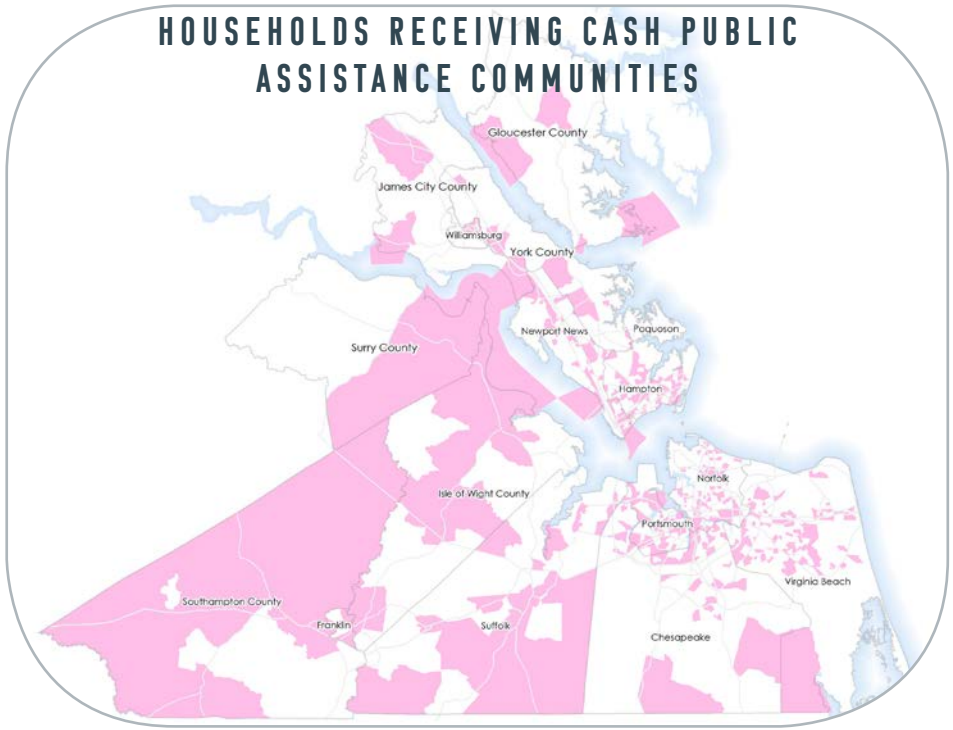
CARLESS HOUSEHOLDS COMMUNITIES



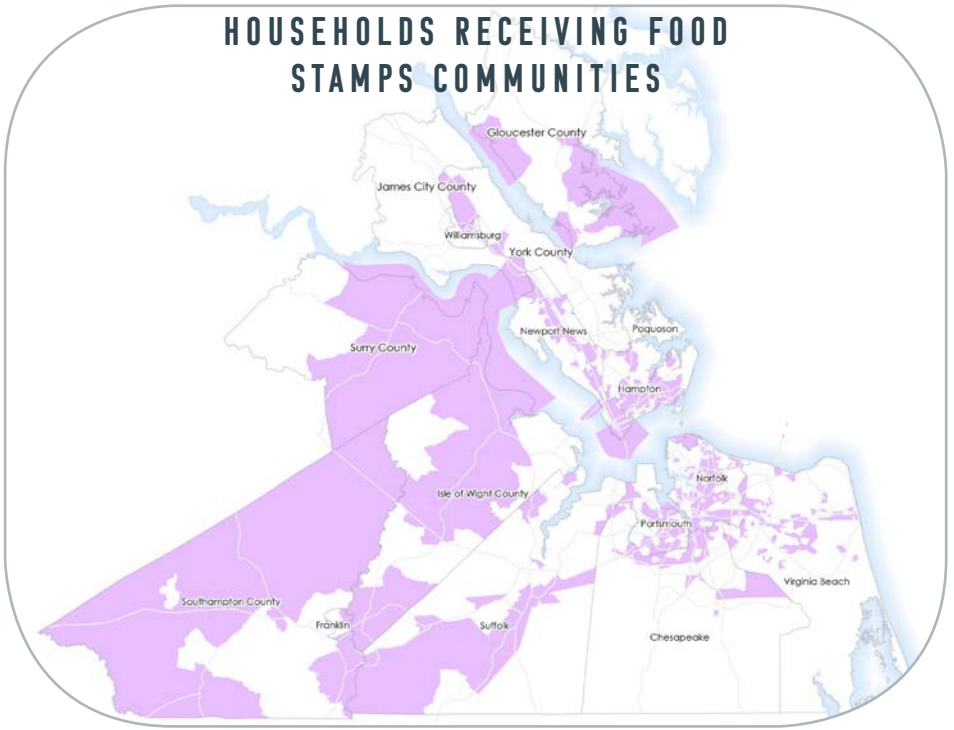
Source: American Community Survey 2016, Census Block Group

DEGREES OF DISADVANTAGED COMMUNITIES

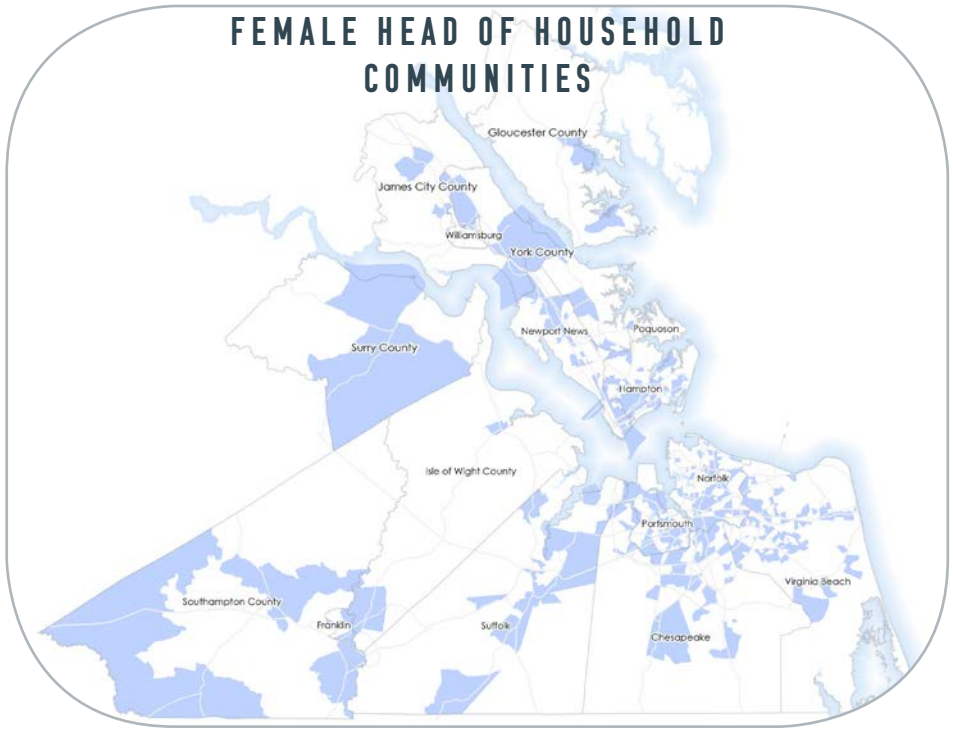
HOUSEHOLDS RECEIVING CASH PUBLIC ASSISTANCE COMMUNITIES



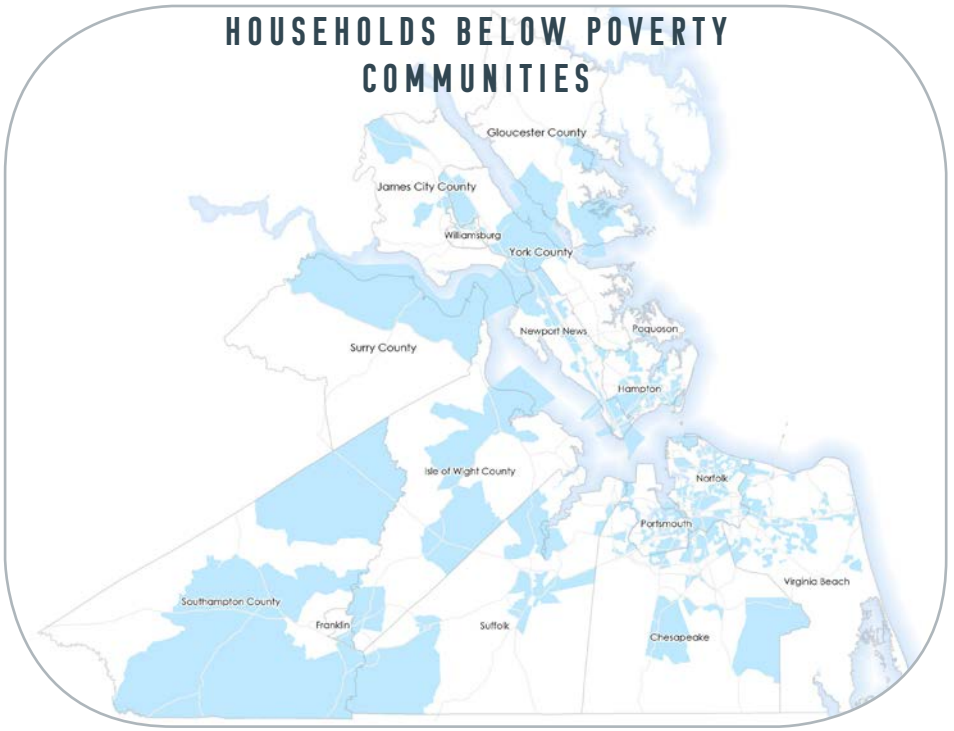
HOUSEHOLDS RECEIVING FOOD STAMPS COMMUNITIES



FEMALE HEAD OF HOUSEHOLD COMMUNITIES



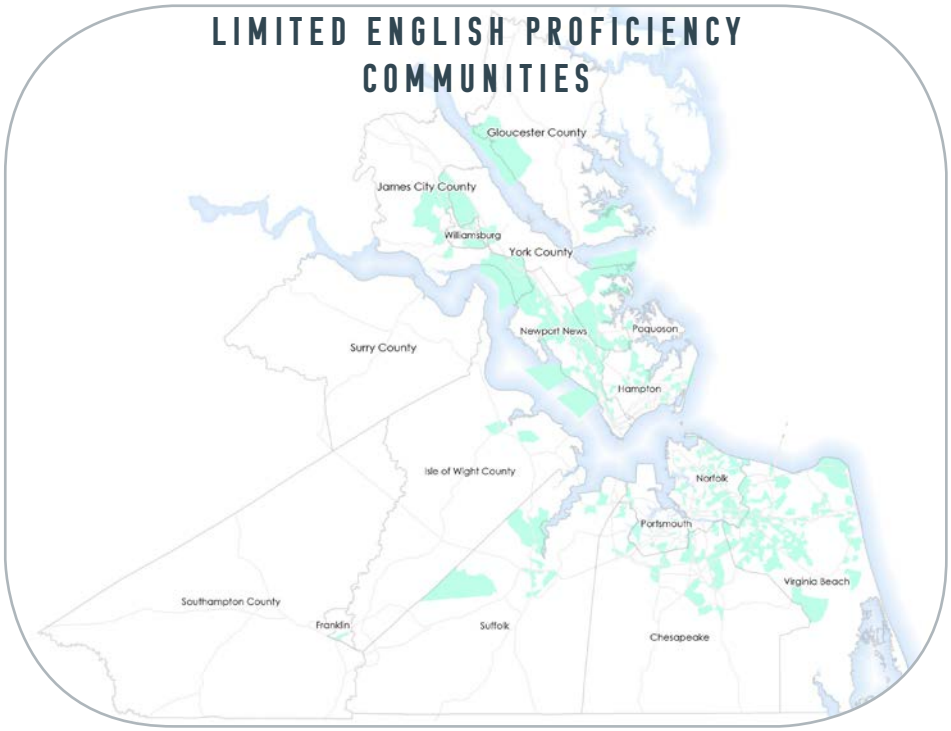
HOUSEHOLDS BELOW POVERTY COMMUNITIES



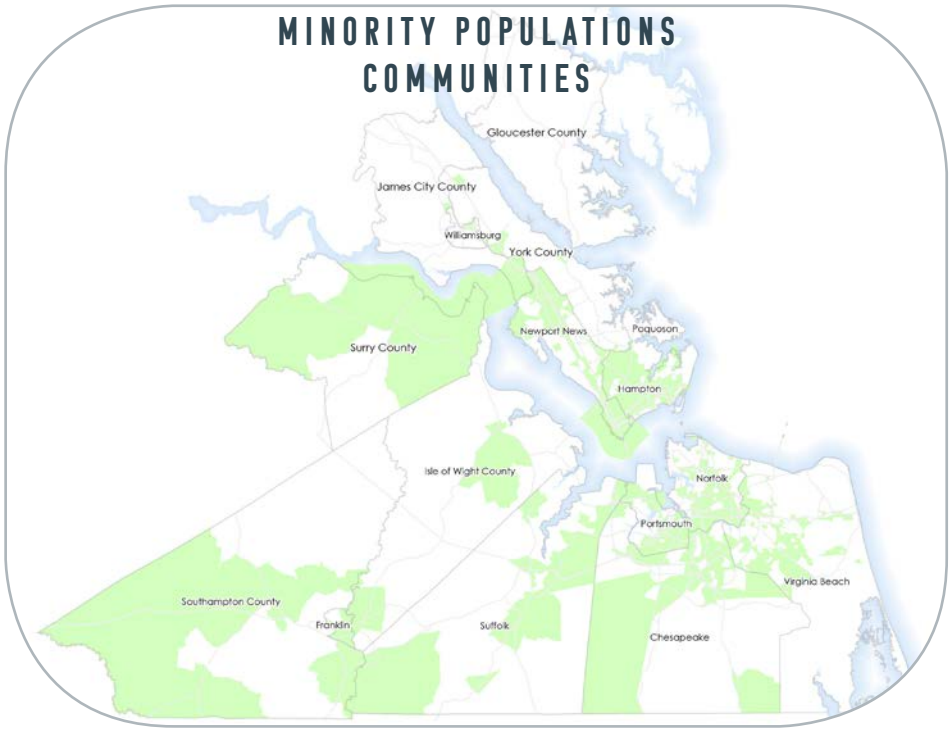
Source: American Community Survey 2016, Census Block Group

DEGREES OF DISADVANTAGED COMMUNITIES

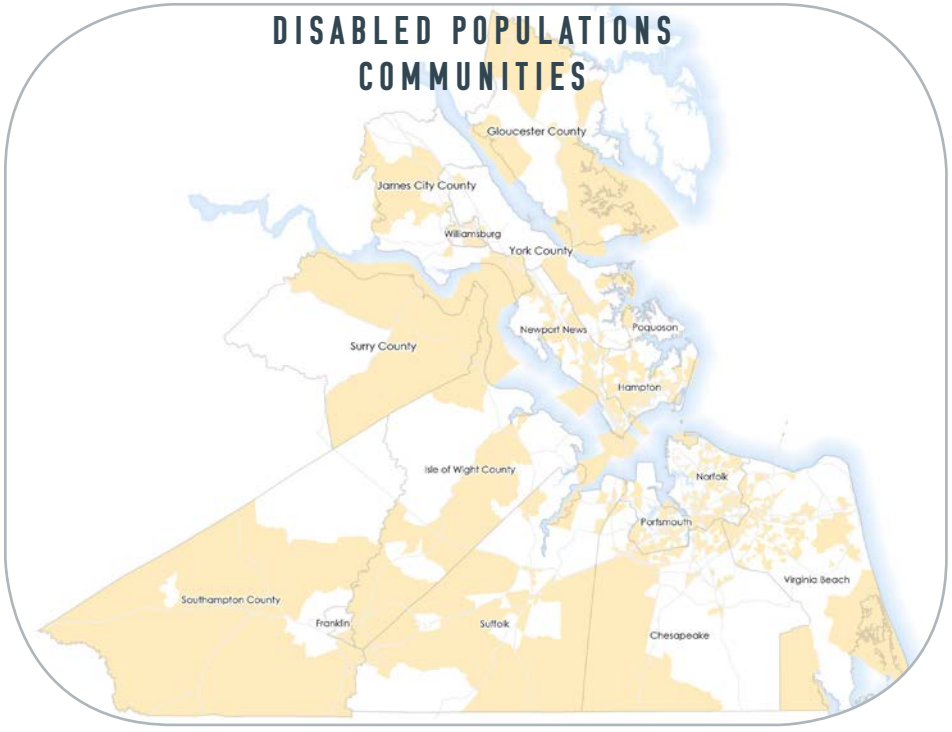
LIMITED ENGLISH PROFICIENCY COMMUNITIES



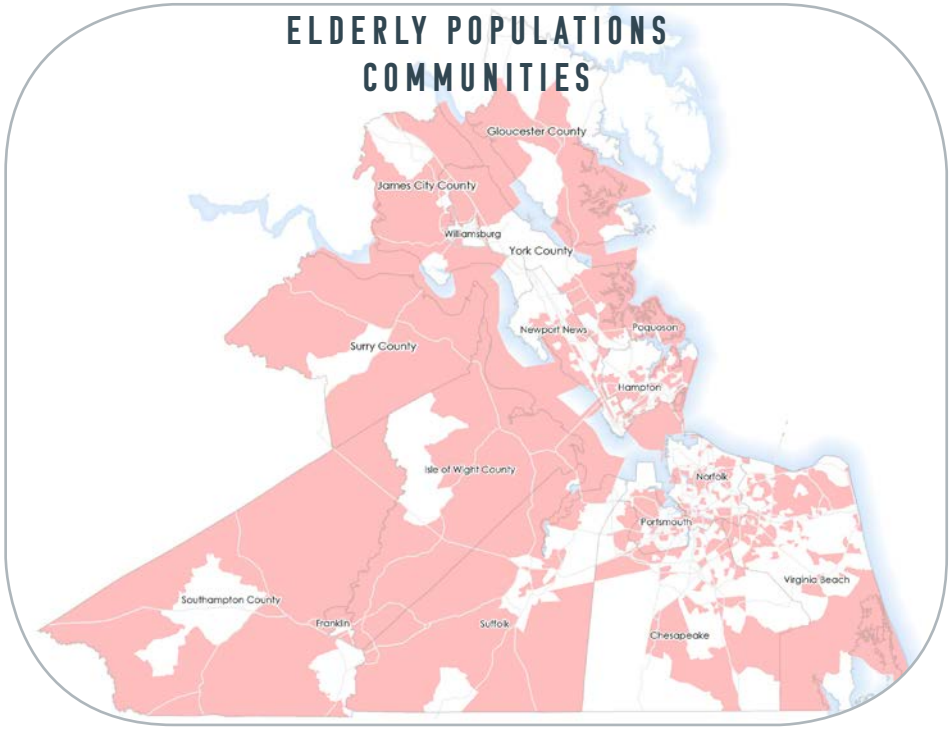
MINORITY POPULATIONS COMMUNITIES



DISABLED POPULATIONS COMMUNITIES



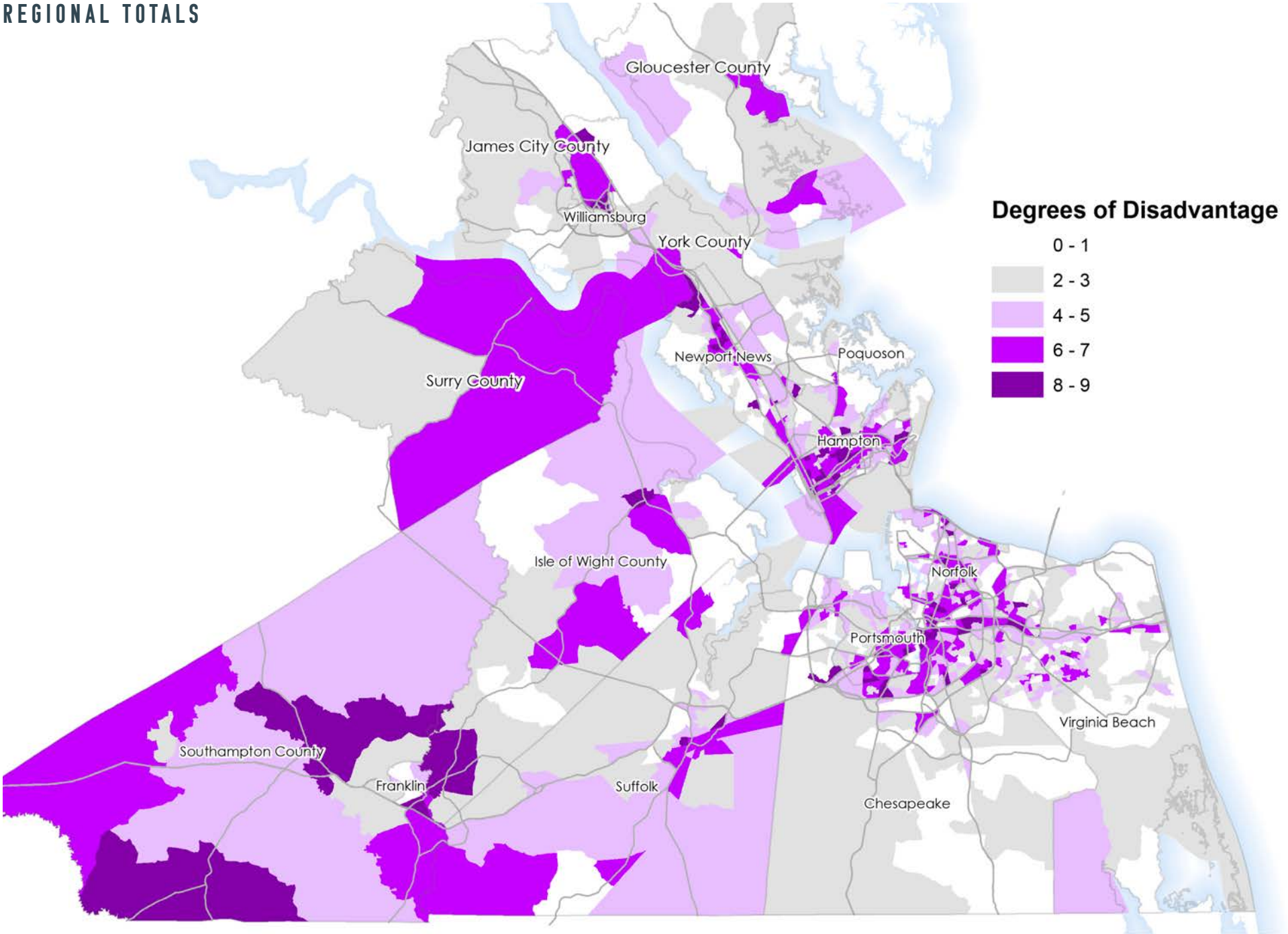
ELDERLY POPULATIONS COMMUNITIES



Source: American Community Survey 2016, Census Block Group

DEGREES OF DISADVANTAGE COMMUNITIES

REGIONAL TOTALS



Source: American Community Survey 2016, Census Block Group

DEGREES OF DISADVANTAGED COMMUNITIES

SUMMARY

The previous map series shows communities across the region that are above the regional averages of the nine identified degrees of disadvantage. The indicators were then totaled to produce the map on the previous page.

This map gives us an environmental justice score for all census block groups for the region. The score ranges from zero to nine. A score of nine means that that specific area has all the degrees of disadvantage higher than the regional average.

For instance, the rural counties of Southampton, Surry and Isle of Wight have large portions with high percentages of disadvantaged persons communities. The disadvantaged persons on the Peninsula live predominantly in the urban areas of Hampton and Newport News. Other areas that also show high averages of disadvantaged persons include areas along I-64 corridor and several spots within Gloucester County.

In Suffolk, concentrations of disadvantaged persons live in the downtown area and also along the US 58 corridor. Suffolk also has two small pockets within the Shoulders Hill Rd/ Bennett Creek areas.

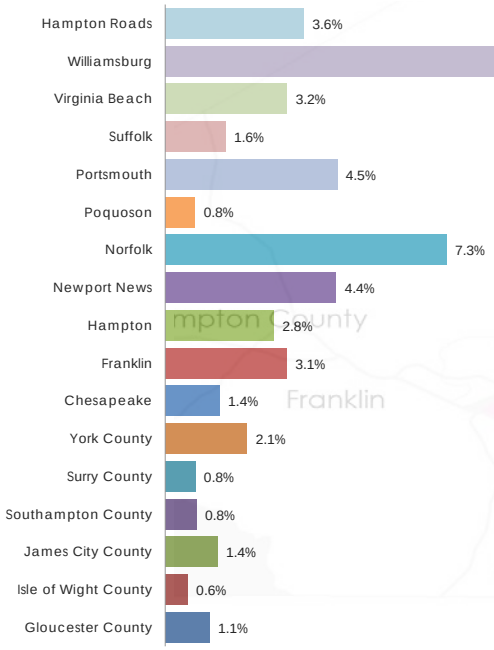
In Chesapeake, Norfolk, Portsmouth, and Virginia Beach, the majority of areas with a high average of disadvantaged persons are within the communities along or near the I-64 corridor. Additionally, there are multiple areas along the I-264 corridor that also have high percentages of disadvantaged persons. In Virginia Beach, there is a moderately high amount of disadvantaged persons within the Blackwater communities. Rural Suffolk also follows the trend of the rural sections of Hampton Roads.

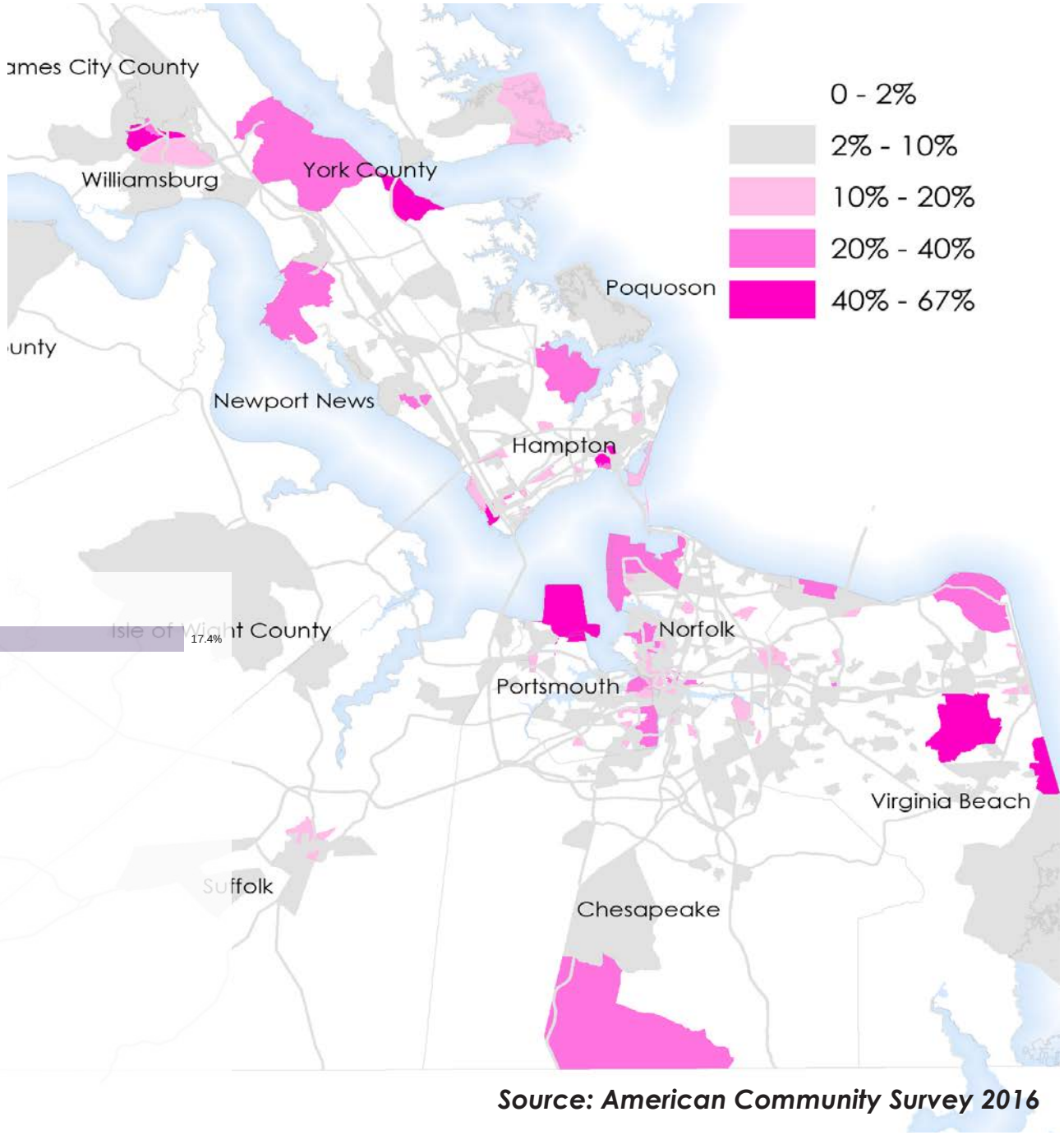
The Title VI/Environmental Justice methodology and analysis provide the HRTPO staff a tool for developing sound recommendations and prioritization for the Linking Hampton Roads active transportation system.

ACTIVE TRANSPORTATION COMMUTE MODE SHARE

At 3.5 percent, Active Transportation (walking and biking combined) commute mode share in the Hampton Roads Region is higher than the state average of 2.8 percent. The city of Williamsburg has the highest percentage (17.4) over six times that of the state rate. The Southside region had an average rate of 3.5 percent compared to the Peninsula region average rate of 3.4 percent. As shown on the map, the areas with the highest percentage are in urban areas and military bases.

The commute mode share rate average for each locality can be seen in the graph below.





Source: American Community Survey 2016

CRASH ANALYSIS

OVERVIEW

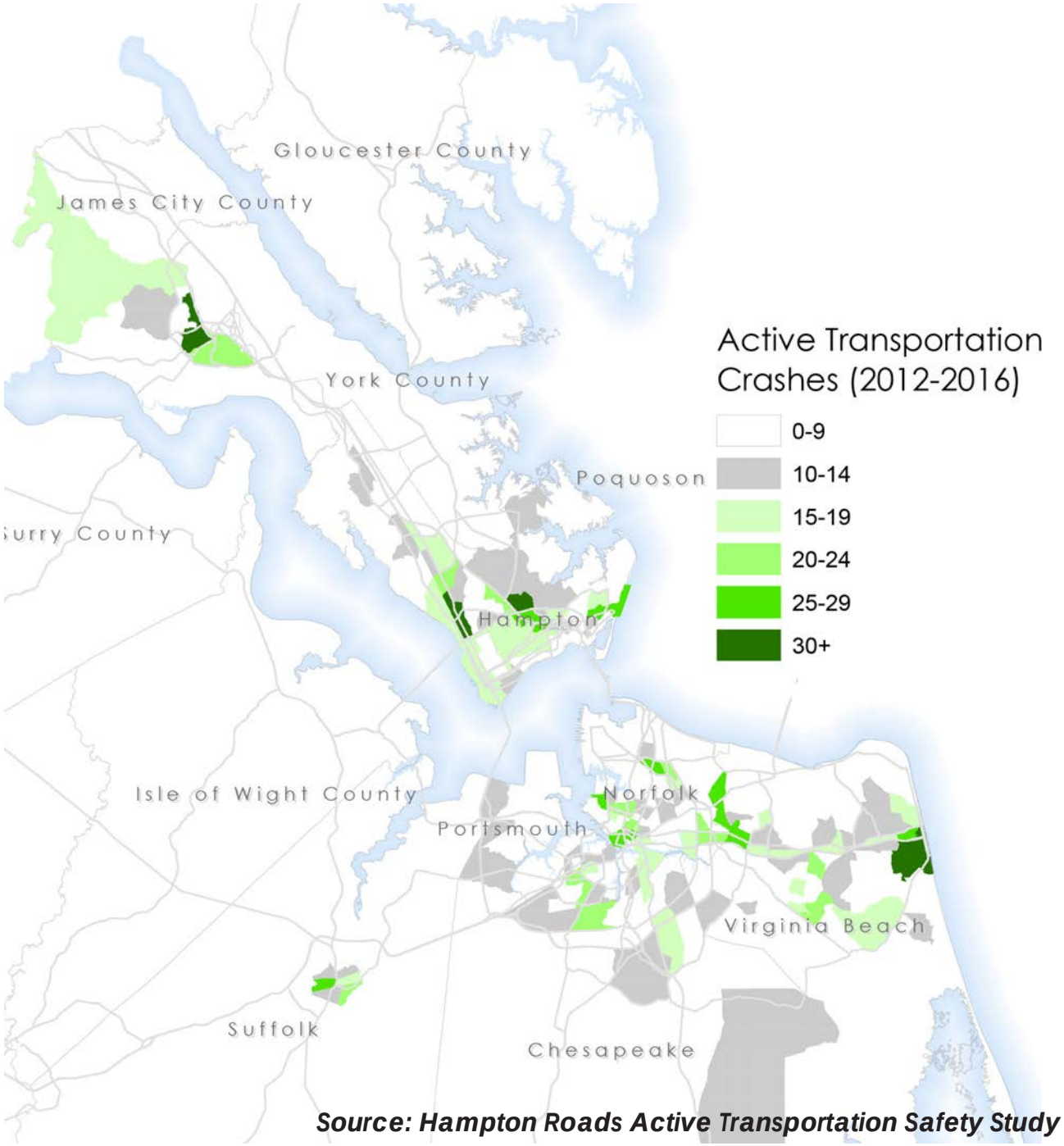
Active Transportation crashes between 2012 and 2016 reveal safety patterns across the Hampton Roads region. Based off of the current *Hampton Roads Active Transportation Safety Study* (Draft) using data from Virginia's Department of Motor Vehicles (DMV), we can analyze these active transportation crash patterns.

The regional map on the right shows active transportation crashes in the region between 2012 and 2016. The density of crashes is per census tract. These four areas stand out as high crash areas:

- Virginia Beach Oceanfront
- Newport News
- Hampton
- Williamsburg

Although these areas vary by the amount of quality active transportation infrastructure, commute mode share, land uses, and urban settings, one common theme among these areas is a high amount of bicycle and pedestrian traffic.

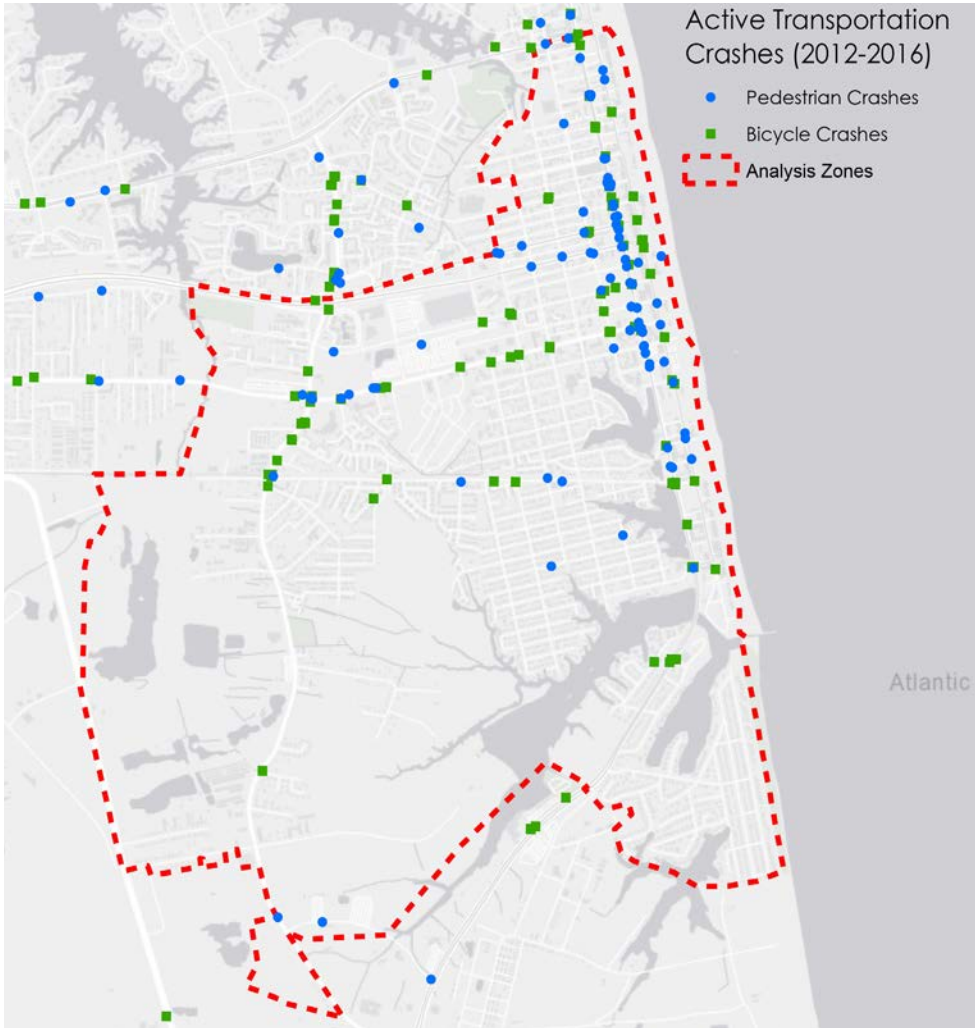
The finding from this analysis will be used to influence and inform the Linking Hampton Roads study's recommendations.



Source: Hampton Roads Active Transportation Safety Study

CRASH ANALYSIS

VIRGINIA BEACH OCEANFRONT



ACTIVE TRANSPORTATION CRASHES BY SEVERITY

Worst Injury	Bicyclist	Pedestrian	Total
Fatal Inury	1	2	3
Incapacitating Injury	9	15	24
Non-Incapacitating Injury	84	69	153
Non-visible Injury	4	9	13
No Injury	3	0	3
TOTAL	101	95	196

The Virginia Beach Oceanfront area has the highest active transportation crashes in the region, with 30+ crashes in each of the three subject census tracts covering the majority of the tourist area and surrounding neighborhoods.

The majority of active transportation crashes are along the following corridors:

- Atlantic Avenue
- Pacific Avenue
- Virginia Beach Boulevard
- Norfolk Avenue
- Birdneck Road

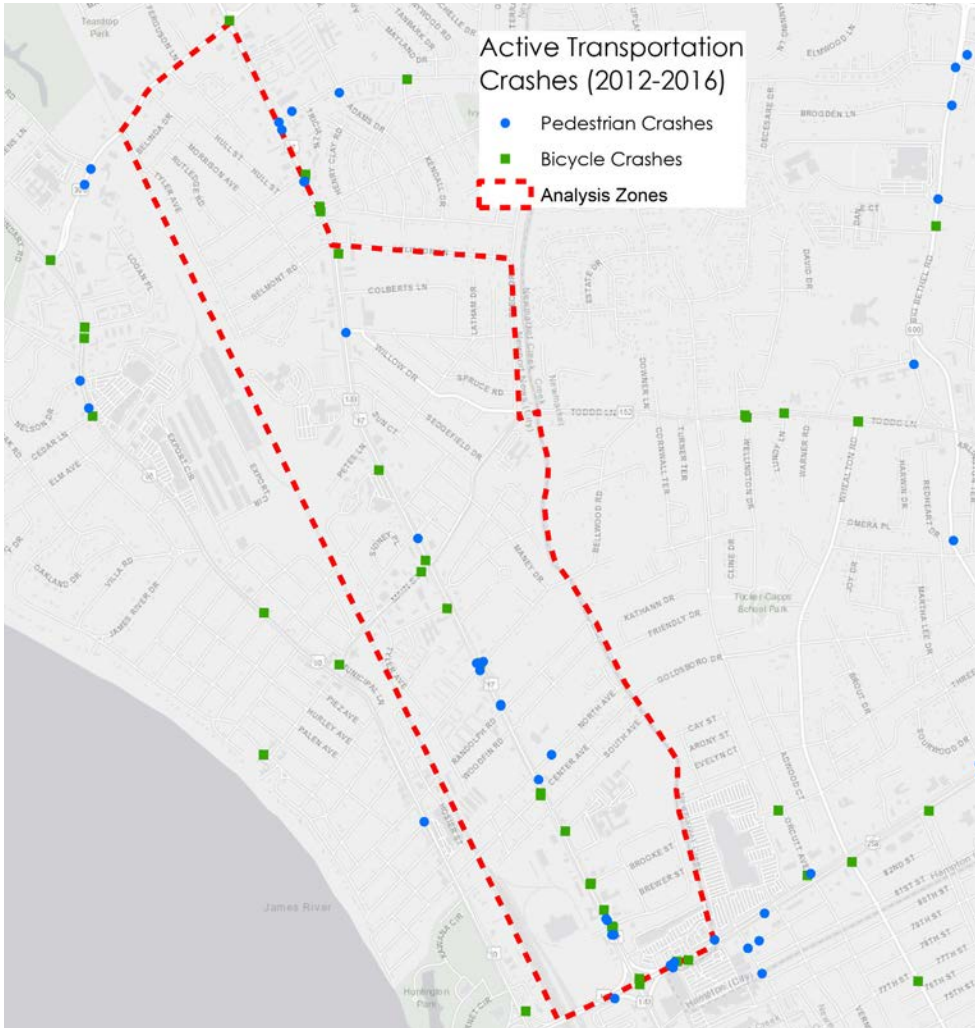
The Pacific Avenue corridor has the highest amount of crashes within the area. Pacific Avenue intersections at 24th Street, Virginia Beach Boulevard, 23rd Street, and 28th Street had the highest total amount of crashes. This is due to these roads being major east/west connectors to the oceanfront from residential areas and hotels.

Virginia Beach Boulevard also has a high amount of crashes along the corridor due to its low quality of active transportation infrastructure. Most of the corridor consists of narrow sidewalks and no facilities for bicyclists. This road is highly used as a corridor for active transportation commuters.

Norfolk Avenue also has a fair amount of crashes along the corridor despite benefiting from having a shared-use trail. The high volume of crashes may be caused by not having auxiliary facilities at key intersections, mid-block sections and key crossings.

Birdneck Road also has a high amount of crashes between Norfolk Avenue and Laskin Road. This road is used as a commuting corridor for local residents and lacks existing active transportation infrastructure.

CRASH ANALYSIS
NEWPORT NEWS



ACTIVE TRANSPORTATION CRASHES BY SEVERITY

Worst Injury	Bicyclist	Pedestrian	Total
Fatal Inury	0	6	6
Incapacitating Injury	4	13	17
Non-Incapacitating Injury	9	2	11
Non-visible Injury	9	2	11
No Injury	0	0	0
TOTAL	22	23	45

The Jefferson Avenue and Mercury Boulevard corridors in Newport News have patterns of high active transportation crash rates. The Jefferson Avenue corridor between Mercury Boulevard and Harpersville Road had a high number of pedestrian fatalities. The Jefferson Avenue corridor consists of commercial/retail businesses along the road and residential in the surrounding neighborhoods.

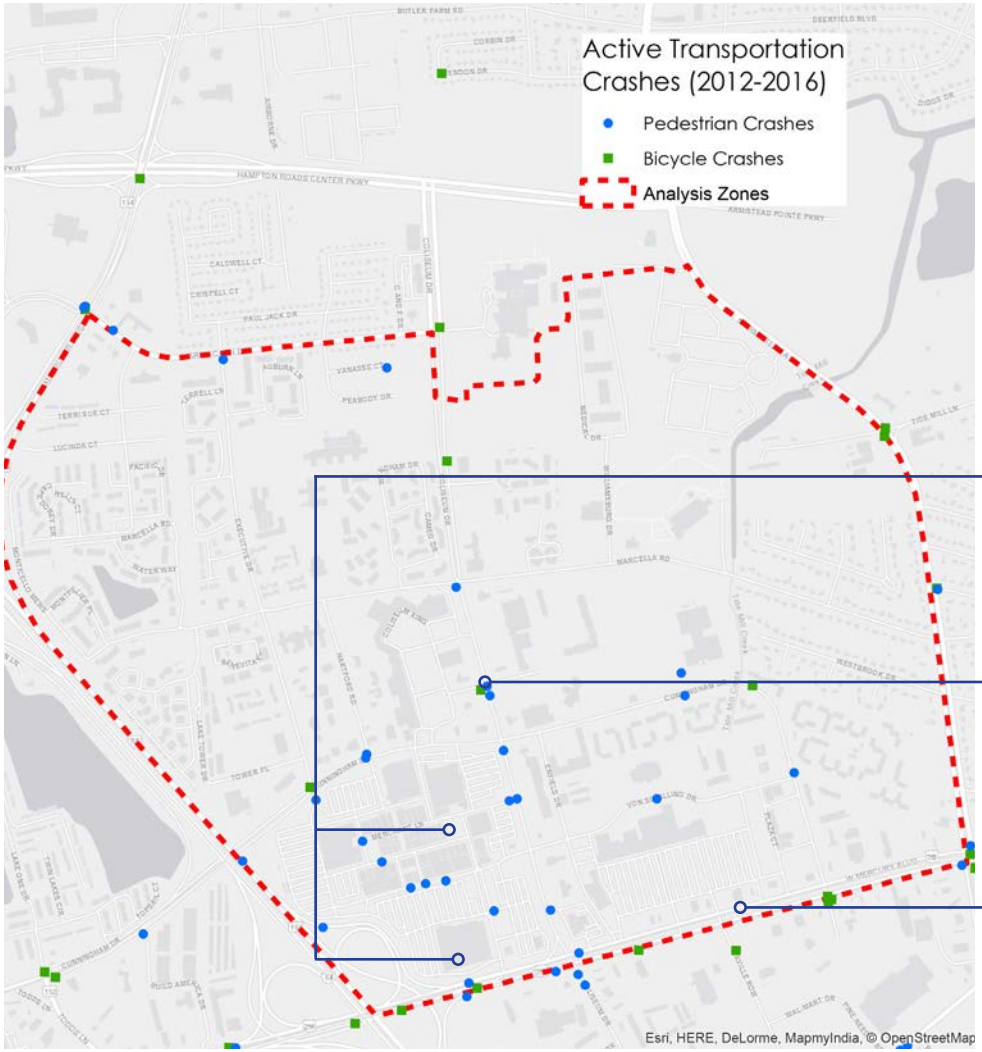
The Jefferson Avenue corridor key findings include:

- Absence of bicycle facilities along corridor
- Lack of auxiliary active transportation facilities at key intersections
- High percentage of pedestrian crashes mid-block
- Sidewalks poor or lacking in multiple areas
- Wide distance for street crossing without pedestrian/ bicycle refuges
- High percentage of fatal and incapacitating injuries

The Mercury Boulevard corridor had several crash locations with both pedestrian and bicyclists involved within this census tract. This corridor includes several commercial areas. Mercury Boulevard, being a six lane divided highway, can be difficult for pedestrians and bicyclists to cross.

CRASH ANALYSIS

HAMPTON



ACTIVE TRANSPORTATION CRASHES BY SEVERITY

Worst Injury	Bicyclist	Pedestrian	Total
Fatal Inury	0	1	1
Incapacitating Injury	7	20	27
Non-Incapacitating Injury	5	6	11
Non-visible Injury	8	9	17
No Injury	0	0	0
TOTAL	20	36	56

The census tract including the Peninsula Town Center has a fairly high level of crashes. In 2008, Peninsula Town Center opened as a redevelopment from a traditional style mall to an open air shopping center. It was designed as a pedestrian- oriented mall for customers to park at one place and walk to multiple shopping destinations. Instead, due to the development's layout and shopper's habits, many patrons drive from one destination to the next.

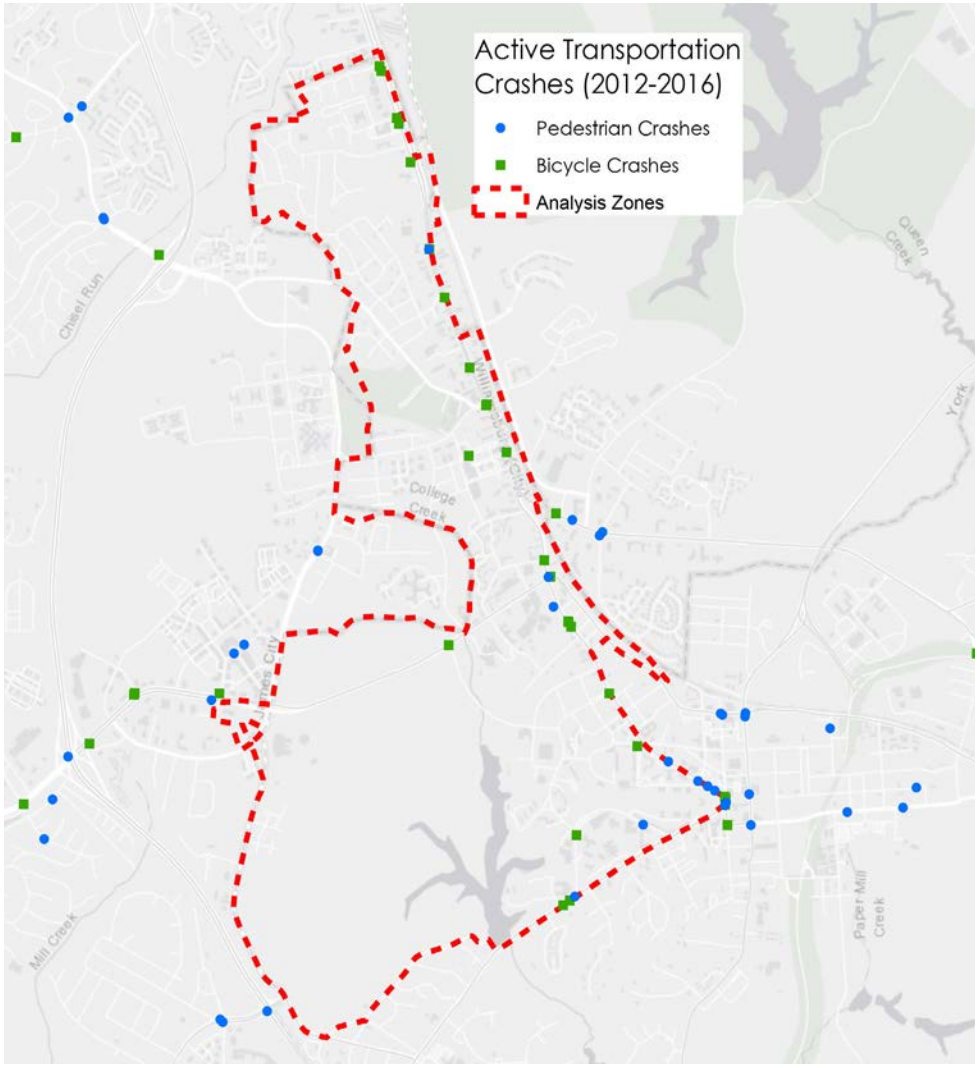
As you can see from the map to the left, the major concentration of pedestrian crashes are between the parking lot of Target and Kilgore Avenue. The parking lot of Target separates Target and other destinations including restaurants. Also having a road connecting to the main entrance near the Target allows for vehicle speeds to be higher than normal.

Coliseum Drive, a four lane thoroughfare, makes it very difficult for patrons to cross from the shopping center to other shopping destinations.

Mercury Boulevard, an eight lane thoroughfare with an I-64 interchange, is very difficult for pedestrians and bicyclists to cross. There are no active transportation facilities along Mercury Boulevard from Power Plant Parkway to Coliseum Drive (approximately 0.75 miles).

A recent study by VDOT (Virginia Department of Transportation) -- Mercury Boulevard (Route 258) Operational and Pedestrian Enhancement study -- has identified some major active transportation recommendations for the Mercury Boulevard corridor in 2017 such as paved shared-use paths and pedestrian crossing enhancements.

CRASH ANALYSIS
WILLIAMSBURG



ACTIVE TRANSPORTATION CRASHES BY SEVERITY

Worst Injury	Bicyclist	Pedestrian	Total
Fatal Inury	0	0	0
Incapacitating Injury	3	1	4
Non-Incapacitating Injury	8	4	12
Non-visible Injury	4	4	8
No Injury	10	2	12
TOTAL	25	11	36

Williamsburg is the final census tract with a high number of active transportation crashes. This census tract includes the College of William and Mary, the Richmond Road corridor, and is near Colonial Williamsburg. Williamsburg and the university tend to be bike/walk friendly for residents, students, and tourists visiting nearby attractions.

This zone has a higher percentage of bicycles versus pedestrian crashes. This is due to two elements: the high student biking population and the city's high amount of local active transportation activity.

Crash points outside the university limits are mostly along the Richmond Road corridor. This could be due to the amount of commercial and retail businesses along the corridor and near residential neighborhoods.

Several key intersections include the following:

- Duke of Gloucester Street
- Monticello Avenue
- Ironbound Road
- Near Airport Road

Detailed analysis of these active transportation crashes can be found in the *Hampton Roads Active Transportation Safety Study.*

STRAVA | METRO HAMPTON ROADS CASE STUDY

BACKGROUND

In 2016, the Hampton Roads Transportation Planning Organization applied for and received a grant from the Tidewater Bicycle Association to purchase STRAVA Metro data to provide data-driven bicycle planning for the southern Hampton Roads region. To fully analyze the region, the HRTPO purchased the peninsula's data to have a full region of data to examine and integrate into the Linking Hampton Roads study.

What is STRAVA Metro?

STRAVA Metro is a mobile-based social activity app that uses a phone's Global Position System (GPS) or a wearable's data to make riding, running, and walking in cities better by partnering with local and statewide agencies to plan, measure, and improve infrastructure for bicyclists and pedestrians.

HRTPO received the regional bicycling data from STRAVA beginning with January 2016 to December 2016. The STRAVA Metro data allows for microanalysis of the following variables:

- Gender
- Age
- Recreational versus Commute
- Daily
- Time of day
- Origin/destination
- Time of year

The data may be analyzed via mapping using Geographic Information System (GIS). This allows us to visually show where users are frequently riding. STRAVA calls these maps, "Global Heat Maps", which shows "heat" aka rider density made by aggregated, public activities by users. The following pages in this section show snapshots of Heat Maps in Hampton Roads.

As expected, the data is predominantly recreation versus commuting. Some of this is due to the restraints in our physical active transportation infrastructure and urban design. But mostly this is due to the popularity of the Strava app within the cycling community compared to the average citizen.

As expected, STRAVA Metro only provides data from users who either use the app for tracking activities or have the activities loading from other wearables and/or other mobile apps (i.e. Map My Run, Garmin Connect, Apple Health, and Google Fit).

This data set excludes a wide range of active transportation uses due to the following reasons:

- STRAVA is only one of many activity tracking mobile apps
- The average active transportation user may not track every activity
- STRAVA Metro is used widely by more serious recreational cyclists

Although not, therefore, proving or disproving that a specific active transportation facility is needed between point A and point B, we can use this available data for analyzing the usage of existing infrastructure.

Also, STRAVA Metro data is one of many snapshots the HRTPO uses to examine our existing regional active transportation system.

The STRAVA Metro local data will be used to influence and inform the Linking Hampton Roads study's recommendations.

STRAVA | METRO FUN FACTS

The total amount of bike trips in Hampton Roads, was nearly

88,267

in 2016.

The number of unique athletes using Strava was

6,752

in 2016.

The average distance for each activity was over

22 Miles.

The average speed of each activity in Hampton Roads was

14 MPH.

The Average Hampton Roads user uploads

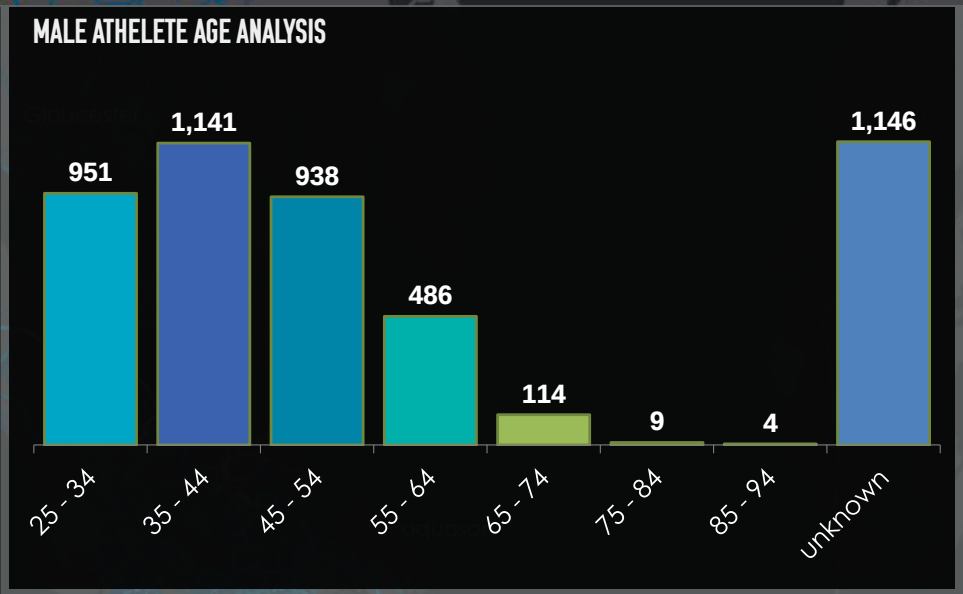
266

activities annually.

According to Strava Metro's app algorithms,

22%

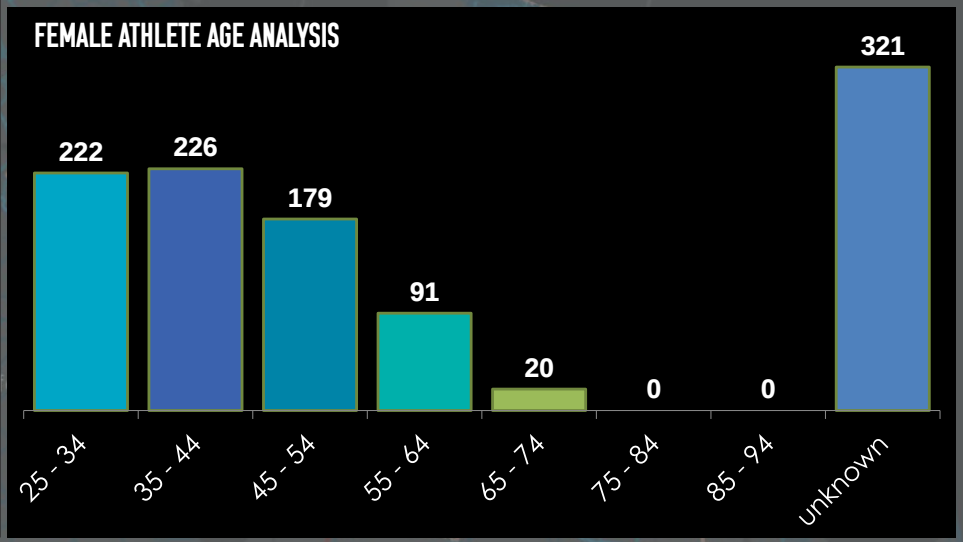
of all users were commuters.



According to Strava Metro,

only18%

of all users were female.



STRAVA | METRO HEAT MAP SERIES

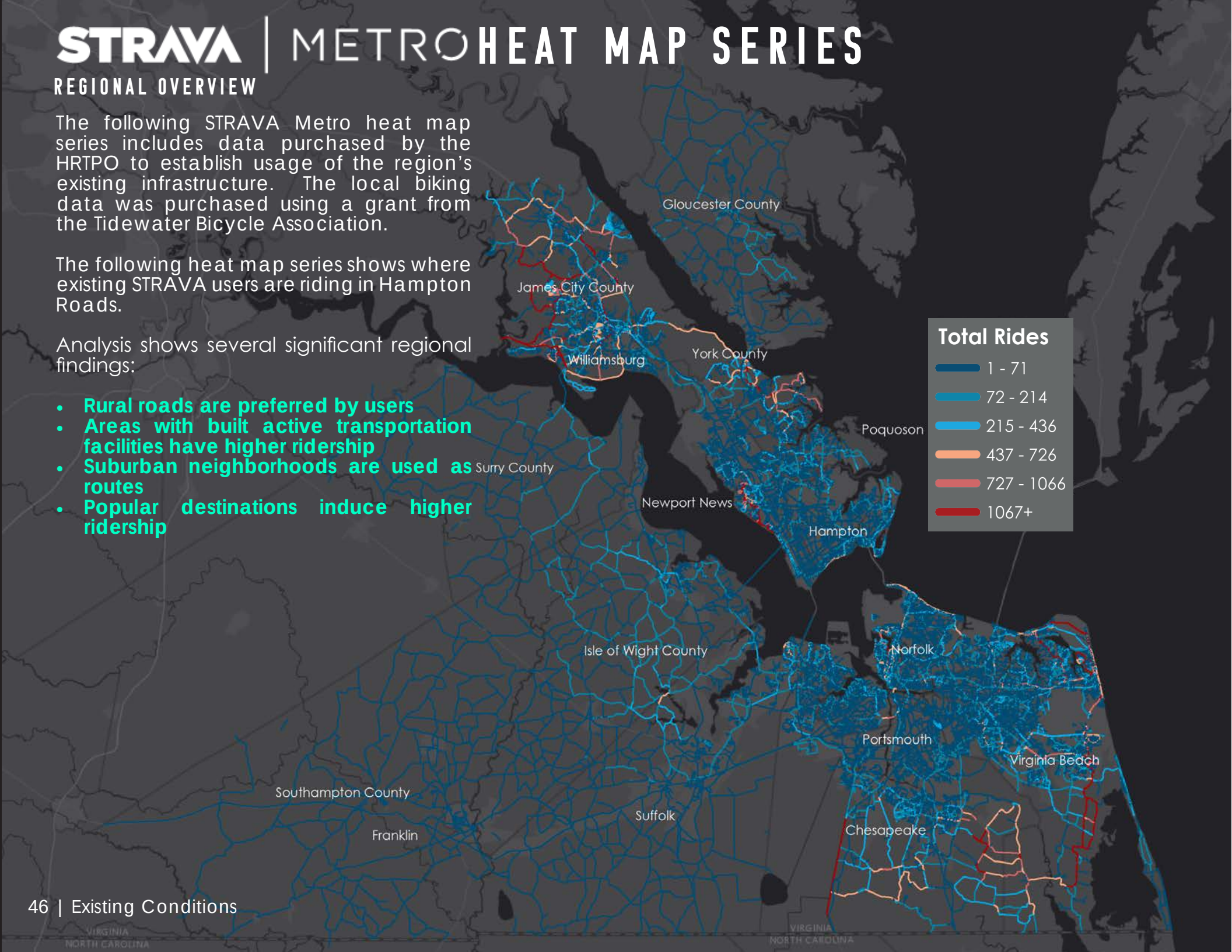
REGIONAL OVERVIEW

The following STRAVA Metro heat map series includes data purchased by the HRTPO to establish usage of the region's existing infrastructure. The local biking data was purchased using a grant from the Tidewater Bicycle Association.

The following heat map series shows where existing STRAVA users are riding in Hampton Roads.

Analysis shows several significant regional findings:

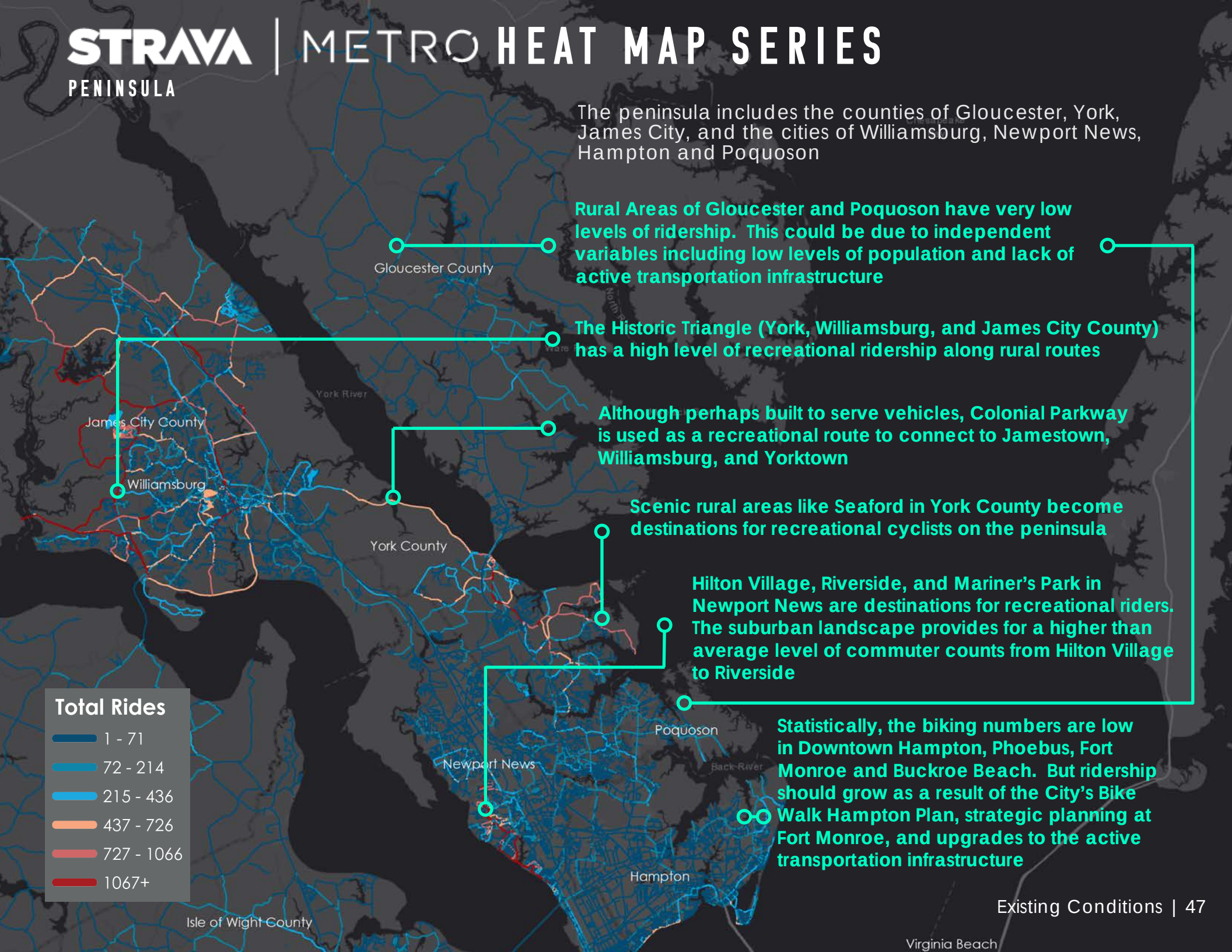
- **Rural roads are preferred by users**
- **Areas with built active transportation facilities have higher ridership**
- **Suburban neighborhoods are used as routes**
- **Popular destinations induce higher ridership**



STRAVA | METRO HEAT MAP SERIES

PENINSULA

The peninsula includes the counties of Gloucester, York, James City, and the cities of Williamsburg, Newport News, Hampton and Poquoson



Rural Areas of Gloucester and Poquoson have very low levels of ridership. This could be due to independent variables including low levels of population and lack of active transportation infrastructure

The Historic Triangle (York, Williamsburg, and James City County) has a high level of recreational ridership along rural routes

Although perhaps built to serve vehicles, Colonial Parkway is used as a recreational route to connect to Jamestown, Williamsburg, and Yorktown

Scenic rural areas like Seaford in York County become destinations for recreational cyclists on the peninsula

Hilton Village, Riverside, and Mariner's Park in Newport News are destinations for recreational riders. The suburban landscape provides for a higher than average level of commuter counts from Hilton Village to Riverside

Statistically, the biking numbers are low in Downtown Hampton, Phoebus, Fort Monroe and Buckroe Beach. But ridership should grow as a result of the City's Bike Walk Hampton Plan, strategic planning at Fort Monroe, and upgrades to the active transportation infrastructure

STRAVA | METRO HEAT MAP SERIES

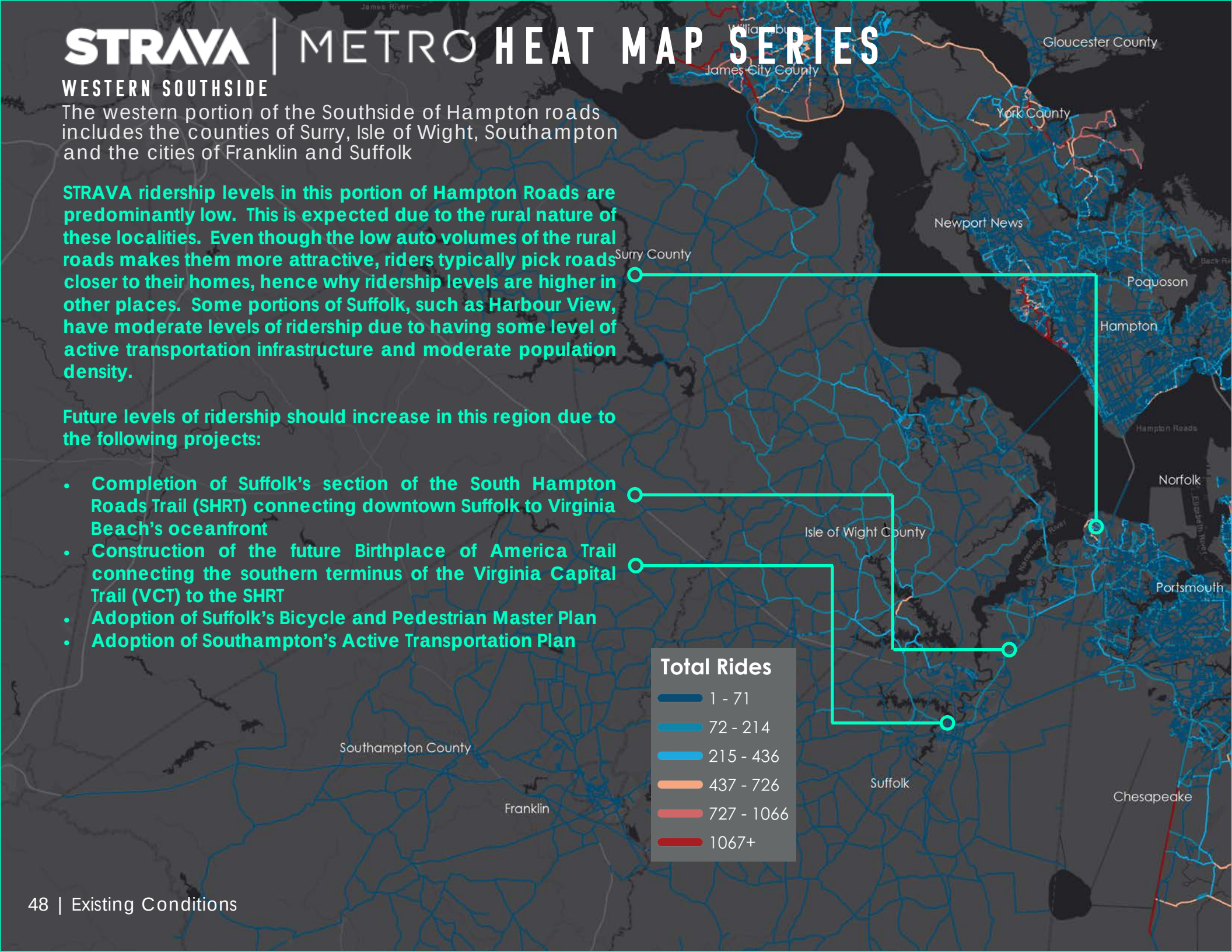
WESTERN SOUTHSIDE

The western portion of the Southside of Hampton roads includes the counties of Surry, Isle of Wight, Southampton and the cities of Franklin and Suffolk

STRAVA ridership levels in this portion of Hampton Roads are predominantly low. This is expected due to the rural nature of these localities. Even though the low auto volumes of the rural roads makes them more attractive, riders typically pick roads closer to their homes, hence why ridership levels are higher in other places. Some portions of Suffolk, such as Harbour View, have moderate levels of ridership due to having some level of active transportation infrastructure and moderate population density.

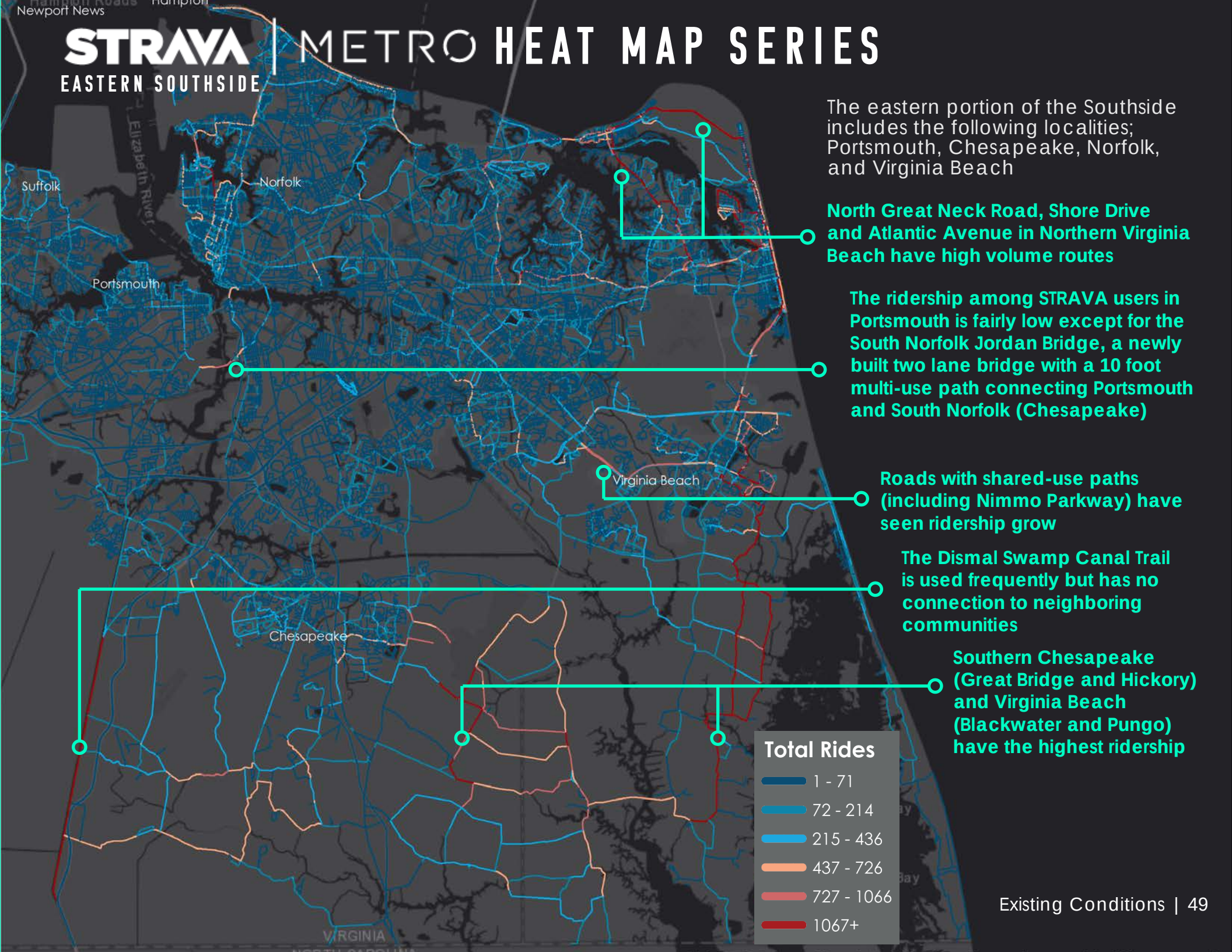
Future levels of ridership should increase in this region due to the following projects:

- **Completion of Suffolk's section of the South Hampton Roads Trail (SHRT) connecting downtown Suffolk to Virginia Beach's oceanfront**
- **Construction of the future Birthplace of America Trail connecting the southern terminus of the Virginia Capital Trail (VCT) to the SHRT**
- **Adoption of Suffolk's Bicycle and Pedestrian Master Plan**
- **Adoption of Southampton's Active Transportation Plan**



STRAVA | METRO HEAT MAP SERIES

EASTERN SOUTHSIDE



The eastern portion of the Southside includes the following localities; Portsmouth, Chesapeake, Norfolk, and Virginia Beach

North Great Neck Road, Shore Drive and Atlantic Avenue in Northern Virginia Beach have high volume routes

The ridership among STRAVA users in Portsmouth is fairly low except for the South Norfolk Jordan Bridge, a newly built two lane bridge with a 10 foot multi-use path connecting Portsmouth and South Norfolk (Chesapeake)

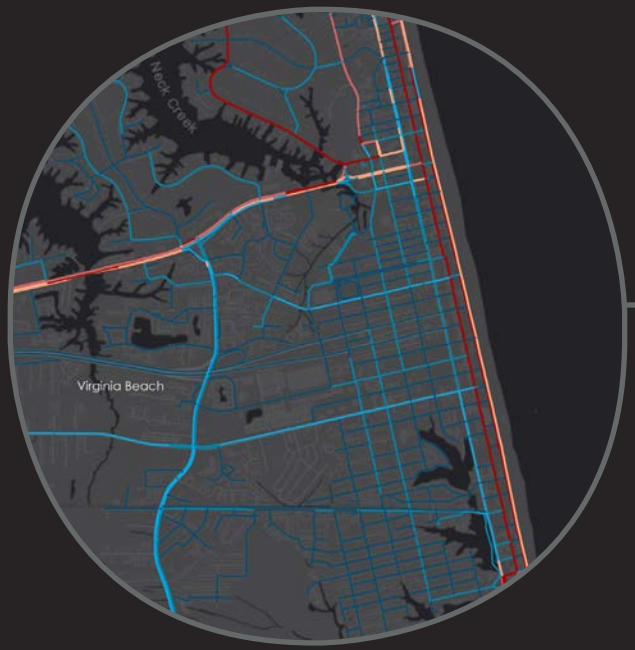
Roads with shared-use paths (including Nimmo Parkway) have seen ridership grow

The Dismal Swamp Canal Trail is used frequently but has no connection to neighboring communities

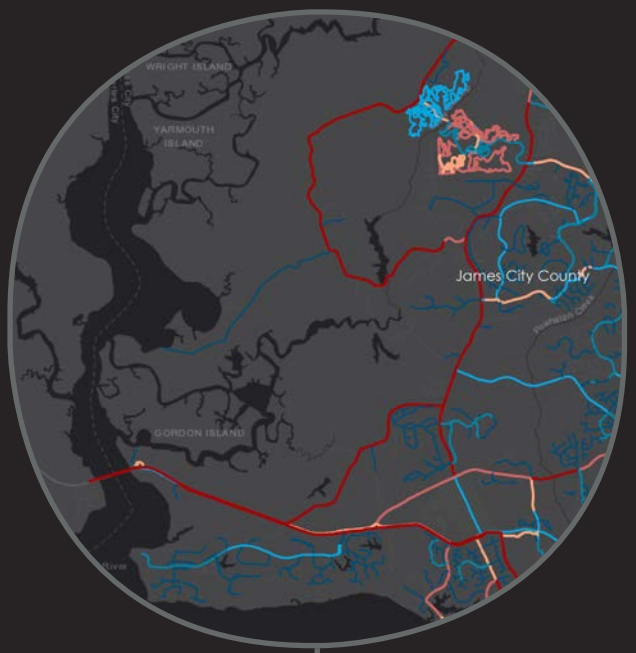
Southern Chesapeake (Great Bridge and Hickory) and Virginia Beach (Blackwater and Pungo) have the highest ridership

STRAVA | METRO HEAT MAP SERIES

MICRO ANALYSIS



Virginia Beach's Oceanfront has some of the highest ridership within the Hampton Roads data. The oceanfront is home to a 3 mile long concrete boardwalk that includes a shared use path and a bike lane. Zooming in on the oceanfront, one can see that ridership along Atlantic Avenue and the bike path along the boardwalk is very high. Most of Atlantic Avenue has sharrows marked within the trolley lanes. During the offseason, these lanes are mostly used by bicyclists and turning vehicles. During the peak season, riders compete with trolleys and vehicles on this high volume road. Ridership along Laskin Road is also high.

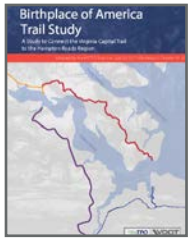


Downtown Norfolk data sends a much different message than that of Virginia Beach's oceanfront. Even though documenting ridership prior to the completion of the Norfolk Bike Loop, the 2016 The STRAVA Metro data shows significant ridership along Colley Ave and Llewellyn Ave. Due to the completion of Norfolk's pilot bike loop, the numbers are expected to grow along the loop, showing recreational cyclists and commuters from the neighboring communities near Colley Ave and Llewellyn Ave. Ridership is also expected to grow in the future with the completion of the Elizabeth River marketing and wayfinding programs.

The Historic Triangle's STRAVA data is very different than other areas. Ridership is high along rural routes, specifically Route 5 where the Virginia Capital Trail (VCT) has been completed. This is a wonderful example of a complete active transportation facility being used for recreation. There is also a reasonable level of ridership around the New Town shopping area near Monticello Avenue. Similarly, there is a heavy amount of ridership in Freedom Park in Williamsburg due to its mountain biking trails.

PREVIOUS LOCAL AND REGIONAL PLANS

Many existing plans for localities in the Hampton Roads region contain recommendations pertinent to active transportation. The findings and recommendations of these plans provide a starting point for the Linking Hampton Roads study. Recommendations from these plans are examined and then included or revamped as appropriate based on the best practices.



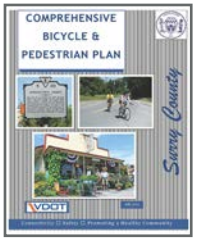
Birthplace of America Trail study
Managed by HRTPO and adopted on July 20, 2017 by the HRTPO Board.

Hampton Roads District Bicycle Plan
Produced by VDOT's Hampton Roads District office in 2003.

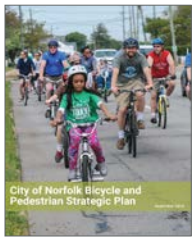
Route 5 Capital to Capital Bikeway Feasibility Study
Produced by consultant and prepared for VDOT in 1999.

Williamsburg, James City, and York Regional Bicycle Facilities Plan
Developed and adopted in 1993 and updated in 1997.

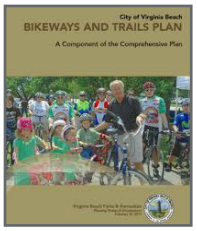
Bike Walk Hampton
Adopted by City Council in 2016.



Surry County's Comprehensive Bicycle and Pedestrian Plan
Produced by VDOT's Hampton Roads District office and adopted in 2016.

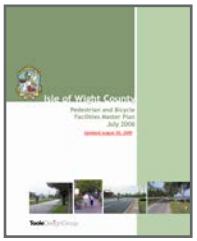


Norfolk Strategic Bike and Pedestrian Plan
Adopted in 2015.



Virginia Beach Bikeways and Trails Plan
Adopted by City Council in 2011.

Suffolk Bicycle and Pedestrian Master Plan
Adopted by City Council in 2017.



Isle of Wight's Pedestrian and Bicycle Facilities Master Plan
Adopted in 2006 and updated in 2009.

ENDNOTES

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CHAPTER THREE: NEEDS ASSESSMENT

OVERVIEW

Following Chapter Two, Chapter Three takes an in-depth look at the existing active transportation facilities across the region and establishes regional needs for connecting them. Not all of these facilities mapped out in this chapter meet the recommended facility types standards outlined in Chapter One due to existing physical constraints and pre-existing local and state guidelines. Recommendations in the following chapters will provide appropriate guidance and facilities for future development.

The Peninsula and Southside regions both include major eco-tourist destinations, military bases, and employment centers. On the Peninsula, the Historical Triangle boasts tourism, shopping, and major universities that provides an active region for biking and walking. The Historic Triangle also boasts the terminus for both the Virginia Capital Trail and the future Birthplace of America Trail.

Downtown Hampton, Phoebus, and Fort Monroe also give the Peninsula attractive destinations in which to live, work and play. With its 2016 adopted Bike Walk Hampton Plan, the city is working on expanding their network of active transportation facilities to include connecting the newly decommissioned Fort Monroe, which is now a new destination for living and recreation, to the rest of the city. As we have learned in the previous chapter, both Newport News and Hampton boast key major employers, population centers, and tourist destinations.

The Southside's key destinations are dispersed throughout the region. In Norfolk, critical companies including port and defense-related industries, fuel our regional economy. The City also has been a leader in active transportation development in the region with its Elizabeth River Trail and bike loop which includes the regions only one-way and two-way protected cycle tracks. Regionally speaking, the City has been the historic center of commerce.

Virginia Beach has developed from a quaint beach town into the largest city in the Commonwealth of Virginia. Virginia Beach is also home to the most prominent tourist destination for the region and Virginia, the Atlantic Ocean. The Virginia Beach Oceanfront proudly owns a boardwalk and bike lanes with breathtaking views of the ocean. Employment and population centers also dot the city as critical destinations to connect via active transportation. Also, Portsmouth has many charming, historic neighborhoods including Olde Towne that are ideal for walking and biking.

Other key southside eco-tourist destinations include the Dismal Swamp, branches of the Elizabeth River, and the Nansemond River. In Chesapeake, the City has connected a decommissioned roadway and turned it into the Dismal Swamp Canal Trail. In Suffolk, the City has been turning former rail right-of-way into trails as part of the South Hampton Roads Trail.

The rural counties of Hampton Roads, Gloucester, Isle of Wight, and Surry, all promote active transportation as a critical part of their planning process and infrastructure.

CHAPTER CONTENTS

PENINSULA NEEDS ASSESSMENT

EXISTING ACTIVE TRANSPORTATION INFRASTRUCTURE

Overall, the Peninsula has a low amount of existing active transportation facilities, as displayed on the following maps series. Below are key findings that provide strengths and weaknesses that will be addressed in the next chapters:

- The Peninsula boasts the southern terminus of the Virginia Capital Trail in James City County.
- Cities such as Williamsburg and Hampton have been proactive in recent years with upgrades to facilities and applying for alternative transportation funds.
- The Historic Triangle encompasses several bike lanes but does not have the recommended level of separation for all users in their perspective context.
- The city of Hampton has multiple bike lanes throughout.
- Newport News has several main roads with shared-use paths.
- US Bicycle Route 76 follows the Virginia Capital Trail into Jamestown, continuing onto the Colonial Parkway, and terminates in York County. US bike routes are signed but do not contain exclusive facilities.

Pembroke Avenue, Hampton


2nd Street, Williamsburg

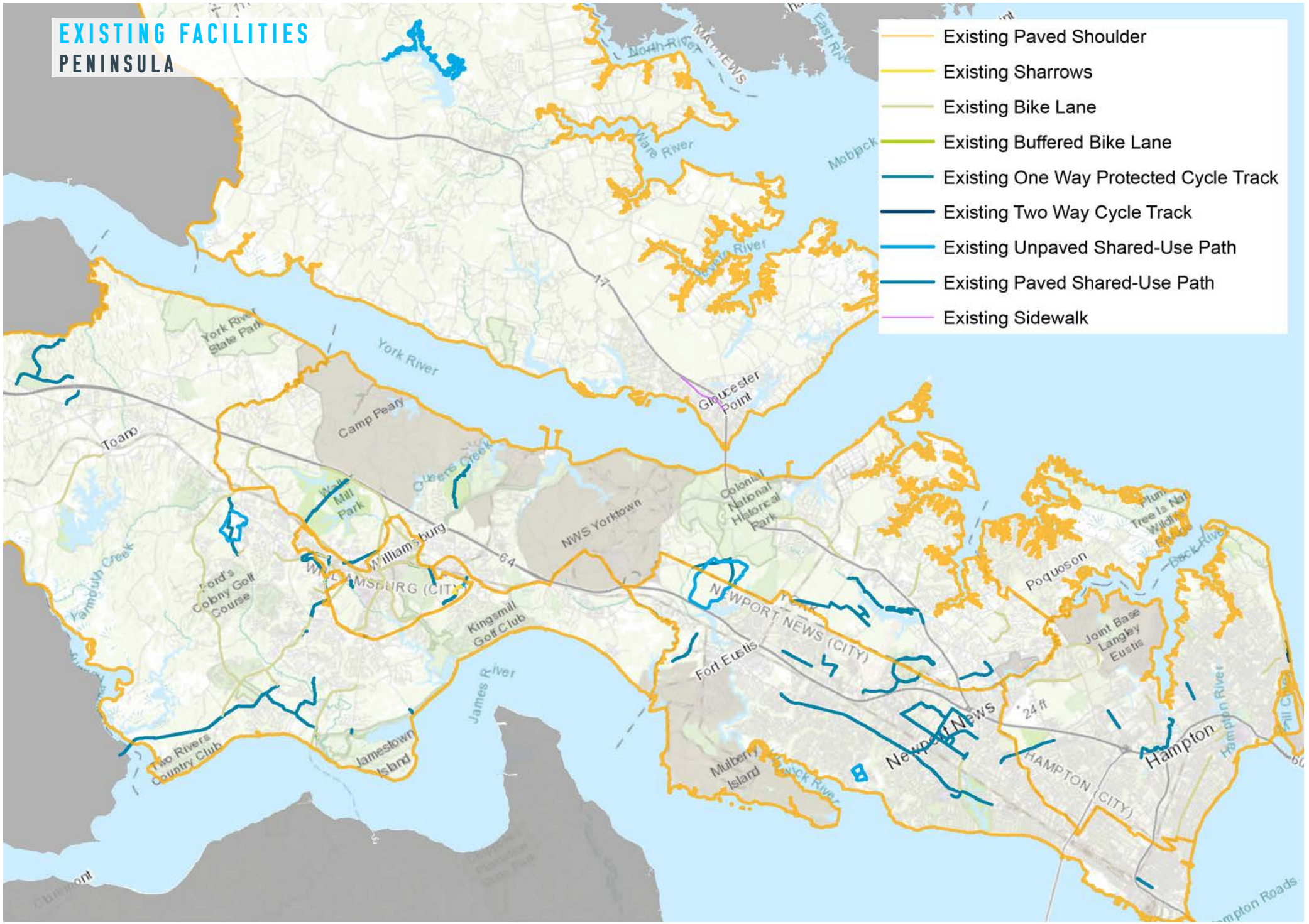
OPPORTUNITIES

The Peninsula is comprised of mostly suburban lands with several urban areas. Despite the lack of active transportation facilities, there are many opportunities for the future:

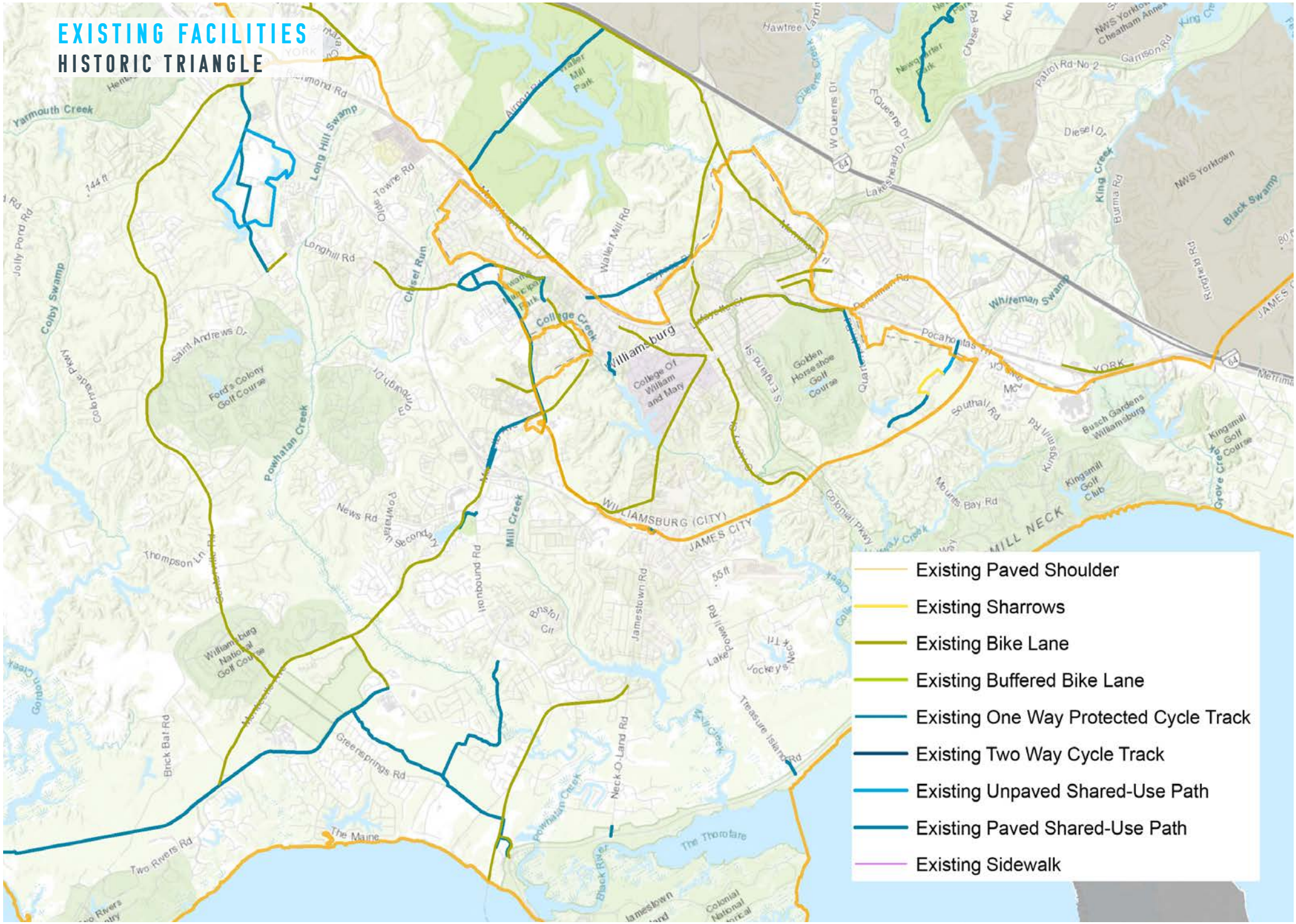
- The southern terminus of the Virginia Capital Trail ends in James City County providing nearby localities with connections to a regional trail system.
- The recently adopted *Bike/Walk Hampton* has provided the city with a detailed plan of action for future opportunities to grow the active transportation network.
- The *Birthplace of America Trail*'s adopted study could provide regional connections from the Virginia Capital Trail to Fort Monroe and the Southside and could be used as a regional spine for active transportation facilities linking other destinations, such as Werwocomoco, the new national park located in Gloucester County.
- Williamsburg and Hampton have both been proactive, applying for federal and state funding for active transportation facilities and amenities
- The localities that make up the Historic Triangle have a strong relationship with each other, providing key regional active transportation ideas.
- State, federal, and local public lands provide the Peninsula with key destinations to promote active transportation.

Pine Chapel Road Multi-use Path, Hampton

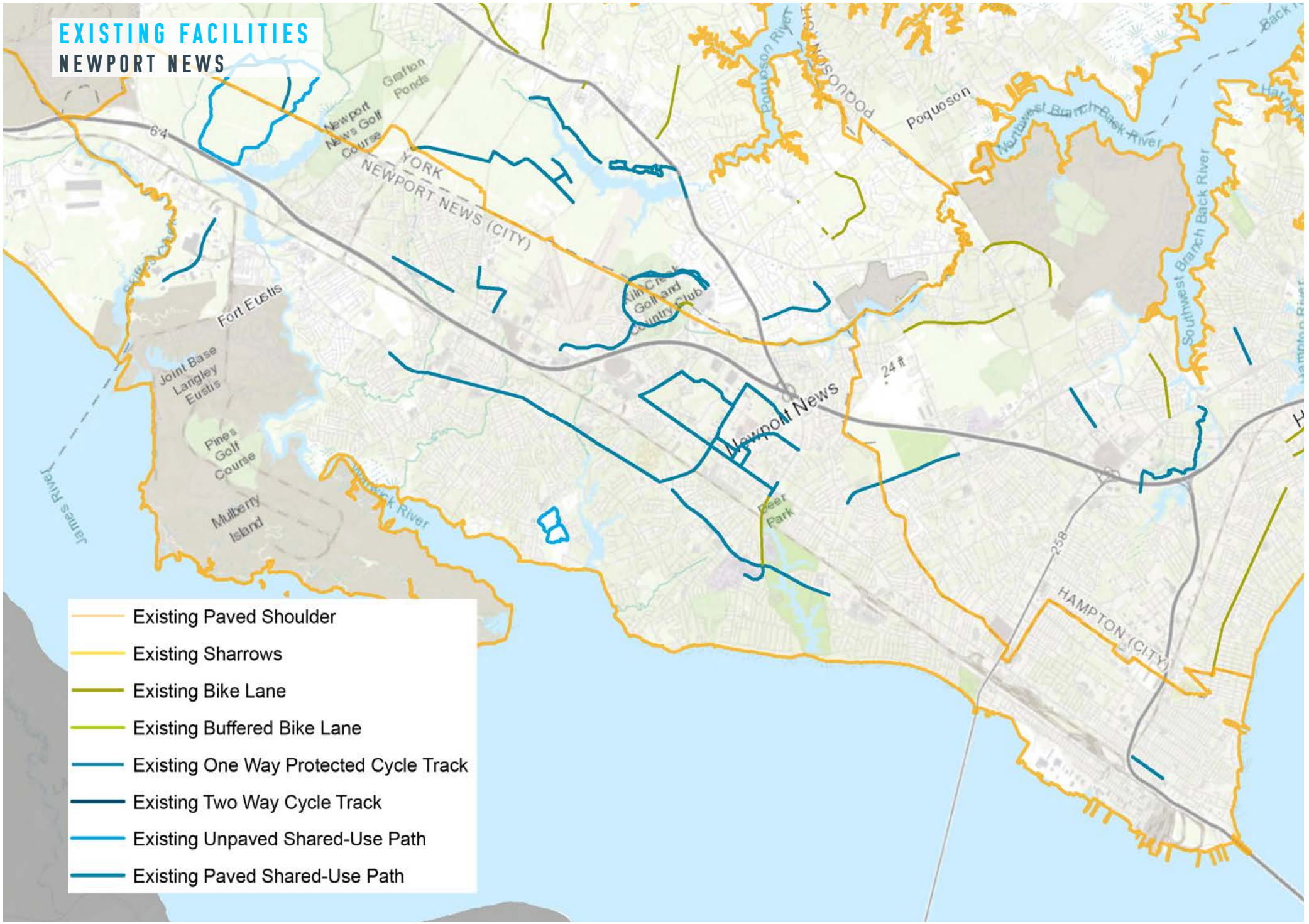
EXISTING FACILITIES
PENINSULA



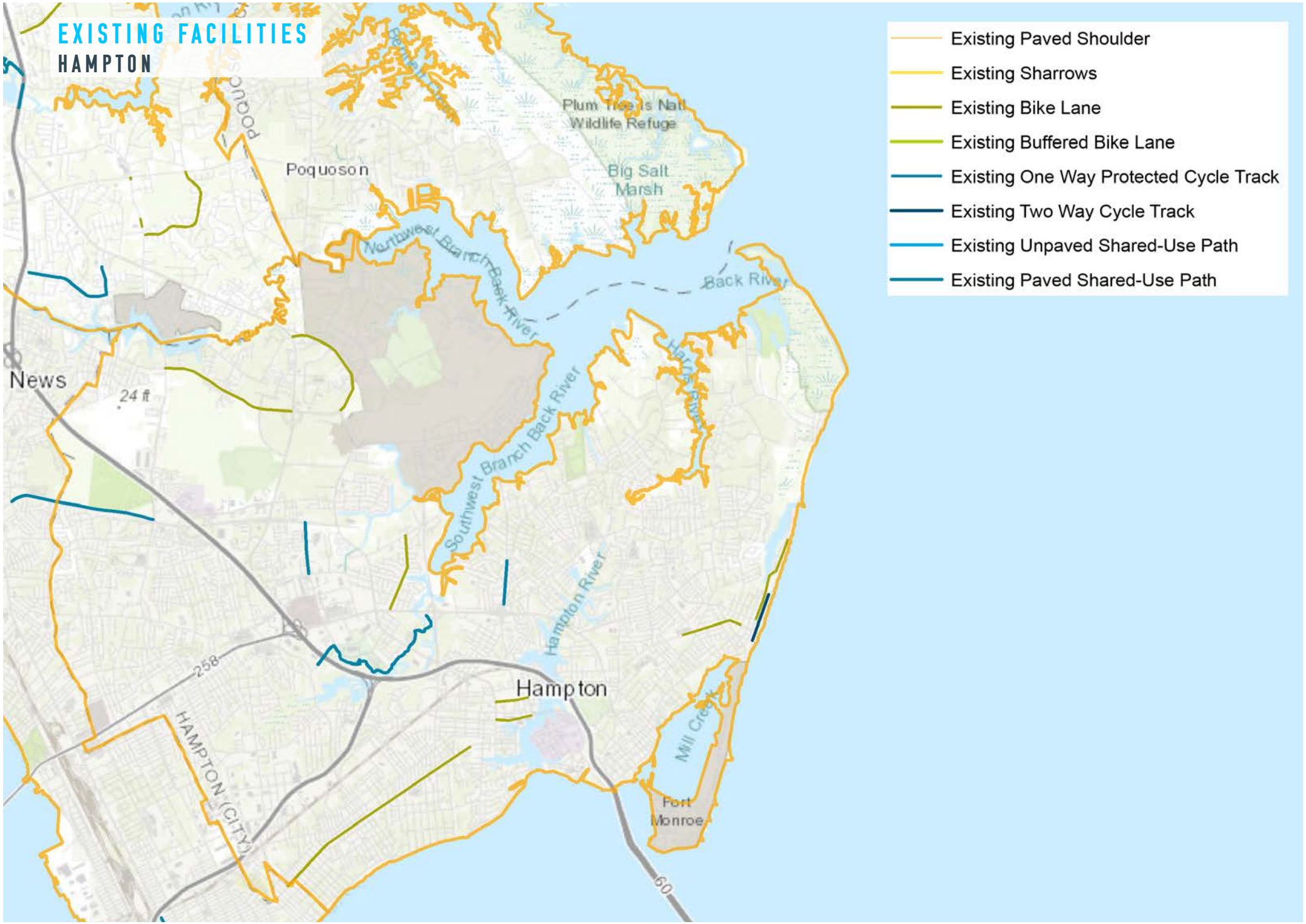
EXISTING FACILITIES
HISTORIC TRIANGLE



EXISTING FACILITIES
NEWPORT NEWS



EXISTING FACILITIES
HAMPTON



PENINSULA ASSESSMENT

BARRIERS

Key barriers to active transportation include:

Physical Barriers

- **Waterways:** Waterways are a barrier to all land transportation modes. Many of the roadway bridge crossing these waterways lack active transportation accommodations.

- **Linking Destinations:** There is a lack of connectivity between the existing active transportation facilities and destinations.

- **Automobile Design Oriented Roads:** Many roads were designed for the automobile and not for other alternative modes of transportation which include active transportation.

- **Land Use and Lack of Connectivity:** As mentioned in the previous chapter, the land uses on the Peninsula do not promote active transportation facilities. Most of the residential, shopping destinations and major employment centers are widely separated and spread throughout the Peninsula.

Active Transportation Facility Development Barriers

- **Bridge Lifespans:** The typical lifespan of bridges in Virginia is 75 years. Reconstruction and additions to accommodate active transportation facilities can be costly.

- **Environmental Features:** As discussed in the previous chapter, both the Peninsula and Southside have multiple environmentally sensitive areas. These range from micro-scale barriers such as ditches to macro-scale barriers such as vast wetlands.

- **Military Installations:** The Peninsula is home to multiple key Department of Defense installations including Yorktown Naval Weapons Station, Langley Air Force Base, and NASA Langley Research Center. These installations are barriers to their surrounding neighbors because of the security and protection of the government property.

- **Right-of-way:** Right-of-way acquisition can be a costly and challenging process.

- **Lack of Funding:** Historically, active transportation funding regionally and statewide has been minimal.

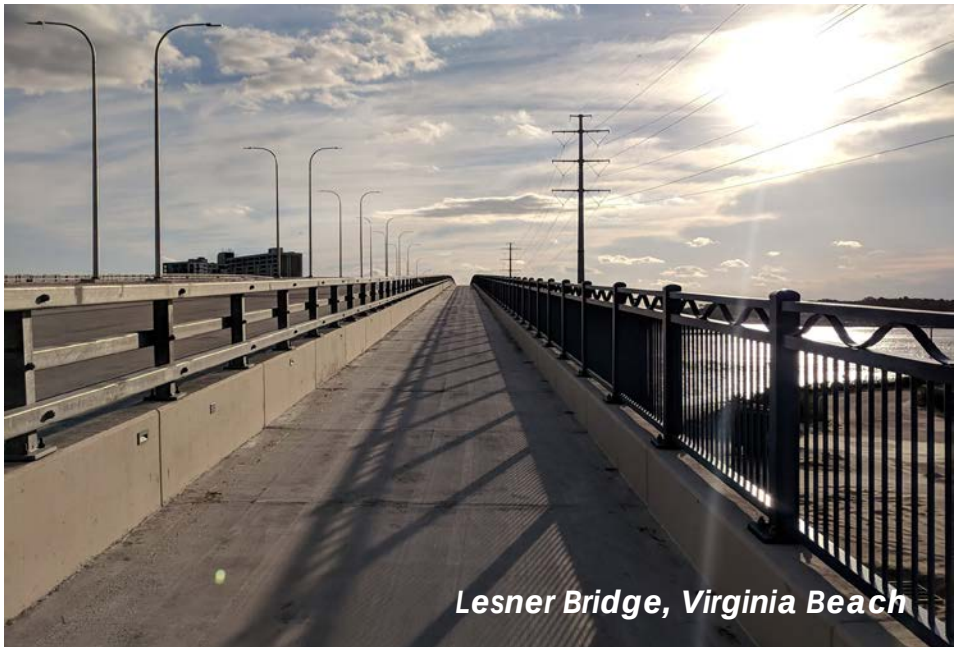
- **Range of Developments:** The extent of Active transportation facilities and amenities in developments depend on the developer, the city's existing plans and codes, and the critical priorities for amenities at the time.

Hampton Waterfront

EXISTING ACTIVE TRANSPORTATION INFRASTRUCTURE

The Southside of Hampton Roads has a moderate level of existing active transportation facilities, as displayed in the following map series. The key findings that provide strengths and weaknesses to be addressed in later chapters follow:

- The Counties of Isle of Wight and Surry and the City of Suffolk provide opportunities for future expansions of the South Hampton Roads Trail and the Birthplace of America Trail due to their rural nature.
- The City of Norfolk has been a leader in active transportation planning and development with the maturation of the Elizabeth River Trail, the pilot bike loop and multiple bike lanes popping up across the city.
- Southside Hampton Roads is home to the South Hampton Roads Trail connecting downtown Suffolk to the oceanfront with phases already built in Suffolk and funding in place in Portsmouth and Chesapeake.
- Chesapeake is home to the Dismal Swamp Canal Trail, a ten-mile-long shared use path.
- Virginia Beach's oceanfront boardwalk and bike lanes are among the most popular active transportation facilities in the country with the breathtaking view of the Atlantic Ocean and tons of stops for food, drinks, and shopping.



Lesner Bridge, Virginia Beach

W. 25th Street, Norfolk

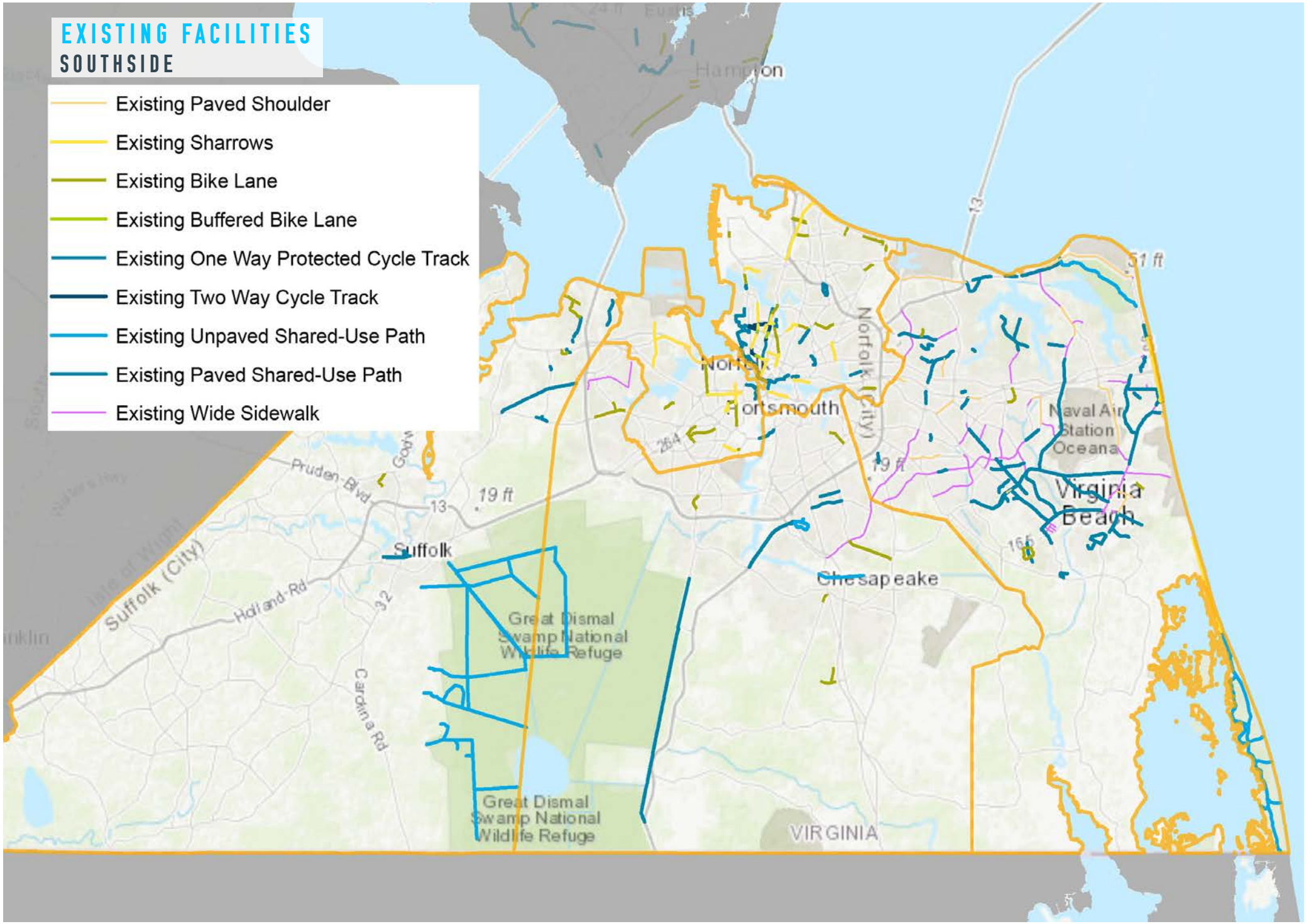
OPPORTUNITIES

From the rolling farmlands in the west to the highrises of Norfolk, there is much diversity in the landscape and quantity of active transportation facilities of the Southside of Hampton Roads. Here are significant opportunities for achieving a robust active transportation system in the future:

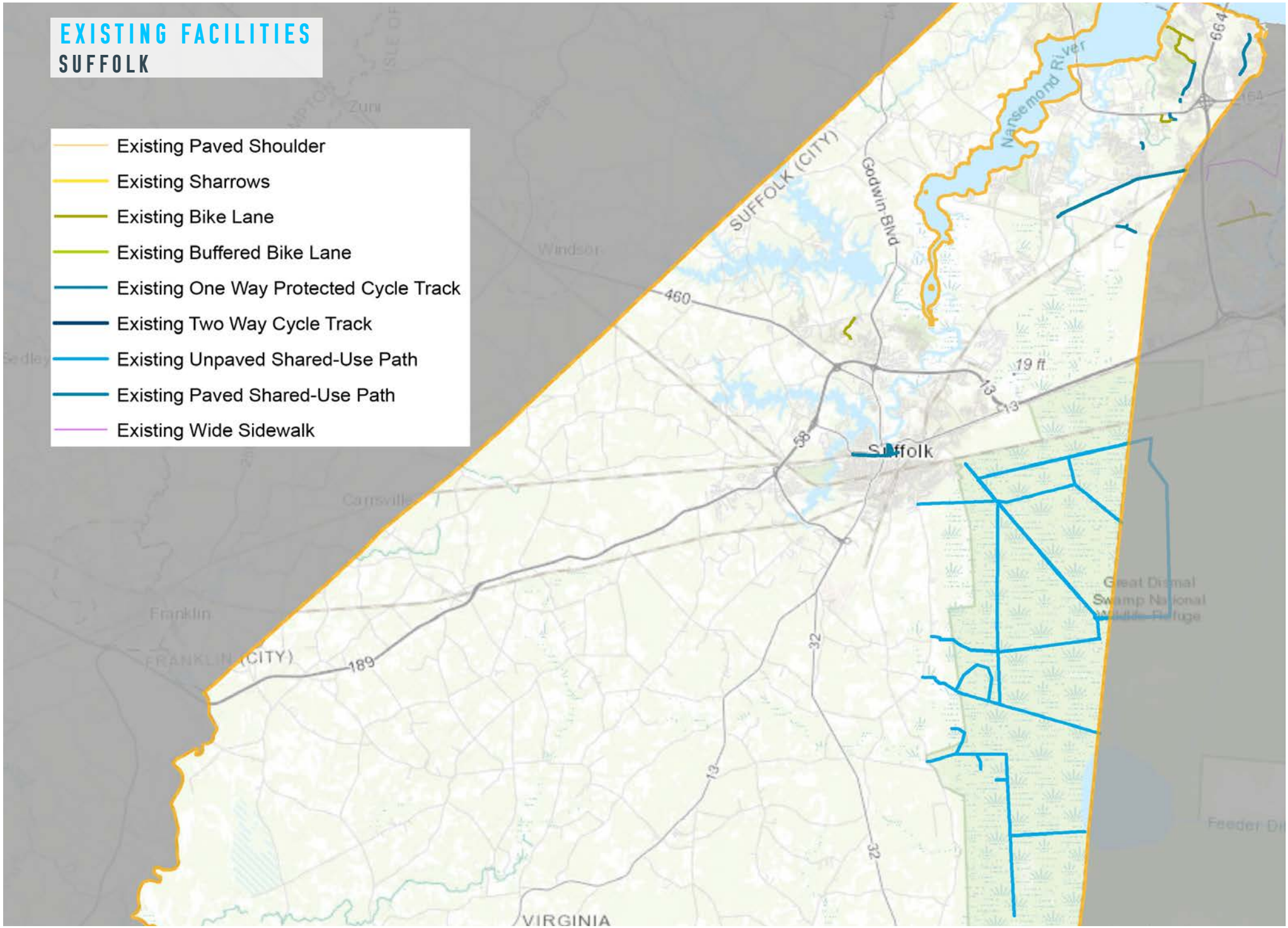
- The preferred route of the Birthplace of America Trail and the developing South Hampton Road Trail is a regional route connecting the Scotland Neck/Jamestown Ferry to the Virginia Beach Oceanfront.
- Norfolk, Suffolk, and Virginia Beach have all recently adopted active transportation-related plans providing the cities with guidelines for future development.
- The City of Norfolk has been progressive in developing and promoting active transportation facilities across the city.
- The Elizabeth River Trail and its foundation have recently received funding to support, develop and plan future development.
- Chesapeake, Portsmouth, and Suffolk have been proactively applying for federal and state funding for active transportation facilities along the South Hampton Road Trail route.
- Virginia Beach's oceanfront, bay beaches, and Norfolk's Ocean View provide key destinations for active transportation facilities.

Cape Henry Trail, Virginia Beach

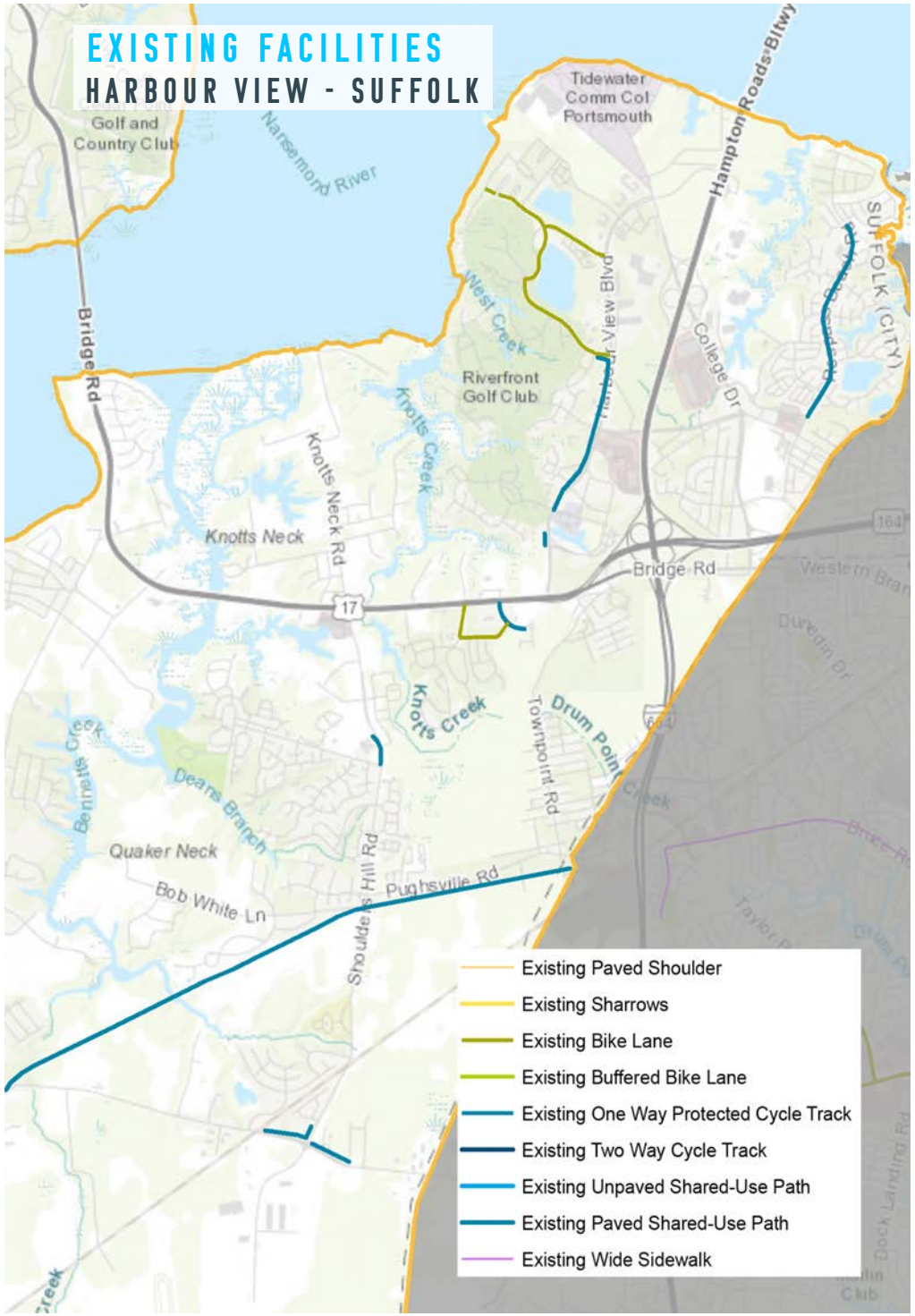
Seaboard Coastline Trail, Suffolk


EXISTING FACILITIES
SOUTHSIDE
Existing Paved Shoulder
Existing Sharrows
Existing Bike Lane
Existing Buffered Bike Lane
Existing One Way Protected Cycle Track
Existing Two Way Cycle Track
Existing Unpaved Shared-Use Path
Existing Paved Shared-Use Path
Existing Wide Sidewalk
Hampton
Norfolk
Portsmouth
Norfolk (City)
Naval Air Station Oceana
Virginia Beach
Chesapeake
Suffolk
Suffolk (City)
Pruden Blvd
Holland Rd
Cardinia Rd
Great Dismal Swamp National Wildlife Refuge
VIRGINIA
19 ft
51 ft
13
32
264

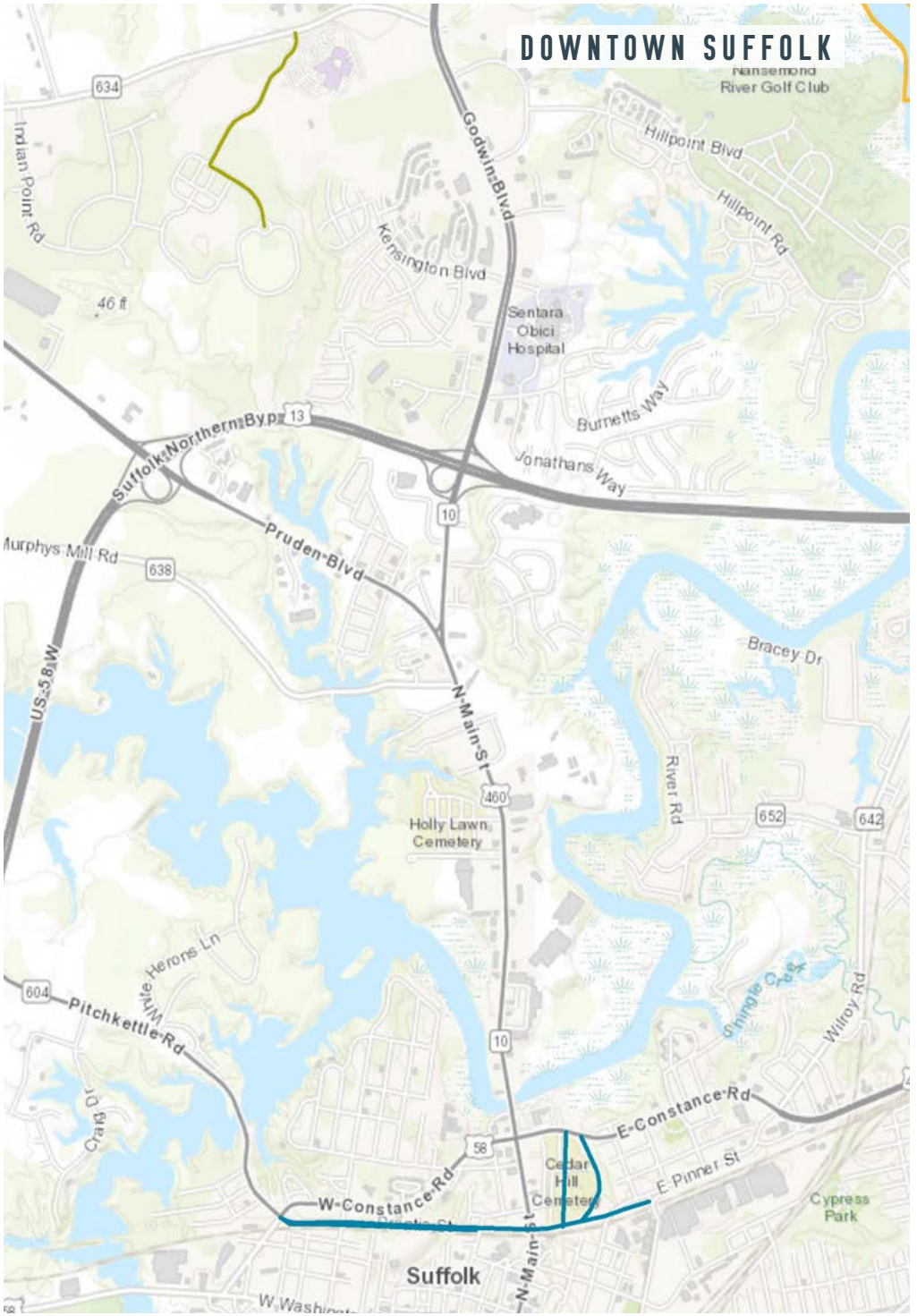
EXISTING FACILITIES
SUFFOLK



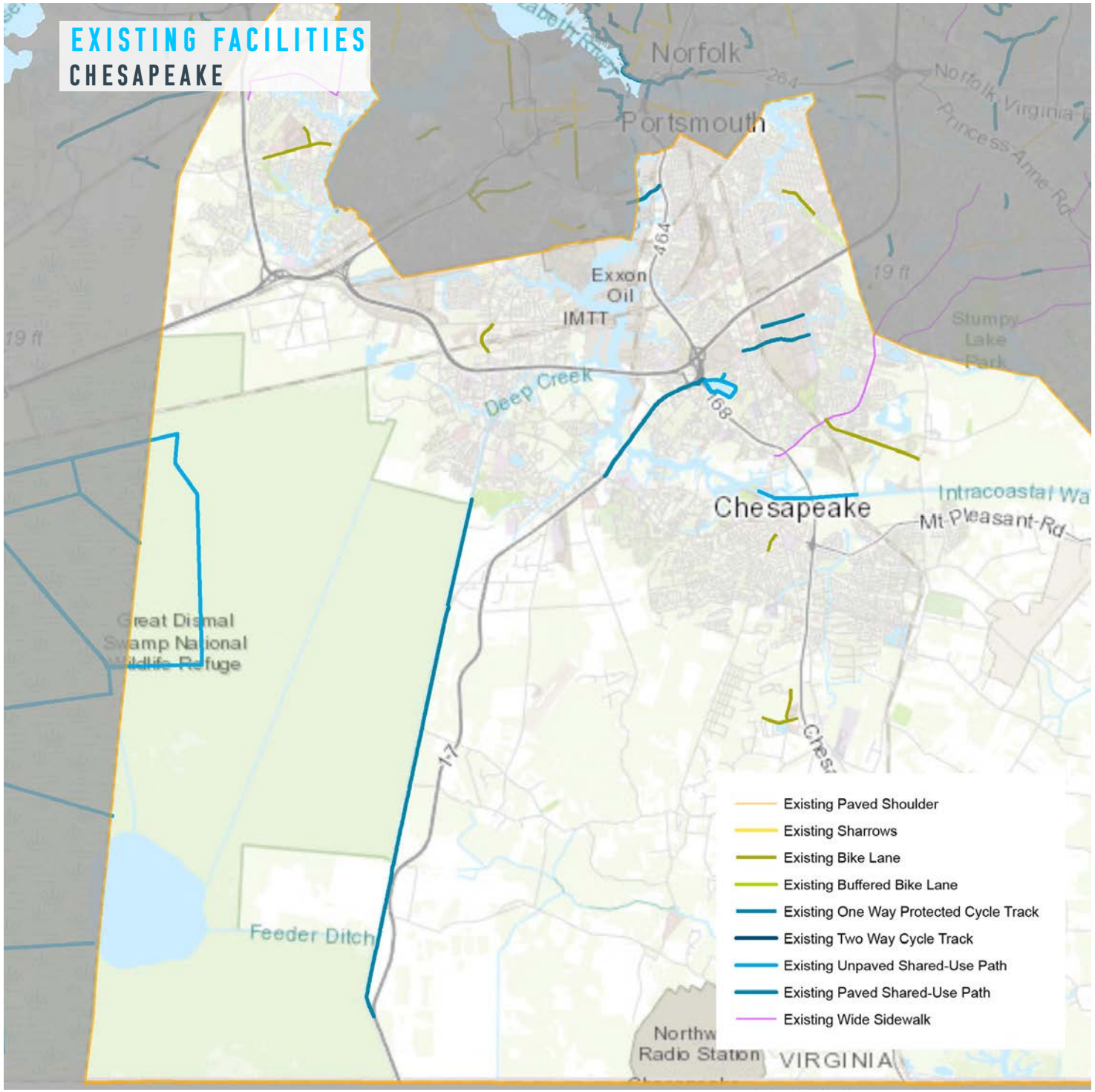
EXISTING FACILITIES
HARBOUR VIEW - SUFFOLK



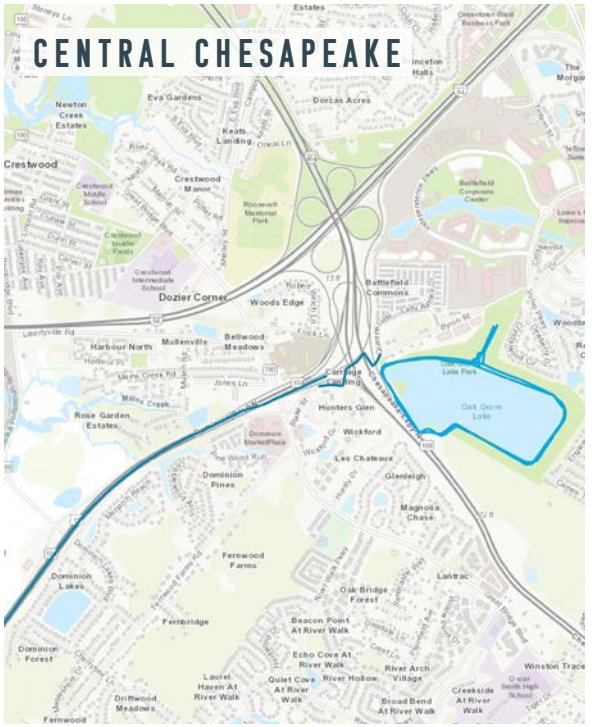
DOWNTOWN SUFFOLK



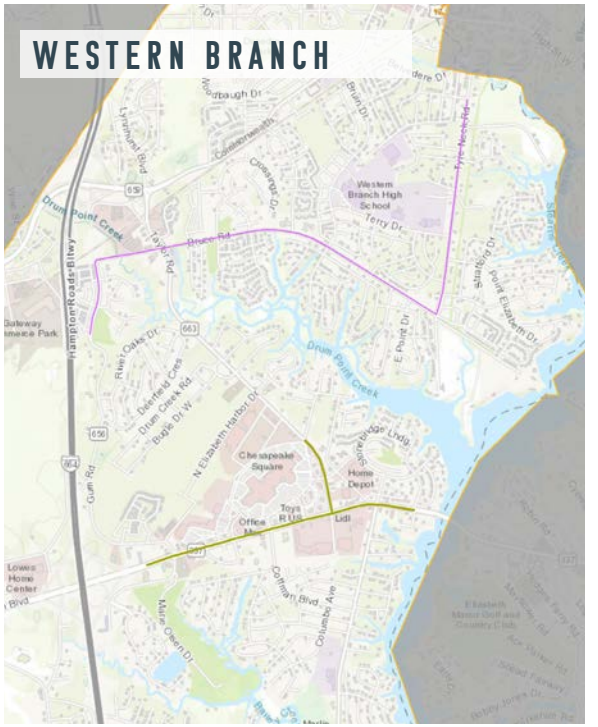
EXISTING FACILITIES
CHESAPEAKE



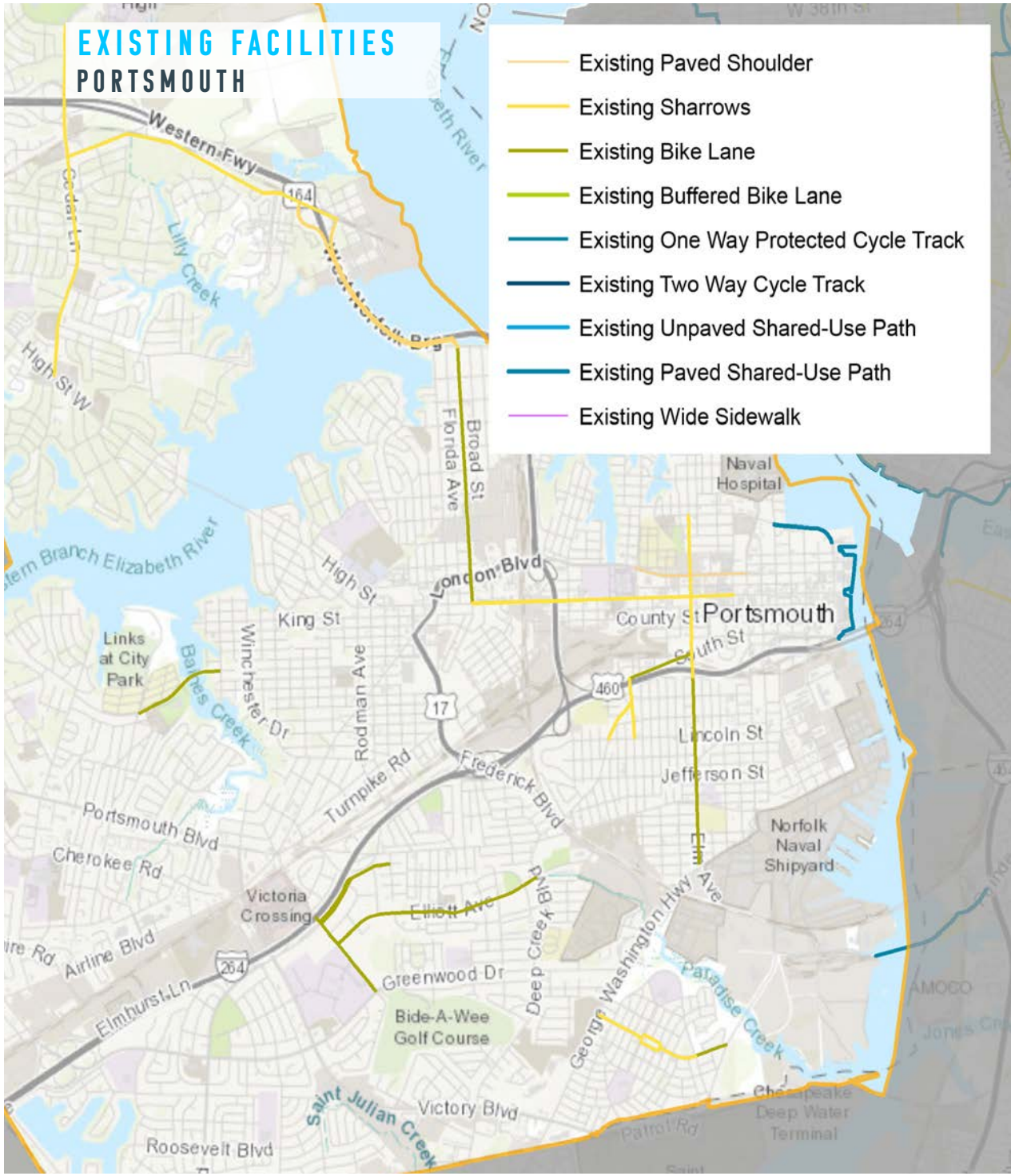
CENTRAL CHESAPEAKE



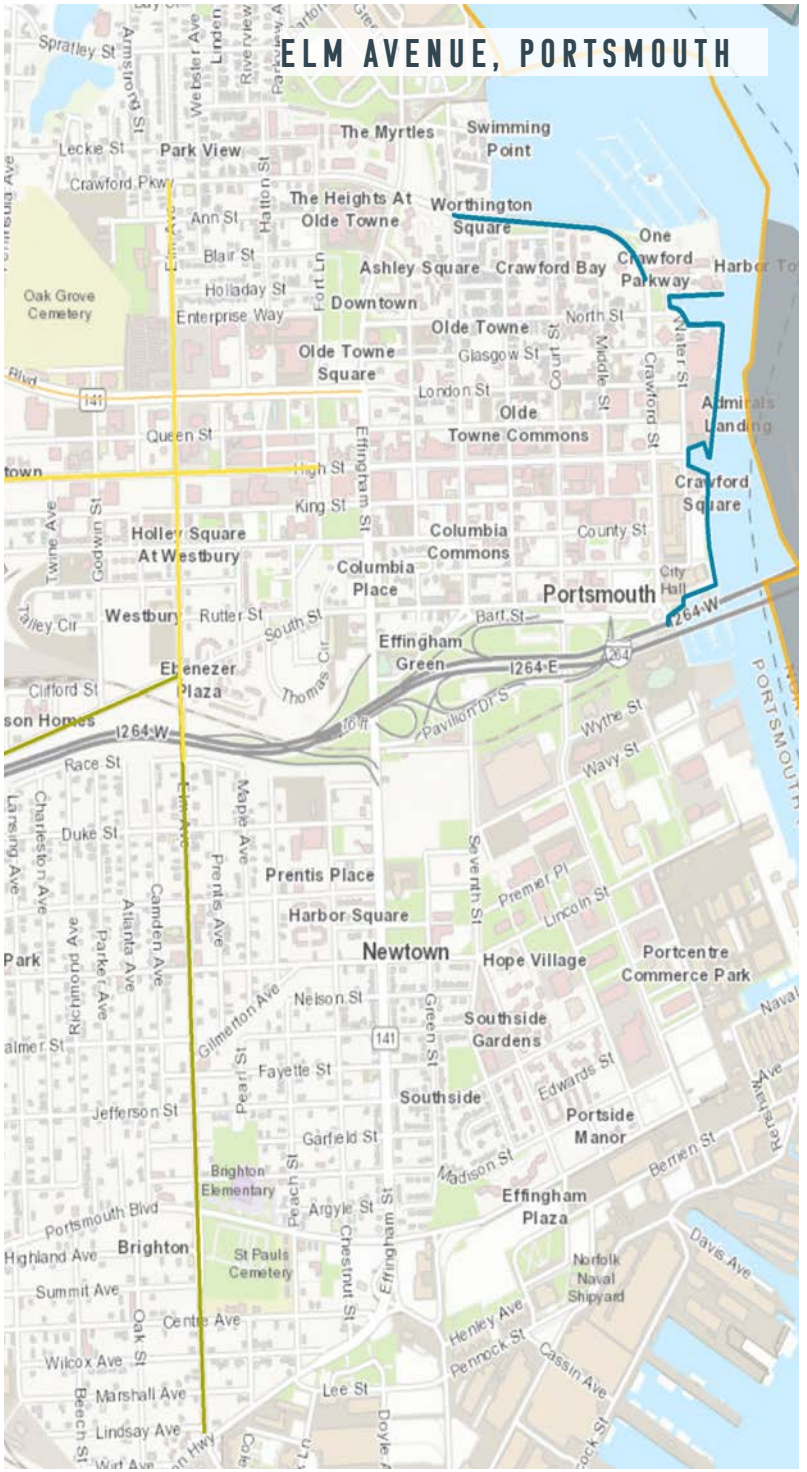
WESTERN BRANCH



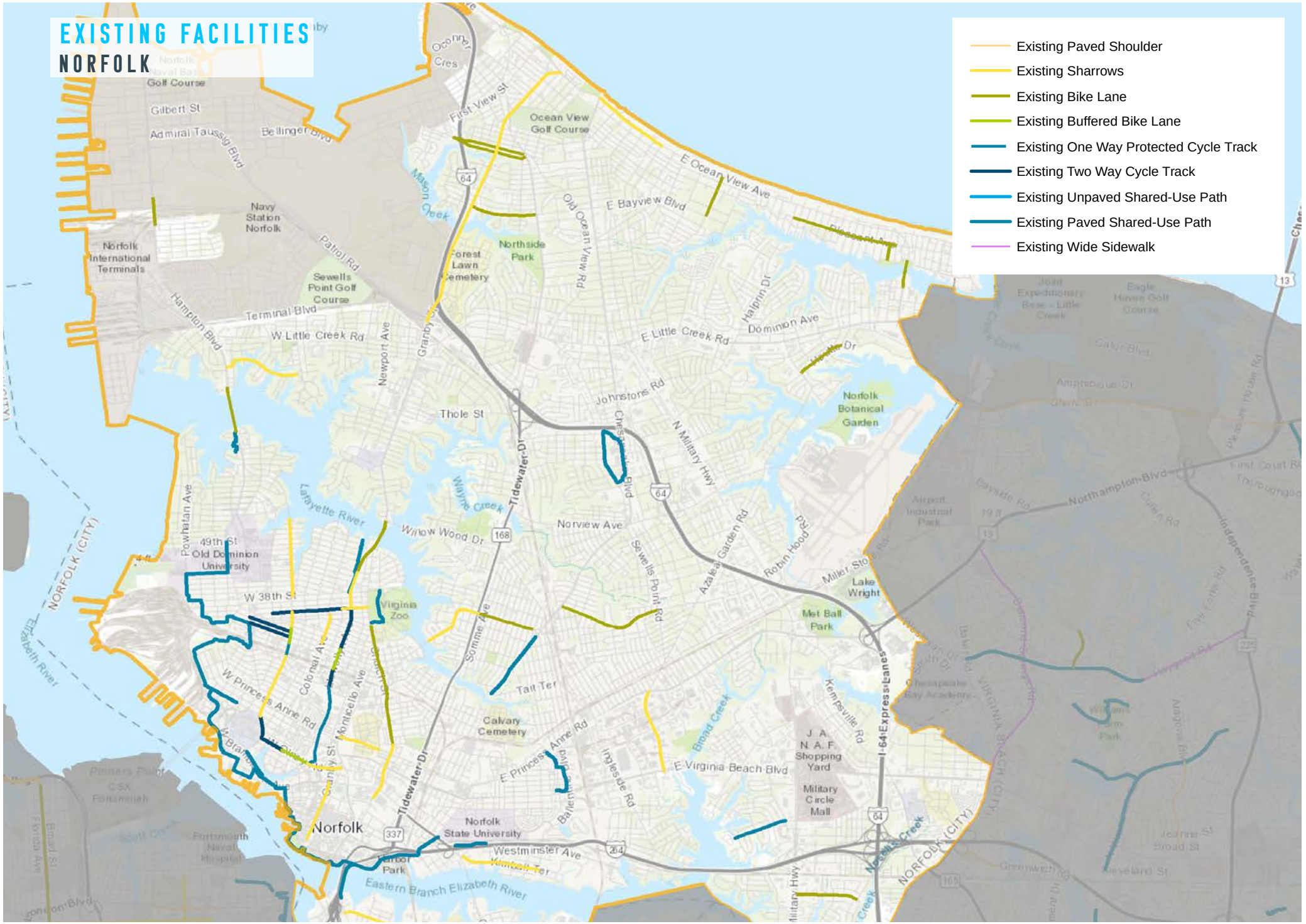
EXISTING FACILITIES
PORTSMOUTH

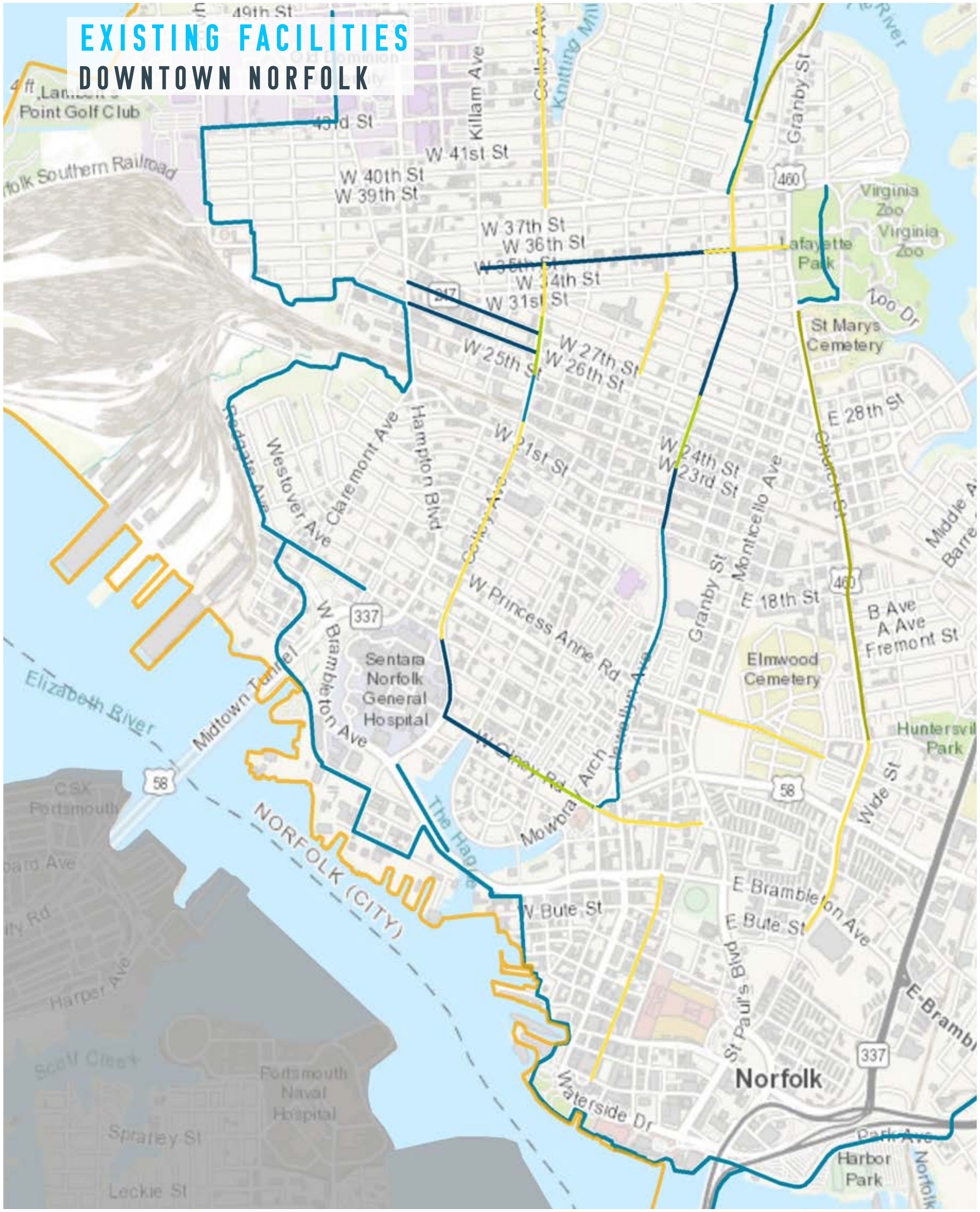


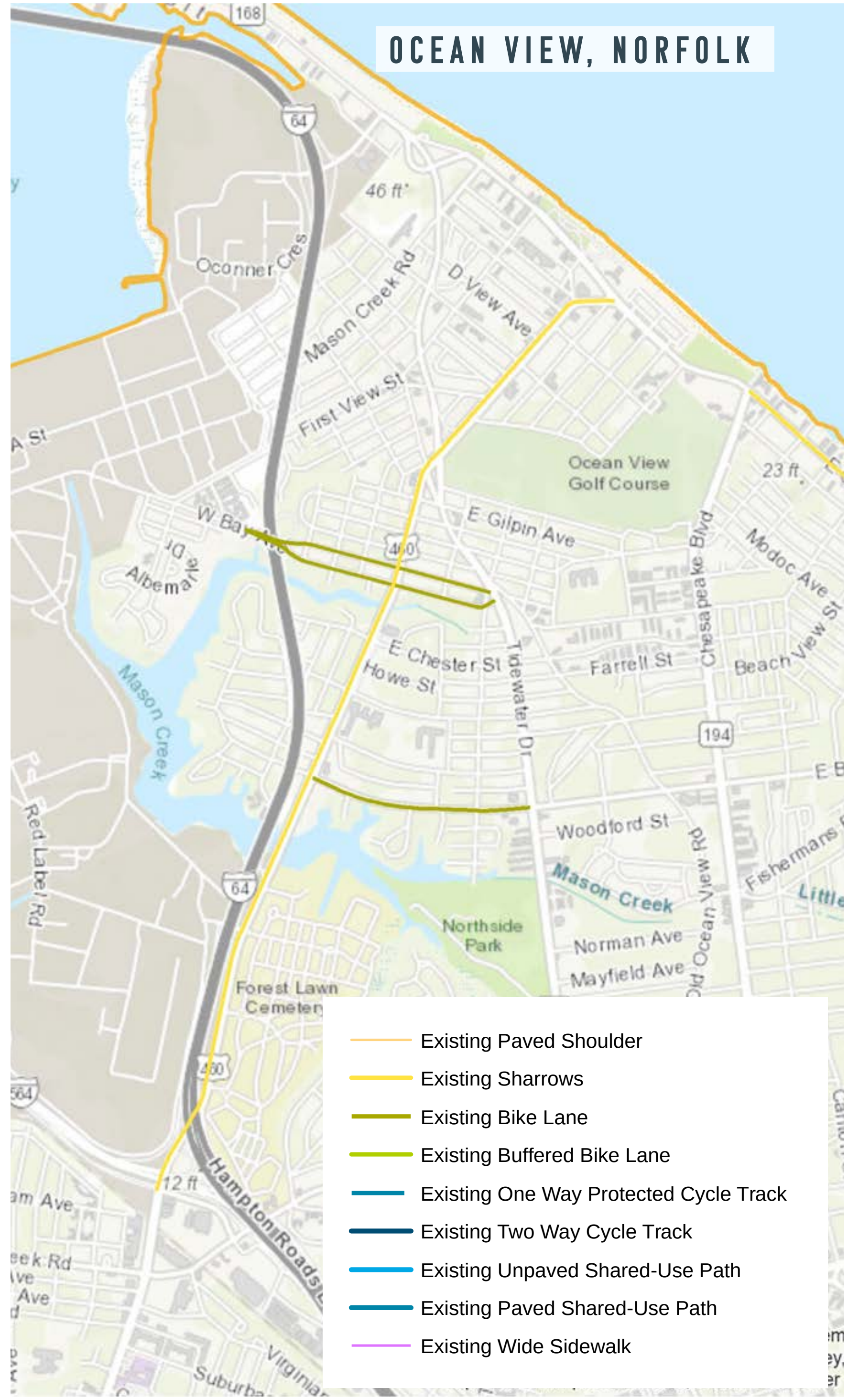
ELM AVENUE, PORTSMOUTH



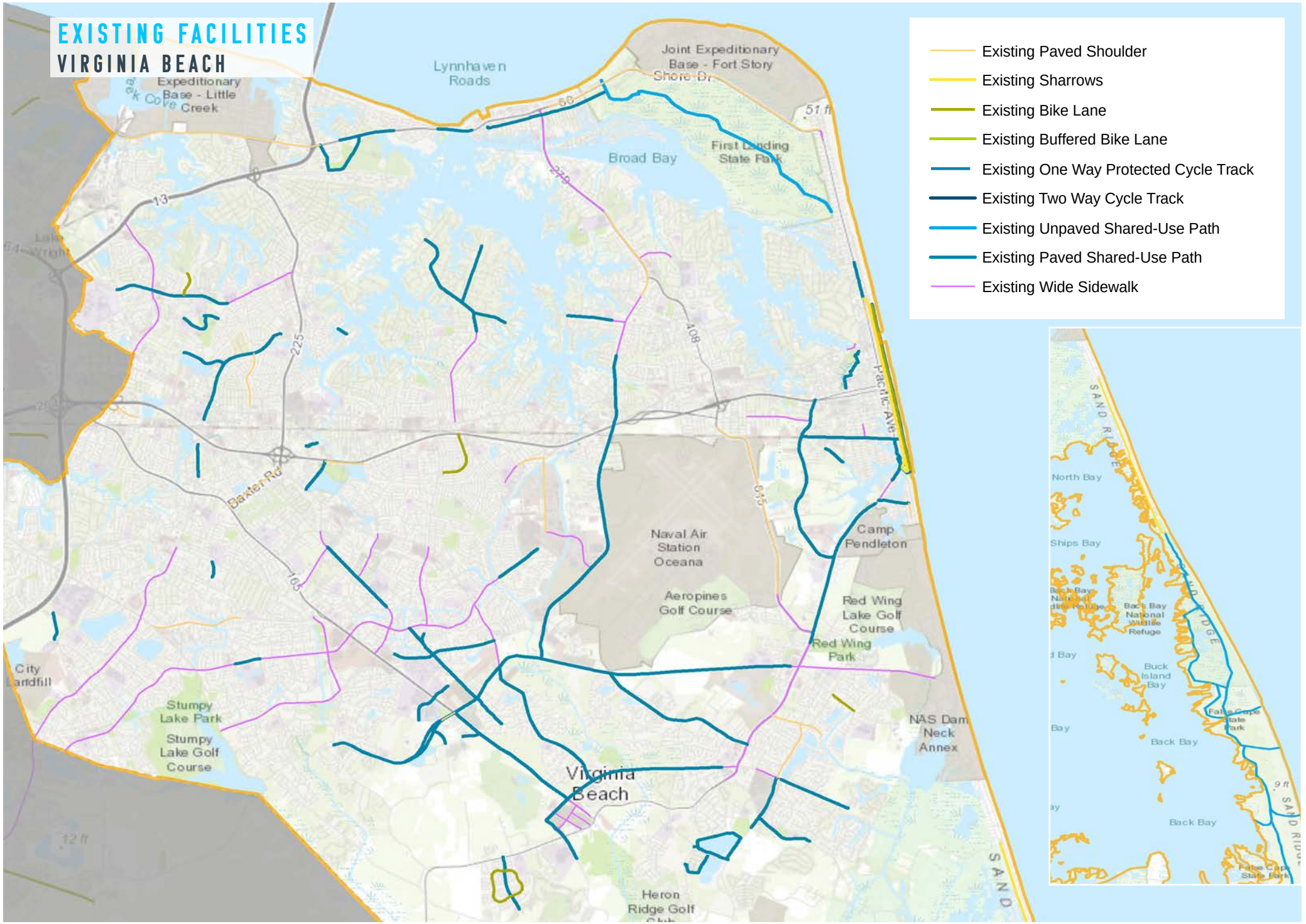
EXISTING FACILITIES
NORFOLK



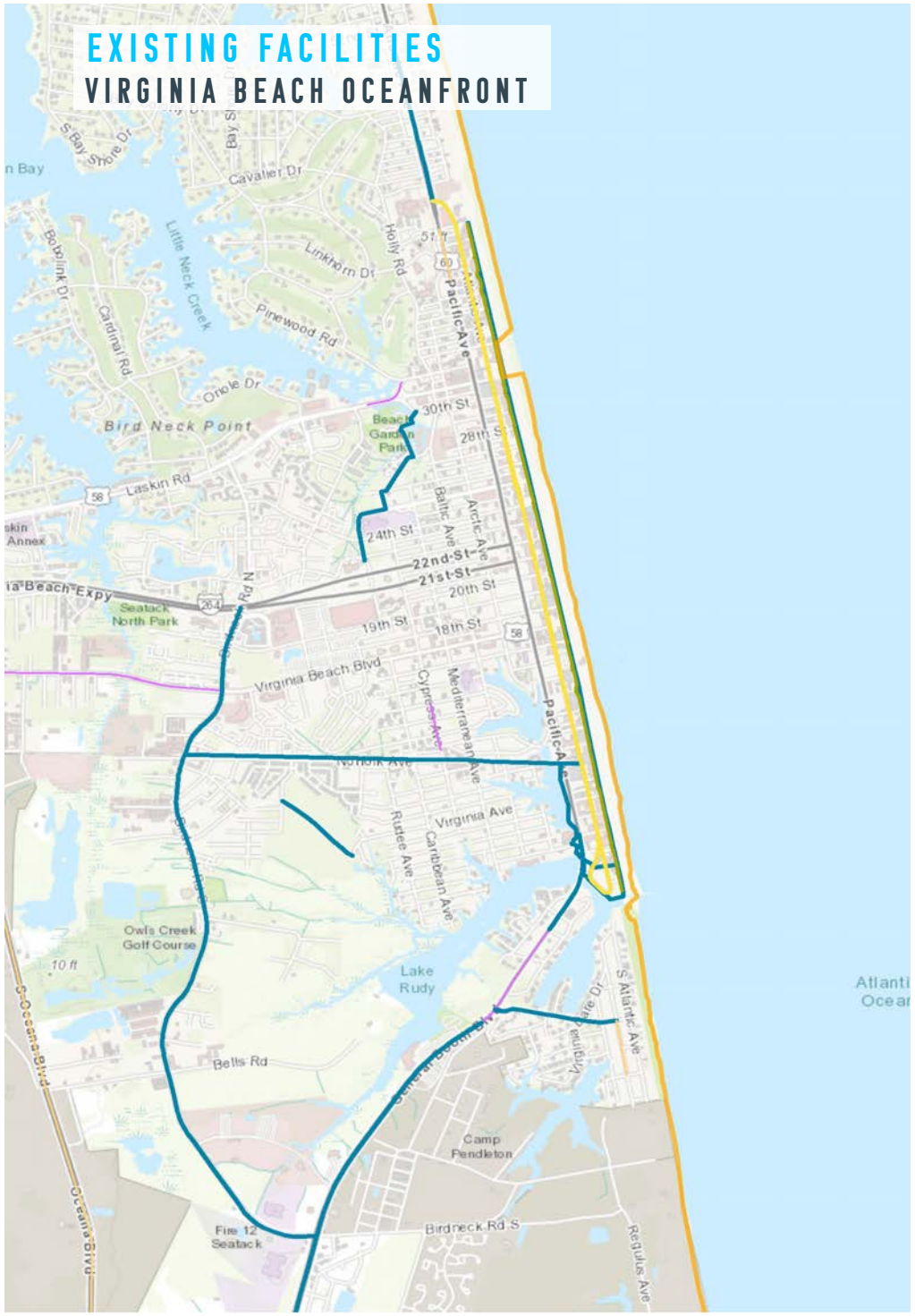

EXISTING FACILITIES
DOWNTOWN NORFOLK
Norfolk
Elizabeth River
Sentara Norfolk General Hospital
Elmwood Cemetery
St Marys Cemetery
Lafayette Park
Virginia Zoo
Harbor Park
Lamberts Point Golf Club
W Princess Anne Rd
Granby St
Waterside Dr
Midtown Tunnel
NORFOLK (CITY)


OCEAN VIEW, NORFOLK
Ocean View Golf Course
Mason Creek
Northside Park
Forest Lawn Cemetery
Hampton Roads
Tidewater Dr
Chesapeake Blvd
Existing Paved Shoulder
Existing Sharrows
Existing Bike Lane
Existing Buffered Bike Lane
Existing One Way Protected Cycle Track
Existing Two Way Cycle Track
Existing Unpaved Shared-Use Path
Existing Paved Shared-Use Path
Existing Wide Sidewalk

EXISTING FACILITIES
VIRGINIA BEACH



EXISTING FACILITIES
VIRGINIA BEACH OCEANFRONT

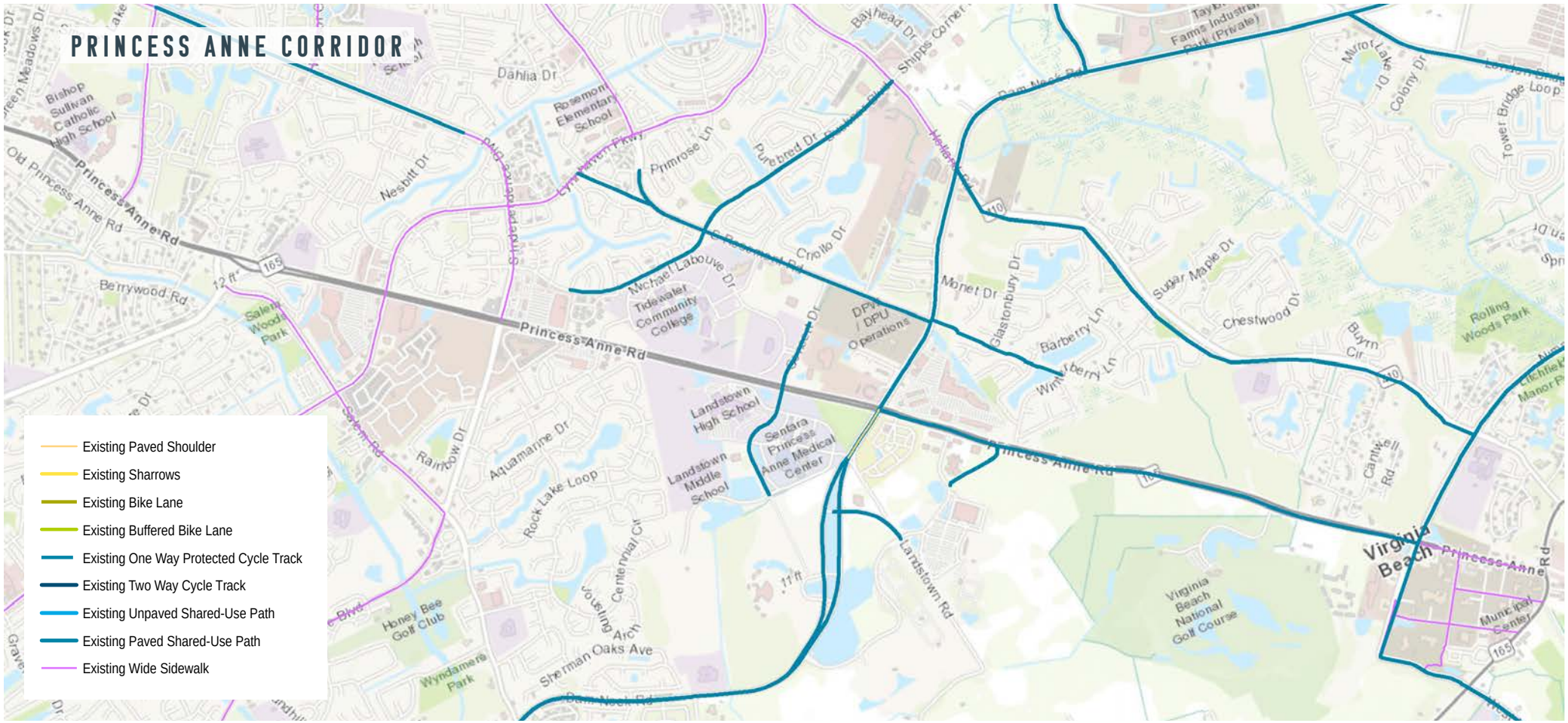


- Existing Paved Shoulder
- Existing Sharrows
- Existing Bike Lane
- Existing Buffered Bike Lane
- Existing One Way Protected Cycle Track
- Existing Two Way Cycle Track
- Existing Unpaved Shared-Use Path
- Existing Paved Shared-Use Path
- Existing Wide Sidewalk

OCEANFRONT BOARDWALK

EXISTING FACILITIES
SHORE DRIVE, VIRGINIA BEACH

PRINCESS ANNE CORRIDOR



SOUTHSIDE ASSESSMENT

BARRIERS

Key barriers to active transportation include:

Physical Barriers

- **Waterways:** Waterways are a barrier to all land transportation modes. Many of the roadway bridge crossing these waterways lack active transportation accommodations.

- **Automobile Design Oriented Roads:** Many roads were designed for the automobile and not for other alternative modes of transportation which include active transportation.

- **Linking Destinations:** There is a lack of connectivity between the existing active transportation facilities and destinations such as having to drive to use the Dismal Swamp Canal Trail.

- **Land Use and Lack of Connectivity:** As mentioned in the previous chapter, the land uses on the Southside do not promote active transportation facilities. Most of the residential, shopping destinations and major employment centers are widely separated and spread throughout the Southside.

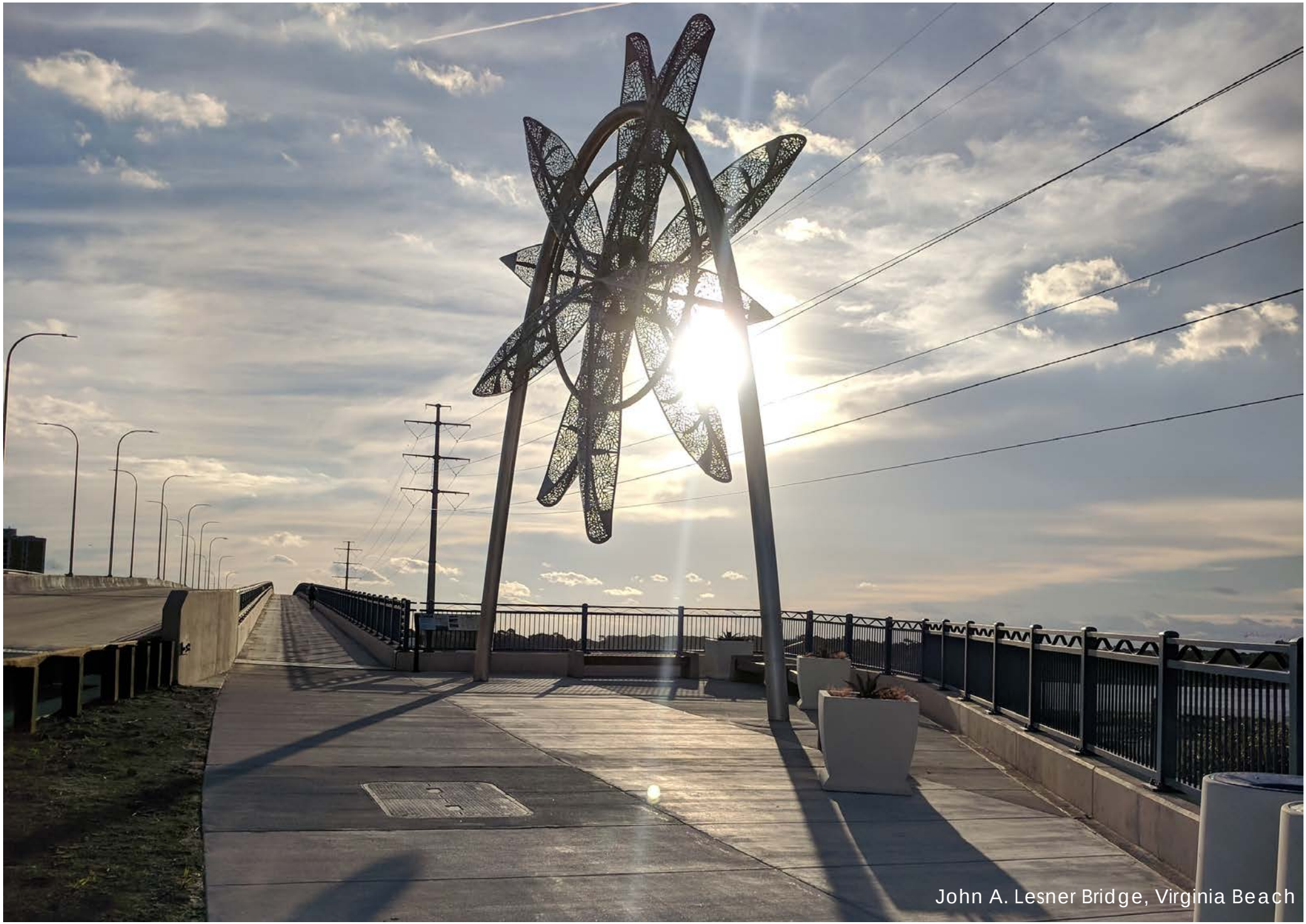
Active Transportation Facility Development Barriers

- **Bridge Lifespans:** The typical lifespan of bridges in Virginia is 75 years. Reconstruction and additions to accommodate active transportation facilities can be costly. Planning and development of active transportation facilities must be thought out long in advance.

- **Range of Developments:** The extent of Active transportation facilities and amenities in developments depend on the developer, the city's existing plans and codes, and the critical priorities for amenities at the time.

- **Environmental Features:** As discussed in the previous chapter, both the Peninsula and Southside have multiple environmentally sensitive areas. These range from micro-scale barriers such as ditches to macro-scale barriers such as vast wetlands.

- **Military Installations:** The Southside is home to multiple key Department of Defense installations. These installations are challenges to their surrounding neighbors because of the security and protection of the government property.



John A. Lesner Bridge, Virginia Beach

CHAPTER FOUR: INFRASTRUCTURE RECOMMENDATIONS

OVERVIEW

This plan's infrastructure recommendation chapter provides a complete network of proposed active transportation facilities for the Hampton Roads region that will link businesses, communities, neighborhoods, and schools. The network consists of existing and proposed facilities, such as bicycle boulevards, bicycle lanes, two-way cycle tracks, and shared-use paths. The proposed regional active transportation network will accommodate all users including people with access and functional needs, and all types of bicycle users (Figure 1).

METHODOLOGY

The proposed regional active transportation network was developed using multiple inputs:

Public online surveys
- Public events
- Active Transportation Subcommittee
- Field analysis from local government agencies
- Existing facilities
- Adopted plans

FACILITY TYPES

The facility types recommended for this plan accommodates all modes of active transportation and all users.

Note: Due to this plan having a regional perspective, sidewalk recommendations will be provided on a case-by-case basis from each locality and not be shown on the following maps. Sidewalks should be built if conditions allow when parallel to on-road facilities.

SHARROWS (SHARED-LANE)

Colley Avenue, Norfolk

- On-road markings designate roadway as shared by bicycles and vehicles
- Appropriate for streets with low-speed (≤25 mph) and low-volume traffic
- Can be used where limited road width cannot accommodate other bike facilities
- Preferred Placement: center of travel lane

CHAPTER CONTENTS

BICYCLE BOULEVARDS

Source: www.pedbikeimages.org

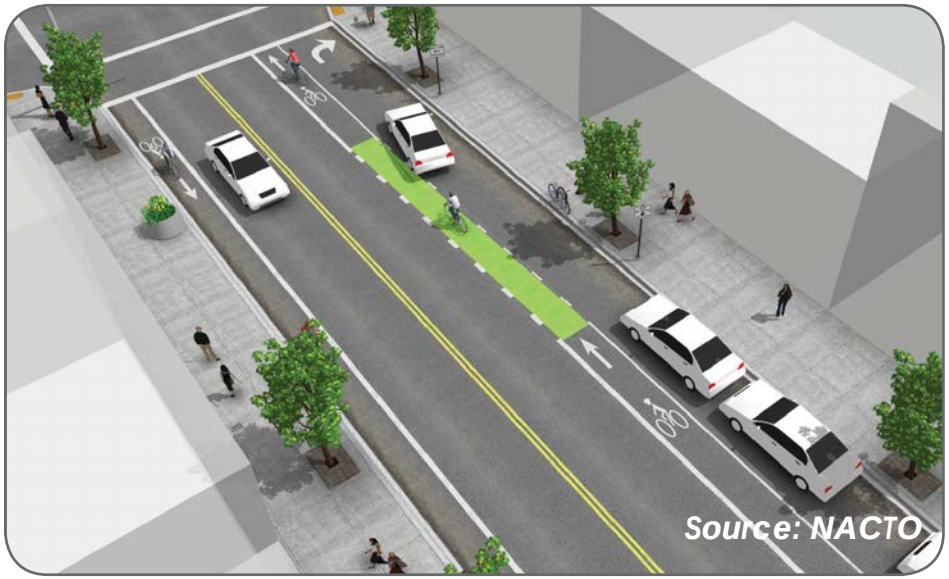
Source: NACTO

Bicycle boulevards are streets with low motorized traffic volumes and speeds designed to give bicycle travel priority. Bicycle boulevards use signs, pavement markings, and speed and volume management measures to discourage through trips by motor vehicles and create safe, convenient bicycle crossings of busy arterial streets.

Many local streets with low existing speeds and volumes offer the basic components of a safe bicycling environment. These streets can be enhanced using a range of design treatments, tailored to existing conditions and desired outcomes, to create bicycle boulevards. Design treatments and their benefits follow:

- Route Planning: Direct access to destinations
- Signs and Pavement Markings: Safety
- Speed Management: Slow motor vehicle speeds
- Volume Management: Low or reduced motor vehicle volumes
- Minor Street Crossings: Minimal bicyclist delay
- Major Street Crossings: Safe and convenient crossings
- Offset Crossings: Clear and safe navigation
- Green Infrastructure: Enhancing environments

BIKE LANE



- Striping separates marked bicycle lane from vehicular traffic
- Appropriate for streets with posted traffic speeds of 25-35 mph and low-moderate traffic volumes
- Desired minimum: 6 feet

BUFFERED BIKE LANE

- Painted buffer zone separates bike lane from vehicular traffic
- Provides greater separation from traffic than standard bike lane
- Appropriate for streets with high speeds (30-45 mph) and/or high-volume traffic
- Desired minimum buffer width: 2 feet
- Desired bicycle travel area width: 7 feet

ONE-WAY PROTECTED CYCLE TRACK

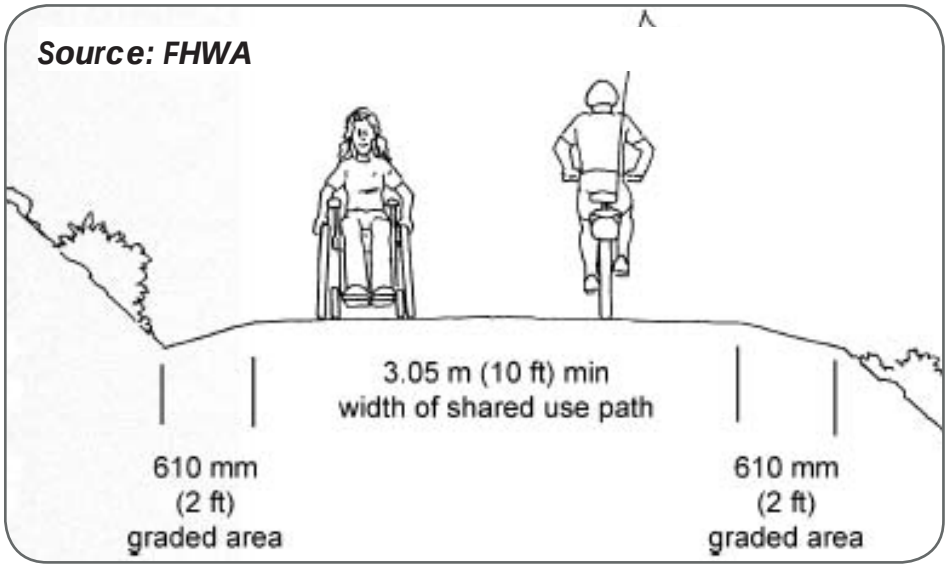
- Dedicated and protected space for bicyclists
- More attractive to a wide range of bicyclists of all levels and ages
- Desired minimum width: 5 to 7 feet
- Desired minimum buffer: 3 feet
- Alternative Protection Strategies include: bollards, movable planters, parking lanes, and a raised curb

TWO-WAY CYCLE TRACK

- Dedicated and protected space for bicyclists
- More attractive to a wide range of bicyclists of all levels and ages
- Desired minimum width: 12 feet
- Desired minimum buffer: 3 feet

PAVED SHARED-USE PATH

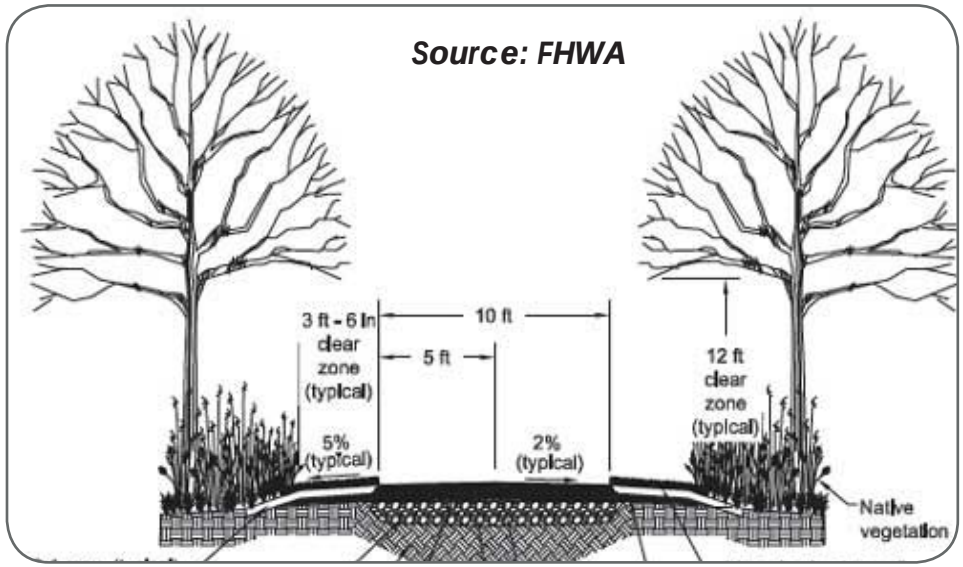
Suffolk Seaboard Trail, Suffolk



- Two-way path is shared by bikes and pedestrians
- For trails along roads, the trail is separated from the road by a curb and may include plant buffer strip between trail and roadway
- Desired width: 10 feet
- Desired minimum shoulder from roadway: 2 feet

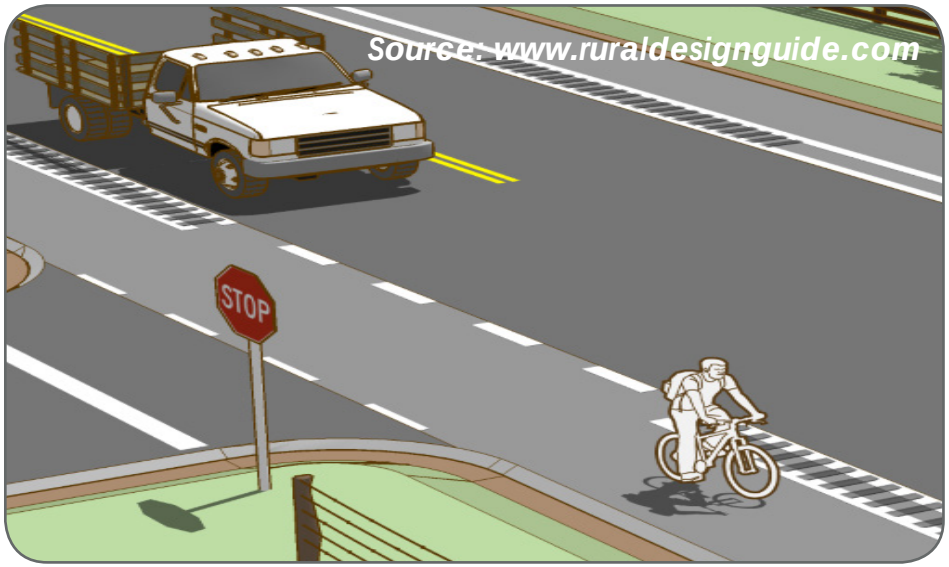
UNPAVED SHARED-USE PATH

First Landing State Park, Virginia Beach



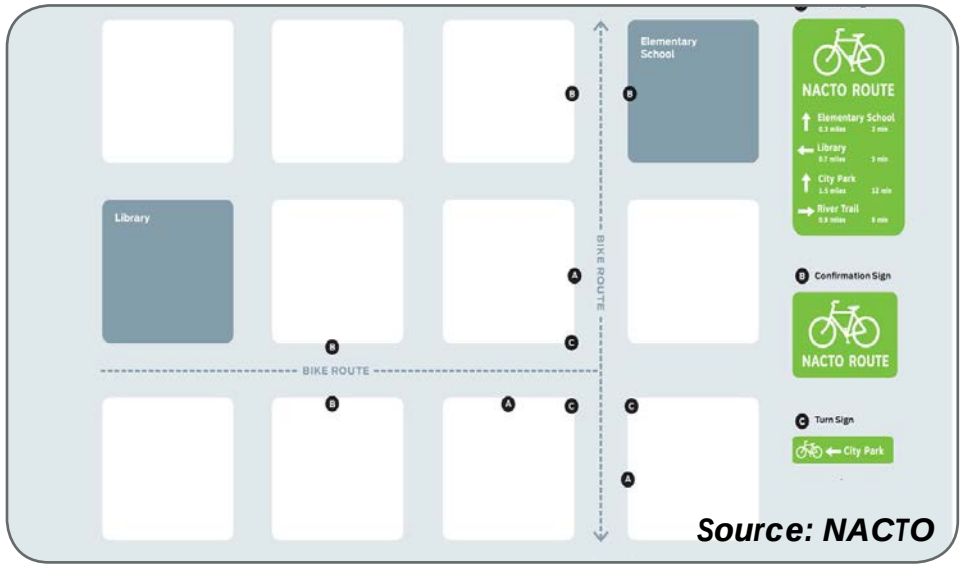
- Two-way path shared by bikes and pedestrians
- Typically not along roadways
- Attractive to a wide range of users of all levels and ages
- Desired minimum width: 12 feet

WIDE PAVED SHOULDER



- On the edge of roadways
- Appropriate on roads with low to moderate volumes and speeds
- Serves long-distance and rural regional travel
- Desired minimum width: 4 feet plus buffer

SIGNED BIKE ROUTE



- Appropriate along more lightly traveled residential, secondary and rural roads
- Utilized to direct bicyclists to less-congested roadways
- Suggested route to get to specific destinations

ACTIVE TRANSPORTATION AUXILIARY FACILITIES TYPES

The following facilities may be useful in appropriate locations, due to the regional scale of this active transportation plan, these facility types will not be included in this plan. Rather, these facilities should be used by localities to provide a complete and safe active transportation network.

HIGH-VISIBILITY CROSSWALK

- On-road pavement marking to indicate appropriate location to cross a street
- Connects to sidewalks at intersection or mid-block locations
- Bold, reflective striping improves visibility of crosswalk for pedestrians and drivers

PEDESTRIAN-SCALE LIGHTING

- Street lighting that use shorter lampposts and is directed toward the sidewalk instead of the roadway
- Improves pedestrian visibility and safety
- Special lighting treatments can be used to improve specific locations such as underpasses

RAISED CROSSWALK

- High visibility crosswalk raised from street level to sidewalk level
- Increases visibility of pedestrians crossing street
- Raised crossing acts as speed table to reduce vehicle speeds
- May be placed mid-block or at an intersection

CURB EXTENSION

- Sidewalk and curb space extended into roadway to reduce roadway width
- Slows motor vehicle turning speed
- Visually narrows roadway to help reduce vehicle speeds
- Reduces crossing distance for pedestrians
- Provides more space for pedestrians waiting to cross the street

CURB RAMP

- ADA-compliant curb ramps provide ramped access to sidewalks
- Detectable warning surface on curb ramp provides warning for physically impaired
- Should be located to place users in line with crosswalk across intersection leg

MEDIAN ISLAND

- Curb separated space for pedestrians in center of roadway
- Allows pedestrians to cross wide streets in two stages
- Visually narrows roadway to help reduce vehicle speeds
- Best used on multi-lane roadways with high motor vehicle traffic volumes

ACTIVE TRANSPORTATION AUXILIARY FACILITIES TYPES

LEADING PEDESTRIAN INTERVAL

- Intersection signalization programmed to provide pedestrians additional time to cross the intersection before the "green" signal for motor vehicles
- Pedestrians crossing at an intersection have a head start and are more visible to turning motorists

BIKE BOX

- Space for bicyclists to wait at intersection in front of waiting motor vehicles
- Indicated with pavement markings
- Gives bicyclists a head start by positioning them in front of motor vehicles

RECTANGULAR RAPID FLASHING BEACON

- On demand pedestrian or bicyclist activated signal with push button
- Bright LED flashing beacons increase motorist awareness of pedestrians or bicyclists crossing
- May be used in conjunction with median islands or high visibility crossings
- May be used at mid-block crossings or intersections

BICYCLE PARKING

- Bicycle parking provides bicyclists with secure location to store a bicycle
- Conveniently located, covered, and well-designed bike parking can increase bicycle security
- Abundant bicycle parking will reduce instances of bicycles being locked to sign posts, gates, and trees
- Variety of types include sidewalk racks, on-street bike corrals, and bicycle lockers

HAWK SIGNAL

- On demand signal with push button activated by pedestrian or bicyclist
- Red signal requires motor vehicles to stop while pedestrian crosses the road
- Generally used at mid-block crossings
- Best used on multi-lane roadways or roads with higher motor vehicle speeds

INTERSECTION STRIPING

- Bicycle lane striping continues through intersection
- Improves visibility of bicyclist
- May include green pavement, shared lane markings and/or bicycle lane lines

PENINSULA INFRUSTRACTURE RECOMMENDATIONS

PROPOSED NETWORK

GLOUCESTER COUNTY

Gloucester County's proposed network consists of a combination of buffered bike lanes, shared-use paths, future regional trails, and signed routes.

1. Proposed paved shared-use paths connecting Gloucester Point and Courthouse to Middle Peninsula State Park, Werocomoco National Park, and Beaverdam Park. This route could join the Birthplace of America Trail and/or the following proposed facility.

2. Proposed future regional trails on George Washington Memorial Highway and John Clayton Memorial Highway recommended to be further researched and studied by the Middle Peninsula Planning District Commission and Fredericksburg.

3. Signed routes proposed for rural roads near Peasley, Achilles, Ware Neck, Robins Neck, and Guinea Neck.

PROPOSED NETWORK

GLOUCESTER POINT

Gloucester Point is home to the Virginia Institute of Marine Science and a variety of established civic, recreational, commercial, and residential areas. In 2011 the County worked with stakeholders to develop The Gloucester Point/Hayes Village Development Area Plan. Goals for the area include creating efficient transportation options which promote connectivity between internal roads and pedestrian networks to reduce dependence on Rte. 17 and providing a safe, functional pedestrian environment to allow non-drivers to access their destinations. Proposed facilities include:

1. Proposed bike sharrows along Greate Road parallel to the funded sidewalk project that is currently being developed. These projects provide the area with desired safe facilities to promote non-vehicular traffic.

2. Proposed shared-use paths connecting Tyndall Park to the Institute and Gloucester Point Beach Park.

3. A proposed boardwalk connecting the VIMS property to the Gloucester Point Boat Ramp.

4. Other future considerations should include upgrading the bridge connecting Gloucester County to York County with separated bike lanes to accommodate users.

5. Funded sidewalk projects across the area provide connectivity.

PROPOSED NETWORK

GLOUCESTER COURTHOUSE

Gloucester Court House is the County's historic business district. In 2013 the County adopted the Court House Village Sub-Area Plan. The vision of that plan is to enhance the economic and social vitality of the Court House Village community, while maintaining and enhancing its historic, small-town character, and walkable, mixed-use environment. Proposed facilities include:

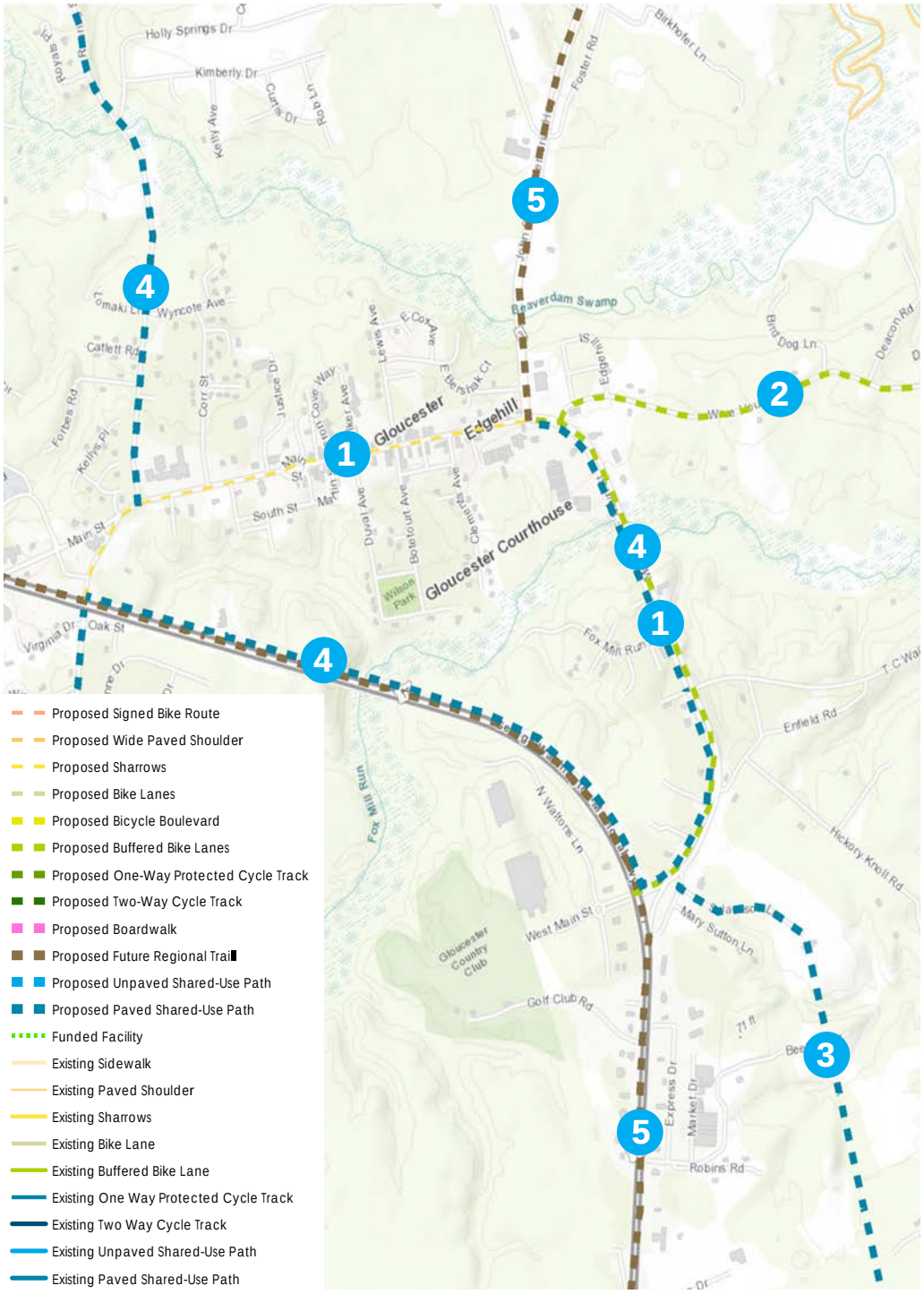
1. Proposed buffered bike lanes and sharrows on Main Street on both sides to connect key businesses and destinations.

2. Proposed buffered bike lanes on Ware House Road from Main Street to the Ware House boat ramp.

3. A proposed off-road shared-use path connecting Main Street to Gloucester High School.

4. Proposed shared-use paths along Belroi Road, George Washington Memorial Highway, Main Street and Roaring Springs Road connecting Main Street to multiple parks across the county.

5. Proposed future regional trails on George Washington Highway and John Clayton Memorial Highway being further researched and studied for future connections to Middlesex County and Matthews County.



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PROPOSED NETWORK

HAMPTON REGIONAL ROUTES

1. **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail corridor will connect the southern terminus of the Virginia Capital Trail to Fort Monroe via an off-road paved shared-use path.

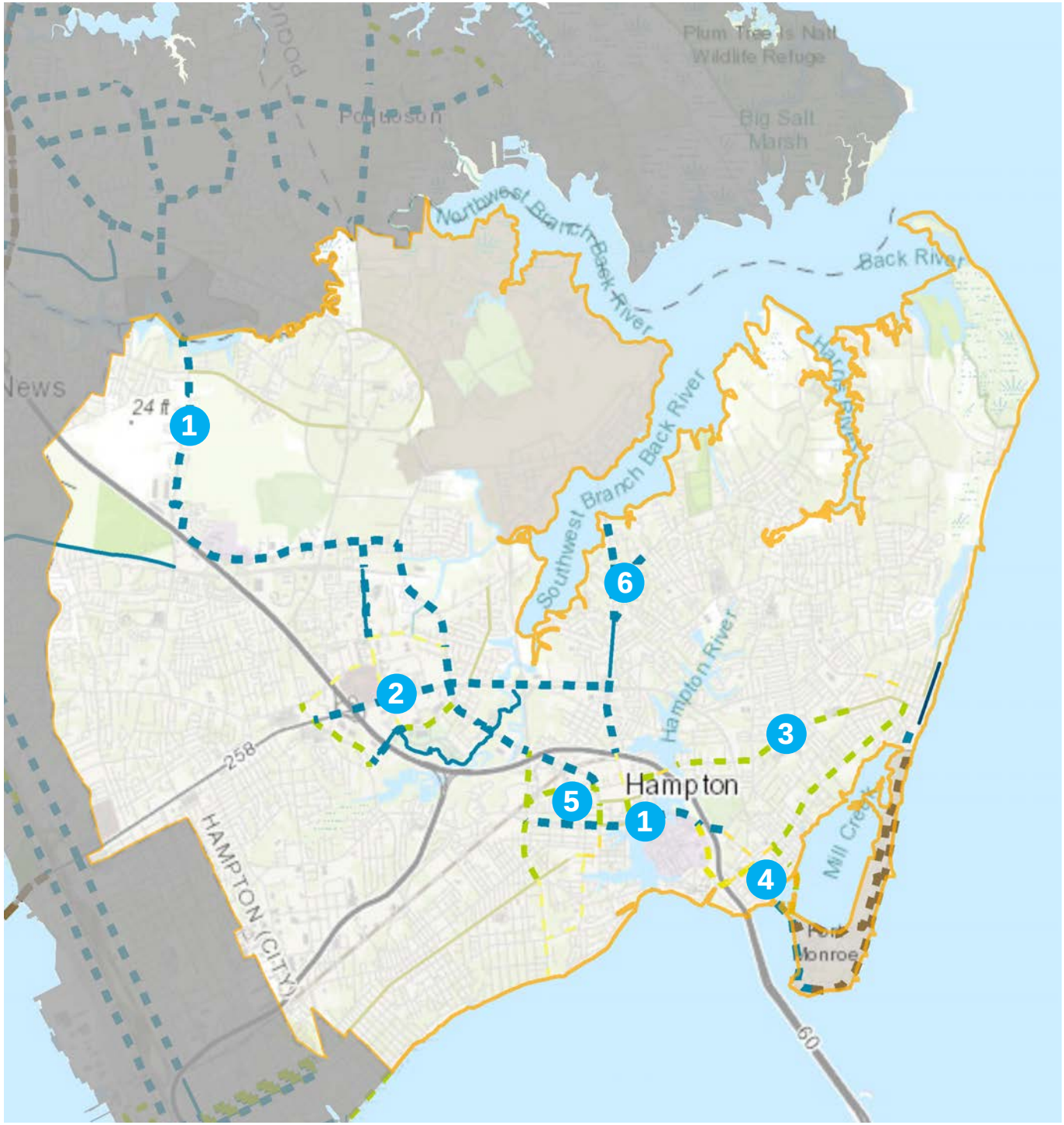
2. **MERCURY BOULEVARD** - A shared-use path provides the Coliseum area with protected facilities to connect the residential and commercial spaces.

3. **E. PEMBROKE AVENUE** - Buffered bike lanes from Downtown to Buckroe Beach.

4. **N. MALLORY STREET** - Buffered bike lanes from downtown Pheobus to Buckroe Beach protect from vehicular traffic.

5. **DOWNTOWN HAMPTON** - Multiple facilities recommended in Downtown Hampton will provide connections to/from neighboring residential areas.

6. **KING STREET/ LITTLE BACK RIVER ROAD** - Shared-use path accommodations provide residences with protection.



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PROPOSED NETWORK
DOWNTOWN HAMPTON

1. **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail corridor will connect the southern terminus of the Virginia Capital Trail to Fort Monroe via an off-road paved shared-use path.

2. **MERCURY BOULEVARD** - A shared-use path along Mercury Boulevard from Power Plant Parkway to King Street provides the Coliseum area with protected facilities to connect the residential and commercial spaces.

3. **POWER PLANT PARKWAY** - Buffered bike lanes from Mercury Boulevard to Pine Chapel Road.

4. **PINE CHAPEL ROAD** - Shared-use path and buffered bike lanes from Power Plant Parkway to North Armistead Avenue connect multiple shopping destinations.

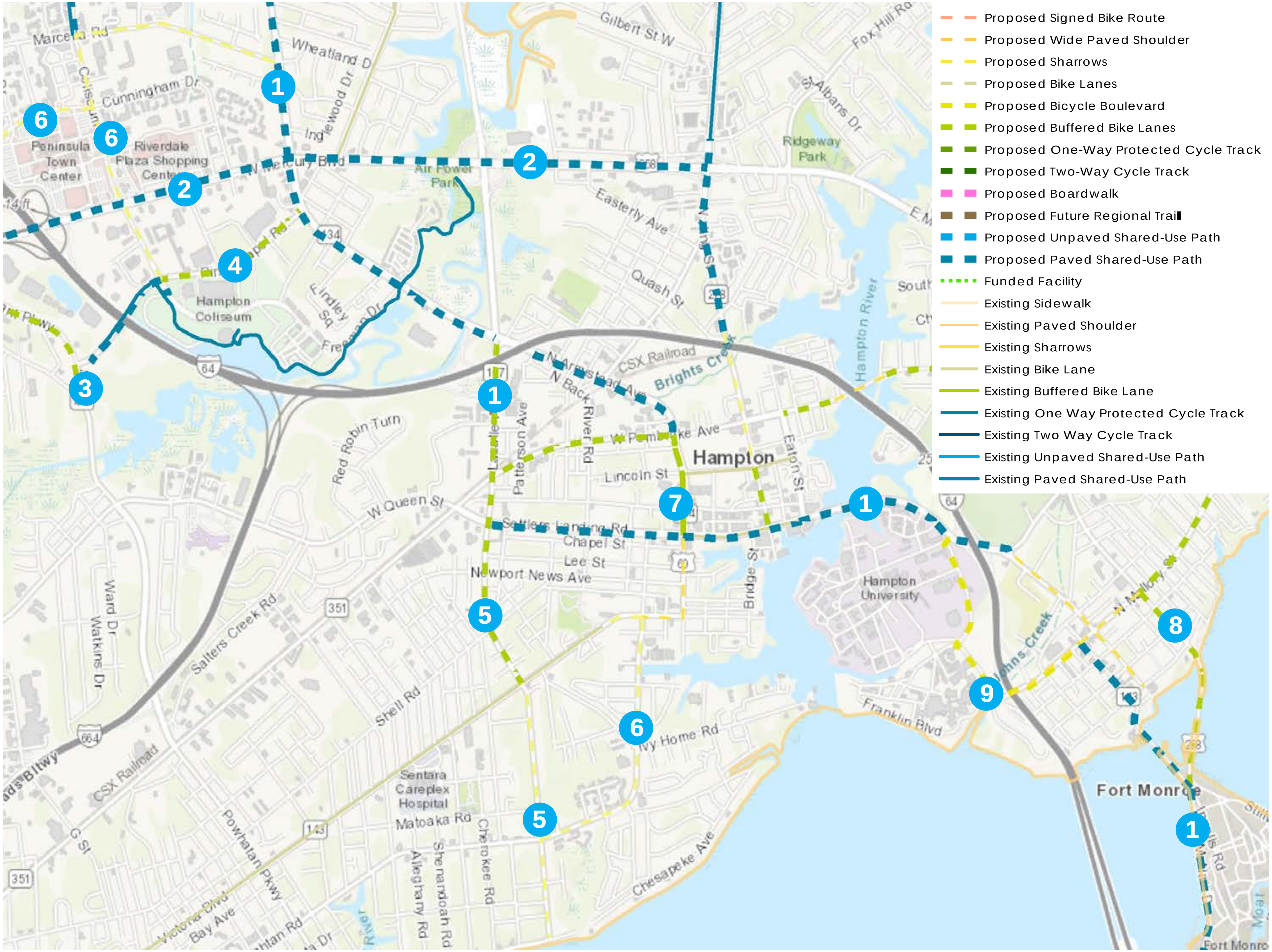
5. **LASALLE AVENUE** - Buffered bike lanes transitioning to bike lanes (in the suburban area) from North Armistead Avenue to Chesapeake Avenue provide residents with a connection to commercial districts and downtown Hampton.

6. **MULTIPLE BIKE LANES** - Throughout the surrounding areas bike lanes provide connectivity between residential areas and the commercial districts.

7. **E. PEMBROKE AVENUE** - Buffered bike lanes from Lasalle Avenue to Buckroe Beach.

8. **N. MALLORY STREET** - Buffered bike lanes from downtown Pheobus to Buckroe Beach protect from vehicular traffic.

9. **EMANCIPATION DRIVE/MARTIN LUTHER KING JR. BOULEVARD/MALLORY STREET** - Along these routes a bike boulevard from Hampton University to Pheobus provides better connectivity.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Hampton
Peninsula Town Center
Riverdale Plaza Shopping Center
Hampton Coliseum
Air Power Park
Ridgeway Park
Hampton University
Sentara Careplex Hospital
Fort Monroe
Brights Creek
Hampton River
Wheatland Dr
Cunningham Dr
Marcella Rd
W Mercury Blvd
Easterly Ave
Quash St
Gilbert St W
Fox Hill Rd
St Albans Dr
N Armistead Ave
N Back River Rd
CSX Railroad
W Pembroke Ave
Lincoln St
Eaton St
Red Robin Turn
Patterson Ave
W Queen St
Settlers Landing Rd
Chapel St
Lee St
Newport News Ave
Bridge St
Salters Creek Rd
Shell Rd
Ward Dr
Watkins Dr
Powhatan Pkwy
Matoaka Rd
Cherokee Rd
Shenandoah Rd
Allegheny Rd
Chesapeake Ave
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PROPOSED NETWORK
HISTORIC TRIANGLE - JAMES CITY COUNTY, WILLIAMSBURG, AND YORK COUNTY

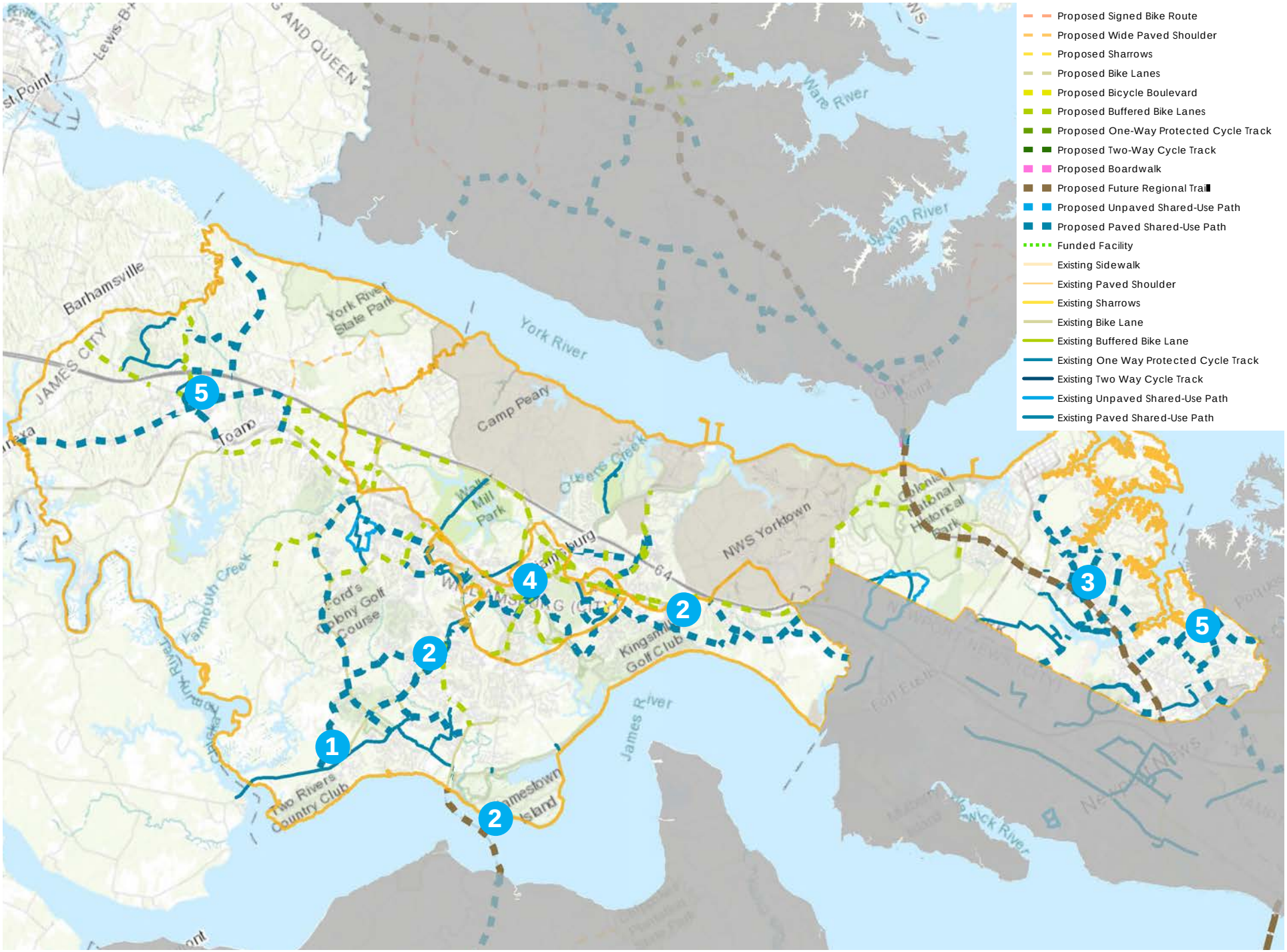
1. **VIRGINIA CAPITAL TRAIL** - Connecting and expanding the regional trail system of the existing 55-mile shared-use path from Richmond to Jamestown will be a critical regional effort.

2. **BIRTHPLACE OF AMERICA TRAIL** - This regional trail joining to the Virginia Capital Trail will run from Jamestown and head south to downtown Suffolk and east toward Fort Monroe. The proposed route will provide mostly a paved shared-use path. This trail is part of the East Coast Greenways Historic Coastal route.

3. **FUTURE REGIONAL TRAIL** - A proposal for a study of a planned regional trail following Route 17 into Gloucester to provide future regional connectivity.

4. **DOWNTOWN WILLIAMSBURG** - Multiple upgrades and proposed facilities in Williamsburg will connect the College of William & Mary, Colonial Williamsburg, and the Colonial National Historical Park.

5. **SHARED-USE PATHS** - Multiple upgrades and proposed shared-use paths throughout the Triangle provide residents and tourists separated facilities.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Barhamsville
JAMES CITY
York River State Park
York River
Camp Peary
Toano
Mill Park
Queens Creek
NWS Yorktown
Colonial National Historical Park
Yarmouth Creek
Ford's Colony Golf Course
Kingsmill Golf Club
James River
Two Rivers Country Club
Jamestown Island
Ware River
Severn River
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PROPOSED NETWORK
WILLIAMSBURG

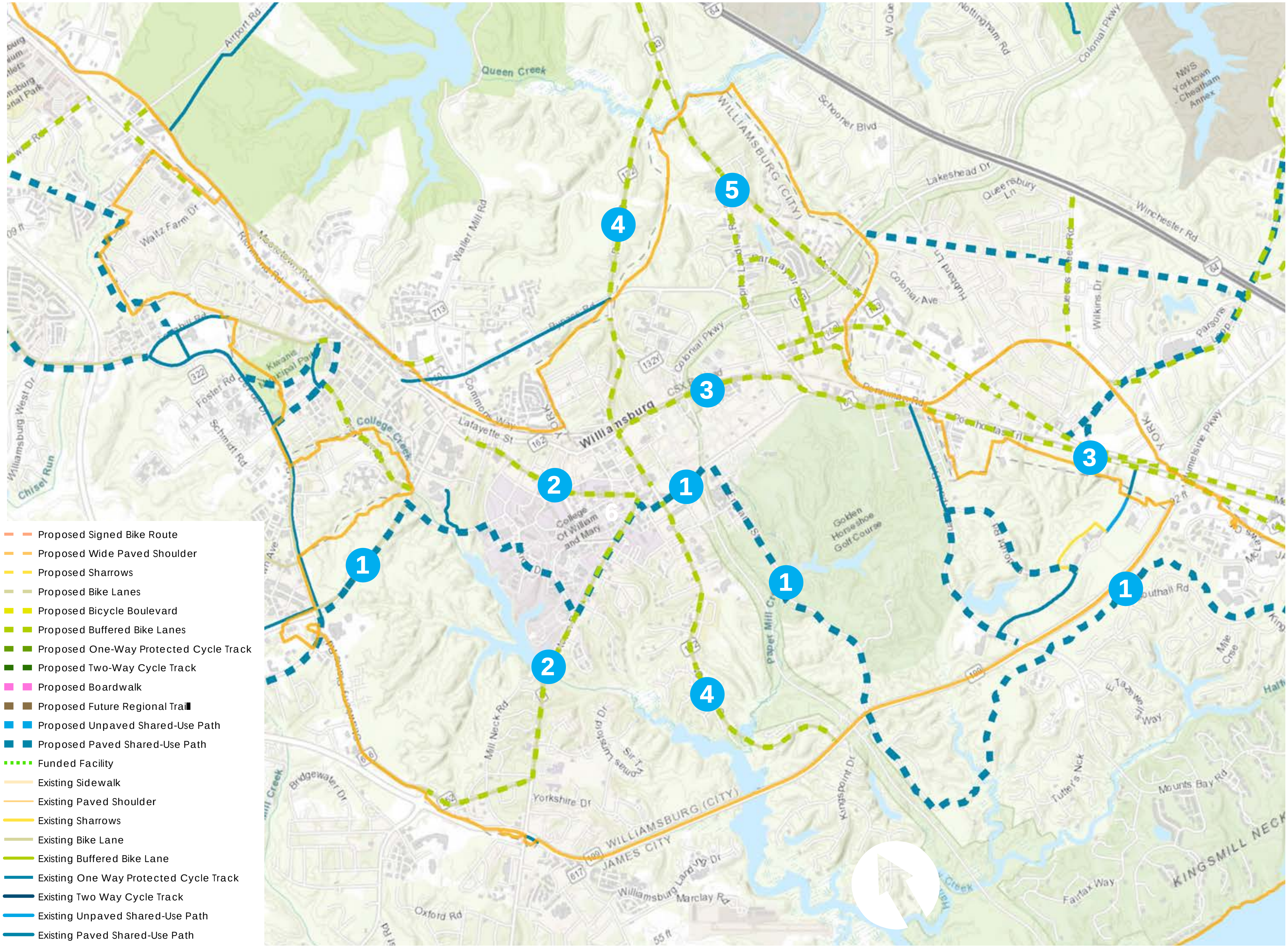
1. **BIRTHPLACE OF AMERICA TRAIL** - The southern terminus of the Virginia Capital Trail ends in Jamestown where the Birthplace of America Trail heads toward downtown Williamsburg, following Monticello Avenue going behind the College of William and Mary. Then the route follows Jamestown Road onto Francis Street through Colonial Williamsburg. From there the route goes south via South England Street to Carters Grove Country Road. This trail is a paved shared-use path except when in Colonial Williamburg.

2. **RICHMOND AVENUE AND JAMESTOWN ROAD** - Proposed buffered bike lanes near the campus of College of William and Mary and Colonial Williamsburg provide locals, tourists, and students with separated facilities.

3. **LAFAYETTE AVENUE/POCAHONTAS TRAIL** - Proposed buffered bike lanes along this corridor provide users with connectivity heading east from downtown Williamsburg. Some of these proposed facilities are upgrades to the existing infrastructure.

4. **SOUTH HENRY STREET** - Proposed buffered bike lanes along this street provide a connection to both northern and southern residential area.

5. **CAPITAL LANDING ROAD** - Proposed buffered bike lanes heading north towards York County.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Williamsburg
Queen Creek
College Creek
College of William and Mary
Golden Horseshoe Golf Course
Airport Rd
Waltz Farm Dr
Waller Mill Rd
Lafayette St
Colonial Pkwy
Schooner Blvd
Lakeshead Dr
Winchester Rd
Colonial Ave
Penniman Rd
Pocahontas Trl
Wilkins Dr
Southall Rd
Mill Neck Rd
Yorkshire Dr
Kingspoint Dr
Mounts Bay Rd
Fairfax Way
Oxford Rd
Marclay Rd
Bridgewater Dr
WILLIAMSBURG (CITY)
JAMES CITY
KINGSMILL NECK
NWS Yorktown - Cheatham Annex

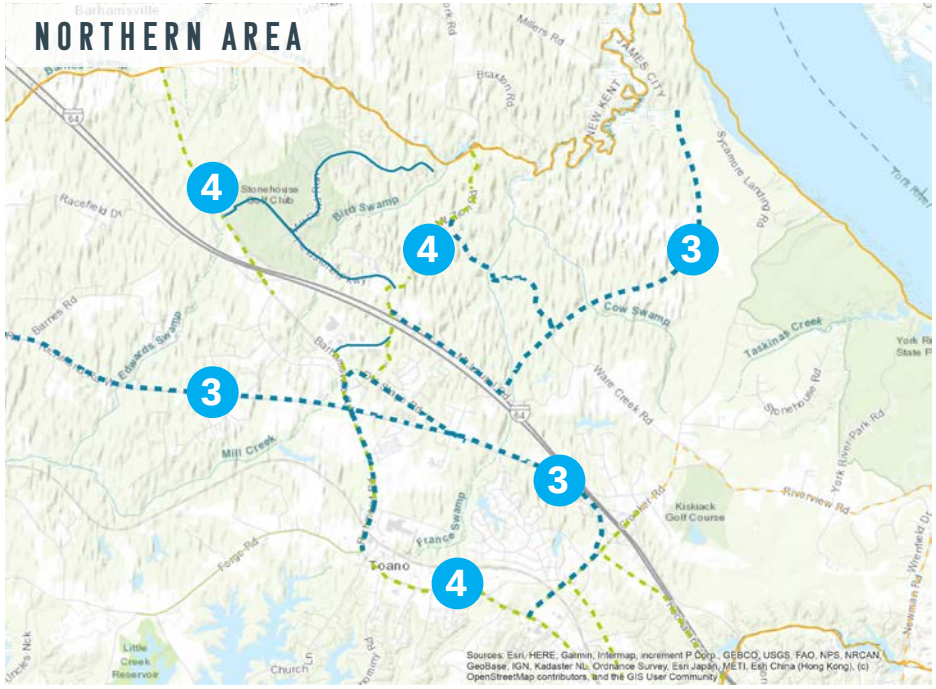
PROPOSED NETWORK
JAMES CITY COUNTY

1. **VIRGINIA CAPITAL TRAIL** - The Virginia Capital that begins in Richmond and ends near Jamestown will be joined in the future to Fort Monroe and Suffolk via the Birthplace of America Trail.

2. **BIRTHPLACE OF AMERICA TRAIL** - The trail heads into downtown Williamsburg via a proposed shared-use path.

3. **SURROUNDING AREA** - Multiple proposed shared-use paths connecting the County and City of Williamsburg provide multiple routes throughout the Historic Triangle.

4. **NORTHERN AREA** - Multiple proposed buffered bike lanes throughout the northern area provide connectivity through the county.



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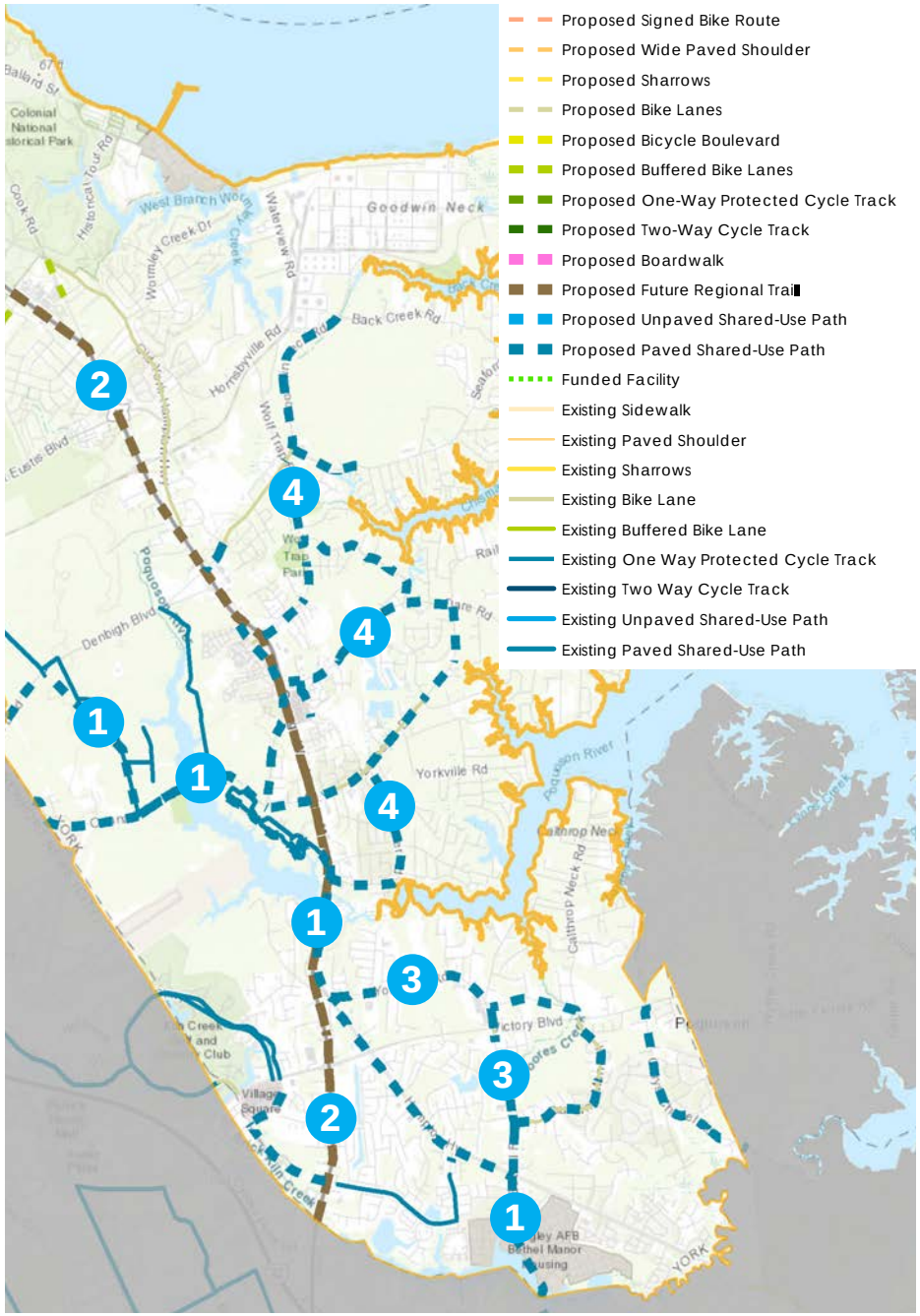
PROPOSED NETWORK
YORK COUNTY

1. **BIRTHPLACE OF AMERICA TRAIL** - The proposed shared-use path in York County will provide a regional connection.

2. **FUTURE REGIONAL TRAIL** - A study is proposed to research a future path connecting York County to Gloucester County via US-17.

3. **TABB** - Multiple shared-use paths along Victory Boulevard, Big Bethel Road, Yorktown Road, and Running Man Trail provide Tabb with a network of routes connecting the communities.

4. **GRAFTON** - Multiple shared-use paths along Lakeside Drive, Dare Road, Showalter Road, and Oriana Road provide Grafton with a network of routes connecting the communities.



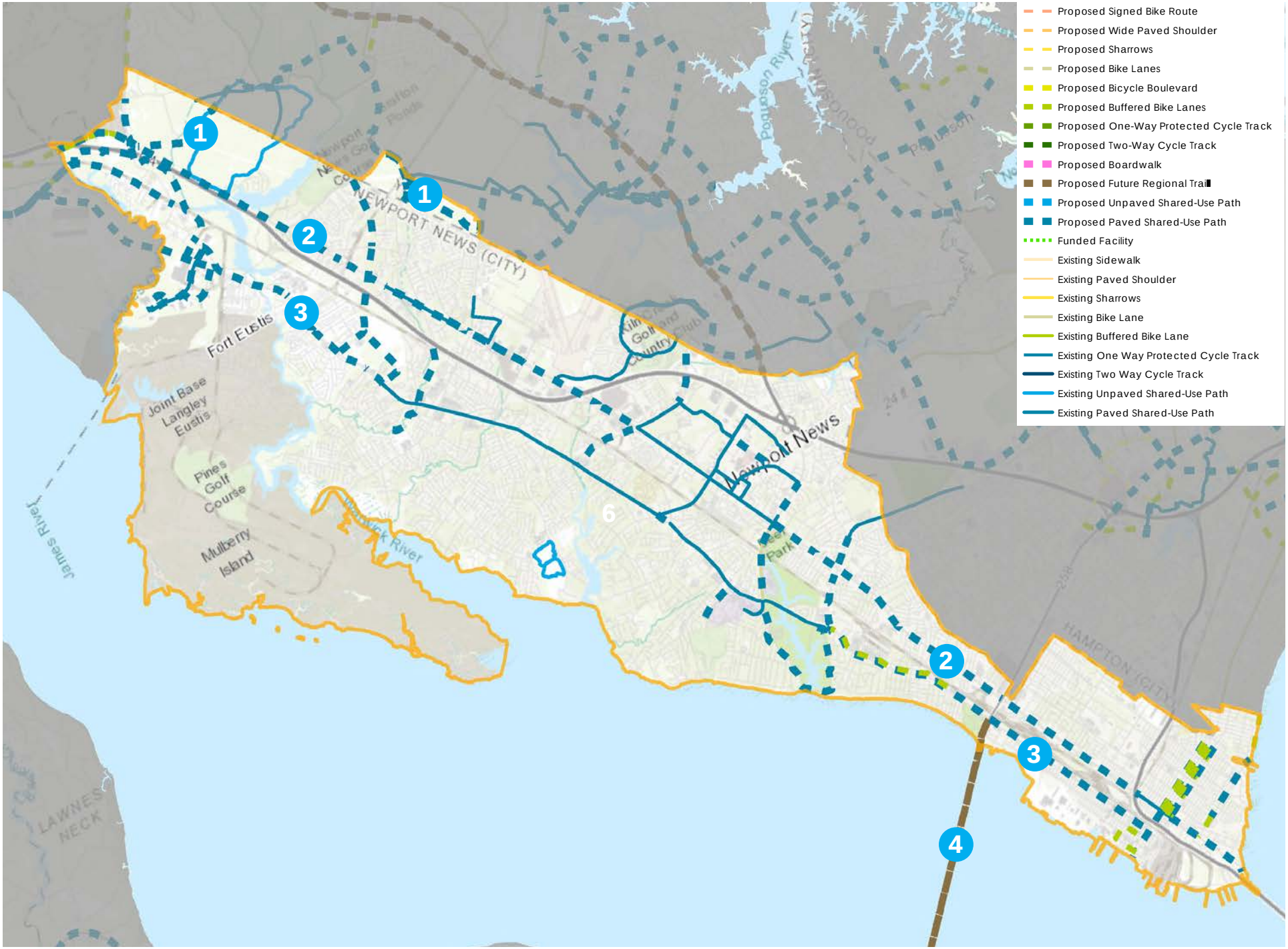
PROPOSED NETWORK
NEWPORT NEWS

1. **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail's proposed shared-use path connects Jamestown to Fort Monroe.

2. **JEFFERSON AVENUE** - Proposed shared-use paths along the Jefferson Avenue corridor will provide the residents of Newport News east of the CSX rail lines with an essential separated active transportation facility.

3. **WARWICK BOULEVARD** - Proposed shared-use paths along the Warwick Boulevard corridor will provide the residents of Newport News west of the CSX rail lines with an essential separated active transportation facility.

4. **JAMES RIVER BRIDGE** - Proposed future regional trail on the James River Bridge will provide a separated facility connecting the Peninsula and Southside.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NEWPORT NEWS (CITY)
Fort Eustis
Joint Base Langley Eustis
Pines Golf Course
Mulberry Island
James River
Newport News
HAMPTON (CITY)
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PROPOSED NETWORK
SOUTHERN NEWPORT NEWS

1. **28TH STREET** - A proposed shared-use path from the waterfront to Jefferson Ave will provide a vital connection over 664 and the CSX rail line.

2. **DOWNTOWN LOOP** - A proposed bike loop in downtown Newport News will provide a buffered bike lane near businesses and the Newport News Transit Center.

3. **16TH STREET/CHESAPEAKE AVENUE** - Proposed buffered bike lanes/shared-use path along 16th Street/ Chesapeake Avenue provides a protected facility along the Chesapeake Bay.

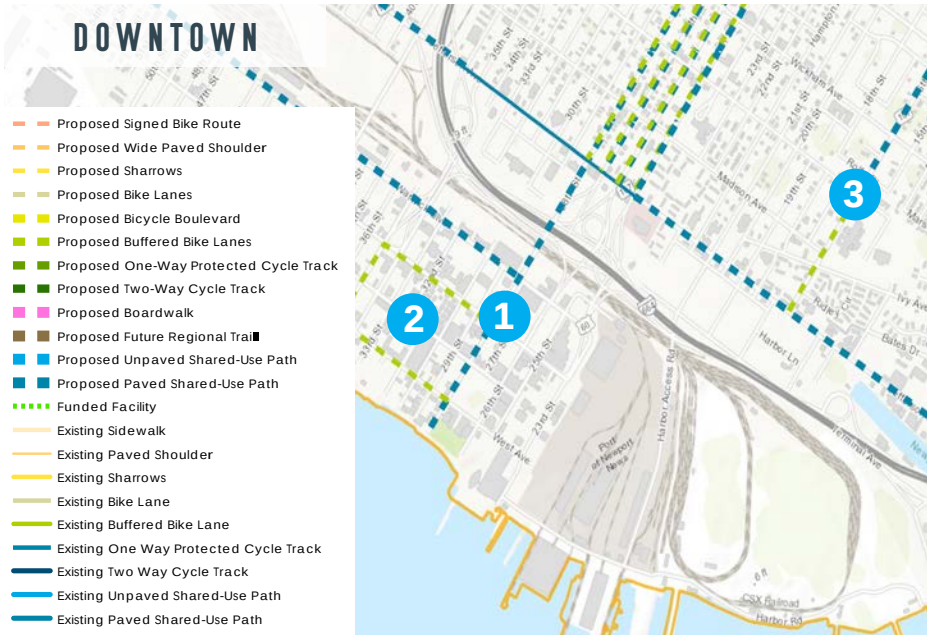
4. **WARWICK BOULEVARD** - Both a proposed shared-use path and buffered bike lanes within the Hilton Village provide residents and businesses with safe facilities and promote foot traffic within the village business district.

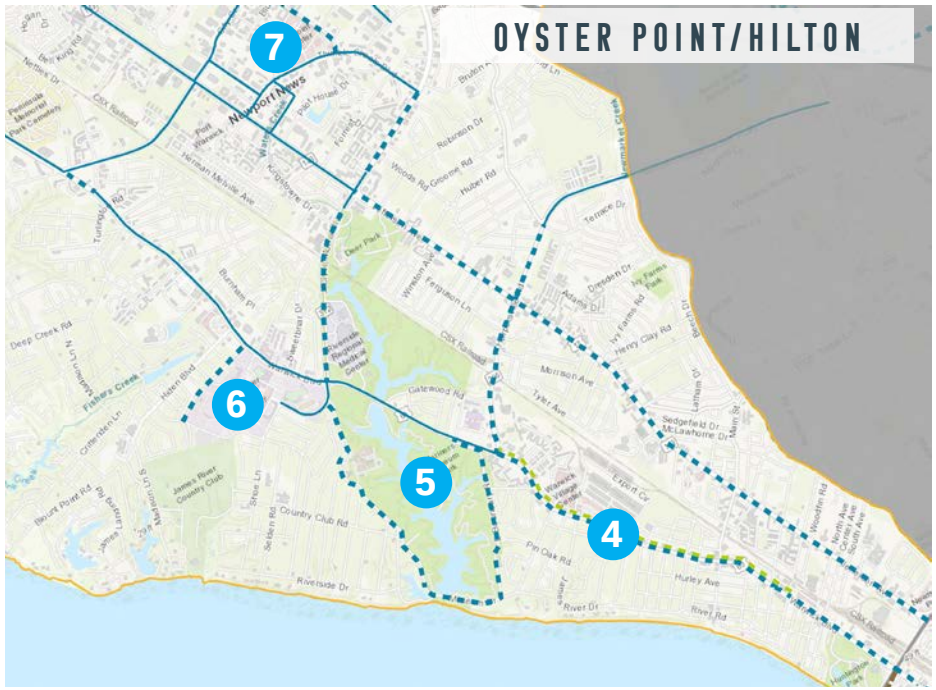
5. **LAKE MAURY AREA** - A proposed shared-use path surrounding Lake Maury will connect the Noland Trail system and the Mariners' Museum to Warwick Boulevard.

6. **CHRISTOPHER NEWPORT UNIVERSITY** - Proposed shared-use paths surrounding the University connect the school and the surrounding area with separated facilities.

7. **OYSTER POINT** - Multiple proposed shared-use paths connecting the business district and surrounding residential neighborhoods promote non-vehicular traffic.

8. **25TH/26TH/27TH/28TH STREETS** - Proposed Road diets to these streets will provide shared-use paths and/or bike lanes across the city.





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PROPOSED NETWORK
POQUOSON

1. **VICTORY BOULEVARD -** Proposed shared-use paths along Victory Boulevard will provide residents with connectivity.

2. **WYTHE CREEK ROAD** - Proposed shared-use paths along Wythe Creek Road will connect residents to the NASA Langley Research Center.

3. **POQUOSON AVENUE** - Proposed buffered bike lanes along Poquoson Avenue will connect residents, schools and local businesses.

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SOUTHSIDE INFRASTRUCTURE RECOMMENDATIONS

PROPOSED NETWORK

CHESAPEAKE

1. **SOUTH HAMPTON ROADS TRAIL** - A paved shared-use path funded From City of Suffolk line to City of Portsmouth line, part of the region's route that connects the existing Virginia Capital Trail to the oceanfront.

2. **DOMINION BOULEVARD** - The Dominion Boulevard Corridor will connect the existing Dismal Swamp Canal Trail, and Veteran's Bridge shared use paths. This route is also part of the East Coast Greenways Historic Coastal Route.

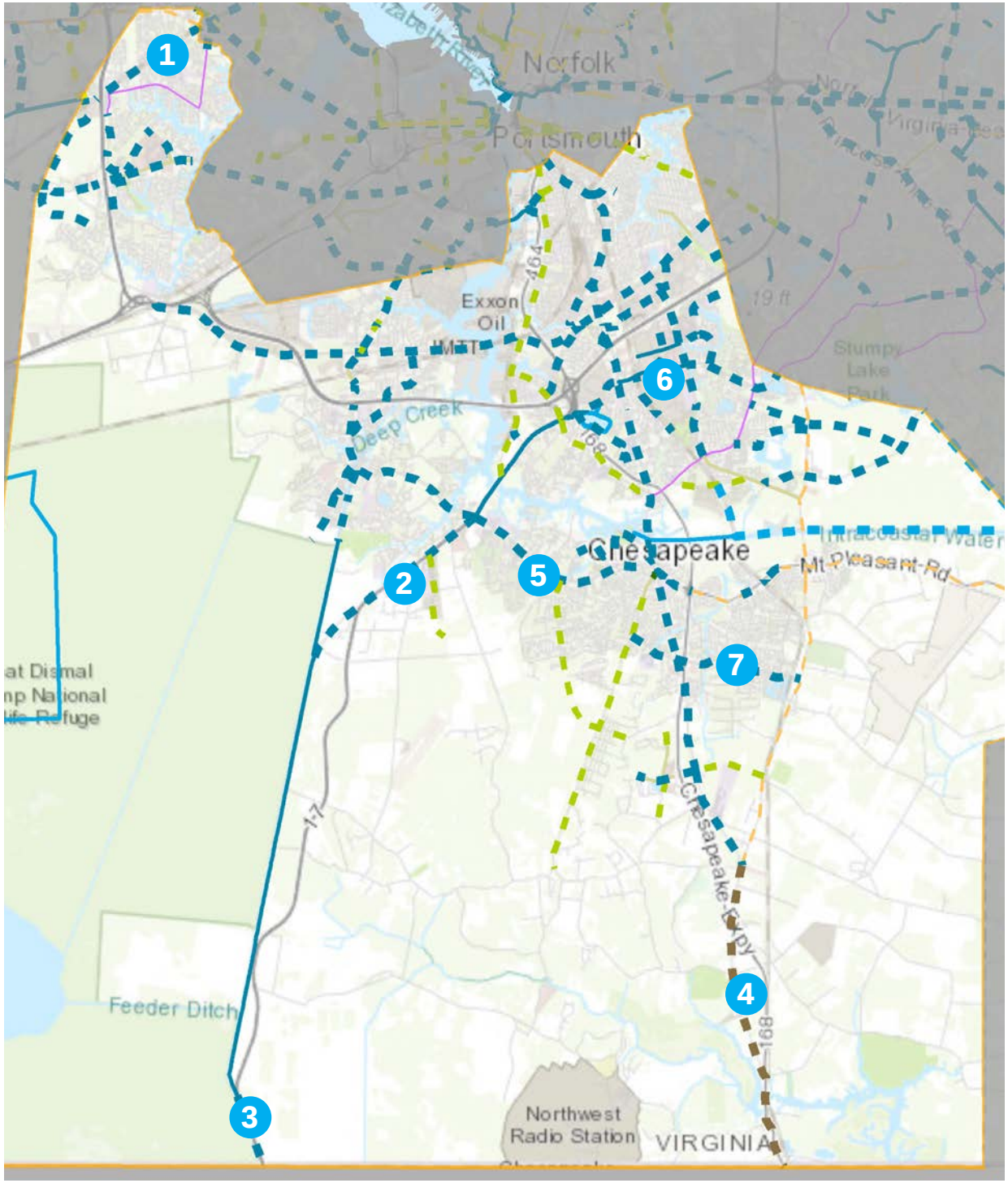
3. **ROUTE 17** - The proposed southern portion of the Route 17 shared-use path will connect the south terminus of the existing shared-use path to North Carolina's existing shared-use path. This proposed section is also part of the East Coast Greenways Historic Coastal Route.

4. **BATTLEFIELD BOULEVARD** - Multiple proposed facilities and upgrades are recommended on the corridor to provide a network of facilities throughout Chesapeake to the North Carolina line.

5. **CEDAR ROAD** - Upgrades to the existing facilities along Cedar Road will provide connections to the city hall, Great Bridge shopping district, residential areas, and commercial businesses.

6. **GREENBRIER PARKWAY AND SURROUNDING ROADWAYS** - Proposed facilities along Greenbrier Parkway and the Greenbrier area's roads will provide a comprehensive network of facilities to connect the future Dollar Tree development, Greenbrier Mall, retail businesses, commercial businesses, and surrounding residential neighborhoods.

7. **HANBURY ROAD/ETHRIDGE MANOR BOULEVARD** - A proposed shared-use path along Hanbury Road and Ethridge Manor Boulevard will provide residents with a safe, separated, low-stress facility connecting residential neighborhoods to shopping destinations and Battlefield Boulevard.



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PROPOSED NETWORK
CHESAPEAKE - GREENBRIER

1. **GREENBRIER PARKWAY** - A proposed shared-use path along Greenbrier Parkway will connect the regional mall, surrounding shopping, multiple industrial and commercial business centers, numerous parks, and recreation centers. This route is a highly used corridor without facilities to match that usage.

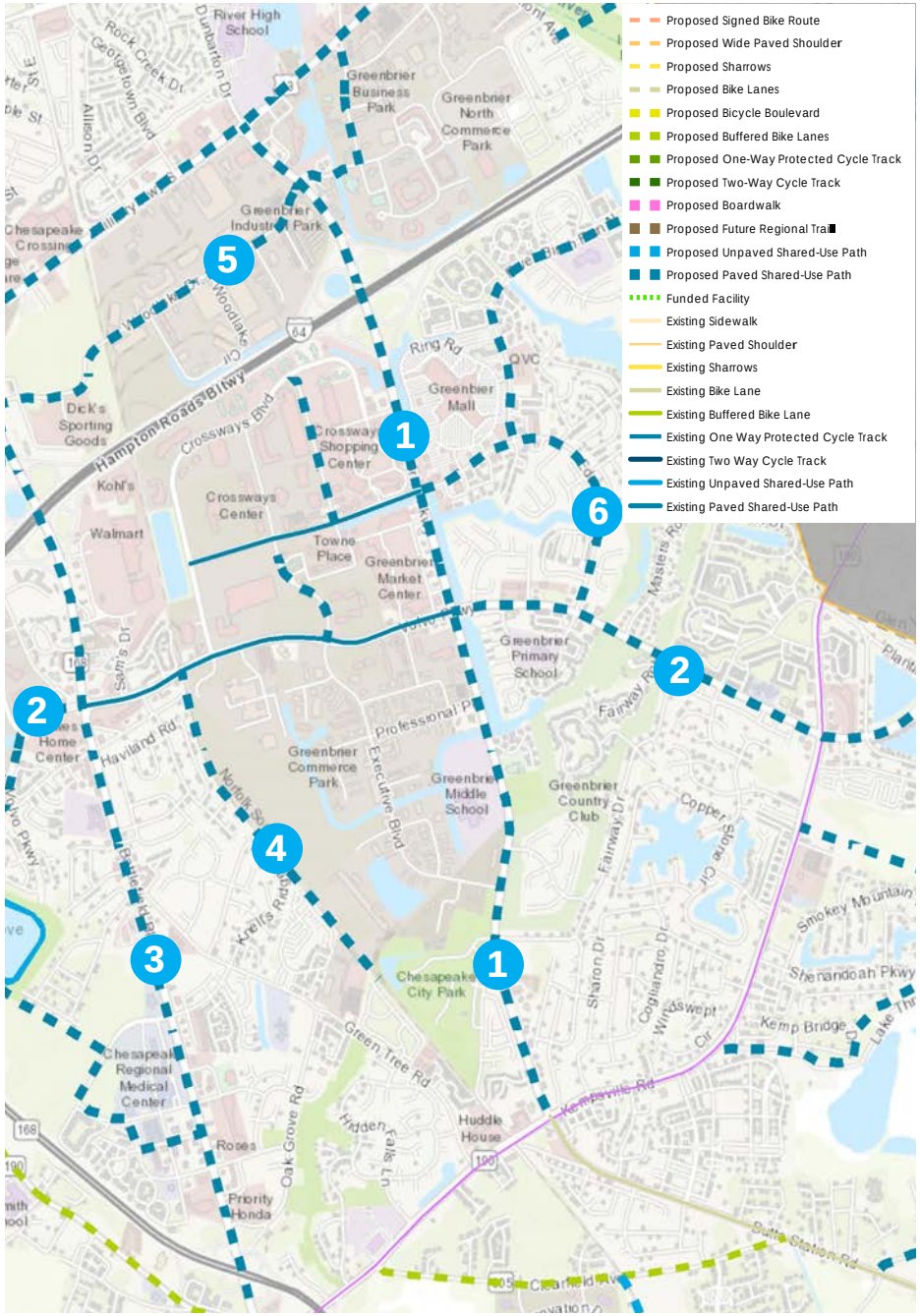
2. **VOLVO PARKWAY** - A proposed shared-use path along Volvo Parkway will connect the center of the commercial district to the eastern and western neighborhoods and Oak Grove Park.

3. **BATTLEFIELD BOULEVARD** - A proposed shared-use path along the Boulevard will provide a regional and local connection for the heart of the City of Chesapeake.

4. **NORFOLK SOUTHERN RIGHT-OF-WAY** - A proposed shared-use path along the existing Norfolk Southern Right-of-way will provide users a connection between the west side of the commercial district and Chesapeake City Park.

5. **WOODLAKE DRIVE** - a proposed shared-use path along Woodlake Drive will connect multiple business and industrial areas between Battlefield Boulevard and Greenbrier Parkway.

6. **EDEN WAY/RIVER BIRCH RUN ROAD** - A proposed shared-use path along Eden way and River Birch Run Road will connect Greenbrier East with Greenbrier Parkway.



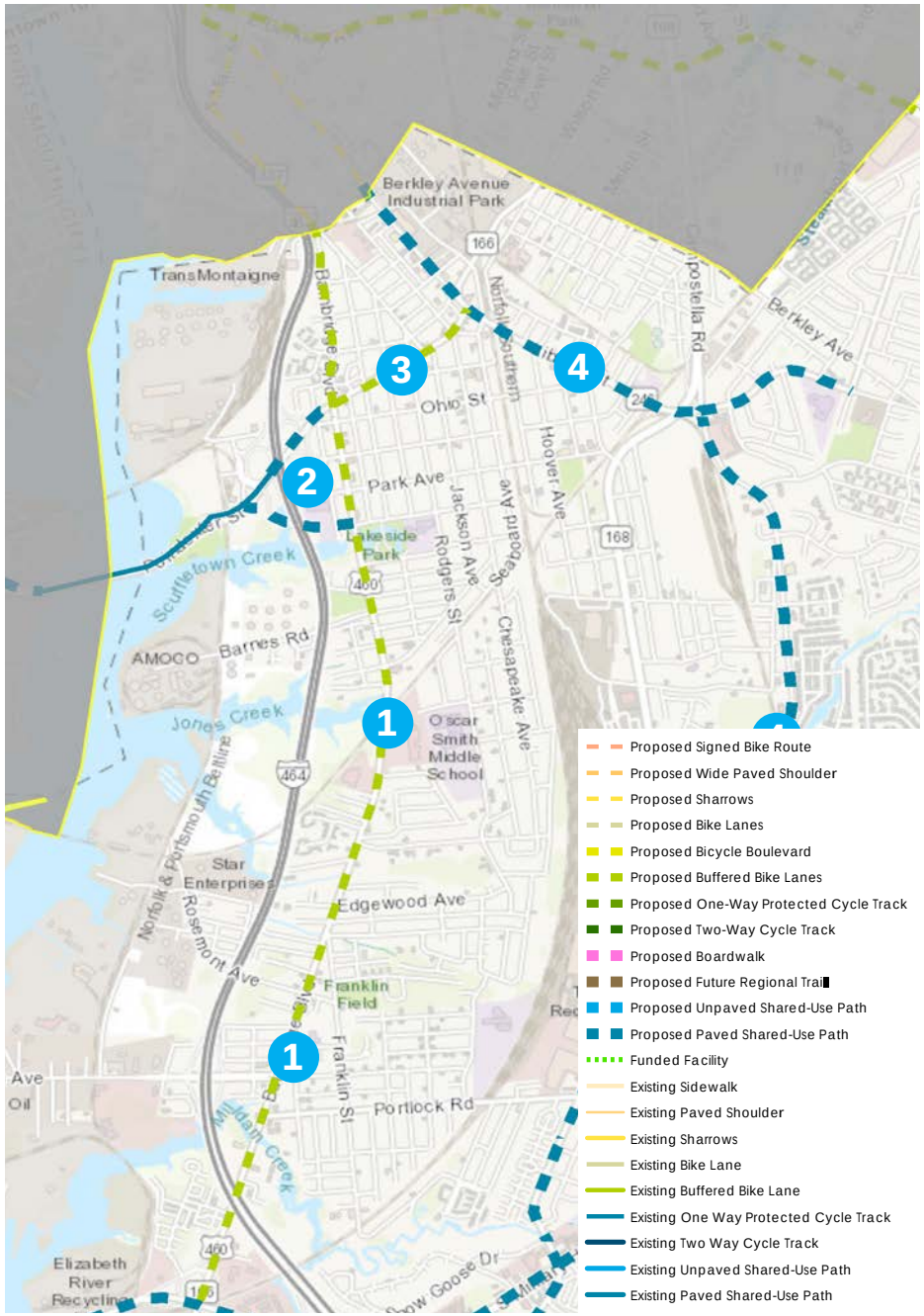
PROPOSED NETWORK
CHESAPEAKE - SOUTH NORFOLK

1. **BAINBRIDGE BOULEVARD** - Proposed buffered bike lanes along the main corridor in South Norfolk will accomodate and promote non-vehicular transportation in the area.

2. **POINTDEXTER STREET/ELIZABETH RIVER PARK CONNECTOR** - Two proposed shared-use paths between Jordan Bridge shared-use path andBainbridge Boulevard will connect the Elizabeth River Park and the Jordan Bridge to residential areas.

3. **POINTDEXTER STREET** - Proposed buffered bike lanes along Pointdexter Street from Bainbridge Boulevard to Liberty Street.

4. **LIBERTY STREET/CAMPOSTELLA ROAD** - A proposed shared-use path along Liberty Street and Campostella Road will connect downtown Norfolk into the Greenbrier area. This route is also part of the East Coast Greenway Historic Coastal Route.



PROPOSED NETWORK
CHESAPEAKE - GREAT BRIDGE

1. **BATTLEFIELD BOULEVARD** - Proposed shared-use path along the corridor.

2. **CEDAR ROAD** - A proposed shared-use path that connects Battlefield Boulevard to Dominion Boulevard.

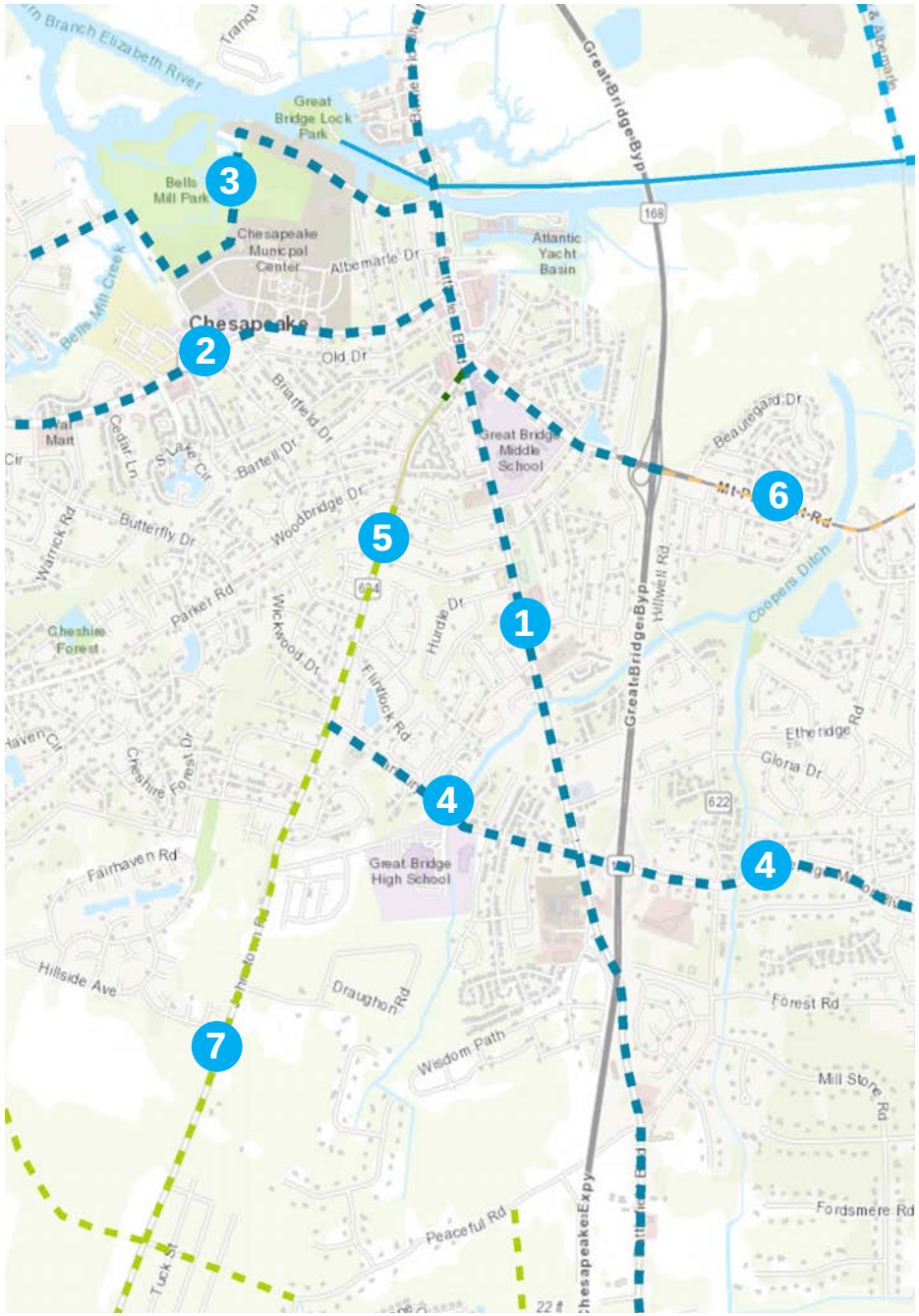
3. **CHESAPEAKE MUNICIPAL CENTER/BELLS MILL PARK** - A proposed shared-use path along the Intra Coastal Waterway behind the municipal center and Bells Mill park will connect to surrounding neighborhoods.

4. **HANBURY ROAD/ETHRIDGE MANOR BOULEVARD** - This corridor connects Great Bridge High School, Hanbury shopping area, and residential neighborhoods. Currently, this roadway is a highly used route for pedestrians and cyclists with no existing facilities.

5. **MOUNT PLEASANT ROAD** - A proposed shared-use path between Battlefield Boulevard and the Chesapeake Expressway will provide businesses, students at Great Bridge Middle School, and residents with a protected facility.

6. **MOUNT PLEASANT ROAD** - From the Chesapeake Expressway east, wide-paved shoulders are proposed to offer local cyclists space to ride along the road.

7. **SOUTH JOHNSTOWN ROAD** - Proposed buffered bike lanes on this route from the Great Bridge area heading south.



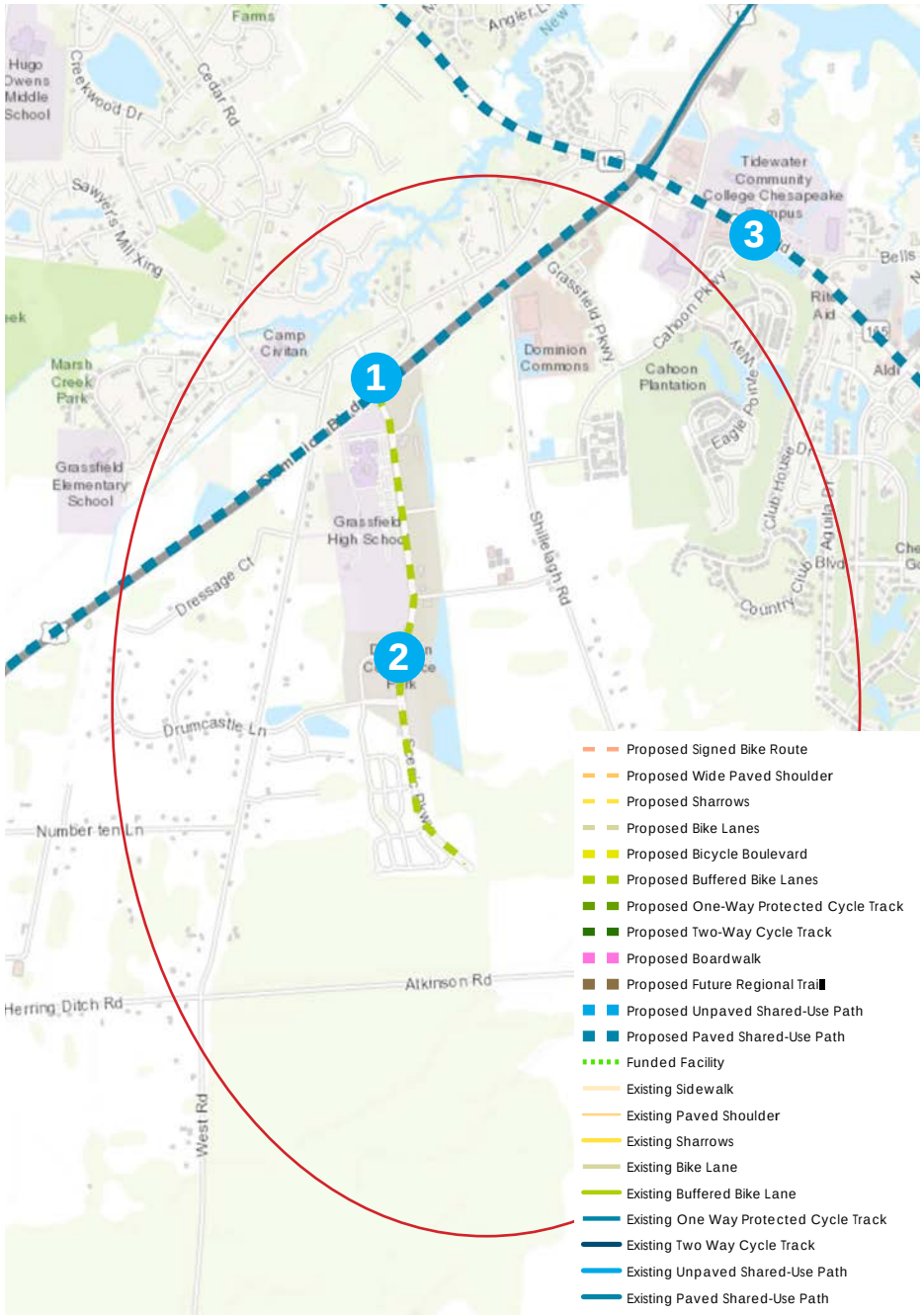
PROPOSED NETWORK
CHESAPEAKE - DOMINION BOULEVARD CORRIDOR

Due to the uncertain timing of the development of the Dominion Boulevard corridor, this plan shows minimal proposed facilities within this area. Future growth of this area will be defined by the adopted Dominion Boulevard Corridor Study, which provides detailed guidelines for future development, including recommendations for future urban, suburban, and existing rural areas.

1. **DOMINION BOULEVARD** - A proposed shared-use path along the north side of Dominion Boulevard will connect the existing Veterans Bridge shared-use path to the Dismal Swamp Canal Trail. This is part of the East Coast Greenways Historic Coastal Route.

2. **SCENIC PARKWAY** - Proposed buffered bike lanes on the Parkway will connect Grassfield High School, the Dominion Commerce Park, and surrounding residential neighborhoods.

3. **CEDAR ROAD** - A proposed shared-use path along the road will connect the Great bridge area to the Dominion Boulevard area.



PROPOSED NETWORK
ISLE OF WIGHT COUNTY

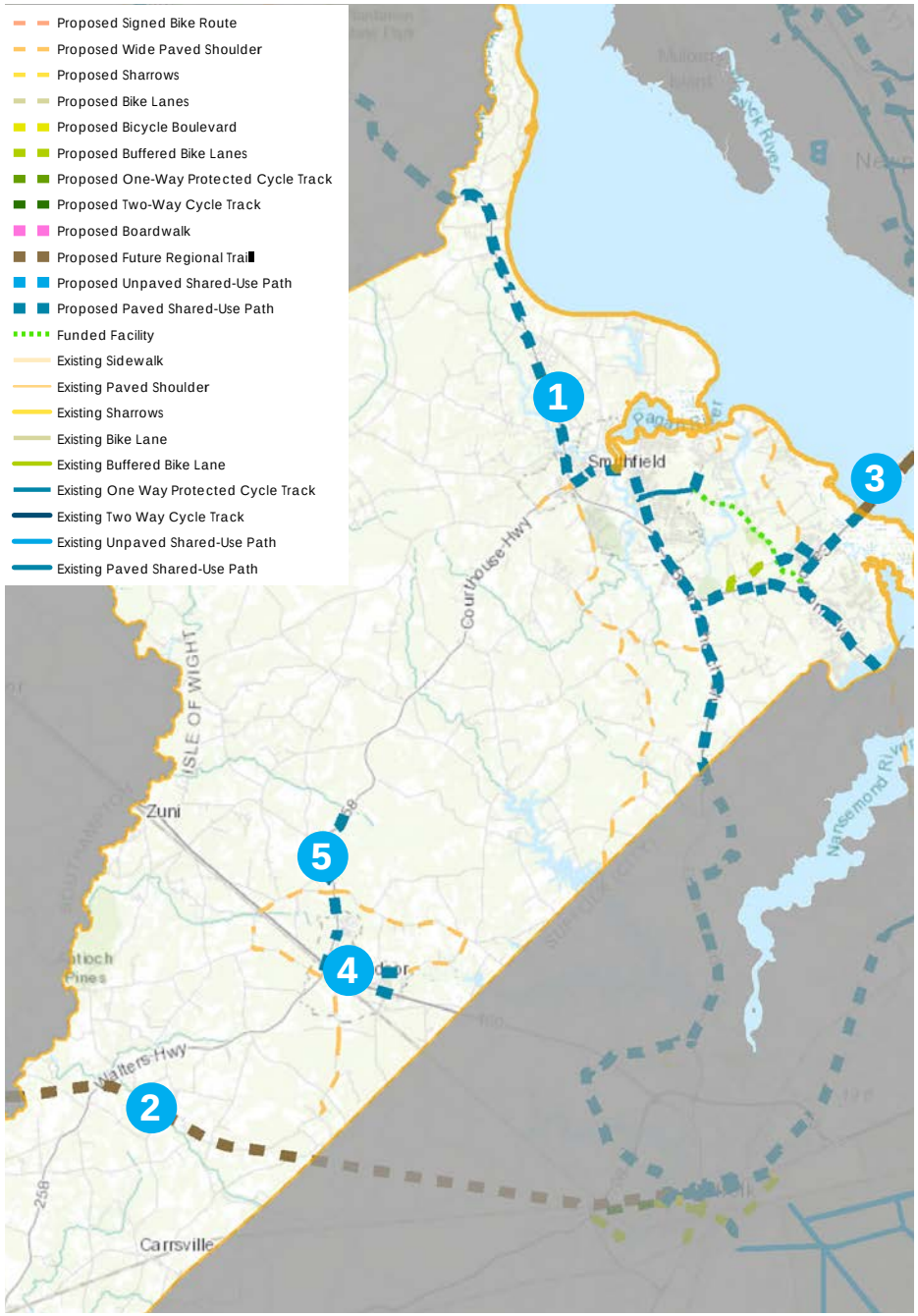
1 **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail Corridor will connect the southern terminus of the Virginia Capital Trail to the South Hampton Roads Trail in downtown Suffolk, thereby connecting Richmond to the oceanfront via an off-road paved shared-use path.

2 **BEACHES TO BLUEGRASS TRAIL** - The Beaches to Bluegrass Trail is a trail only in concept and will need further research for a preferred alignment across the state. The path is part of a proposed statewide trail that would tie into the existing South Hampton Roads Trail.

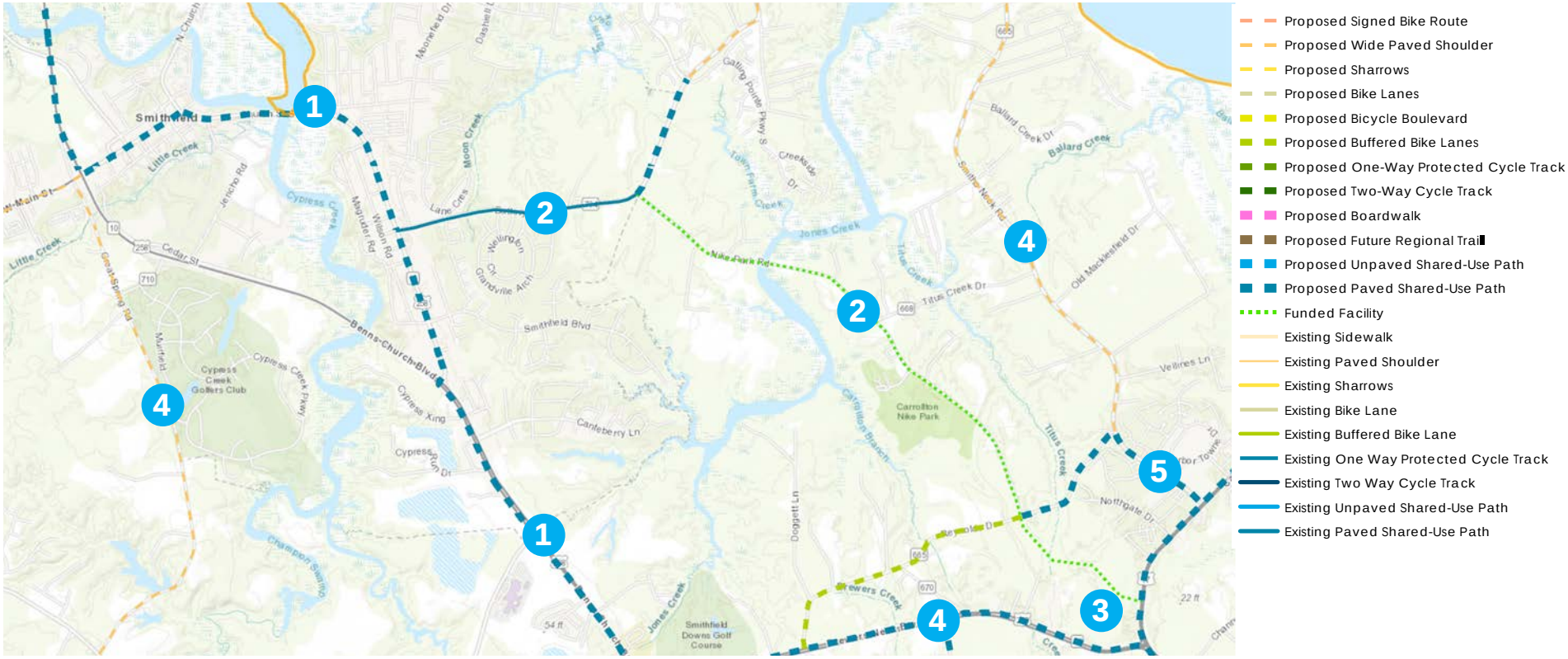
3 **JAMES RIVER BRIDGE/US-17** - A proposed future regional trail on the James River Bridge will provide a key connection and across the James River for the Peninsula and Southside.

4 **DOWNTOWN WINDSOR -** Multiple paved shared-use paths in Windsor on Windsor Boulevard, Courthouse Boulevard, and Shiloh Drive.

5 **WINDSOR AREA-** Proposed wide paved shoulders surround the town of Windsor, providing space for cyclists outside the town limits.



PROPOSED NETWORK
ISLE OF WIGHT COUNTY - SMITHFIELD



1 **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail Corridor will connect the southern terminus of the Virginia Capital Trail to the South Hampton Roads Trail in downtown Suffolk, thereby connecting Richmond to the oceanfront via an off-road paved shared-use path.

2 **BATTERY PARK ROAD/NIKE PARK ROAD -** A funded paved shared-use path along Battery Park Road and Nike Park Road connect Smithfield to Nike Park.

3 **US - 258/ US - 17** - Proposed paved shared-use paths along US - 258 and US - 17 provide connections from the Birthplace of America Trail to the Suffolk city line.

4 **RURAL ROADS** - Proposed wide paved shoulders provide rural connections to and from Smithfield and Carrollton.

5 **CARROLLTON/US - 17** - Proposed shared-use paths in this area provide seperated facilities to connect residential areas, commercial areas, and the James River Bridge.

PROPOSED NETWORK

NORFOLK REGIONAL ROUTES

1. **ELIZABETH RIVER TRAIL** - Proposed upgrades to the Elizabeth River Trail will complete the trail system and provide Norfolk with a critical regional trail system. A portion of this trail is part of the South Hampton Roads Trail and the East Coast Greenways Historic Coastal Route.

2. **SOUTH HAMPTON ROADS TRAIL** - A paved shared-use path funded from Elizabeth River ferry to City of Virginia Beach line will provide a regional connection as part of the region's route that connects the existing Virginia Capital Trail to the oceanfront.

3. **TERMINAL BOULEVARD** - A proposed shared-use path along the boulevard will help connect the Elizabeth River Trail eastward to Ocean View.

4. **OCEAN VIEW AVENUE** - Proposed buffered bike lanes along West and East Ocean View Avenue from Willoughby Spit to the City of Virginia Beach line will provide tourists and beach residents with safe facilities.

5. **GRANBY STREET** - From Ocean View Avenue to the Lafayette River, proposed buffered bike lanes will connect Ocean View to Downtown Norfolk.

6. **CHESAPEAKE BOULEVARD** - Proposed buffered bike lanes recommended along Chesapeake Boulevard from Virginia Beach Boulevard to Shore Drive.

7. **BERKLEY AVENUE/INDIAN RIVER** - Proposed buffered bike lanes along the corridor, connecting the Berkley neighborhood to the Chesapeake city line.

8. **GRANBY STREET** - Proposed sharrows recommended from Church Street to Brambleton Boulevard to connect the Virginia Zoo/Lafayette Park to Downtown Norfolk.

9. **NORTHAMPTON BOULEVARD** - The Northampton Boulevard paved shared use path connects Shore Drive residents to the City of Norfolk border.

10. **NORFOLK PILOT BIKE LOOP** - Multiple proposed facilities recommended along the bike loop to upgrade the existing network and regional connectivity.

- Proposed Signed Bike Route
- Proposed Wide Paved Shoulder
- Proposed Sharrows
- Proposed Bike Lanes
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PROPOSED NETWORK
NORFOLK - OCEANVIEW

1. **WEST AND EAST OCEAN VIEW AVENUE** - Ocean View Avenue is a critical route for the City of Norfolk. Proposed buffered bike lanes will maximize the level of comfort for the beachfront community. This facility will provide residents and tourists with a safe, separated facility.

2. **CHESAPEAKE BOULEVARD** - Proposed buffered bike lanes to connect the core of eastern Norfolk to Ocean view.

3. **GRANBY STREET** - Buffered bike lanes will connect Wards Corner shopping centers, Hampton Roads Transit transfer station, and Ocean View.

4. **OCEAN VIEW AVENUE/SHORE DRIVE** - A shared-use path along Shore Drive is proposed for crossing Little Creek. Proposed sharrows along 19th Street to the waterfront will connect with a proposed shared-use path from 19th Bay Street to 21st Bay Street onto the Shore Drive shared-use path.

5. **SHORE DRIVE** - Proposed buffered bike lanes and a shared-use path along Shore Drive to the Virginia Beach line.

6. **HUETTE DRIVE/ AZALEA GARDENS ROAD** - Proposed buffered bike lanes along this route to connect the Ocean View area to Virginia Beach Boulevard.

PROPOSED NETWORK
NORFOLK - DOWNTOWN

1. **LLEWELLYN AVENUE** - Proposed buffered bike lanes along Llewellyn will upgrade some of the existing pilot bike loop's bike lanes.

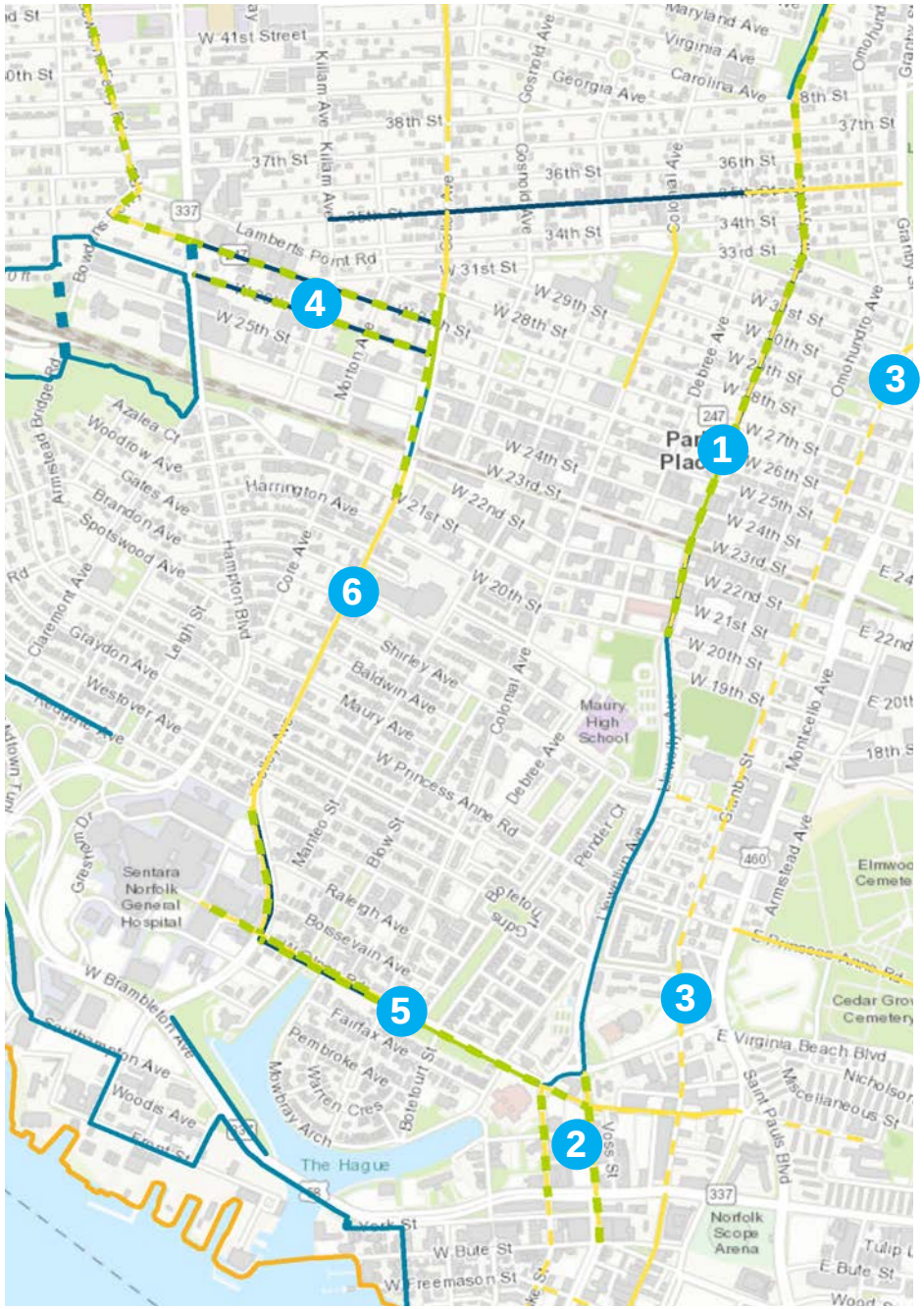
2. **DUKE STREET/BOUSH STREET** - Proposed buffered bike lanes from Olney Road to the Freemason area.

3. **GRANBY STREET** - Proposed buffered bike lanes to provide better separation.

4. **26TH/27TH STEET** - Proposed sharrows along Granby Street from Downtown Norfolk to 30th Street.

5. **OLNEY ROAD** - Proposed buffered bike lanes to provide more separation on the current pilot bike loop's bike lanes.

6. **COLLEY AVENUE** - Proposed buffered bike lanes to provide more separation on the current pilot bike loop's bike lanes.



PROPOSED NETWORK

PORTSMOUTH REGIONAL ROUTES

1. **SOUTH HAMPTON ROADS TRAIL** - An enhanced South Hampton Roads Trail corridor will follow the Commonwealth Railway right-of-way through Chesapeake into Portsmouth where it veers off onto High Street going into downtown Portsmouth via an off-road paved shared-use path. The SHRT is part of the East Coast Greenways Historic Coastal Route.

2. **PORTSMOUTH RAIL-TO-TRAIL** - From the Chesapeake city line to Old Coast Guard Boulevard, a funded paved shared-use path following former rail right-of-way.

3. **W. NORFOLK ROAD** - Proposed buffered bike lane (upgrading the existing sharrows) along W. Norfolk Road will provide residents with protected and safe facilities.

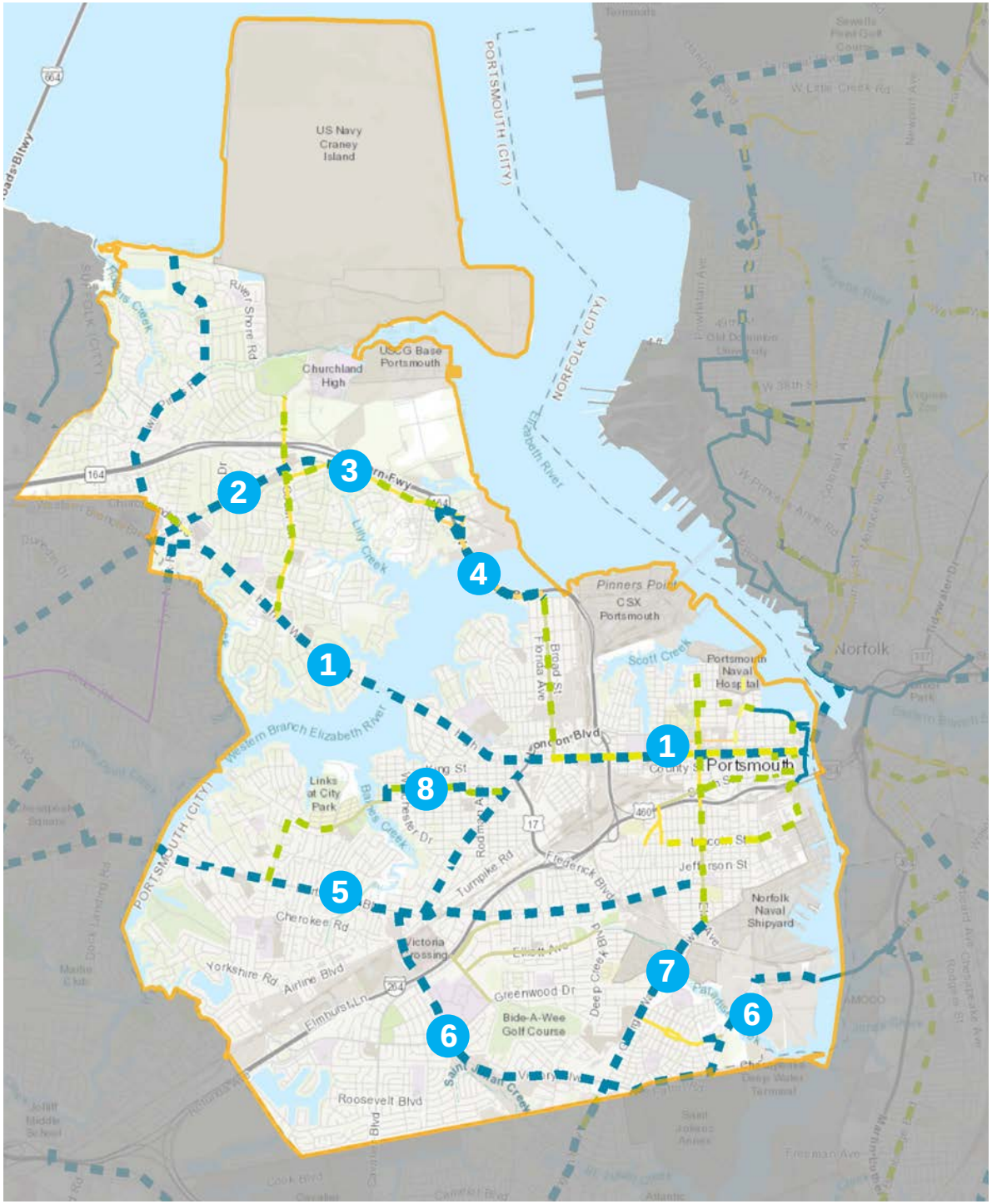
4. **WESTERN FREEWAY** - Proposed barrier separated paved shared-use paths along Western Freeway from W. Norfolk Road to Mt. Vernon Street provides a direct link from residential areas to key business areas in Portsmouth.

5. **PORTSMOUTH BOULEVARD** - Proposed off-street paved shared-use paths along this corridor to connect the city's residents from west to east.

6. **VICTORY BOULEVARD** - Proposed off-street paved shared-use paths from Portsmouth Boulevard to the Jordan Bridge will provide a vital connection with existing routes across the Elizabeth River in Chesapeake and Norfolk.

7. **GEORGE WASHINGTON HIGHWAY** - Proposed paved shared-use path from the Chesapeake city line to downtown Portsmouth provides a direct link between the Dismal Swamp Canal Trail and downtown Portsmouth.

8. **WESTHAVEN BICYCLE BOULEVARD** - Proposed paved shared use path and on-street bike lanes connecting Portsmouth City Park with residential neighborhoods and the Midtown Shopping District.



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PROPOSED NETWORK

DOWNTOWN PORTSMOUTH ROUTES

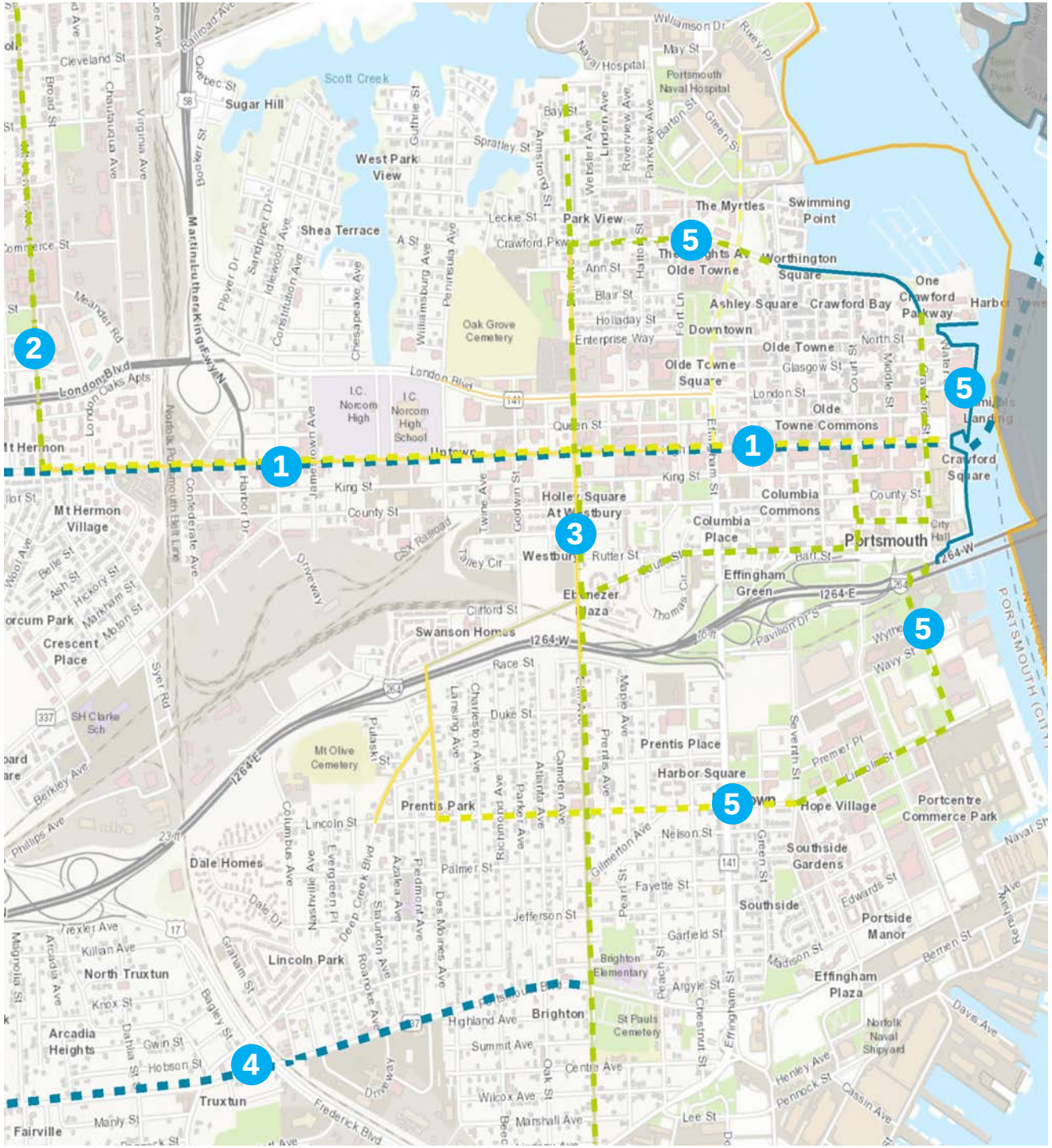
1. **HIGH STREET** - From Mt. Vernon Avenue to the waterfront, High Street's proposed facilities include a off-street shared-use path and on-road upgrades including a bicycle boulevard providing residents with a safe and separated facility through downtown Portsmouth. These recommendations will also improve the access to the Portsmouth Seawall and ferry. This route is part of the South Hampton Roads Trail and East Coast Greenways Historic Coastal Route.

2. **MT. VERNON AVENUE** - From the Western Freeway to High Street, proposed buffered bike lanes to upgrade the existing bike lanes with seperation.

3. **ELM AVENUE** - From the Portsmouth Yacht Club to George Washington Parkway, proposed buffered bike lanes provide separation from vehicular traffic.

4. **PORTSMOUTH BOULEVARD** - Proposed shared-use paths along this corridor provide a connection from neighboring communities to downtown Portsmouth.

5. **DOWNTOWN** - Upgraded facilities along Crawford Parkway and Crawford Street provide a loop to connect the Portsmouth Naval Medical Center and downtown Portsmouth. Proposed buffered bike lanes and bicycle boulevards around the Portsmouth Pavilion will provide neighboring residents with connectivity to the waterfront.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PROPOSED NETWORK
SOUTHAMPTON COUNTY AND FRANKLIN

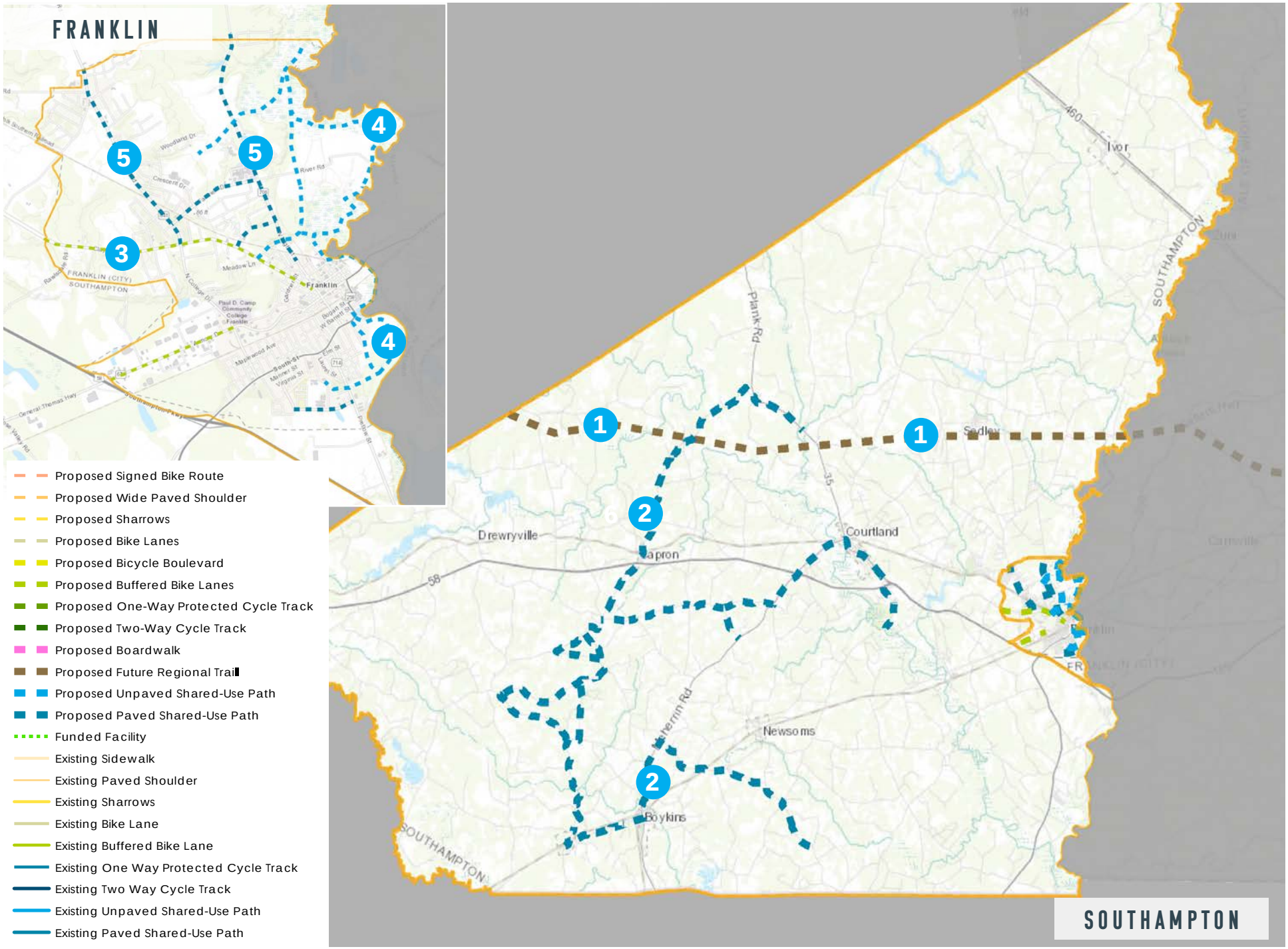
1. **BEACHES TO BLUEGRASS TRAIL** - The Beaches to Bluegrass Trail is a trail only in concept and will need further research for a preferred alignment across the state. The path is a proposed statewide trail that would tie into the existing South Hampton Roads Trail in Suffolk.

2. **NAT TURNER INSURRECTION TRAIL** - A proposed shared-use path connects Insurrection historical markers in Southampton County, providing the county with tourism and recreational attractions.

3. **CLAY STREET** - Proposed buffered bike lanes connect downtown Franklin to Southampton County.

4. **PARK AREAS** - Proposed unpaved shared-use paths throughout the waterfront and parks provide both recreational and off-road connectivity.

5. **HIGH STREET/N. COLLEGE DRIVE** - multiple proposed shared-use paths connect the towns' various commercial and residential areas.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PROPOSED NETWORK

SUFFOLK REGIONAL ROUTES

1. **SOUTH HAMPTON ROADS TRAIL** - A partially completed paved shared-use path recommended for future construction from the southern terminus of the Birthplace of America Trail to the City of Chesapeake line. The South Hampton Roads Trail will connect the existing Virginia Capital Trail to the oceanfront.

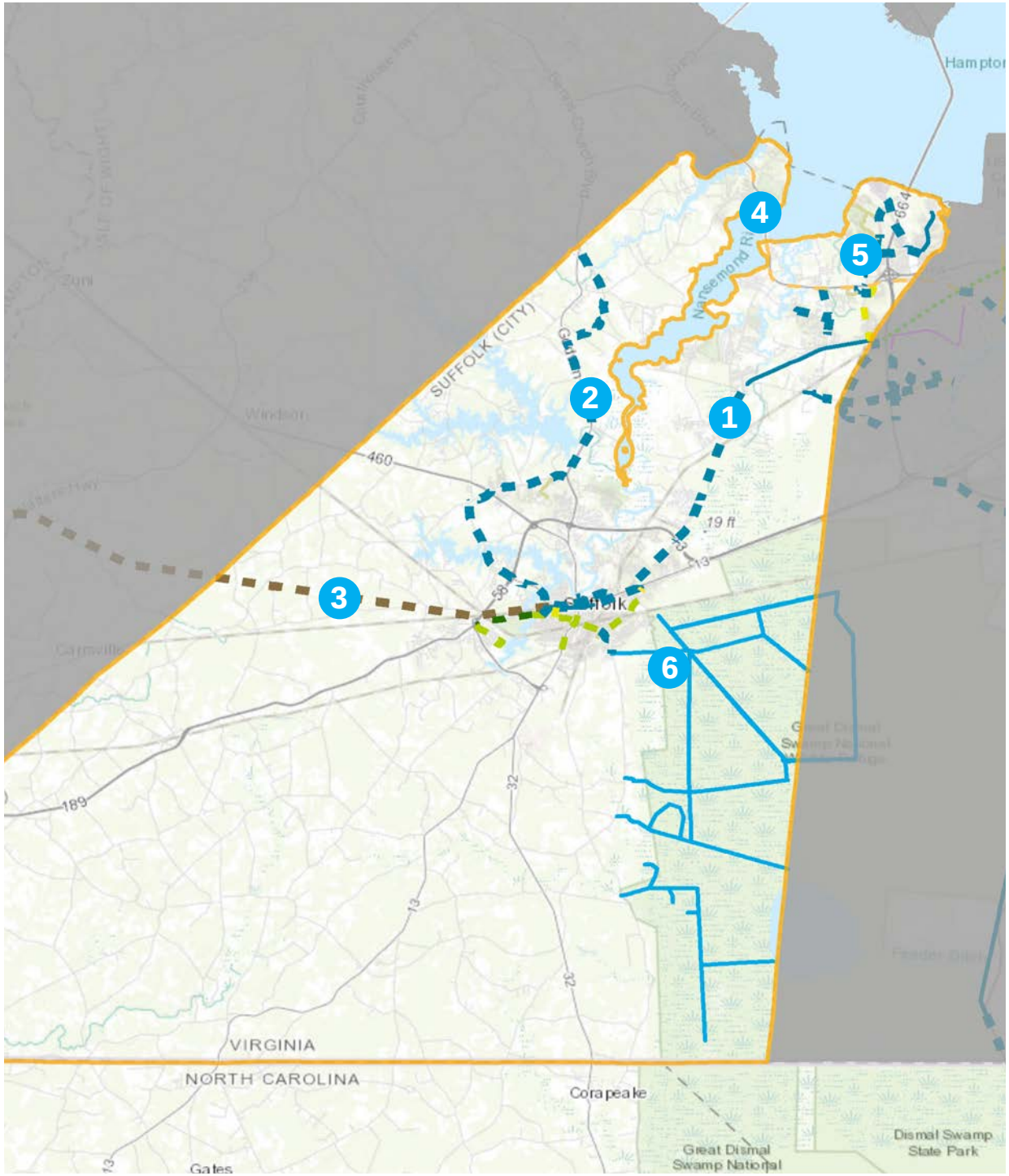
2. **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail Corridor will connect the southern terminus of the Virginia Capital Trail to the South Hampton Roads Trail in downtown Suffolk, thereby connecting Richmond to the oceanfront via an off-road paved shared-use path.

3. **BEACHES TO BLUEGRASS TRAIL** - The Beaches to Bluegrass Trail is a trail only in concept and will need further research for a preferred alignment across the state. The path is part of a proposed statewide trail that would tie into the existing South Hampton Roads Trail.

4. **ROUTE 17/ BRIDGE ROAD** - A proposed highway upgrade will include improved paved shoulders to connect Isle of Wight County to the City of Chesapeake.

5. **HARBOUR VIEW AREA** - Multiple upgrades to the Harbour View area will allow better connectivity between residential areas and commercial districts.

6. **DOWNTOWN SUFFOLK** - Multiple upgrades to the downtown area will allow better connectivity between residential areas and commercial districts.



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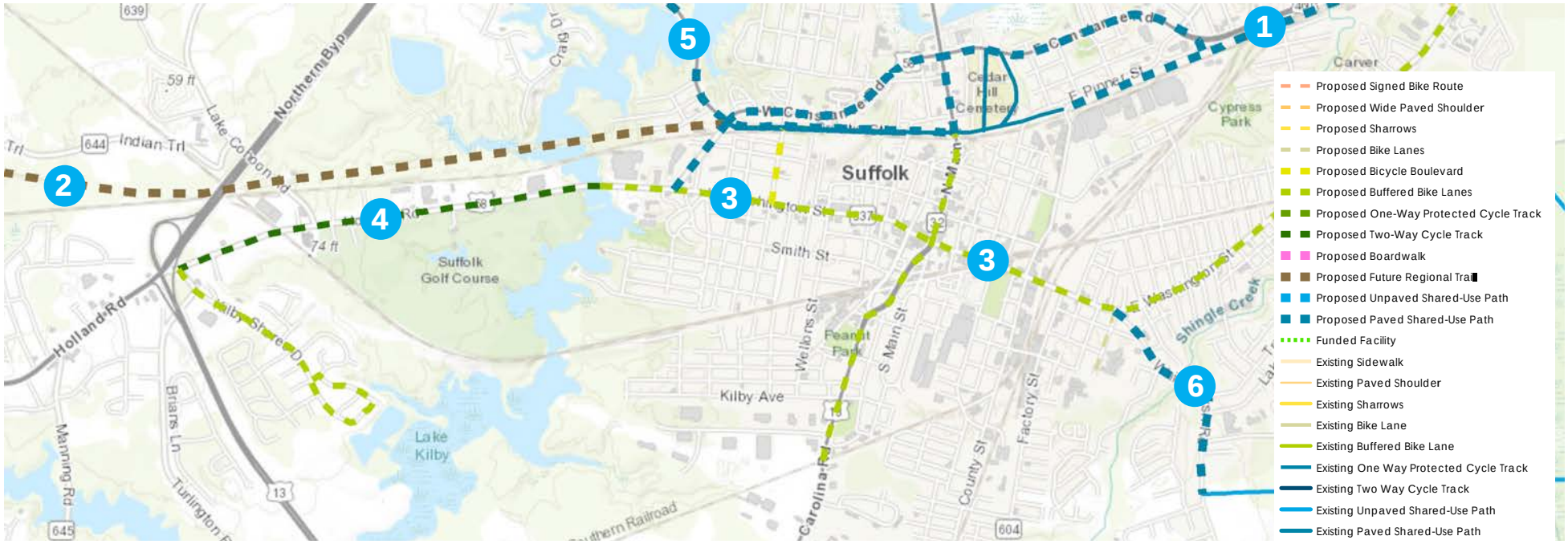
PROPOSED NETWORK
SUFFOLK - DOWNTOWN



1 **SOUTH HAMPTON ROADS TRAIL** - A partially completed paved shared-use path and recommended for future construction from the southern terminus of the Birthplace of America Trail to the City of Chesapeake line. The South Hampton Roads Trail will connect the existing Virginia Capital Trail to the oceanfront.

2 **BEACHES TO BLUEGRASS TRAIL** - The Beaches to Bluegrass Trail is a trail only in concept and will need further research for a preferred alignment across the state. The path is part of a proposed statewide trail that would tie into the existing South Hampton Roads Trail.

3 **WEST AND EAST WASHINGTON STREET** - Proposed buffered bike lanes along Washington Street from the Nansemond River to Suburban Drive provide residential neighborhoods with protected facilities.

4 **HOLLAND ROAD** - A proposed two-way cycle track from US-58 to the Nansemond River provide buffered facilities for connectivity.

5 **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail Corridor will connect the southern terminus of the Virginia Capital Trail to the South Hampton Roads Trail in downtown Suffolk, thereby connecting Richmond to the oceanfront via an off-road paved shared-use path.

6 **WHITE MARSH ROAD** - A proposed paved shared-use path along White Marsh Road joins downtown Suffolk to the Great Dismal Swamp National Refuge's unpaved trail system.

PROPOSED NETWORK
SUFFOLK - HARBOUR VIEW

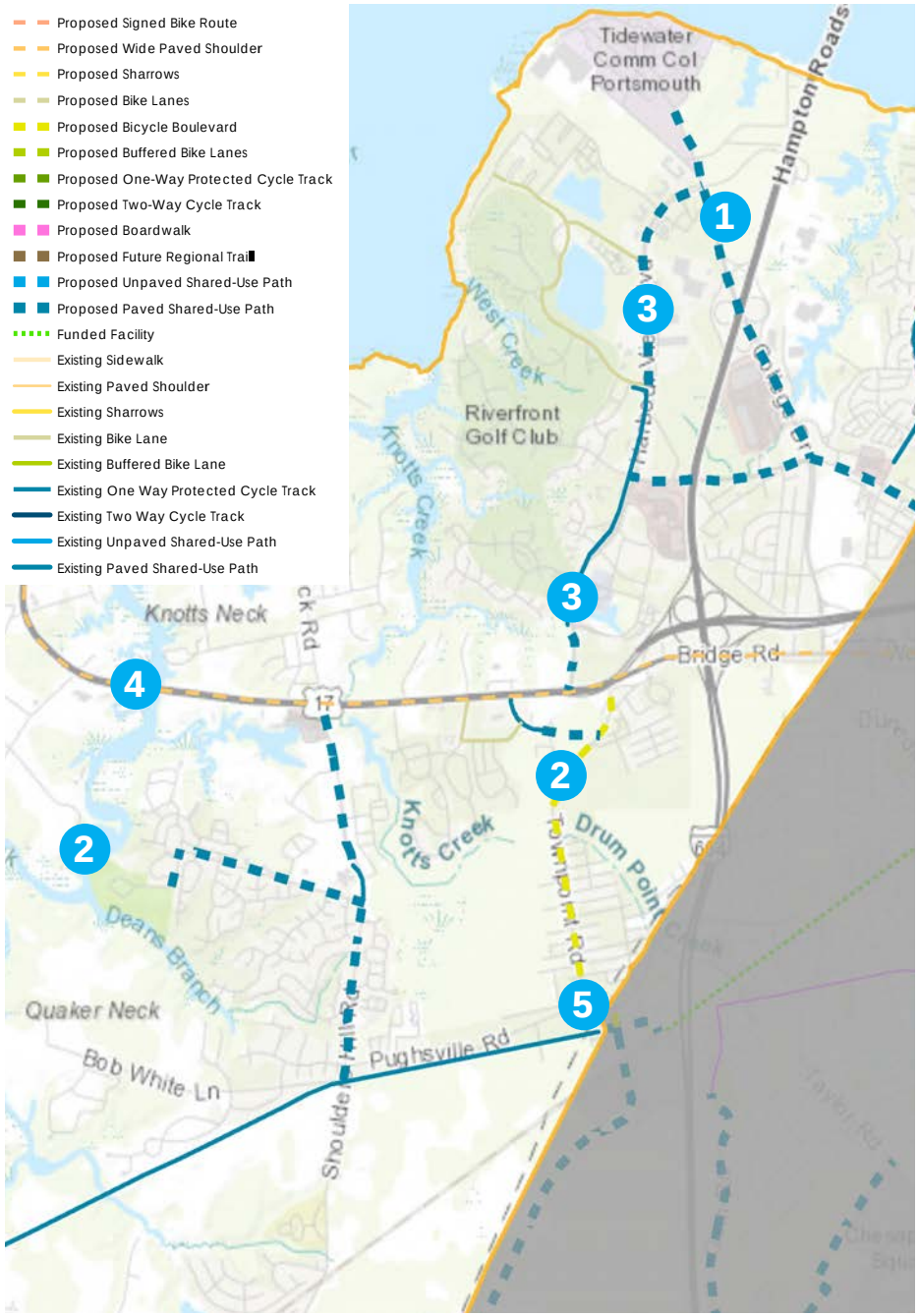
1. **COLLEGE DRIVE** - Proposed paved shared-use path along College Drive provides residential and commercial areas connections to the Tidewater Community College - Center for Workforce Solutions.

2. **TOWNE POINT ROAD** - Proposed paved shared-use paths along Towne Point Road connecting Harbour View Boulevard to the City of Portsmouth line.

3. **HARBOUR VIEW BOULEVARD** - Proposed paved shared-use paths along Harbour View Boulevard connects the existing shared-use paths, thereby linking Bridge Road to College Drive.

4. **ROUTE 17/ BRIDGE ROAD** - A proposed highway upgrade will include improved paved shoulders to connect Isle of Wight County to the City of Chesapeake.

5. **PUGHSVILLE ROAD -** Proposed wide paved shoulders along Pughsville Road to connect the Harbour View area to the South Hampton Roads Trail.



PROPOSED NETWORK
SURRY COUNTY

1. **BIRTHPLACE OF AMERICA TRAIL** - The Birthplace of America Trail Corridor will connect the southern terminus of the Virginia Capital Trail to the South Hampton Roads Trail in downtown Suffolk, thereby connecting Richmond to the oceanfront via an off-road paved shared-use path.

2. **JAMESTOWN/SCOTLAND FERRY** - This route is part of the Birthplace of America Trail and the East Coast Greenway's Historic Coastal Route.

3. **RURAL** - Due to rural nature of the County, proposed wide paved shoulders will provide residents with safer facilities across the County.

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PROPOSED NETWORK

VIRGINIA BEACH REGIONAL ROUTES

1. **SHORE DRIVE** - From City of Norfolk line, Shore Drive facilities connect the following to the oceanfront: Naval Amphibious Base Little Creek, multiple bay beach communities, Joint Expeditionary Base Fort Story.

2. **OCEANFRONT AREA** - Multiple routes at the oceanfront area intertwine the oceanfront neighborhoods via facilities on the following streets: Atlantic Avenue, Virginia Beach Boulevard, 17th Street, and Norfolk Avenue.

3. **VIRGINIA BEACH TRAIL** - The former Norfolk Southern rail line connects the oceanfront to the interior of the city, including Town Center as part of the South Hampton Roads Trail.

4. **GENERAL BOOTH BOULEVARD** - The General Booth Bouelvard corridor provides critical connections between the oceanfront and surrounding neighborhoods.

5. **NIMMO PARKWAY** - Nimmo Parkway and its future extension will provide a non-motorized off-road connection between the Red Mill, Ocean Lakes, Strawbridge and Sandbridge.

6. **VIRGINIA BEACH BOULEVARD** - The Virginia Beach Boulevard facilities will provide local businesses and residences with connections across Virginia Beach and into Norfolk.

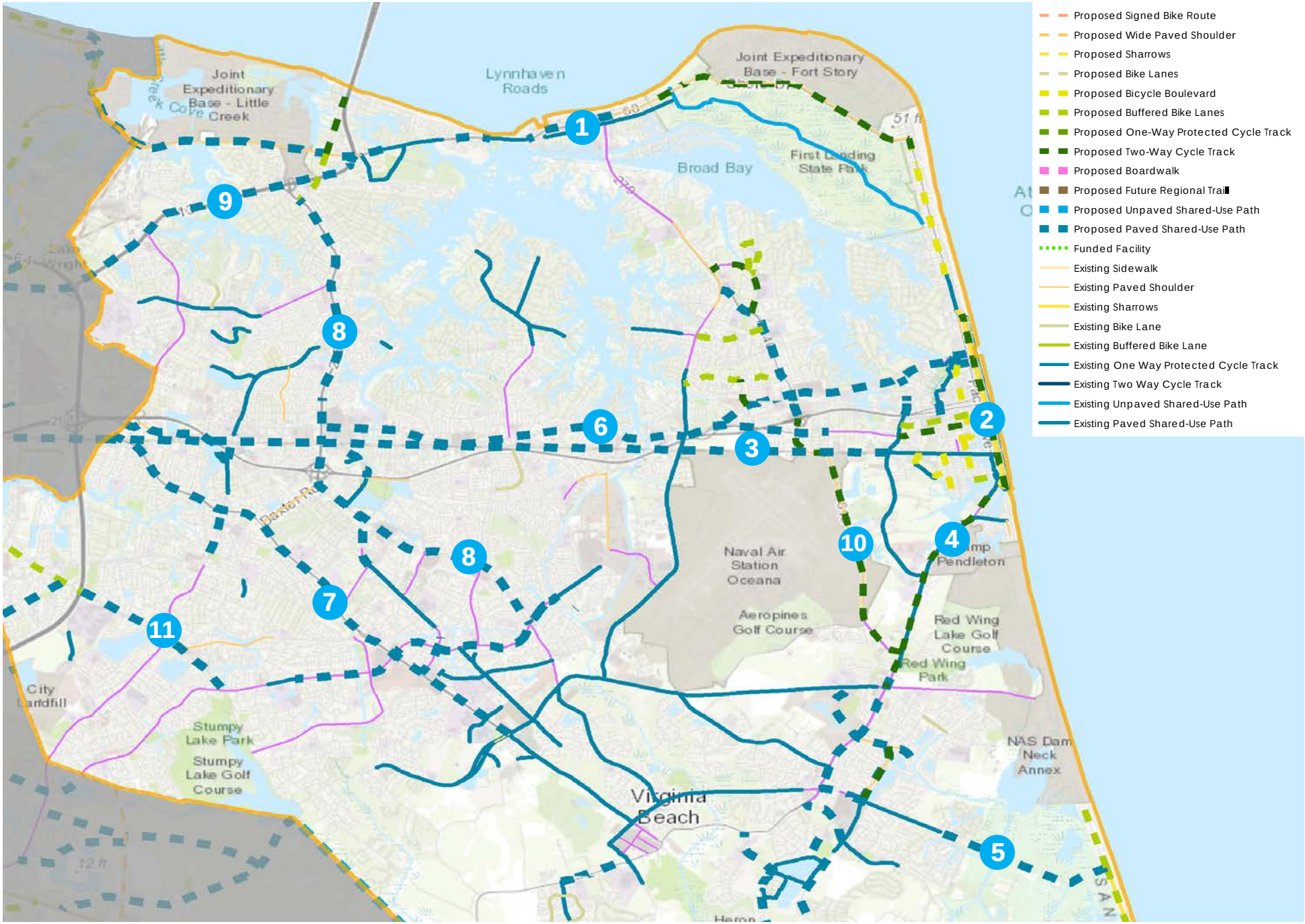
7. **PRINCESS ANNE ROAD** - Princess Anne Road facilities provide connections from the City of Norfolk border to the southern area of Virginia Beach, inculding Pungo.

8. **INDEPENDENCE BOULEVARD** - From Bayside to Town Center to Nimmo Parkway, this route provides a critical link for the City.

9. **NORTHAMPTON BOULEVARD** - The Northampton Boulevard facility connects Shore Drive residents to the City of Norfolk border.

10. **OCEANA BOULEVARD** - Oceana Boulevard connects General Booth Boulevard to the Hilltop area and Naval Air Station Oceana.

11. **INDIAN RIVER ROAD** - Indian River Road facilities from the City of Norfolk border to Lynnhaven Parkway connect multiple neighborhoods and business areas.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Lynnhaven Roads
Joint Expeditionary Base - Fort Story
Broad Bay
First Landing State Park
Naval Air Station Oceana
Aeropines Golf Course
Camp Pendleton
Red Wing Lake Golf Course
Red Wing Park
NAS Dam Neck Annex
Virginia Beach
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PROPOSED NETWORK
VIRGINIA BEACH - OCEANFRONT

The oceanfront area of Virginia Beach is a key tourism destination for the region. The area includes highly used existing facilities and key proposed facilities to connect both the local population and tourist population to critical destinations and points of interest.

1. **BOARDWALK** - The Virginia Beach Boardwalk provides both pedestrian and bicycle accommodations via a wide paved shared-use path and a two-way bike lane.

2. **PACIFIC AVENUE** - Currently, the City has bike sharrows along the Pacific Avenue trolley lanes and roadway. This type of facility does not meet current state and federal standards. The proposed facility would include a two-way cycle track to provide users with separated lanes for each mode. This corridor will provide a route off the boardwalk connecting the Southend and Northend of the oceanfront.

3. **30TH STREET, LASKIN ROAD, 32ND STREET** - These east-west proposed corridors will provide off-road paved shared-use paths along the streets to connect locals and tourists from the oceanfront to Hilltop.

4. **N. BIRDNECK ROAD** - A proposed shared-use path connecting Laskin Road to 21st Street will complete the shared-use path network along the roadway.

5. **19TH STREET** - A buffered bike lane along 19th street will provide users with a protected facility for the Vibe Business District.

PROPOSED NETWORK
VIRGINIA BEACH -SHADOWLAWN

The Southend of the oceanfront has key proposed corridors connecting the existing residential neighborhoods, surrounding businesses, and the oceanfront.

1. **NORFOLK AVENUE** - Norfolk Avenue's shared-use path is a crucial corridor for the oceanfront and neighboring communities, but it also serves regional trips as part of the South Hampton Roads Trail. The existing trail in the former rail right-of-way will be part of an east-west corridor that will provide the City, region, and state with a critical off-road network.

2. **GENERAL BOOTH BOULEVARD** - The existing shared-use paths/ wide sidewalks do not meet the future needs of the corridor. The proposed network will include the existing facilities plus a two-way cycle track to separate the bicyclists and pedestrian users.

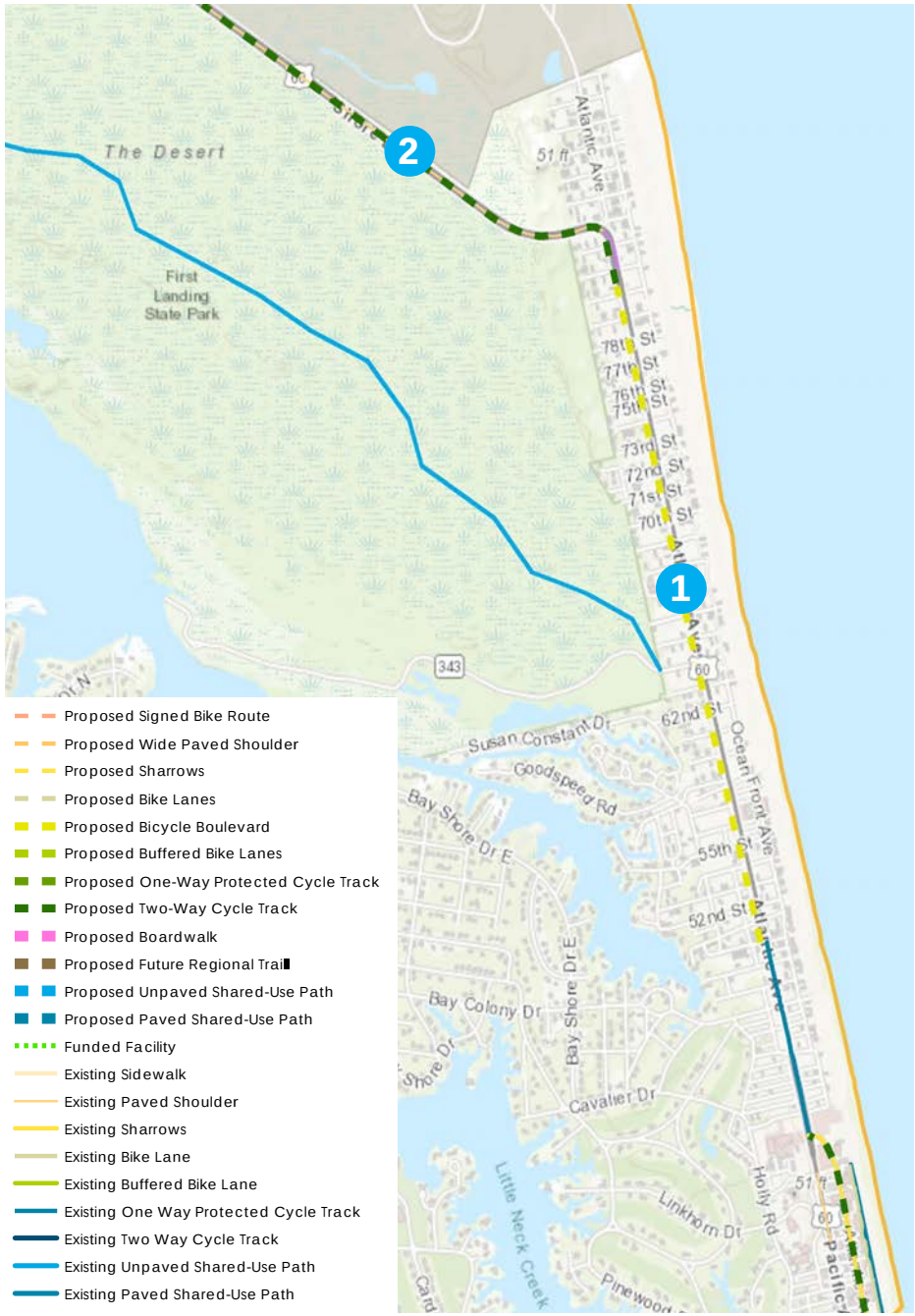
3. **MEDITERRANEAN AVENUE, RUDEE AVENUE, MARSHVIEW DRIVE, AND BALTIC AVENUE** - These four streets will provide local users with low-stress bicycle boulevards connecting other facilities in the area. Bicycle boulevards provide low cost, highly effective facilities to complete the local network.

PROPOSED NETWORK
VIRGINIA BEACH - OCEANFRONT - NORTHEND

The Northend of the oceanfront not having many existing facilities, its proposed facilities are vital regional connections for the city and region.

1. **ATLANTIC AVENUE** - Atlantic Avenue from 51st Street to 80th Street has a side street parallel to the main road. For locals, this street serves as a northern-southern bike route and a shared-use path. The proposed facility for this street is a bicycle boulevard which would give the bicycles/pedestrians right-of-way priority and low-stress shared facilities. This bicycle boulevard eliminates a gap in the regional network, connecting the oceanfront to Shore Drive.

2. **SHORE DRIVE** - A proposed two-way cycle track on each side of Shore Drive is recommended to replace the existing wide paved shoulders. These tracks will be buffered by physical barriers to make the user feel comfortable near the road.



PROPOSED NETWORK
VIRGINIA BEACH -RED MILL/STRAWBRIDGE

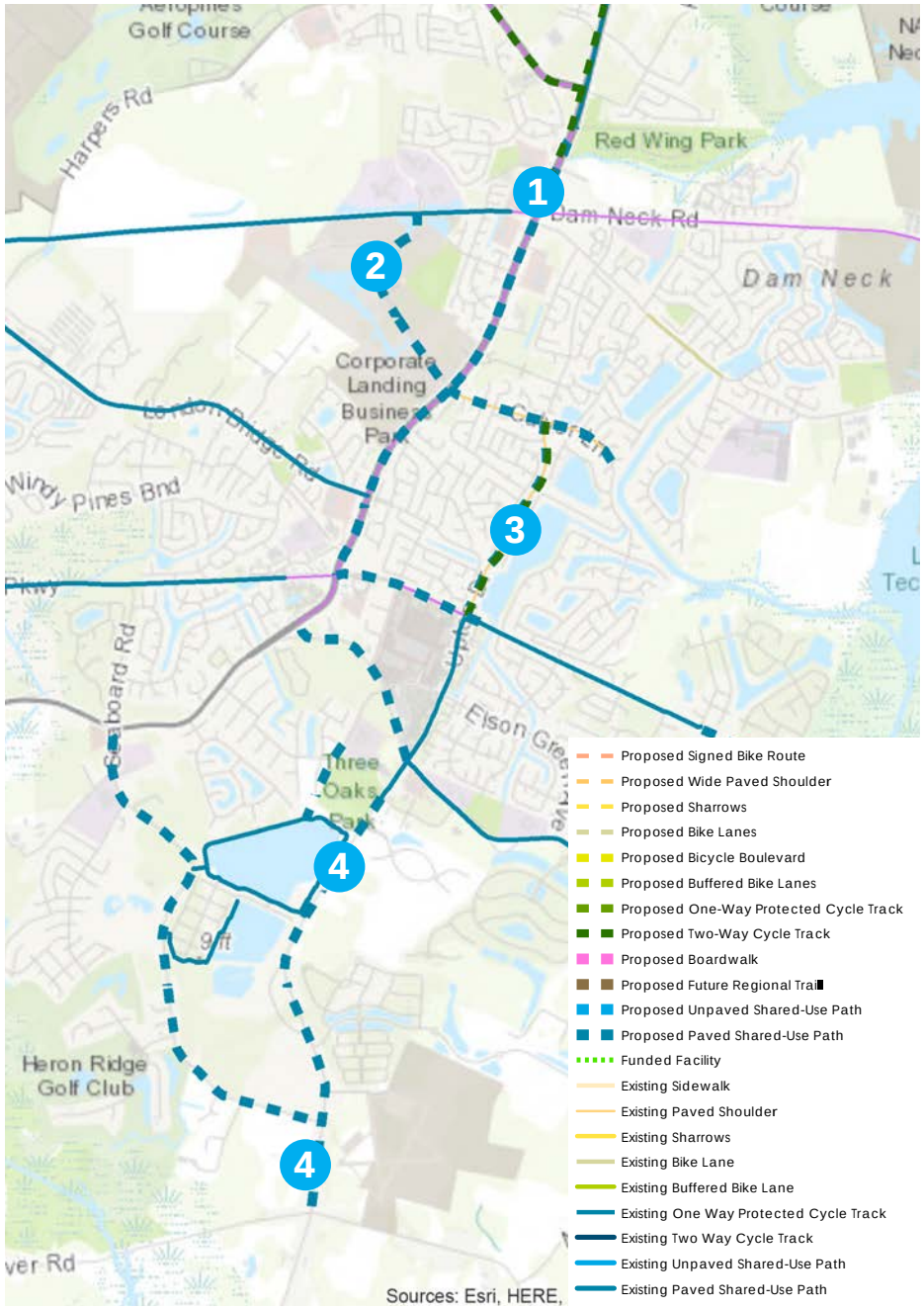
Due to the newer age of the Red Mill/Strawbridge neighborhoods, multiple existing facilities exist. Connecting these facilities and giving the area an entire network will provide all users with connectivity to parks, residential areas, and shopping destinations.

1. **GENERAL BOOTH** - From Dam Neck Road to Princess Anne Road, a shared-use path is proposed replacing the existing wide sidewalk to provide all users ample space to feel comfortable off the road. This corridor connects this area to the oceanfront.

2. **CORPORATE LANDING/CULVER LANE** - Connecting the Ocean Lakes neighborhood to General Booth via an off-road paved shared-use path will provide users with ample separation and space.

3. **UPTON DRIVE** - From Culver Lane to Nimmo Parkway, a two-way cycle track is proposed to give bicyclists a separate facility from vehicles and pedestrians.

4. **PRINCESS ANNE ROAD** - Multiple proposed shared-use paths in various places to bridge the gaps in existing infrastructure.



PROPOSED NETWORK
VIRGINIA BEACH - HILLTOP

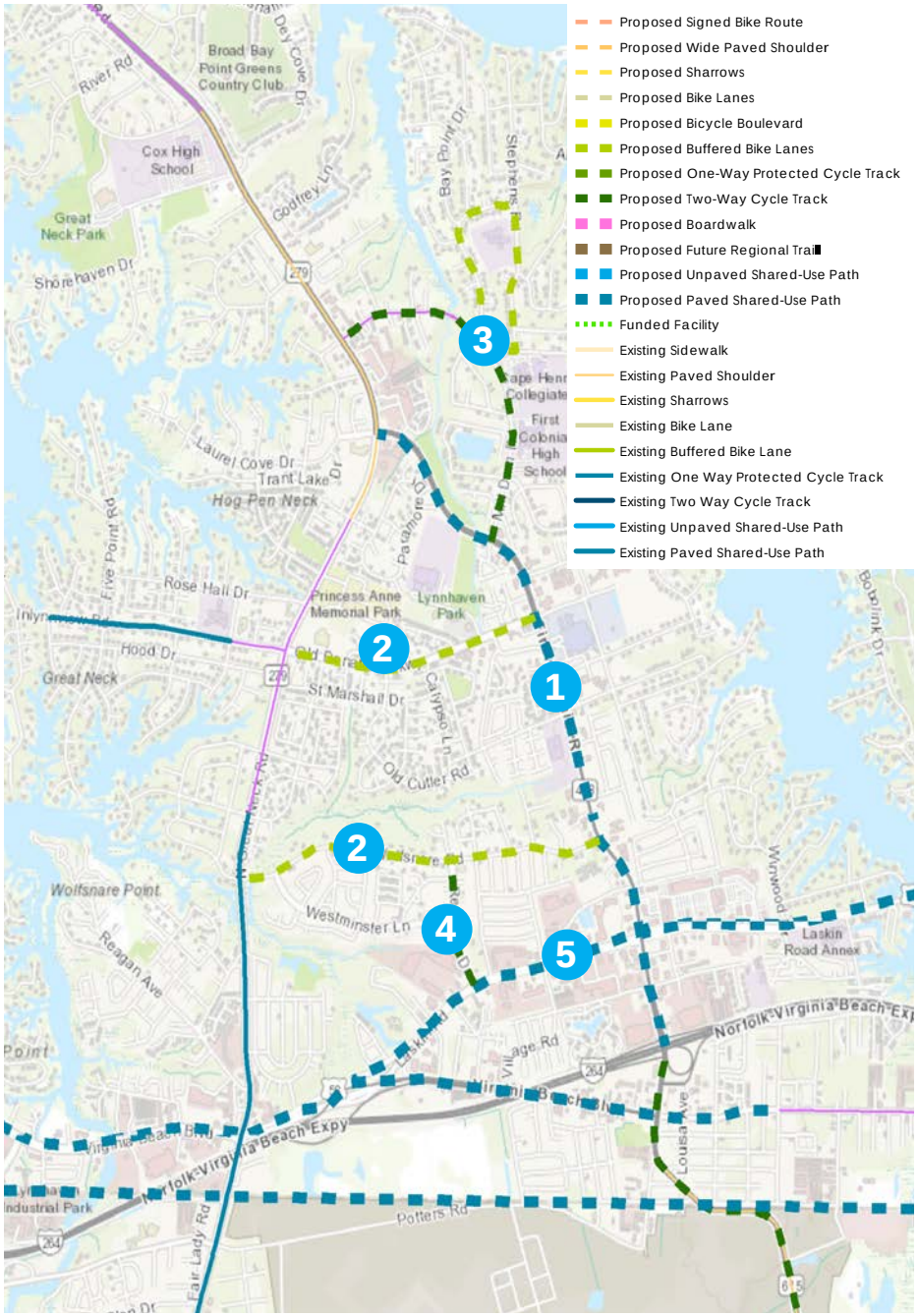
1. **FIRST COLONIAL ROAD** - A proposed shared-use path on both sides of First Colonial will provide all users with facilities connecting key shopping destinations, the Sentara Virginia Beach Hospital, surrounding businesses, and the residential neighborhoods.

2. **WOLFSNARE ROAD/OLD DONATION PARKWAY** - Proposed buffered bike lane along these two east-west corridors provide multiple connections from Great Neck Road to First Colonial Road.

3. **MILL DAM ROAD** - A two-way cycle track along this corridor provides students from Cape Henry Collegiate, and First Colonial High School separated facilities to/from school and residential areas. It also offers a safe route for the Alanton Elementary School off Stephens Road.

4. **REGENCY DRIVE** - A proposed two-way cycle track will provide residents with a connection to multiple Hilltop shopping destinations.

5. **LASKIN ROAD** - Proposed shared-use paths along Laskin Road will replace the old feeder road system, providing a safe network of facilities in this area.



PROPOSED NETWORK
VIRGINIA BEACH -CHIX BEACH

1 **PLEASURE HOUSE ROAD** - A proposed two-way cycle track along Pleasure House Road will provide locals with a safe, separated bike facility to the beach from Shore Drive. From Shore Drive to Independence, proposed buffered bike lanes will provide users from the Thoroughgood neighborhood with connections to Chix Beach.

2 **SHORE DRIVE** - Multiple funded facilities are planned along the corridor in Virginia Beach connecting the Chix Beach area back to Great Neck Road via the new Lesner Bridge shared-use path.

3 **INDEPENDENCE ROAD/NORTHAMPTON BOULEVARD** - Proposed shared-use paths along these corridors connect this area to the City of Norfolk and Town Center.

CHAPTER FIVE: TAKING ACTION

OVERVIEW

Linking Hampton Roads provides the framework for the Hampton Roads region as a destination for healthy lifestyles, alternative transportation, and tourism. Implementation success of these proposed recommendations will require a constant regional effort between the HRTPO, VDOT, and localities.

The Taking Action chapter provides detailed next steps for the region and localities. The success of both regional and local projects will provide our area with a complete active transportation system for both transportation and recreation. These action steps do not offer specific actions for each recommendation, but instead offer priority steps for the region.

SIX E'S

Below are the essential elements needed to achieve the vision of a bicycle and pedestrian-friendly community for everyone.

- **Engineering:** Create a safe and convenient place to walk, bike, and ride.
- **Education:** Give people of all ages and abilities knowledge of safe bicycle and pedestrian practices, traffic laws, and opportunities.
- **Encouragement:** Create a strong regional active transportation culture that welcomes and celebrates active transportation.
- **Enforcement:** Ensure safety for all users on all active transportation facilities.
- **Evaluation and Planning:** Plan for active transportation as a safe and viable transportation option instead of an alternative option.
- **Equity, Diversity, and Inclusion:** Guide communities towards more equitable, diverse, and inclusive active transportation planning.

The Taking Action chapter provides proposals related to all of the Six E's. Achieving the vision of the Linking Hampton Roads plan depends on HRTPO, VDOT, and localities working together and taking action on the following next steps.

CHAPTER CONTENTS

NEXT STEPS

PRIORITIZATION

The first step toward implementation is the prioritization of the proposed recommendations from Chapter Four. Prioritization will be a combined effort of the HRTPO's LRTP and active transportation efforts using the HRTPO Project Prioritization Tool. This process has been reviewed by both the Active Transportation Subcommittee and the Long Range Transportation Planning Subcommittee. All regional and subregional projects in the Linking Hampton Roads plan will be scored via the Prioritization Tool and added to the LRTP's active transportation project candidate list.

LOCAL PLANS

Following the adoption of the Linking Hampton Roads plan, HRTPO staff will provide localities with assistance on local comprehensive bike and pedestrian plans to supplement the regional plan. These local plans provide more detailed recommendations and also allow for more local input from citizens. Once the localities adopt these local plans, HRTPO staff will review and update the Linking Hampton Roads plan accordingly.

ADOPTION OF COMPLETE STREET POLICIES

The HRTPO and localities will support Complete Streets policies providing a framework for ensuring that all regional planning, engineering, and construction of roadways offer adequate facilities for all users, including people with access and functional needs. Through local and regional efforts, we can create a consistent and safe connected transportation network for bicyclists, pedestrians, motorists, and transit users of all ages and abilities.

PUBLIC EDUCATION

VDOT, the HRTPO, and localities may expand public education campaigns promoting right-of-way awareness and the rights and responsibilities of all road users. The HRTPO, localities, and school districts can also work with VDOT to ensure that bicycle and pedestrian safety is a key part of public education.

PROMOTION OF THE MAJOR ACTIVE TRANSPORTATION ROUTES

Building on the success of the completion of the Virginia Capital Trail, the formation of the Tidewater Trail Alliance, and Elizabeth River Trail Foundation; HRTPO, VDOT, and localities can promote the major active transportation routes in Chapter Two as the spine linking our region through active transportation plans.

The major active transportation routes include:

- Virginia Capital Trail - Richmond to Jamestown.
- Birthplace of America Trail - Jamestown to Fort Monroe and Downtown Suffolk.
- South Hampton Roads Trail - Downtown Suffolk to the Virginia Beach Oceanfront.
- Elizabeth River Trail - Local trail that is part of the South Hampton Roads Trail system along the Elizabeth River.
- East Coast Greenway - A national greenway along the East Coast that follows the Virginia Capital Trail, Birthplace of America Trail, Elizabeth River Trail, and connects to the Dismal Swamp Canal Trail south into North Carolina.
- Beaches to Bluegrass Trail - A proposed statewide trail between the Virginia Beach Oceanfront and Cumberland Gap.

As our region progresses and grows, other trail systems should be added to link our local active transportation facilities and our community further.

BICYCLE RECOMMENDATIONS

The following actions specific to bicycle facilities are recommended to localities:

- Retrofit existing roadways, when appropriate, to accommodate active transportation facilities.
- Provide bicycle parking at key popular destinations, schools, parks, and businesses.
- Add bicycle parking requirements within development and zoning policies.
- Each locality and VDOT review all future road projects to determine appropriateness for bike facilities.
- Localities increase the amount of way-finding signage.
- On a regional level, HRTPO and VDOT may implement regional way-finding plans for key regional trails.

PEDESTRIAN RECOMMENDATIONS

The following actions specific to pedestrian facilities are recommended to localities:

- School Districts and Localities designate a 1/2 mile zone around schools and parks as high priority locations for pedestrian facilities.
- Using the Hampton Roads Active Transportation Safety Study, Localities will identify the highest priority crosswalk locations annually to be funded.
- Localities will develop plans for Americans with Disabilities Act (ADA) compliance problems and promote standards that make pedestrian facilities for people with access and functional needs.
- Increase the amount of way-finding around each locality.

FUNDING

Constructing and implementing all of the facilities and programs proposed in this plan will require extensive local, state, and federal resources. A variety of financial sources are available locally and statewide.

Besides the typical local, state, and federal funds, localities can use the following sources:

- **Roadway Maintenance Programs** - Incorporate proposed bicycle facilities within roadway during resurfacing, restriping, and upgrading projects.
- **Road Diets** - For roadways that have excess facility capacity, localities can repurpose the existing right-of-way using low-cost restriping to add on-road bicycle facilities.
- **New Developments** - Force new development projects to provide bicycle and pedestrian amenities.
- **Utility Right-of-Way** - Pursue utility companies and use the utility corridors to develop active transportation facilities within the utility's right-of-way.

PUBLIC - PRIVATE PARTNERSHIPS

Partnerships between localities, non-profit organizations, and governments can be a successful tool for funding active transportation projects. As businesses see that amenities like bike and pedestrian facilities provide both recreational and commuting alternatives, they also provide their companies and communities with healthier environments. As Hampton Roads businesses grow, active transportation amenities provide them with publicity for healthier lifestyles.

GRANTS

Multiple nonprofit organizations provide grants for active transportation-related projects to make communities healthier. The following are a few examples:

- Mapping
- Wayfinding
- Planning
- Active Transportation/Recreation Amenities

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APPENDIX: PUBLIC INPUT

OVERVIEW

In order for the HRTPO and regional active transportation staff to gain local knowledge and involvement, a public outreach element was included as an important portion of the Linking Hampton Roads study. Public input was collected through several different means including the following:

- Active Transportation Subcommittee meetings
- Public input surveys
- Public meetings
- HRTPO's website

These methods were accessible to Hampton Roads residents as an opportunity to contribute to the active transportation plan.

ACTIVE TRANSPORTATION SUBCOMMITTEE & MEETINGS

The Active Transportation Subcommittee's meetings were held throughout the planning process with representatives from each entity of the Hampton Roads Transportation Planning Organization. Non-voting entities and Military Liaisons, including the US Navy, were included in the meetings. In addition, VDOT (statewide and local) and Department of Conservation and Recreation (DCR) participated in the AT Subcommittee meetings. HRTPO staff encompassed advocacy groups including but not limited to: Peninsula Bicycle Association, Tidewater Bicycle Association, Historic Triangle Bicycle Association and Bike Norfolk. The AT Subcommittee oversaw all aspects of the study, assisted staff to identify areas of need in the region, and reviewed the plan. The subcommittee's input is reflected throughout the recommendations of this planning document.

The existing AT Subcommittee and its regularly scheduled meetings were used as the method to gain further insight into existing conditions and preliminary recommendations.

CHAPTER CONTENTS

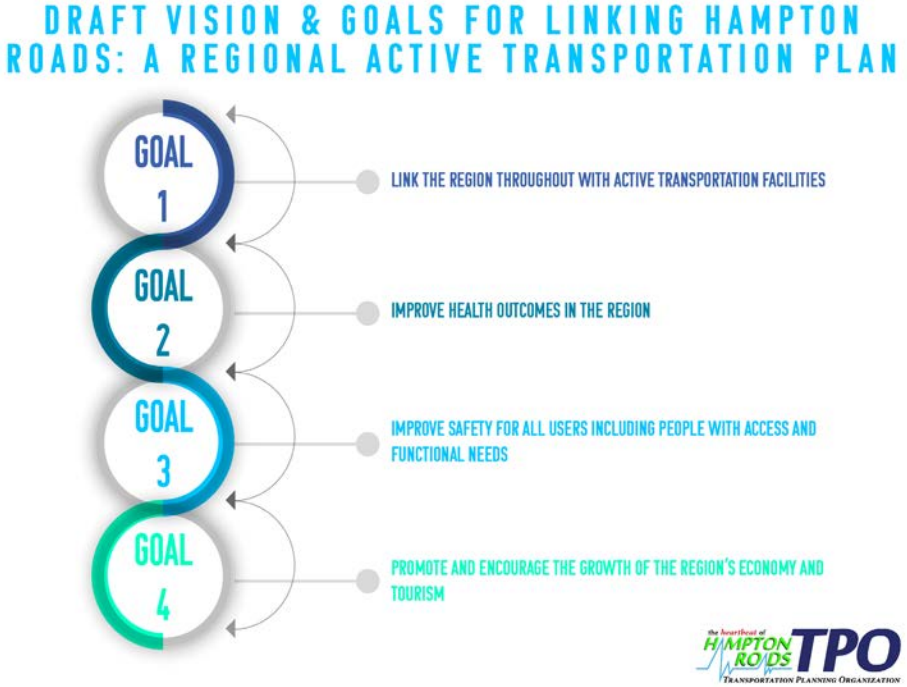
PUBLIC INPUT SURVEYS
VISION STATEMENT AND GOALS SURVEY RESULTS

An online survey for public input on the study's vision statement and goals was live for two weeks during November 2017. The survey had 653 responses from the public. The survey was a two question survey including the following:

- Do you agree with the following vision or goals?
- Do you have any other vision or goals for active transportation here in Hampton Roads?

88% or 574 of the responses agreed with the main objectives. Overwhelmingly, the public comments for the second question remained positive and grouped within the four main objectives of the study's vision. Safety was the number one concern from residents. The design, placement and protection of active transportations facilities were the biggest concern among resident's comments about safety. Due to this being the highest concern the objective, "Improve safety for all users including people with access and functional needs" was moved to the Goal 1. Connectivity to and from active transportation facilities, destinations, schools, parks, and businesses was also an important objective to residents.

Multiple residents also commented that with limited money for the region and the widening of major highways as a "never-ending project", they proposed building regional active transportation facilities as a better use of funding. Several residents did have negative responses to regional active transportation. These responses included: the cost versus outcome from upgrading active transportation facilities is not cost effective, several comments against light rail, and encouraging denser development to create walkable centers versus regional active transportation facilities.



Do you Agree with these Vision and Goals?

PUBLIC INPUT SURVEYS
INFRASTRUCTURE RECOMMENDATIONS SURVEY RESULTS

An online survey for public input on the plan's infrastructure recommendations and the 2045 Long Range Transportation Plan was live for between March 28, 2019 to June 12, 2019. The public provided HRTPO staff with the following infrastructure recommendations that fit within the plan's boundaries and scope. The following projects have been added to the Linking Hampton Roads plan's infrastructure recommendation chapter:

Project Name	From	To	Project Description
Battlefield Blvd	Military Highway	Volvo Parkway	Provide bicycle and pedestrian accomodations for safer travel to shopping/retail on foot.
Multi-use Paths	Beaverdam Park	Main Street	Provide bike and pedestrian trails to Beaverdam Park from Main St in Gloucester.
Five Mile Loop Trail	Fort Monroe	Fort Monroe	Develop Five Mile Loop Trail at Fort Monroe.
Bike Lanes on Indian River	Campostella Rd	Military Highway	Add bike lanes on Indian River Rd from Berkley Ave in Norfolk to Sparrow Rd in Chesapeake.
Expand the Virginia Capital Trail	James City County	Rest of Hampton Roads	Expand the Virginia Capital Trail.
James River Heritage Trail Expansion	Existing Trailhead	Hampton Roads	Complete the James River Heritage Trail.
South Hampton Roads Trail	Suffolk	Virginia Beach	Bicycle/Pedestrian Facility
South Hampton Roads Trail: Virginia Beach (Bike Trails/Lanes Along Light Rail Tracks)	Norfolk	Oceanfront	Bicycle/Pedestrian Facility
Southside Bike Trail	Chesapeake	Virginia Beach Oceanfront	Provide Southside Bike Trail corridor from Chesapeake to Virginia Beach oceanfront
Tidewater Loop			Connect the trail systems of Norfolk, Chesapeake, Virginia Beach and Portsmouth. From survey respondent, "Each has trail systems (ERT, Shore Dr, etc), but little connection between them. Make it a Tidewater Loop. It would connect the regions attractions, retail/business areas, and population areas. It would also be a significant regional attraction itself."
Bike/ pedestrian Access to Naval Station Norfolk via Hampton Blvd	Various Locations	Naval Station Norfolk	Bike/pedestrian access to Naval Station Norfolk via Hampton Blvd
Military Hwy Bike Access	N/A	N/A	Provide bike access to shopping areas and outlet mall on Military Hwy.
Virginia Beach Trail	Newtown Road	Norfolk Ave	Construct shared use path.
York County Trail	N/A	N/A	Provide a trail through York County linking much of the western half, west of Rte 17 to historic Yorktown and the Colonial Pkwy utilizing Showalter, Lakeside, Dare, Allens Mill, Wolf Trap, Hornsbyville, Old York-Hampton Hwy, and Cook Rd.

PUBLIC COMMENT PERIODS

HRTPO staff engaged the public for input during the planning process. Staff produced E-news articles for the public with each draft chapter linked online for review. Staff also provided the public with the option to provide recommendations for the plan via an online survey coinciding with the Long Range Transportation Plan's public input survey. The following dates for public input on draft chapters and draft recommendations were as follows:

Chapter One: Introduction
Comment Period: May 4, 2018 to May 18, 2018

Chapter Two: Existing Conditions
Comment Period: October 31, 2018 to November 19, 2018

Chapter Three: Needs Assessment
Comment Period: January 11, 2019 to January 25, 2019

Chapter Four: Facility Recommendations
Survey:March 28, 2019 to June 12, 2019
Comment Period: August 3, 2019 to August 19, 2019

Chapter Five: Taking Action
Comment Period: December 23, 2019 to January 6, 2020

Final Draft: Active Transportation Subcommittee Review
Comment Period: January 10, 2020 to January 24, 2020

Final Draft: TTAC Review
Comment Period: January 31, 2020 to February 21, 2020

PUBLIC ENGAGEMENT

During Bike Month (May 2019), HRTPO staff attended two public events to promote and solicit public input on the proposed regional active transportation facilities.

Staff attended the following events:

Norfolk Bike Expo, Slover Library, 235 E. Plume St. Norfolk, VA 23510, on May 7, 2019 from 6:00 PM to 7:30 PM.

Tour de Fort, Oozlefinch Brewery, 1052, 81 Patch Rd, Hampton, VA 23651 on May 19, 2019, from 2:00 PM to 4:00 PM.

PUBLIC COMMENTS
CHAPTER ONE REVIEW

Public Comment

Name: Bridjette Parker, Newport News
Date: 05/07/2018
Subject: RE: Linking Hampton Roads Final Draft Chapter One
Good Morning Steve,
I have no comments about the Linking Hampton Roads Final Draft.
Regards,
Bridjette

Public Comment

Name: Carl Jackson, Portsmouth
Date: 05/11/2018
Subject: RE: Linking Hampton Roads Comments
Hey Steve,
We had a lot of fun yesterday, thanks for organizing the ride. The tour inspired me to ride the on-street portion of the SHRT in Portsmouth which apart for a few issues, was surprising easy!! Here are my comments on the Active Transportation Plan draft:
Page 1, Third Paragraph: should say "Building from.." not "off of"; and on the next line just say "HRTPO" since it's already been spelled out in previous paragraph.
Page 1, Third Paragraph; last line, should say "Fort Monroe and the South Hampton Road Trail...", not Oceanfront as final destinations.
Page 1, Fifth Paragraph: should say Virginia Beach Oceanfront
Page 2, Fourth Paragraph: "South-side" should be one word. Also, you may want to note the other HRT MAX Routes that cross the water: 965,966 and 967
Page 2 , Map: may want to change the color of York, it's all white and looks like it's not in the study area.
Page 4, First Paragraph: when has Hampton Roads ever been ranked the healthiest and fittest region in the country?
Page 7, Second Paragraph: isn't VMASC in Suffolk, might be best to say VMASC center at ODU and not identify a city.
Page 8, First Paragraph: "onetime" is two words
Page 8, Third Paragraph: there are spacing issues with the second to last sentence.
Page 9: not sure if a Portland is a good comparison, opinions in our area might be worse.
Page 10: First Paragraph, last line: consider saying "multi-use facilities (shared use paths)".
Page 11: take out Brooklyn example and find something more local.
Page 12: fix contrast on Colley Avenue photo (too dark)
Page 13: please change "trail" to "path" below the FHWA diagrams
Also include page numbers
Thanks.
Carl E. Jackson

Public Comment

Name: Carolyn Murphy, Williamsburg
Date: 05/15/2018
Subject: RE: Linking Hampton Roads Final Draft Chapter One

Steve,
Nice job. Only small comment I have is could the jurisdictions be outlined on the map on study area page. With the light color it is hard to tell the boundaries.
Have a great day.
Carolyn

HRTPO Staff Response (05/15/2018)
Thank you. Will add to the list of comments and edits and will adjust the map.

Public Comment

Name: Alison Eubank, Hampton
Date: 05/18/2018
Subject: linking HR comments

Steve,
I've attached a document with quite a few comments for Linking HR Chapter One.

Let me know if you have questions about anything.
Thanks!
Alison

Alison Eubank
(Comments not included due to being embedded in large pdf document)

HRTPO Staff Response (05/18/2018)
Thank you for the comments. I will review these. Much appreciated.

Public Comment

Name: Carol Rizzio, Gloucester County
Date: 05/18/2018
Subject: Linking Hampton Roads Final Draft Chapter One

Hi Steve,

Chapter looks great! Just a few items for your information/ consideration.

1. Looks like for rural roadways the wide paved shoulder and signed bike route are the way to go. We are running into road blocks implementing these facilities in our community. Maybe partially because we don't have an adopted bike plan… yet. Once we do though, I imagine that limited funding and/or right of way with impede the addition of paved shoulders except where they serve a key community destination. That leaves the most applicable solution as bike route signage. A discussion on VDOT's policies and regulations around signing bike routes might be helpful to include in the plan so communities know the steps to take/items to consider. Maybe not in the first chapter, but somewhere.
2. Additionally, while they are not ideal in all circumstances, widen sidewalks (or sidewalks in general) are an important active transportation component in rural localities more developed areas so that individuals don't have to get in their cars to access businesses within walking distance. Sidewalks are mentioned in "Goal 2 – link the region through with active transportation facilities", but they are not included in the facility types, which primarily focus on bicycle facilities, or in the active transportation auxiliary facility types.
3. The heading for "Active Transportation Auxiliary Facilities Types" might be better as "Active Transportation Auxiliary Facility Types".

Thanks for the opportunity to review!
Carol

CHAPTER TWO REVIEW

Public Comment

Name: Carol Rizzio, Gloucester County
Date: 01/27/2019
Subject: RE: Regional ATP comments

Hi Steve,

Just a couple of comments on the Regional ATP.

Ch 2 –

- On page 21 our new state park and national park don't show up on the map. See attached maps for location.
- On page 22 they may need to be added as well. Its hard to tell with the scale.

Thanks for all you do!
Carol

HRTPO Staff Response (02/27/2019)

Carol,

So I was just looking at Page 21, 22. It will be very difficult for me to update those maps since they were not done by me and I don't know if they have been updated with your new park. Part of the problem with existing conditions is that things do change frequently.

Thank You,
Steve A. Lambert

CHAPTER THREE REVIEW

Public Comment

Name: Erin Burke, Williamsburg
Date: 01/27/2019
Subject: Existing Bike Facilities

Here are the notes I got from our City Engineer. Hopefully they are helpful.

(Notes not included due to being embedded in large pdf document)

HRTPO Staff Response (01/29/2019)

Erin,

These have been added.

Thank You,
Steve A. Lambert

Public Comment

Name: Alison Eubank, Hampton
Date: 04/15/2019
Subject: Chapter 3 needs assessment.

Steve,

I just took a quick look at Chapter 3 that was sent out in the meeting invite. While I understand comment was previously requested, I wanted to suggest you consider a different photo on page 52 in lieu of the 'King St Bike Lane'. This particular

location is 4 parking spaces long and is not signed or marked as a facility. We don't consider this one.
What is the photo on page 59 illustrating?
Apologies I didn't send comments previously.
Thanks,
Alison

HRTPO Staff Response (04/16/2019)

I can definitely swap the picture out. I am very thankful you told me. I have had issues with other localities that say it's a specific type and it's really not. Can you recommend a good photo for Hampton?
Page 59 is just a filler page.

Public Comment

Name: Carl Jackson, Portsmouth
Date: 04/12/2019
Subject: Chapter Three Comments

Hey Steve/Uros,
I just wanted to thank you two for doing such a good job with the mapping for this chapter and for agreeing to including the bike facilities in Portsmouth that are also critical to the South Hampton Roads Trail. The narrative of the chapter is a good read and I only have a few suggestions. On Page 51 could you include a blurb about Portsmouth as you have with the other cities like maybe
"Portsmouth has many charming, historic neighborhoods including Olde Towne that are ideal for walking and biking". Also, on Page 61, second bullet, although Portsmouth has only now kicked-off its citywide bicycle and pedestrian plan, our recently adopted comp plan does have substantial active transportation elements so could we be included in this paragraph? Here are a few other minor errors:
Page 51 (2nd Paragraph): should say major "universities"
Page 65 Chesapeake Map: does not show High Street or Seawall
Page 67 Norfolk Map: Too many street labels
Page 68 Downtown/ Ocean View Maps: Too many street labels.
Page 72 Military Installations: Can this be reworded so as not to make the military a "barrier" but maybe a challenge and please don't single out the Naval Medical Center because they are good community partners for us.
Also, we can send you pictures of the Portsmouth Seawall (now open to bicycles) if needed.

Thanks Again!

HRTPO Staff Response (04/15/2019)

Carl,

These edits have been made.

Thank You,
Steve A. Lambert

CHAPTER FOUR REVIEW

Public Comment

Name: Carol Rizzio, Gloucester County
Date: 06/14/2019
Subject: RE: Recommendation Pages

Steve,

See attached comments. Let me know if you have any questions.

Hope you have a great weekend!

Thanks!
Carol

(Comments not included due to being embedded in large pdf document)

HRTPO Staff Response (06/19/2019)

These comments have been reviewed and edits were made.

Thank You,

Steve A. Lambert

Public Comment

Name: Carl Jackson, Portsmouth
Date: 09/11/2019
Subject: RE: pORTSMOUTH EDITS.pdf

Hey Steve,

You almost got everything, I made a few small edits (attached).

Thank you!!

Carl E. Jackson, AICP

(Edits not included due to being embedded in large pdf document)

HRTPO Staff Response (09/12/2019)

Thank You,

Steve A. Lambert

CHAPTER FIVE REVIEW

Public Comment

Name: Jennifer Wampler, DCR
Date: 12/27/2019
Subject: active transportation plan

[Excerpt:]
Reading over the active transportation plan--I suggest that you take the East Coast Greenway out of the regional trails list and replace it with the Eastern Shore Rail Trail, now that the players in Accomack and Northampton have signed a resolution of support.

You could create another heading for state trails if you would like to include them and list these three for Hampton Roads
East Coast Greenway
James River Heritage Trail
Beaches to Bluegrass Trail

I'm working on finalizing the James River Heritage Trail plan now, and can connect Hampton Roads at least through Goochland and perhaps to Scottsville on the north bank of the James--if we make Birthplace of America Trail a major segment.

Although it has been a long time coming, there is support for the state trail system now from three major groups, Virginia Forever, Virginia Conservation Network and VIrginia's United Land Trusts.

Jennifer Wampler

HRTPO Staff Response (01/20/2020)

Jennifer,

[Excerpt:]
Thank you for responding. Due to the timing of the study, it is too late to change the following. But moving forward, we can add the Eastern Shore Rail Trail as a regional trail and ask the Active Transportation Subcommittee to okay it (which I don't think they would have a problem). But since it's not actually in this study's boundaries, it is not needed. And We can add the James River Heritage Trail in future maps. And as we have talked about before, We would prefer to use the BOAT alignment if possible and would promote it as such.

Happy New Year,

Steve

CHAPTER FIVE REVIEW

Public Comment

Name: Elaine Linn, Virginia Beach
Date: 12/30/2019
Subject: Taking Action Chapter

Hi Steve, hope the holidays are treating you well.
Just a couple minor comments:
Page 136 Chapter Contents: lists "Facility Types" that is not supported in the following text.
Page 137 Promote Regional Trails: need a space between "The" and "regional" in subheading.
Nice work overall. Also, I will forward the completed draft of the Virginia Beach 2020 Active Transportation Plan as soon as it is ready. Slight delay as we had to shift gears to work on facility design standards but we still anticipate plan completion early 2020.
Thanks,

Elaine Linn, PLA, ASLA

HRTPO Staff Response (12/30/2019)

Thank you for the comments. And awesome. Can't wait to see it. Keep up the good work.

Public Comment

Name: Carol Rizzio, Gloucester County
Date: 1/6/2020
Subject: Taking Action Chapter

Hi Steve,

Happy New Year! Below are some general comments/ questions. Thanks for the opportunity to review.

Chapter 4 – There is some concern related to the use of the word "proposed" which is often interpreted to mean in a plan or even funded. Many of the proposed facilities in Gloucester are just ideas and not really proposed at this time…maybe recommendations? We realize that the term "proposed" is used throughout all the community recommendations. Maybe the addition of a clarifier for Gloucester that the facilities are conceptual in nature and will be evaluated and refined through the County's first multimodal transportation plan currently underway.

Question - Several of our recommended "share the road" signed roadways (Warner Ride and Ware Neck Loop) were not included in the recommendations? Was it because of the speed limit, or some other factor that they didn't make it?

Thanks!
Carol

HRTPO Staff Response (1/7/2020)

Carol,

Thank you for the comments.

Related to the use of the word "proposed." The term Proposed and Recommended is used both in this chapter and in other parts of the document. If we were to change it all, it would delay the timeline for adoption. I understand your concerns.

CHAPTER FIVE REVIEW

But as all comprehensive plans, proposed or recommended, are always conceptual and once evaluated on a design level scale, the route, facility type, and other details are vetted out.

Warner Ride and Ware Neck Loop were added during the Gloucester plan's update, and I forgot to update the map accordingly on page 84. It will be updated this week.

Steve

Public Comment

Name: Chris Whitney, Norfolk
Date: 1/6/2020
Subject: Public Comment Period - Final Chapter of Linking Hampton Roads: A Regional Active Transportation Plan

Mr. Lambert,

Attached please find a letter from the Norfolk Department of City Planning in response to the call for comments on the draft final chapter of the plan, "Chapter Five: Taking Action."

Please let us know if you have any questions and thank you for the opportunity to comment.

Sincerely,

Chris Whitney, AICP, CZA, CFM
City Planner III

HRTPO Staff Response (1/7/2020)

Thank you for the comments.

THE CITY OF NORFOLK
CITY PLANNING

January 6, 2020

Hampton Roads Transportation Planning Organization (HRTPO)
Attn: Steve Lambert, Transportation Planner II
723 Woodlake Drive
Chesapeake, VA 23320
slambert@hrtpo.org

Dear Mr. Lambert,

The Norfolk Department of City Planning appreciates the opportunity to provide comments on the draft final chapter of *Linking Hampton Roads: A Regional Active Transportation Plan*. This chapter, entitled, "Chapter Five: Taking Action," is a crucial component of the plan, as it provides, amongst other things, detailed next steps for the region, including the promotion of existing local plans.

The City of Norfolk has adopted two documents that are most pertinent to this regional plan: the *City of Norfolk Bicycle and Pedestrian Strategic Plan* and the *Complete Streets Policy*, both of which are appendices of the City's general plan, *plaNorfolk2030*. We are very pleased to see these plans and concepts are incorporated into the regional plan, as well as this draft final chapter. It is vital that the final version of the regional plan include bicycle and pedestrian recommendations in Norfolk that are in line with these adopted documents. Additionally, we are pleased to see, as part of the "Next Steps" within this chapter, that the Elizabeth River Trail (ERT) will be one of the major regional routes making up the spine linking our region through active transportation plans. The ERT is an essential component of the present and future multi-modal transportation network of Norfolk and the region as a whole.

The Norfolk Department of City Planning sincerely thanks you for the incorporation of the aforementioned plans, aspects, policies, and concepts into the regional plan and strongly urges that they remain in the final version of the plan.

Sincerely,

George M. Homewood, FAICP, CFM
Department of City Planning
Director

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www.norfolk.gov

ACTIVE TRANSPORTATION SUBCOMMITTEE COMMENT PERIOD REVIEW

Public Comment

Name: Lee Wilkins, Norfolk
Date: 1/10/2020
Subject: Final Draft

[Via Phone]

Please change Olney Avenue to Olney Road on Pages 13 and 78.

HRTPO Staff Response (1/10/2020)

The Changes will be made.

Public Comment

Name: Tom Leininger, James City
Date: 1/17/2020
Subject: Public Comment Period - Complete Final Draft Linking Hampton Roads: A Regional Active Transportation Plan

I have attached comments from James City County regarding the Linking Hampton Roads ATS Draft.

Let us know if you have any questions regarding any comments we have made.

[See attachment with comments below]

HRTPO Staff Response (1/22/2020)

Comments on the January 9, 2020 Linking Hampton Roads ATS Draft
Acknowledgements Page – Please include Tom Leininger in addition to Roberta Sulouff for James City County.

Done

Page 28 – On the population density map, James City County is cut off in such a way that the name and higher population densities are not represented. For all regional overview maps introducing sections, it may be best to show the extent of the region.

I did move it over slightly. But typically, any maps that are cut off are due to not having any details are that are showing. And in this case, for the population density, there is no density from "Medium Low" to "High"

Page 29 – There are two maps displaying Southside and Peninsula. Could there be a third for Historic Triangle?

The zoomed in maps are for discussions on high densities are within the region.

Page 30 – Similar to comments for page 28, it would be helpful to see the entire region in this map.

In this case, for the population density, there is no density from "Medium Low" to "High"

ACTIVE TRANSPORTATION SUBCOMMITTEE COMMENT PERIOD REVIEW

Page 32 – In most instances, Jamestown, Williamsburg and Yorktown are commonly listed as the three corners of the Historic Triangle region with Historic Jamestowne, Jamestown Settlement, Colonial Williamsburg, the Yorktown Battlefield and the Yorktown Victory Center representing the historic attractions for the three areas. References to the University of William and Mary and Anheuser Busch should be corrected to the College of William and Mary and Anheuser Busch InBev. Water Country USA is located in York County.

I made these changes.

Page 36 – In keeping with other labels, the title would be "Degrees of Disadvantaged Communities".

The Label actually shows the "degrees" of which each community scores.

Page 38 – Was there any data to be displayed in the northern areas of James City County? If so, it should be represented on the map. Also, labels for James City County here and elsewhere are cut off.

No

Page 39 – It appears that some data has been cut off. Please include more of the Williamsburg, and Upper York to ensure all the data is shown on the map.

Done
Page 43 – University of William and Mary should be revised to College of William and Mary.

Done

Pages 47, 50 and 53 – References should be corrected from incorrect terms to "Historic Triangle".

Done

Page 53 – Could the Needs Assessment Overview for the Historic Triangle be broadened to include a reference to the Capital Trail?

Done

Page 56 and 57 – Both map legends state "existing sidewalk", but it appears that only one sidewalk is shown on the map on page 56 for the entirety of the Peninsula and none are shown on page 57. Is that on purpose? Also, could the map be rescaled on page 57 to include all of Jamestown and Yorktown?

Page 56 – Due to the amount of sidewalks in Hampton Roads and the lack of GIS inventory on sidewalk, we did not map out all existing sidewalk inventory. Most the existing sidewalk inventory is mapped out due to some localities calling their facilities shared use paths when they are actually just wide sidewalks or sidewalks in most cases. The Label only has all the facility types because I used the same label for all the maps. However, as mentioned in our recommendation chapter on page 76:
"Note: Due to this plan having a regional perspective, sidewalk recommendations will be provided on a case-by-case basis from each locality and not be shown on the following maps. Sidewalks should be built if conditions allow when parallel to on-road facilities."

ACTIVE TRANSPORTATION SUBCOMMITTEE COMMENT PERIOD REVIEW

Page 141 – Image is not readable. Please replace with a high quality image.

Done.

Public Comment

Name: Alison Eubank, Hampton
Date: 1/17/2020
Subject: Taking Action Chapter - Linking Hampton Roads (The final Draft)

Steve, I have no big comments. Thanks, Alison

HRTPO Staff Response (1/22/2020)

Thank you.

TRANSPORTATION TECHNICAL ADVISORY COMMITTEE COMMENT PERIOD REVIEW

Public Comment

Name: Brian Pierce, Newport News
Date: 1/28/2020
Subject: RE: ATS & PABAC

Good afternoon Steve,

After reviewing the document with leads in the Planning and Engineering Departments, the City has a few recommended changes.

- Page 54 bullet 2, please include Newport News on this list. We have applied for and received a number of active transportation projects.
- Page 60, the last bullet under development barriers (priorities), please list the same language that is used for the south-side or remove this bullet.
- Page 138 says localities will complete and adopt Complete Streets Policies. Our locality cannot agree to adopt a Complete Street Policy without Council approval. Can the language be tweaked to reflect this? Perhaps, "the localities will complete and take a Complete Streets Policy to Council for adoption"

Thanks for your assistance,

Brian

HRTPO Staff Response (1/28/2020)

Brian,

Due to the timing of the comments, I can't incorporate the comments and edits before Friday. But I will add these to the TTAC version of the document after it gets approved to move forward to TTAC. Here are my responses in Red.

Page 54 bullet 2, please include Newport News on this list. We have applied for and received a number of active transportation projects.
Done
Page 60, the last bullet under development barriers (priorities), please list the same language that is used for the south-side or remove this bullet.
Done
Page 138 says localities will complete and adopt Complete Streets Policies. Our locality cannot agree to adopt a Complete Street Policy without Council approval. Can the language be tweaked to reflect this? Perhaps, "the localities will complete and take a Complete Streets Policy to Council for adoption"
I don't think there is any locality that can adopt a Complete Street Policy without Council adoption due to it being a city policy document that dictates what it does. That is why the word "adopt" is in there. I can change the text to the following: "The HRTPO and localities will create and produce Complete Streets policies for their perspective governing body to adopt"
Thanks,
Steve

Public Comment

Name: Brian Pierce, Newport News
Date: 1/28/2020
Subject: RE: ATS & PABAC

[Excerpt:]

Good afternoon Steve,

Thanks for your response. After reviewing the maps for the Peninsula and those for the Southside I am still confused as to why "priorities" is listed for the Peninsula only. It seems that many localities on the Southside suffer from the same lack of density for AT facilities.

Best,

Brian

HRTPO Staff Response (1/28/2020)

Brian, on the southside, the following text is under the same. Range of Developments: The extent of Active transportation facilities and amenities in developments depend on the developer, the city's existing plans and codes, and the critical priorities for amenities at the time.

Brian's Response (1/28/2020)

Good afternoon Steve,

Can this bullet be used for the peninsula too in place of the priorities bullet?

Thanks,

Brian

HRTPO Staff Response (1/31/2020)

[Via Conversation]

Yes. Will make this edit with the others.

Steve

Public Comment

Name: Carl Jackson, Portsmouth
Date: 1/28/2020
Subject: RE: ATS & PABAC

Hey Steve,

Sorry for the delay in sending comments, I hope you can incorporate these minor changes before Friday's meeting:

Page 31 (Second Paragraph): Should say Portsmouth Naval Medical Center
Page 49: The Strava Maps seem kind of low for Portsmouth particularly along the SHRT route, any other data you can use on ridership?
Page 51: Is there any way you can add input from the DRAFT Portsmouth Bicycle and Pedestrian Plan, it will be completed this spring.

Page 116: Please add #8 Westhaven Bicycle Boulevard-Proposed paved shared use path and on-street bike lanes connecting Portsmouth City Park with residential neighborhoods and the Midtown Shopping District
Page 118: Redraw a portion #5 to stay on Lincoln Street and go north at Gosport Park and Harbor Center Way to connect with the Seawall.

Thank you!!

HRTPO Staff Response (1/28/2020)

Carl,

Due to the timing of the response, I can not incorporate them before Friday. But I will add these to the TTAC comments after it gets approved to move forward to TTAC. Here are my responses below in RED.

Page 31 (Second Paragraph): Should say Portsmouth Naval Medical Center
DONE
Page 49: The Strava Maps seem kind of low for Portsmouth particularly along the SHRT route, any other data you can use on ridership?
All facilities that are not built have no or low levels of ridership. As mentioned in the text of that section, at the time, STRAVA was the best available tool to analyze the level of ridership.
Page 51: Is there any way you can add input from the DRAFT Portsmouth Bicycle and Pedestrian Plan, it will be completed this spring.
Not currently. But as Rob Case and I mentioned at the Fall AT meeting in Cape Charles, this plan, the proposed facilities can be updated when localities provide updated bike and pedestrian plans. This is the same for Virginia Beach. There will always be updates to locality's bike and ped plans, and this plan will also be updated accordingly.
Page 116: Please add #8 Westhaven Bicycle Boulevard-Proposed paved shared use path and on-street bike lanes connecting Portsmouth City Park with residential neighborhoods and the Midtown Shopping District
There are already proposed on-street bike lanes in the plan. I can add the shared-use path also for the TTAC draft.
Page 118: Redraw a portion #5 to stay on Lincoln Street and go north at Gosport Park and Harbor Center Way to connect with the Seawall.
I can redraw this for the TTAC draft.

Thank you,

Steve