BIKE WALK HAMPTON

A Strategic Bicycle & Pedestrian Plan

ADOPTED BY CITY COUNCIL ON DECEMBER 14, 2016

HAMPTON VA

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EXECUTIVE SUMMARY

INTRODUCTION

The City of Hampton is a diverse community located in the heart of Hampton Roads. Unique destinations, such as Buckroe Beach, Central Park, and historic Fort Monroe, along with distinct commercial districts provide amenities for Hampton residents and attract visitors from the surrounding region. Many of these community resources are linked with vehicular corridors but lack adequate bicycle and pedestrian connections to support alternative, sustainable transportation options.

Although the City has made strides to improve access to bicycle and pedestrian transportation options, it recognizes there is a significant opportunity to continue to improve this transportation network in a planned and coordinated way. Improvement of the active transportation network – human powered travel such as bicycling or walking - yields additional benefits such as improved human and environmental health, and a boost to economic development.

In October of 2015, Hampton was awarded a planning grant from the Office of Intermodal Planning and Investment to develop a bicycle and pedestrian plan. Through a nearly year-long process, City staff and the project consulting team worked closely with community stakeholders, including residents, elected officials, and institutional representatives, to develop a plan that meets the City's current and future needs.

This Plan will provide the City with a strategic bicycle and pedestrian plan for its seven master plan areas. The Plan will serve as a guiding document for developing future bicycle and pedestrian-focused improvements.

EXISTING CONDITIONS

In order to make recommendations for informed future improvements, the project team spent several months analyzing the existing conditions of the City's bicycle and pedestrian network. Multiple factors were reviewed, including the varying character of the master plan areas, land use, important destinations and resources, crash data, bus stop locations, and physical roadway conditions (e.g. width of lanes, posted speed limit, etc.).

Through the analysis of existing conditions, several clear challenges and opportunities emerged that need to be addressed in order to create a safe and comfortable bicycle and pedestrian culture.

Figure 1: Master Plan Areas

This map depicts the seven master plan areas.

Figure 2: Examples of Hampton's Existing Facilities

Bike lanes on Settlers Landing Road are some of the existing bicycle facilities in the City. (Source: Rhodeside & Harwell)

CHALLENGES: Narrow bridges, lack of connectivity, high traffic roadways, overpasses, and ramps, lack of amenities, and lack of clarity.

OPPORTUNITIES: Neighborhood and activity centers, regional attractions, cultural resources, and natural resources.

PUBLIC INPUT

To help refine the goals of this Plan and tap into local knowledge, a public input strategy was developed. This included a steering committee of stakeholders and City staff, a public survey, and a series of public meetings.

Steering committee members helped refine the vision for this Plan and draft policy and program recommendations, such as driver- and cyclist-oriented education campaigns. Public meetings presented an opportunity for residents to express desires for the Plan and discuss localized recommendations. With 648 responses, the public survey provided information about who is cycling and walking in Hampton, and what broad changes are most important to creating a bicycle friendly city.

RECOMMENDATIONS AND TOOLKIT

In this Plan, recommendations are broken down into several types: program, policy, and facilities. Both program and policy recommendations include non-physical improvements such as developing a safety and awareness campaign, implementing a bike share program, and adopting a complete streets policy.

Facility recommendations are the physical infrastructure (such as sidewalks and bike lanes) that best marry the needs and desires of residents with existing conditions and physical constraints. Over 30 miles of facility recommendations can be found in this Plan.

With the help of public and stakeholder input, strategic corridors were defined - those corridors act as the base of the bicycle and pedestrian network and connect neighborhoods, activity centers, destinations, and attractions within and near the City's seven master plan areas. With the corridors established, individual recommendations are made along the corridors and separated by master plan area. These specific facility recommendations are derived from a toolkit, which lays out a variety of options for improvements to fit a number of situations. For example, the toolkit displays what level of comfort a user must have to ride on a certain facility, and what facilities are appropriate for roads of varying speeds and traffic volumes.

Figure 3: The Community Engagement Process

Attendees of *Bike Walk Hampton*'s open house provide feedback on project recommendations. (Source: Rhodeside & Harwell)

PRIORITIZATION AND IMPLEMENTATION

As it is infeasible to implement all projects at once, staff developed criteria to prioritize the various projects. Prioritization criteria include cost, need for land acquisition, proximity to schools, and need for improvements due to previous crash reports. This criteria will help the City choose projects as funds or grants become available.

The Plan concludes with recommended next steps to continue the momentum of this Plan into the future.

URBAN DEVELOPMENT AREA TECHNICAL ASSISTANCE GRANT

Completion of this bicycle and pedestrian plan was made possible through an urban development area technical assistance grant provided by the Office of Intermodal Planning and Investment. In accordance with § 15.2-2223.1 of the Code of Virginia, this Plan promotes the development of urban development areas in a way that is consistent with Traditional Neighborhood Design. This Plan will be adopted as an amendment to the Hampton Community Plan (2006, as amended).

> "Imagine my delight to discover that Hampton is rethinking this important issue for its citizens! Way to go, Hampton!" - Survey comment

The City of Hampton received the grant in the form of direct on-call consultant services of Rhodeside and Harwell, Inc.

Figure 4: Strategic Corridors

Strategic corridors are highlighted in yellow within the project focus area. The project focus area correlates with the City's seven master plan areas. Corridors will receive specific bicycle and pedestrian project recommendations.

INTRODUCTION

City of Hampton leaders, staff, and residents are striving to make Hampton a more bikable, walkable, and livable community. *Bike Walk Hampton* focuses on connectivity in and between the City's seven master plan areas, improvement of bicycle and pedestrian facilities, and program and policy recommendations to improve the bicycle and pedestrian environment throughout the City.

Many citizens are, or have been, a cyclist or a pedestrian, and this Plan was crafted with their valuable knowledge. A successful transportation network will provide for a variety of safe and desirable options for all users, allow for residents to cycle to dinner, work or the bus stop; walk to a neighborhood store; walk for exercise; and allow visitors to reach many of Hampton's attractions.

With a goal of implementable and actionable project recommendations, this Plan focuses on specific corridors in and between the master plan areas. Program and policy recommendations are included for further exploration with the intention of increasing public awareness of cycling and walking, connecting to other trails and bicycle networks, and improving accessibility for all users.

The *Bike Walk Plan* includes:

- An overview of existing cycling and pedestrian conditions
- Program recommendations
- Policy recommendations
- Strategic Corridors for improvement
- Project Prioritization criteria
- Funding & Implementation strategies

The *Bike Walk Plan* will make active transportation a safe, convenient, and enjoyable experience in Hampton.

BENEFITS OF A BICYCLE & PEDESTRIAN FRIENDLY CITY

Active transportation – human powered travel such as bicycling or walking - is seeing a resurgence as residents in many urban areas seek alternatives to driving.

According to the American Community Survey, between 2000 and 2013 the percentage of commutes made by bicycle in the United States increased by 62%[1]. As a result, many urban communities have begun to make significant investments in infrastructure to support bicycling and walking; adding bike lanes, improving sidewalks, installing shared use paths, and providing related amenities. As the following pages illustrate, localities that encourage walking and biking stand to benefit significantly from doing so.

Economic

Property Values

Research has shown that investing in biking and walking infrastructure encourages economic development, improves property values, and helps create new jobs and businesses. For example, after making Valencia Street less conducive to automobile travel and more conducive to pedestrian and bicycle travel, nearly 40% of affected San Francisco merchants reported increased sales and 60% reported more area residents shopping locally. Two-thirds of merchants believed business improved with

1 League of American Bicyclists. The Growth of Bike Commuting [PDF]. Data from the American Community Survey

increased levels of bicycling and walking.[2]

Transportation Savings

Bicycling and walking are affordable forms of transportation, which is particularly important for the low-income or no-car community. In 2015, the American Automobile Association found that the average sedan cost about $8,698 to own and operate annually[3]. By comparison, the Sierra Club estimates that the average cost to operate a bicycle is about $308[4].

Environment

A city's air quality can be improved through increased cycling and walking as cars are taken off the road. According to Transportation Alternatives, if 5% of New Yorkers commuting by private car or taxi switched to commuting by bicycle to work, 150 million pounds of CO2 emissions per year could be reduced. This is equivalent to the amount reduced by planting a forest 1.3 times the size of Manhattan[5].

Health

The design of neighborhoods, cities, and the transportation network is increasingly revealing itself as an important factor in levels of physical activity. Increasing active transportation can have an enormous positive impact on the physical health of a community. A 2011 Report from the U.S. Department of Health and Human Services states regular physical activity (like walking and biking), reduces depression, and helps prevent heart disease, obesity, diabetes, and other ailments[6].

Integrating moderate-intensity physical activity such as walking or cycling into the lifestyle of a sedentary adult is three to four times less expensive than enrolling into a structured exercise program, which is especially beneficial to low-income citizens[7].

Figure 5: Multiple users on the Indianapolis Cultural Trail

Pedestrians and bicyclists enjoy the ICT shared use path in Indianapolis, IN (Source: IndyCulturalTrail.org)

"I love the idea that Hampton is taking a positive approach to improving clean and healthy modes of transportation whether for recreation or other purposes. Kudos to the team!"
- Survey comment

2 Drennan, E. *The Benefits of Complete Streets 7: Complete Streets Spark Economic Revitalization.* Washington: National Complete Streets Coalition, 2003. Print.

3 Stepp, E. (2015). Annual Cost to Own and Operate a Vehicle Falls to $8,698, Finds AAA. Retrieved August 4, 2016, from http://newsroom.aaa.com/2015/04/annual-cost-operate-vehicle-falls-8698-finds-aaa-archive/

4 Pedaling to prosperity: Bicycling will save Americans $4.6 billion in 2012 [PDF]. (n.d.). The Sierra Club.

5 *Rolling Carbon: Greenhouse Gas Emissions from Commuting in New York City*. N.p.: n.p., n.d. *Transportation Alternatives*. Oct. 2008. Web. Aug.

6 U.S. Department of Health and Human Services. Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities. Washington, DC: U.S. Dept of Health and Human Services, Office of the Surgeon General; 2015.

7 Sevick, MA, Al Dunn, MS Morrow, BH Marcus, GJ Chen, and SN Blair. *Cost-effectiveness of Lifestyle and Structured Exercise Interventions in Sedentary Adults: Results of Project ACTIVE. Pubmed.gov*. US National Library of Medicine/National Institute of Health, July 2000. Web. Aug. 2016.

BICYCLING & WALKING IN HAMPTON

The City of Hampton has the potential to take advantage of the economic, environmental, and health benefits, and it has several assets that can be leveraged to encourage the growth of bicycling and walking in the City.

- Flat terrain;
- Commercial, recreational, and institutional destinations in close proximity to one another (e.g. Downtown, Phoebus, Hampton University, and Ft. Monroe);
- Stable, well-connected residential neighborhoods.

City leaders have recognized the value of these assets, and the importance of encouraging walking and bicycling in Hampton. The Hampton Community Plan (2006, as amended) includes many policies related to bicycle and pedestrian facilities, including:

- Promote internal circulation alternatives – including transit and pedestrian options – for priority City districts where appropriate. (TR Policy 6)
- Emphasize the safety of motorists, pedestrians, bicyclists, and property owners when prioritizing transportation facility and service improvements. (TR Policy 28)
- Provide parks and recreational facilities that contribute to the health and safety of children and youth. Encourage physical activity and pedestrian and bike access to reduce the dangers of traffic and the risks associated with a sedentary lifestyle. (CF Policy 29)

This *Bike Walk Plan* builds on policies of the Hampton Community Plan (2006, as amended) with specific recommendations for active transportation infrastructure and programs. This Plan sets forth a roadmap for accomplishing some of the overarching policies and goals of the Hampton Community Plan (2006, as amended) by providing coordinated direction for making improvements and guiding City policy surrounding bicycle and pedestrian infrastructure and programs.

PROJECT GOALS

From the outset of the *Bike Walk Hampton* project, several goals guided the development of the Plan:

1. Create a plan utilizing community input and expertise to meet the need of all user groups.
2. Connect local and regional destinations and resources with active transportation options.
3. Design a framework of strategic corridors for the future development of safe and connected bicycle and pedestrian infrastructure in and between the City's seven Master Plan areas.

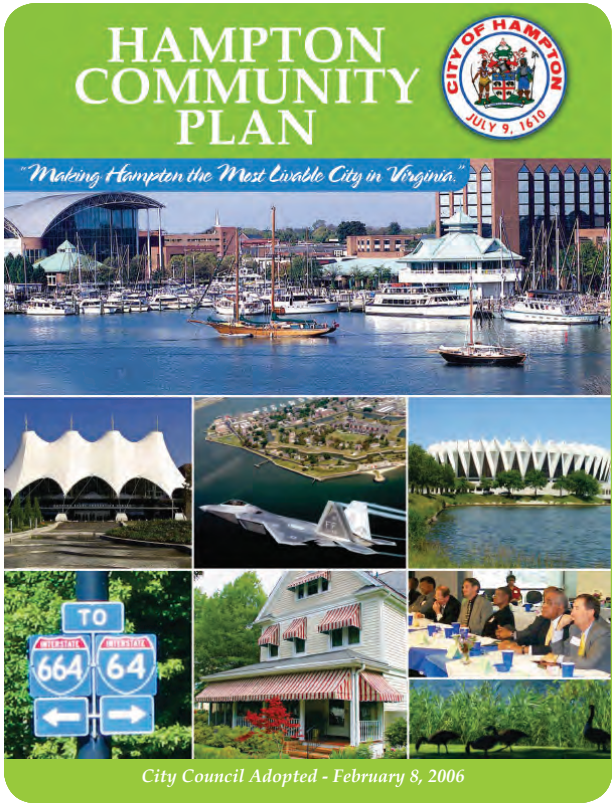


Figure 6: The Hampton Community Plan
(Source: City of Hampton)

4. Provide direction and guidance on appropriate bicycle and pedestrian facilities in distinct settings.
5. Develop programs and policies to respond to changing needs of the public.
6. Prioritize project recommendations for achieving implementation.

EXISTING CONDITIONS

An analysis of Hampton's existing conditions was utilized to develop program, policy, and facility recommendations to improve the bicycle and pedestrian environment.

The development of the *Bike Walk Plan* began with an assessment of conditions within the master plan areas, as relevant to pedestrian and bicycle infrastructure. This included field observations by the project team, analysis of geographic information system (GIS) data from the City of Hampton and the Virginia Department of Transportation (VDOT), discussions with the project steering committees, and input gathered from the public.

Overall analysis of existing conditions within the master plan areas included the following:

- Current challenges to bicycle and pedestrian transportation
- Opportunities to connect cultural, natural, economic, and recreational resources with active transportation
- Existing and planned bicycle and pedestrian facilities
- Land use
- Key destinations and resources
- Bicycle and pedestrian crash data
- Bus stop locations and usage

This analysis helped the team identify strategic corridors which are the focus of specific infrastructure recommendations. Corridors were selected based on the existing conditions and with the goal of connecting neighborhoods, activity centers, and attractions and utilizing facilities to create a continuous network of pedestrian and bicycle facilities.

MASTER PLAN AREAS

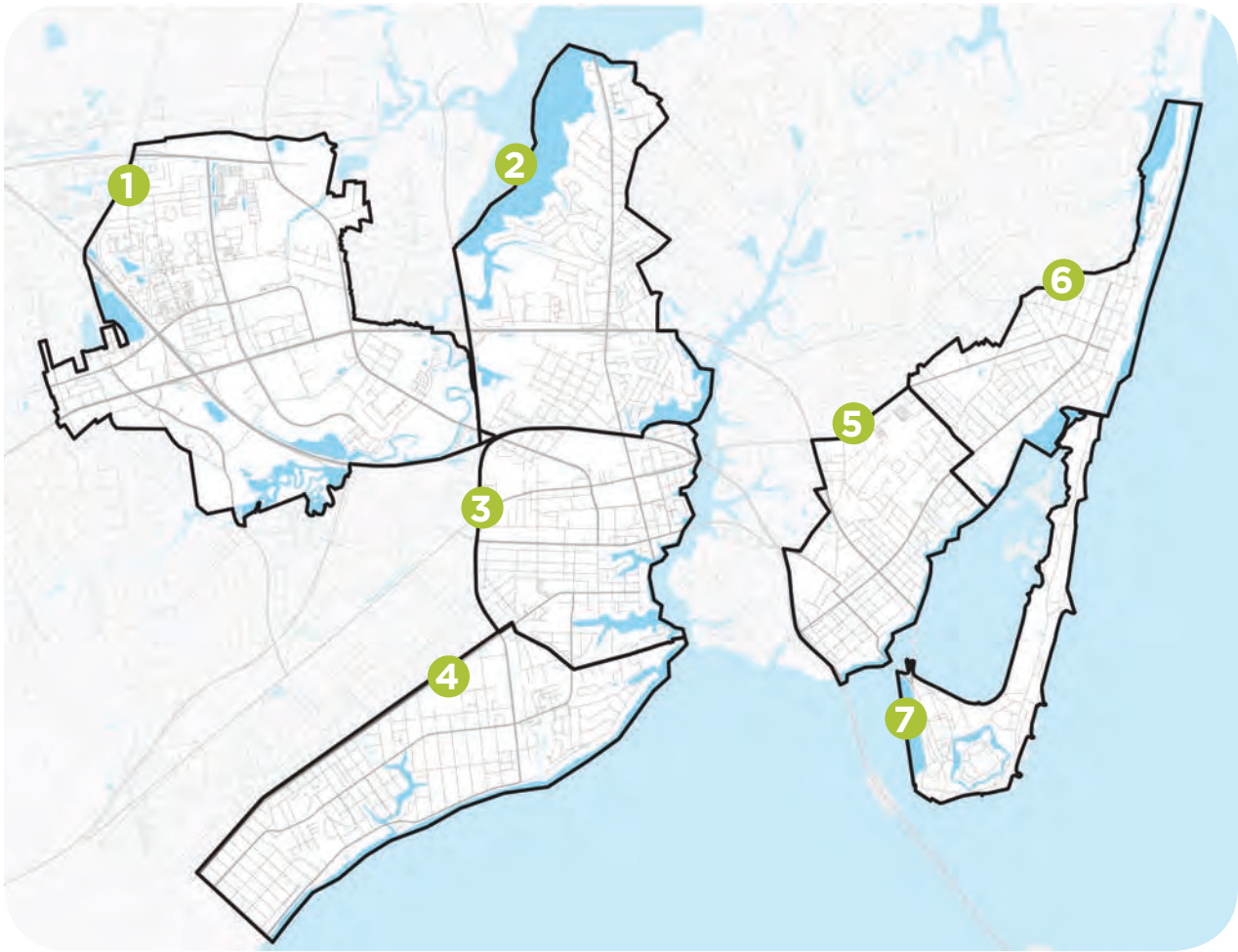


Figure 7: Hampton's Master Plan Areas

The City of Hampton has seven master plan areas - Buckroe, Coliseum Central, Downtown, Fort Monroe, Kecoughtan Road Corridor, North King Street Corridor, and Phoebus. Master plans are used to guide future development and investment in the community and are seen as a roadmap for the future. Each master plan area has a unique vision based on its specific physical characteristics and the desires of the community.

Master plan areas are the focus of *Bike Walk Hampton* as they are the activity centers of the City and have previously been identified for targeted investment. These areas include some of the oldest and most historic neighborhoods in the City, many of which have traditional development patterns that are especially conducive to walking and bicycling.

1 COLISEUM CENTRAL

Coliseum Central is the City's commercial center, located at the intersection of I-64, I-664 and Mercury Boulevard. The area includes shopping centers, office buildings, Sentara CarePlex Hospital, Hampton Coliseum, the Hampton Roads Convention Center, as well as schools, residential neighborhoods, and natural amenities at Bluebird Gap Farm and along Newmarket Creek. Centered around one of the region's busiest interstate interchanges and major thoroughfares, such as

Mercury Boulevard, this area evolved into an auto-oriented district, which present challenges to pedestrians and cyclists at present, but on-going redevelopment and available land present opportunity for future improvements.

2 NORTH KING STREET CORRIDOR

The North King Street Corridor is one of the City's most historic streets, and is primarily characterized by residential neighborhoods. North King Street acts as a front door to adjacent neighborhoods and is an important connection between Langley Air Force Base, one of the City's largest employers, and the downtown. The North King Street Corridor master plan calls for a linear park to run down the length of the street. This is one of the primary examples of active amenities already being integrated into the City.

3 DOWNTOWN

Downtown Hampton is a small-scale but high-activity area at the heart of Hampton, with many cultural and open space resources. A vibrant mix of uses is found in this area, including residential neighborhoods, office buildings, community resources, retail, and dining. The traditional grid pattern of the historic neighborhoods, mix of uses in close proximity, and public access to the waterfront create an environment amenable to bicycling and walking.

4 KECOUGHTAN ROAD CORRIDOR

The Kecoughtan Road Corridor, a primarily residential area, extends from Downtown Hampton to Newport News. The southern edge of the area is bounded by Chesapeake Avenue, a scenic and historic route along Hampton's waterfront favored by cyclists and pedestrians. This area contains predominately low speed, low traffic streets built in a gridded pattern.

5 PHOEBUS

Phoebus was historically an independent city, and this can be seen in its physical characteristics. Developed centered along Mellen Street and surrounded by residential neighborhoods, Phoebus is built on a traditional grid pattern and dense street network. It is the gateway to Fort Monroe, and is in close proximity to Hampton University and the VA Medical Center. These attributes make it ideal for bicycling and walking.

6 BUCKROE

Buckroe was originally built as a summer escape around Buckroe Beach, which remains an asset for the surrounding neighborhoods and the Peninsula. Today, Buckroe is primarily residential with some retail to serve the local market. Both the bayfront beach park and waterfront serve as community gathering places and offer various recreational opportunities. Buckroe's many residential streets, bayfront boardwalk, and juxtaposition to Fort Monroe present opportunities for improving cycling and walking connections.

7 FORT MONROE

Fort Monroe is a 400 year old military base currently undergoing a significant transformation in use following the Base Realignment and Closure (BRAC) process in September 2011. Full of history, cultural and natural resources, it is anticipated Fort Monroe will attract an increasing amount of residents and visitor each years. Access is only possible through two bridges – both of which connect to the Phoebus neighborhood – and the ability to expand on-site parking is limited, creating a need for alternative transportation modes.

CHALLENGES

The most common challenges that were observed during the preliminary assessment of the existing conditions include:

- Narrow bridges with inadequate facilities
- Lack of connectivity between destinations and master plan areas
- High-traffic roadways, overpasses, & highway ramps
- Lack of both bicycle and pedestrian amenities
- Lack of clarity of facilities

NARROW BRIDGES

There are several significant water resources located within the study area including the Hampton River, Mill Creek, and Southwest Branch Back River. As a result, bridges are required along connecting thoroughfares to span these bodies of water. Many of these bridges have high traffic volumes and lack adequate bicycle and pedestrian infrastructure.

Bridges can be significant safety hazards and deterrents for bicyclists and pedestrians. Narrow shoulders along bridges require bicyclists to use busy roadway travel lanes and pedestrians are often forced to use these narrow lanes although they are immediately proximate to high-traffic, high-speed travel lanes. Improving visibility and safety for bicyclists and pedestrians on bridges should be prioritized to increase safety and connectivity.

LACK OF CONNECTIVITY

Many of Hampton's key destinations are dispersed throughout the City. Developing a high quality and cohesive active transportation network will help residents and visitors access these destinations as well as daily conveniences.

Currently, there are major gaps in sidewalk and bicycle connectivity between key destinations. Some areas include pedestrian infrastructure, but it may be in disrepair, lack adequate safety features, or may not be ADA accessible. There is existing bike infrastructure, but it is dispersed throughout the City, and needs to be built upon. To encourage more pedestrian and bicycle use in the City, a well-connected network of high quality infrastructure must be installed and maintained.

Figure 8: Existing Challenges

Mellen St. bridge to Fort Monroe currently lacks designated bicycle facilities. (Source: Rhodeside & Harwell)

End of sidewalk on Armistead Ave illustrates the need for additional pedestrian facilities. (Source: Rhodeside & Harwell)

HIGH TRAFFIC ROADWAYS, OVERPASSES & ROADWAY RAMPS

Several high-capacity, high-traffic volume thoroughfares bisect the City. Major highways such as Interstates 64 & 664 create physical and visual, barriers between districts, and highway exits onto City streets create safety hazards for pedestrians and bicyclists.

Corridors that provide direct access to destinations are often vehicle-oriented and unsafe for pedestrian and bicyclist uses. Improving bicycle and pedestrian infrastructure along major streets and key high volume interchanges, or providing accessible alternative routes will increase non-vehicular transportation options.

LACK OF AMENITIES

Amenities such as lighting, benches, bike racks, wayfinding systems, public art, and street trees can increase safety and comfort for pedestrians and bicyclists, and help encourage use of the bicycle and pedestrian network. Currently, there is a lack of these amenities in strategic areas of the City including near major community destinations and along major routes.

LACK OF CLARITY

As new bicycle and pedestrian facilities are constructed, it is imperative that they are properly and consistently signed. Along several routes within the study area, bike lanes are not properly marked or signed, making it difficult to tell where lanes will begin or end and how they interact with automobile traffic. With a goal of ensuring the safety and comfort of users, facilities should be clearly marked and maintained.

Figure 8: Existing Challenges, continued

Mercury Blvd. overpass at King St is one of many interchanges that present a challenge to cyclists and pedestrians. (Source: Rhodeside & Harwell)

Bikes may be locked to signs and other structures when racks are not available. (Source: Chicago Department of Transportation)

Existing bike lanes on Victoria Blvd. are not clearly marked and may cause confusion to cyclists & drivers. (Source: Rhodeside & Harwell)

OPPORTUNITIES

The City's master plan areas include a wide variety of cultural, recreational, natural, and economic resources. Maximizing active transportation connections to all of the City's resources will encourage visitors to explore destinations such as:

- Neighborhood & Activity Centers
- Regional Attractions
- Cultural and Historical Resources
- Natural Features

NEIGHBORHOODS & ACTIVITY CENTERS

The City's master plan areas are comprised of a variety of unique neighborhoods, districts, and destinations. These distinct areas of the City should be linked together with quality multi-modal infrastructure to connect people, jobs, educational facilities, recreation resources, and destinations.

REGIONAL ATTRACTIONS

Hampton has several major regional commercial attractions which not only provide amenities for local residents, but also draw visitors from the surrounding region. These attractions include:

- Buckroe Beach
- Fort Monroe
- Hampton Coliseum
- Hampton Roads Convention Center
- Peninsula Town Center / Coliseum Central District
- Virginia Air & Space Center

Figure 9: Existing Opportunities
Aerial view of downtown Hampton (Source: Virginia.org)

Hampton Roads Convention Center (Source: Virginia.org)

NATURAL RESOURCES

Hampton is home to several important natural resource areas including:

- The Hampton River and Mill Creek
- Chesapeake Bay (including Buckroe Beach)
- Hampton Roads
- Southwest Branch Back River (and associated scenic wetland area)
- Newmarket Creek

There are opportunities to provide additional connections to these natural resource areas from surrounding residential areas and existing destinations.

CULTURAL RESOURCES

There are a significant number of cultural institutions within the City. Historic resources such as Fort Monroe help tell the story of the City and region. Higher education institutions, such as Hampton University, serve as incubators supporting the development of the region's future workforce.

Combined, these resources are significant drivers for local economic development. Connecting these destinations to one another, and to adjacent neighborhoods, will enhance these amenities and provide greater access to Hampton residents and visitors alike.

"We have a beautiful city to view [by] walking and biking. Let's give our citizens the opportunity to view this beauty and be healthier by walking and biking." - Survey comment

"Hampton is thinking ahead of the area on this, BRAVO!!! THANK YOU!!!!!" - Survey comment

Figure 9: Existing Opportunities, continued
Buckroe Beach (Source: City of Hampton)

Casemate Museum in Fort Monroe (Source: Virginia.org)

Historic home on Pembroke Ave (Source: Rhodeside & Harwell)

EXISTING & PLANNED FACILITIES

This study of existing conditions within the City's master plan areas guided the selection of strategic corridors and the identification of specific project recommendations.

A map of documented conditions and accompanying summary is included for each topic area.

EXISTING FACILITIES

Existing bicycle facilities in Hampton include 9 miles of bike lanes and shared use paths located in Buckroe, Downtown, Kecoughtan Road Corridor, North King Street Corridor and Coliseum Central. These facilities, in conjunction with the planned facilities shown on the following pages, display the beginning of a bicycle network within Hampton.

Pedestrian sidewalks in the study area are extensive and generally in good condition; however, gaps appear in some locations, and in other locations, sidewalks do not meet the Americans with Disabilities Act (ADA) standards due to maintenance levels or narrow widths. Intersections throughout the master plan areas may also lack appropriate ADA accessible curb ramps.

Although Hampton has 76 miles of signed bike routes, most routes do not provide adequate facilities given current road conditions or meet standard recommendations for safe and comfortable cycling. As such, these routes are not included in this inventory of facilities. Recommendations pertaining to the treatment of these routes can be found in the Program and Policy Recommendations chapter of this document.

PLANNED FACILITIES

Hampton has a number of bicycle and pedestrian infrastructure projects which have been approved and funded. These improvements include the extension of existing bike lanes on Pembroke Avenue, the North King Street Corridor shared use path, and sidewalk additions to fill gaps in the network.

Along with existing facilities, these planned improvements were used to guide the location and type of recommendations outlined in this Plan.

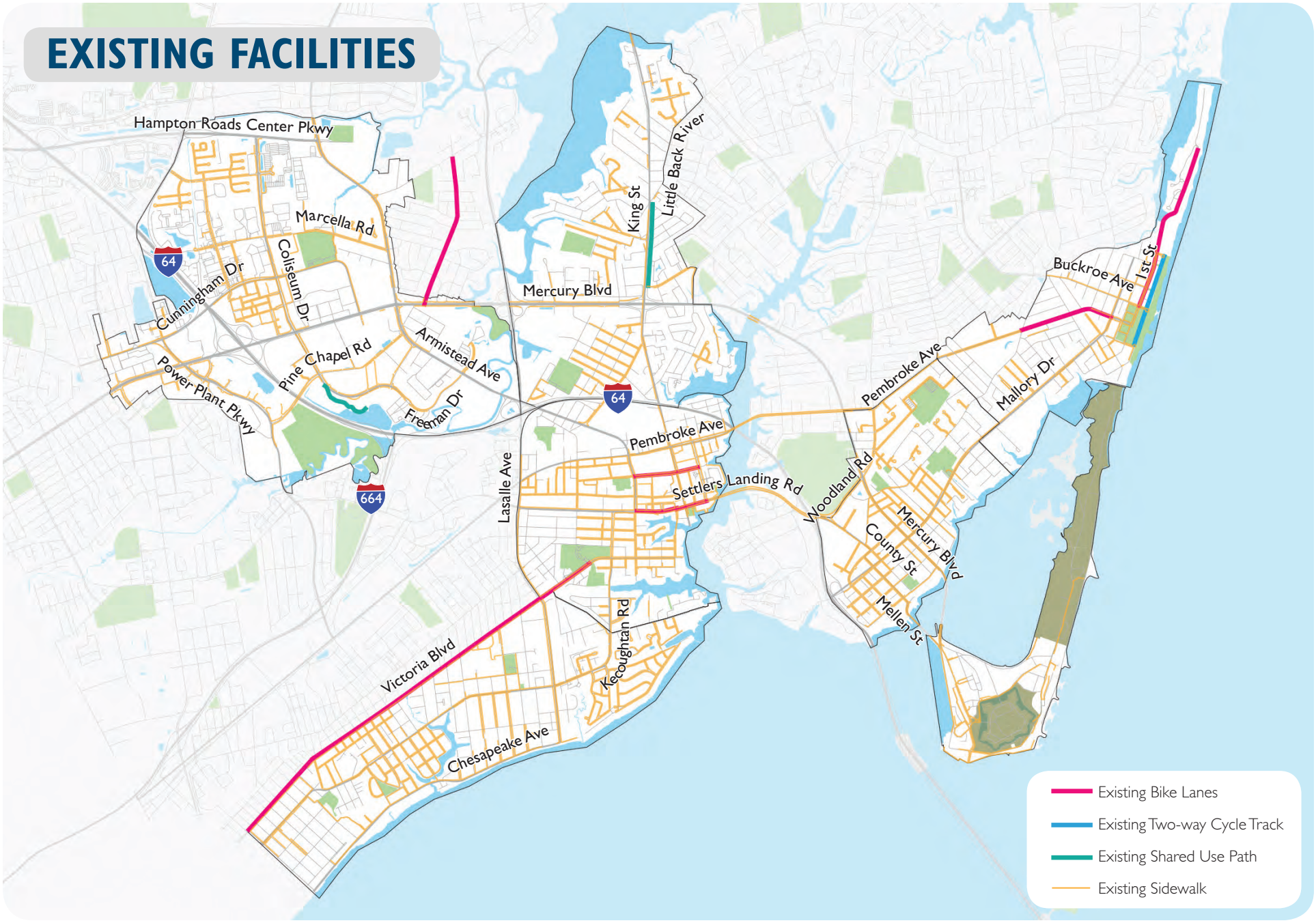


Figure 10: Existing Bicycle & Pedestrian Facilities

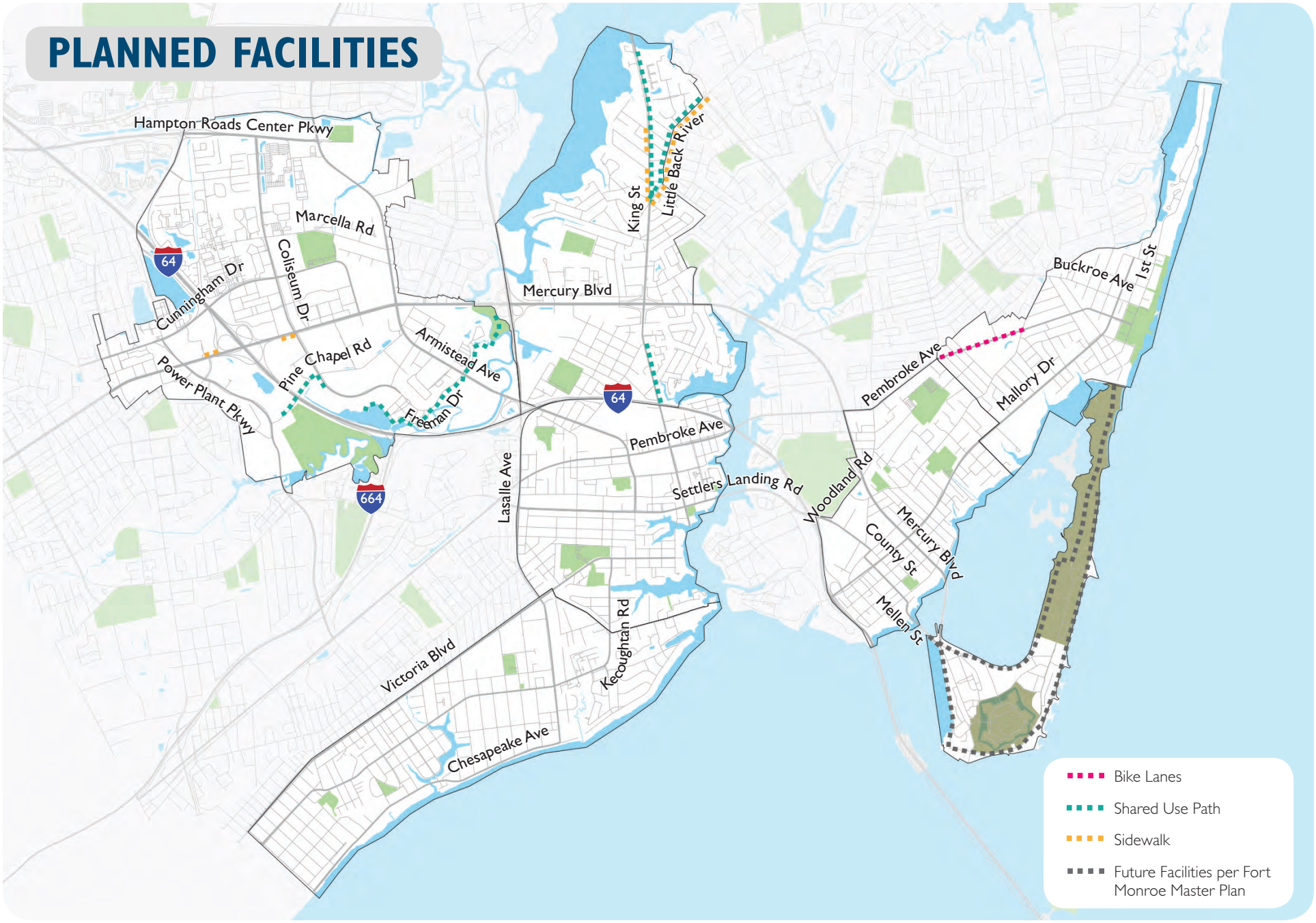


Figure 11: Planned Bicycle & Pedestrian Facilities

LAND USE & DESTINATIONS AND RESOURCES

LAND USE

Land use patterns are a key factor in determining where to recommend bike and pedestrian facilities to best serve the community. The selected strategic corridors aim to link mixed use and commercial activity areas, residential neighborhoods, employment centers, schools, the City's many open spaces, waterfronts, and other community assets.

Land use is variable across the City's master plan areas but consistently dominated by mixed use or residential uses ranging in density:

- Coliseum Central is primarily mixed use and consists of several large shopping centers, event spaces, and medium-density residential.
- North King Street is characterized by low- and medium-density residential uses and some small scale shopping areas.
- Downtown Hampton is comprised of mixed use, low-density and medium-density residential uses, and is the home of the City's governmental functions.
- Kecoughtan Road Corridor is a low-density residential area with a few concentrated commercial nodes.
- Phoebus ranges from low- to medium-density residential uses with a central mixed-use retail and dining area.
- Buckroe is comprised primarily of low- to medium-density residential uses with open space and pockets of commercial use.
- Fort Monroe contains much open space, as well as mixed use areas of residential, employment, retail/dining, institutional, and hospitality uses.

DESTINATIONS & RESOURCES

Hampton is home to a range of community assets. Among other things, Downtown, Phoebus, and Coliseum Central offer dining and entertainment opportunities; Fort Monroe offers cultural, historical and recreational resources; and Downtown boasts the Virginia Air and Space Center and Hampton History Museum. Recreational opportunities like boating and swimming can be accessed at Buckroe Beach, Downtown and Fort Monroe, and there are many natural resource areas along the Chesapeake Bay and other waterways. Other destinations include schools, parks, community centers, and shopping centers spread across the master plan areas.

As part of the public outreach process, the project team compiled a map of destination and resource locations and asked the public for input pertaining to which places they most liked/needed to bike or walk. Along with the land use areas described in the previous sections, this mapping of destinations and community resources was used to identify strategic corridors for bicycle and pedestrian facility recommendations.

"Thank you for considering bike lanes. Bike lanes connecting all the different parts of the City are long overdue!"
- Survey comment

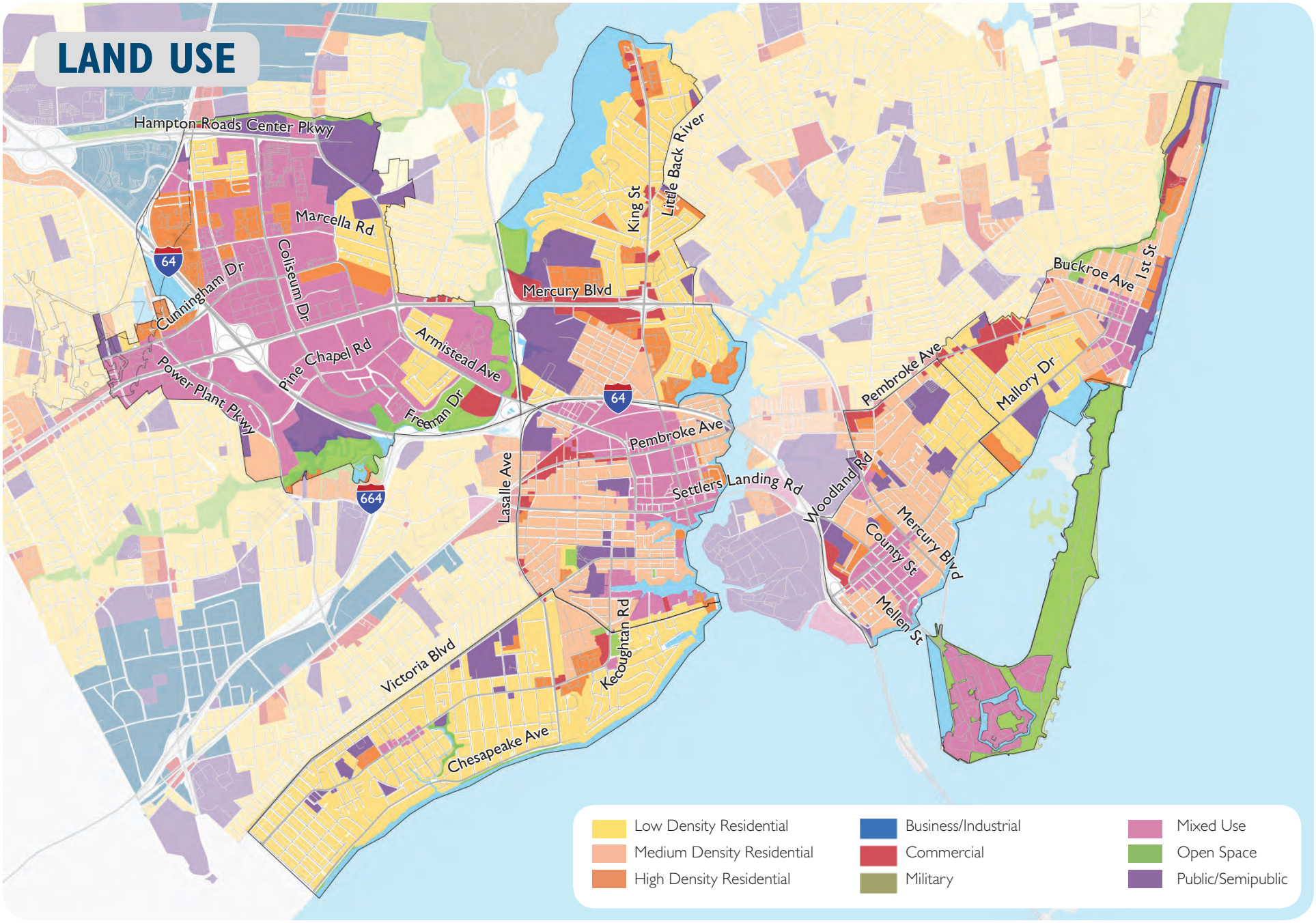


Figure 12: LandUse

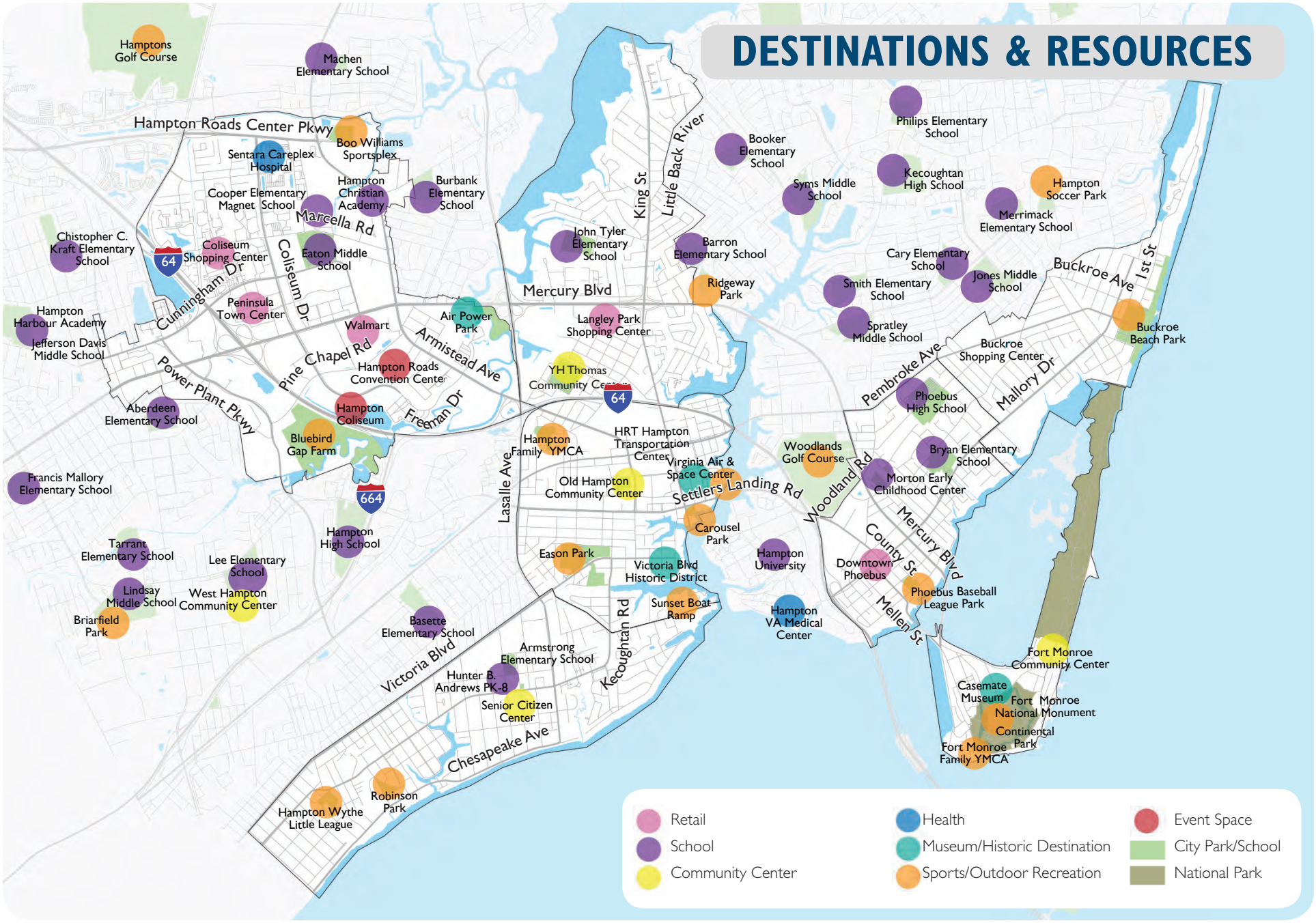


Figure 13: Destinations & Resources

CRASH DATA & BUS STOPS

CRASH DATA

Available crash data was analyzed to determine trends in bicycle and pedestrian related crashes within the study area and identify high-risk areas. Crash data from 2014 and 2015 were evaluated and categorized by severity of injury (sorted from most severe to least severe):

- Fatal injury crashes
- Incapacitating injury crashes
- Non-incapacitating injury crashes
- Non-visible injury

These crashes were mapped to evaluate geographic trends and concentrations. The highest concentration of crashes has occurred near major thoroughfares and in high traffic areas of the City.

Bicycle, pedestrian and driver awareness programs should be considered to reduce conflicts with these transportation modes. Along with programs, the provision of adequate facilities such as intersection enhancements, driveway improvements, and marked/designated facilities should be implemented.

BUS STOPS

The Hampton Roads Transit (HRT) system forms a network of bus routes, including Metro Area Express and Commuter Service routes, which connect locations within the City and throughout the Peninsula and Hampton Roads. As part of a multimodal transportation network, pedestrian and bicycle facilities help to complete the "first-mile/last mile" links to public transportation systems. People using public transportation must be able to reach transit points, such as bus stops, and should be able to safely approach the "first mile" and "last mile" of their journey. Sidewalks and bike lanes help complete that first mile, last mile transition. A complete, connected system of sidewalks and bicycle lanes is therefore of increased importance along transportation routes, and make the overall transit system more usable.

Additionally, the HRT Hampton Transit Center serves as a central transfer point and transit hub in Downtown Hampton. Bicycle and pedestrian facilities connecting to the transfer center are important, as they provide options to those arriving to and departing from the City of Hampton. HRT buses are equipped with front bike racks to carry a limited number of passenger bicycles.

Figure 12 shows all HRT bus stop locations within the master plan areas. Those stops which are in the top 25% of city-wide use (measured by combined HRT boarding and alighting counts) are highlighted with a larger orange dot. Since they serve larger numbers of Hampton transit users, these higher use stops in particular are priority locations for making "first mile/last mile" bicycle and pedestrians connections.

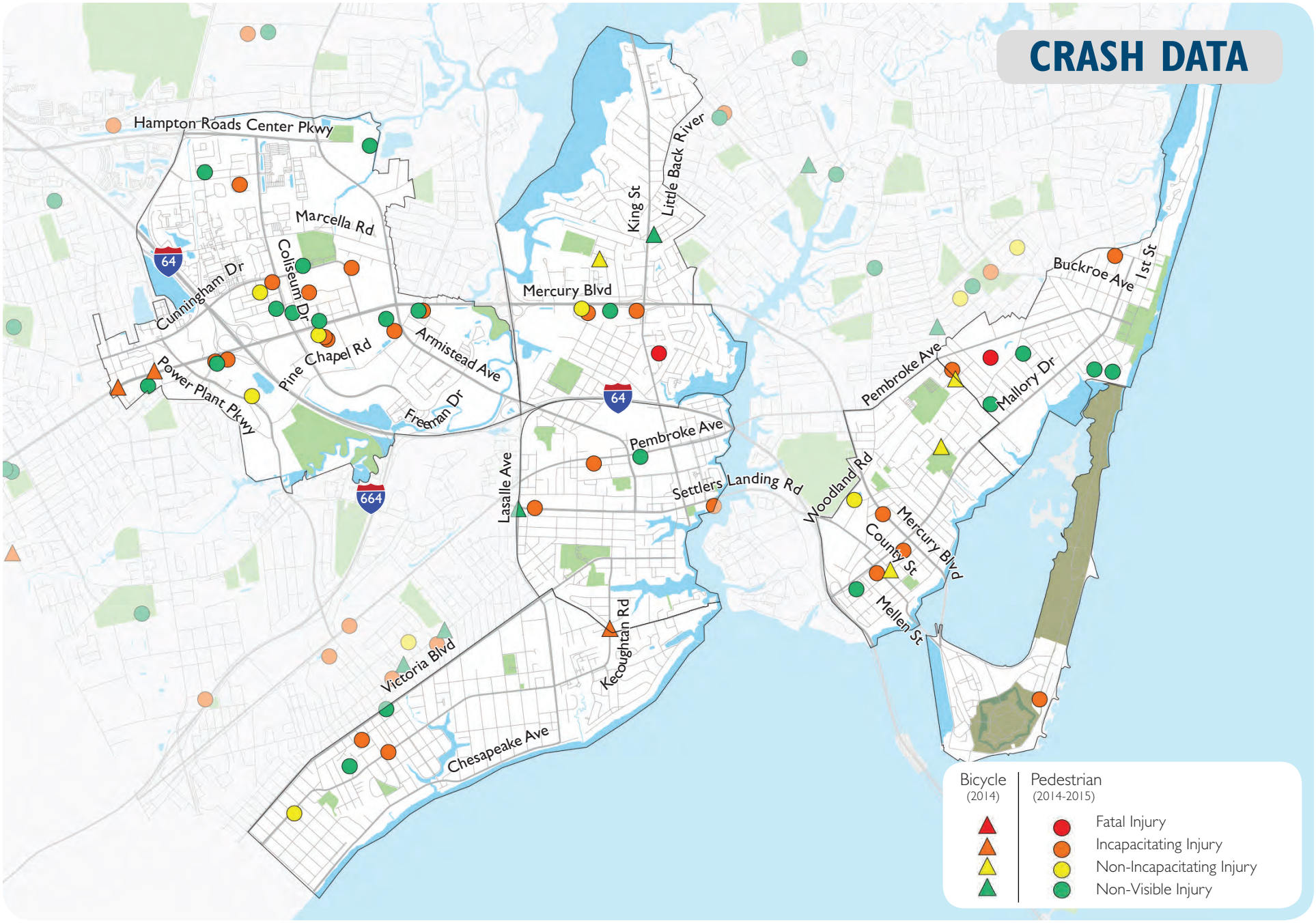


Figure 14: Crash Data

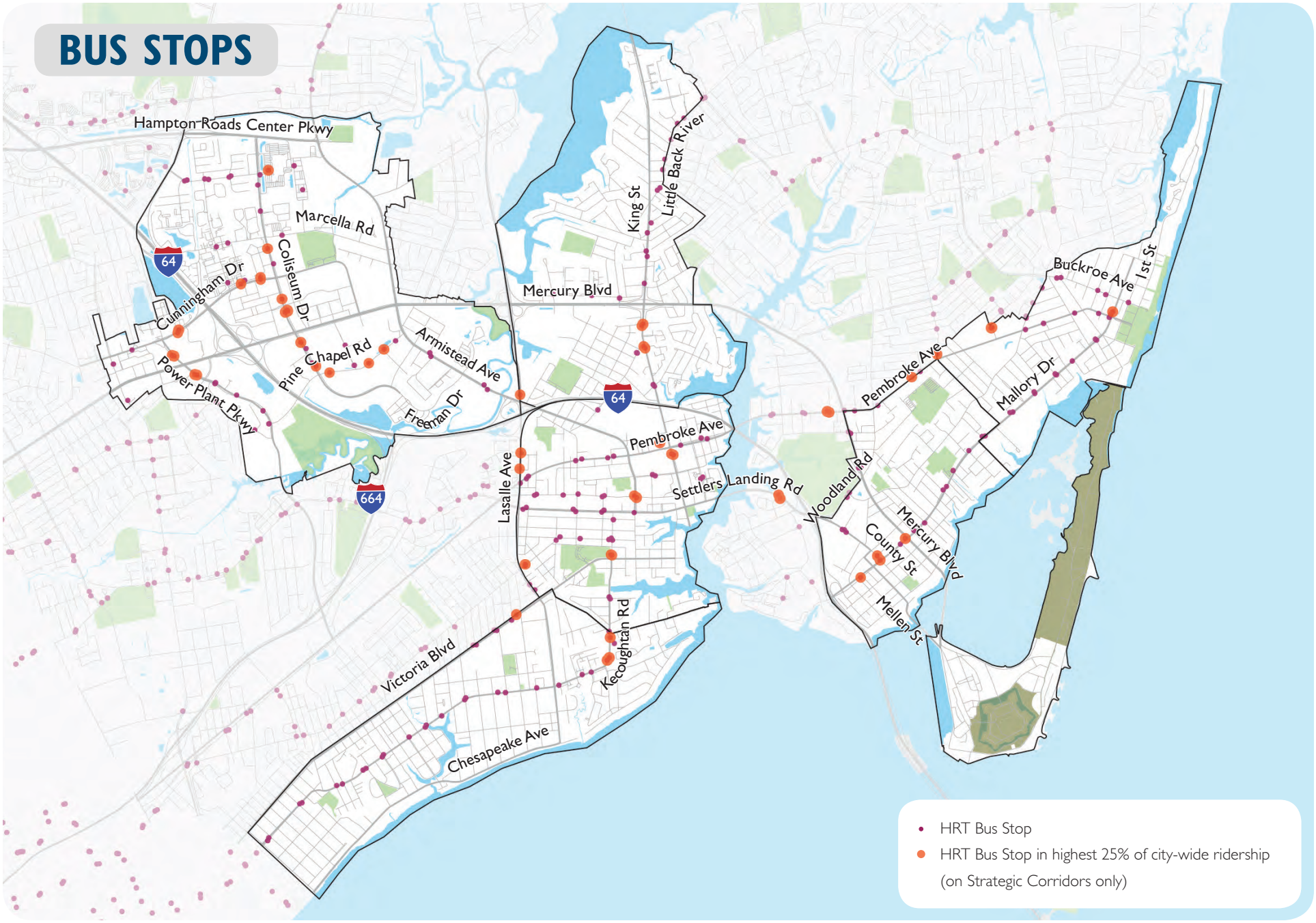


Figure 15: HRT Bus Stops

COMMUNITY ENGAGEMENT

Public engagement was an essential element in the development of the *Bike Walk Hampton* Master Plan, and involved steering committee meetings, public open houses, youth engagement, and an online community survey. Additionally, the City hosted a public event celebrating bicycling and walking.

COMMUNITY STEERING COMMITTEE

A steering committee comprised of Hampton citizens and representatives of institutions and civic groups met four times throughout the planning process. The purpose of the committee was to identify project goals and framework, discuss existing conditions, identify potential bicycle corridors and destinations, review recommendations, and identify project priorities.

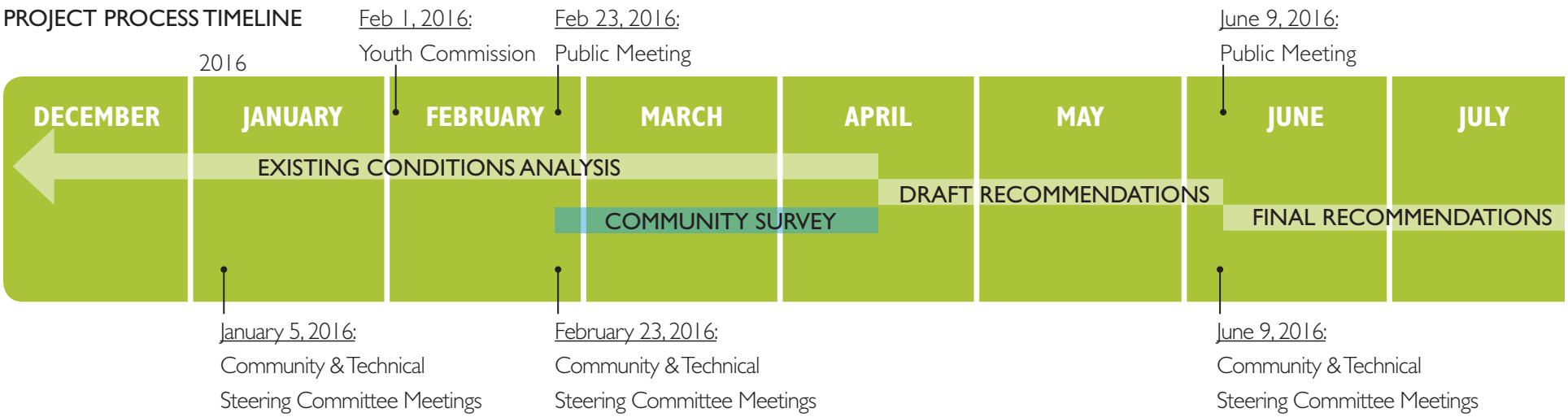
Community steering committee members included participants from the following organizations:

- Fort Monroe Authority
- Hampton City Council
- Hampton City Schools
- Hampton Health Department
- Hampton Roads Transit
- Mayor's Committee on Disabilities
- National Park Service
- Peninsula Bicycling Association
- Sentara Health Care
- YMCA

TECHNICAL STEERING COMMITTEE

The Technical Steering Committee provided institutional City knowledge to the project team throughout the planning process, and were asked

PROJECT PROCESS TIMELINE



to consider recommendations in relation to their department's goals and policies. The Technical Steering Committee met three times throughout the planning process to review existing condition findings, review and develop project recommendations, and to ensure integration of current City projects in the *Bike Walk Plan*. Technical steering committee members included representatives of the following departments:

- Community Development Department
- Convention and Visitors Bureau
- Marketing Inc.
- Parks, Recreation, & Leisure Services Department
- Police Division
- Public Works Department

PUBLIC MEETING #1

The first public open house was held on February 23, 2016, at the Hampton Roads Convention Center. During the first open house, participants were provided the opportunity to review existing conditions and to express needs and concerns that could be addressed through the Plan.

This meeting allowed particpants to identify cycling and walking destinations, as well as challenging areas, and share local knowledge.

HAMPTON YOUTH COMMISSION

Young adults are one of the user groups most likely to be impacted by bicycle and pedestrian improvements. Staff met with the Hampton Youth Commission (HYC) early in the process to understand their specific needs and desires of this Plan. HYC members also provided a list of key destinations for high-schoolers.

PUBLIC MEETING #2

A second public Open House was held on June 9, 2016 at the Hampton Roads Convention Center. During the second Open House, participants reviewed draft project recommendations and were provided the opportunity to engage the project team and provide further project ideas.

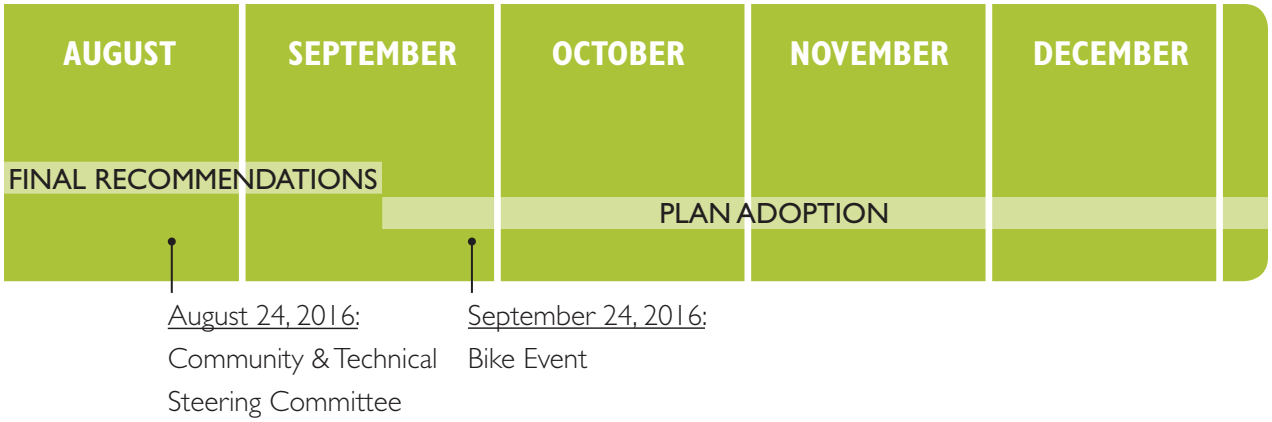


Figure 16: Bike Walk Hampton **Public Meeting**
Attendees provided feedback on initial recommendations (Source: Rhodeside & Harwell)

COMMUNITY SURVEY

Additional public input was solicited through an online survey which was available through the City website. The purpose of this survey was to:

- Gain insight into current bicycle and pedestrian conditions and experiences
- Understand current perceptions of the bicycle and pedestrian environment and culture
- Learn what community desires from *Bike Walk Hampton* and future initiatives
- Determine which improvements will best facilitate more biking and walking

The survey was open to the public for two months, and during this time 648 responses were received. The survey was available to Hampton residents and employees across the City, making the results applicable to the entire City.

In addition to the survey questions, over 200 survey respondents provided open-ended insights. Some frequently recurring comments included:

- Increase the amount of sidewalks and crosswalks
- Develop a public education and safety campaign for both bicyclists and drivers
- Connect schools and neighborhoods
- Maintenance of existing infrastructure is as important as building new
- Provide access to waterways and waterfront
- Consider physically disabled and seniors when designing facilities
- Connect Fort Monroe and Buckroe
- Provide bike route map, adequate bike parking, lighting, and benches

Many of these comments are reflected in recommended policies, programs, and physical improvements. Additional key findings from the survey are detailed on this and the following pages.

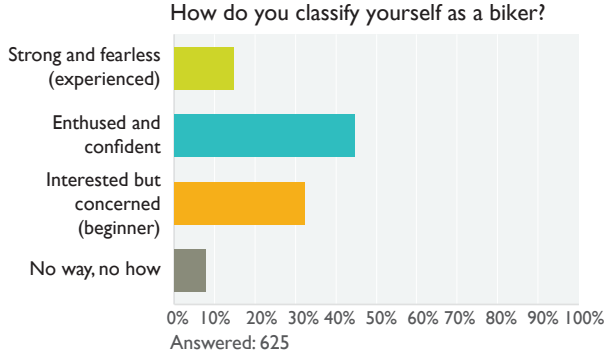
"This is a real estate enhancer and better future for our kids. Please don't give up on this." - Survey comment

KEY FINDINGS SURVEY RESULTS

Characteristics of Respondents

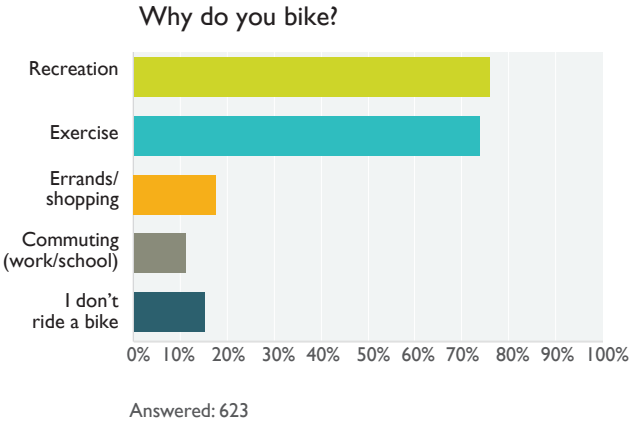
Respondents represented a variety of Hampton residents and employees. Just over half of the respondents were female (54.9%). Baby Boomers made up the majority of respondents, with 54.4% falling into the age range of 45-64. Children and young adults made up the smallest group of respondents (3.2% are 24 or younger).

While 98.1% of respondents have access to an automobile, 54.3% and 66.9% have biked or walked in the past year, respectively.



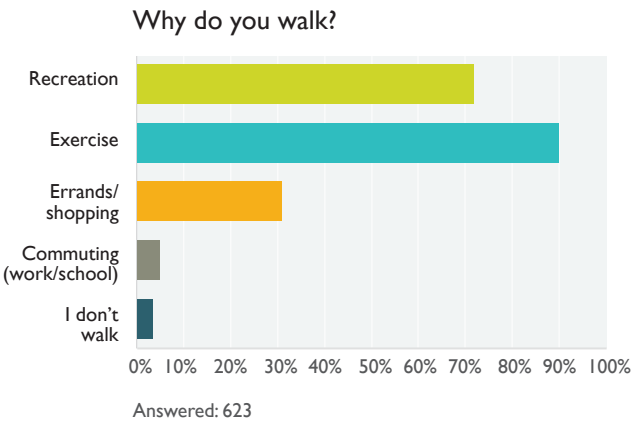
Over three-quarters of respondents fell into biking user type B, enthused and confident, or type C, interested but concerned. These two categories will likely experience the greatest impact from improved facilities. The strong and fearless can be expected to continue to ride in current conditions, and the no way, no how population are not likely to ride even if conditions are substantially improved. The no way, no how population, make up the smallest group of respondents at 8%.

However, given that respondents were more likely to take the survey if they did have some interest in bicycling (or walking), these may not be accurate representations of the City of Hampton at large.



Reasons for Bicycling

For bicycling, the vast majority of respondents participate for recreation and exercise. 76,1% of participants bicycle for recreation, and 73.8% ride for exercise. About 15% of respondents to this question, do not ride a bicycle at all. Just over half of respondents, 53.2%, ride only 1 day a week or less. 15% ride 4 or more days a week.



Factors that Discourage Biking

To determine the reasons people do not ride their bikes, respondents were given fifteen options (including "other"), and were allowed to select all that applied. Options spanned from not knowing how to ride a bike and not being sure of the route to unsafe intersections and safety concerns. Four factors that discouraged people from bicycling rose clearly to the top:

Top 4 Factors Discouraging Biking

Automobile traffic & bad driver behavior (72.2%)
No bikes lanes/parking or in poor condition (70.1%)
Unsafe intersections (65.5%)
Personal safety concerns (51.8%)

All other factors were significantly less important than these four (selected by under 30% of participants).

Reasons for Walking

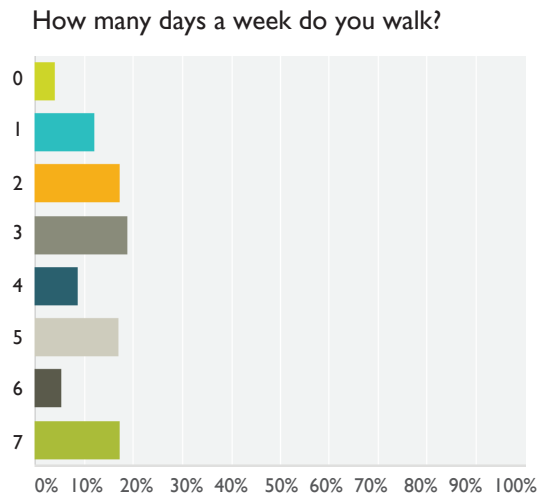
Many respondents walk for recreation and exercise (71.7% and 89.9% respectively), and most respondents walk for one reason or another - only 3.5% of respondents claim they do not walk for any significant reason. Respondents also walk more frequently than cyclists ride. 17% of respondents walk seven days a week, while only 4% claimed to walk zero days. Additionally, many open-ended comments highlighted that pedestrians are typically walking with their dogs.

Factors that Discourage Walking

As with bicycling, respondents were given a number of options from which to select reasons they do not walk more. Some of the options were the same (e.g. unsure of route), but some options do not apply here (e.g. not knowing how to ride a bike), so only twelve options were available. One of the most interesting results from the survey is that despite some variation in options, and what one might think are differences in experiences as a pedestrian versus a cyclist, the same top four factors surfaced, albeit in a slightly different order (with sidewalks being equated to bike lanes):

Top 4 Factors Discouraging Walking

No sidewalks/sidewalks in poor condition (57.8%)
Personal safety concerns (51.9%)
Automobile traffic & bad driver behavior (47.4%)
Unsafe intersections (43.2%)



Importance of Bicycling and Walking

Through the survey, the project team learned that having a sound bicycling and pedestrian network is important to the community. Respondents were asked to rate how important it was to them to have safe and convenient bicycle and pedestrian facilities on a scale of 1 to 5 with 1 being not important at all and 5 being very important.

89.1% of respondents said it was either important or very important to have safe and convenient bicycle and pedestrian facilities.

Again, this may not be representative of the entire City, but it is encouraging that less than 2% of respondents do not think it is important to have these facilities.

A similar question asked how much more likely would the respondent be to bicycle or walk more frequently if it became safer and more convenient. The spread of answers to this question very closely mirrored the answers to the previous question: 85.2% of respondents said they would be likely or very likely to bicycle or walk more frequently if it became safer and more convenient, and only 2.6% would not be likely to bicycle or walk more frequently.

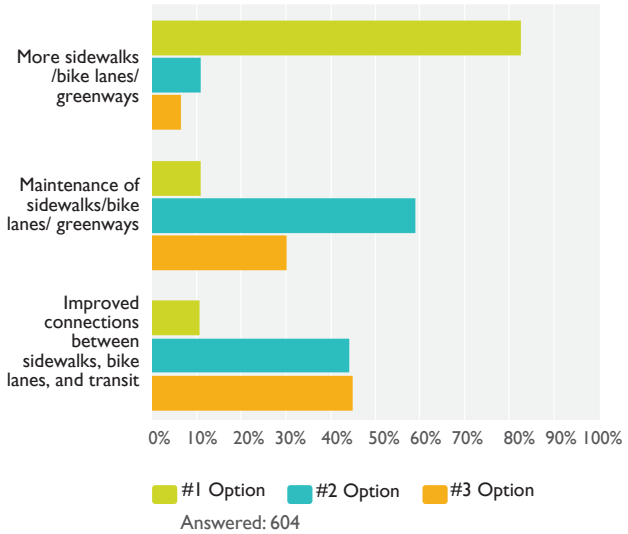
Improvements

In order to direct the *Bike Walk Plan*, one of the most important questions in the survey asked what improvements would be the most supportive in improving bicycling and walking in the City of Hampton. Answers to these questions led directly to policy and program recommendations (e.g. a program to educate drivers, bicyclists, and pedestrian on proper safety and interactions), and helped guide some specific improvements. Mercury Boulevard came up repeatedly in survey comments, as well as public and steering committee meetings, leading to additional improvement recommendations.

Respondents were asked to pick, in order, the top 3 improvements they considered to be most important for improving bicycling and walking out of 9 possibilities. There are clear takeaways from this question as well. A couple of improvements, such as worksite amenities (i.e. showers, dressing rooms, etc.) and a bicycle route map ranked very poorly, indicating that, while important, they are not fundamental to increasing and improving bicycling and walking in Hampton.

Increasing the amount of sidewalks, bike lanes, and greenways was the number one choice for 73.2% of respondents, and 88.3% selected it as one of their top three. This is far and away the most selected option. All three top options relate to creation and maintenance of physical infrastructure.

Top three improvements which citizens feel would be most supportive to improving bicycling and walking in the City of Hampton:



Given the current state of Hampton's bicycle and pedestrian infrastructure, this is not a surprising result, and further solidifies the need for a strategic plan to guide smart implementation of the bicycle and pedestrian network. A similar survey several years from now may yield significantly different results, which is why it is important to revisit these plans and continue to build upon them.

"I am glad to see we are moving in this direction in Hampton. I feel it is much needed to make us a more liveable city." - Survey comment

PROGRAM & POLICY RECOMMENDATIONS

From the community survey, public and steering committee meetings, and staff and consultant field investigations of existing bicycle and pedestrian conditions throughout the City, it became clear that improving the physical bicycling and pedestrian infrastructure alone may not increase bicycle ridership and pedestrian activity in the City. This is due to concerns regarding safety and a desire for amenities, among other issues.

This section of the Plan includes program recommendations meant to work in partnership with physical infrastructure improvements to increase cycling and walking in the community.

PROGRAM RECOMMENDATIONS

Develop Public Safety & Awareness Campaign

A public safety and awareness campaign should be developed to educate citizens on bicycling and pedestrian safety and regulations. This campaign should be geared equally towards drivers and cyclists, with a secondary focus on pedestrians.

Citizens indicated primary reasons for not cycling and walking are automobile traffic, bad driver behaviors, and personal safety concerns. Drivers also indicated the need to encourage safe and predictable cycling behaviors.

Implement Bike Share Program

The City should assess its ability to support a bike share system. This is recommended to be done as the network of on and off- street bicycle lanes increases but can also prove to be an effective tool for building political will to increase infrastructure and increasing enthusiasm in the community. Bike share programs provide opportunities for both visitors and citizens. Scalable bike share systems are available, giving the City the ability to customize the system to the City's needs, and grow a system over time.

Provide Bicycle & Pedestrian Amenities

Bicycle and pedestrian amenities should be provided in future projects and existing facilities should be retrofitted with amenities. Amenities include items such as furnishings (benches, garbage receptacles), lighting, shade trees, bicycle parking, bicycle repair stations, bicycle storage lockers, and wayfinding and route maps.

Appropriate lighting of bicycle and pedestrian facilities is not merely an amenity but a way to increase safety. Increasing amenities such as benches along sidewalks and paths, shows respect for pedestrians. Older citizens indicated a desire to walk but a need to rest along the way.

Develop Signature Path/Trail

Develop a signature path/trail. A signature path can become a destination for both residents and

Figure 17: The Indianapolis Cultural Trail
A signature shared use path in Indianapolis, IN is used by bikes and pedestrians (Source: Indianapolis Star)

visitors. Examples include the Capital Trail in Richmond, Virginia and the Indianapolis Cultural Trail in Indianapolis, Indiana. Trails are often off-road paths and have a recognized name and brand. In addition, off-road facilities are preferred by new, less-experienced riders.

POLICY RECOMMENDATIONS

Ensure Compatibility with Regional Plans

Future bicycle and pedestrian projects and plans should consider the recommendations of regional plans when proposing improvements, especially significant trail alignments.

Connect to Neighboring Localities

Future bicycle and pedestrian projects and plans should include connections to neighboring localities, specifically Newport News, York County, and Poquoson.

Review Existing Ordinances

Existing legislation related to bicycle and pedestrian traffic in the City of Hampton Code of Ordinances should be reviewed for consistency with current state codes and ordinances and for current applicability.

Evaluate Existing Bicycle Routes

Currently, the City has 76 miles of signed bicycle routes. Signed over twenty years ago, traffic patterns and volumes have changed and it is recommended the routes be reevaluated for safety.

Formalize Existing Bicycle Lanes

Existing bicycle facilities throughout the City should be marked and signed in compliance with the Manual on Uniform Traffic Control Devices (MUTCD) and the American Association of State Highway and Transportation Officials (AASHTO) Design Manuals. Necessary markings and signage should be added.

Inventory Existing Pedestrian Facilities

Existing pedestrian facilities should be inventoried in order to assess their current condition. This information should be utilized to prioritize repairs to existing facilities, as well as new sidewalk and shared use path projects.

Inventory Residual Right-of-Way for Connections

The City should inventory all residual right-of-way for creating bicycle and pedestrian connections. In areas without traditional street grid patterns, pedestrians and cyclists often travel long distances due to lack of connections. By utilizing existing City-owned right-of-way, there is an opportunity to extend streets, or develop bicycle and pedestrian only connections, allowing for more direct connections between destinations.

Figure 18: Existing Bike Route Signage
Signed bike routes do not always offer adequate facilities for current vehicular conditions(Source: Rhodeside & Harwell)

Figure 19: Existing Bike Lanes
Bike lanes on Lincoln St. lack proper markings (Source: Rhodeside & Harwell)

Figure 20: Presentation of Programs and Policies

Potential programs and policies were presented at the second public meeting. (Source: City of Hampton)

Figure 21: A Complete Street

Example of a "complete street" in Seattle, WA with vehicular lanes, bike lanes, and sidewalks. (Source: Seattle Department of Transportation)

Establish Bicycle & Pedestrian Advisory Committee

A Bicycle & Pedestrian Advisory Committee should be established to make policy and program recommendations. The committee should be comprised of interested members of the cycling and pedestrian community, as well as City staff.

Develop Partnerships with Community Institutions

Institutions such as Hampton University, Langley Air Force Base, NASA, and the Hampton VA Medical Center have large populations who could greatly benefit from and utilize improved pedestrian and bicycle facilities. Going forward, their input, expertise and support should be sought.

Achieve Bicycle Friendly Community Status

Strive to meet the attributes of a Bicycle Friendly Community as set forth by the League of American Bicyclists and become a Bicycle Friendly Community, as well as encourage local businesses to become Bicycle Friendly Businesses and local universities to become Bicycle Friendly Universities.

Support Bicycle & Pedestrian Related Legislation

Support state and federal bicycle and pedestrian related legislation, especially related to facility funding and improved safety measures.

Adopt Complete Streets Policy

A Complete Streets policy should be adopted to ensure all future transportation projects take into account the needs of everyone using the road. Complete streets are designed to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. With the adoption of a Complete Streets policy, future transportation projects will contribute to a safer and more diverse street network. Day-to-day decisions concerning funding, planning, design, maintenance, and operations should be aligned to the goals of the adopted policy document.

TOOLKIT

The following pages outline a toolkit of bicycle and pedestrian facilities options that can be used together to create a continuous multimodal network within the study area. These facilities follow current VDOT recommendations and current design guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), the National Cooperative Highway Research Program (NCHRP), and the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD).

The contents of the toolkit are as follows:

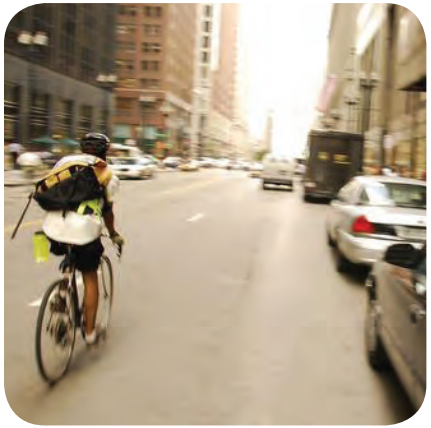
- Bicycle User Types – The charactertistics of different bicyclists, and how recommendations are targeted for each bike user group
- Facilities Overview – The types of bike and pedestrian facilities included in these recommendations and guidelines for their use
- On-road Facilities – An overview of on-road bike facility types and where they should be used
- Off-road Facilities - An overview of off-road shared use and pedestrian facilities and where they should be used
- Intersection Treatments – Treatments to create safer, more comfortable intersections for bicycles and pedestrians
- Bus Stop Treatments - Treatments to create safer interactions between bicycle lanes and bus stop locations

BICYCLE USER TYPES

The following typology of bike users separates people who bicycle into four categories based on their experience, interest, and level of comfort with biking. The majority of the American population, approximately 60%, may be categorized as "interested but concerned." About 30% have no interest in biking, and the remaining 10% are in the strong/fearless or enthused/confident categories, with the majority of these in the latter group[1]. The recommendations included in this report aim to encourage biking as a mode of transportation for Hampton's residents and visitors by creating a more comprehensive network of bicycle facilities that will allow riders to feel safe and comfortable across a range of road conditions.

For those who choose not to bicycle, a connected network of sidewalks and shared use paths encourages walking for both transportation and recreational purposes.

1 Jaffe, E. (2016). The 4 Types of Cyclists You'll Meet on U.S. City Streets. Retrieved August 3, 2016, from http://www.citylab.com/commute/2016/01/the-4-types-of-cyclists-youll-meet-on-us-city-streets/422787/.



(Source: City of Chicago)

STRONG & FEARLESS (EXPERIENCED)

- Willing to bike in most conditions whether or not a bike facility is present

(Source: San Francisco Examiner)

ENTHUSED & CONFIDENT (MODERATE)

- Comfortable biking on roadways but prefer using a dedicated bike facility
- Appreciate a wider network of bike facilities

(Source: Steigerwaldt)

INTERESTED BUT CONCERNED (BEGINNER)

- Curious about biking but concerned about riding near fast-moving vehicular traffic
- Would prefer biking on trails or other facilities separated from the roadway

(Source: Rhodeside & Harwell)

NO WAY, NO HOW!

- Not interested, not able to bike, or not comfortable biking in any conditions

FACILITIES OVERVIEW

The recommendations in this Plan may be divided into three categories: on-road bicycle-only facilities (sharrows, bike lanes, buffered bike lanes) off-road shared use facilities (shared use path); and off-road pedestrian-only facilities (sidewalks).

Once it is determined where bike and pedestrian facilities should be located, roadway conditions will determine what type of facility is most appropriate. For on-street facilities, the facility type is determined primarily by vehicular traffic volume and speed – as these increase, greater separation between bicycle facilities and vehicular lanes is recommended. Consideration must also be given to how new facilities can fit into the existing roadway. In some cases, where conditions are constrained, a less preferred facility may be used in order to fill a gap in the overall network. Where the existing roadway cannot accommodate on-street facilities but a route is desired, shared-use paths may be used by both bicycles and pedestrians.

Since they are located outside of the roadway, the location of shared use paths and sidewalks is not determined be vehicular conditions. However, both facility types require minimum amounts of space to be available within the public right-of-way. Current design standards for all facility types are outlined in the table below.

FACILITY TYPE	POSTED SPEED	TRAFFIC VOLUME	FACILITY WIDTH	USER TYPE
ON-ROAD - BICYCLE				
Sharrows	• Low (≤25 mph)	• Low (≤3,000 AADT)	• 0' additional	• Bicyclists A/B
Bike lanes	• Low-medium (25-35 mph)	• Low-moderate	• 5' min. each side	• Bicyclists A/B
Buffered / Protected Bike Lanes	• Medium-high (30-45 mph)	• High	• 7' min. each side (5' lane with 2' buffer)	• Bicyclists A/B/C
Buffered / Protected Two-way Cycle Track*	• Medium-high (30-45 mph)	• Any	• 15' (two 6' lanes with 3' buffer)	• Bicyclists A/B/C
OFF-ROAD - SHARED				
Shared Use Path	• High (45 mph+) or where on-road facilities are not feasible	• Any	• 15-18' (10' path with 3-6' buffer on street side and 2' buffer on inside) • 8' min. in constrained conditions	• Bicyclists B/C • Pedestrians
OFF-ROAD - PEDESTRIAN				
Sidewalks	• Any	• Any	• VDOT: 8' min. (5' sidewalk and 3' buffer or 8' sidewalk) • City of Hampton: 4' min. for residential and 5' min. for commercial.	• Pedestrians only

Table 1: Facilities Overview

*Note: Two-way cycle track is not included in these project recommendations but is part of the existing network of bicycle facilities.

ON-ROAD FACILITIES

BICYCLE-FOCUSED FACILITIES

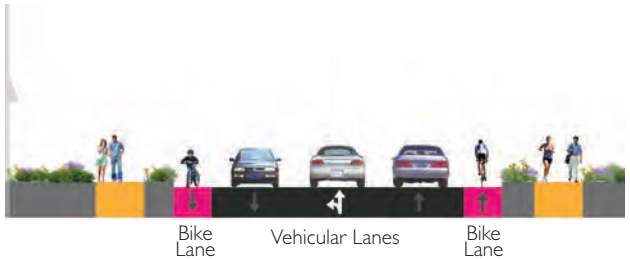
SHARROWS

(Source: Brewster-MA.gov)

- 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
- A "super sharrow" can be used where additional visibility of facility is needed, and is accomplished with additional colored paint and stripes to highlight the sharrow.

BIKE LANE

(Source: Streetsblog USA)

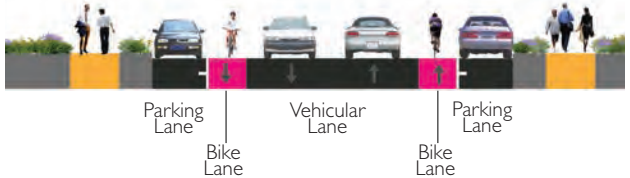


- Striping separates marked bicycle lane from vehicular traffic
- Appropriate for streets with posted traffic speeds of 25-35 mph and low-moderate traffic volumes

BICYCLE-FOCUSED FACILITIES, CONTINUED

BIKE LANE WITH PARKING

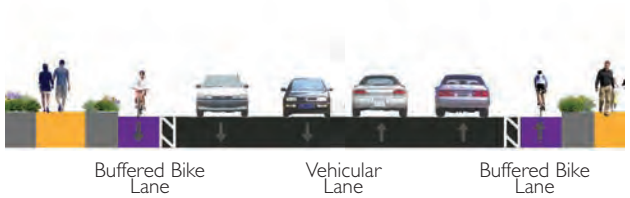
(Source: Rhodeside & Harwell)



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

BUFFERED BIKE LANE

(Source: LoopNorth.com)



- Painted buffer zone separates bike lane from vehicular traffic
- Provides greater separation from traffic than standard bike lane.
- Appropriate for streets with high-speed (30-45 mph) and/or high-volume traffic

OFF-ROAD FACILITIES

SHARED USE FACILITIES

SHARED USE PATH

(Source: Greater Greater Washington)

- Two-way path is shared by bikes and pedestrians
- Path is separated from the road by a curb and may include a planted buffer strip between the path and the roadway
- Centerline may be used to divide users by their direction of travel

PEDESTRIAN-FOCUSED FACILITIES

SIDEWALKS

(Source: Rhodeside & Harwell)

- Sidewalk network should be continuous, well-maintained and wide enough for anticipated users
- Should meet the Americans with Disabilities Act standards of width, slope, and surface condition

INTERSECTION TREATMENTS

BICYCLE-FOCUSED TREATMENTS

MARKED BIKE LANES/ENHANCED LANE MARKINGS ACROSS INTERSECTIONS

(Source: Nacto.org)

- Marked crossings for bicycles highlight the presence of bikes at road intersections and ramps to minimize conflicts between vehicles and bicycles
- Can use colored marking in addition to white line striping to enhance visibility

(Source: BTAOregon.org)

- Can also be used at highway ramps
- May be used in conjunction with crossing signage or flashing beacons (see "Pedestrian-Focused Infrastructure")

BIKE BOXES

(Source: Ortec)

- Provide safe area for bikes to stop and make turns at road intersections
- Appropriate for signalized intersections with high traffic volumes and/or bicycle use
- May not be appropriate at steep inclines or where right turns are frequently made on red.

BIKE SIGNALS

(Source: AlexandriaVA.gov)

- Timed to prevent conflicts with vehicles at road intersections
- Appropriate where bicycle clearance time differs significantly from the pedestrian clearance time or where bicycle movement conflicts with vehicular movement

PEDESTRIAN-FOCUSED TREATMENTS

CURB RAMPS AND DETECTABLE WARNINGS

(Source: Rhodeside & Harwell)

- Curb cuts at driveway and road crossings should meet Americans with Disabilities Act standards
- Truncated domes provide a detectable warning

MEDIAN REFUGES

(Source: Rhodeside & Harwell)

- Waiting area in median splits crossing distance for pedestrians (should be wide enough to also accommodate bicycles)
- Appropriate for multi-lane roads with higher traffic volumes

MARKED CROSSWALKS

(Source: Nacto.org)

- High-visibility striped or textured crosswalks make crossing areas more visible to vehicles
- Standard parallel line crosswalks should be used where high-visibility is not required

CURB BUMP-OUTS

(Source: Rhodeside & Harwell)

- Extended sidewalk at intersections reduces crossing distance and makes pedestrians more visible to drivers
- Appropriate for higher-density, lower-speed areas with on-street parking lanes

PEDESTRIAN-FOCUSED TREATMENTS, CONTINUED

SIGNAL TIMING ADJUSTMENTS

(Source: SE23.com)

- Signal timing may be adjusted to allow all users to safely cross roadways

ACCESSIBLE PEDESTRIAN SIGNALS

(Source: ddotdish.com)

- Non-visual components (tactile and audible signals) facilitate use by visually impaired users

CROSSING SIGNAGE AND/OR RAPID-FLASHING BEACONS

(Source: TRB.org)

- Pedestrian crossing warning signs alert drivers to the presence of pedestrians (and bicycles) at crossings
- Rapid-flashing beacons can be used selectively for increased visibility in safety concern areas
- May not be appropriate at locations with sight distance constraints

BUS STOP TREATMENTS

BICYCLE-FOCUSED TREATMENTS

ENHANCED LANE MARKINGS

(Source: AlexandriaVA.gov)

- Enhanced lane markings highlight the presence of bike lanes at bus stops

SEPARATED BIKE LANE (AT BUS STOP ONLY)

(Source: Nacto.org)

- High-volume stops may benefit from separated bike lanes at bus stops which route bicycle movement out of the bus's path of travel

PROJECT RECOMMENDATIONS

The following chapter outlines this Plan's recommendations for improved bicycle and pedestrian transportation options within Hampton's seven master plan areas. The process of identifying **where** recommendations should be focused and **what** type of facility would be most appropriate in each location involved a thorough analysis of existing conditions, a review of design standards and best practices, and collaboration with the Community Steering Committee, Technical Steering Committee, and members of the community who provided public input.

STRATEGIC CORRIDORS

One of the initial steps in the development of this Plan was to identify "strategic corridors" which are the focus of project recommendations. These corridors create a network of bicycle and pedestrian facilities within and between the City's seven master plan areas.

The strategic corridors were selected by the project team following an analysis of existing conditions (see the "Existing Conditions" chapter), with an emphasis on connecting neighborhoods, activity centers, and attractions and linking existing bicycle and pedestrian facilities to create a continuous network.

Other factors included existing physical conditions in the public right-of-way and opportunities to retrofit with new facilities; current traffic volumes and speeds that would be prohibitive or supportive of on-road facilities; feasibility of implementation (though long-range recommendations are also included); and future projects that could impact the roadway and streetscape profile.

A preliminary mapping of strategic corridors was reviewed with the Community Steering Committee, Technical Steering Committee, and citizens of Hampton at public meetings. The project team then refined the corridor selection based on input provided by these groups.

The final selection of project corridors (see Figure 19) delineates strategically-identified routes for improved and additional bicycle and pedestrian facilities that will best serve the community by creating a usable, connected network of active transportation infrastructure.

Specific facility recommendations along each strategic corridor are detailed in the next sections of this chapter.

Figure 22: Strategic Corridors

OVERALL RECOMMENDATIONS

After strategic corridors were identified, specific facility recommendations were selected based on existing road and right-of-way conditions, the design standards outlined in the Facilities Toolkit, and the following considerations:

- *Feasibility of implementation* - It is assumed that curb lines will not move unless there is to be a future road reconstruction project. Recommended on-road facilities typically require re-striping only.
- *Separation of bike and pedestrian facilities where possible* – In order to best serve these different user types, a shared use path is typically recommended only where the roadway cannot accommodate bike facilities
- *Continuity with existing or recommended facilities in contiguous segments* – The recommendations minimize transitions between facilities located on opposite sides of the roadway (bike lanes, sharrows) and facilities on only one side (shared use paths), or between shared use paths on opposite sides of the roadway.

Figure 20 illustrates a recommended network of bicycle and pedestrian facilities, along with existing and planned sidewalks, bike lanes, and shared use paths. The proposed bicycle system is comprised of different bike facilities, including sharrows, bike lanes, buffered bike lanes, and shared use paths, used together to create continuous bicycling routes. In addition to shared use paths, sidewalks are recommended to bridge gaps in existing sidewalk routes along the strategic corridors.

As illustrated, the project recommendations create a connected multimodal system that link different neighborhoods with the City's many community resources and destinations. The following sections of this chapter include specific recommendations for each segment of the strategic corridors with detailed maps of these recommendations shown for each master plan area.

While intersection treatments for specific locations are not included in these recommendations, public feedback has highlighted intersection safety as a key issue for cyclists and pedestrians. Opportunities for improved intersection treatments should be evaluated for all recommended bicycle and pedestrian infrastructure locations.

DEFINITIONS

- EXISTING FACILITIES – sidewalks, shared use paths, and bike facilities that are already in place
- PLANNED FACILITIES – bike- and pedestrian-focused projects that are approved or in progress
- RECOMMENDED FACILITIES – new bicycle and pedestrian facilities focused in the strategic corridors

RECOMMENDATIONS

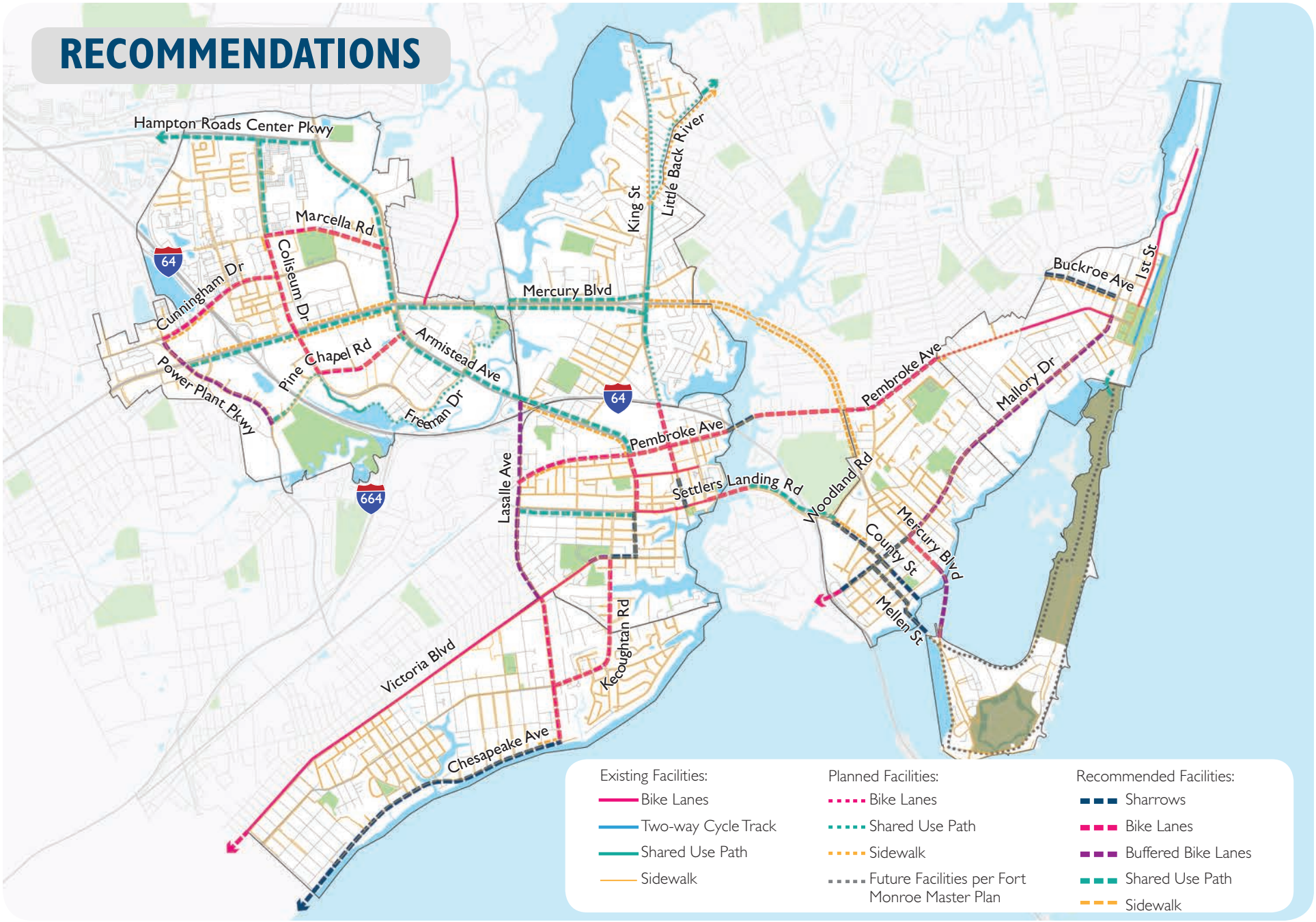


Figure 23: Overall Recommendations

RECOMMENDATIONS BY SEGMENT

As described previously, the location of facility recommendations was determined primarily by land use and destinations, existing roadway conditions—including the location of existing bicycle and pedestrian infrastructure—and potential connections to transit points. The type of facility recommended in each location follows current design standards for creating safe and comfortable facilities, with consideration of how new infrastructure could be added to existing roadways.

The following table lists project recommendations for each master plan in order by strategic corridor. Corridors are broken down into segments based on variations in street conditions or delineations made by planned pedestrian, bicycle, or overall roadway projects.

Recommendations in the table include the type of facility and what action is needed to accommodate its addition (e.g., by reducing the number of vehicular lanes or reducing vehicular lane widths). In all cases where recommendations exist for reducing number of lanes, additional study is necessary to ensure levels of service. Further information about retrofitting new infrastructure can be found in the Appendix in the "Approach to Adding Facilities" table.

DEFINITIONS

- CORRIDOR – the street name of the strategic corridor
- MASTER PLAN – the Master Plan area which the segment is located within (many strategic corridors span multiple Master Plan areas)
- SEGMENT – the cross streets at the beginning and end of the given segment
- RECOMMENDATION – the recommended action to accommodate bicycle and/or pedestrian facilities
- FACILITY TYPE – the type of facility being recommended (further information about facility types can be found in the "Toolkit" chapter)
- USER ADDRESSED – whether the recommendation serves pedestrians, bicyclists, or both

CORRIDOR	MASTER PLAN	SEGMENT	RECOMMENDATION	FACILITY TYPE	USER ADDRESSED
ARMISTEAD AVENUE					
	Downtown	*Victoria Blvd. to Settlers Landing Rd.*	• Add shared lane markings	Sharrows	Bicyclist
	Downtown	*Settlers Landing Rd. to Pembroke Ave.*	• Reduce number of vehicular lanes to two travel lanes; add bike lanes; add parking lanes (per Downtown Master Plan)	Bike Lanes	Bicyclist
	Downtown	*Pembroke Ave. to Lasalle Ave.*	• Add shared use path on E/N side	Shared Use Path	Bicyclist/ Pedestrian
			• Add sidewalk on S/W side	Sidewalk	Pedestrian
	Coliseum Central	*Lasalle Ave. to Freeman Dr./Mercer Ave.*	• Add shared use path on N side	Shared Use Path	Bicyclist/ Pedestrian
	Coliseum Central	*Freeman Dr./Mercer Ave. to Convention Center Blvd.*	• Add shared use path on S side	Shared Use Path	Bicyclist/ Pedestrian
	Coliseum Central	*Convention Center Dr. to Mercury*	• Add shared use path on S/W side	Shared Use Path	Bicyclist/ Pedestrian
	Coliseum Central	*Mercury Blvd. to Marcella Rd.*	• Add shared use path on W side	Shared Use Path	Bicyclist/ Pedestrian
	Coliseum Central	*Marcella Rd. to Tide Mill Ln.*	• Add shared use path on S/ W side (requires further study)	Shared Use Path	Bicyclist
	Coliseum Central	*Tide Mill Ln. to Hampton Road Center Pkwy.*	• Add shared use path on S/ W side	Shared Use Path	Bicyclist/ Pedestrian
BUCKROE AVENUE					
	Buckroe	*Old Buckroe Rd. to Mallory St.*	• Add sidewalk on S side	Sidewalk	Pedestrian
			• Add shared lane markings; formalize on street parking	Sharrows	Bicyclist
COUNTY STREET					
	Phoebus	*Woodland Rd. to Mallory St.*	• Add sidewalk on N side where missing	Sidewalk	Pedestrian
			• Add shared lane markings	Sharrows	Bicyclist
	Phoebus	*Mallory St. to Willard Ave.*	• Add shared lane markings	Sharrows	Bicyclist
CHESAPEAKE AVENUE					

Table 2: Overall Recommendations

	Kecoughtan	*Pear Ave. to Lasalle Ave.*	• Add shared lane markings	Sharrows	Bicyclist
			• Add sidewalk on N side where missing (East Ave to LaSalle)	Sidewalk	Pedestrian
COLISEUM DRIVE					
	Coliseum Central	*Pine Chapel Rd. to Mercury Blvd.*	• Reduce width of median; add bike lanes	Bike Lanes	Bicyclist
	Coliseum Central	*Mercury Blvd. to Marcella Rd.*	• Incorporate bike lanes into future road improvements	Bike Lanes	Bicyclist
	Coliseum Central	*Marcella Rd. to Hampton Roads Center Pkwy.*	• Add shared use path on E side	Shared Use Path	Bicyclist/ Pedestrian
CUNNINGHAM DRIVE					
	Coliseum Central	*Todds Lane to Executive Dr.*	• Reduce width of vehicular lanes; add bike lanes; incorporate improved bicycle facilities into any future bridge reconstruction as feasible	Bike Lanes	Bicyclist
			• Add sidewalk on S side (Power Plant Parkway to bridge)	Sidewalk	Pedestrian
	Coliseum Central	*Executive Dr. to Coliseum Dr.*	• Reduce width of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
HAMPTON ROADS CENTER PARKWAY					
	Coliseum Central	*Armistead Ave. to Coliseum Dr.*	• Add shared use path on N side	Shared Use Path	Bicyclist/ Pedestrian
	Coliseum Central	*Coliseum Dr. to Big Bethel Rd.*	• Add shared use path on N side	Shared Use Path	Bicyclist/ Pedestrian
KECOUGHTAN ROAD					
	Kecoughtan	*Lasalle Ave. to Victoria Blvd.*	• Reduce number of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
KING STREET					
	Downtown	*Settlers Landing Rd. to Lincoln St.*	• Add shared lane markings	Sharrows	Bicyclist
	Downtown	*Lincoln St. to Randolph St.*	• Reduce number of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
	Downtown	*Randolph St. to Quash St.*	• Reduce number of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
	North King	*Quash St. to Rip Rap Rd.*	• Planned linear park on E side	Shared Use Path (Planned)	Bicyclist/ Pedestrian
	North King	*Rip Rap Rd. to Old Fox Hill Rd.*	• Add shared use path on E side	Shared Use Path	Bicyclist/ Pedestrian
	North King	*Old Fox Hill Rd. to Little Back River Rd.*	• Existing linear park on E side	Shared Use Path (Existing)	Bicyclist/ Pedestrian

Table 2: Overall Recommendations, continued

	North King	*Mac Alva Dr. to Boeing Ave./Langley AFB entrance*	• Planned linear park on E side	Shared Use Path (Planned)	Bicyclist/ Pedestrian
	North King	*Boeing Ave. to Langley AFB entrance*	• Planned crosswalks from Boeing to path and then back to avoid wetland areas	Crosswalk (Planned)	Pedestrian
LASALLE AVENUE					
	Kecoughtan	*Chesapeake Ave. to Kecoughtan Rd.*	• Reduce width of median; add bike lanes	Bike Lanes	Bicyclist
	Kecoughtan	*Kecoughtan Rd. to Victoria Blvd.*	• Reduce width of vehicular lanes (parking and travel lanes); add bike lanes	Bike Lanes	Bicyclist
	Downtown	*Victoria Blvd. to Pembroke Ave.*	• Reduce number of vehicular lanes; add bike lanes; add buffered bike lanes as feasible	Bike Lanes/Buffered Bike Lanes	Bicyclist
	Downtown	*Pembroke Ave. to Armistead Ave.*	• Reduce number of vehicular lanes; add bike lanes; add buffered bike lanes as feasible	Bike Lanes/Buffered Bike Lanes	Bicyclist
LITTLE BACK RIVER ROAD					
	North King	*N King St. (Six Points) to Clemwood Pkwy.*	• Add shared use path on N side; add sidewalk on S side	Shared Use Path; Sidewalk	Bicyclist/ Pedestrian
MALLORY STREET					
	Phoebus	*Hampton University/Veterans Affairs Medical Center to Segar St.*	• Reduce lane width and/or use existing shoulder to add bike lanes	Bike Lanes	Bicyclist
	Phoebus	*Segar St. to Mellen St.*	• Add shared lane markings	Sharrows	Bicyclist
	Phoebus	*Mellen St. to Mercury Blvd.*	• Add shared lane markings; consider super sharrow	Sharrows	Bicyclist
	Phoebus	*Mercury Blvd. to Shelton Rd./ Greenhouse Ln.*	• Remove median; reduce number of vehicular lanes (to two travel lanes with two way left turn lane); add buffered bike lanes	Buffered Bike Lanes	Bicyclist
	Buckroe	*Shelton Rd./Greenhouse Ln. to Pembroke Ave.*	• Remove median; reduce number of vehicular lanes (to two travel lanes with two way left turn lane); add buffered bike lanes	Buffered Bike Lanes	Bicyclist
MARCELLA ROAD					
	Coliseum Central	*Coliseum Dr. to Eaton Middle School*	• Reduce number of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
	Coliseum Central	*Eaton Middle School to Armistead Ave.*	• Reduce width of vehicular lanes (travel and parking lanes); add bike lanes	Bike Lanes	Bicyclist
			• OR per the MP recommendation add landscaped median to slow traffic; add shared lane markings	Sharrows; Median	Bicyclist
MELLEN STREET					

Table 2: Overall Recommendations, continued

	Phoebus	*Mallory St. to NW end of bridge*	• Add shared lane markings	Sharrows	Bicyclist
	Phoebus	*Mugler Bridge*	• Add shared lane markings	Sharrows	
			• OR Build adjacent 12' shared use path separated from vehicular bridge	Shared Use Path	Bicyclist/ Pedestrian
			• OR Widen in future reconstruction; add bike lanes or shared use path	Shared Use Path/ Bike Lanes	Bicyclist/ Pedestrian
MERCURY BOULEVARD					
	Coliseum Central	*Power Plant Pkwy. to Coliseum Dr.*	• Add sidewalk on N side where missing	Sidewalk	Pedestrian
			• OR Add shared use path in future roadway projects as feasible	Shared Use Path	Bicyclist/ Pedestrian
	Coliseum Central	*Coliseum Dr. to LaSalle Ave.*	• Add sidewalks on both sides	Sidewalk	Pedestrian
			• OR Add shared use path in future roadway projects as feasible	Shared Use Path	Bicyclist/ Pedestrian
	North King	*Lasalle Ave. to King St.*	• Add shared use path on N and S sides in future roadway projects as feasible	Shared Use Path	Bicyclist/ Pedestrian
	North King to Phoebus	*King St. to Pembroke Ave.*	• Add sidewalks both sides where missing	Sidewalk	Pedestrian
	Phoebus	*Pembroke Ave. to Woodland Rd.*	• Add sidewalk both sides where missing	Sidewalk	Pedestrian
	Phoebus	*Mallory St. to Willard Ave.*	• Reduce number of vehicular lanes (remove wide outside lane); add bike lanes; add parking lanes	Bike Lanes; Parking Lanes	Bicyclist
	Phoebus	*Bridge (Willard Ave. to Ft. Monroe)*	• Reduce number of vehicular lanes; add buffered bike lanes; add median	Buffered Bike Lanes; Median	Bicyclist
PEMBROKE AVENUE					
	Downtown	*Lasalle Ave. to Back River Rd.*	• Reduce number of vehicular lanes (to two travel lanes with two way left turn lane); add bike lanes/buffered bike lanes	Bike Lanes/Buffered Bike Lanes	Bicyclist
			• OR widen roadway; add bike lanes/buffered bike lanes	Bike Lanes/Buffered Bike Lanes	Bicyclist
			• Add sidewalks on S side where missing	Sidewalk	Pedestrian

Table 2: Overall Recommendations, continued

	Downtown	*Back River Rd. to Armistead Ave.*	• Reduce number of vehicular lanes to two travel lanes with two way left turn lane; add bike lanes/buffered bike lanes	Bike Lanes/Buffered Bike Lanes	Bicyclist
	Downtown	*Armistead Ave. to King St.*	• Reduce number of vehicular lanes to two travel lanes with two way left turn lane; add bike lanes/buffered bike lanes	Bike Lanes	Bicyclist
	Downtown	*King St. to River St.*	• Reduce width of vehicular lanes (travel and parking lanes); add bike lanes	Bike Lanes	Bicyclist
	Downtown to Phoebus	*River St. to east side of bridge*	• Add shared lane markings	Sharrows	Bicyclist
			• Incorporate bike & pedestrian facilities into any future bridge reconstruction as feasible	TBD	Bicyclist/ Pedestrian
	Phoebus	*East side of bridge to Mercury Blvd.*	• Reduce width of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
			• OR Add shared lane markings	Sharrows	Bicyclist
	Phoebus	*Mercury Blvd. to Grimes Rd./Shelton Rd.*	• Reduce number of vehicular lanes (to two travel lanes with two way left turn lane); add bike lanes; add buffered bike lanes where feasible	Bike Lanes/Buffered Bike Lanes	Bicyclist
	Buckroe	*Grimes Rd./Shelton Rd. to Old Buckroe Rd.*	• Planned bike lanes	Bike Lanes (Planned)	Bicyclist
			• Continue sidewalks on S side where missing; add pedestrian crossings	Sidewalk; Crosswalk	Pedestrian
	Buckroe	*Old Buckroe Rd. to Mallory St.*	• Formalize existing bike lanes with improved lane markings	Bike Lanes (Existing)	Bicyclist
PINE CHAPEL ROAD					
	Coliseum Central	*Power Plant Pkwy. to Bass Pro Shops*	• Extend planned 10' shared use path on N side	Shared Use Path	Bicyclist/ Pedestrian
	Coliseum Central	*Bass Pro Shops to Coliseum Dr.*	• Planned shared use path on N side	Shared Use Path (Planned)	Bicyclist/ Pedestrian
	Coliseum Central	*Coliseum Dr. to Saville Row*	• Reduce number of vehicular lanes (to two travel lanes with two way left turn lane); add bike lanes; add buffered bike lanes where feasible	Bike Lanes/Buffered Bike Lanes	Bicyclist
	Coliseum Central	*Saville Row to Walmart entry drive*	• Reduce width of vehicular lanes (travel and turn lanes); add bike lanes	Bike Lanes	Bicyclist
	Coliseum Central	*Walmart entry drive to Armistead Ave.*	• Reduce width of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
POWER PLANT PARKWAY/TODDS LANE					

Table 2: Overall Recommendations, continued

	Coliseum Central	*Cunningham Dr. to BJs entry drive*	• Reduce width of vehicular lanes and median and/or reduce number of vehicular lanes; add buffered bike lanes	Buffered Bike Lanes	Bicyclist
	Coliseum Central	*BJs entry drive to Pine Chapel Rd.*	• Reduce width of vehicular lanes and median and/or reduce number of vehicular lanes; add buffered bike lanes	Buffered Bike Lanes	Bicyclist
SETTLERS LANDING ROAD					
	Downtown	*Lasalle Ave. to Armistead Ave.*	• Add shared use path on S side	Shared Use Path	Bicyclist/ Pedestrian
	Downtown	*Armistead Ave. to Eaton St.*	• Formalize existing bike lanes with improved lane markings	Bike Lanes (Existing)	Bicyclist
	Downtown to Phoebus	*Eaton St. to east end of bridge*	• Reduce number of vehicular lanes (assess feasibility of removing westbound lane); add bike lanes	Bike Lanes	Bicyclist
			• OR Incorporate bike & pedestrian facilities in any future bridge reconstruction as feasible	TBD	Bicyclist/ Pedestrian
	Phoebus	*East end of bridge to County St.*	• Add shared use path on S side	Shared Use Path	Bicyclist/ Pedestrian
VICTORIA BOULEVARD					
	Kecoughtan	*Pear Ave. to Pennsylvania Ave.*	• Formalize existing bike lanes with improved lane markings	Bike Lanes (Existing)	Bicyclist
	Kecoughtan	*Pennsylvania Ave. to Darling Stadium*	• Formalize existing bike lanes with improved lane markings	Bike Lanes (Existing)	Bicyclist
	Downtown	*Darling Stadium to Kecoughtan Rd.*	• Reduce number of vehicular lanes; add bike lanes	Bike Lanes	Bicyclist
	Downtown	*Kecoughtan Rd. to Armistead Ave.*	• Add shared lane markings	Sharrows	Bicyclist
WOODLAND ROAD					
	Phoebus	*County St. to Pembroke Ave.*	• Repair existing sidewalks as needed to meet ADA standards	Sidewalks (Existing)	Pedestrian
OTHER					
	Buckroe	*Atlantic Ave./Bay Shore Ln. to Ft. Monroe*	• Add shared use boardwalk connection to Ft. Monroe	Shared Use Path	Bicyclist/ Pedestrian

Table 2: Overall Recommendations, continued

COLISEUM CENTRAL

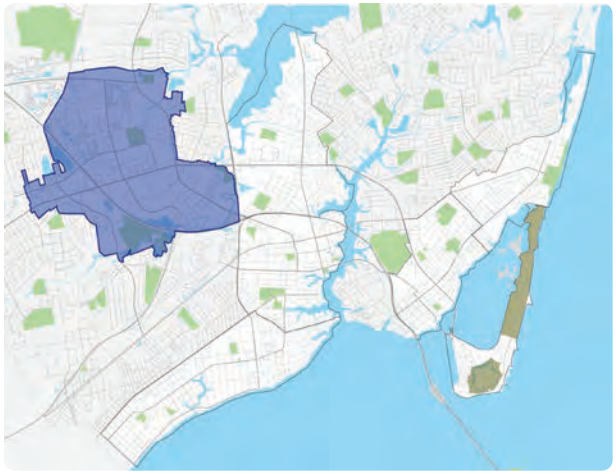


Figure 24: Coliseum Central

KEY OPPORTUNITIES:

- Connections to existing/planned Central Park shared use path
- Policies and regulations supporting mixed-use development and walkability
- Future connection to Sandy Bottom Nature Park

KEY CHALLENGES:

- High volume roadways
- Limited right-of-way space to add facilities
- Constrained bridge conditions
- Highway interchange

Recommendations in Coliseum Central are focused on building transportation options along the arterial roadways that run through the central commercial districts and connect to natural and recreational resources, such as the Boo Williams Sportsplex and Central Park.

Retrofitting bicycle and pedestrian facilities in this area is more challenging than in other parts of the City due to high vehicular traffic volumes and demands. However, as recognized in the Coliseum Central master plan, an opportunity exists to create a bicycle- and pedestrian-oriented community and transform Coliseum Drive into a main street.

A combination of bicycle lanes, buffered bicycle lanes, and shared use paths is recommended, as well as sidewalks along Mercury Boulevard where they are currently missing.

Figure 25: Existing Conditions in Coliseum Central

The streetscape on Coliseum Drive includes wide sidewalks buffered from automobile traffic by street trees. (Source: Google)

The tree-lined shared use path at Hampton Coliseum links to planned extensions of the Central Park Trail. (Source: Google)

RECOMMENDED FACILITIES

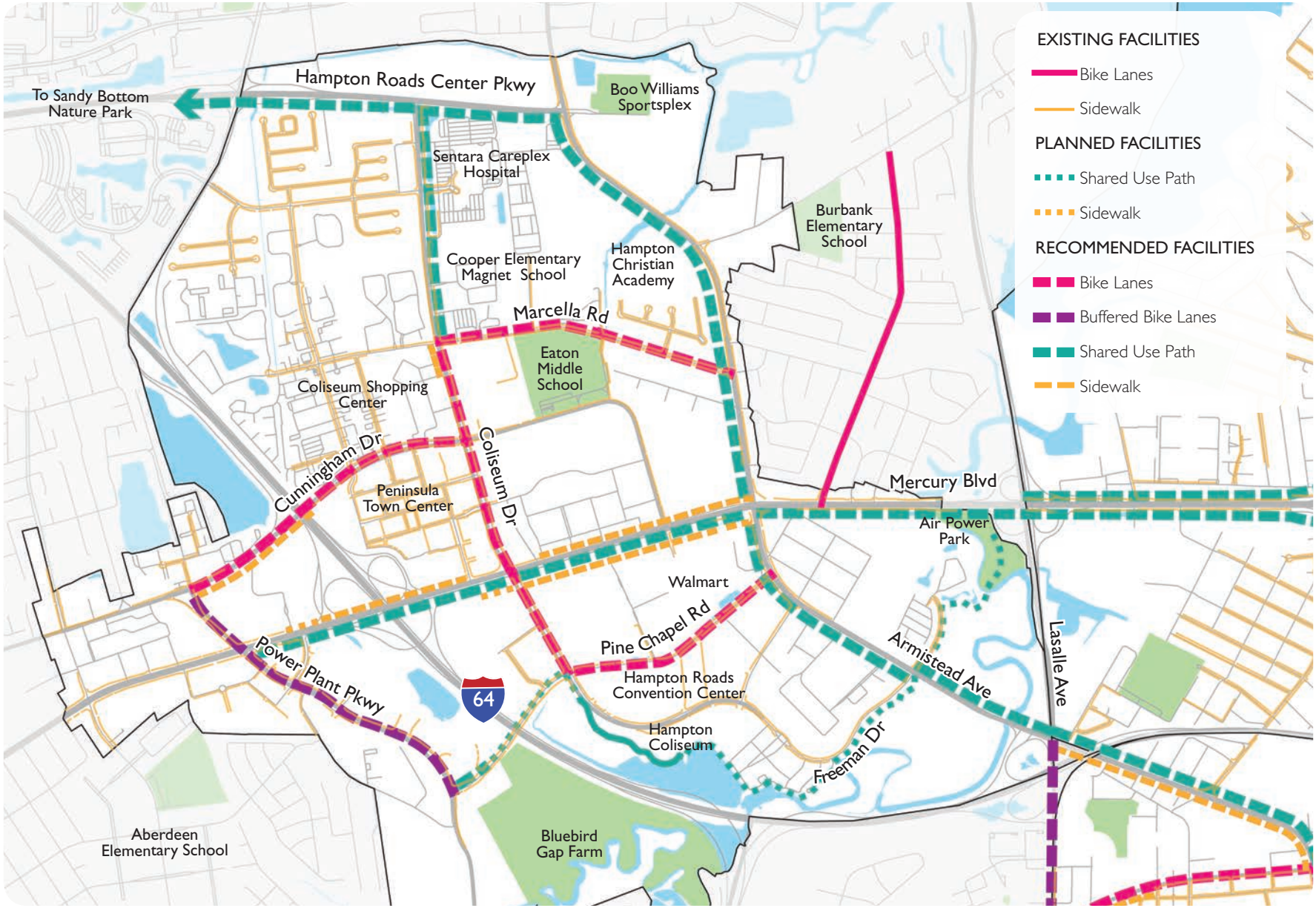


Figure 26: Recommended Facilities - Coliseum Central

NORTH KING STREET CORRIDOR

Figure 27: North King Street Corridor

KEY OPPORTUNITIES:

- Extension of existing/planned shared use path
- Direct connection to several neighborhoods
- Enhance gateway to Langley Air Force Base

KEY CHALLENGES:

- Disconnected street network offers few alternative routes to N King Street
- Challenging road configuration at Mercury Boulevard and King Street intersection
- High volume roadways

North King Street serves as a central connection and front door for many adjacent residential neighborhoods, and makes an important connection to Langley Air Force Base to the north. Several transportation projects are already underway in this area to improve safety and access to drivers, pedestrians, and bicyclists. It is recommended that the shared use "linear park" be extended across Mercury Boulevard to link the existing path with a planned connection to Downtown Hampton.

Longer-term recommendations include a shared use path on either side of Mercury Boulevard to the west, connecting the area to Coliseum Central, while a sidewalk on Mercury Boulevard to the east creates a pedestrian route to the Phoebus area. Planned shared use and pedestrian facilities along Little Back River Road should extend beyond the master plan area.

Figure 28: Existing Conditions in North King Street Corridor

The shared use path on North King Street provides a safe route for cyclists and pedestrians. (Source: Rhodeside & Harwell)

Constrained conditions under overpass at Mercury Boulevard limit opportunities for retrofitting the roadway with bicycle and pedestrian facilities. (Source: Rhodeside & Harwell)

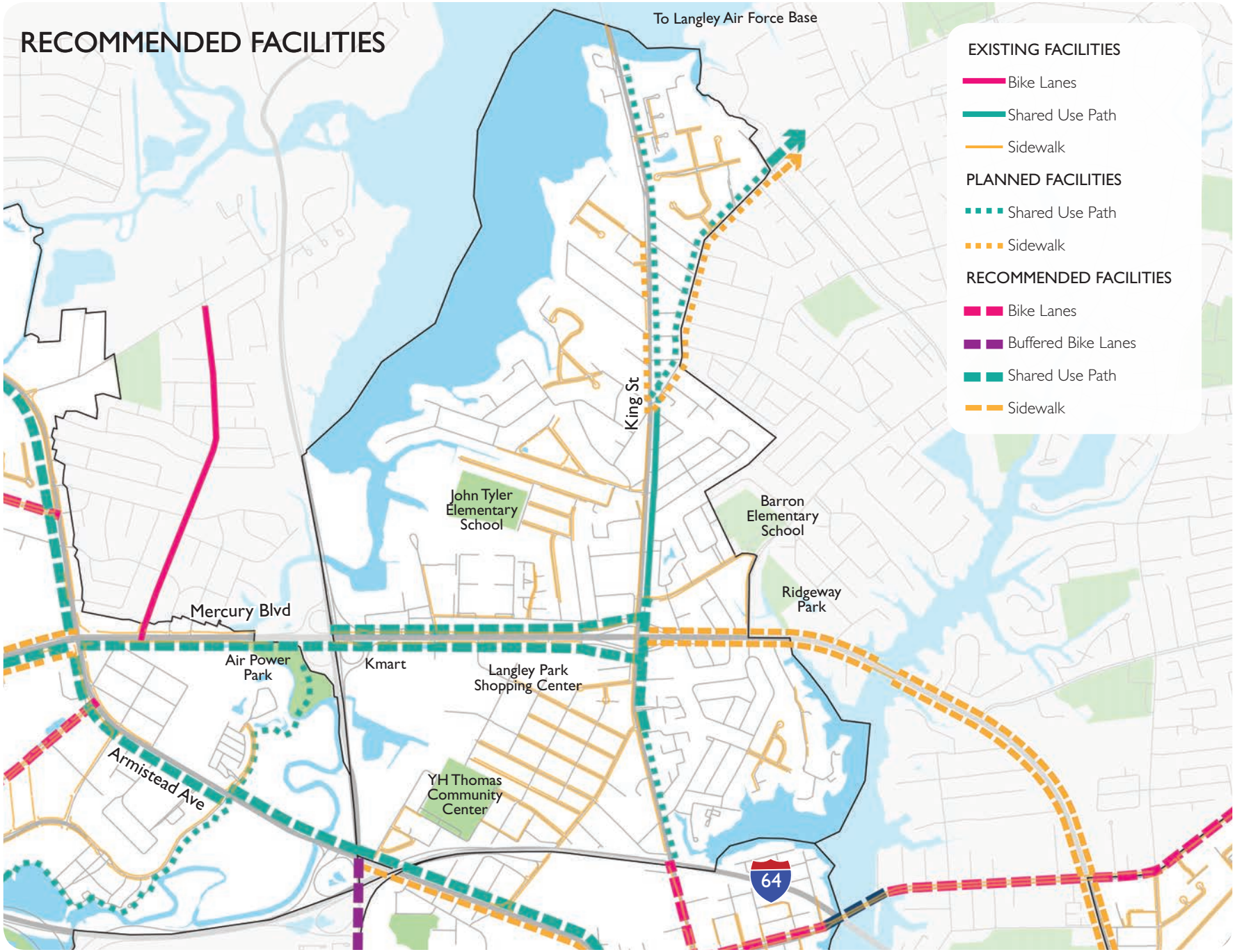


Figure 29: Recommended Facilities - North King Street Corridor

DOWNTOWN

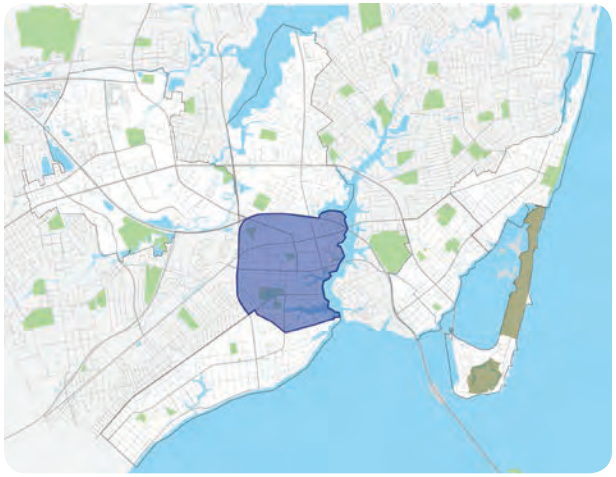


Figure 30: Downtown

KEY OPPORTUNITIES:

- Hub of strategic corridors links multiple areas across the City
- Mix of uses with destinations, residences, and employment
- Low-speed urban streets and clear grid pattern.

KEY CHALLENGES:

- High volume roadways
- Traffic volumes vary greatly between peak and non-peak hour
- Constrained bridge conditions

Multiple strategic corridors converge in Downtown Hampton. The many planned bicycle facilities in this area also link to community amenities within the urban center, including shopping and dining, waterfront parks, and the Hampton Roads Transit Center.

Recommendations include a combination of shared use and bicycle facilities that are reflective of the built environment. With its dense street grid and lower speed limits, bike lanes and sharrows make up the majority of the recommendations. Buffered bike lanes, and shared use paths are recommended where larger streets transition out of Downtown to other master plan areas. Sidewalks are present in most of Downtown but are recommended for improvements in select locations where they are not continuous.

Figure 31: Existing Conditions in Downtown area

Existing bike lanes on Settlers Landing Road are the beginning of a bicycle facility network. (Source: Rhodeside & Harwell)

Conditions on the Pembroke Avenue bridge limit the number of options for retrofitting the roadway with bicycle and pedestrian facilities. (Source: Rhodeside & Harwell)

RECOMMENDED FACILITIES

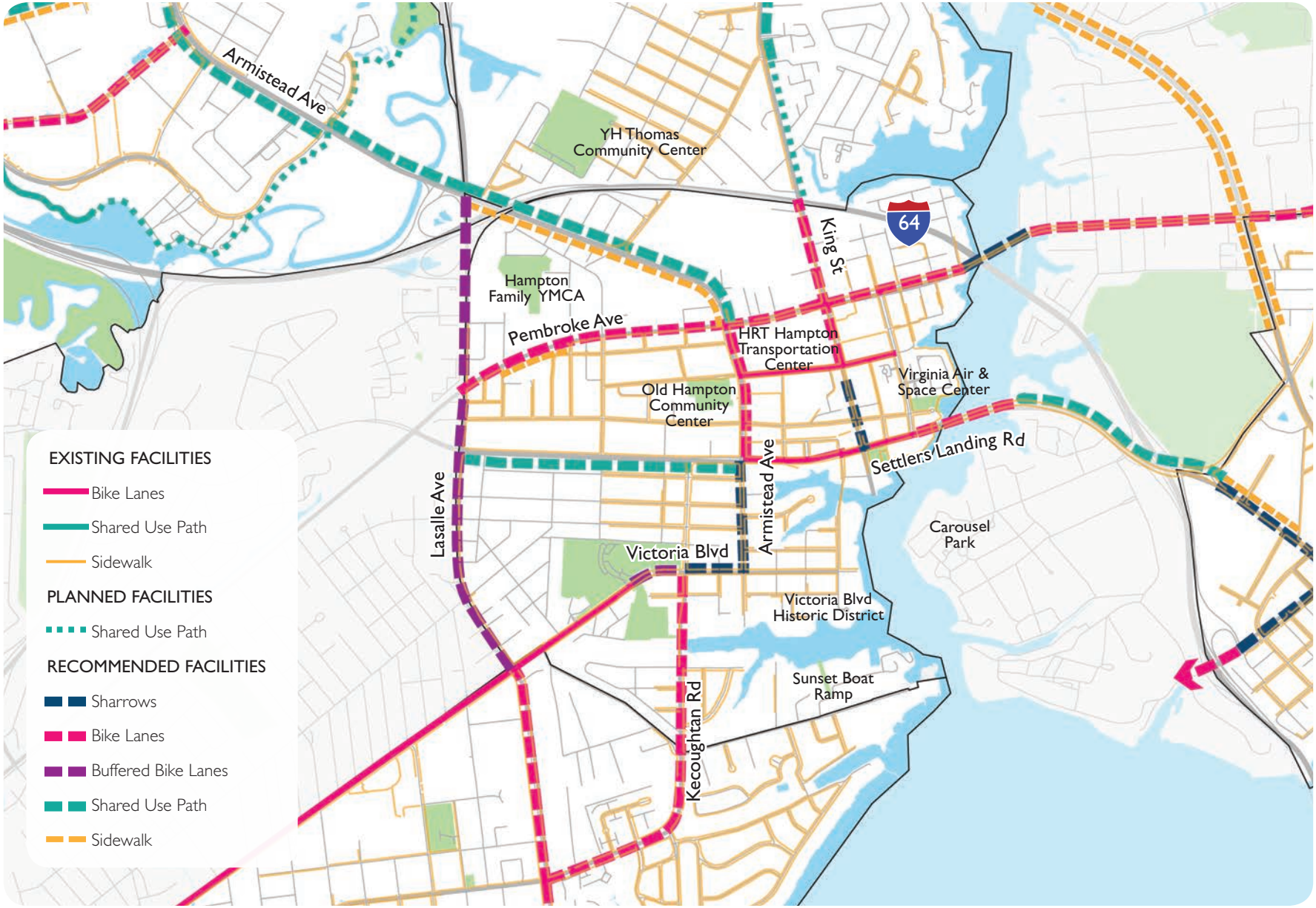


Figure 32: Recommended Facilities - Downtown

KECOUGHTAN ROAD CORRIDOR

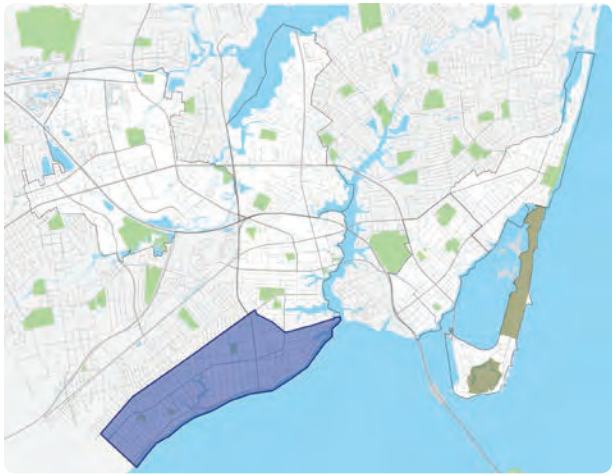


Figure 33: Kecoughtan Road Corridor

KEY OPPORTUNITIES:

- Continuation of existing bike lanes on Victoria Blvd
- Connections to downtown Newport News
- Scenic route and Civil Wars Trail location on Chesapeake Ave
- Historic neighborhoods with traditional street patterns and elementary schools with lower speeds and traffic volumes

KEY CHALLENGES:

- Limited right-of-way space to add facilities

East-to-west bike facilities in the Kecoughtan Road Corridor serve as main routes of travel for the residential neighborhoods and create a connection to Newport News. While bike lanes are present along much of Victoria Boulevard, improved lane markings are required to meet current standards. Shared lane markings on Chesapeake Avenue are appropriate for the low traffic volume along this scenic roadway.

Additional north-south bike lanes are recommended along Lasalle Avenue and the eastern segment of Kecoughtan Road to connect the area with Downtown Hampton and Coliseum Central.

Sidewalks are present along the majority of the Kecoughtan Road corridors and should be added where missing. In historic neighborhoods, maintenance and repair of existing sidewalks is more important.

Figure 34: Existing Conditions in Kecoughtan Road Corridor

Limited vehicular traffic is present on Chesapeake Ave. making it ideal for cyclists and pedestrians. (Source: Rhodeside & Harwell)

Existing bike lanes on Victoria Boulevard are in need of improved markings (Source: Rhodeside & Harwell)

RECOMMENDED FACILITIES

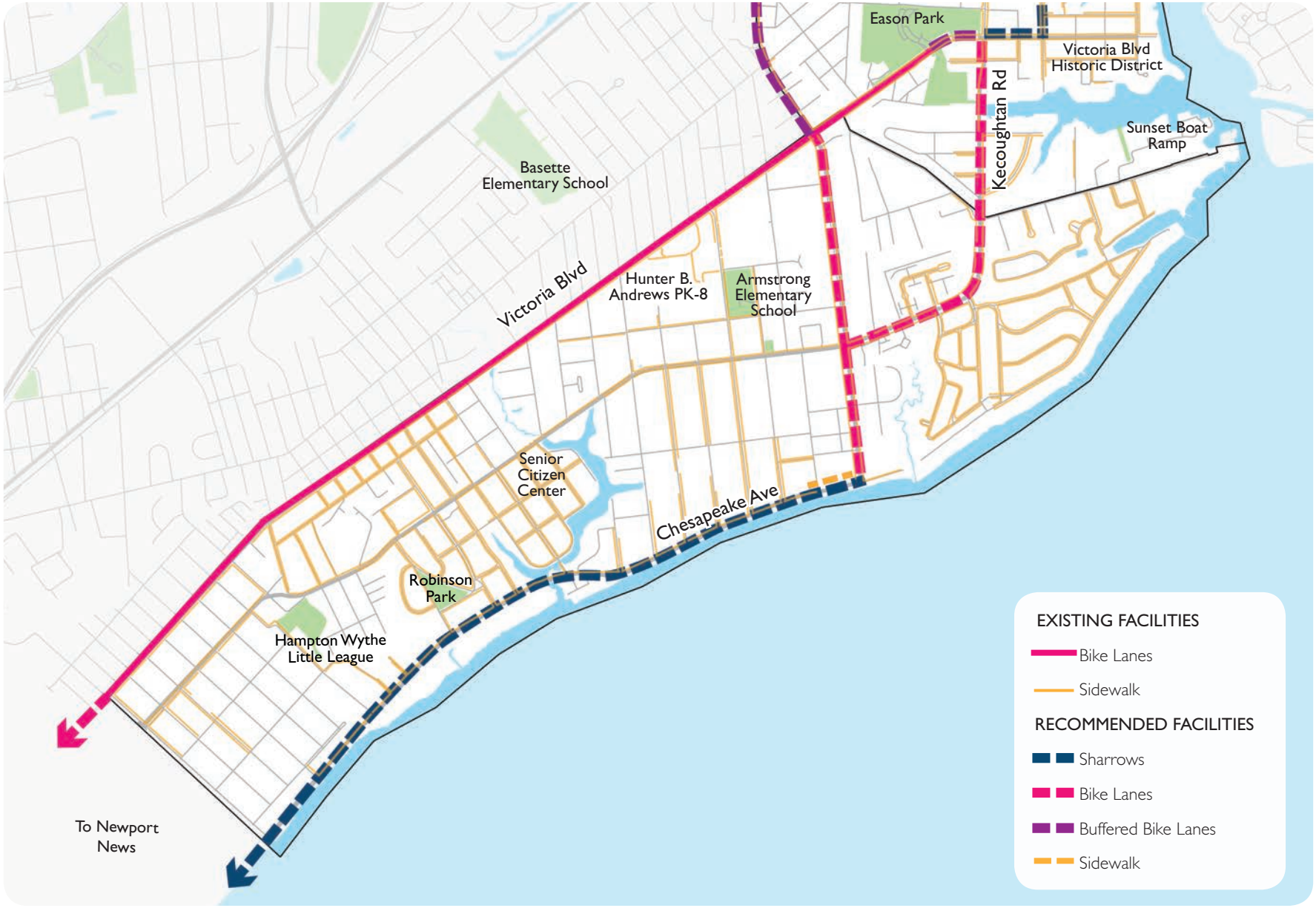


Figure 35: Recommended Facilities - Kecoughtan Road Corridor

PHOEBUS & FT. MONROE

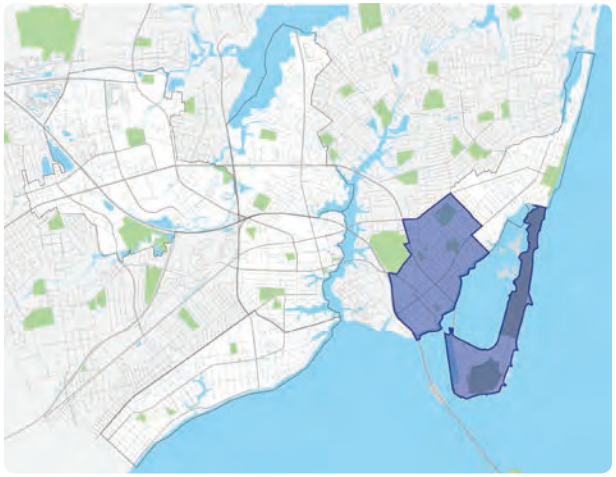


Figure 36: Phoebus & Ft. Monroe

KEY OPPORTUNITIES:

- Bike and pedestrian connections to Fort Monroe and Buckroe Beach
- Connection to Hampton University and VA Medical Center
- Low-speed streets in commercial district and residential areas
- Mix of uses with destinations, residences, and employment

KEY CHALLENGES:

- Constrained bridge conditions
- Highway exit ramps

Phoebus links several master plan areas and provides a connection to Fort Monroe, Buckroe Beach, and Downtown. A combination of different facilities is recommended throughout Phoebus to support bicycle and pedestrian movement across varying road conditions.

Once an independent city, Phoebus has a vibrant downtown with low-speed streets where sharrows are recommended. The existing and planned bike lanes on Pembroke Ave should continue on to connect with Downtown Hampton, and a shared use path is recommended to link south Phoebus to the west along Settlers Landing Road. Future connections beyond the master plan area to Hampton University and the Hampton VA Medical Center are also recommended.

Additional sidewalks are recommended to fill gaps on Settlers Landing Road and Mercury Boulevard heading north to the North King Street Corridor area.

Phoebus provides two key connections to Fort Monroe via Mellen Street and Mercury Boulevard. While sidewalks are present on both bridges, sharrows and buffered bike lanes are recommended, respectively, to create safer, more inviting bicycle routes. Bicycle and pedestrian facilities on Fort Monroe are being developed separately from this Plan as part of the *Fort Monroe Master Plan*.

Figure 37: Existing Conditions in Phoebus

Shared lane markings (sharrows) are appropriate for the low-speed shopping and dining district on Mellen St. (Source: Rhodeside & Harwell)

RECOMMENDED FACILITIES

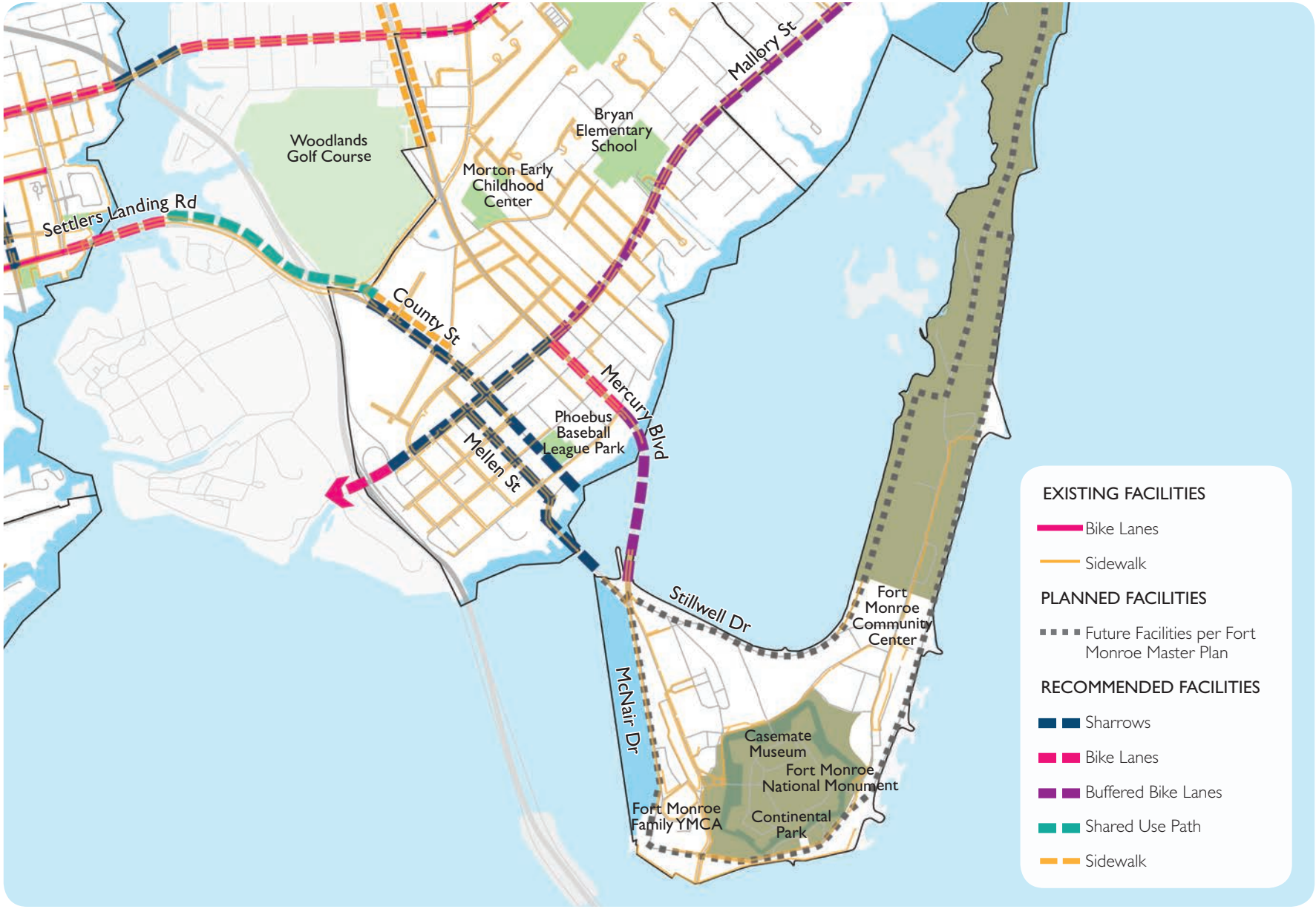


Figure 38: Recommended Facilities - Phoebus and Fort Monroe

BUCKROE

Figure 39: Buckroe

KEY OPPORTUNITIES:

- Connection to Fort Monroe
- Destinations such as Buckroe Beach and Park
- New development in neighborhood

KEY CHALLENGES:

- Limited right-of-way on Mallory Drive to continue missing sidewalks
- No opportunity for overland route to Fort Monroe

Existing, planned, and recommended facilities in Buckroe all serve to connect neighorhoods and the City at large to the beach and surrounding park. Buckroe currently has bike lanes on 1st Street and Pembroke Avenue, with planned extensions of the latter. Lane markings should be improved as needed to meet current standards. Buffered bike lanes are recommended along Mallory Street to surrounding neighborhoods in Phoebus, and sidewalks and sharrows on Buckroe Avenue will enhance connectivity to the west.

Buckroe Beach and Fort Monroe are two of Hampton's most significant open-space amenities. As such, a shared use connection is recommended between the two, allowing for pedestrians and cyclists to move directly between the two.

Figure 40: Existing Conditions in Buckroe
Bike lanes on Pembroke Avenue lack some markings. (Source: Rhodeside & Harwell)

Buckroe Beach offers both a pedestrian boardwalk and separated cycle track (Source: Rhodeside & Harwell)

RECOMMENDED FACILITIES

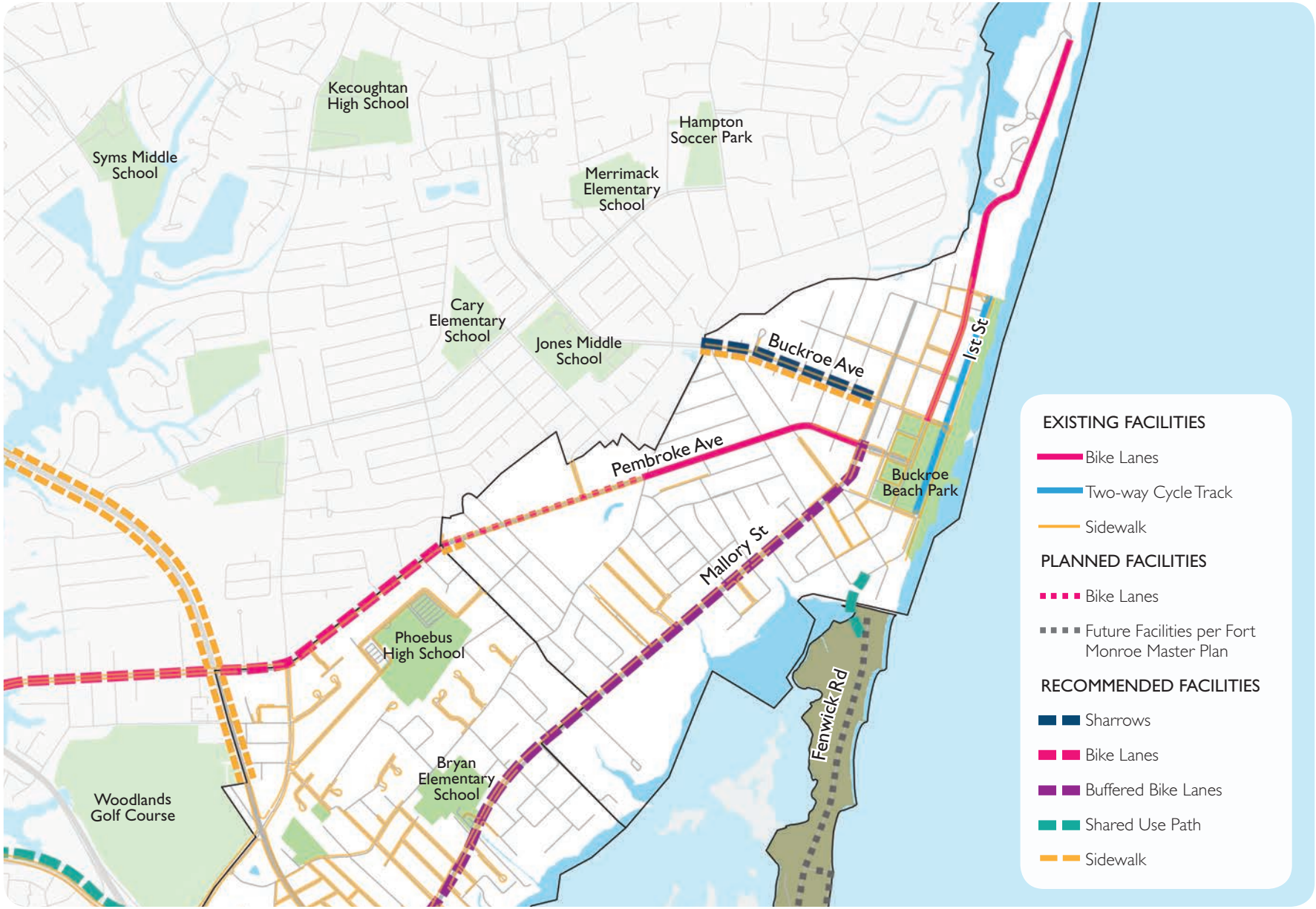


Figure 41: Recommended Facilities - Buckroe

PRIORITIZATION & IMPLEMENTATION

This Plan recommends treatments for over 30 miles of streets in the seven master plan areas, and it is thus necesary to approach implementation strategically. Staff has considered several criteria to prioritize the recommended segment improvements against one another. These criteria are flexible; some are representative of existing conditions or funding sources, and as these change, criteria for selecting future projects should too.

Included in Master Plan – The City's strategic master plans are developed and adopted through an in-depth process that involves significant community input. These plans are adopted by City Council, and are guiding documents for future development and investments. A bicycle or pedestrian recommendation that is consistent with the master plans has already been vetted by the public input process and City Council approval, and is weighted more favorably.

Connects to an existing facility – Throughout the public input process, the community expressed a desire for a connected network of facilities, as opposed to small segments scattered throughout the City. Staff gave additional weight to projects that connect to existing facilities (bicycle lanes, sidewalks, etc.).

City controls adequate land – Land ownership is a practical issue that can delay or halt a project if not resolved. As bicycle and pedestrian facilities often traverse long distances and multiple properties, if land is held by many private owners, easements must be pursued for each individual parcel. Therefore, projects where enough land exists in the City-owned right of way can be acheived more easily and cost-effectively.

Cost – As with all City projects, the transportation improvements recommended in this Plan must be prioritized against all other expenditures made by the City. In order to maintain momentum and kick off Hampton's implementation of the bicycle and pedestrian plan, projects that are lower cost (and therefore more easily implemented) are weighted more favorably.

Public Input – This Plan has been driven by community input. As such, additional weight is given to recommendations highlighted by community members as especially important for creating connections and getting cyclists and pedestrians where they would like to go.

Crash/Safety – Improvements that are located in an area where there is recorded crash data involving a cyclist or pedestrian receive a higher score as safety is one of the greatest concerns when it comes to improving active transportation networks.

On transit corridor – the "first mile / last mile" refers to the common situation where public transportation can get people close to their destinations and cover large distances. It is often more difficult to get people from their current location to the transit (the first mile) and from the point they get off transit to their final destination (last mile). Improved bicycle and pedestrian facilities can help ease the difficulty of covering that first and last mile. Bicycle facilities, pedestrian facilities and public transportation together create active

transportation networks. Because of this, segment improvements located along transit routes received additional points.

Connects to school – Safe routes to school are of great importance to the Hampton community. Many parents would like a safe alternative for their child to travel to school using active transportation but are currently not comfortable with the existing facilities. Therefore, improvements located in close proximity to a school site received additional points.

Successful as a stand-alone project – Many recommended improvements require the implementation of other projects to be an important part of the bicycle and pedestrian network. For instance, building sidewalks on a bridge will not be very useful if the streets on either side of the bridge do not have connecting sidewalks, and run up against dangerous intersections. In order to lower the chances of implementing improvements that cannot be immediately used by the public, staff considered whether or not each improvement, if implemented alone, would benefit our cyclists and pedestrians.

FUNDING/IMPLEMENTATION

One of the biggest keys to implementing the improvements recommended in this Plan is obtaining or dedicating funding for projects.

There are a variety of options for funding transportation projects. The projects recommended in this Plan will go through the same funding processes as all City transportation projects. Projects can be funded in a variety of ways: through the existing operating budget, by applying for outside funding sources (state funds, grants), by recommending the project be included in the Capital Improvement Plan, or some combination thereof.

An operating budget is a department's plan for financial operations for the fiscal year. Maintenance and minor roadway repair are examples of items in the Public Works operating budget. As such, the operating budget is a good source for smaller, lower-cost projects, such as the addition of painted sharrows on a roadway. Sometimes, these projects can be included in existing projects with little additional cost.

The Capital Improvement budget is meant for projects that will cost $50,000 or more, and have a life expectancy of at least five years. This budget is more appropriate for larger recommended improvements such as lengthy shared-use paths. The projects recommended in this Plan represent a wide variety of funding needs. This means that some projects are faster and cheaper to implement, while others are more complicated both time and money-wise. The variety will allow the City to tackle some projects quickly, while providing the time and resources necessary to secure funding for the more complex recommended improvements.

A multitude of funding sources is available for which the City regularly applies to accomplish its transportation projects. A few funding sources often utilized to fund bicycle and pedestrian active transportation projects are noted below; however, funding programs are subject to change:

- Congestion Mitigation and Air Quality Improvement (CMAQ): by providing viable alternative forms of transportation, bicycle and pedestrian improvements can reduce the number of cars on the road and the amount of time cars sit in traffic producing pollutants that negatively impact human and environmental health.
- Surface Transportation Block Grant Program TA Set-Aside: this funding supports ONLY transportation alternatives, including bicycle and pedestrian facilities, safe routes to school, recreational trails, and others. This money is available under the Fixing America's Surface Transportation Act.

- SMART SCALE: a new funding process, SMART SCALE utilizes enhanced, region specific criteria to rank projects against one another across the state. For the Hampton Roads region, congestion mitigation ranks highly, and projects with alternative transportation aspects may have greater benefits for relatively smaller costs.

NEXT STEPS

This Plan has focused on the City's seven master plan areas: Downtown, Buckroe, Phoebus, Kecoughtan Road Corridor, North King Street Corridor, Coliseum Central, and Fort Monroe. However, this document should be considered as the first step of many to transform Hampton into a bicycle and pedestrian friendly city. There is interest and demand for bicycle and pedestrian facilities across the entire City, including demand that may not be met by this Plan alone.

Along with implementation of the program and policy recommendations and infrastructure improvements in this Plan, future efforts should expand to cover the entirety of Hampton, as well as further investigate ways to create regional connections with Newport News and the rest of the Peninsula. The City should continue exploring even greater connections, such as the Capital Trail, that connect Hampton to the rest of Virginia and other states on the East Coast.

Also, given the complex nature of intersections, and the degree of engineering analysis required to adapt them for safer and more comfortable bicycling and walking, intersections were not deeply investigated in this Plan. Significant time should be spent in the future determining where the most immediate intersection concerns are located, and how any issues can be mitigated. Work should also investigate best locations for new crosswalks or intersections that may not currently exist.

In addition to future planning work, next steps should include continued outreach and enthusiasm for a healthy bicycle and pedestrian culture. The City should consider holding a yearly event, such as a forum with community and political leaders to discuss issues surrounding bicycle and pedestrian culture to include economic impacts, environmental and human health benefits, or concerns around safety. An environment that brings the City together to discuss issues and provide education will only serve to strengthen the community and the bicycle and pedestrian culture of Hampton. The City can also establish bicycle and pedestrian themed events during National Bike Month in May, and other small-scale initiatives to get residents out walking and riding.

MOVING FORWARD

The work that has been presented in this document combines the expertise and knowledge of City staff, consultants, interest groups, government partners, the local community, cyclists, and walkers. The team has provided a practical path forward to achieving our City's goal of providing bicycling and pedestrian transportation options to all of Hampton's residents. This Plan promotes accessibility, tourism, sustainability, safety, healthy living, and economic development. As the bicycle and pedestrian culture grows and improvements are recommended, work will be done to keep this guiding document up to date and ensure we are doing all we can to make Hampton a safe and comfortable place for bicycling and walking.

APPENDIX

APPROACH TO ADDING FACILITIES

Retrofitting bicycle and pedestrian facilities requires altering exiting roadway conditions to accommodate these new uses. When adding on-road facilities, it is preferable to retain the existing width of the roadway to make implementation more feasible. Some roadways have a vehicular capacity that is greater than present-day needs, while others may have lane widths that are wider than required. In some cases, existing curb-to-curb width cannot both accommodate new facilities and meet vehicular traffic needs. In these instances, new on-road bike facilities can only be accommodated by extending the limits of the roadway. Adding off-road facilities is most feasible where there is room to do so within the existing right-of-way. Where the right-of-way cannot accommodate new facilities, a public easement should be considered.

APPROACH	DESCRIPTION	APPLICATION	CONSIDERATIONS
ON-ROAD - RETAIN LIMITS OF EXISTING ROADWAY			
Share existing vehicular lanes with bicycles	• Add shared lane markings to roadway (number and width of vehicular lanes are unchanged)	• Separated facilities are not needed (due to traffic speeds and volumes) or cannot be accommodated within limits of existing roadway	• Does not require changes to vehicular lanes; • Not preferred when bike lanes can be accommodated
Reduce width of vehicular lanes	• Re-stripe road to narrow width of existing vehicular lanes (10' min.) and add bicycle lane markings	• Vehicular lanes are wider than necessary	
Reduce number of vehicular lanes	• Re-stripe road to reduce number of vehicular lanes and add bicycle lane markings	• Road capacity is higher than traffic demand and/or multimodal transportation is a priority	• Traffic analysis needed to determine feasibility of reduced road capacity
ON-ROAD - EXTEND LIMITS OF EXISTING ROADWAY			
Reduce or remove median	• Reduce width of center median or remove entirely • Re-stripe roadway to shift vehicular lanes and add bicycle lane markings	• Bicycle facilities cannot be accommodated within limits of existing roadway • Divided roadway is not required or can safely function with narrower median	• Planted medians provide aesthetic value and should remain where possible • Traffic analysis needed to assess need for divided roadway
Widen roadway	• Realign curb to widen the roadway • Re-stripe roadway to shift vehicular lanes and add bicycle lane markings	• Road widening project is planned to expand the limits of the existing roadway	
OFF-ROAD			
Use existing public right-of-way (ROW)	• Utilize existing ROW outside of the roadway to add off-road facilities	• ROW is wide enough to accommodate recommended off-road facilities	
Acquire easement	• Pursue easement beyond existing ROW outside of the roadway to add off-road facilities	• ROW is not wide enough to accommodate recommended off-road facilities	• Will require further study case-by case; may not be the preferred approach

Table A-1: Approach to Adding Facilities

EXISTING CONDITIONS BY CORRIDOR

Prior to developing the facility recommendations outlined in this Plan, the project team assessed existing conditions along the strategic corridors via field observation and the City of Hampton's Geographic Information System (GIS) data and measurement tools. This assessment helped the team to identify opportunities for adding new facilities and what time of facilities would be appropriate for each location.

Corridors are broken down into segments based on variations in street conditions or delineations made by planned pedestrian, bicycle, or overall roadway projects.

DEFINITIONS

- CORRIDOR – the street name of the strategic corridor
- MASTER PLAN – the Master Plan area which the segment is located within (many strategic corridors span multiple Master Plan areas)
- SEGMENT – the cross streets at the beginning and end of the given segment
- TRAFFIC VOLUME – annual average daily traffic count
- BUS ROUTE – whether or not a bus route is located on the corridor
- SPEED LIMIT - posted speed limit (mph)
- NUMBER OF VEHICULAR LANES – current travel and turn lanes
- MEDIAN – description and width of median, if present
- ROAD WIDTH – curb-to-curb width of the roadway (ft)

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
ARMISTEAD AVENUE								
	Downtown	Victoria Blvd. to Settlers Landing Rd.	3,001-4,500	No	30	2 with street parking	None	38
	Downtown	Settlers Landing Rd. to Pembroke Ave.	3,001-4,500	Yes	35	4 driving lanes with median/ turning lane at intersections	Landscaped median / turning lane. 30 ft	77
	Downtown	Pembroke Ave. to Lasalle Ave.	10,001-71,000	Yes	35-45	4 driving lanes with large medians and turning lanes. Large shoulder	Landscaped median / turning lane(s). 36 ft. at largest	96
	Coliseum Central	Lasalle Ave. to Freeman Dr./Mercer Ave.	10,001-71,000	Yes	45	4 driving lanes with large median and turning lanes at major intersection	Landscaped median / turning lane(s). 42 ft. at largest	108

Table A-2: Existing Conditions by Corridor

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
	Coliseum Central	Freeman Dr./Mercer Ave. to Convention Center Blvd. (low priority)	10,001-71,000	Yes	45	4-7 lanes (including turning lanes at intersection). Varying median	Landscaped median / turning lane(s). 38 ft. at largest	96
	Coliseum Central	Convention Center Dr. to Mercury (low priority)	10,001-71,000	Yes	45	4-9 lanes (including turning lanes at intersection). Varying median	Landscaped median / turning lane(s). 56 ft. at largest	110
	Coliseum Central	Mercury Blvd. to Marcella Rd. (low priority)	10,001-71,000	No	40	4-8 lanes (including turning lanes at intersections)	Landscaped median / turning lane(s). 36 ft. at largest	76
	Coliseum Central	Marcella Rd. to Tide Mill Ln.	10,001-71,000	No	40	4-6 lanes (including turning lanes at intersections).	Landscaped median on portions of stretch. 6' concrete barrier in other portions.	48-62
	Coliseum Central	Tide Mill Ln. to Hampton Road Center Pkwy.	10,001-71,000	No	45	4-8 lanes (including turning lanes at intersections)	6-20 ft median. Larger portions vegetated. 6 ft. concrete curb at intersections with turn lane	65
BUCKROE AVENUE								
	Buckroe	Old Buckroe Rd. to Mallory St.	N/A	Yes	30	2 driving with on street parking	None	32
COUNTY STREET								
	Phoebus	Woodland Rd. to Mallory St.	3,001-4,500	No	30	3 driving lanes	None	34
	Phoebus	Mallory St. to Willard Ave.	3,001-4,500	No	25	2 driving with on street parking	None	28
CHESAPEAKE AVENUE								
	Kecoughtan	Pear Ave. to Lasalle Ave.	1,501-3,000	No	25	2 driving lanes with some on street parking opportunities	None	26-36
COLISEUM DRIVE								

Table A-2: Existing Conditions by Corridor, continued

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
	Coliseum Central	Pine Chapel Rd. to Mercury Blvd.	N/A	Yes	30	4-5 lanes (one turning lane at intersection). Vegetated median	Landscaped median / turning lane. 24 ft at widest	64
	Coliseum Central	Mercury Blvd. to Marcella Rd.	N/A	Yes	30	6 lanes with vegetated median	Landscaped and concrete median / turning lane(s). 32 ft. at largest. 12 ft concrete medians at intersection turns	66-90
	Coliseum Central	Marcella Rd. to Hampton Roads Center Pkwy.	N/A	Partially	40	5-6 lanes with median (including turning lanes at intersections)	Landscaped and concrete median / turning lane(s). 58 ft. at largest. 12 ft concrete medians at intersection turns	70-140
CUNNINGHAM DRIVE								
	Coliseum Central	Power Plant Pkwy. to Executive Dr.	10,001-71,000	Yes	35	4-6 lanes (including turning lanes at intersections).	Landscaped and concrete median / turning lane(s). 20 ft. at largest. 8 ft concrete medians at intersection turns	70
	Coliseum Central	Executive Dr. to Coliseum Dr.	10,001-71,000	Yes	35	4-6 lanes (including turning lanes at intersections).	Landscaped / concrete median. 12 ft	70
HAMPTON ROADS CENTER PARKWAY								
	Coliseum Central	Armistead Ave. to Coliseum Dr.	10,001-71,000	Yes	55	4-6 lanes (including turning lanes at intersections).	Vegetated median. 30 ft	112
	Coliseum Central	Coliseum Dr. to Big Bethel Rd.	10,001-71,000	No	55	4-8 lanes (including turning lanes). Varying size lawn median.	Landscaped median / turning lane. 30 ft	112-140
KECOUGHTAN ROAD								
	Downtown	Lasalle Ave. to Victoria Blvd.	4,501-10,000	Yes	35	4-5 lanes (one turning lane at intersection).	Portions with striped median otherwise used as left turn lane	50

Table A-2: Existing Conditions by Corridor, continued

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
KING STREET								
	Downtown	Settlers Landing Rd. to Lincoln St.	N/A	Yes	25	1-2 lanes with partial on-street parking	None	22
	Downtown	Lincoln St. to Randolph St.	4,501-10,000	Yes	35	4-5 lanes with partial some on-street parking and turning lanes at intersections	Vegetated median until E Pembroke. No median from Pembroke to Randolph	60
	Downtown	Randolph St. to Quash St.	4,501-10,000	Yes	35	3 driving lanes	None	32
	North King	Quash St. to Rip Rap Rd.	3,001-4,500	Yes	35	4 driving lanes	None	44
	North King	Rip Rap Rd. to Old Fox Hill Rd.	1,501-3,000	Yes	35	4-5 driving lanes (with one turning lane at intersections)	None	48-84
	North King	Old Fox Hill Rd. to Little Back River Rd.	1,501-3,000	Yes	35	4-6 driving lanes (with turning lanes at intersections)	None	70
	North King	Mac Alva Dr. to Boeing Ave./Langley AFB entrance	1,501-3,000	No	25	4-2 lanes	None	30-42
	North King	Boeing Ave. to Langley AFB entrance	3,001-4,500	No	35	2-3 lanes	Landscaped and concrete median / turning lane(s). 20 ft at largest	25-40
LASALLE AVENUE								
	Kecoughtan	Chesapeake Ave. to Kecoughtan Rd.	1,501-3,000	No	25	2 driving lanes with on-street parking	20 ft striped median	50
	Kecoughtan	Kecoughtan Rd. to Victoria Blvd.	4,501-10,000	Yes	30	2 driving lanes with turning median and on street parking	Center turning lane 14 ft	58

Table A-2: Existing Conditions by Corridor, continued

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
	Downtown	Victoria Blvd. to Pembroke Ave.	10,001-71,000	Yes	35	4-5 lanes (including turn lanes at intersections)	Some spots of at grade 12 ft. median. Space is predominately used for turning middle turning lane	50
	Downtown	Pembroke Ave. to Armistead Ave.	N/A	Yes	35	4-5 lanes (including turn lanes at intersections)	None	50
LITTLE BACK RIVER ROAD								
	North King	N King St. (Six Points) to Clemwood Pkwy.	N/A	Yes	30	2-6 lanes (including turn lanes at King St. intersection)	None	26-45
MALLORY STREET								
	Phoebus	Hampton University/ Veterans Affairs Medical Center to Segar St.	N/A	Yes	30	2-3 lanes (turn lanes at intersection)	None	30-40
	Phoebus	Segar St. to Mellen St.	N/A	Yes	30	2-3 lanes (turn lanes at intersection)	Vegetated median / turning lane for 2 partial blocks. 14 ft at widest	38
	Phoebus	Mellen St. to Mercury Blvd.	4,501-10,000	Yes	30	2 drive lanes and on-street parking	None	40
	Phoebus	Mercury Blvd. to Shelton Rd./Greenhouse Ln.	4,501-10,000	Yes	35-40	4 lanes	6-12 ft landscape median	42-52
	Buckroe	Shelton Rd./Greenhouse Ln. to Pembroke Ave.	4,501-10,000	Yes	35-40	2-4 lanes with portions of on-street parking	6-12 ft landscape median	25-50
MARCELLA ROAD								
	Coliseum Central	Coliseum Dr. to Eaton Middle School	N/A	Yes	35	4 driving lanes	None	42

Table A-2: Existing Conditions by Corridor, continued

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
	Coliseum Central	Eaton Middle School to Armistead Ave.	N/A	No	30	2-4 driving lanes (on-street parking along portions of street)	None	42
MELLEN STREET								
	Phoebus	Mallory St. to NW end of bridge	4,501-10,000	No	25	2 driving lanes with on-street parking	None	37
	Phoebus	Mugler Bridge	4,501-10,000	No	25	2 drive lanes	None	25
MERCURY BOULEVARD								
	Coliseum Central	Power Plant Pkwy. to Coliseum Dr.	N/A	Yes	45	10-12 lanes including turning lanes	Landscaped median / turning lane(s). 20 ft at widest.	130-150
	Coliseum Central	Coliseum Dr. to LaSalle Ave.	N/A	Yes	45	8-13 lanes (including turn lanes at intersections)	Landscaped median / turning lane(s). 20 ft at widest.	120-160
	North King	Lasalle Ave. to King St.	N/A	Yes	45	9-10 lanes (including turn lanes at intersections)	16ft concrete curb - 36 ft vegetated curb / turning lane(s).	120
	North King to Phoebus	King St. to Pembroke Ave.	N/A	No	45	4-7 driving lanes (including turning lanes at intersections	Landscaped median / turning lane. 32 ft	110-88
	Phoebus	Pembroke Ave. to Woodland Rd.	N/A	Yes	45	4-6 lanes (including turn lanes at intersections)	Small portion with striped median and some landscaped near Woodland.	42-70
	Phoebus	Mallory St. to Willard Ave.	1,501-3,000	No	35	4 driving lanes	None	43
	Phoebus	Bridge (Willard Ave. to Ft. Monroe)	1,501-3,000	No	35	4 driving lanes	None	42-50
PEMBROKE AVENUE								

Table A-2: Existing Conditions by Corridor, continued

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
	Downtown	Lasalle Ave. to Back River Rd.	4,501-10,000	Yes	35	4-5 lanes (including turn lanes at intersections)	None	45
	Downtown	Back River Rd. to Armistead Ave.	4,501-10,000	Yes	35	4-5 lanes (including turn lanes at intersections)	None	50
	Downtown	Armistead Ave. to King St.	4,501-10,000	Yes	35	4-5 lanes (including turn lanes at intersections)	None	45-65
	Downtown	King St. to River St.	4,501-10,000	Yes	35	5-3 lanes (includes some street parking and turn lanes)	Landscaped median. 22 ft.	66
	Downtown to Phoebus	River St. to east side of bridge	10,001-71,000	Yes	35	2 lanes	None	30
	Phoebus	East side of bridge to Mercury Blvd.	10,001-71,000	Yes	35	2-3 lanes (turn lane at intersection and turning median in portions)	Center turning lane 14 ft	35-40
	Phoebus	Mercury Blvd. to Grimes Rd./Shelton Rd.	10,001-71,000	Yes	35-40	4 lanes	None	35
	Buckroe	Grimes Rd./Shelton Rd. to Old Buckroe Rd.	10,001-71,000	Yes	40	4-5 (including turn lane at intersection)	None	45
	Buckroe	Old Buckroe Rd. to Mallory St.	3,001-4,500	Yes	30-40	2-4 lanes (includes turn lanes at intersection). On-street parking on large portions of stretch	None	40
PINE CHAPEL ROAD								
	Coliseum Central	Power Plant Pkwy. to Bass Pro Shops	4,501-10,000	No	40	5-7 lanes (including turning lanes at intersection).	None	60-96
	Coliseum Central	Bass Pro Shops to Coliseum Dr.	4,501-10,000	No	40	4-7 lanes (including turn lane)	None	55-75
	Coliseum Central	Coliseum Dr. to Saville Row	4,501-10,000	Yes	30	4-5 lanes (including turn lane at intersection)	None	42-72

Table A-2: Existing Conditions by Corridor, continued

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
	Coliseum Central	Saville Row to Walmart entry drive	4,501-10,000	Yes	30	2 lanes with turn lane median in center	None	50
	Coliseum Central	Walmart entry drive to Armistead Ave.	4,501-10,000	Yes	30	2 lanes		35
POWER PLANT PARKWAY/TODDS LANE								
	Coliseum Central	Cunningham Dr. to BJs entry drive	10,001-71,000	Yes	35-45	7-8 lanes (including turn lanes at intersections)	Landscaped median / turning lane(s). 28 ft at widest	110
	Coliseum Central	BJs entry drive to Pine Chapel Rd.	10,001-71,000	Yes	45	4-8 lanes (including turn lanes at intersections)	Landscaped median / turning lane(s). 24 ft at widest	73-106
SETTLERS LANDING ROAD								
	Downtown	Lasalle Ave. to Armistead Ave.	N/A	Yes	25-35	4-6 lanes (turn lane at intersections)	Landscaped median / turning lane. 30 ft at widest.	80
	Downtown	Armistead Ave. to Eaton St.	3,001-4,500	Yes	25	3-4 driving lanes (including turn lanes at intersections). On-street parking along portions of street	Landscaped and concrete medians / turning lane. 30 ft at widest	75
	Downtown to Phoebus	Eaton St. to east end of bridge	3,001-4,500	Yes	25	4-5 lanes	Concrete barrier (?)	55
	Phoebus	East end of bridge to County St.	3,001-4,500	Yes	25-35	4-5 lanes (turn lane at County intersection)	Landscaped median. 17 ft at widest	55-75
VICTORIA BOULEVARD								
	Kecoughtan	Pear Ave. to Pennsylvania Ave.	4,501-10,000	Yes	40	4-5 lanes (middle turn lane at intersections). Street parking along most portions	8-16 ft landscaped and concrete medians / turning lanes	82
	Kecoughtan	Pennsylvania Ave. to Darling Stadium	4,501-10,000	Yes	40	4-5 lanes (turn lane at intersection)	8-16 ft landscaped and concrete medians / turning lanes	44

Table A-2: Existing Conditions by Corridor, continued

CORRIDOR	MASTER PLAN	SEGMENT	AVERAGE DAILY TRAFFIC	BUS ROUTE	SPEED LIMIT	NUMBER OF LANES	MEDIAN	CURB TO CURB WIDTH
	Downtown	Darling Stadium to Kecoughtan Rd.	3,001-4,500	Yes	40	4-5 lanes (turn lane at intersection)	8-16 ft landscaped and concrete medians / turning lanes	50
	Downtown	Kecoughtan Rd. to Armistead Ave.	3,001-4,500	Yes	30	4-5 lanes (turn lane at intersection)	None	40-50
WOODLAND ROAD								
	Phoebus	County St. to Pembroke Ave.	N/A	Partially	35	4 lanes (turn lane at intersection)	Portion with 10 ft median	40-65
OTHER								
	Buckroe	Atlantic Ave./Bay Shore Ln. to Ft. Monroe	N/A	N/A	N/A	N/A	N/A	N/A

Table A-2: Existing Conditions by Corridor, continued