Middle Peninsula Planning District Commission (MPPDC)

2040 Long Range Transportation Plan

Adopted June 2020

Table of Contents

1.0 Introduction and Purpose

The Office of Intermodal planning and Investment is developing VTrams2040, which will be the guiding document for transportation investments in the Commonwealth. VTrans2040 will identify multimodal needs across the Commonwealth. Moving forward, only projects that help address a need identified in VTrans2040 will be considered for funding under the statewide prioritization process. The development of VTrans2040 will be guided by input provided by local and regional stakeholders and this document, the 2040 Regional Long-Range Transportation Plan, will provide VTrans2040 with insight into the transportation planning issues that face the Middle Peninsula.

Long Range Transportation Plans are meant to provide a region with an overview of the transportation issues it faces and a blueprint for how to address these issues as well as create new opportunities for the region's transportation network. VDOT, Virginia's Planning District Commissions (PDC), and the local governments they represent, are partners in the development of these regional transportation plans in rural and small urban areas. This plan was developed in a collaborative manner that involved state, regional, and local partners. The transportation system the region was evaluated, and a range of transportation improvements - roadway, rail, transit, air, bicycle, and pedestrian - are recommended that can best satisfy existing and future needs. The majority of the Middle Peninsula Planning District Commission (MPPDC) region is rural, however, part of Gloucester County lies within the Hampton Roads Transportation Planning Organization (HRTPO) area. For this Plan's purposes, Gloucester County demographics and land use are included in their entirety, but the road network within the HRTPO was not analyzed.

2.0 Overview of the Region

2.1 Description and Function of the Middle Peninsula Planning District Commission

The MPPDC serves the Counties of Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex, and the Towns of Tappahannock, Urbanna, and West Point. The Middle Peninsula is a predominantly rural area with denser development occurring in the southeast portion of the region in Gloucester County. The geography of the region is primarily influenced by the waterways in the region including the Rappahannock, Mattaponi, Pamunkey, and York rivers, and the Chesapeake Bay. The region lies on the edge of three larger metropolitan areas, Fredericksburg, Richmond, and Hampton Roads. There are two state-recognized Native American Reservations located in the Region: the Mattaponi Indian Reservation and the Pamunkey Indian Reservation.

2.2 Summary of Transportation Network

The transportation network is influenced by the waterways which generally run northwest to southeast; therefore, many of the primary arterials also run in this direction. Primary corridors running generally east to west include US 360, VA 14, VA 30, and VA 33. The main north to south corridors are US 17 and VA 14. Bay Transit is the public transportation authority of Bay Aging, a charitable, non-profit organization. Fixed-route service is not widely available in the Middle Peninsula. However, Bay Transit buses offer four deviated fixed-route public transportation

routes identified as the following: Courthouse Circulator in Gloucester, Gloucester HiveExpress, The Rivah Ride in Tappahannock, and West Point Deviated Fixed-Route. Two of these routes are located inside of the MPPDC jurisdiction while the other two are just outside in the Hampton Roads TPO section of Gloucester County. The two routes that operate within the MPPDC jurisdiction are in the towns of Tappahannock and West Point. Tappahannock's bus system, The Rivah Ride, offers service Monday-Friday from 9:00 AM to 2:00 PM. Meanwhile, West-Point's Deviated Fixed-Route bus system offers service Monday, Wednesday, and Friday from 10:00 AM to 2:00 PM. Furthermore, Bay Transit offers transportation services designed to help seniors and people with disabilities travel to social and recreational events, retail shopping, medical appointments, and work through the New Freedom Mobility Management and Medcarry. In addition to Bay Transit's services, MidPenRideShare coordinates travel demand management services in the region. There are no commercial airports and three general aviation airports in the region. However, Richmond International is located south of the region, within 30 miles of the eastern portion of the region. Rail infrastructure in the region is extremely limited. However, there is a spur of a Norfolk Southern owned freight rail line to West Point in King William County. There are ten official VDOT maintained park and ride lots within the region.

This Long-Range Transportation Plan has a horizon year of 2040 and is meant to address the anticipated impacts of demographic changes, population and employment growth, and shifting transportation needs upon the transportation system. This plan will be reviewed and updated as needed. This plan was developed as a vision plan, addressing all needs of the transportation system studied regardless of anticipated funding availability. It is envisioned that this plan will be used as a basis to identify transportation funding priorities. Additional details on topics discussed in this plan can be found in the Technical Report.

3.0 Goals and Objectives

Needs for this regional plan were developed based on local, regional and statewide goals and objectives. In order to better align this plan with the transportation funding priorities for the Commonwealth set by VTrans2040, local and regional needs were compared to the goals and objectives set forth by VTrans2040. Additionally, a basic goal for all transportation programs in Virginia is the provision for the effective, safe, and efficient movement of people and goods. This plan for the MPPDC was developed with this primary goal in mind. The Goals and Objectives that guided the development of this plan for the MPPDC include:

3.1 2040 MPPDC Long Range Transportation Plan Goals and Objectives

Goal 1: Increase the Economic Competitiveness of the Middle Peninsula

- Enhance inter-regional connections to access intermodal facilities and major activity centers

- Increase access to the region's goods and services through expanded water, rail, and air transportation infrastructure
- Increase freight capacity along the region's primary and secondary roadways
- Increase the rate of tourism in the area

Goal 2: Ensure the Safety of All Users

- Reduce the number and rate of motorized fatalities and injuries
- Reduce the number and rate of non-motorized fatalities and injuries
- Provide safe routes for non-motorized alternative transportation uses

Goal 3: Promote Proactive and Efficient System Management

- Ensure the timely maintenance of all roadways

Goal 4: Preserve and Leverage Existing Transportation Resources

- Increase the freight usage of the region's waterways
- Preserve the navigability of the region's waterways
- Coordinate transportation investments with local land use policies

Goal 5: Support Healthy and Sustainable Transportation Communities

- Increase access to Park and Ride Lots and teleworking stations in the region
- Increase access to active transportation infrastructure

For reference, provided below are the Goals and Objectives of VTrans2040:

3.1 Vtrans2040 Goals and Objectives

Goal 1: Economic Competitiveness

- Objective 1: Reduce the amount of travel that takes place in severe congestion
- Objective 2: Reduce the number and severity of freight bottlenecks
- Objective 3: Improve reliability on key corridors for all roads

Goal B: Accessible and Connected Places

- Objective 1: Reduce average peak-period travel times in metropolitan areas
- Objective 2: Reduce average daily trip lengths in metropolitan areas

- Objective 3: Increase the accessibility to jobs via transit, walking and driving in metropolitan areas

Goal C: Safety for All Users

- Objective 1: Reduce the number and rate of motorized fatalities and severe injuries
- Objective 2: Reduce the number of non-motorized fatalities and severe injuries

Goal D: Proactive System Management

- Objective 1: Improve the condition of all bridges based on deck area
- Objective 2: Increase the lane miles of pavement in good or fair condition
- Objective 3: Increase percent of transit vehicles and facilities in good or fair condition

Goal E: Healthy Communities and Sustainable Transportation Communities

- Objective 1: Reduce Per-Capita Vehicle Miles traveled
- Objective 2: Reduce Transportation related NOX, VOC, PM and CO emissions
- Objective 3: Increase the number of trips traveled by active transportation

4.0 Demographic and Land Use Trends

4.1 Population

The Middle Peninsula is comprised of largely rural, low density counties and three small towns with a total estimated population of 91,199 for the entire region in 2017 and an average population density of 17 persons per square. Recently, the Middle Peninsula region overall has experienced modest population growth and this modest population growth is expected to continue. However, this population growth has been uneven among the region's counties. From 2010 to 2017, three of the counties (Middlesex, Gloucester, and King William) experienced growth in population while the other three the counties experienced a decline in population (Matthews, Essex, and King and Queen). Moving forward this population growth is projected to be more widespread among the counties, with only Mathews County being expected to have negative population growth from 2020 to 2040 while King and Queen and King William Counties are expected to have the highest rate of population growth, 12% and 17%, respectively. As a region, the Middle Peninsula is projected to grow its population from an expected 91,491 in 2020 to 98,814 in 2040, or 7.4%.

Population trends have implications for the transportation network of any geographic area. Improvements to the network are needed because mobility and safety are affected by increases in population. In the case of the Middle Peninsula, increasing pressure on the network has already resulted in changes in traffic along US 17 and US 360, which have become increasingly heavily traveled routes. The region's location along

multiple waterways and adjacent to the Chesapeake Bay also affect the transportation network. Travel outside of the region to the north and southeast is funneled towards bridges with access across the York and Rappahannock rivers.

Table 1: King and Queen County Population Trend and Future Projection

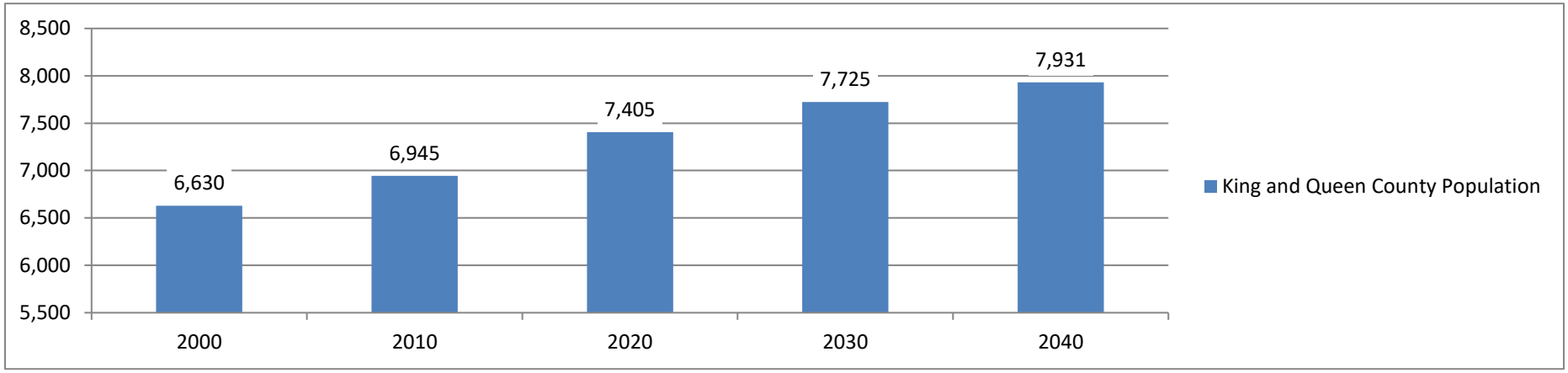


Table 2: King William County Population Trend and Future Projection

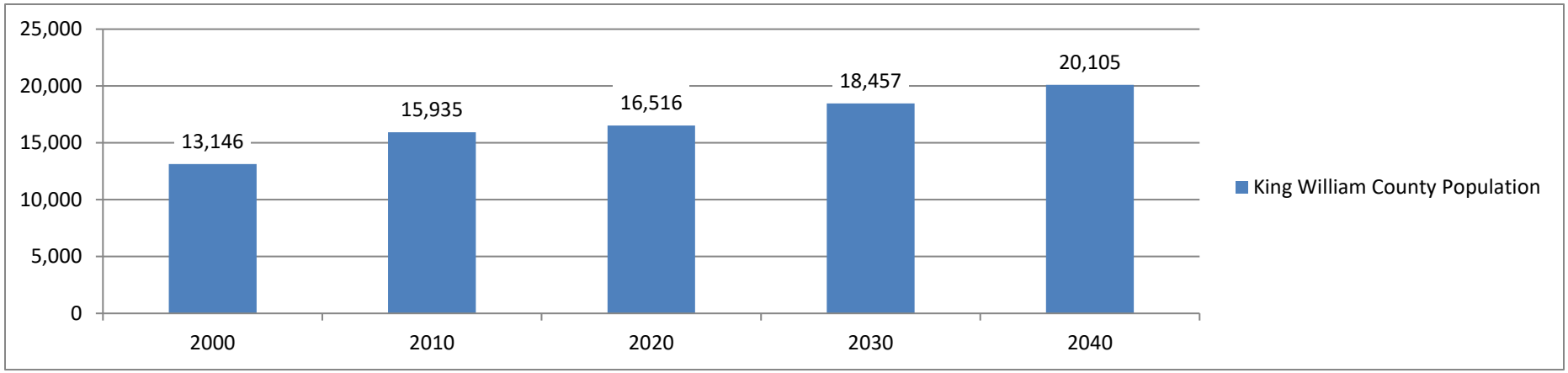


Table 3: Essex County Population Trend and Future Projection

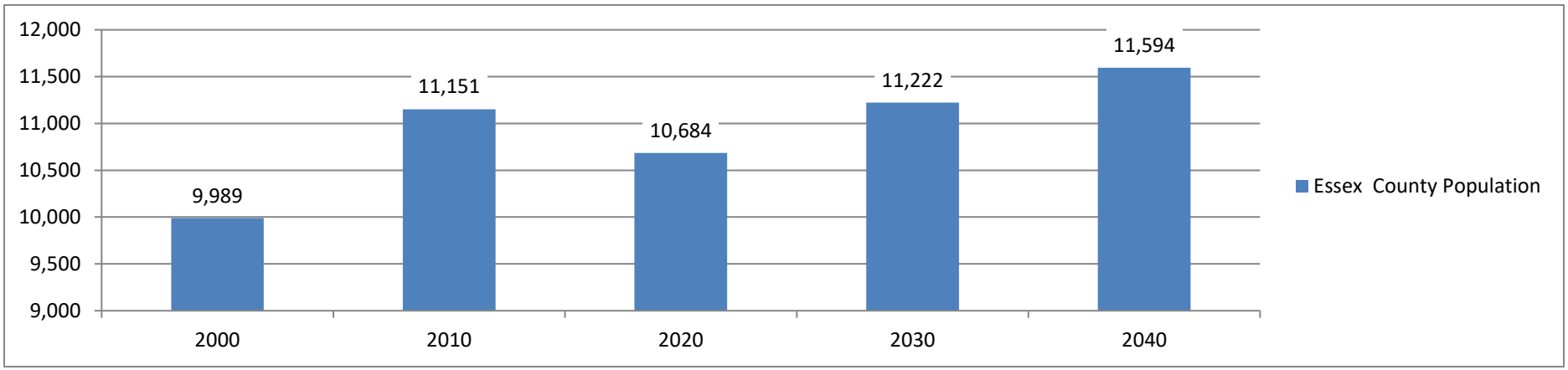


Table 5: Mathews County Population Trend and Future Projection

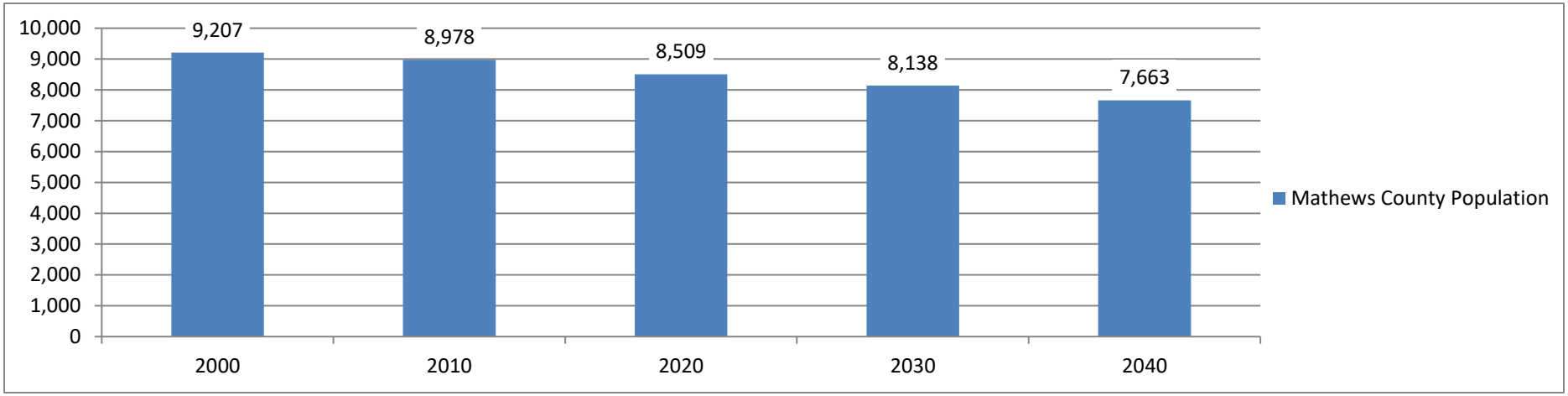


Table 4: Gloucester County Population Trend and Future Projection

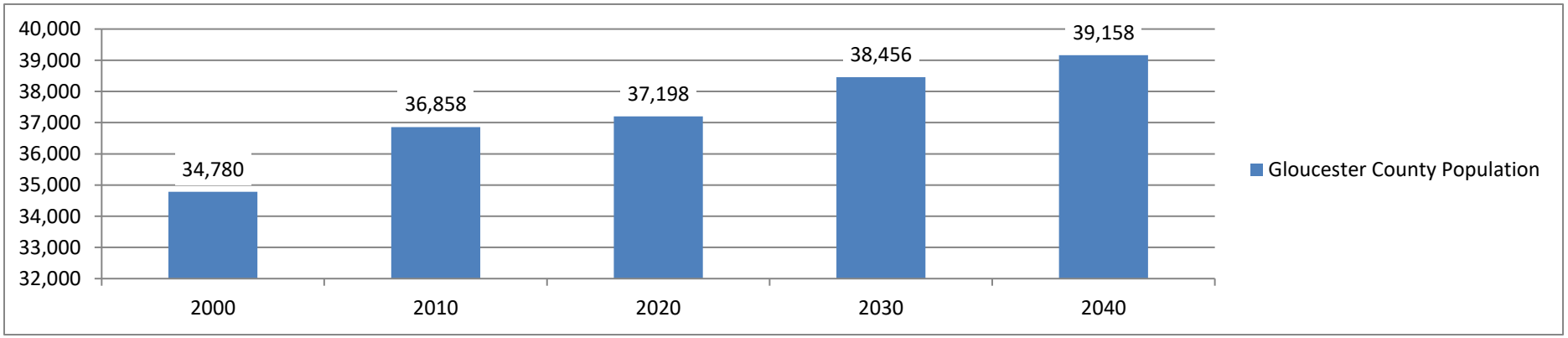


Table 6: Middlesex County Population Trend and Future Projection

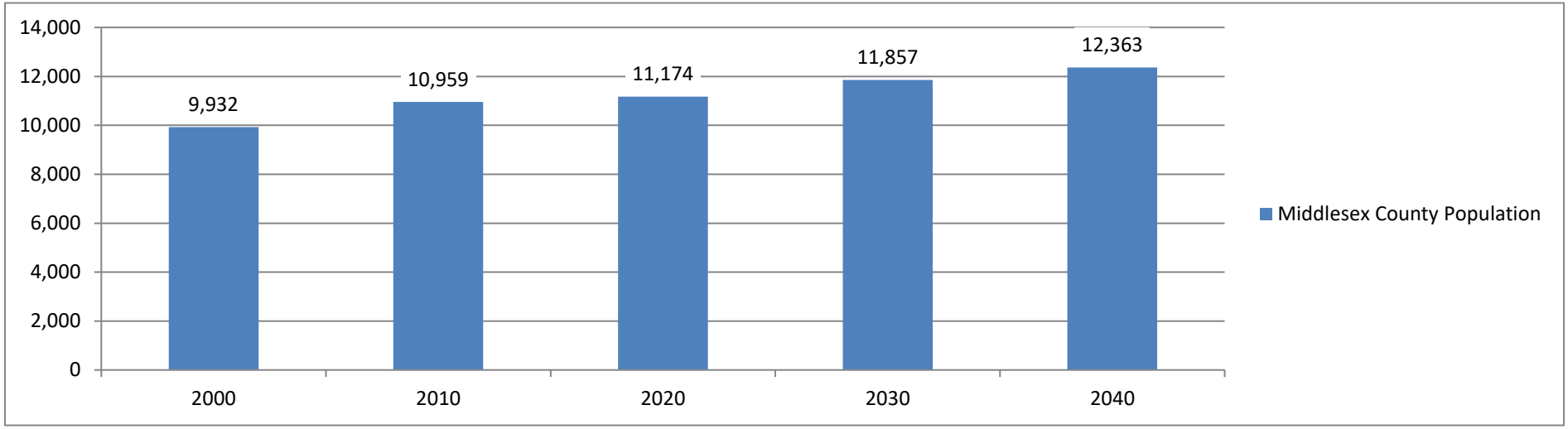
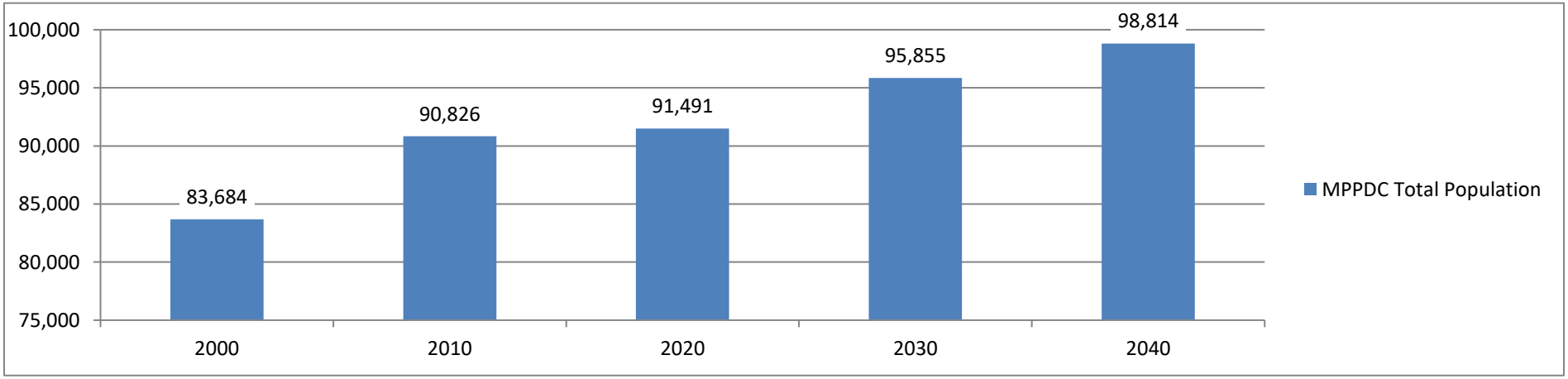


Table 7: MPPDC Population Trend and Future Projection



Source: 2000 Census,2010 Census, Weldon Cooper Center 2018.

4.2 Employment

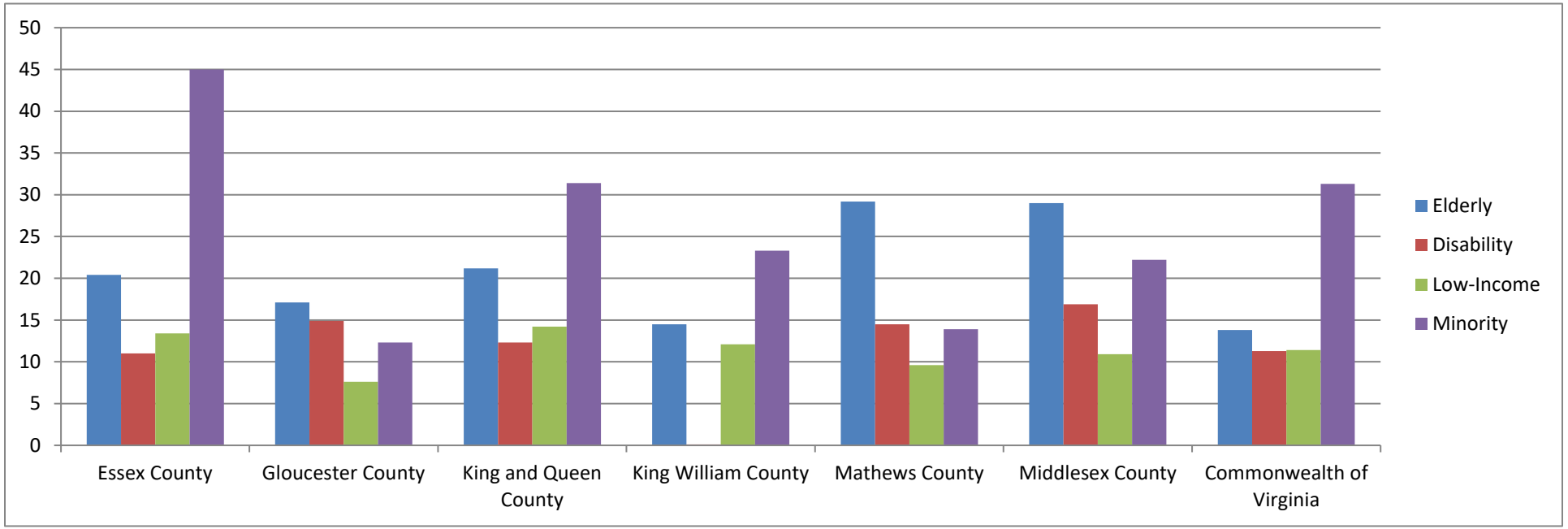
The three largest employment sectors within the region are government, retail trade, and health care and social assistance. Although not a part of the top three employment sectors, agriculture, manufacturing, and construction are also large employers in the region. While the majority of employers in the Middle Peninsula are small companies (09 employees), the highest percentage of total employment in the region is among mid-sized companies (10 to 50 employees).

In 2016, the unemployment rate in region's jurisdictions ranged from 2.0% in Mathews County to 6.2% in Essex County. Additionally, in 2016 the median household income in the region had a range of $47,427 in Essex County to $64,049 in Mathews County. Each of the six Middle Peninsula Counties had median a median household income lower than the state average of $68,114. The largest transportation related issue in the Middle Peninsula's employment conditions is the deficit of available jobs and well-paying jobs within the Middle Peninsula. The local industry supports only 22,792 jobs in the region with the wages paid by local employers being well below the state and national averages. Average weekly wages in the Middle Peninsula are between 50% and 80% of the state average. This ranks the Middle Peninsula as having the fourth lowest weekly wages paid by local employers of all regions in the Commonwealth of Virginia. The lack of higher paying jobs in the region has resulted in 73% of the region's workforce commuting to employment in the adjacent metropolitan areas of Richmond and Hampton Roads. This high rate of workers commuting out of the region for employment affects the region's transportation infrastructure as residents are forced to drive longer distances to commute to and from work. These long commutes also put an increased amount of strain on the region's primary roadways and bridges that connect the region to the larger metropolitan areas of Fredericksburg, Richmond and Hampton Roads.

4.3 Demographic Trends

Disadvantaged population groups were studied in order to determine if there are any gaps or deficiencies in the transportation network that could affect these groups. Disadvantaged groups studied include persons with low-income, minorities, the elderly, and persons with disabilities, as defined by the US Census. In the 2016 5-year American Community Survey by the US Census, Essex and King and Queen Counties had a minority population percentage higher than that of the state (31 percent). In 2016, Essex, King and Queen, and Middlesex Counties had low-income populations above the state percentage of 11.4 percent. The portion of the population with disabilities in all jurisdictions, except King William and Essex County, is above the state percentage of 11.3 percent. All the jurisdictions have elderly populations in a higher proportion than the state (13.8 percent). Elderly, Disabled, Low-Income and Minority Populations in the Middle Peninsula PDC

Table 8: Elderly, Disable, Low-Income, and Minority Populations in the MPPDC



4.4 Public Transportation Implications from Demographic Trends

Using 2016 Census Bureau Data, this report reviewed demographic data at the block group level to order to identify concentrations of disadvantaged populations in the Middle Peninsula that may be ideal for an expansion of public transportations services. These disadvantaged populations are more likely to lack access to an automobile or have the physical ability to operate an automobile, therefore making them dependent on other forms of transportation. Because of this, disadvantage populations are often identified as the portion of the population that would benefit the most from access to publicly provided transportation, whether it is fixed route or demand responsive transit. This analysis found that there are multiple block groups throughout the region that have a concentration of multiple potential disadvantaged groups. In areas of low population density but a concentration of multiple disadvantaged populations, an increase in demand responsive transit services would provide these populations with improved access to transportation. In areas of higher population density, such as the towns of the region, increased fixed route transit services would have the same effect.

4.5 Relationship of Land Use and Development to Transportation

Rural counties throughout the Commonwealth and in the Middle Peninsula are often working to promote economic growth while striving to preserve the rural character of the landscape. The land use in the Middle Peninsula region is generally rural residential, agricultural, and forested with denser residential and commercial uses clustered around the existing towns and courthouse areas. As an approach to growth, the rural counties of the Middle Peninsula are primarily trying to direct new growth towards existing towns, village centers, or service districts in order to provide services and to continue to address the needs of residents while maintaining a general agricultural setting. Future land use and growth patterns are important to this plan as changes in existing land use and new development can have a long-term effect on traffic forecasts and demand on the transportation network. Land use and development changes that particularly affect transportation in rural areas include, but are not limited to: school consolidation, loss or gain of a major employer, movement of younger sectors of the population to more urban areas, retirement community development, and growth of bedroom-community type developments for nearby urban areas. The Middle Peninsula's proximity to Fredericksburg, Richmond, and the Hampton Roads region has affected the land use, development, and population and employment growth in parts of the region. The counties which lie on the urban boundaries, Gloucester and King William, have experienced the most population growth and the associated development and land use changes.

In order for the region's transportation system to accommodate and properly serve the region's future land use patterns and growth, a connection must be made between this plan and the future land use plans of the Middle Peninsula localities.

Essex County

In Essex County, the Town of Tappahannock has the predominant residential and commercial development, with 94% of existing land in the county being either undeveloped or used for forestry. The Essex County Comprehensive Plan focuses on limiting growth to areas near Tappahannock or in small "rural service center areas" along US 17 and US 360.

Gloucester County

In Gloucester County, land use is more intensified in the southern half of the county along Route 17, within the HRTPO area. Development is more rural and low density residential within the MPPDC area and features large areas of agriculture and forested land. The Gloucester County Comprehensive Plan calls for rural residential and rural resources uses within the MPPDC section of northern Gloucester, with a few rural service centers at intersections along Route 17.

King and Queen County

In King and Queen County, the predominant land uses are agricultural and forested with residential and commercial development along US 360 and VA 33. The King and Queen County Comprehensive Plan calls for preserving the county's forested and agricultural land while developing rural village centers along US 360 and VA 33. Future plans also note the potential to further develop industrial land uses near an existing airport along

the VA 33 corridor.

King William County

King William County is also primarily agricultural and forested. Commercial and residential development is around the Town of West Point, in the northern portion of the county, and along US 360 in the western part of the county. The King William County Comprehensive Plan calls for development to remain concentrated in these three areas.

Mathews County

Mathews County is also primarily rural and low density residential in nature. Of the existing land uses in Mathews County, 39% is residential single family, 30% is undeveloped open land, and 19% is rural agricultural uses. Commercial and industrial development collectively account for 2% of existing land use in the County. The Mathews County Comprehensive Plan calls for limiting additional residential development along the County's waterfront, where much of the current residential development exists, due to environmental challenges. The Comprehensive Plan calls for most new residential development to take place in the higher lying area of the County located north of RT 198/RT 3 along the Gloucester County border and near the Piankatank River. The Comprehensive Plan calls for new commercial development to take place at Mathews Courthouse and along the existing business areas of Hudgins, Gywnn's Island and Cobb Creek.

Middlesex County

Middlesex County has more residential and commercial development than some of the other Middle Peninsula counties. These uses are primarily located in Saluda, Urbanna, and Deltaville. The Middlesex County Comprehensive Plan calls for future residential development to take place primarily in the eastern end of the county near the coastline and for commercial development to take place in existing commercial zones.

5.0 Regional Transportation System

5.1 Roadways

There are no federal interstate highways in the Middle Peninsula. However, Interstate 95 passes just west of the region and Interstate 64 runs northwest to southeast just south of the region. The roadways of within region tend to run in a northwest to southeast direction due to the location of waterways within and between the counties. The primary corridors running generally east to west include US 360, VA 14, VA 30, and VA 33. The main north-south corridors are US 17 and VA 14. In the MPPDC, there are 240 miles of arterials, and 414 miles of collectors. The region's principal arterials are RT 17, RT 33, and US 360 which the region's minor arterial are RT 30, RT 14, RT 198, RT3, and RT 33 (Middlesex County portion).

5.1.1 Roadway Capacity in the Middle Peninsula

The roadways of the Middle Peninsula vary in their capacity, from the four-lane divided primary corridors such as US 17, US 360 and VA 33, to two lane secondary highways and local roadways. Provided below are the five most heavily trafficked roadways for each MPPDC locality, determined using VDOT data on Average Annual Daily Traffic (AADT) for 2017:

- Essex County:
    1. *US 17/US 360 Tappahannock Blvd*: AADT of **23,000** within the Town of Tappahannock.
    2. *US 360 Queen Street*: AADT of **14,000** within the Town of Tappahannock.
    3. *US 360 Richmond Highway*: AADT of **10,000** from the King and Queen County line to RT 620.
    4. *US 17 Tidewater Trail*: AADT of **7,600** from RT 609 to US 360.
    5. *RT 627 Airport Road*: AADT of **3,900** from Tappahannock line to US 17.
- Gloucester County:
    1. *VA 3/VA 14 John Clayton Memorial Highway*: AADT of **13,000** from Mathews County line to RT 623.
    2. *US 17/VA 14 George Washington Memorial Highway*: AADT of **12,000** from VA 33 to Middlesex County Line.
    3. *VA 33 Lewis Puller Memorial Highway*: AADT of **7,500** from the King and Queen County line to US 17.
    4. *RT 616 Belroi Road*: AADT of **4,600** from RT 615 to US 17.
    5. *VA 14 Adner Road*: AADT of **4,400** from King and Queen County line to US 17.
- King and Queen County:
    1. *VA 33 Lewis Puller Memorial Highway*: AADT of **15,000** from King William County line to RT 678.
    2. *US 360 Richmond Highway*: AADT of **11,000** from King William County to VA 14.
    3. *VA 14 Buena Vista Road*: AADT of **4,200** from VA 33 to Gloucester County line.
    4. *RT 721 Newtown Road*: AADT of **2,600** from US 360 to RT 619
    5. *VA 14 The Trail*: AADT of **1,400** from RT 614 to VA 33
- King William County:
    1. *VA 30/VA 33 14th Street*: AADT of **19,000** from the New Kent County line to the King and Queen County line through the Town of West Point.
    2. *US 360 Richmond Tappahannock Highway*: AADT of **19,000** from the Hanover County line to RT 605.
    3. *VA 30 King William Road*: AADT of **4,800** from RT 608 to US 360.
    4. *RT 1129 Main Street*: AADT **3,100** in the Town of West Point.

5. *RT 611 Venter Road*: AADT of **2,300** from RT 606 to US 360.

- Mathews County:
  1. *VA 3/VA 14 John Clayton Memorial Highway*: AADT of **12,000** from Windsor Road to Gloucester County line.
  2. *VA 3/VA 198 Buckley Hall Road*: AADT of **7,800** from RT 198 to Windsor Road.
  3. *VA 3 Twiggs Ferry Road*: AADT of **6,900** from Middlesex County line to RT 198.
  4. *VA 3 Windsor Road*: AADT of **6,600** from RT 198 to VA 14.
  5. *VA 14 Main Street*: AADT of **5,100** from RT 198 to RT 611
- Middlesex County:
  1. *US 17/VA 33 Tidewater Trail*: AADT of **12,000** from Gloucester County line to Saluda.
  2. *VA 33 General Puller Highway*: AADT of **9,700** from RT 619 to VA 3.
  3. *Business US 17 Gloucester Road*: AADT of **7,200** in Saluda.
  4. *VA 3 Greys Point Road*: AADT of **6,900** from Lancaster County line to VA 33.
  5. *VA 3 Twiggs Ferry Road*: AADT of **6,200** from VA 33 to Mathews County line.

5.1.2 Roadway Safety in the Middle Peninsula

To assess the safety of the Middle Peninsula's roadways, crash data provided by VDOT from 2014 to 2017 was analyzed. The table below shows the annual, and average annual, number of crashes and fatalities on the roadways of each Middle Peninsula county.

		Mathews	Middlesex	King William	King and Queen	Essex	Gloucester
2014	Total Crashes	86	81	206	144	222	411
	Fatalities	1	2	2	1	5	2
2015	Total Crashes	87	97	212	147	226	436
	Fatalities	1	2	1	3	3	5
2016	Total Crashes	96	97	237	139	254	408
	Fatalities	2	1	3	2	3	5
2017	Total Crashes	83	99	272	158	234	425
	Fatalities	2	1	3	4	3	7
Annual Average	Total Crashes	88	93.5	231.75	147	234	420
	Fatalities	1.5	1.5	2.25	2.5	3.5	4.75

Provided below are the locations of concentrations of crashes in each Middle Peninsula locality:

- Mathews County: The majority of crashes within Mathews County from 2014 to 2017 were scattered along Route 14 and Route 198.
- Middlesex County: Crashes within Middlesex County from 2014 to 2017 were heavily concentrated on Route 3 near the Norris Bridge, throughout the Town of Urbanna, along Route 17 and Route 33.
- King William County: Crashes within King William County are generally concentrated in the Town of West Point at the intersection of 14th street and Main street, along Route 39, around the commercial center of Central Garage (intersection of US 360 and route 30), along Route 608, and the intersection of US 360 and Route 605.
- King and Queen County: Crashes within King and Queen County are generally concentrated along RT 33, notably at the intersection with RT 14 Buena Vista Road, and along US 360 in the St. Stephens Church area.
- Essex County: Crashes within Essex County are concentrated within the Town on Tappahannock on RT 17, at the intersection of RT 17 and US 360, and at intersections of secondary roadways and RT 17.
- Gloucester County: Crashes within the MPPDC section of Gloucester County are concentrated at the intersections of Route 17 and Route 619 near the Riverside Hospital, Route 17 and Route 610 and at Route 17 and Route 33.

5.1.3 Roadway Maintenance in the Middle Peninsula

The safe and effective movement of goods and services along the Middle Peninsula's roadways and bridges is dependent on transportation system that is well maintained. Among the region's roadways, maintenance issues are most common along the region's secondary roadways, which serve as connecting routes that allow for people and goods to access the region's primary roadways. The greatest threats to effective roadway maintenance in the region are:

- Flooding: Flooding is primarily caused by the region's low-lying topography and the effects of sea level rise on the region's waterways.
- Debris Management: The strong storms that the region often experiences, such as hurricanes and Nor'easters, commonly result in fallen forest debris that can block the region's narrow, two lane secondary roadways.
- Right of Way Encroachment: The growth of tree limbs and other natural vegetation can reduce the visibility and navigability of the region's secondary roadways.
- Bridge Maintenance and Bridge Replacement: Due to the region's geography, the Middle Peninsula is home to numerous bridges that play a valuable role in the region's transportation system. The Middle Peninsula is home to 17 bridges with posted weight limits and eight bridges that have vehicle height and width restrictions. The limits and restrictions of these facilities heavily impact the region's goods

producers, as these limits influence the routes in which freight vehicles can travel. It is imperative for the safety of users and for the economic vitality of the region that the bridge maintenance and replacement be done in a proactive manner.

5.1.4 The Role of Roadways in Economic Development on the Middle Peninsula

The roadways of the Middle Peninsula play an important role in economic development in the region, as the vast majority of the movement of goods, services, and people take place along the region's roadways. Not only do the roadways serve as connective facilities that allow for the movement of people and materials, they also serve as the location for the vast majority of economic development opportunities in the region, particularly the principal and minor arterials. In Gloucester County, the vast majority of economic development has taken place, and is projected to continue to take place, along the RT 17 corridor. In King and Queen County, the county has identified RT 33 as the location for its "Technology Corridor". In King William County, the majority of economic development opportunities are located along the US 360 corridor and in the Town of West Point adjacent to RT 33. In Essex County, the majority of economic development opportunities are located along the US 360 corridor, along RT 17, and in the Town of Tappahannock. In Middlesex County, a large portion of commercial land in the County's Future Land Use Map is located along RT 17, RT 33 and RT 3. In Mathews County, the majority of economic development opportunities are within the County's villages and hamlets, which are located along RT 198 and RT 14.

However, there is a significant obstacle that consistently prevents these economic development opportunities along the region's major roadways from coming to fruition. This obstacle is the implementation cost of VDOT's access management regulations found in Appendix F of the VDOT Design Manual. Access Management is "the systematic control of the location, spacing, design, and operation of entrances, median crossovers, traffic signals, and interchanges for the purpose of providing vehicular access to land development in a manner that preserves the safety and efficiency of the transportation system." Each one of these creates a transportation conflict point, and as the number of conflict points increase, so does traffic congestion and crashes. In response, the 2007 Virginia General Assembly unanimously approved legislation directing VDOT to develop access management regulations and standards.

Good access management can have the following impacts: reduced number of crashes and crash potential, decreased travel time and congestion, improved access to properties, synchronized land-use and transportation decisions, and enhanced travel efficiency. With these regulations and standards in place, no entrance to a VDOT-maintained highway may be constructed unless its location and design complies with these regulations or a waiver is granted based on conditions or criteria presented. Permission to construct an entrance is granted through VDOT's land use permit.

The challenge is VDOT regulations require the applicant to meet certain design standards outlined in Appendix F of the VDOT Design Manual, while the developer desires an effective, yet more cost-efficient standard of access management. Because of the access management regulations required by VDOT, many development projects have failed due to the costs associated with achieving the required standards. In response, Delegate Keith Hodges, who represents the 98th District, which includes much of the Middle Peninsula, has repeatedly requested that VDOT re-evaluate the access management standards they require on specific projects by beginning the negotiations at the minimum standard, rather than the highest standard. In these instances, the standards required by VDOT are often reduced through a waiver process, resulting in a compromise with the developer so that the development project can come to fruition.

This perceived inconsistent and often cost prohibitive process is far from uncommon, as many of the potential economic development opportunities on the Middle Peninsula are located along the region's principal and minor arterials, which feature demanding access management requirements. The financial costs associated with complying with these access management standards, based on the Access Management Design Standards, are often cost prohibitive and incur costs to the development that can make it economically unfeasible. Access management in Virginia should be used to help a rural coastal locality grow and thrive while also providing safe and uncongested roadways. Unfortunately, the access management standards are currently perceived by Middle Peninsula communities as consistently a deterrent to rural growth. Localities should collaborate with VDOT to review the access management guidelines to see what compromises they would be willing to accept on their roadways to allow for increased economic development while sacrificing some safety and access management standards in the current regulations.

5.1.5 The Role of Roadways in Providing Public Access to the Waterways of the Middle Peninsula

The roadways of the Middle Peninsula play another unique role in the region, as the Secondary System of State Highways, maintained by VDOT, provide the region with the majority of its public access sites to state waters. The Secondary System of State Highways was created in 1932 by the passage of the Byrd Road Act of 1932. The Byrd Road Act transferred to VDOT the control of all non-primary highways and landing in Virginia for the purpose of relieving local governments of the obligation of maintenance. Since receiving the control of these roadways, VDOT has ended the state maintenance of many of them at a fixed location, or road ending. However, the end of maintenance does not mean the end of the public's right to use these roadways, and their established right of way, for public passage. The deeded right of way for many of these road endings continues all the way to the water's edge, meaning that they create a right-of-passage that the public can utilize to access the water. These roadways and landings provide the region with a unique opportunity to provide the residents of the region with numerous points of access to the region's waterways for recreational and commercial purposes. However, in order for these points of access to provide the public with safe, maintained, and consistent access, collaboration between VDOT, the Middle Peninsula Chesapeake Bay Public Access Authority, and local governments is required.

5.2 Public Transportation

Bay Transit serves the Northern Neck and Middle Peninsula of Virginia as well as New Kent and Charles City counties, which is an area of nearly 3,000 square miles that includes 12 counties and has an estimated population of 150,000 people.

Fixed-route service is not widely available in the Middle Peninsula. As previously mentioned, Bay Transit buses offer four deviated fixed-route public transportation routes, two inside of the MPPDC jurisdiction and two just outside, in the Hampton Roads TPO section of Gloucester County. The two routes offered inside of the MPPDC are "The Rivah Ride" in the Town of Tappahannock and a route offered in the Town of West Point. "The Rivah Ride" operates Monday through Friday from 9:00 am to 2:00 pm and runs roughly 3 miles down Route 17 through the middle of town. The West Point Deviated Fixed Route operates Monday, Wednesday, and Friday from 10:00 am to 2:00 pm and runs roughly 2.5 miles along Route 30. Bay Transit also operates a trolley in the Town of Urbanna during the summer months.

Bay Transit currently maintains 62 current vehicles, consisting of 53 vans, 3 buses, and 6 station wagons. The majority of Bay Transit service is provided through demand-response service, a reflection of the low population density of the region it serves. Demand-response service is offered from Monday to Friday, 6:00 am to 6:00 pm. In 2012, the demand-response service fee was increased from $1.00 to $2.00 per trip, which resulted in a 12% reduction in ridership from 2012 to 2014. However, during this time period both fare revenue and the farebox recovery ratio increased by over 50%, increasing the efficiency of the organization's operations.

Fiscal Year 2017 Ridership Data for the Middle Peninsula										
County	Total	Department of Social Services	Employment	Education	Health Care	Legal Services	Retail	Active Lifestyle Center	Trolley/Other	Non-Accommodations
Essex County	20,450	86	6,483	616	3,852	195	2,773	216	6,229	361
Gloucester County	43,712	49	15,433	1,021	7,612	276	7,113	4,114	8,094	2,952
King and Queen County	3,829	2	2,260	213	368	15	464	507	0	970
King William County	5,909	2	1,482	723	1,790	3	699	1,210	0	1,854
Mathews County	5,857	14	1,925	123	1,110	31	1,061	1,593	0	1,077
Middlesex County	7,434	22	2,717	327	2,470	78	1,605	215	0	563
Total	87,191	175	30,300	3,023	17,202	598	13,715	7,855	14,323	7,777

When compared to peer transit providers, Bay Transit currently operates less service than its peers, which is indicative of the challenge the organization faces from operating within a large service area. To address this, Bay Transit's Transit Development Plan for fiscal years 2016 to 2021 presents four recommendations to improve service. The four potential service improvements are:

1. Add an additional demand-response vehicle in Middlesex County
2. Extend service offers to the City of Richmond
3. Extend service to evening hours

Organizations that do not serve the general public but do serve the transportation needs of specific disadvantaged groups include ARC of the Peninsula, the Virginia Department of Rehabilitative Services, and the Middle Peninsula/Northern Neck Community Services Board. In addition, the United Way Volunteer wheels program is a volunteer network of drivers who use privately owned vehicles for transport.

The Virginia Department of Rail and Public Transportation (DRPT) recently completed a Coordinated Human Service Mobility Plan for each PDC in the Commonwealth. The plan for the Middle Peninsula examined and analyzed the existing fixed-route transit and demand-responsive transit services and identified strategies to address existing unmet transit needs of the region's population (DRPT, 2013). The plan identified the following strategies to address the unmet transportation needs in the region. These strategies included the following:

- Continue to support and maintain capital needs of coordinated human service/public transportation providers.
- Expand availability of demand-response and specialized transportation services to provide additional trips for older adults, people with

disabilities, people with lower incomes, veterans, and the general public at large. 3

- Expand outreach and information on available transportation options in the region, including establishment of a centralized point of access.
- Continue to build coordination among existing public, private, and human service transportation providers.
- Bring new funding partners to public transit/human service transportation.
- Implement new public transportation services or operate existing public transit services on more frequent basis.
- Provide flexible transportation options and more specialized one-to-one services through expanded use of volunteers.
- Provide targeted shuttle and vanpool services to access employment opportunities. Middle Peninsula (PDC 18) Coordinated Human Service Mobility Plan 29
- Expand access to taxi services and other private transportation operators.
- Develop a marketing campaign to educate officials, the business community, and the general public on the efficacy of transportation services to promote economic development, personal savings, and environmental responsibility, as well as meeting our social obligations to the neediest of our citizens.

Disadvantaged population groups were not only studied as a part of the DRPT Mobility Plan but also studied as a part of this Plan in order to determine deficiencies in the transportation network which affect these groups. 2010 US Census data at the block group level was examined in order to determine locations and densities of all of these groups. This analysis found:

- A concentration of minority residents in northern Essex County, in the Town of Tappahannock, in Northern King and Queen County, and in eastern Middlesex County.
- A concentration of elderly residents throughout Mathews and Middlesex Counties, and the northern and southern portions of King and Queen County.
- A concentration of disabled residents through Mathews and Middlesex Counties, northern Gloucester County, and southern King and Queen County.
- A concentration of low-income residents in and around the Town of Tappahannock, the Town of Urbanna, and in eastern Middlesex County.

The DRPT Mobility Plan combined these demographic factors, as well as access to an automobile and several other transit demand indicators to develop a map of Transit Demand Index (TDI). This TDI map classifies the Town of Tappahannock, northern King and Queen County, northern King William County, the majority of Mathews County, and northern Gloucester County as having high to very high transit demand ratings.

5.3 Airports

There are no commercial airports in the region. However, Richmond International is within 30 miles of the western portion of the PDC and Newport News/Williamsburg International is located south of the region, within 30 miles of the eastern part of the PDC. There are three general aviation airports: Middle Peninsula Regional Airport in King and Queen County; Tappahannock-Essex County Airport outside of the Town of Tappahannock on Aviation Road; and Hummel Field in Saluda (Exhibit 11). The Virginia Air Transportation System Plan Update in 2016 includes data on changes in the number of based aircraft at airports as well as projected growth rates for each airport. The projected average annual growth rate between 2012 and 2037 is 0.0% at Hummel Field, 3.0% at Middle Peninsula Regional, and 3.0% at Tappahannock/Essex. The projected growth at Middle Peninsula Regional and at Tappahannock/Essex outpaces the state and national average for airports. The growth of these facilities could create an increase in freight and general automobile traffic on the secondary roadways that connect these facilities to the region's primary roadways. For the Middle Peninsula Regional Airport, RT 643 provides a connection to US 33 and for the Tappahannock-Essex County Airport, Aviation Road provides a connection to US 360.

Airports	Forecast Average Annual Growth of Total Based Aircraft		
	2012-2022	2022-2037	2012-2037
Virginia Commercial Service Airports	0.6%	0.5%	0.6%
Virginia General Aviation Airports	1.2%	1.1%	1.1%
All Virginia Airports	1.1%	1.0%	1.0%
All U.S. Airports	0.4%	0.9%*	0.6%*

Source: Virginia Department of Aviation, Virginia Air Transportation System Plan Update (2016)

5.4 Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities in the Middle Peninsula are severely lacking throughout the majority of the region, in part because of the low density of the area. Additionally, bicycle and pedestrian planning on the regional scale is also sorely lacking in the Middle Peninsula. The most recent regional active transportation plan, the Middle Peninsula Regional Bicycle Facility Plan, was developed in 2004 by the MPPDC through the Middle Peninsula Regional Bike Plan Focus Group. The recommendations from this plan are useful and informative but are now severely outdated. At the local level, the bicycle and pedestrian planning contained in local comprehensive plans ranges from making no mention of bicycle or pedestrian facilities, such as King and Queen and King William Counties, to acknowledging the lack of adequate bicycle and pedestrian infrastructure and while encourage the development of such facilities, such as Middlesex, Essex, Gloucester and Mathews Counties.

5.5 Bicycle and Pedestrian Safety

Without adequate access to bicycle and pedestrian facilities throughout the region, not only is the potential for bicycle and pedestrian activity reduced, the safety of pedestrians and cyclists in the Middle Peninsula is at risk. Overall, the majority of pedestrian and bicycle related crashes occurred throughout the region's towns. The following section provides VDOT crash data on bicycle and pedestrian related crashes in each Middle

Peninsula county from 2014 to 2018. As a region, from 2014 to 2018 there were twenty pedestrian related crashes, three of which resulted in a fatality, and seven bicycle related crashes, one of which resulted in a fatality.

Gloucester County:

Because of the more urbanized nature of development in the southern half of Gloucester County which falls within the HRTPO, the vast majority of bicycle and pedestrian crashes, many of which involve fatalities, are located in the southern section of the county, primarily along RT 17. However, bicycle and pedestrian crashes in the northern section of Gloucester County is still a cause of concern. From 2014 to 2018, in the northern section of Gloucester County that falls within the MPPDC, there were three pedestrian crashes, one of which involved a fatality, and one bicycle crash. Three of these crashes were located along RT 17, near the intersections of RT 610, RT 606, and RT 601, and the one fatal crash was at the intersection of RT 33 and RT 666/RT609.

Middlesex County:

From 2014 to 2018, there were two pedestrian related and four bicycle related crashes in Middlesex County. One of the pedestrian crashes was along RT 33 in Deltaville and the other was along RT 602 in Urbanna and resulted in a fatality. Of the bicycle crashes, one was located on RT 33 in Saluda, one was at an intersection of residential streets in Urbanna, and the other two were along the secondary roadways of RT 604 and RT 625.

Mathews County:

From 2014 to 2018, there were two pedestrian and one bicycle related crashes in Mathews County. Of the two pedestrian crashes, one was at the intersection of RT 14 and RT 728, which resulted in a fatality, and the other was at the intersection of RT 641 and RT 647. The only bicycle crash was located along RT 617.

Essex County:

From 2014 to 2018, there were seven pedestrian related crashes, one resulting in a fatality, and zero bicycle related crashes. The vast majority of pedestrian related crashes in Essex County occurred in the Town of Tappahannock, primarily along RT 17 and US 360. Along RT 17, there were pedestrian crashes at the intersections of RT 17 and Virginia Street and RT 17 and Ball Street. Along US 360 there were two pedestrian crashes at the intersection of US 360 and Cross Street.

King and Queen County:

King and Queen County had the lowest number of pedestrian and bicycle related crashes of any Middle Peninsula county from 2014 to 2018, with only one pedestrian crash, which occurred along RT 607.

King William County:

From 2014 to 2018, there were five pedestrian related crashes in King William County and one bicycle related crash. Two of the pedestrian crashes were located on RT 30, one near the intersection with RT 617 and another near the intersection with RT 610. The other two pedestrian crashes

occurred on US 360 near the intersection RT 30 at Central Garage and along RT 662. Finally, the only bicycle related crash was located on US 360 just north of Central Garage and resulted in a fatality.

5.6 Transportation Demand Management

With diminishing resources of fossil fuels coupled with increasing travel demand, and a need to preserve and enhance environmental quality, every effort needs to be made to reduce the number of vehicle trips, especially single-occupant trips. In some rural areas, low population and dispersed trip attractors may not be conducive to major shifts to mass transit. In the MPPDC, the environmental and economic impacts of unmanaged transportation demand are further exacerbated by the region's out commute rate. The Middle Peninsula region has the largest percentage of out-commuters in the Commonwealth of Virginia, meaning that out of the region's workforce of 46,000, 33,244 (or 72%) commute outside of the region for employment. In fact, there are more Middle Peninsula residents who commute to the Hampton Roads Planning District Commission for employment than Middle Peninsula residents who actually work within the Middle Peninsula. This uniquely high out-commuting rate puts a strain on the region's transportation system and creates challenges for the region's local economy. This out-commute rate has also resulted in a regional average commute time and length that are both substantially longer than the statewide average.

One of the greatest challenges to managing the travel demand created by the large portion of out-commuters is that there is not a single concentration of out-commuter destinations. Out-commuters often travel to the urbanize areas of Richmond, Fredericksburg, and Hampton Roads for employment in higher wage jobs than are available on the Middle Peninsula. Not only is out commuting an issue at the regional level, the majority of the commuters who stay in the region for employment are not employed in the county they resident within, creating a significant amount of inter-commuting among MPPDC employees. The 2016 5-year American Community Survey found that each county within the MPPDC had a higher percentage of workers who commute to work outside of their county of resident than the state average of 43%.

The MPPDC operates a ridesharing program - MidPenRideShare - that offers alternative transportation information and assistance throughout the region. It provides commuter matching for traditional carpools and vanpools, as well as school pools for parents of school-age children to coordinate pick up and drop off at individual schools. There is a guaranteed ride home program, with some restrictions, for those registered in the system. In 2015, the MPPDC published a Transportation Demand Management (TDM) Plan for FY2016- FY2021. This TDM Plan sought to identify strategies the region and the organization could pursue to address its long-distance commuting issues. The TDM proposes there key improvements the region can make to address its commuting issues:

- Enhance the ride matching software MidPenRideShare uses to an online system that has access to a statewide database of commuters.
- Assist in the development of King and Queen County's planned Technology Corridor along RT 33 from Rappahannock Community College to RT 14.
- Increase regional efforts to improve the regional economy in order to retain and create more job opportunities for Middle Peninsula Residents.

In addition to the MidPenRideShare program, there are also ten VDOT maintained park and ride lots in the region: two in Essex County, one each in King and Queen and King William Counties, three in Mathews County, and two in Middlesex County (Exhibit 13). There is one park and ride lot in the rural portion of Gloucester County; there is an additional lot within the HRTPO.

5.7 Goods Movement

The majority of goods movement in the region is by truck and utilizes most of the road network, particularly US 17, US 360, VA 3, VA 14, VA 30, and VA 33. The freight generators and shippers are more heavily clustered in southern Gloucester County and in western King William County, both of which are the closest locations to the interstate system and major metropolitan areas (Exhibit 12).

There is only one rail line in the area, a Norfolk Southern branch that crosses into King William County from New Kent County and terminates in the Town of West Point. The line is heavily used by the paper mill in town that is operated by WestRock. However, there is potential and interest in the region for expanding rail and water-based freight movement and to create a intermodal transportation facility in the Middle Peninsula. In 2009, a Multimodal Freight Operations Study was prepared for the MPPDC that analyzed the conditions for multimodal freight movement in the region. The report concluded that there is significant potential for the region to establish a multimodal facility that could combine truck, rail, and water-based freight movement. The report highlights southern King William County as the most likely location for such a facility, due to its relatively proximity to I-64, containing the main rail line in the region, being the principal source of truck traffic, and position at the terminus of the York River and the widest portions of the Mattaponi and Pamunkey Rivers.

5.8 Waterways

The waterways of the Middle Peninsula are critical to the region's transportation system as well as its economy and way of life. The historical development of the region was tied to its access to water ways for international navigation and this access to waterways continues to be a vital component of the region's success. The Middle Peninsula region is bounded by the Rappahannock River to the north and the York River to the south and has 1,200 miles of coastline. Also found in the region is the Pamunkey River and Mattaponi River, which flow into the York River, the Piankatank River which flows into the Chesapeake Bay, and the Severn, Ware, East, and North Rivers while flow into the Mojack Bay and then into the Chesapeake Bay. This system of waterways supports the region's marine industries, which consists of 1,660 jobs and $22.7 million in wages in the region.

These waterways also enhance the region's logistical advantage, providing the region access to two major international ports, the Port of Virginia in Norfolk and the Port of Baltimore. According to the American Association of Port Authorities, in 2017 the Port of Virginia was the seventh busiest port in the country while the Port of Baltimore was the thirteenth busiest.

5.8.1 At-Risk Waterways

However, the future use of these waterways as a vital part of the region's economy, transportation system, and way of life is in jeopardy as the region's waterfront development is as risk of sea level rise and an increased frequency and magnitude of storm events. Compounding this issue is the shoaling of navigable channels throughout the Chesapeake Bay, restricting access and limiting water travel.

A study published by the United States Coast Guard in 2018 highlights this issue of shoaling in the region's navigable creeks that provide access to the Chesapeake Bay. For the purpose of this report, waterways that are identified in the USCG report as experiencing any level of shoaling will be defined as "at-risk waterways". The report found that in the Middle Peninsula region, there are seven tributaries that connect into the major waterways that are shoaled in, putting them in jeopardy of having their ATONs signage removed. The removal of ATON signs removes the Coast Guard's responsibility to maintain the waterway. Without ATON and federal maintenance, these waterways become unreliable and unsafe for maritime travel, diminishing their ability to provide transportation and economic benefits to the region. These shoaled in waterways are:

- Aberdeen Creek (Gloucester County)
- Cedarbrush Creek (Gloucester County)
- Timberneck Creek (Gloucester County)
- Davis Creek (Mathews County)
- Winter Harbor (Mathews County)
- Hole in the Wall (Mathews County)
- Parrots Creek (Middlesex County)

In addition to the seven shoaled in waterways, there are also two waterways in the region in which its entrance is shoaled in, but its creek end is stable and four waterways in which its entrances are stable, but its creek end is shoaled in. The two waterways with shoaled in entrances are:

- Horn Harbor (Mathews County)
- Haven East (Mathews County)

The four waterways with stable entrances but with creek ends that are shoaled in are:

- Sarah Creek (Gloucester County)
- Perrin Creek (Gloucester County)
- Urbanna Creek (Middlesex County)

- La Grange/Robins Creek (Middlesex County)

This report shows that in total, there are thirteen at-risk waterways in the Middle Peninsula that are currently affected by shoaling. This issue of shoaling poses an issue for the future use of these tributaries as a part of the transportation system of the Middle Peninsula and threatens their ability to contribute to the region's vital marine industries.

5.8.2 Threat to Working Waterfronts Infrastructure

The future navigability of these at-risk waterways poses a grave threat to the region's marine industries, with 21 of the region's 81 working waterfront facilities (WWF), or 26%, being located on at-risk waterways. Among waterways that are classified as shoaled in by the USCG:

- Aberdeen Creek: 1 WWF
- Davis Creek: 3 WWF's
- Winter Harbor: 3 WWF's

Among waterways in which the entrance is shoaled in, but its creek end is stable:

- Horn Harbor: 3 WWF's

Among waterways in which the entrance is stable, but its creek end is shoaled:

- Sarah Creek: 3 WWF's
- Perrin River: 6 WWF's
- Urbanna Creek: 2 WWF's

5.8.3 Water Trails Throughout the Middle Peninsula

In addition to its waterways that provide navigation access to motorized vehicles and host vital working waterfronts, the region is also home to an extensive system of minor waterways that provide active transportation options. Throughout the Middle Peninsula region, multiple established water trails utilize these minor waterways as sources for tourism, recreation, and transportation. Both Mathews and Gloucester County have an established, countywide water trails, the National Park Service manages the Captain John Smith Trail that runs up the York, Mattaponi, Pamunkey, Piankatank, and Rappahannock Rivers, and the Friends of the Dragon Run offer guided kayaking tours of the 40-mile-long Dragon Run Creek and Swamp. The "Mathews Blueways Water Trails System" consists of 15 designated trails and the Gloucester Blueway Water Trails consists of 7 established routes. In addition to the established water trails in the region, the MPPDC is currently in the process of developing a plan for an integrated water trails system that enhances the access and connections of the existing water trails and will identify future trail locations.

6.0 Transportation System Recommendations

6.1 Roadway Improvements

The analysis of the region's roadway system focused on primarily on the safety of the region's intersections and the capacity of the region's primary and secondary roadways. Through the review of available data and of state, regional, and local plans and from input provided by local and regional officials as the public through public meetings, the MPPDC, in conjunction with the local jurisdictions and VDOT, prepared a list of priority locations for roadway improvements. This list of roadway improvements is based on:

- The relevant recommendations of the 2035 Middle Peninsula Long Range Transportation Plan (2012)
- 2025 Virginia State Highway Plan
- 2035 Virginia Surface Transportation Plan
- VDOT crash data from the years 2014 to 2017
- VDOT Fredericksburg District's Potential Safety Improvements database
- Locality staff input
- Locality Comprehensive Plans
- Public input

Many of the priority locations that were identified from precedent studies had improvement recommendations and required no further analysis. Newly identified priority locations required an analysis of conditions and recommended alternatives. The safety improvement locations were identified using safety and crash database information, and input from local officials and the public. The capacity improvement locations were identified using traffic data and safety and crash database information. A more detailed discussion of all the identification of priority locations and recommended alternatives is located in the Technical Report.

6.2 Recommendations for Improving the Role of Roadways in Economic Development on the Middle Peninsula

Within rural localities, it is believed that for economic development to occur, VDOT's access management standards must be reduced. However, localities must be willing to accept the fact that if access management standards are reduced, we may compromise the safety of drivers and increase the level of congestion. Therefore, we must create a suitable set of standards and a consistent process that balances the need for economic development along the region's primary rural corridors while also ensuring safe and responsible access management. This will be a task that can only be completed through collaboration between the relevant local, regional, and statewide government entities. This plan recommends that the region work with VDOT to restructure its process for establishing access management standards for development projects into a process that is more mindful of the impact it has on economic development in the region while also protecting the safety of the region's roadways.

6.3 Intersection and Roadway Segment Recommendations for each County

6.3.1 Essex County

Priority Intersections & Roadway Segments Addressed by the 2012 MPPDC LRTP

Of the identified priority intersections in the VDOT Fredericksburg Office's Potential Safety Improvements database within Essex County, the following intersections were addressed, along with corresponding recommendations, during the development of the 2012 MPPDC Long Range Transportation Plan

- The intersection of RT 17 (Church Lane) and RT 1036 (Ball Street). This intersection has a district priority rank of 22.
  - Recommendation from the 2012 LRTP: This intersection is located in a dense commercial and high activity area with several adjacent signalized intersections. The intersection is a safety concern as there is a high potential for rear-end and left turn accidents. It was recommended that a study of this corridor be commissioned to explore possible solutions to the safety concerns at this intersection and other adjacent intersections

- The intersection of RT 17 (Church Lane) and RT 1003 (Duke Street). This intersection has a district priority rank of 51.
  - Recommendation from the 2012 LRTP: This intersection as identified as a safety concern as the number of crashes at this location exceeded the planning threshold. It was recommended that this intersection continued to be monitored for potential improvements.

- The intersection of RT 17 (Church Lane) and RT 657 (Marsh Street). This intersection has a district priority rank of 126.
  - Recommendation from the 2012 LRTP: This intersection is both a safety and congestion concern. It was recommended to install turn lanes as needed to increase safety and capacity at this intersection.

2018 LRTP Priority Intersections Recommendations

- The intersection of US 360 (Richmond Highway) and RT 619 (Kino Road). This intersection has a district priority rank of 77.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study even though this intersection was in the top 100 on the district priority ranking.

- The intersection of US 360 (Richmond Highway) and RT 1001 (Cross Street). This intersection has a district priority rank of 60.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study even though this intersection was in the top 100 on the district priority ranking.

- The intersection of RT 17 (Church Lane) and RT 1010 (Preston Street). This intersection has a district priority rank of 131.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of US 360 (Richmond Highway) and RT 684 (Howerton Road). This intersection has a district priority rank of 116.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 17 (Church Lane) and RT 1006 (Virginia Street). This intersection has a district priority rank of 138.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 17 (Church Lane) and RT 1032 (Elm Street). This intersection has a district priority rank of 232.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 620 (Millers Tavern Road) and RT 684 (Howerton Road). This intersection has a district priority rank of 245.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 17 (Tidewater Trail) and RT 1215 (Mary Field Road). This intersection has a district priority rank of 2817.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 619 (Kino Road) and RT 618 (Scottsmill Road). This intersection has a district priority rank of 288.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

Recommendations to Address Priority Roadway Segments

- US-360 (Church Lane)/RT 1003 (Duke Street).

- Recommendation: This segment of road has a district priority rank of 79. There are limited improvements that can be done due constraints within the area. However, based on the completed research and field review, the following recommendations for this roadway are suggested:
    - Install a stop bar on both approaches of SR-1003 (Duke Street). This will provide visual stopping point to motorists on SR-1003 (Duke Street) as they approach the stop sign.
    - Eliminate left turns from SR-1003 (Duke Street). This can be done by the installation of "No Left Turn" signs on both approaches.
    - Eliminate crossing and left turn maneuvers by constructing a median along US-360 (Church Lane) in order to minimize the number vehicle conflict points. This may not be a feasible option due to the limited lane widths and physical constraints of the intersection.
    - Close, consolidate, and/or relocate driveways at the intersection. This will reduce roadside friction by removing the number of locations where vehicle to vehicle conflicts occur. If driveways cannot be closed, consolidated, or relocated, it may be appropriate to restrict turning maneuvers at the driveway to right-in/right-out movements. For example, left turns at the Union Bank and plant nursery driveway can be restricted/limited to right turns in and right turns out. The median proposed above would further reduce the number of conflict points at these driveways.

- RT 17/US 360 Tappahannock Bypass:
    - Recommendation: This segment of road has a district priority ranking of 79. Recommend the construction of a "Tappahannock Bypass", from the intersection of RT 17 and US 360 south of Tappahannock to RT 17 north of Tappahannock. This bypass is recommended to be four lanes wide with a median and roughly 3 miles long in distance. This bypass will allow for vehicles using RT 17 as a long-distance connecting route to bypass the congestion and intersections of concern within the Town of Tappahannock, while also decreasing the stress on the current RT 17 segment through Tappahannock. The segment of RT 17 that runs through Tappahannock had an Average Annual Daily Traffic count of 23,000 vehicles, the most of any road segment in Essex County. Additionally, there are seven intersections identified by VDOT as potential safety improvements along RT 17 through Tappahannock:

        - RT 17 and RT 1036 (Ball Street)
        - RT 17 and RT 1032 (Elm Street)
        - RT 17 and RT 725 (Winston Road)
        - RT 17 and RT 101 (Preston Street)
        - RT 17 and RT 1006 (Virginia Street)

- RT 17 and RT 1003 (Duke Street)
- RT 17 and RT 657 (Marsh Street)

6.3.2 Gloucester County:

Priority Intersections and Roadway Segments Addressed by the 2012 MPPDC LRTP

Of the identified priority intersections in the VDOT Fredericksburg Office's Potential Safety Improvements database within Gloucester County, the following intersections were addressed, along with corresponding recommendations, during the development of the 2012 MPPDC Long Range Transportation Plan:

- The intersection of RT 17 (George Washington Memorial Highway) and RT 610 (Woods Cross Road). This intersection has a district priority rank of 19:
  - Recommendation from the 2012 LRTP: This intersection is a safety concern, as crashes at this location exceeded the planning threshold. The high speeds along RT 17 and lack of advance warning signs prevents drivers from being aware of the upcoming intersection. It was recommended that a traffic signal be installed at this intersection.
- The intersection of RT 33 (Lewis Puller Memorial Highway), RT 17 (George Washington Memorial Highway), and RT 198 (Glenns Road). This intersection has a district priority rank of 36:
  - Recommendation from the 2012 LRTP: This intersection is a safety concern, as crashes at this location exceeded the planning threshold. It was recommended that pavement markings be added for the northbound left turns from RT 17 to RT 198. It was recommended that the entrance to the 7-eleven be relocated away from the intersection.
- The intersection of RT 17 (George Washington Memorial Highway) and RT 606 (Ark Road). This intersection has a district priority rank of 46.
  - Recommendation from the 2012 LRTP: This intersection is a safety concern, as crashes at this location exceeded the planning threshold. It was recommended that that this intersection continued to be monitored for potential improvements.

2018 LRTP Priority Intersections Recommendations

- The intersection of RT 14 (John Clayton memorial Highway) and RT 623 (Ware Neck Road). This intersection has a district priority rank of 98.

  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 198 (Dutton Road) and RT 602 (Burkes Pond Road). This intersection has a district priority rank of 138.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 618 (Cappahosic Road) and Poplar Pond Drive. This intersection has a district priority rank of 193.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The Intersection of RT 198 (Glenns Road) and RT 726 (Dogwood Trail). This intersection has a district priority rank of 221.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 610 (Davenport Road) and RT 612 (Millers Landing Road). This intersection has a district priority rank of 303.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 14 (John Clayton Memorial Highway) and RT 602 (Burkes Pond Road). This intersection has a district priority rank of 245.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 623 (Ware Neck Road) and RT 624 (Griffin Road). This intersection has a district priority rank of 288.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 606 (Ark Road) and RT 614 (Hickory Farm Road). This intersection has a district priority rank of 245.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- Intersection of RT 14 (John Clayton Memorial Highway) and RT 661 (Rangtang Road).
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- Intersection of RT 3/ RT 14 (John Clayton Memorial Highway) and RT 623 (Ware Neck Road).
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- Intersection of RT 618 (Cappahosic Road) and RT 614 (Hickory Fork Road).
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- Intersection of RT 614 (Hickory Fork Road) and RT 631 (Gum Fork Road).
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- Intersection of RT 614 (Hickory Fork Road) and RT 616 (Belroi Road).
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

Recommendations to Address Priority Roadway Segments

- Expansion of RT 198 (Glenns Road)
  - Recommendation: Recommend the expansion of RT 198 (Glenns Road) from RT 17 to RT 601 (Pampa Road) from a two-lane roadway to a four-lane roadway with a dividing median. This expansion is supported by the 2025 Virginia State Highway Plan. There is one intersection, the intersection of RT 198 (Glenns Road) and Dogwood Trail (RT 726), along this segment that has been identified as a potential safety improvement by VDOT.

- Expansion of RT 610 (as both Davenport Road and Pinetta Road)
  - Recommendation: Recommend the expanding the capacity that can be accommodated by RT 610 from the intersection of RT 17 and RT 610 to the intersection of RT 614 and RT 610. Increasing this roadway's capacity will assist in addressing future congestion issues that may be caused by the future opening of the National Park that will be located at Werowocomoco, along the York River.

6.3.3 King William County:

Priority Intersections and Roadway Segments Addressed by the 2012 MPPDC LRTP

Of the identified priority intersections in the VDOT Fredericksburg Office's Potential Safety Improvements database within King William County, the following intersections were addressed, along with corresponding recommendations, during the development of the 2012 MPPDC Long Range Transportation Plan:

- The intersection of RT 30 (Main Street) and 15th Street. This intersection has a district priority rank of 57.
  - Recommendation from the 2012 LRTP: This intersection is a safety concern, as poor intersection layout, missing roadway markings, the prevalence of freight vehicles, and adjacent commercial uses make vehicle crashes at this intersection a common occurrence. It was recommended that a stop bar and centerline marking be installed on both approaches of 15th Street and that signage be installed on the eastbound approach along 15th Street to warn cars that freight vehicles make wide right turns. It was also recommended to move entrance to the Valero gas station westward, away from the intersection.

2018 LRTP Priority Intersections Recommendations

- The intersection of US 360 (Richmond-Tappahannock Highway) and RT 618 (Mt. Pleasant Road). This intersection has a district priority rank of 97.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study because it was unlikely to be funded.

- The intersection of RT 611 (Venter Road) and RT 1201 (Newton Drive). This intersection has a district priority rank of 164.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of US 360 (Richmond-Tappahannock Highway) and RT 604 (Dabneys Mill Road). This intersection has a district priority rank of 204.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 30 (King William Avenue) and Euclid Boulevard. This intersection has a district priority rank of 204.

  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 30 (King William Road) and RT 611 (Venter Road). This intersection has a district priority rank of 204.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 30 (King William Road) and RT 607 (Beadles Road). This intersection has a district priority rank of 216.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of US 360 (Richmond-Tappahannock Highway) and RT 1210 (Oxford Lane). This intersection has a district priority rank of 221.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of US 360 (Richmond-Tappahannock Highway) and RT 605 (Mansfield Road). This intersection has a district priority rank of 232.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of US 360 (Richmond-Tappahannock Highway) and RT 647 (Mill Road). This intersection has a district priority rank of 263.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The Intersection of RT 606 (Commins Road) and Rosebud Run. This intersection has a district priority rank of 303.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 30 (King William Road) and RT 662 (Sharon Road). This intersection has a district priority rank of 185.
  - Recommendation: This intersection is currently being addressed through the addition of an offset right turn lane. The VDOT assigned project identification number or UPC number for this intersection is 109466.

Recommendations to Address Priority Roadway Segments

- Widen RT 608 (Upshaw Road)
  - Recommendation: Recommend widening RT 608 (Upshaw Road) from the intersection with US 360 to the intersection with RT 30 (a total length of 4.73 miles) to include wider travel lanes and a shoulder. This segment of RT 608 is currently too narrow to accommodate the increased level of traffic the road experiences due to new residential development. RT 608 has experienced 29 crashes from 2014 – 2018, one of which was fatal. RT 608 experienced a 2017 Annual Average Daily Traffic (AADT) of 530 vehicles between RT 607 (Beadles Road) and RT 600 (West River Road) and an AADT of 390 vehicles between RT 30 (King William Road) and RT 607 (Beadles Road). The following are specific recommendations presented by VDOT:
    - The horizontal curves are posted with advisory curve warning signs and supplemental advisory speed plaques. These curves can be negotiated at the posted advisory speed, however, chevron alignment signs are recommended at two locations, to enhance driver awareness and consequently mitigate off road crashes. Ideally, all trees/hazards within the clear zone would be removed. However, it is not always practical due to the limited right of way. Removal of trees would require the involvement of the County in contacting homeowners to determine their willingness to allow removal.
    - Installation of shoulder or centerline rumble strips to alert inattentive, drowsy, or sleeping drivers of lane departures could be beneficial. However, give the narrow width of the roadway this would require additional right-of-way to widen the roadway and/or extensive roadside modification.
    - High friction roadway surface treatments to reduce wet/icy weather crashes would be beneficial. However, given the low AADT and length of the roadway, such a treatment is unlikely. Spot treatments are an option, but no concentrations of wet/icy crashes were identified.
    - Shoulder widening and paving, as well as using a pavement shoulder wedge to promote safe recovery would be beneficial. However, this will require additional right-of-way and/or extensive roadside modification. A pavement wedge is recommended as a treatment during the next roadway paving schedule.
    - Widening lane widths to allow for installation of centerline markings and for lateral vehicle eccentricities would help vehicles stay in the correct lane. Nevertheless, centerline markings require a minimum of 18 feet of roadway width per VA

supplement to the 2009 Manual of Uniform Traffic Control Devices (MUTCD). Standard roadway lane widths are 12 feet. Widening the roadway to meet this standard will require additional right-of-way and/or extensive roadside modification.

- Increasing the curve radius at locations where curves have advisory speeds below the posted 40 mph speed limit will improve highway geometry. However, this will require additional right-of-way and/or extensive roadside modification.

- US 360 and RT 30 Central Garage Access Management
  - Recommendation: Recommend implementing access management measures to limit the number of ingress and egress points directly onto US 360 and RT 30 from commercial properties in Central Garage. From 2014 – 2018 there were 26 total crashes, one of which was a fatal crash at these ingress/egress points. The AADT volume in 2017 for US 360 north of the US 360/RT 30 intersection was 13,000 vehicles and 18,000 vehicles south of the intersection. Additionally, RT 30 through this intersection had an AADT of 4,800 vehicles. Furthermore, Central Garage is a growing commercial district, with the vast majority of these commercial properties providing ingress and egress to either US 360 or RT 30, which has become two of the most heavily trafficked roadways in King William County. This has created an increasing safety concern and, therefore, a project to address this concern is currently in the design development phase. The entire segment of RT 360 heading north from the Pamunkey River (Hanover County line) to the Mattaponi River (King & Queen County line) is currently underway and is projected to be completed by this time next year.

6.3.4 King and Queen County:

Priority Intersections and Roadway Segments Addressed by the 2012 MPPDC LRTP

- RT 33 (Lewis B. Puller Memorial Highway) and RT 14 (Buena Vista Road). This intersection has a district priority rank of 90.
  - Recommendation from the 2012 LRTP: This intersection is a safety concern due to intersection configuration. The intersection alignment, median openings, and turn lane lengths are all inadequate. It was recommended that an eastbound right turn lane be installed along RT 33, the westbound left turn lane along RT 33 be lengthened and to include turn lanes to the RT 14 crossovers.

- The intersection of RT 33 (Lewis B. Puller Memorial Highway) and RT 605 (York River Road). This intersection has a district priority rank of 164.
  - Recommendation from the 2012 LRTP: This intersection is a safety concern, as the east and westbound turn lanes along RT 33 are too short for the high-speed RT 33 accommodates. It was recommended to extend the east and westbound turn lanes and relocate the “intersection ahead” sign by 1,000 feet on both approaches.

2018 LRTP Priority Intersections Recommendations

- The intersection of RT 14 (Buena Vista Road) and RT 644 (Jonestown Road). This intersection has a district priority rank of 138.
  - Recommendation: This intersection is a safety concern due to intersection design, roadway geometrics that impair sightlines, and vehicle speeds. It is recommended that curve warning signs and 45 mph advisory signs be installed in advance of the intersection along RT 14 and chevrons be installed at the intersection.

- The intersection of RT 14 (Buena Vista Road) and RT 605 (Plain View Lane). This intersection has a district priority rank of 164.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 33 (Lewis B. Puller Memorial Highway) and RT 643 (Airport Road). This intersection has a district priority rank of 193.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 721 (Newton Road) and RT 619 (Owens Mill Road). This intersection has a district priority rank of 221.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 14 (The Trail) and RT 33 (Lewis B. Puller Memorial Highway). This intersection was not identified in the district priority rankings but was identified by County staff as being a safety concern due to roadway speeds on RT 33 and the freight vehicles turning onto RT 33 from RT 14.
  - Recommendation: In 2015, this intersection has studied by VDOT and new warning signs and rumble strips were added along this intersection. This plan recommends that King and Queen County, in collaboration with VDOT and the MPPDC, continuously monitor future vehicle collision at this intersection to determine whether these improvements adequately address safety concerns. This intersection experienced 18 crashes from 2014 – 2018. In 2017, RT 33 in this segment of road had an AADT of 15,000 vehicles and RT 14 had had an AADT of 1,400 vehicles (20% of which were freight vehicles). Westbound left turns can still occur east of the intersection on RT 601.

- The intersection of RT 14 (The Trail), RT 631 (Stevensville Road) and RT 633 (Mantua Road). This intersection was not identified in the district priority rankings but was identified by County staff as being a safety concern due to intersection configuration.

- Recommendation: This intersection experienced 3 crashes from 2014 – 2018. This segment of RT 14 has an AADT of 310 vehicles in 2017. This intersection was reviewed in 2015 where it was discussed prohibiting westbound left turns and channelizing the crossover. Westbound left turns would remain east of the intersection on RT 601 (Pear Tree Avenue).

Recommendations to Address Priority Roadway Segments

- Safety improvements along RT 33 (Lewis B. Puller Memorial Highway) from RT 686 (Ashby Road) to RT 643 (Airport Road).
  - Recommendation: This segment of RT 33 (0.8 miles) is a safety concern, as RT 33 is the most heavily trafficked roadway in the southern portion of King & Queen County and from 2014 – 2018 this segment experienced 20 vehicle crashes. RT 33 experienced an AADT of 15,000 vehicles while RT 643 had an AADT of 260 vehicles and RT 686 had an AADT of 45 vehicles. Recommend safety improvements by increased signage alerting drivers along RT 33 of upcoming intersections and installing turn lanes along the eastbound side of RT. Additionally, VDOT recommends relocating utility poles as part of future permitting; upgrading some guardrail locations as funding becomes available; and widening the roadway to accommodate turn lanes via a Two-Way Left Turn Lane (TWLTL).

- Safety improvements along RT 602 (Mt. Olive Road) from the intersection with RT 614 (Devils 3 Jump Road) to the Middlesex County line.
  - Recommendation: This road segment is a safety concern due to geometric conditions and inadequate pavement markings and way-finding signage. Recommend the installation of chevrons through the segment as necessary, movement markings, and way-finding signage.

6.3.5 Mathews County:

Priority Intersections and Roadway Segments Addressed by the 2012 MPPDC LRTP

Of the identified priority intersections in the VDOT Fredericksburg Office's Potential Safety Improvements database within Mathews County, the following intersections were addressed, along with corresponding recommendations, during the development of the 2012 MPPDC Long Range Transportation Plan:

- The intersection of RT 3 (Twiggs Ferry Road) and RT 198 (Buckley Hall Road). This intersection has a district priority rank of 48.
  - Recommendation from 2012 LRTP: It was determined that vehicles traveling southbound along RT 3 had difficulty turning onto RT 198 due to congestion. It was recommended to consider the installation of a turn signal at the intersection of RT 3 (Twiggs Ferry Road) and RT 198 (Buckley Hall Road).

- The intersection of RT 3 (Windsor Road) and RT 14 (John Clayton Memorial Highway). This intersection has a district priority rank of 90.
  - Recommendation from 2012 LRTP: It was determined that there is a safety concern at this intersection caused by short turn bays along RT 3. It was recommended that the existing turn bays along RT 3 be extended to current VDOT standards.

- The intersection of RT 198 (Buckley hall Road) and RT 3 (Windsor Road). This intersection has a district priority rank of 131.
  - Recommendation from 2012 LRTP: It was determined that there is a safety concern at this intersection that is caused by the horizontal curve along RT 3 as it approaches this intersection. It was recommended that RT 3 be straighten as it approaches this intersection to improve visibility.

2018 LRTP Priority Intersections Recommendations

- The intersection of RT 660 (East River Road) and RT 625 (Tick Neck Road). This intersection has a district priority rank of 232.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 223 (Cricket Hill Road) and RT 639 (Crab Neck Road). This intersection has a district priority rank of 245.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of 198 (Buckley Hall Road) and RT 631 (Chapel Lane). This intersection has a district priority rank of 245.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 198 (Buckley Hall Road) and RT 14 (Main Street). This intersection has a district priority rank of 303.
  - Recommendation: VDOT reviewed this intersection and has made the following recommendations:
    - Add only pavement markings to the Buckley Hall Road eastbound right turn lane. This will provide additional guidance to motorists of the required right turn at the intersection.
    - Install Intersection Lane Control signs on the Buckley Hall Road eastbound approach in order to provide advance notice of the lane configuration.

- Add a sign under the westbound Stop sign, “Traffic From Left Does Not Stop” (W4-4Bp), to alert motorists that the northbound traffic does not stop.
- Add a sign under the eastbound Stop sign, “Traffic From Left Does Not Stop” (W4-4Bp), to alert motorists that the northbound traffic does not stop.
- Remove the Divider Island. This will require realigning the stop bar and relocating the Stop sign to ensure that motorists have a clear view of the stop condition at the intersection.
- Until the Divider Island is removed, replace the existing Keep Right sign with a narrow “Keep Right” (R4-7c) so that the sign is with the edges of the Stop sign.
- Close the entrance/exit on RT 14 (Main Street) at the BP Gas Station (HY Co Market) since it is only approximately 32’ from the intersection with RT 14/RT 198. The two entrance/exits on RT 14/RT 198 would remain open to motorists. Closing the entrance/exit will allow for more efficient and safer movement of motorists by removing a conflict point that is immediately adjacent to the intersection.
- If a crosswalk is installed across the southern intersection leg, Pedestrian Crosswalk Signs are recommended.

- The intersection of RT 14 (John Clayton Memorial Highway) and RT 657 (Bookers Lane). This intersection has a district priority rank of 303.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 3 (Twiggs Ferry Road) and RT 701(Green Point Lane). This intersection has a district priority rank of 303.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 14 (John Clayton Memorial Highway) and RT 611 (Church Street). This intersection has a district priority rank of 193.
  - Recommendation: This intersection was recently reconstructed by VDOT.

Recommendations to Address Priority Roadway Segments

- RT 3 (Twiggs Ferry Road, Buckley Hall Road, Windsor Road) Expansion:
  - Recommendation: Recommend expanding RT 3 (along Twiggs Ferry Road, Buckley Hall Road and Windsor Road) from the Middlesex County line to the intersection of RT 3 (Windsor Road) and RT 14 (John Clayton Memorial Highway). This expansion should result in these sections of RT 3 becoming a 4 lane (48 feet wide) roadway with a dividing median. This recommendation is supported by the recommendations of both the 2025 Virginia State Highway plan and in the 2035 Virginia Surface Transportation Plan. This 4.5-mile segment of RT 3 serves as the primary connection from the southern portion of Mathews County to Middlesex County. This segment also has four intersections that have been identified as requiring potential safety improvements by the VDOT Fredericksburg District:

    1. Intersection of RT 3 and Green Point Lane
    2. Intersection of RT 3 and RT 198
    3. Intersection of RT 198 and RT 3 (Windsor Road).
    4. Intersection of RT 3 and RT 14

- RT 14 (John Clayton memorial Highway) Expansion:
  - Recommendation: Recommend expanding RT 14 (John Clayton Memorial Highway) from RT 3 (Windsor Road) to RT 198 (Buckley Hall Road). This expansion should result in this section of RT 14 becoming a 4 lane (48 feet wide) roadway with a dividing median. This recommendation is supported by the 2025 Virginia State Highway Plan. This 7-mile segment of RT 14 serves are the primary east to west corridor in southern Mathews County. This segment also has four intersections have been identified as requiring potential safety improvements by the VDOT Fredericksburg District:

    1. Intersection of RT 3 and RT 14
    2. Intersection of RT 14 and Brookers Lane (RT 657)
    3. Intersection at RT 14 and Church Street (RT 611)
    4. Intersection at RT 14 and RT 198

6.3.6 Middlesex County:

2018 LRTP Priority Intersections Recommendations

- The intersection of RT 602 (Old Virginia Street and RT 603 (Warner Road). This intersection has a district priority rank of 193.

  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 602 (Old Virginia Street and RT 676 (Remlik Drive). This intersection has a district priority rank of 221.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 603 (Farley Park Road) and RT 613 (Moss Swamp Road). This intersection has a district priority rank of 232.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 33 (General Puller Highway) and RT 624 (Regent Road). This intersection has a district priority rank of 245.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 3 (Twiggs Ferry Road) and RT 630 (Stampers Bay Road). This intersection has a district priority rank of 245.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 3 (Greys Point Road) and RT 33 (General Puller Highway). This intersection has a district priority rank of 263.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 33 (General Puller Highway) and RT 707 (Grafton Church Road). This intersection has a district priority rank of 263.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 33 (General Puller Highway) and RT 730 (Wood Brothers Road). This intersection has a district priority rank of 263.
  - Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 33 (General Puller Highway) and RT 654 (Gillim Road). This intersection has a district priority rank of 288.

- Recommendation: This intersection was reviewed by VDOT and it was determined that there was no need for an additional study due to the low district priority ranking.

- The intersection of RT 17 (Tidewater Trail) and RT 17 Business (Gloucester Road). This intersection has a district priority rank of 27.
  - Recommendation: This intersection is the southern intersection of RT 17 and Bus. 17 near the Hardees. RT 17 is a 4-lane divided highway with an ADT of 11,000 vehicles per day while Bus. 17 is a two-lane roadway with an ADT of 7,400 vehicles per day. Three-year crash data from 2016 – 2018 found four angle crashes that resulted in four injuries. Two of the crashes occurred in the northbound lanes and the other two occurred within the crossover. Taken this into consideration, VDOT recommends that updating the crossover signing to the current standards would be beneficial to motorists. A review of 2009 signal warrant analysis found that this intersection did not meet any of the traffic signal warrants. As traffic changes in the future, further analysis may be considered. Due to the change in grade elevation on the southbound approach, frequent mowing is recommended in order to maintain the sight distance.

Recommendations to Address Priority Roadway Segments

- RT 616 (Town Bridge Road) and RT 615 (Town Bridge Road) Expansion:
  - Recommendation: Recommend expanding capacity along RT 616 (Town Bridge Road) and RT 615 (Town Bridge Road). This roadway serves as one of two primary routes that connect the Town of Urbanna to RT 1. It also serves as the primary route to access the expanding Bethpage Camp-Resort for vehicles traveling along RT 17 from the south. This segment of Town Bridge Road is 2.5 miles long.

- RT 3 Norris Bridge Expansion:
  - Recommendation: Recommend expanding the Norris Bridge to a 4-lane roadway. This expansion would encompass 1.92 miles. This recommendation is supported by the 2035 Virginia Surface Transportation Plan. The RT 3 Norris Bridge serves as the only connection between the southern counties of the Middle Peninsula and the counties of the Northern Neck. The only other connection between the Middle Peninsula and the Northern Neck is the Downing Bridge in Tappahannock, roughly 40 miles north of the Norris Bridge.

- RT 3 from Mathews County to RT 33 Expansion:
  - Recommendation: Recommend expanding RT 3 to a 4 lane (48 feet wide) roadway with a dividing median. This expansion is a recommendation in the 2025 Virginia State Highway Plan. One intersection along this segment of RT 3, the intersection of RT 3 and Stampers Bay Road (RT 630), has been identified as a potential safety improvement by VDOT. In 2017, this segment of RT 3 had an

AADT of 6,200 vehicles. This segment is roughly 3 miles and serves as the connecting route from Mathews County to RT 33 in Middlesex County.

- RT 3 from RT 33 to the Norris Bridge Expansion:
  - Recommendation: Recommend expanding RT 3 to a 4 lane (48 feet wide) roadway with a dividing median. This expansion is a recommendation in the 2025 Virginia State Highway Plan. in 2017, this segment of RT 3 had an AADT of 6,900 vehicles. This segment is roughly 4 miles long and connects RT 33 to the Norris Bridge.

6.4 Public Transportation

The analysis of the region's existing public transportation system was conducted primarily through an analysis of disadvantaged population groups in the region, Bay Transit fiscal year 2017 ridership data and a review of the services and capacity that Bay Transit currently offers. The recommendations of this plan are also aided by the contents of Bay Transit's "Transit Development Plan" (TDP) for the fiscal years 2016 through 2021 and by the contents of the Coordinated Human Service Mobility Plan for the Middle Peninsula that was conducted by the Virginia Department of Rail and Public Transportation (DRPT).

6.4.1 Recommendations for Bay Transit

Bay Transit, in partnership with other regional organizations, is exploring the possibility of providing additional fixed-route services, increased demand responsive services, and increased hours of operations in the future to meet the high transit demands of the Middle Peninsula region. The staff of Bay Transit and several stakeholders have identified the potential need in the region for the initiation of additional fixed-route services. The review of disadvantaged population groups determined that there is limited access to public transportation by these populations, other than by demand-responsive service. There are several census tract block group areas that had a high portion of one or more transportation disadvantaged groups. The addition of fixed-route or flexible fixed-route transit service along the principal arterials within the region would provide better mobility and access to and from these areas and populations. The following are recommendations of locations for future fixed route service in the region:

- Recommendation: Extend the proposed deviated fixed route service along RT 17 from Gloucester Point to Gloucester Courthouse north to Saluda and Urbanna in Middlesex County along RT 17, RT 33 and RT 227. In Bay Transit's recent TDP plan, Gloucester County was identified as having the highest overall population density, the highest population density of low income and unemployed persons, and among the highest population density of elderly persons. Additionally, Middlesex County was identified as having a modest overall population density and moderately high population density of elderly and low-income persons. This proposed deviated fixed route service is located along RT 17, the region's only Corridor of Statewide Significance and a roadway that has a heavy concentration of retail and employment facilities. This roughly 21.5-mile extension from Gloucester Courthouse to Urbanna would connect the northern Gloucester County along with the Saluda and Urbanna to the employment, retail, and healthcare facilities (Riverside Walter Reed Hospital is located on RT 17 just north of

Gloucester Courthouse) of the urbanized RT 17 corridor in southern Gloucester.

The demand-responsive service provided by Bay Transit is a vital service offered in the mostly rural areas of the region because it offers transportation services to those with no other means of travel to necessary trip destinations. The following are recommendations of how to improve demand-responsive service in the region:

- Recommendation: Extend service hours of demand-responsive service region wide to evening hours to better serve transit dependent residents of the Middle Peninsula.
- Recommendation: Increase capacity for demand-responsive service in throughout Mathews County, which has a high concentration of elderly and disabled residents, had over 1,000 non-accommodations during 2017, and the majority of the county was identified as having a high or very high transit dependency.
- Recommendation: Increase capacity for demand-responsive service along the US 360 corridor in northern King William County, northern King and Queen County, and in Essex County in and around the Town of Tappahannock. Collectively, the three counties accounted for over 3,000 non-accommodations in 2017 and the US 360 corridor has a concentration of multiple disadvantaged population groups. Additionally, the majority of population growth in these three counties is projected to take place along the US 360 corridor.

6.4.2 Recommendations for all Middle Peninsula Public Transportation Stakeholders

The following recommendations are strategies that Middle Peninsula public transportation stakeholders (Bay Transit, MPPDC, Middle Peninsula localities, major employers, healthcare facilities, etc.) can use to improve public transportation conditions, coordination and access throughout the region:

- Recommendation: Create a Rural Public Transportation Taskforce that comprises of citizens, elected officials and representatives from Bay Transit, MPPDC, major employers, and healthcare facilities. This taskforce should be responsible for coordinating public transportation efforts across the region and for fostering cooperation and collaboration across the spectrum of stakeholders.
- Recommendation: This Rural Public Transportation Taskforce should develop a regional marketing campaign to educate officials, the business community, and the general public on the important role that transportation services in creating opportunities for economic development, personal savings, and environmental responsibility.

6.5 Airports

Increased airport activity, growth and airport related travel could have a measurable impact on the Middle Peninsula's overall transportation system. Though the Middle Peninsula has no commercial airports in the region, there are two international airports (Richmond International and Newport News/Williamsburg International) located within close proximity. Within the region, two general aviation airports (Tappahannock-Essex County Airport and the Middle Peninsula Regional Airport) are projected to increase air traffic by 3% from 2012 to 2037. This increase in air traffic could result in an increase in vehicle traffic, both passenger and freight, along the roadways that connect these facilities to the

region's primary routes. This plan recommends that the region work to foster a close connection between the region's goods producers and the commercial airports located adjacent to the region, and to monitor the secondary roadways that connect growing airports to the region's primary routes for an increase in vehicle traffic.

6.6 Goods Movement

The counties and towns of the Middle Peninsula have established a desire to direct most new industrial and commercial development towards the existing development in order to maintain the predominantly rural land uses throughout the counties as well as to utilize the current infrastructure such as water and sewer service and the transportation network. Key truck freight corridors will likely continue to include the major arterials and collectors in the region, US 17, US 360, VA 3, VA 14, VA 30, and VA 33, due to their access to I-64. Additionally, the future expansion of the Governor Harry Nice Memorial Bridge along RT 301, which crosses the Potomac River and provides a connection from Virginia to Maryland, could have a significant impact on vehicle and freight travel along RT 17 in the Middle Peninsula, as RT 17/RT 301 becomes a more attractive north/south alternative to I-64/I-95 for passenger and goods movement from Hampton Roads to the northern states of the Mid-Atlantic. This plan recommends continuing to locate new industrial and commercial development within areas adjacent to existing development to maximize the utilization of current infrastructure and to monitor the RT 17 corridor for an increase in vehicle and freight traffic once the expansion of the Governor Harry Nice Memorial Bridge is complete. If a substantial increase in traffic occurs, the region will need to conduct an in-depth study and analysis of ways to accommodate this growth along the region's sole Corridor of Statewide Significance.

The transfer of some goods shipments from roadway to rail has the potential to strengthen rail freight services offered, while also reducing the number of long-haul tractor-trailers trips and preserving or possibly enhancing roadway levels of service. However, due to the limited rail network in the Middle Peninsula, this is not a likely possibility without substantial improvements to the intermodal transportation infrastructure. However, the Middle Peninsula's competitiveness in coastal and production industries could be enhanced by implementing improvements to intermodal infrastructure to creating a connection between roadway, rail, and water freight movement. A public intermodal facility established on the Middle Peninsula could be a more effective link between transportation modes by providing a centralized point for cargo transfer and allow goods producers to access to alternative markets. The region's Multimodal Freight Operations Study has identified southern King William County as the ideal location for such a facility. This location would produce a facility that would have:

- Direct access to the Pamunkey and York Rivers
- No navigation obstacles constraining vessel or barge operations
- Proximity to RT 30 and RT 33, as well as being located only 8 miles from I-64
- On-dock rail access

- The required acreage to support the facilities footprint

The conceptual intermodal facility would serve as a transportation and loading site, able to accommodate agriculture and timber industries' commodities as well as the region's sizable seafood products with the proper facilities. This plan supports the recommendation of the Multimodal Freight Operations Study to locate and construct a public intermodal facility in the southeast section of the Town of West Point in southern King William County through working with local, state and federal stakeholders and funding authorities.

6.7 Bicycle and Pedestrian Facilities and Safety

In addition to the severe lack of bicycle and pedestrian infrastructure and facilities available on the Middle Peninsula, the Middle Peninsula also lacks current, thorough, strategic, and coordinated bicycle and pedestrian planning, as known as active transportation planning. In response, the primary active transportation recommendation of this plan is the development of increased active transportation planning in the Middle Peninsula.

6.7.1 Regional Active Transportation Planning

The current regional active transportation plan, the 2004 Middle Peninsula Regional Bicycle Facility Plan, requires an update. This plan is severely dated and is limited in scope, as it does not include planning for pedestrian improvements. This plan recommends the development of an updated, regional comprehensive active transportation plan for the Middle Peninsula. The development of this regional plan should incorporate the contents of the current plan, the 2004 Middle Peninsula Regional Bicycle Facility Plan, and follow the recommended guidelines:

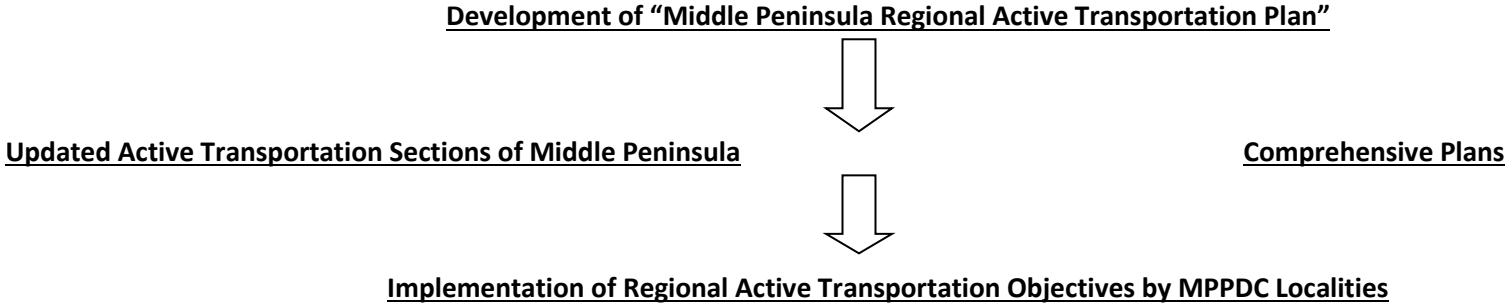
- The recommendations should be consistent with two overall objectives:
    1. Increasing access to safe and active transportation throughout the towns and activity centers of the Middle Peninsula.
        - This objective should focus on analyzing and developing recommendations that create a system of small connective paths throughout the region's towns and activity centers. The primary goal of this objective is to encourage active transportation as a viable option in the region's towns by providing adequate facilities.
    2. Create an integrated and connected regional system of bicycle and pedestrian infrastructure.
        - This objective should focus on creating a regional active transportation system that not only connects the region and expands transportation options, but also increases public health and promotes tourism. This objective has three goals:
            - Establish a regional multi-use path along the RT. 17 corridor from Gloucester Courthouse to Tappahannock. This multi-use path would serve as the primary route of the region's active transportation system.
            - Create a system of secondary routes that connect the region's towns and activity centers to the RT.17 Multi-Use Path. This can be accomplished by establishing highly visible safety signage, in addition to bike lanes, sharrows or expanded shoulders, along

the identified secondary routes. Special consideration should also be given to roadways that would connect the RT 17 Mutli-Use to parks, recreational facilities and historic sites.

- Create a regional marketing campaign to advertise the region's active transportation and outdoor recreation facilities as well as the amenities that the region provides, such as bike shops, lodging, historic sites, scenic areas, parks, trail heads, etc.

6.7.2 Local Active Transportation Planning

The second recommendation of this plan is the enhancement and expansion of the active transportation section of each locality's Comprehensive Plan by incorporating the findings and recommendations of the updated regional active transportation plan. The current active transportation sections found in the Comprehensive Plans of Middle Peninsula communities are extremely limited, with multiple counties making no mention of active transportation in their Comprehensive Plan. By developing a thorough active transportation section that examines the existing bicycle and pedestrian infrastructure and includes the recommendations of an updated regional plan, Middle Peninsula localities will have a much greater likelihood of success in securing funding for active transportation improvements in the future. Additionally, by creating an active transportation plan that targets specific area's for bicycle and pedestrian facility improvements, the Comprehensive Plan of each locality will become a guiding document that can be used to enact land use changes and introduce new development requirements that will also result in an increase in active transportation infrastructure. Overall, developing a well-rounded and thorough active transportation section will enhance the ability of Middle Peninsula localities to implement the objectives of the regional active transportation plan.



6.8 Waterways

Preserving the navigability of the region's waterways is vital not only because the waterways are a valuable part of the integrated transportation system, but also because the waterways play a key role in supporting local business and are a backbone of the region's economy. However, preserving the region's waterways will require proactive planning and the procurement of local, state and federal resources. In response, this plan has created an inventory of at-risk waterways and analyzed the commercial value and, when available, associated dredging costs of each at-risk waterway. Using this analysis, along with local input collected through public outreach, this plan has created a list of priority and secondary dredging projects for the region.

6.8.1 Priority Waterways for Future Dredging

- Davis Creek, Mathews County: Davis Creek has been identified as a priority waterway for dredging because of its conditions, it is shoaled in, and its commercial value and cost effectiveness. Located on the Mobjack Bay, Davis Creek plays an important role in the marine employment and water-based travel of southern Mathews County, as it is home to three Working Waterfronts facilities and was one of the four most commonly identified waterways requiring dredging by the public. The Army Corps of Engineers has estimated that Davis Creek would require a seven-year dredging cycle, with an average annual dredging cost of $105,000.
- Winter Harbor, Mathews County: Winter Harbor has been identified as a priority waterway for dredging because of its conditions, it is shoaled in, and its commercial value and cost effectiveness. Facing the Chesapeake Bay, Winter Harbor plays an important role in the marine employment and water-based travel of Mathews County, as it is home to three Working Waterfronts facilities and was one of the four most commonly identified waterways requiring dredging by the public. The Army Corps of Engineers has estimated that Winter Harbor would require a seven-year dredging cycle, with an average annual dredging cost of $105,000.
- Aberdeen Creek, Gloucester County: Aberdeen Creek has been identified as a priority waterway for dredging because of its conditions, it is shoaled in, and its commercial value. Located at the mouth of the York River, Aberdeen Creek plays an important role in the marine employment and water-based travel of Gloucester County. It is home to one Working Waterfronts facility and was one of the four most commonly identified waterways requiring dredging by the public. The Army Corps of Engineers has estimated that Aberdeen Creek would require an eight-year dredging cycle, with an average annual dredging cost of $93,000.
- Horn Harbor, Mathews County: Unlike the other priority waterways, Horn Harbor was identified as only being shoaled in at its entrance. However, a shoaled entrance greatly restricts the navigable and functionality of a waterway and Horn Harbor plays an important role in the region as it is home to three Working Waterfront facilities and was one of the four most commonly identified waterways requiring dredging by the public. Horn harbor is located in southern Mathews County and faces the Chesapeake Bay. The Army Corps of Engineers has estimated that Horn Harbor would require a seven-year dredging cycle, with an average annual dredging cost of $80,000, making it the most cost-effective priority dredging project.

6.8.2 Secondary Waterways for Future Dredging

- Hole in the Wall, Mathews County: Hole in the Wall has been identified as a secondary waterway in terms of prioritization because the waterway is shoaled in and was one of the four most commonly identified waterways that require dredging by the public input survey. However, the Army Corps of Engineers did not include dredging estimates for Hole in the Wall and the MPPDC's Working Waterfronts report did not identify any working waterfronts infrastructure located on Hole in the Wall. Without dredging estimates, or identified commercial infrastructure, it is difficult to determine the cost effectiveness of dredging Hole in the Wall and the associated return on investment in terms of preserving water-based employment. This plan recommends a preliminary study be conducted on the role that Hole in the Wall plays in the region's water-based transportation system and on the estimated cost of dredging. This study will provide the region with the necessary information it requires to determine whether future dredging at Hole in the Wall should be pursued.

6.8.3 *Waterways to Continuously Evaluate*

- Perrin River, Gloucester County: Perrin River has a significant presence of commercial activity as it is home to six identified working waterfront facilities. Perrin River was also identified as having a stable entrance but experiencing shoaling at the river's terminus. Due to the key commercial role the waterway plays in the region, it will be important for the effects and rate of shoaling on the Perrin River to be continuously monitored, as a significant increase in shoaling could jeopardize the commercial functionality of its waterways.
- Sarah Creek, Gloucester County: Sarah Creek also plays an important role in the region's water-based employment as it is home to three working waterfront facilities. Sarah Creek has a stable entrance but a terminus that is experiencing shoaling. The effects and rate of shoaling on Sarah Creek should be continuously monitored.
- Urbanna Creek, Middlesex County: Urbanna Creek plays a key role in the water-based employment of Middlesex County, as it is home to two working waterfronts facilities. Similar to the Perrin River and Sarah Creek, Urbanna Creek has a stable entrance but a shoaling terminus. Because of this, the effects and rate of shoaling on Urbanna Creek should be continuously monitored.
- Blackwater Creek, Mathews County: Though Blackwater Creek was not identified within the USCG report on shoaling conditions in the Chesapeake Bay or the MPPDC Working Waterfronts report, Blackwater Creek was identified in the public input survey as a being affected by shoaling, as well as being home to a commercial marina. Due to a lack of information available on this waterway within the reports utilized in this plan, it will be important for local, regional, and state organizations to monitor the effects of shoaling on Blackwater Creek and evaluate the commercial uses that are at risk along this waterway.

6.9 Travel Demand Management

Managing the transportation demands of a rural, six county region, which features commuting patterns unlike any other region in the Commonwealth, has created unique challenges for the Middle Peninsula. In response, these unique challenges must be met with unique solutions. This plan recommends the following strategies to increase transportation demand management in the region with the ultimate goal of reducing the number and length of vehicle trips within, and out of, the Middle Peninsula:

- Support the following efforts to implement the recommendations of the MPPDC TDM Plan for FY2016-FY2021
    - The Virginia Department of Rail and Public Transportation has agreed to provide regional Transportation Demand Management Programs with an upgraded, online ride matching software. This will allow for MidPenRideShare to more effectively match commuters with similar destinations.
    - King and Queen County was awarded Smart Scale funding from Virginia Department of Transportation to construct a Business Telework Center, located along King and Queen County's Technology Corridor. Other localities in the region should pursue similar projects, as telework centers can reduce the need for long distance commuting and can spur business creation and innovation.
    - The Middle Peninsula has established a new regional economic development organization, the Middle Peninsula Economic Development Resource Organization. This organization should create a comprehensive economic development strategy for the region.

- The MPPDC should commission a study on the causes of the Middle Peninsula's out-commuting rate with an analysis of the effects that out-commuting has on the region's transportation system and regional economy. By defining the cause and effects of the region's out-commuting, Middle Peninsula policy makers will be equipped to develop innovation solutions.
- The MPPDC should establish the Middle Peninsula as an "Economic Development District" (EDD) by the Economic Development Authority (EDA). An EDD distinction will allow the region to qualify for the economic development programs and funds administered by the United States EDA.
- The region should continue to advocate and strive for enhanced broadband connection in order to promote business development, attraction, and retention in the Middle Peninsula.