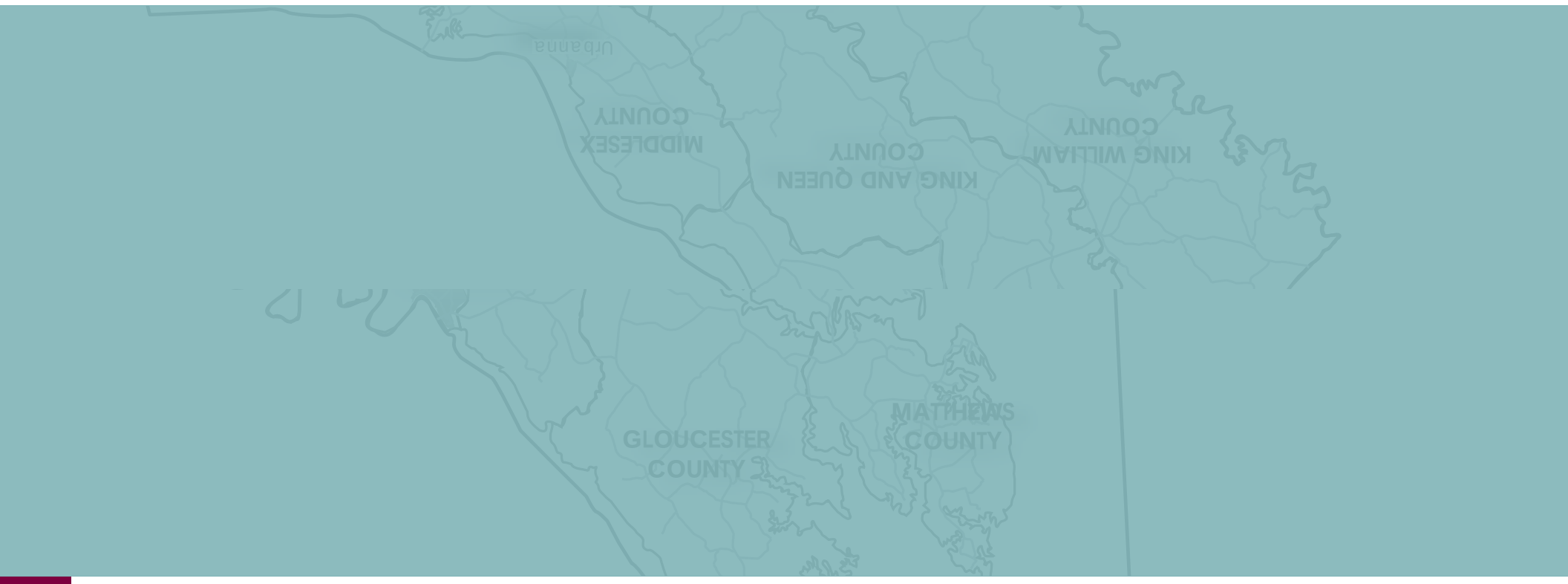
2012

2035 REGIONAL LONG RANGE TRANSPORTATION PLAN
MIDDLE PENINSULA PLANNING DISTRICT COMMISSION



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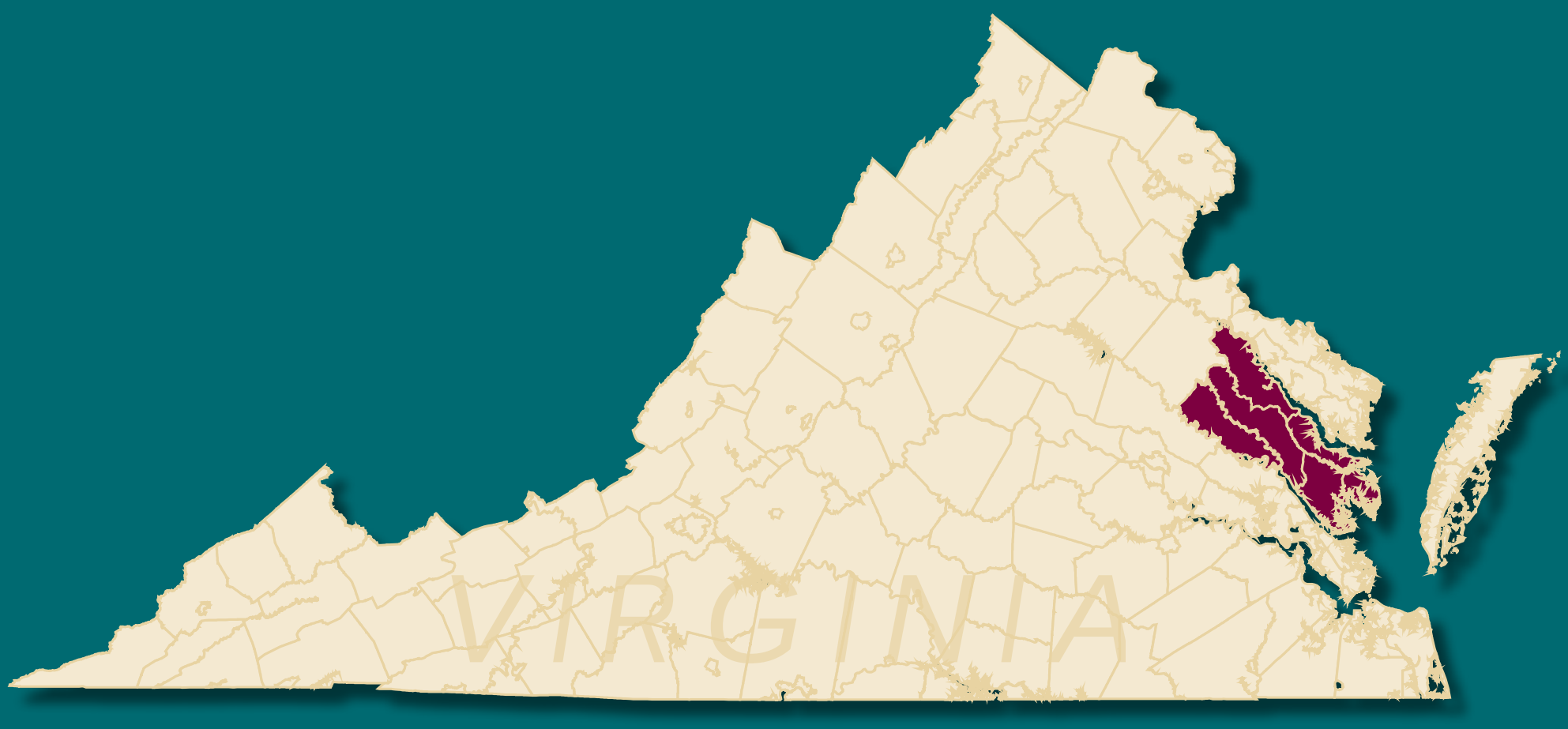
Middle Peninsula Planning District Commission

2035 RURAL LONG RANGE TRANSPORTATION PLAN

VDOT Virginia Department of Transportation

MIDDLE PENINSULA PLANNING DISTRICT COMMISSION



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INTRODUCTION & PURPOSE

The Transportation and Mobility Planning Division (TMPD) of the Virginia Department of Transportation (VDOT) has worked with other modal agencies to develop *VTrans 2035*, the Commonwealth's multi-modal long range plan and a more detailed subset report known as the *2035 Surface Transportation Plan*. The highway element of the *2035 Surface Transportation Plan* includes proposed improvements on Virginia's federal functionally classified roadways. This *Regional Long Range Transportation Plan* is one piece of the 2035 Plan. VDOT, Virginia's Planning District Commissions (PDC), and the local governments they represent, are partners in the development of this new initiative to create regional transportation plans in rural and small urban areas that complement those in Virginia's metropolitan areas.

The transportation system within the rural areas for each 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. Some of the PDCs contain urbanized areas whose transportation needs are coordinated by a Metropolitan Planning Organization (MPO). 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.

Each rural regional plan has a horizon year of 2035 and addresses the anticipated impacts of population and employment growth upon the transportation system. This plan will be reviewed and updated as needed. Each rural plan was developed as a vision plan, addressing all needs of the transportation system studied regardless of anticipated funding availability. It is envisioned that each regional 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.

STUDY APPROACH

- Development of regional transportation goals and objectives,
- Public involvement,
- Data compilation and collection,
- Data analysis,
- Identification of transportation deficiencies and recommendations, and
- Environmental and cost reviews.

OVERVIEW OF THE REGION

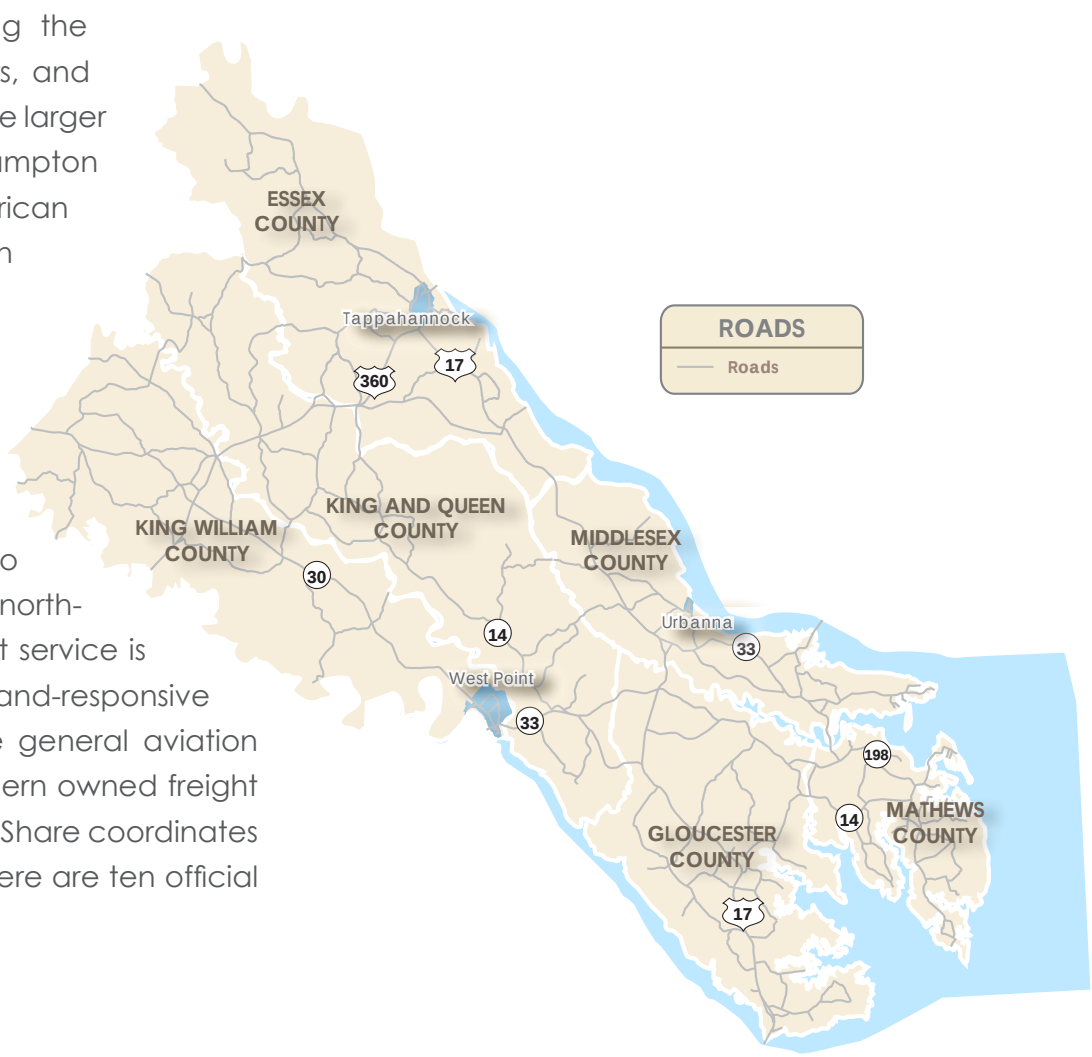
Description and Function of the Middle Peninsula Planning District Commission

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.

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-south corridors are US 17 and VA 14. Fixed-route transit service is not available in the region; Bay Transit provides demand-responsive service. There are no commercial airports and three general aviation airports in the region. There is a spur of a Norfolk Southern owned freight rail line to West Point in King William County. MidPenRideShare coordinates travel demand management services in the region. There are ten official VDOT maintained park and ride lots within the region.

Fixed-route transit is not available in the region; Bay Transit provides demand-rsponsive service.



Goals and Objectives

Needs for each regional plan were developed based on regional and statewide goals and objectives. Similar concepts within the goals of the PDCs were identified and used to shape common regional long range plan goals (at right) to address rural transportation planning across the Commonwealth. A basic goal for all transportation programs in Virginia is the provision for the effective, safe, and efficient movement of people and goods. The plan for the MPPDC was developed with this primary goal in mind, along with other goals including consideration for environmental issues and local travel desires. Each PDC developed transportation goals and objectives that were used to guide the development of the Rural Long Range Transportation Plan for their area. Goals for the MPPDC include:

GOAL 1 Support the economic vitality of the region, especially by enabling global competitiveness, productivity, and efficiency.

GOAL 2 Increase the safety of the transportation system for motorized and non-motorized users.

GOAL 3 Increase the security of the transportation system for motorized and non-motorized users.

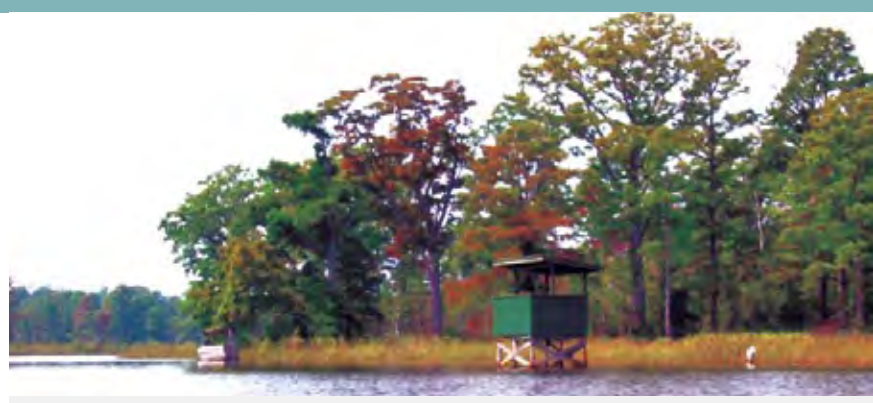
GOAL 4 Increase the accessibility and mobility of people and freight.

GOAL 5 Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvments and state and local planned growth and economic development patterns.

GOAL 6 Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.

GOAL 7 Promote efficient system management and operation.

GOAL 8 Emphasize the preservation of the existing transportation system, where appropriate.



Common Rural Long Range Plan Goals

In addition to the regional goals, a number of goals have been developed to address rural transportation planning across the Commonwealth. These were developed using input from each of the 20 PDCs in Virginia that include rural areas within their boundaries. These goals are consistent with those of *VTrans 2035* and are listed below:

GOAL 1 Enhance the connectivity of the existing transportation network within and between regions across all modes for both people and freight.

GOAL 2 Provide a safe and secure transportation system.

GOAL 3 Support and improve the economic vitality of the individual regions by providing access to economic opportunities, such as industrial access or recreational travel and tourism, as well as enhancing intermodal connectivity.

GOAL 4 Ensure continued quality of life during project development and implementation by considering natural, historic, and community environments, including special populations.

GOAL 5 Preserve the existing transportation network and promote efficient system management in order to promote access and mobility for both people and freight.

GOAL 6 Encourage land use and transportation coordination, including but not limited to, development of procedures or mechanisms to incorporate all modes, while engaging the private sector.

DEMOGRAPHIC AND LAND USE TRENDS

Relationship of Land Use and Development to Transportation

Rural counties throughout the Commonwealth and in the MPPDC are working either to seek new economic growth and diversification or to balance growth, while striving to preserve the rural character of the landscape. Most of the land in these counties is in agricultural or forested use, with more intensive land use in the towns and village centers, typically at the intersection of two roadways. There is a broad spectrum in the amount of growth and land use changes that is occurring throughout the Commonwealth and in the MPPDC, based particularly on proximity to urban areas. Many of the rural counties are trying to direct any 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, which is the case in the Middle Peninsula region. As the population fluctuates, either through in- or out-migration or shifting within the region, the needs of the communities - including education, health care, social services, employment, and transportation - shift and fluctuate as well. 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.

Population trends have implications for the transportation network of any geographic area.

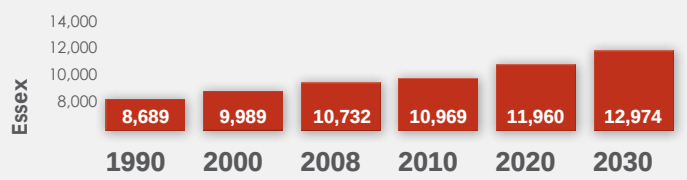
The Middle Peninsula's proximity to Fredericksburg, Richmond, and the Hampton Roads region has affected the land use, development, and population and employment growth in parts of the region. The counties which lie on the urban boundaries, Gloucester and King William, have experienced the most population growth and the associated development and land use changes.

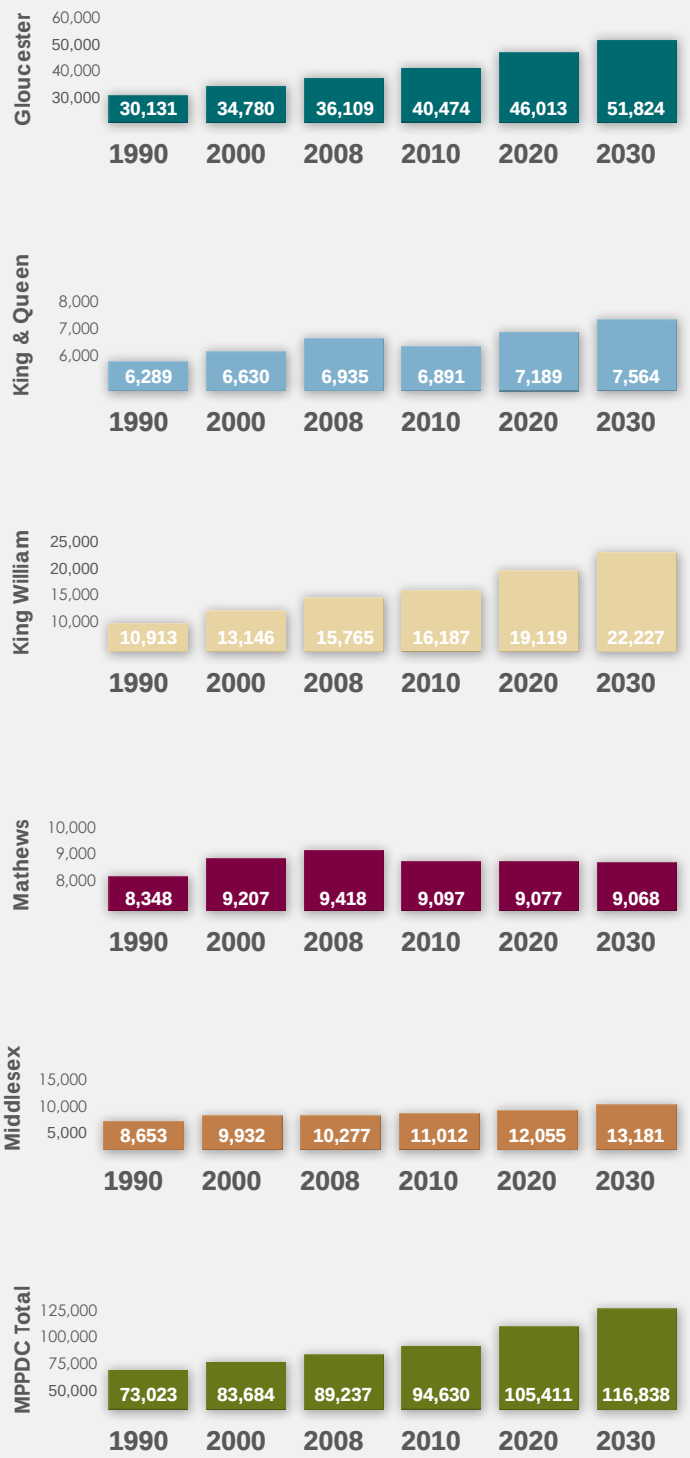
Population Trends

The Middle Peninsula region has experienced steady population growth, which is expected to continue. Total population was estimated in 2008 at 89,237. Beginning in the 1970s, Gloucester County population began to grow more rapidly than the other counties, rising from 30 percent of the region's population to just over 40 percent by 2008. This trend is expected to continue. By 2030, only Mathews County is expected to have minimal growth. Gloucester and King William Counties are expected to have the most growth by 2030 of 43 percent and 41 percent, respectively.

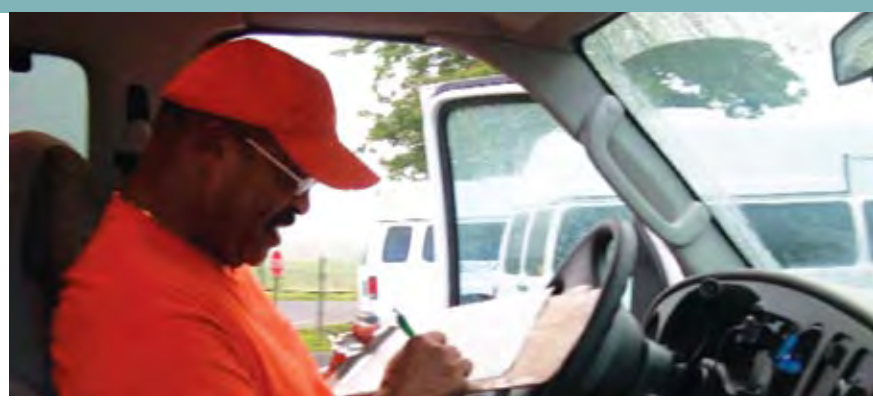
Population trends have implications for the transportation network of any geographic area. Improvements to the network are needed because mobility and safety are affected by increases in population. In the case of the Middle Peninsula, increasing pressure on the network has already resulted in changes 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.

Total Population Over Time





Disadvantaged groups
studied include
low-income, minority, elderly,
and people with disabilities,
as defined by the US Census.



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 2000 US Census, Essex and King and Queen Counties had a minority population percentage higher than that of the state (29.9 percent). In 2000, Essex, King and Queen, and Middlesex Counties had low-income populations above the state percentage of 9.6 percent. The portion of the population with disabilities in all jurisdictions, except King William County, is above the state percentage of 18.1 percent. All of the jurisdictions have elderly populations in a higher proportion than the state in 2000 (11.2 percent).

Transportation Implications

US Census data from 2000 was reviewed at the block group level in order to provide enough detail to assess possible areas of service expansion for fixed-route and demand-responsive transit. Any segment of the population without an available vehicle, which can include elderly, people with disabilities, and low-income groups, is more dependent on demand-responsive transit in rural areas than in urban areas. This is due to the smaller network of fixed-transit routes in rural areas when compared to urban areas. The MPPDC, in conjunction with the Virginia Department of Rail and Public Transit (DRPT)'s statewide effort, recently completed a Coordinated Human Service Mobility (CHSM) Plan which assessed the mobility needs of these target populations. The need for additional demand-responsive transit and, in some cases, determining a single point of contact for providers, are both needs that are being identified throughout the Commonwealth.

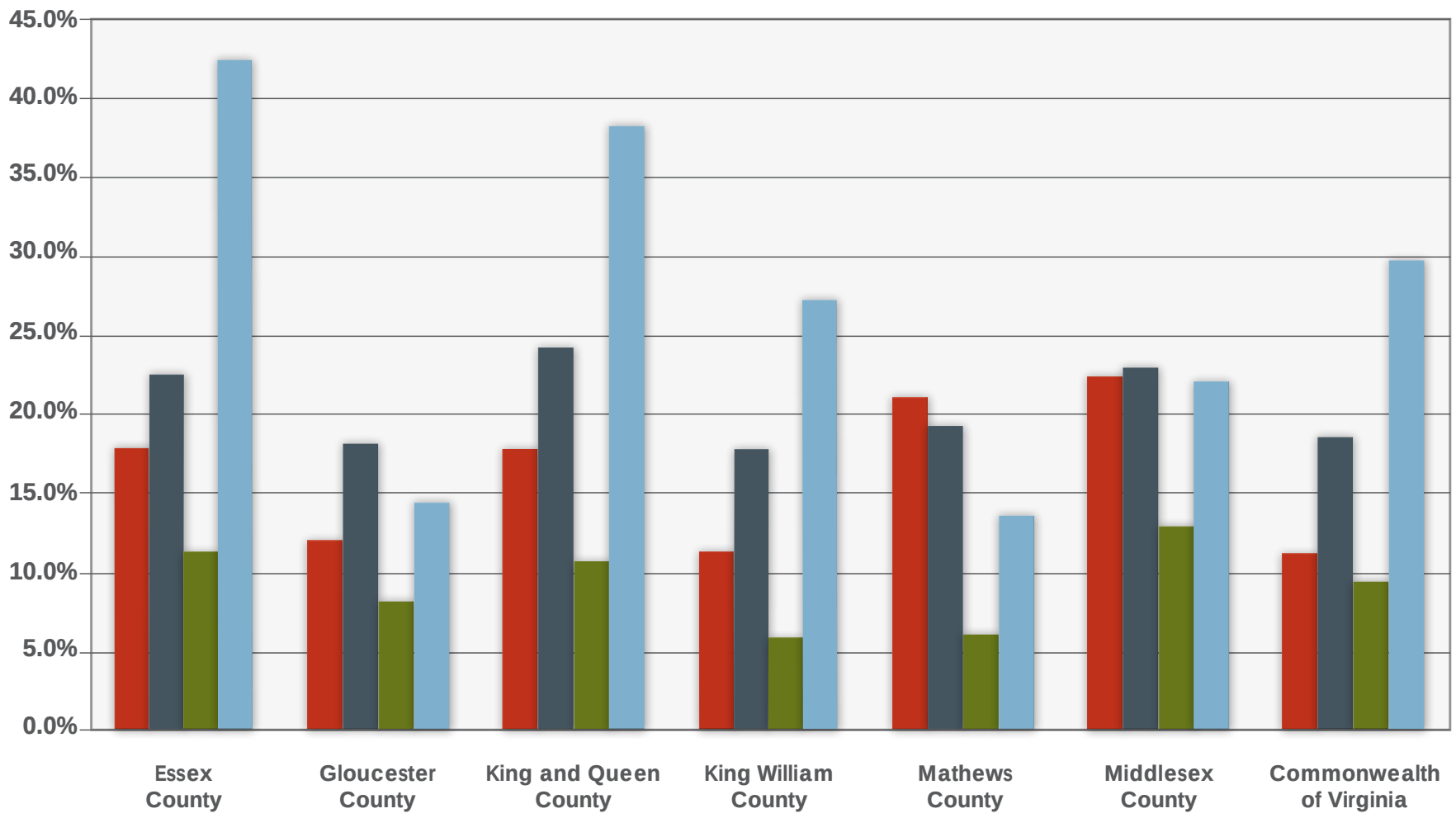
In the 2000 US Census, Essex and King and Queen Counties had a minority population percentage higher than that of the state (29.9 percent).

LEGEND

- Elderly
- Disability
- Low-Income
- Minority

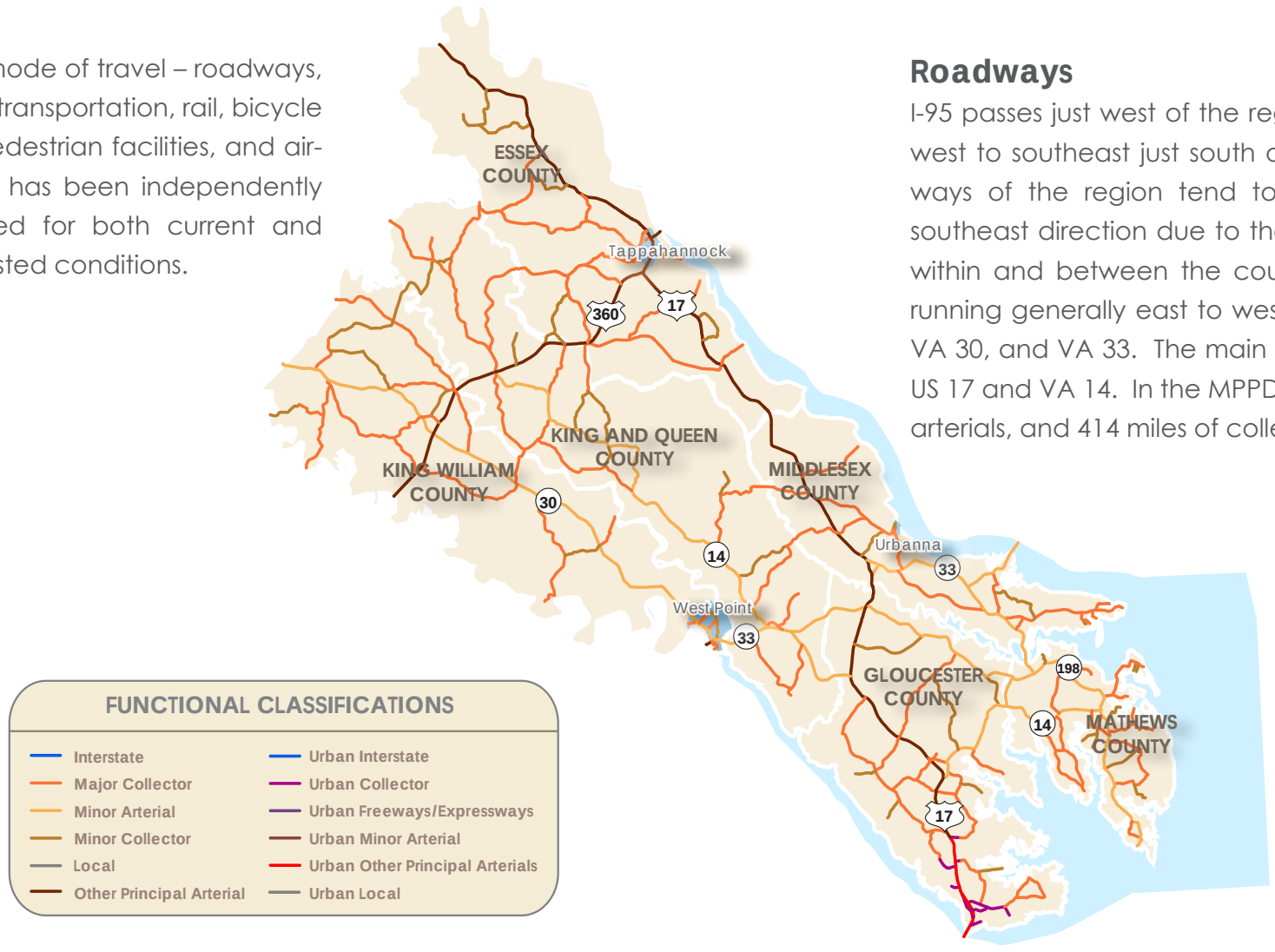
Source: US Census, 2000. Note: People with disabilities is based on the population over 5 years of age. Low-income is a percentage of the population for whom poverty is determined.

Elderly, Disability, Low-Income, and Minority Populations in the Middle Peninsula PDC



REGIONAL TRANSPORTATION SYSTEM

Each mode of travel – roadways, public transportation, rail, bicycle and pedestrian facilities, and airports – has been independently analyzed for both current and forecasted conditions.



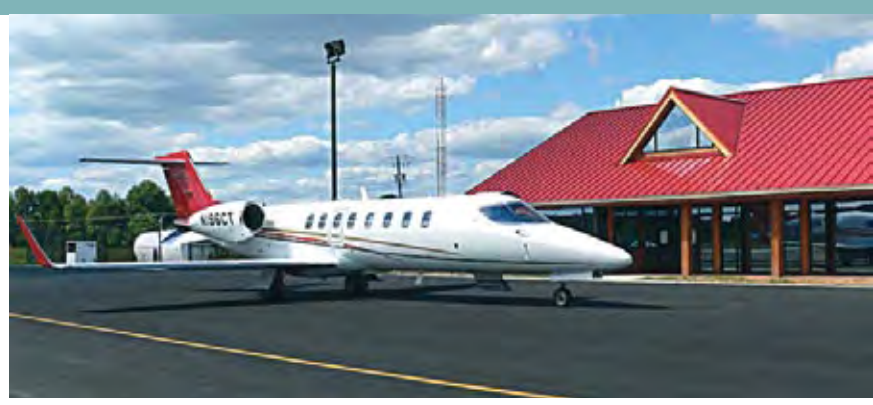
Roadways

I-95 passes just west of the region and I-64 runs northwest to southeast just south of the region. The roadways of the region tend to run in a northwest to southeast direction due to the location of waterways within and between the counties. 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.

Demand-responsive transit is provided by Bay Aging, a non-profit organization, through Bay Transit.

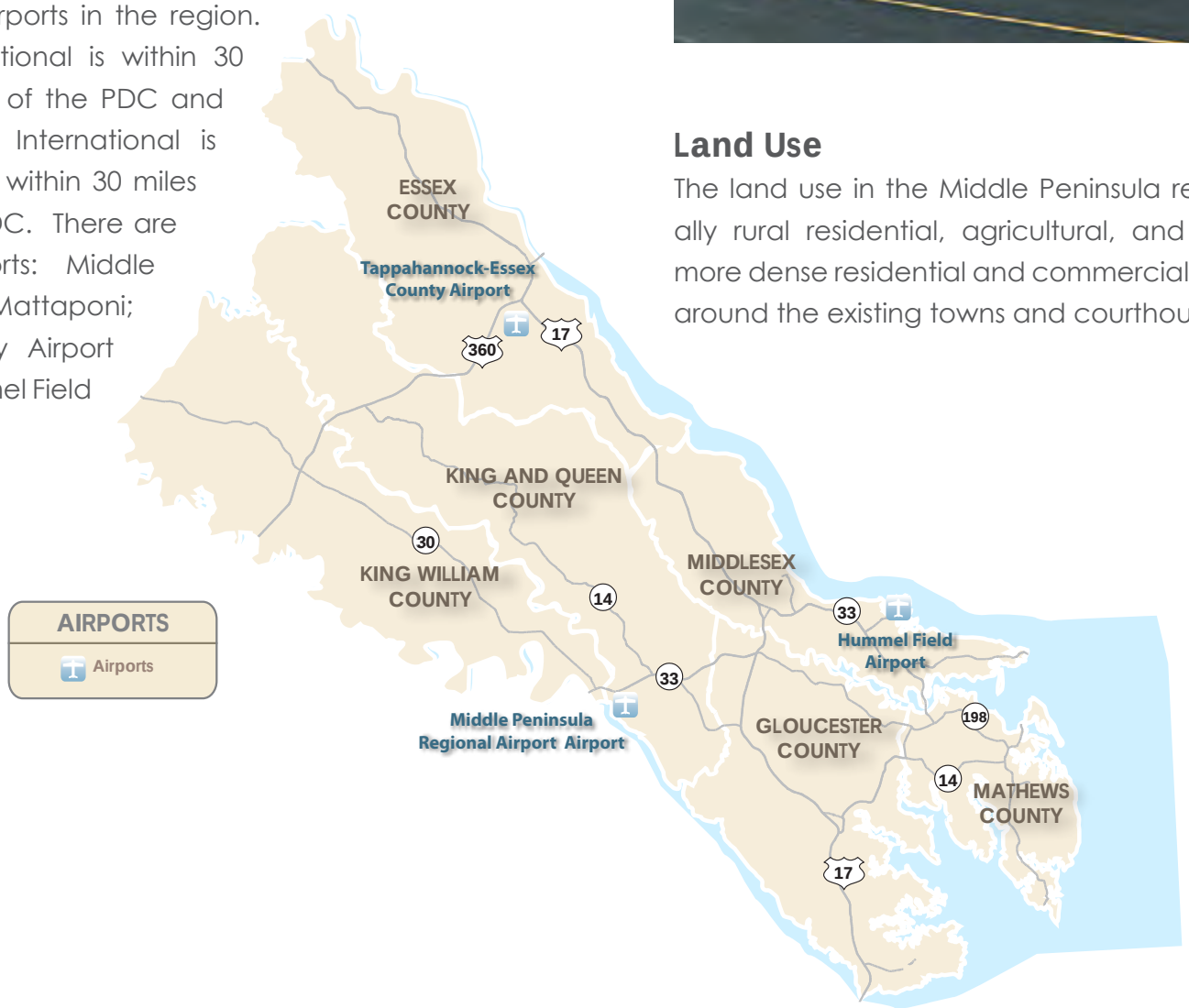
Public Transportation

Public transportation includes public transit, both fixed-route and demand-responsive, volunteer transportation, and private providers. Fixed-route service is not widely available in the Middle Peninsula. Bay Transit offers fixed-route service in West Point, a trolley route in the Town of Urbanna on a limited basis, and routes to the Rappahannock Community College in Glenns. Demand-responsive transit is provided by Bay Aging, a non-profit organization, through Bay Transit. Bay Transit serves the entire PDC as well as three counties in the Northern Neck and two in the Richmond Regional PDC. 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 RehabilitativServices, and the Middle Peninsula/ Northern Neck Community Services Board.



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 Mattaponi; Tappahannock-Essex County Airport in Tappahannock; and Hummel Field in Saluda.



Land Use

The land use in the Middle Peninsula region is generally rural residential, agricultural, and forested with more dense residential and commercial uses centered around the existing towns and courthouse areas.

The Bike Plan Focus Group recommended routes that have proven to be good cycling facilities.

Bicycle and Pedestrian Facilities

The MPPDC, through a focus group, developed the *Middle Peninsula Regional Bicycle Facility Plan* in 2004. The plan represents a realistic look at existing roadway facilities and future improvements to enhance bicycling to the extent possible in a rural environment. Mathews County has several Class III or shared road facilities. In addition, there are several roadways that are a part of rides designated by bike groups. The Bike Plan Focus Group recommended routes that have proven to be good cycling facilities. The group examined safety, funding constraints, and the quality of rides in a more subjective manner than is possible using purely technical processes that rely on only the objective data obtained from lengthy studies. Most of the recommendations in this plan concern routing and signage.

Travel Demand Management

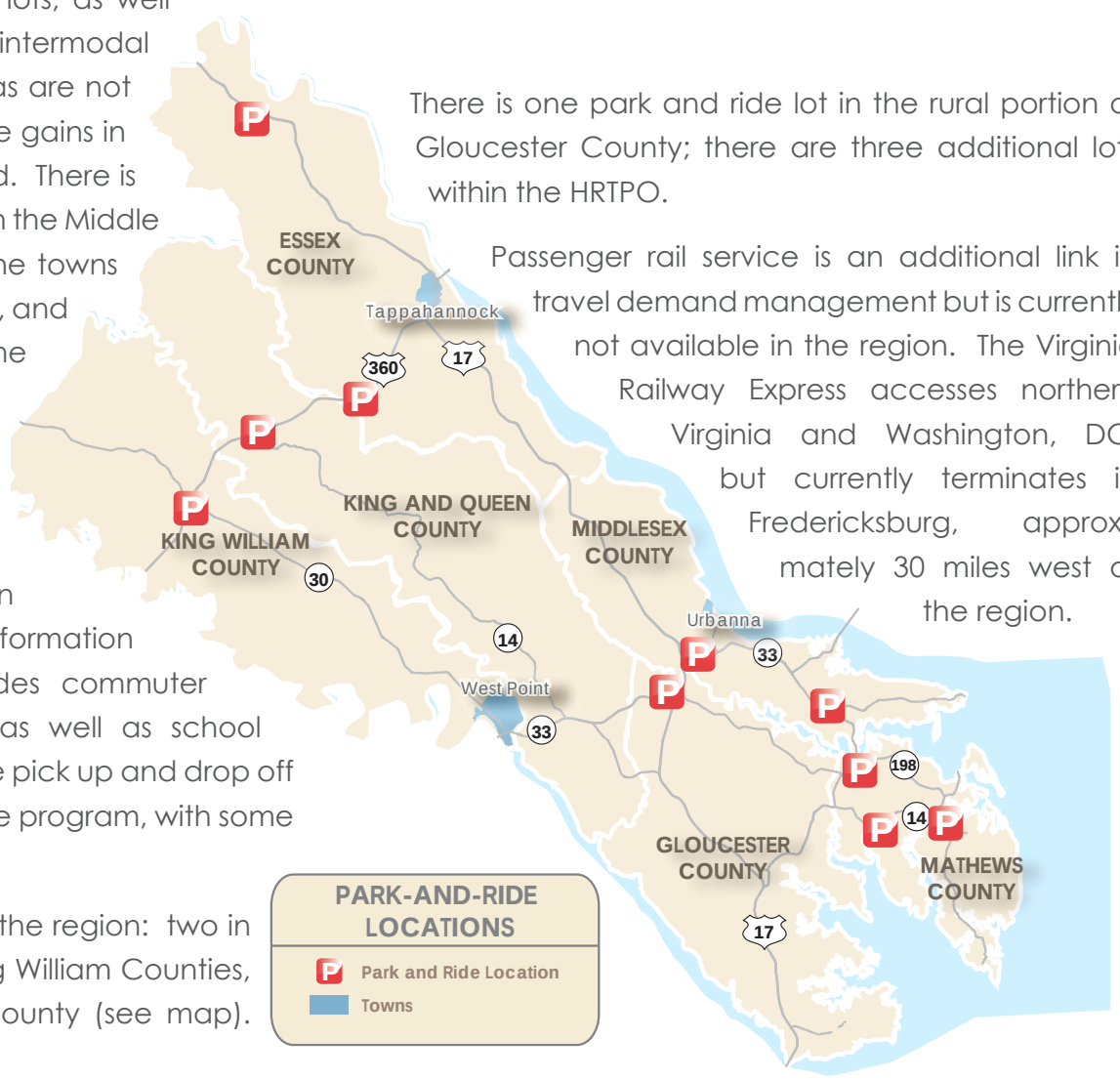
Travel Demand Management (TDM) holds the potential for enhancing many elements of the transportation network and, with other improvements, has been shown to greatly aid in reducing single-occupant vehicle trips. TDM measures include carpooling and vanpooling programs, expanded peak hour public transit, commuter buses, park and ride lots, as well as better coordination between modes to facilitate intermodal transfers. While low population densities in rural areas are not always conducive to major shifts to mass transit, some gains in mass transit ridership for commuters could be realized. There is not a single concentrated area to which commuters in the Middle Peninsula are currently traveling for employment. The towns within the region, as well as Fredericksburg, Richmond, and Hampton Roads, are all centers of employment for the region. According to the 2000 US Census, numerous workers traveled outside of their county of residence, from a low of 47 percent in Essex County to a high of 75 percent in King and Queen County.

The MPPDC operates a ridesharing program - MidPen RideShare - 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.

There are 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 (see map).

There is one park and ride lot in the rural portion of Gloucester County; there are three additional lots within the HRTPO.

Passenger rail service is an additional link in travel demand management but is currently not available in the region. The Virginia Railway Express accesses northern Virginia and Washington, DC, but currently terminates in Fredericksburg, approximately 30 miles west of the region.

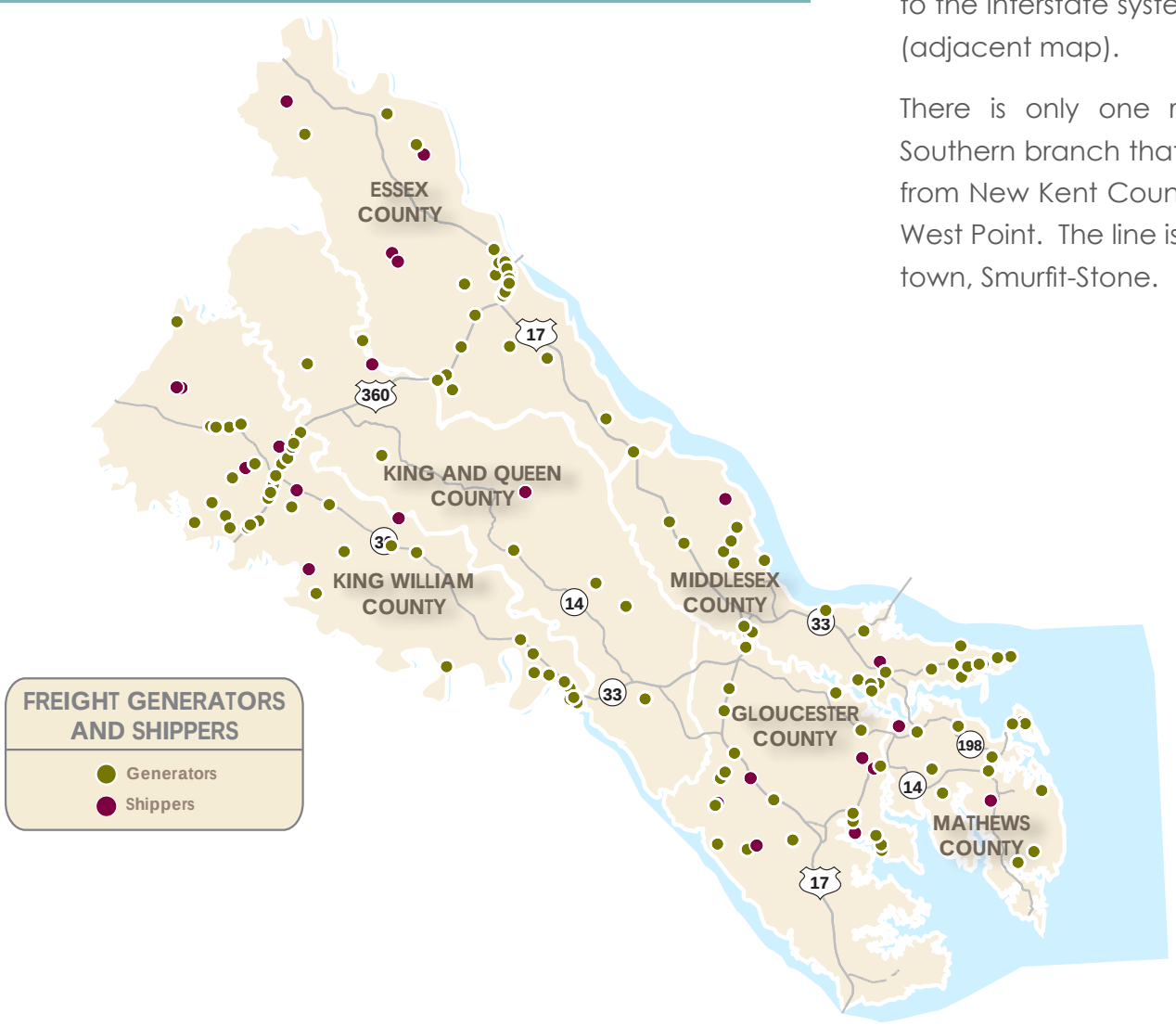


There is not a single concentrated area to which commuters in the Middle Peninsula are currently traveling for employment.

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 (adjacent map).

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, Smurfit-Stone.



TRANSPORTATION SYSTEM PERFORMANCE & RECOMMENDATIONS

Roadways

Roadway analysis focused on safety, geometry and structure, and congestion. Through the review of available data, input at public meetings, and information provided by local and regional officials, the MPPDC, in conjunction with the local jurisdictions, prepared a list of priority locations. The priority study location list is based on roadway performance measures, safety considerations, or a combination of the two. Some priority locations had current improvement recommendations from recent studies and required no further analysis. Other priority locations required a new or updated analysis. Within the MPPDC, forty priority locations were analyzed; recommendations for these locations are in the list of recommendations that follow. Twenty of these locations were identified for assessment of congestion concerns, while the remaining twenty were analyzed for safety. The safety assessment locations were identified using safety and crash database information, and input from local officials and the public. A more detailed discussion of all deficiencies and recommendations with planning-level cost estimates is located in the Technical Report.

Higher priorities were given to those roadways with potential geometric concerns that also carried higher levels of traffic.

Bridge Deficiency Summary

	Functionally Obsolete			Structural Deficiency		
	REPLACE	UPGRADE/REPAIR		REPLACE	UPGRADE/REPAIR	
Bridge Sufficiency Rating	**0-50**	**51-80**	**80+**	**0-50**	**51-80**	**80+**
Essex	0	3	0	4	0	0
Gloucester*	1	4	0	1	0	0
King and Queen	1	2	0	2	3	0
King William	1	4	0	1	2	0
Mathews	2	1	0	1	0	0
Middlesex	0	4	0	1	0	0
MPPDC Total	5	18	0	10	5	0

*Outside HRTPO

1. Safety

The roadway safety assessments identified deficiencies such as sight distance and visibility, access management, and inadequate signage. Recommendations were developed for both intersections and segments throughout the region. The recommendations are identified by jurisdiction. More detailed deficiency data appear in the Technical Report.

2. Operations and Maintenance

a. Geometric Weaknesses

Roadways and intersections with geometric deficiencies such as substandard lane width, shoulder width, or horizontal and vertical curvature, were identified from the VDOT Statewide Planning System (SPS) database. Higher priorities were given to those roadways with potential geometric concerns that also carried higher levels of traffic. Recommendations to address these needs are identified by jurisdiction. More detailed deficiency data appear in the Technical Report.

b. Bridge Condition

Current bridge sufficiency ratings were reviewed and those structures with a rating of less than 50 were considered deficient and in need of structural up grade or replacement. These appear in a separate table by jurisdiction.

3. Capacity

Level of service analyses were performed on all functionally classified roadways in the MPPDC to assess current and projected year 2035 operations. In addition, analyses were conducted for intersections identified by the MPPDC and local governments as priority study locations. The recommendations to address the deficient locations are identified as congestion or safety, by jurisdiction. Short-term, mid-term, and long-term recommendations were combined in the tables and maps.

Deficiencies in the forecast year were noted for the functionally classified roadway network. Forecasted deficiencies are applicable only to anticipated mobility performance measures, since it is not possible to forecast safety issues or geometric and structural deficiencies.


17
ESSEX
COUNTY
360
14
KING AND
QUEEN COUNTY
17
MIDDLESEX
COUNTY
30
KING WILLIAM
COUNTY
Urbanna
198
33
3
GLOUCESTER
COUNTY
223
14
MATHEWS
COUNTY
Hampton Roads
TPO
ROADWAY SYSTEM DEFICIENCIES
Intersection Deficiency
Operation Deficiency
Safety Deficiency
Both Deficiencies
Other Deficiencies
Segment Deficiency
Operation Deficiency
Safety Deficiency
Geometric Deficiency
Both Operation and Safety Deficiency

ESSEX COUNTY RECOMMENDATIONS

1 VA 659 (Desha Rd.) from VA 618 to South City Limit of Tappahannock
Long-term upgrade to design standards and install turn lanes where appropriate.

2 US 17/VA 631
Deficiency with low priority; Continue to monitor for potential improvements.

3 US 360 (Richmond Rd.) from Begin Downing Bridge to End Downing Bridge/Richmond Co. Line
Long-term widen to urban four-lane roadway with median.

4 VA 606 (Fairfield Ln.) from VA 607 to US 17
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

5 VA 607 (Muddy Gut Rd.) from US 17 to VA 606
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

6 VA 609 (Essex Mill Rd.) from US 17 to VA 684
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

7 VA 617 (Island Farm Rd.) from End of Rd. to VA 697
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

8 VA 617 (Island Farm Rd.) from VA 697 to Eastern City Limit of Tappahannock
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

9 VA 618 (Scotts Mill Rd.) from VA 619 to VA 659
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

10 VA 619 (Sunnyside Rd.) from VA 620 E. to King and Queen Co. Line
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

11 VA 620 (Dunbrooke Rd.) from US 360 to VA 619 E.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

12 VA 621 (Midway Rd.) from US 360 to VA 622
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

13 VA 624 (Essex Church Rd.) from VA 630/VA 629 to US 17 N.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

14 VA 624 (Essex Church Rd.) from VA 631 to VA 630/VA 629
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

15 VA 627 (Mount Landing Rd.) from Caroline Co. Line to VA 665 W.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

16 VA 629 (Battery Rd.) from VA 627 to VA 624
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

17 VA 635 (Occupacia Rd.) from VA 639 E. to VA 635 E.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

18 VA 637 (Occupacia Rd.) from VA 635 E. to US 17
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

19 VA 716 (Warings Mill Rd.) from VA 627 to US 17
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

20 VA 659 (Desha Rd.) from South City Limit of Tappahannock to VA 627/ VA706
Long-term upgrade to design standards and install turn lanes where appropriate. (Tappahannock)

21 US 17 (Tidewater Trail)/US 360 (Richmond Hwy.)
Mid-term apply access management and realign Hospital Road further west. (Tappahannock)

22 US 17 (Church Ln.)/VA 657 (Marsh St.)
Short-term install stop bar on westbound approach; Mid-term consider installing turn lanes as needed. (Tappahannock)

23 US 17/VA 1036
Mid-term consider optimization of signals and continue to monitor for accidents. (Tappahannock)

24 US 17 (Church Ln.)/US 360 (Queen St.)
Short-term refresh pavement markings; Mid-term improve pedestrian access and add westbound left turn lane. (Tappahannock)

25 US 17/VA 1008 (Wright St.)
Short-term restrict eastbound left turns out of PARR's Drive-in; Mid-term consider access management. (Tappahannock)

26 US 17/VA 1005
Deficiency with low priority; Continue to monitor for potential improvements. (Tappahannock)

27 US 17/VA 1003
Deficiency with low priority; Continue to monitor for potential improvements. (Tappahannock)

28 US 17/VA 725
Deficiency with low priority; Continue to monitor for potential improvements. (Tappahannock)

29 US 17/VA 698
Deficiency with low priority; Continue to monitor for potential improvements. (Tappahannock)

30 Proposed US 360 Connector from Proposed Tappahannock Bypass to US 17/US 360
Long-term construct proposed US 360 Connector. (Tappahannock)

31 Proposed Tappahannock Bypass from US 360/VA 715 to US 17 N.
Long-term construct proposed Tappahannock Bypass. (Tappahannock)

32 US 360 (Richmond Hwy.) from US 17/US 360 to Richmond Co. Line
Long-term reconstruct to urban four-lane roadway. (Tappahannock)

33 US 17 (North Church Ln.) from US 360 (Queen St.) to VA 627
Short-term reconstruct roadway; Long-term continue to monitor for potential improvements. (Tappahannock)

GLOUCESTER COUNTY RECOMMENDATIONS

1 VA 606 (Farys Mill Rd.) from US 17 (George Washington Memorial Hwy.) to VA 198 (Dutton Rd.)
Short-term refresh pavement markings; Mid-term add southbound left turn lane on VA 678; Long-term upgrade VA 606/678 to design standards and relocate Indian Road.

2 VA 610 (Pinetta Rd.) from VA 610 (Davenport Rd.) to VA 616 (Belroi Rd.)
Mid-term consider adding turn lanes; Long-term upgrade to design standards.

3 VA 198 (Glenns Rd.) from US 17 (George Washington Memorial Hwy.) to Mathews Co. Line
Short-term consider reducing speed limit; Mid-term add turn lanes; Long-term upgrade VA 198 to design standards and consider adding additional capacity.

4 VA 617/VA 610
Mid-term lengthen northbound and southbound left turn lanes and implement access management.

5 US 17/VA 198
Short-term install puppy tracks for northbound left turns and improve southbound right turn movement; Mid-term apply access management.

6 US 17/VA 601
Mid-term install northbound right turn lane.

7 US 17/VA 610
Short-term replace stop bar on westbound approach and add advance intersection warning advisors; Mid-term signalize intersection.

8 US 17/VA 606
Deficiency with low priority; Continue to monitor for potential improvements.

9 US 17 (George Washington Memorial Hwy.) from VA 606 (Ark Rd.) to Hampton Rd. TPO boundary
Long-term reconstruct to urban six-lane roadway with median.

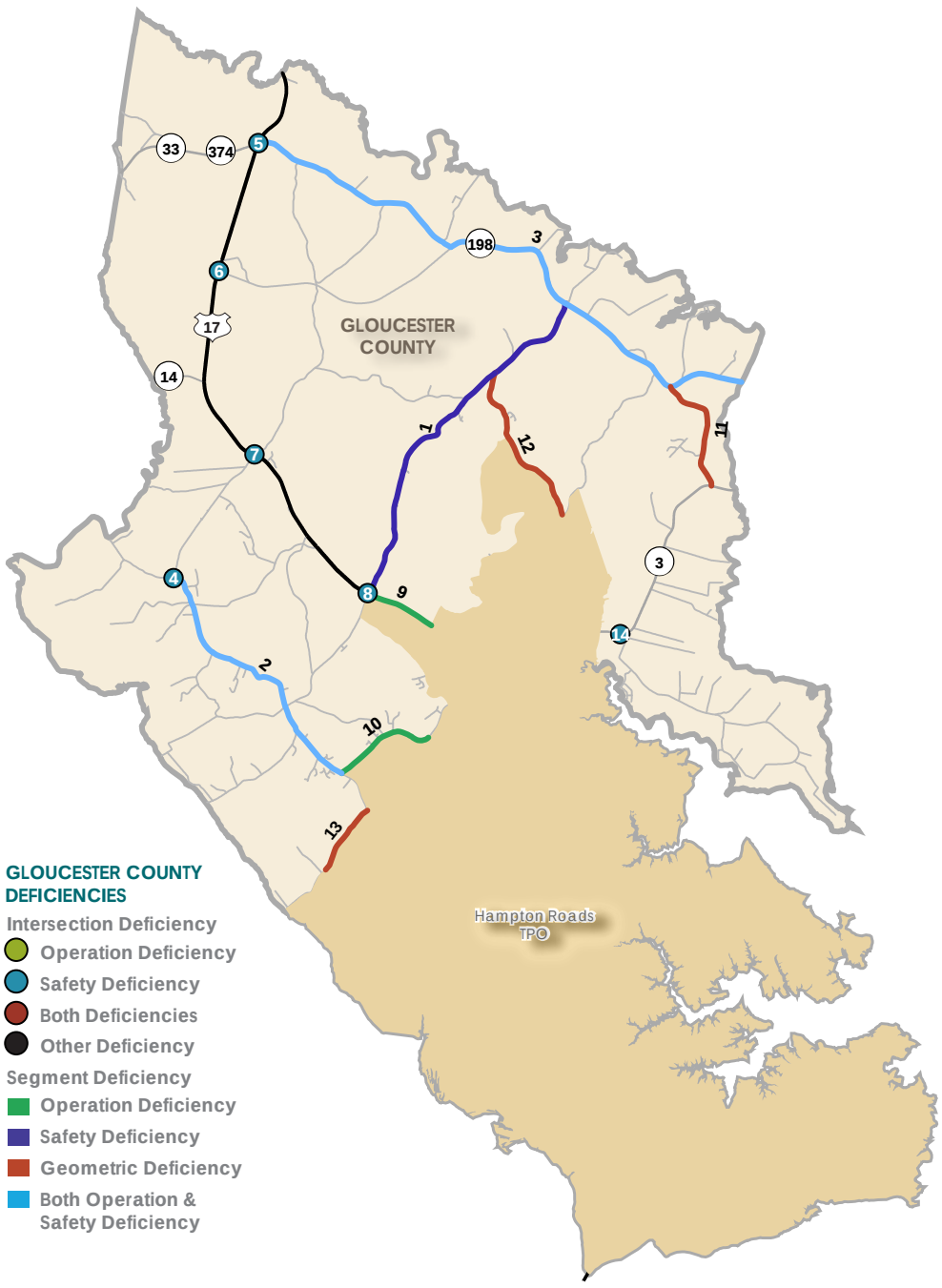
10 VA 616 (Belroi Rd.) from VA 614 (Hickory Fork Rd.) to VA 615 (Burleigh Rd.)
Long-term widen to rural four-lane roadway with median.

11 VA 602 (Burkes Pond Rd.) from VA 3 (John Clayton Memorial Hwy.) to VA 198 (Dutton Rd.)
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

12 VA 605 (Indian Rd.) from VA 603 (Figg Shop Rd.) to VA 606 (Farys Mill Rd.)
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

13 VA 616 (Clay Bank Rd.) from VA 631 (Gum Fork Rd.) to VA 616 (Hickory Fork Rd.)
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

14 VA 3 (John Clayton Memorial Hwy)/VA 623 (Ware Neck Rd.)
Short-term add advisory speed plate to eastbound intersection ahead sign; Long-term relocate eastbound right-turn lane and add "Vehicles Entering When Flashing" sign.



KING AND QUEEN COUNTY RECOMMENDATIONS

1 VA 635 (Bradley Farm Rd.) from Caroline Co. Line to VA 721
Mid-term realign intersections; Long-term reconstruct to design standards, improve drainage, and upgrade side street approaches to VA 635.

2 VA 602 (Mount Olive Rd.) from VA 614 (Devils Three Jump Rd.) to Middlesex Co. Line
Short-term install chevrons as needed, stop bars, and way-finding signage; Long-term upgrade side street approaches and roadway to design standards, with turn lanes as needed.

3 VA 634 (Canterbury Rd.) from VA 636 to VA 14
Short-term install chevrons as needed; Long-term upgrade to design standards.

4 VA 33 (General Puller Hwy.)/VA 605 (York River Rd.)
Short-term improve signage; Mid-term improve sight distance and add/lengthen turn lanes; Long-term repave roadway.

5 VA 33 (General Puller Hwy.)/VA 14 (Buena Vista Rd.)
Mid-term realign VA 14 to the east at Long Dirt Road, modify crossovers, and add/lengthen turn lanes.

6 VA 14/US 360
Short-term refresh pavement markings and check clearance intervals; Mid-term add/lengthen turn lanes.

7 VA 33 (General Puller Hwy.)/VA 14
Short-term add stop bar and signage; Mid-term apply access management and add full westbound right turn lane.

8 VA 601 (Stratton Major Rd.) from VA 605 N. to VA 14 W.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

9 VA 603 (Dragon Bridge Rd.) from Middlesex Co. Line to VA 14
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

10 VA 608 (Clancie Rd.) from 1.25 Mi. N. VA 678 to VA 609 W.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

11 VA 610 (Liberty Hall Rd.) from VA 614 E. to VA 614 W.
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

12 VA 614 (Devils Three Jump Rd.) from VA 602 to VA 610 S.
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

13 VA 614 (Devils Three Jump Rd.) from VA 609 S. to VA 602
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

14 VA 614 (Devils Three Jump Rd.) from VA 613 N. to VA 609 S.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

15 VA 614 (Devils Three Jump Rd.) from VA 14 to VA 613 N.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

16 VA 620 (Owens Mill Rd.) from VA 660 to Essex Co. Line
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

17 VA 619 (Owens Mill Rd.) from VA 660 to VA 721
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

18 VA 620 (Poor House Ln.) from VA 630 to VA 620 E.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

19 VA 631 (Poor House Ln.) from VA 14 N. to VA 630
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

20 VA 622 (Minor Rd.) from US 360 to Essex Co. Line
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

21 VA 623 (Indian Neck Rd.) from VA 721 to VA 635 S.
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

22 VA 625 (Byrds Mill Rd.) from VA 721 to VA 649
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

23 VA 631 (Smithfield Rd.) from US 360 W. to VA 650
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

24 VA 631 (Stevensville Rd.) from VA 632 to VA 14 N.
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

25 VA 632 (Hockley Neck Rd.) from VA 633 to VA 631
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

26 VA 633 (Mantua Rd.) from VA 634 to VA 632
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

27 VA 634 (Mount Elba Rd.) from VA 633 to VA 629 E.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

28 VA 633 over Garnett's Creek
Short-term replace bridge and upgrade approaches.

29 VA 14 from US 360 to VA 33 W.
Short-term add centerline rumble strips.

KING WILLIAM COUNTY RECOMMENDATIONS

1 VA 30 (King William Rd.) from VA 617 E. to VA 613
Short-term install pavement markings on major side streets; Mid-term upgrade VA 30 to design standards; Long-term reconstruct to four-lane roadway with median.

2 VA 618 (Acquinton Church Rd.) from US 360 to VA 30 E.
Long-term upgrade to design standards.

3 US 360/VA 600
Short-term reduce speed limit on both approaches and install flashing warning signs along eastbound approach; Mid-term lengthen eastbound and westbound right turn lanes.

4 US 360/VA 611
Mid-term add westbound right turn lane and apply access management.

5 VA 30 (King William Rd.)/US 360
Short-term improve turn radius for westbound right-turning trucks; Mid-term realign northbound VA 30 to US 360.

6 VA 30 (King William Rd.)/VA 629/VA 9466
Mid-term add/lengthen turn lanes.

7 VA 604 (Dabneys Mill Rd.) from VA 614 to VA 30 E.
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

8 VA 604 (Herring Creek Rd.) from VA 30 W. to VA 628
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

9 VA 608 (Globe Rd.) from VA 607 W. to VA 600
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

10 VA 608 (Globe Rd.) from VA 30 to VA 609
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

11 VA 609 (Smokey Rd.) from VA 604 to VA 608 E.
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

12 VA 611 (Venter Rd.) from VA 605 to VA 30
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

13 VA 614 (Etna Mills Rd.) from VA 601 to VA 615
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

14 VA 615 (Nelsons Bridge Rd.) from Hanover Co. Line to VA 604
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

15 VA 625 (Indian Town Rd.) from VA 640 to End of Rd.
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

16 VA 625 (Indian Town Rd.) from VA 626 to VA 640
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

17 VA 628 (Dorrell Rd.) from VA 600 to King And Queen Co. Line
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

18 VA 628 (Dorrell Rd.) from VA 604 to VA 600
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

19 VA 673 (Pocahontas Trail) from VA 1400 (Pocket Rd.) to VA 633 (Powhatan Trail)
Long-term reconstruct road to address geometric deficiencies (10-foot lanes).

20 US 360 from Hanover/King William Co. Line to VA 1214 (Choctaw Ridge)
Mid-term widen and pave shoulders.

21 VA 600 over Herring Creek
Short-term replace bridge and upgrade approaches.

22 VA 30 (King William Rd.)/VA 1301 (Courthouse Ln.)
Long-term extend Courthouse driveway to VA 30, including right and left turn bays, eliminate existing eastern VA 30 and Courthouse Lane intersection, and construct park & ride lot on Courthouse Lane.

23 VA 30 (King William Rd.) from VA 1002 (Magnolia Ave) to VA 33
Mid-term implement access management, lengthen northbound left turn lane, and add turn lanes to the eastbound approach of VA 30/VA 33 intersection. (West Point)

24 VA 30 (King William Rd.)/VA 1122 (15th St.)
Short-term improve pavement markings and install signage on eastbound approach; Mid-term implement access management. (West Point)

25 VA 30 (King William Rd.)/VA 33
Mid-term add a through lane and an exclusive left turn lane for the eastbound approach; Long-term continue to monitor for potential improvements. (West Point)

26 Off VA 33 (Eltham Rd.) adjacent to new bridge.
Long-term construct commuter lot adjacent to new bridge. (West Point)

27 VA 701 (Euclid Blvd) from VA 1026 to VA 30
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (West Point)

MATHEWS COUNTY RECOMMENDATIONS

1 **VA 3 (Twiggs Ferry Rd.)/VA 198 (Buckley Hall Rd.)**
Mid-term consider signalization.

2 **VA 626 (Hallieford Rd.) from VA 198 N. to VA 666**
Short-term install stop bar; Long-term reconstruct to design standards and improve drainage and consider widening VA 626 where feasible.

3 **VA 660 (East River Rd.) from VA 617 N. to VA 618**
Short-term improve pavement markings; Mid-term add turn lanes as needed; Long-term realign intersections and implement access management.

4 **VA 3 (Windsor Rd.)/VA 198 (Buckley Hall Rd.)**
Long-term straighten VA 3 approach.

5 **VA 14/VA 660**
Long-term continue to monitor for safety improvements.

6 **VA 3 (Windsor Rd.) from VA 14 to Middlesex Co. Line**
Long-term widen to rural four-lane roadway with median.

7 **VA 14 (Buckley Hall Rd.) from VA 198 W. to VA 9246**
Long-term widen to rural four-lane roadway with median.

8 **VA 14 (Old Bayside Drive) from VA 600 (Circle Drive) to Bayside Wharf**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

9 **VA 600 (Circle Drive) from VA 14 N. to VA 14 S.**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

10 **VA 609 (Bethel Beach Rd.) from VA 608 to VA 611**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

11 **VA 611 (Garden Creek Rd.) from VA 613 W. to VA 609**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

12 **VA 613 (Beaverdam Rd.) from VA 14 to VA 611 W.**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

13 **VA 617 (North River Rd.) from VA 618 (Cardinal Rd.) to VA 654**
Short-term reconstruct and realign roadway; Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

14 **VA 617 (North River Rd.) from VA 654 to VA 14**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

15 **VA 618 (Cardinal Rd.) from VA 617 to VA 660**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

16 **VA 628 (Cobbs Creek Ln.) from VA 198 to VA 725**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

17 **VA 636 (Bay Haven Drive) from VA 672 to VA 633**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

18 **VA 637 (Gwynnsville Rd.) from VA 680 to VA 633**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

19 **VA 639 (Crab Neck Rd.) from VA 223 E. to VA 648**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

20 **VA 641 (Pine Hall Rd.) from VA 14 to End of Rd.**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

21 **VA 642 (Fitchetts Wharf Rd.) from VA 643 to Fitchett Wharf**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

22 **VA 643 (Haven Beach Rd.) from VA 642 to VA 645**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

23 **VA 14/VA 198**
Short-term construct turn lanes.

24 **VA 3/VA 14**
Mid-term extend existing turn bays to standards.

MIDDLESEX COUNTY RECOMMENDATIONS

1 **VA 33 (General Puller Hwy.)/VA 3 (Twiggs Ferry Rd.)**
Short-term add signage; Mid-term consider access management; Long-term reconstruct intersection.

2 **VA 603 (Farley Park Rd.) from King & Queen Co. Line to VA 612**
Short-term maintenance; Long-term upgrade roadway to design standards.

3 **VA 3 (Twiggs Ferry Rd.) from Mathews Co. Line to VA 630**
Long-term widen to rural four-lane roadway with median.

4 **VA 33/VA 227**
Short-term improve pavement markings and provide protected left turns; Mid-term improve turn lanes and drainage in median; Long-term apply access management.

5 **US 17/VA 616/VA 665**
Mid-term lengthen southbound left turn lane and convert northbound right turn taper to full right turn lane.

6 **VA 33/VA 3**
Deficiency with low priority; Continue to monitor for potential improvements.

7 **US 17 BUS (Gloucester Rd.) from US 17 S. to VA 33/VA 618**
Long-term reconstruct to urban three-lane roadway.

8 **VA 3 (General Puller Hwy.) from VA 3/VA 33 N. to VA 3/VA 33 N.**
Long-term widen to rural four-lane roadway with median.

9 **VA 3 (Greys Point Rd.) from Lancaster Co. Line/Robert Opie Norris Bridge End to VA 3/VA 33 N.**
Long-term widen to urban four-lane roadway with median and replace bridge with four-lane bridge, including 10 foot shoulders.

10 **VA 3 (Twiggs Ferry Rd.) from VA 3/VA 33 N. to VA 630**
Long-term widen to rural four-lane roadway with median.

11 **VA 33 (General Puller Hwy.) from US 17/VA 33/ VA 618 to VA 703**
Long-term widen to urban four-lane roadway with median.

12 **VA 33 (General Puller Hwy.) from VA 636 to Stingray Point**
Mid-term construct bicycle/pedestrian path.

13 **VA 1101 (Lovers Ln.) from End of Rd. to VA 33**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

14 **VA 1104 (Deagles Rd.) from End of Rd. to VA 1102**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

15 **VA 602 (Wares Bridge Rd.) from King And Queen Co. Line to US 17 N.**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

16 **VA 603 (Farley Park Rd.) from VA 612 to US 17**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

17 **VA 615 (Town Bridge Rd.) from VA 616 to VA 602 W.**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

18 **VA 616 (Zion Branch Rd.) from VA 615 to US 17**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

19 **VA 622 (Dirt Bridge Rd.) from VA 623 to VA 3**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

20 **VA 623 (Regent Rd.) from VA 624 to VA 622**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

21 **VA 624 (Syringa Rd.) from VA 626 to VA 623**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

22 **VA 625 (Barricks Mill Rd.) from VA 624 to VA 628**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

23 **VA 628 (Mill Creek Rd.) from VA 33 to VA 625**
Long-term reconstruct road to address geometric deficiencies (11-foot lanes).

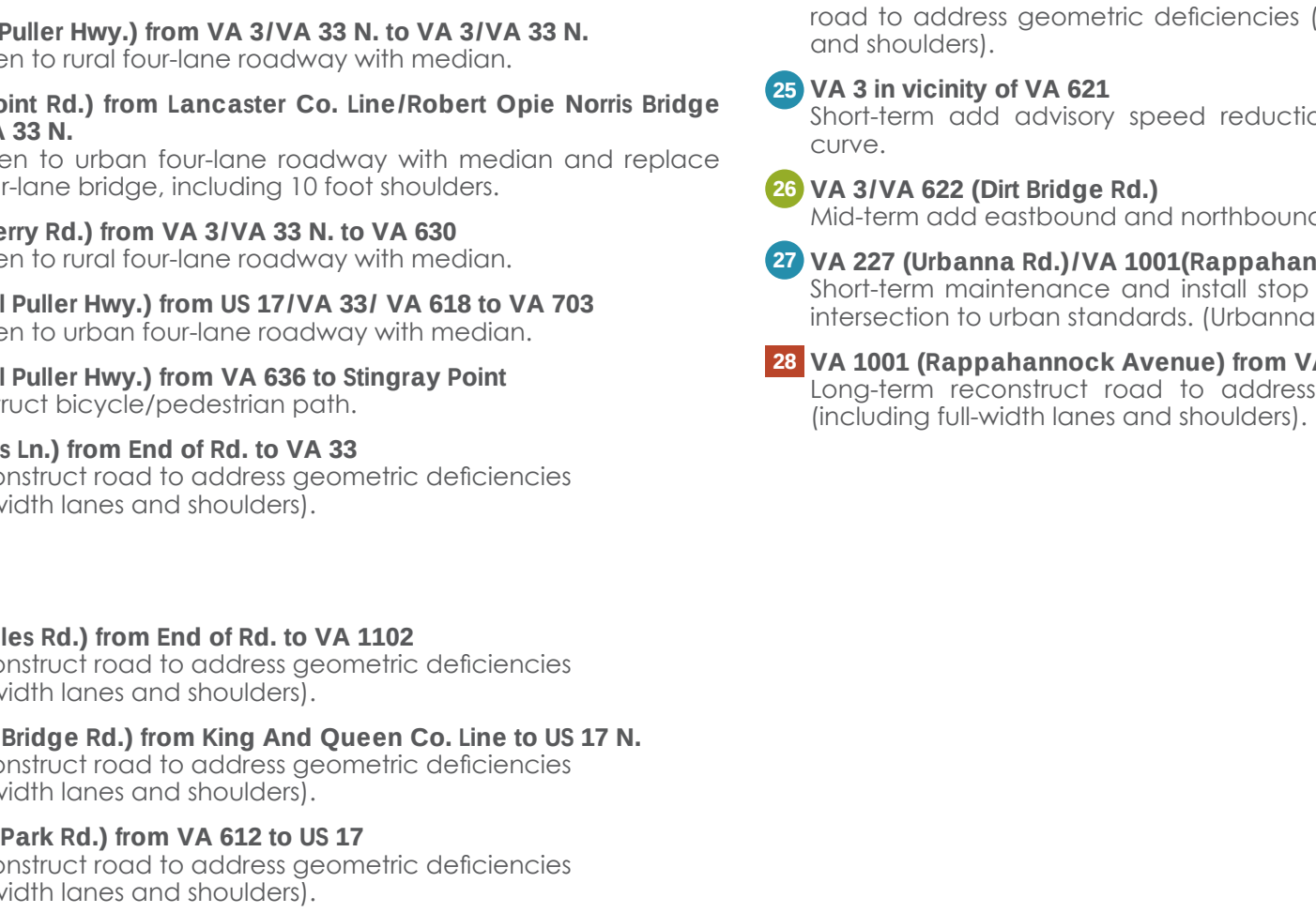
24 **VA 629 (Stormont Rd.) from VA 690 to VA 619**
Mid-term reconstruct section of roadway; Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders).

25 **VA 3 in vicinity of VA 621**
Short-term add advisory speed reduction signage at horizontal curve.

26 **VA 3/VA 622 (Dirt Bridge Rd.)**
Mid-term add eastbound and northbound right turn lanes.

27 **VA 227 (Urbanna Rd.)/VA 1001(Rappahannock Avenue)**
Short-term maintenance and install stop bar; Long-term upgrade intersection to urban standards. (Urbanna)

28 **VA 1001 (Rappahannock Avenue) from VA 1014 to VA 1007**
Long-term reconstruct road to address geometric deficiencies (including full-width lanes and shoulders). (Urbanna)



Public Transportation

Bay Transit, in partnership with other regional organizations, is exploring the possibility of providing additional fixed-route services 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. One proposed fixed route would provide service from Gloucester Point to Urbanna and Tappahannock via US 17.

Demand-responsive transit is a vital service offered in many rural areas throughout the state because the providers offer transportation services to those with no other means of travel to necessary trip destinations. The Coordinated Human Service Mobility plan identified the needs and deficiencies of the region and also formulated strategies to address these needs (DRPT, *Middle Peninsula*, 2008):

- Continue to support and maintain capital needs of coordinated human service transportation providers;
- Expand availability of demand-response and specialized transportation services to provide additional trips for older adults, people with disabilities, and people with lower incomes;
- Expand outreach and information on available transportation options in the region, including establishment of a centralized point of access;

Future growth at these airports is not expected to have long-term effects on the existing transportation network.

- Build coordination between Bay Transit and other demand-responsive transit 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; and
- Provide targeted shuttle services to access employment opportunities.

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. Addition of fixed-route or flexible fixed-route transit service along the principal arterials within the PDC would provide better mobility and access to and from these areas and populations. In addition, extended hours of demand-responsive service and new fixed-route service could provide access to the other transportation disadvantaged groups throughout the region.

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Airports

The *Virginia Air Transportation System Plan Update (2003)* contains forecasts of average annual growth rates of based aircraft through 2020 for both commercial and general aviation airports. Aircraft based at Hummel Field are expected to continue to grow by 0.3 percent annually, at Middle Peninsula Regional Airport by 1.4 percent, and at Tappahannock/Essex County Airport by 1.0 percent. The forecasts assumed that the replacement of Tappahannock Municipal with Tappahannock/Essex would bring some initial gains followed by the projected growth (DOAV, 2003). Future growth at these airports is not expected to have long-term effects on the existing transportation network.

Goods Movement

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. Due to the limited rail network in the Middle Peninsula, this is not as likely a possibility as in other PDCs with more extensive rail networks. Key truck freight corridors will 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. The counties and towns wish 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. The MPPDC conducted a Multimodal Freight Operations Study to analyze the region's existing intermodal and port infrastructure assets and to determine how these assets can be better incorporated to establish a more efficient and reliable transportation system. Locations and development of multi-modal facilities are being investigated to address transportation issues of the seafood, agriculture and timber industries.

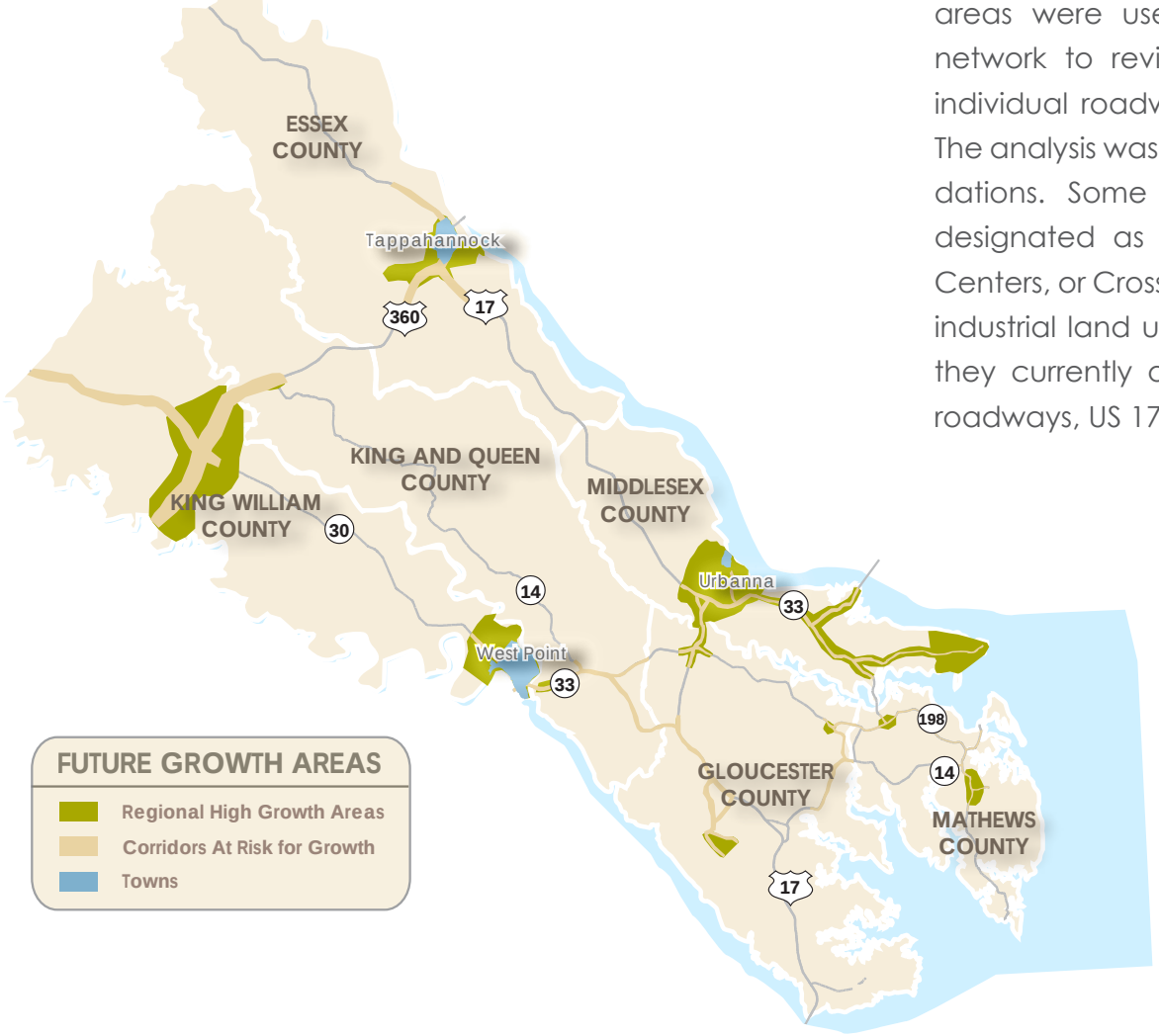
Bicycle and Pedestrian Facilities

The primary source of recommendations was the *Middle Peninsula Regional Bicycle Facility Plan*. In the Middle Peninsula, the relatively flat terrain and current use of roads by bicyclists allowed the bike plan focus group to recommend facilities that will be successfully accepted and utilized. The recommendations from the regional plan are for shared road designations and primarily require routing and signage (adjacent map). A detailed list of recommended bicycle and pedestrian facilities appears in the Technical Report.

Commercial and industrial land uses are expected to continue where they currently occur and to expand along existing roadways, US 17, US 360, VA 30 and VA 33.

Land Use and Future Growth

Because the existing land use in the Middle Peninsula region is generally rural and agricultural in nature, future development is expected to focus in existing towns, along major roadway corridors, and/or where water and sewer service is currently available or to become available (adjacent map). These growth areas were developed by the MPPDC in conjunction with the individual jurisdictions. These areas were used in the analysis of the roadway network to review existing traffic forecasts for the individual roadways and to produce new forecasts. The analysis was then used to prepare the recommendations. Some of these residential growth areas are designated as Rural Service Centers, Rural Village Centers, or Crossroad Communities. Commercial and industrial land uses are expected to continue where they currently occur and to expand along existing roadways, US 17, US 360, VA 30 and VA 33.



Travel Demand Management

In rural areas, low residential densities and dispersed work destinations are generally not conducive to high public transportation use. This is particularly true in the Middle Peninsula. Some decreases in single-occupant vehicle trips are possible through the continued use of the MidPen RideShare program. Further reductions would be possible if fixed-route service is established in the region. In addition, a commuter bus that would link to existing transit in Richmond, Fredericksburg, or Hampton Roads could reduce reliance on single-occupant vehicle travel. Finally, park and ride lots in the region are expected to maintain their importance to the commuting population. A survey of existing lots and their amenities and usage would be useful to assess any changes that may be needed to better serve commuters. A key intermodal connection to Bay Transit should also be addressed. Assessment of the use of the transit system in conjunction with park and ride lot usage can also prove useful in meeting the access and mobility needs of commuters.

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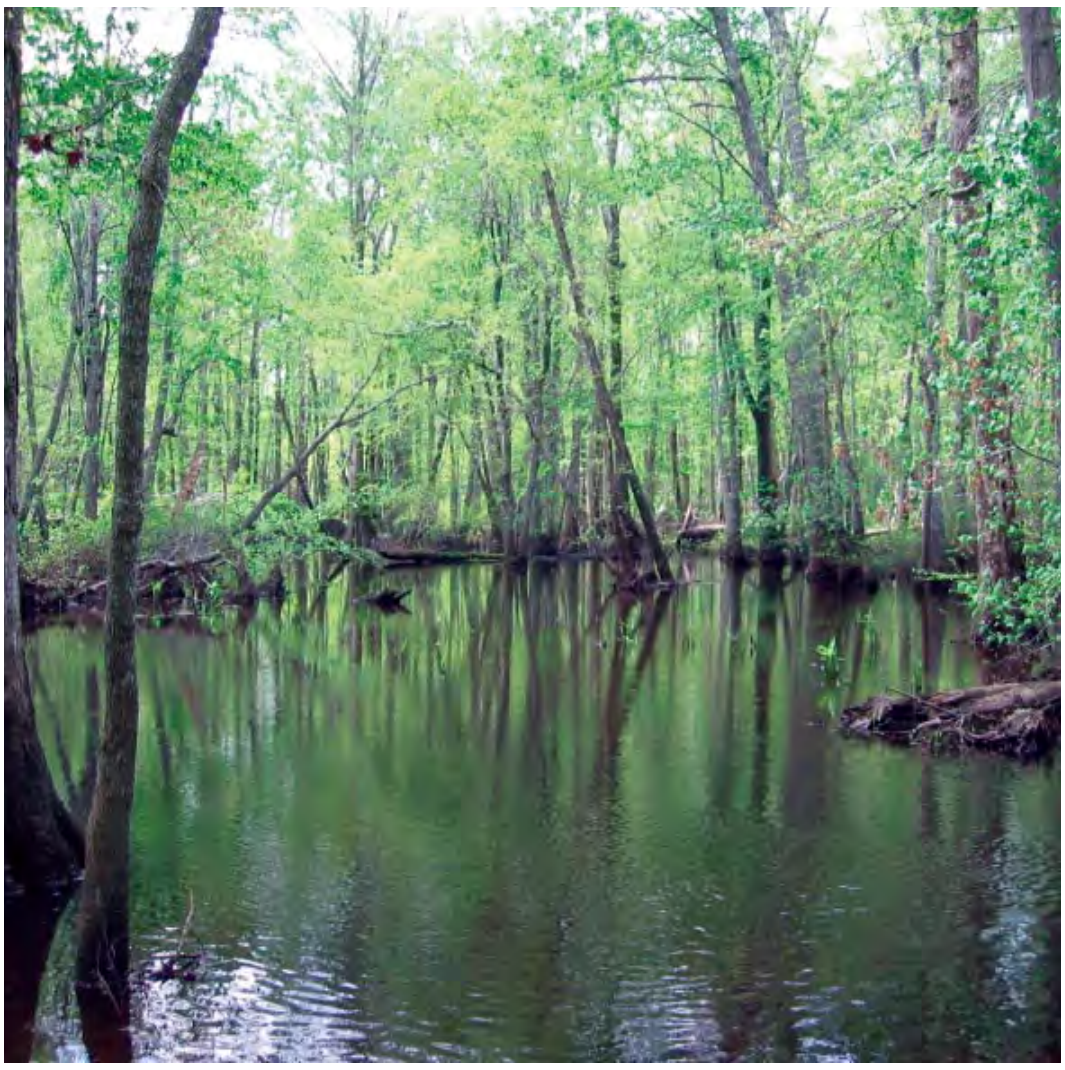

PLAN ADOPTION

The *2035 Regional Long Range Transportation Plan* for the MPPDC was adopted on January 25, 2012 for use as a regional and local transportation planning tool. This Plan will serve as a long term strategy for the transportation network of the region and as a component of the *2035 Surface Transportation Plan*. Projects can be prioritized for funding based on the recommendations that have been identified. Further information on this Plan and the *2035 Surface Transportation Plan* and *VTrans 2035* can be found at www.vdot.virginia.gov.

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