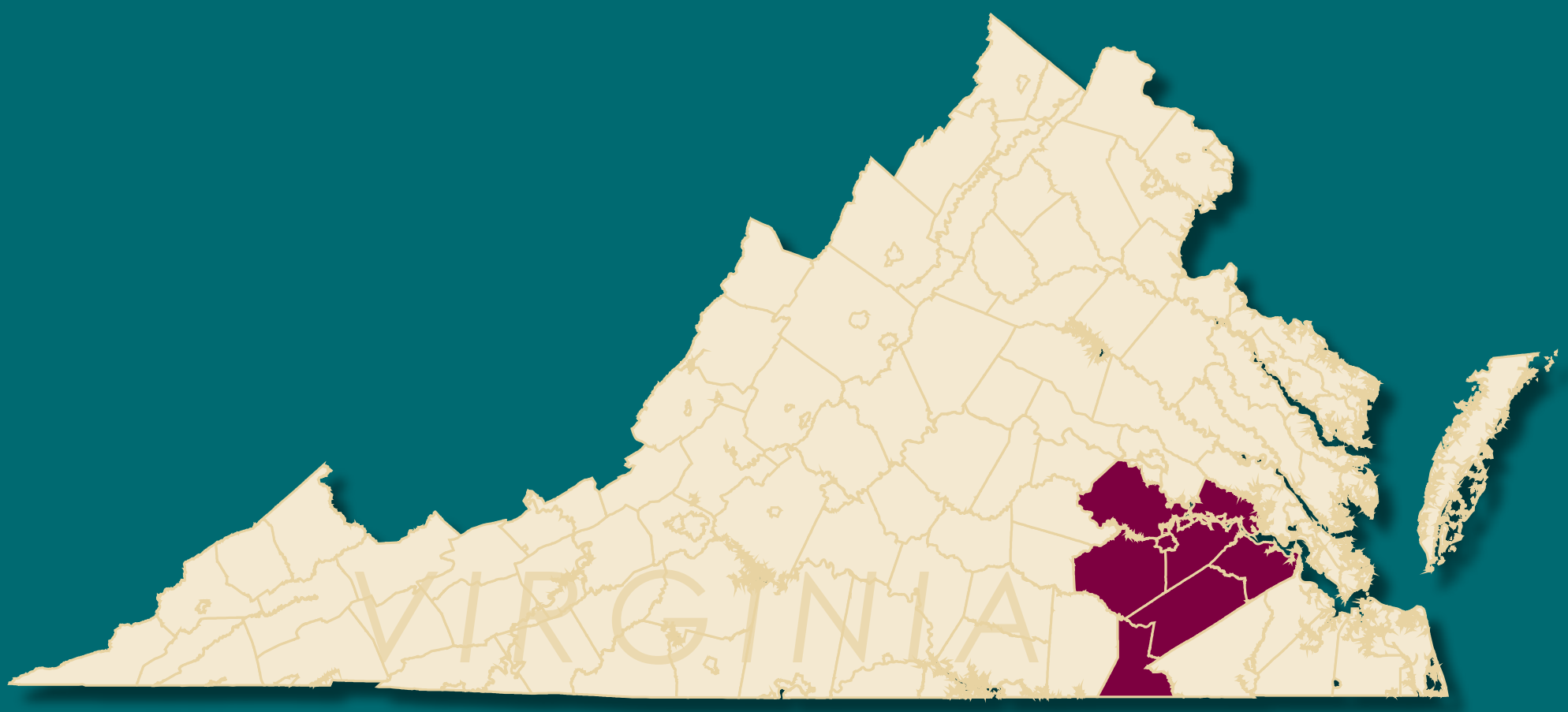
CRATER PLANNING DISTRICT COMMISSION

2035 Rural Long Range Transportation Plan




DRAFT 2011

CRATER
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 *Rural Long Range Transportation Plan* is one piece of the 2035 Plan. VDOT, Virginia's Planning District Commissions (PDCs), 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.

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.

A basic goal for all transportation programs in Virginia is the provision for the effective, safe, and efficient movement of people and goods.

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 overview.

OVERVIEW OF THE REGION

Description and Function of the Crater Planning District Commission

The Crater Planning District Commission (CPDC) serves the south-central area of Virginia and is comprised of the counties of Charles City, Chesterfield, Dinwiddie, Greensville, Prince George, Surry and Sussex, encompassing an area of approximately 1,889 square miles. Also included in the area are the cities of Colonial Heights, Emporia, Hopewell and Petersburg. The area has a population of 427,032 according to the 2000 Census, and a population of 496,955 for the year 2010. The CPDC Rural Transportation study area is comprised of the area south of the Cities of Petersburg and Colonial Heights including the Counties of Greensville, Surry and Sussex and portions of Dinwiddie and Prince George.

Summary of Transportation Network

The primary north-south corridors in this region include Interstate-95, Interstate-85, US 1, and US 460. The major east-west corridors include US 58, VA 40 (McKenney Highway/Sussex Drive) and VA 10.

Emporia City, Dinwiddie, Prince George, Sussex, and Surry counties do not have any transit services. The nearest public transit system is the Petersburg Area Transit (PAT) system, which serves the City of Petersburg with a fleet of 16 vehicles and 11 routes. Greyhound has a bus stop in Emporia and another one nearby in Petersburg. VPSI, Inc. is a private, for-profit company currently providing commuter vanpooling, carpooling and car sharing services in Prince George and Dinwiddie Counties. The Jamestown-Scotland Ferry connects Jamestown in James City County to Scotland Wharf in Surry County. It is a free vehicle crossing ferry service and is operated by the Virginia Department of Transportation. Demand responsive transit service is provided in the area by the Crater District Area Agency on Aging (CDAAA), which is federally-funded and serves Dinwiddie, Greensville, Prince George, Surry and Sussex Counties, and the City of Emporia. There are currently no bikeways in the rural Crater PDC area. The urban populated areas such as Emporia City and McKenney have sidewalks and crosswalks. The nearest international airport is the Richmond International Airport located 5 miles east of Richmond, while Dinwiddie County Airport is located 20 miles south of Richmond. General aviation airports include the Wakefield Municipal Airport and the Emporia-Greensville Airport.

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 found and used to shape common regional long range plan goals to address rural transportation planning across the Commonwealth. A basic goal for all transportation programs in Virginia is provision for the effective, safe, and efficient movement of people and goods. The plan for the CPDC was developed with this primary goal in mind, along with other goals including consideration for environmental issues and local travel desires. Rural transportation planning in the CPDC is guided by the Transportation Task Force Committee, which was formed in 2007. The transportation committee reviewed the needs of the region and formulated the following goals:

GOAL 1 Provide a transportation system that facilitates the efficient movement of people and goods.

GOAL 2 Plan a safe and secure transportation system.

GOAL 3 Improve the region's economic vitality and provide access to economic opportunities for all citizens of the region.

GOAL 4 Improve quality of life and minimize potential impacts to the evironment.

GOAL 5 Preserve the existing transportation system and promote efficient system managment.

These were developed using input from each of the 20 PDCs in Virginia that include rural areas within their boundaries.

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*:

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 CPDC 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 uses in the towns and village centers, typically at the intersection of two roadways. There is a broad range of the amount of growth and land use changes occurring throughout the Commonwealth and in the CPDC, 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 as well as maintain a general agricultural setting. 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.

The total population of the rural Crater PDC area is 94,138 from the 2000 Census and 101,041 from the 2010 Census.

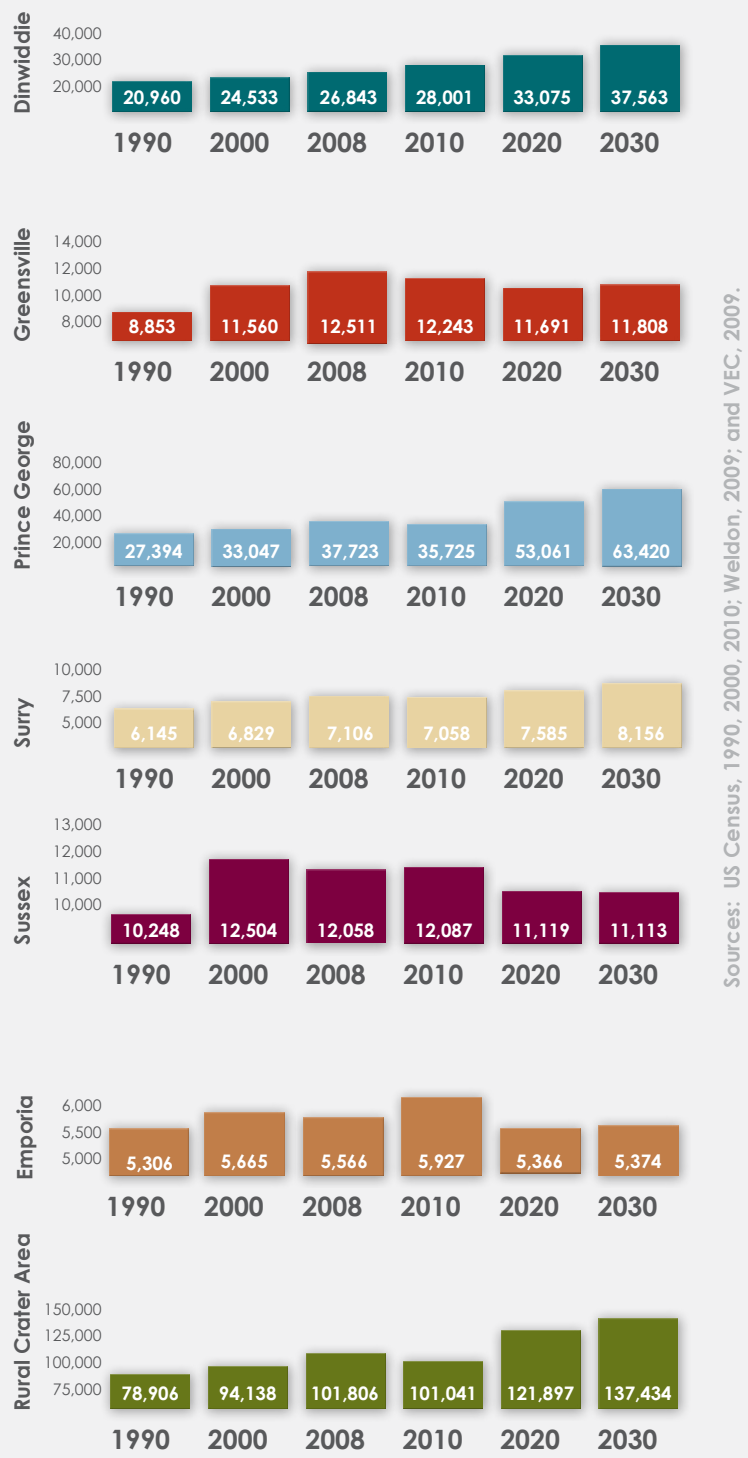
Several factors have affected land use in the CPDC: population growth within the region itself; population growth in the Richmond and Tri-Cities area; and the location of three state-wide roadway corridors that traverse the region, I-95, I-85 and US 460. According to the Virginia Employment Commission, commuting patterns based on the 2000 Census revealed that in the CPDC area there were a total of 21,325 in-commuters and a total of 22,767 out-commuters for a net total of out-commuters of 1,442. Commuter trends reveal that a majority of the commuters travelling to and from Dinwiddie County and Prince George County are in and around the Tri-Cities area and further north including Chesterfield County and Richmond City; a majority of the commuters to and from Surry County are from the adjoining western part of the CPDC area including Isle of Wight, James City County and Newport News; and a majority of the commuters from Sussex County are to the Tri-Cities area and Greensville County, while a majority of commuters to Sussex County are from the adjoining Sussex County and Prince George County.

Population Trends

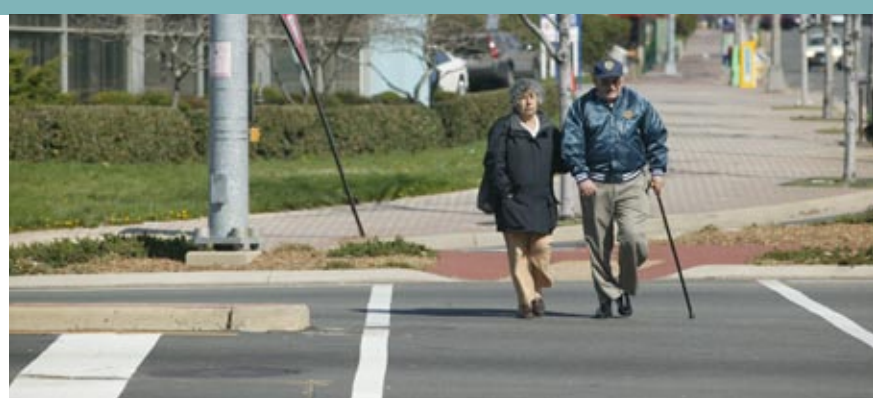
The CPDC has experienced steady growth in population over time. The total population of the rural Crater PDC area (including the entire Dinwiddie and Prince George counties) is 94,138 from the 2000 Census and 101,041 from the 2010 Census. During the decade of 1990 to 2000, growth was highest in Greensville and Sussex counties; however, this relatively high rate of growth is projected flatten through 2030. Dinwiddie and Prince George counties are predicted to continue growing into the future at higher rates during the period 2008-2030; however, it should be noted that separate data for the rural areas of these counties were not available. It can be observed that Dinwiddie County is forecasted to experience the highest growth rate among the counties, especially during the ten-year periods of 2000 – 2010 (growth rate of 1.33%). Greensville and Sussex counties experienced high growth rates in the ten year period of 1990 – 2000, after which the growth trails off substantially. The City of Emporia is projected to experience consistently modest growth throughout the period.

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 CPDC, these population increases are pressuring additional development throughout the region. Development pressures from growth have contributed to some reductions in mobility. In addition, access from the CPDC Region to more urban areas outside of the region (Tri-Cities area) is of continuing importance.

Total Population Over Time



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



Transportation Implications

US Census data from 2000 were 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 a vehicle available, which can include elderly, people with disabilities, and low-income groups, are more dependent on demand responsive transit in a rural area than in urban areas. This is due to the smaller network of fixed transit routes in rural areas when compared to urban areas. The CPDC, in conjunction with the Virginia Department of Rail and Public Transportation's (DRPT) statewide effort, recently completed a Coordinated Human Service Mobility (CHSM) Plan that assessed the mobility needs of these target populations. Certain needs are being identified throughout the state such as limited demand responsive transit service, limited fixed route service, determination of a single point of contact for providers, and funding constraints. These needs were also identified in the CPDC.

Demographic Trends

Disadvantaged population groups were studied in order to determine deficiencies in the transportation network that affect these groups. Disadvantaged groups studied include low-income, minority, elderly, and people with disabilities. US Census 2000 data at the block group level was examined in order to determine locations and densities of all these groups. This data was reviewed for possible areas of service expansion for all transit providers.

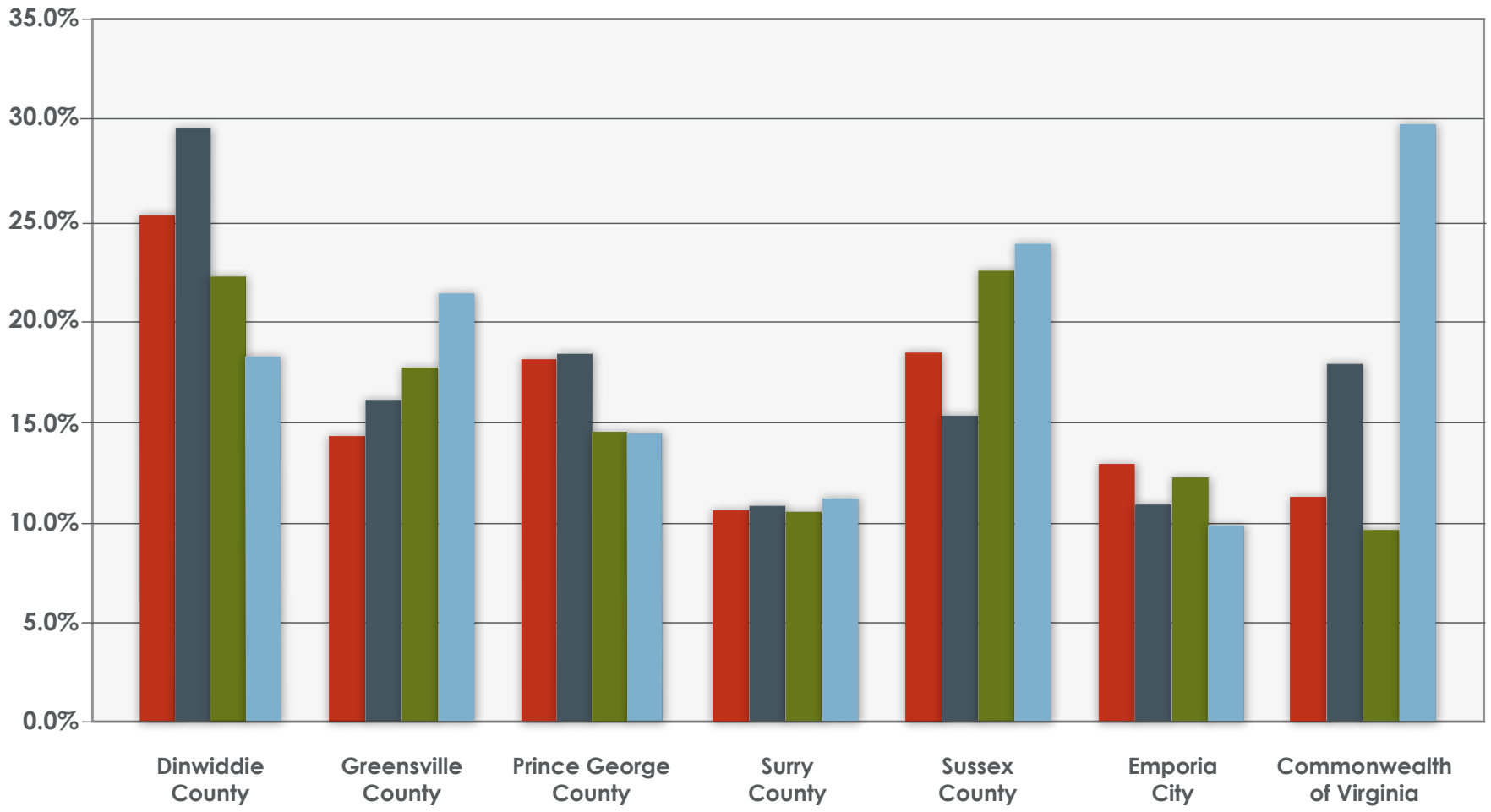
This data was reviewed for possible areas of service expansion for all transit providers.

LEGEND

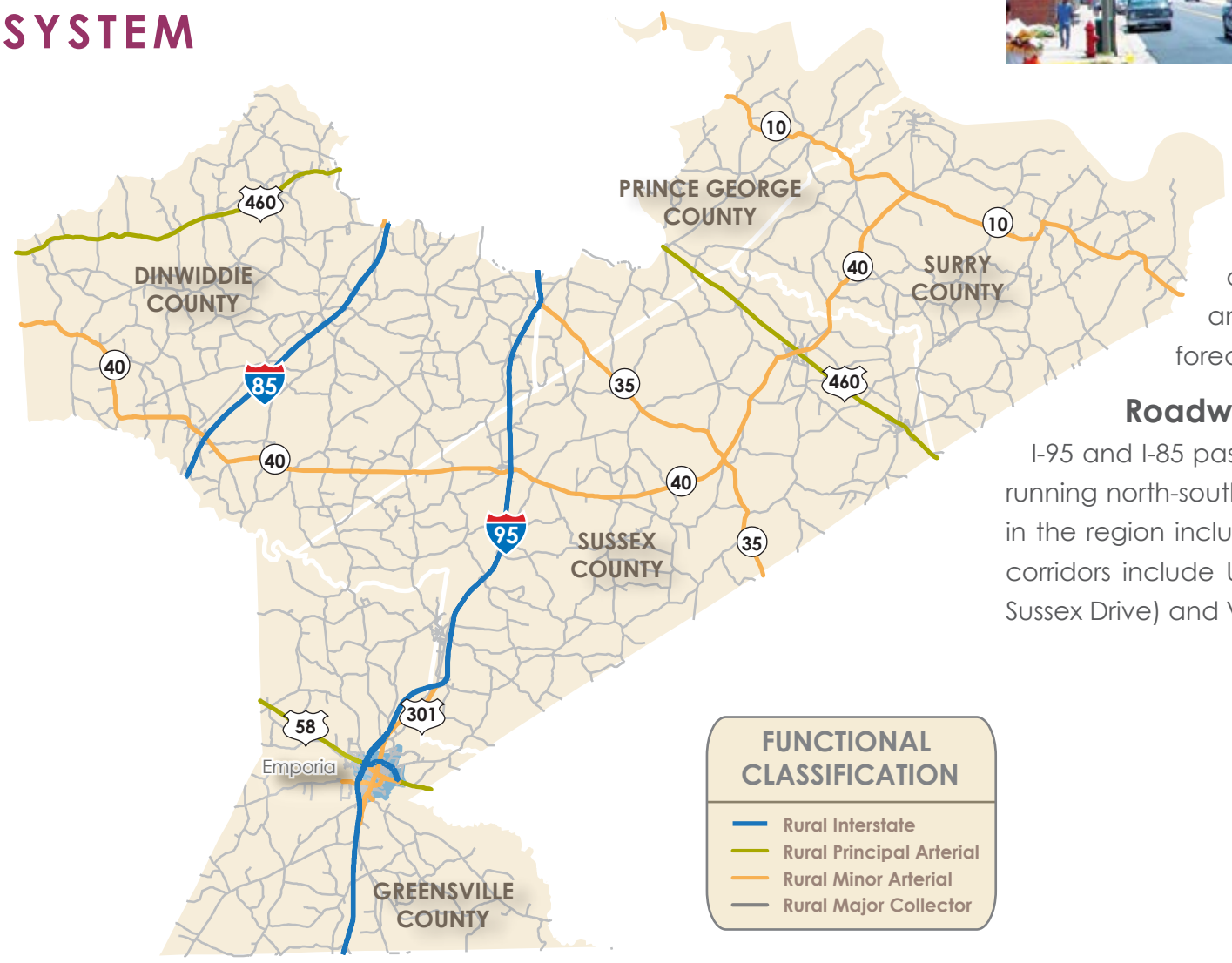
- Elderly
- Disability
- Low-Income
- Minority

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 Crater Planning District Commission



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 and I-85 pass through the middle of the region, running north-south. The primary north-south corridors in the region include US 1, and US 460. The east-west corridors include US 58, VA 40 (McKenney Highway/ Sussex Drive) and VA 10 (Colonial Trail W).

The nearest public transit system is the Petersburg Area Transit (PAT) system.

Public Transportation

Public transportation includes public transit, both fixed-route and demand-responsive, volunteer transportation, and private providers. Emporia City, Dinwiddie, Prince George, Sussex, and Surry counties do not have any transit services. The nearest public transit system is the Petersburg Area Transit (PAT) system, which serves the City of Petersburg with a fleet of 16 vehicles and 11 routes. Greyhound has a bus stop in Emporia and another one nearby in Petersburg. VPSI, Inc. is a private, for-profit company providing commuter vanpooling, carpooling and car sharing services currently in Prince George and Dinwiddie Counties. The Jamestown-Scotland Ferry connects Jamestown in James City County to Scotland Wharf in Surry County. It is a free vehicle crossing ferry service and is operated by the Virginia Department of Transportation. Demand responsive transit service is provided in the area by the Crater District Area Agency on Aging (CDAAA) which is federally-funded and serves Dinwiddie, Greensville, Prince George, Surry and Sussex Counties and the City of Emporia in the CPDC.

Land Use

The land use/land cover in the CPDC Region is generally rural residential, agricultural, and forested with more dense residential and commercial uses centered around the existing towns. The location and extent of land use and development throughout the region was reviewed as a part of the traffic analysis. Changes in existing land use and geographic shifts of land use and development can have a long-term effect on traffic forecasts and demand on the transportation network. Growth areas in the CPDC are focused around the northern parts of Sussex, Dinwiddie and Prince George Counties (adjacent to the Tri-Cities area) and Emporia City. Major freight generators are scattered throughout the region in proximity to the I-95 and US 460 corridors.

Bicycle and Pedestrian Facilities

There are currently no bikeways in the rural Crater PDC area. The urban populated areas such as Emporia City and McKenney have sidewalks and crosswalks. The nearest bicycle and pedestrian route is the Virginia Capital Trail connecting Richmond, Jamestown and Williamsburg along the Route 5 Scenic Byway. The Virginia Beach Pipeline Trail is a part of the Trans-Virginia Southern Trail and is under construction. The Bikewalk Virginia event is held annually in Emporia.

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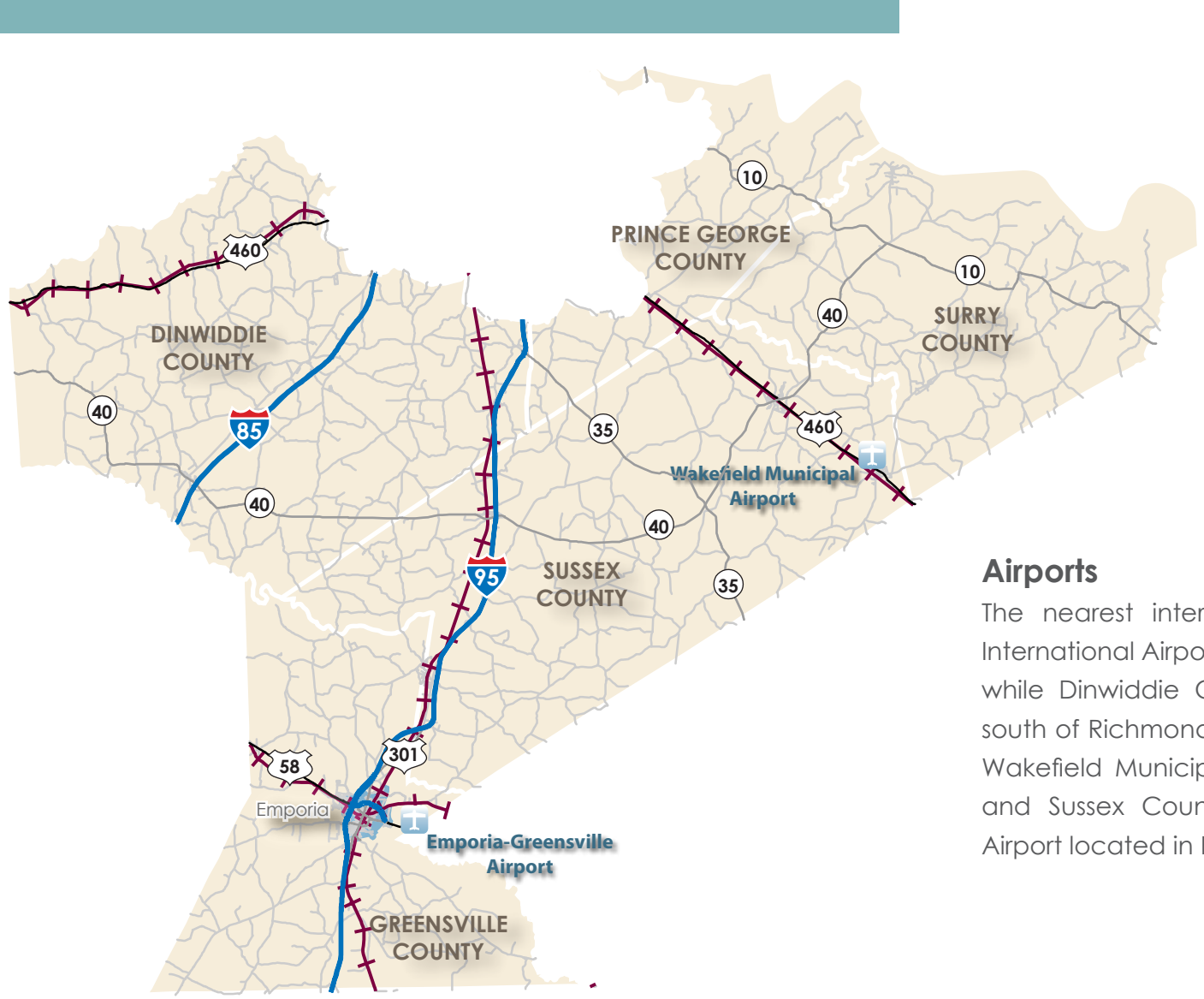


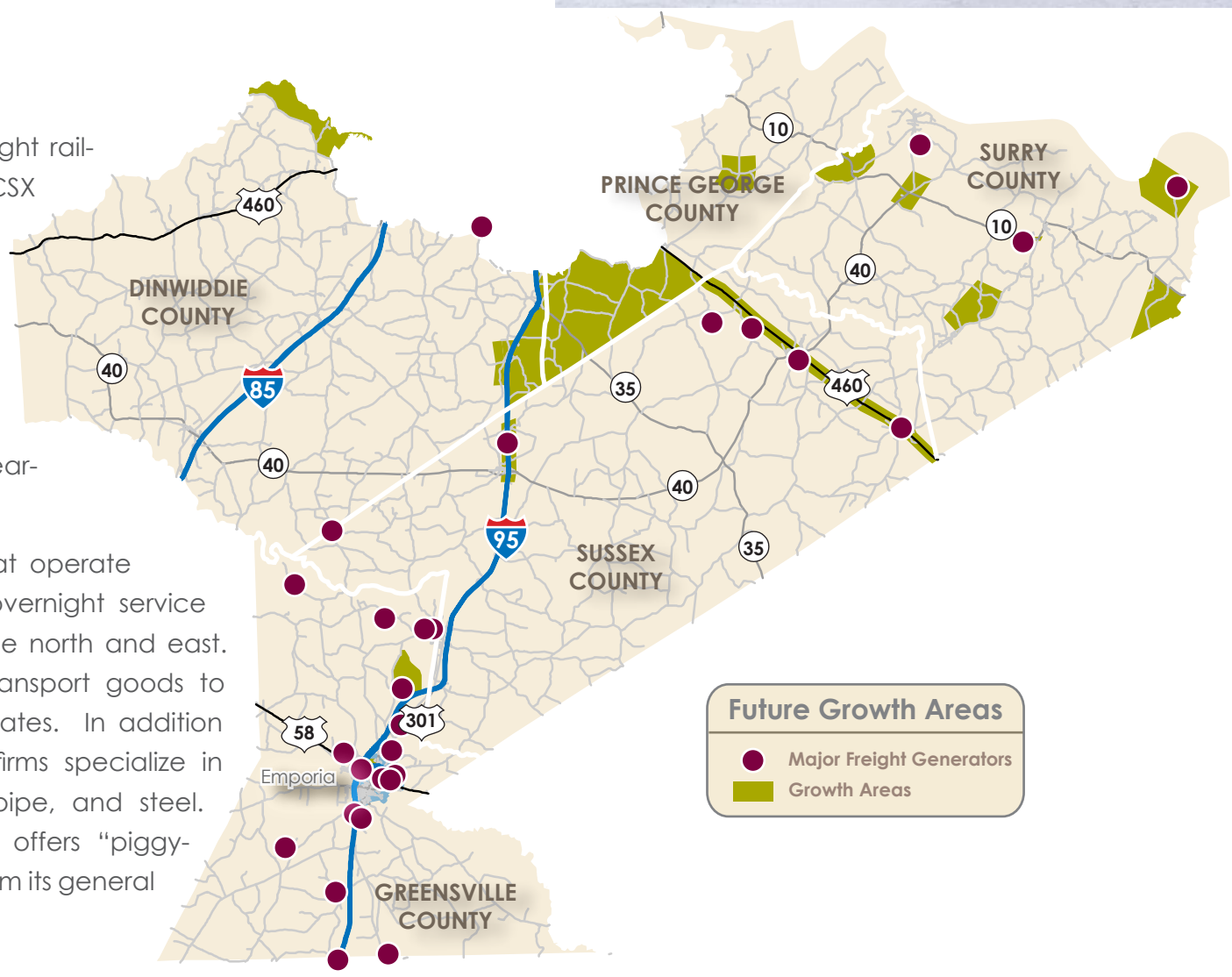
Airports

The nearest international airport is the Richmond International Airport located 5 miles east of Richmond, while Dinwiddie County Airport is located 20 miles south of Richmond. General aviation airports are the Wakefield Municipal Airport, which serves Wakefield and Sussex Counties, and the Emporia-Greensville Airport located in Emporia-Greensville.

Goods Movement

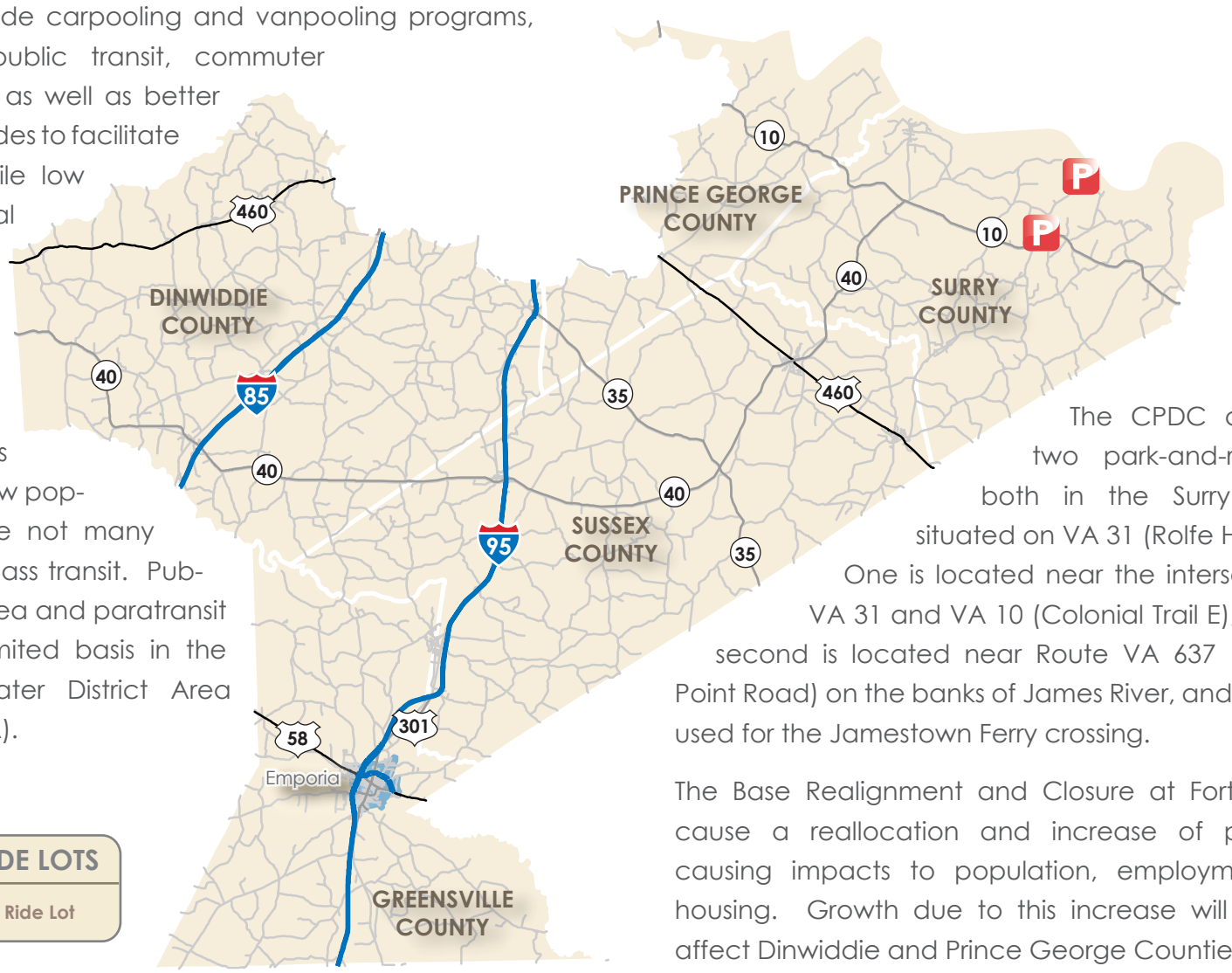
CSX and Norfolk Southern have freight railroads in the Crater PDC area. The CSX Virginia north-south mainline runs from Alexandria, VA to Richmond, VA and continues south to North Carolina via Petersburg, VA and Emporia, VA. The Portsmouth, VA Portsmouth Marine Terminal and the City Point port in Hopewell are the nearest ports for the region.

There are four (4) trucking firms that operate in Greensville County to provide overnight service to markets and ports throughout the north and east. Greensville County truckers also transport goods to major markets across the United States. In addition to general freight carriers, many firms specialize in transporting petroleum products, pipe, and steel. Also, the Norfolk-Southern Railway offers "piggy-back" freight service (rail to road) from its general freight terminal.



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. The CPDC region is predominantly rural with low population densities, therefore not many areas are conducive to mass transit. Public transit is sparse in the area and paratransit service operates on a limited basis in the CPDC area by the Crater District Area Agency on Aging (CDAAA).



The CPDC area has two park-and-ride lots, both in the Surry County situated on VA 31 (Rolfe Highway). One is located near the intersection of VA 31 and VA 10 (Colonial Trail E), and the second is located near Route VA 637 (Pleasant Point Road) on the banks of James River, and both are used for the Jamestown Ferry crossing.

The Base Realignment and Closure at Fort Lee will cause a reallocation and increase of personnel causing impacts to population, employment and housing. Growth due to this increase will primarily affect Dinwiddie and Prince George Counties.

TRANSPORTATION SYSTEM PERFORMANCE & RECOMMENDATIONS

Roadways

The roadway analysis focused on safety, infrastructure condition and congestion. Through the review of available data, input at public meetings, and information provided by local and regional officials, the CPDC, in conjunction with the local jurisdictions, prepared a list of priority study 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 CPDC, 112 priority locations were analyzed; recommendations for these locations are identified separately in the list of recommendations that follow. Several of these locations were identified for assessment of congestion concerns, while the remaining 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.

The priority study location list is based on roadway performance measures, safety considerations, or a combination of the two.

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+**
Dinwiddie	6	6	0	9	10	0
Greensville	1	16	0	2	4	0
Prince George	0	1	0	1	4	0
Sussex	2	8	1	0	0	0
Surry	0	3	1	0	0	0
CPDC Total	9	34	2	12	18	0

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.

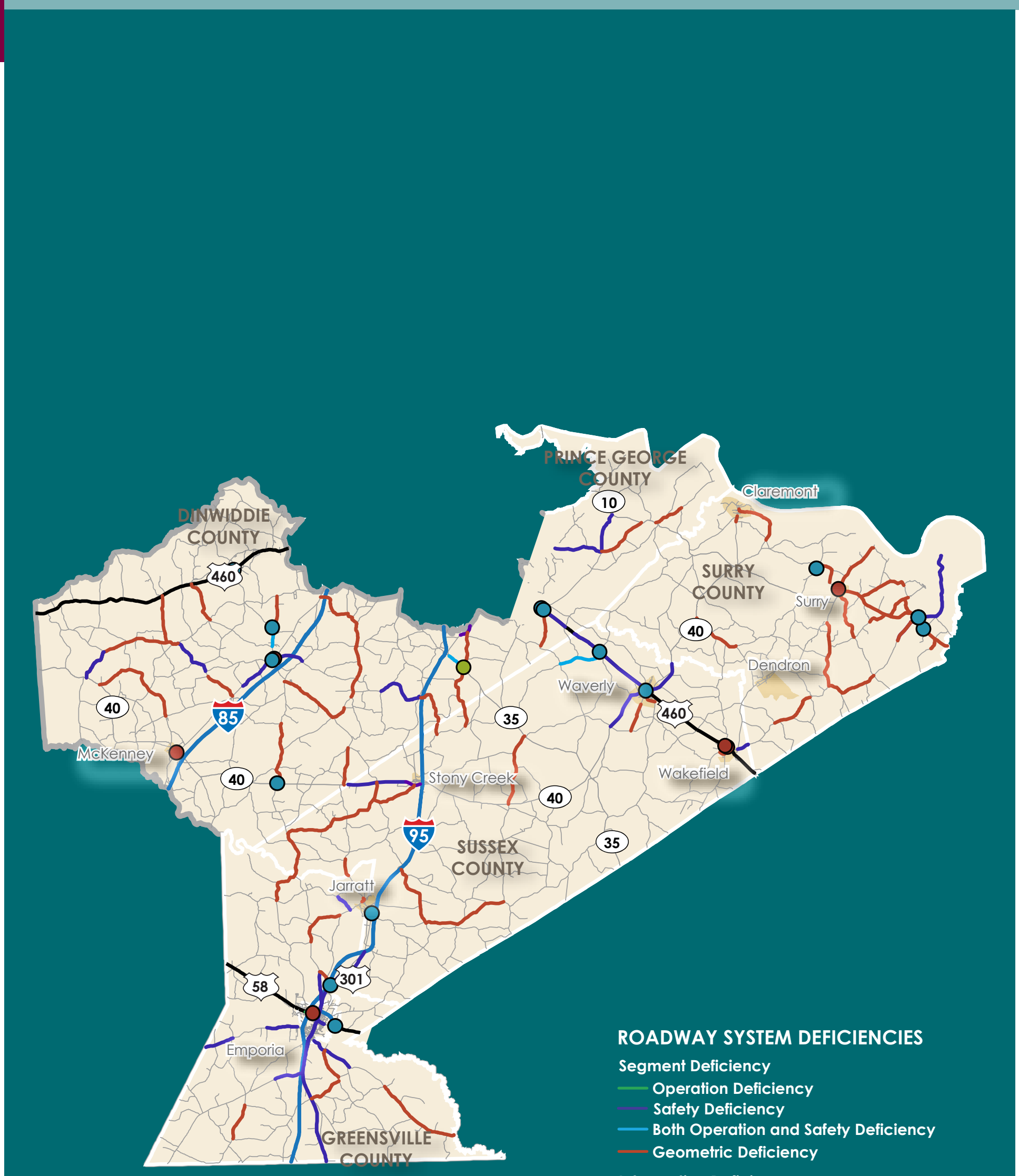
b. Bridge Condition

Current bridge sufficiency ratings were reviewed and those structures with a rating of less than 50 were considered deficient and in need of structural upgrade 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 CPDC to assess current and projected year 2035 operations. In addition, analyses were conducted for intersections identified by CPDC and local governments as priority study locations. The recommendations to address the deficient locations are identified as operational or safety, by jurisdiction. Current Day, 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.


PRINCE GEORGE COUNTY
DINWIDDIE COUNTY
SURRY COUNTY
SUSSEX COUNTY
GREENSVILLE COUNTY
Claremont
Surry
Dendron
Waverly
Wakefield
Stony Creek
Jarratt
McKenney
Emporia
10
460
40
85
35
95
58
301
ROADWAY SYSTEM DEFICIENCIES
Segment Deficiency
Operation Deficiency
Safety Deficiency
Both Operation and Safety Deficiency
Geometric Deficiency
Intersection Deficiency
Operation Deficiency
Safety Deficiency
Both Deficiencies

DINWIDDIE COUNTY RECOMMENDATIONS

1 US 1 (Boydton Plank Rd.)/VA-40 (Doyle Blvd.)
Short-term: Stripe lane use arrows on US 1 approaches; redesign right turn channelization and install additional stop sign on eastbound approach of VA-40; Mid-term: Study installation of right turn lane on eastbound VA-40;

2 US 1 (Boydton Plank Rd.)/VA-627 (Courthouse Rd.)
Short-term: Construct concrete central island for stop sign on VA-627 southbound approach; install Advance Intersection Warning signs (W2 series) on US 1; Mid-term: Study installation of right turn lane on Courthouse Rd.

3 US 1 (Boydton Plank Rd.)/VA-619 (Courthouse Rd.)
Short-term: Trim vegetation on north side on US 1 to improve sight distance; paint stop bar on VA-619 approach.

4 VA-661 (Boisseau Rd.)/VA-627 (Courthouse Rd.)
Short-term: Additional stop sign on centerline for southbound Boisseau Rd.; raised pedestrian warning for mid-block pedestrian crossing.

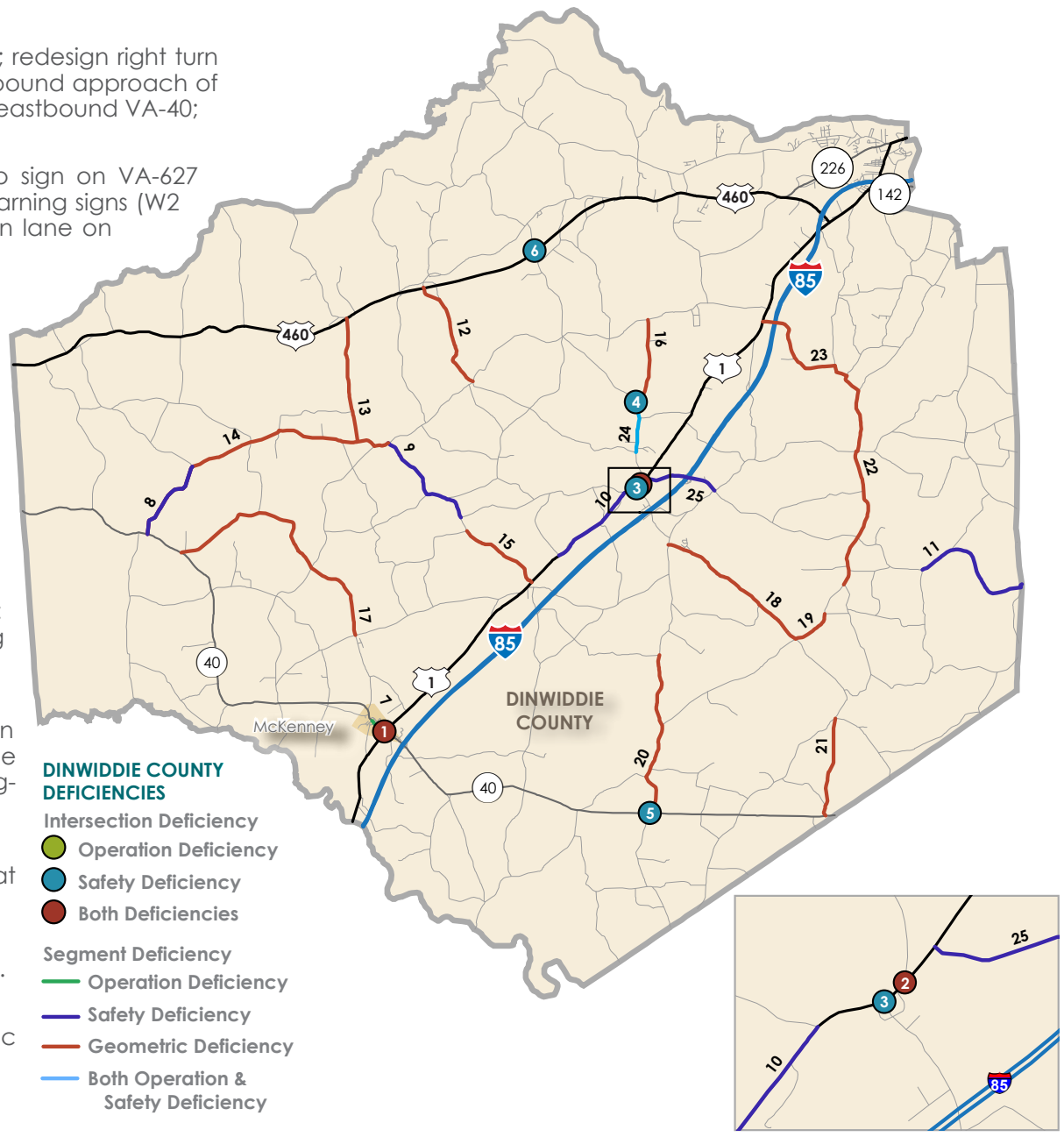
5 VA-40 (Doyle Blvd.)/VA-619 (Courthouse Rd.)
Short-term: Install concrete islands on VA-619 centerline; install stop bar on northbound VA-619; trim vegetation on NW. corner to improve sight distance; Mid-term: Enhance speed reduction measures on VA-40 including flashers.

6 460 (New Cox Rd.)/VA-627 (Courthouse Rd.)
Short-term: Install one-way and do not enter signs on median and VA-627 approaches per MUTCD; stripe centerline and stop bars on US 460 storage space; Long-term: Study safety issues on U.S. Route 460 crossovers.

7 VA-40 from VA-1009 to US 1
Short-term: Install right turn bay on eastbound VA-40 at US 1; Mid-term: Widen to 4 lanes.

8 VA-613 from VA-40 to VA-639
Long-term: Develop Class III bike route. Replace bridge.

9 VA-646 from VA-613 to VA-647
Long-term: reconstruct road to address geometric deficiencies (10-foot lanes) and replace bridge.



10 US 1 from VA-657 to VA-647
Short-term: Install horizontal alignment (W1) signs at curves; Long-term: Replace bridge over Stoney Creek and bridge over Little Cattail Creek.

11 VA-703 from VA-667 to I-95 Ramps
Long-term: Replace bridge.

12 VA-611/627 from US 460 to VA-627
Long-term: reconstruct road to address geometric deficiencies (10-foot lanes).

13 VA-622 from VA-613 E to US 460
Long-term: reconstruct road to address geometric deficiencies (12-foot lanes).

14 VA-613 from VA-40 E to VA-646
Long-term: reconstruct road to address geometric deficiencies (11-foot lanes).

15 VA-646 from VA-647 to US 1
Long-term: reconstruct road to address geometric deficiencies (10-foot lanes).

16 VA-661 from VA-627 to VA-613
Long-term: reconstruct road to address geometric deficiencies (12-foot lanes).

17 VA-644 from VA-40 to VA-650
Long-term: reconstruct road to address geometric deficiencies (12-foot lanes).

18 VA-626 from VA-619 to VA-609
Long-term: reconstruct road to address geometric deficiencies (12-foot lanes).

19 VA-609 from VA-626 to VA-682
Long-term: reconstruct road to address geometric deficiencies (10-foot lanes).

20 VA-619 from VA-658 to VA-40
Long-term: reconstruct road to address geometric deficiencies (12-foot lanes).

21 VA-626 from VA-665 to VA-40
Long-term: reconstruct road to address geometric deficiencies (10-foot lanes).

22 VA-670 from VA-613 S to VA-609
Long-term: reconstruct road to address geometric deficiencies (11-foot lanes).

23 VA-613 from VA-1 S to VA-670 W
Long-term: reconstruct road to address geometric deficiencies (12-foot lanes).

24 VA-627 from VA-611 to VA-661
Short-term: Install horizontal alignment (W1) signs, chevrons and shoulder rumble strips at appropriate locations; Long-term: Widen to 4 lanes.

25 VA-703 from US 1 to VA-660
Short-term: Install chevrons at horizontal curves; install stop ahead signs on I-85 off-ramps; Long-term: Rural 2-lane 24 feet from I-85 to VA-660.

PRINCE GEORGE COUNTY RECOMMENDATIONS

26 US-460 from VA-625 to VA-601
Short-term: Corridor improvement project; Mid-term: Add turn lanes at intersection with Rtes 601, 624, 635, 618; install warning lights/rumble strips at VA-616 (US 460 Location Study).

27 VA-156 from 0.5 Mi. W. of VA-638 to 0.5 Mi. E. of VA-638
Short-term: Install horizontal alignment (W1) signs at curves.

28 VA-616 from VA-635 to VA-625
Short-term: Install horizontal alignment (W1) and chevron signs at curves; stripe edgelines; Long-term: Rural 2-lane 22 feet.

29 VA-625 from VA-616 to VA-10
Long-term: reconstruct road to address geometric deficiencies (11-foot lanes).

30 VA-35 from US 301 to VA-638
Short-term: Install warning signs for turning vehicles near US 301; Long-term: Widen to 4 lanes.

31 VA-35 (Courtland Rd.)/VA-638 (Templeton Rd.)
Short-term: Install stop bar on northbound VA-638; repaint pavement marking on southbound VA-638.

32 US 460 (County Dr.)/VA-618 (Queen St.)
Short-term: Relocate utility pole on southeast corner (fixed object hazard); repave corners to remove depressions at the corners; install advance intersection warning (W2 series) on US 460 approaches; Long-term: US 460 realignment.

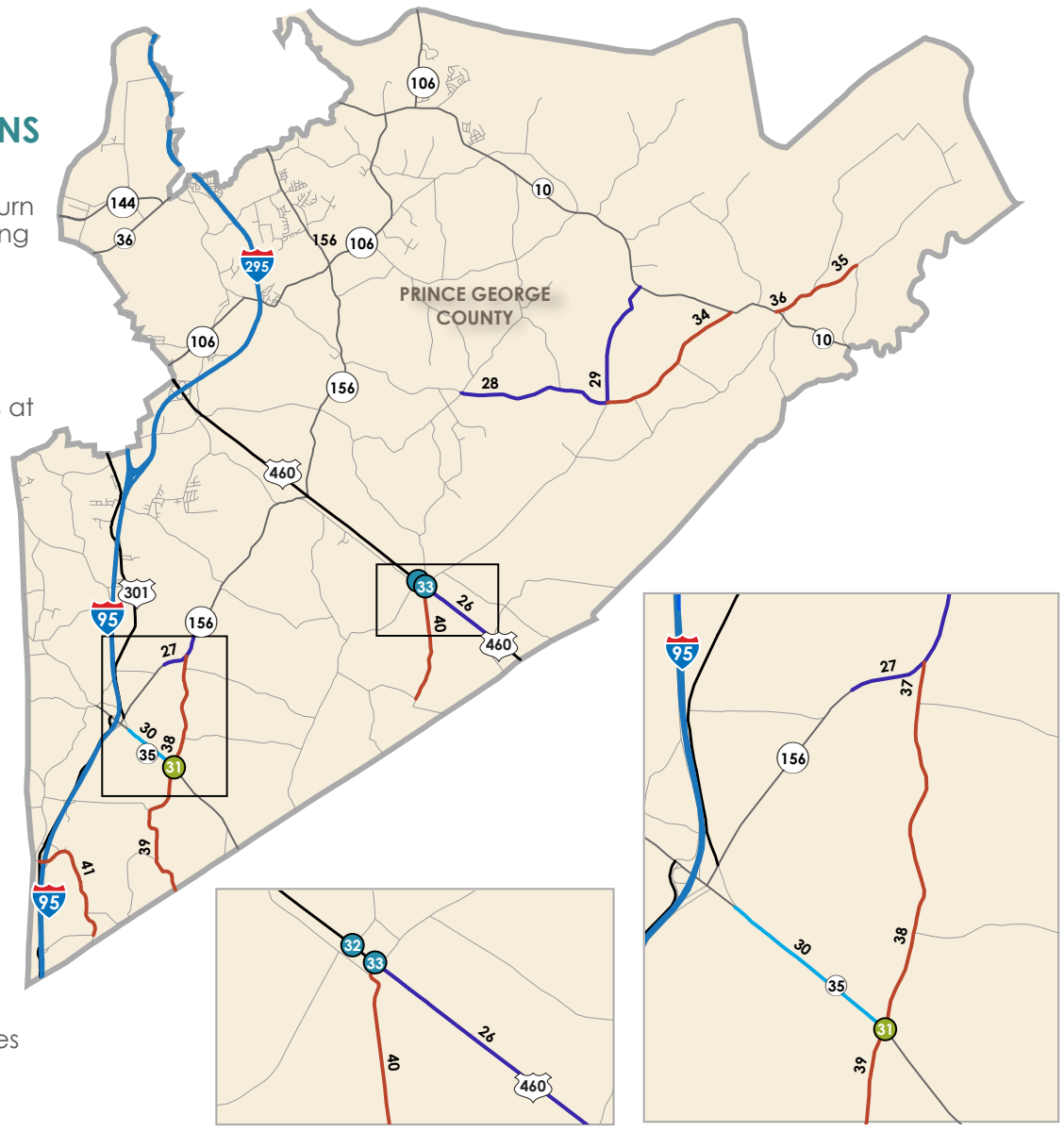
33 US 460 (County Dr.)/VA-625 (Hines Rd.)
Long-term: Add turning lanes

34 VA-616 from VA-625 to VA-10
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

35 VA-611 from VA-1201 to VA-610
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

36 VA-1201 from VA-10 to VA-611
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

37 VA-638 from VA-156 to VA-662
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).



PRINCE GEORGE COUNTY DEFICIENCIES

Intersection Deficiency	Segment Deficiency
Operation Deficiency	Operation Deficiency
Safety Deficiency	Safety Deficiency
Both Deficiencies	Geometric Deficiency
	Both Operation & Safety Deficiency

38 VA-638 from VA-662 to VA-35
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

39 VA-638 from VA-35 to Sussex Co. Line
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

40 VA-625 from VA-619 to US 460 E.
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

41 VA-623 from VA-667 to US 301
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

SUSSEX COUNTY RECOMMENDATIONS

42 US 460 from Waverly Co. Line to Prince George Co. Line
Short-term: Install horizontal alignment (W1) and chevron signs at curves; Long-term: Realignment.

43 VA-602 from VA-625 to VA-626
Short-term: Install horizontal alignment (W1) and Chevron signs at curves; Long-term: Widen to 4 lanes.

44 VA-40 from VA-655 to Surry Co. Line
Short-term: Study introduction of turn bays south of Rte 460 to improve safety and congestion; Long-term: Realignment of US 460 (US 460 Location Study) - Alternative CBA1 proposes an interchange at the junction of Rt. 40.

45 VA-40 (Main St.)/Railroad Ave./Railroad Crossing Short-term: Relocate stop bar and stop sign on Railroad Ave. Study improvement of sight distance from Bank St. by reconfiguring parking.

46 US 460 (N. County Dr.) at VA-603 (Church St.)
Short-term: Paint stop bar on Church St. approach; enhance channelization at south west corner for US 460 traffic (island is a fixed object hazard); Assess speed reduction measures in this section of US 460; Mid-term: Assess the intersection for signalization; Long-term: Urban 2-lane section on Church St.

47 US 460 (N. County Dr.) at VA-714 (High St.)
Short-term: Relocate stop sign on southbound approach of High St. (fixed object hazard); Assess speed reduction measures in this section of US 460; Long-term: Add turning lanes on High St.

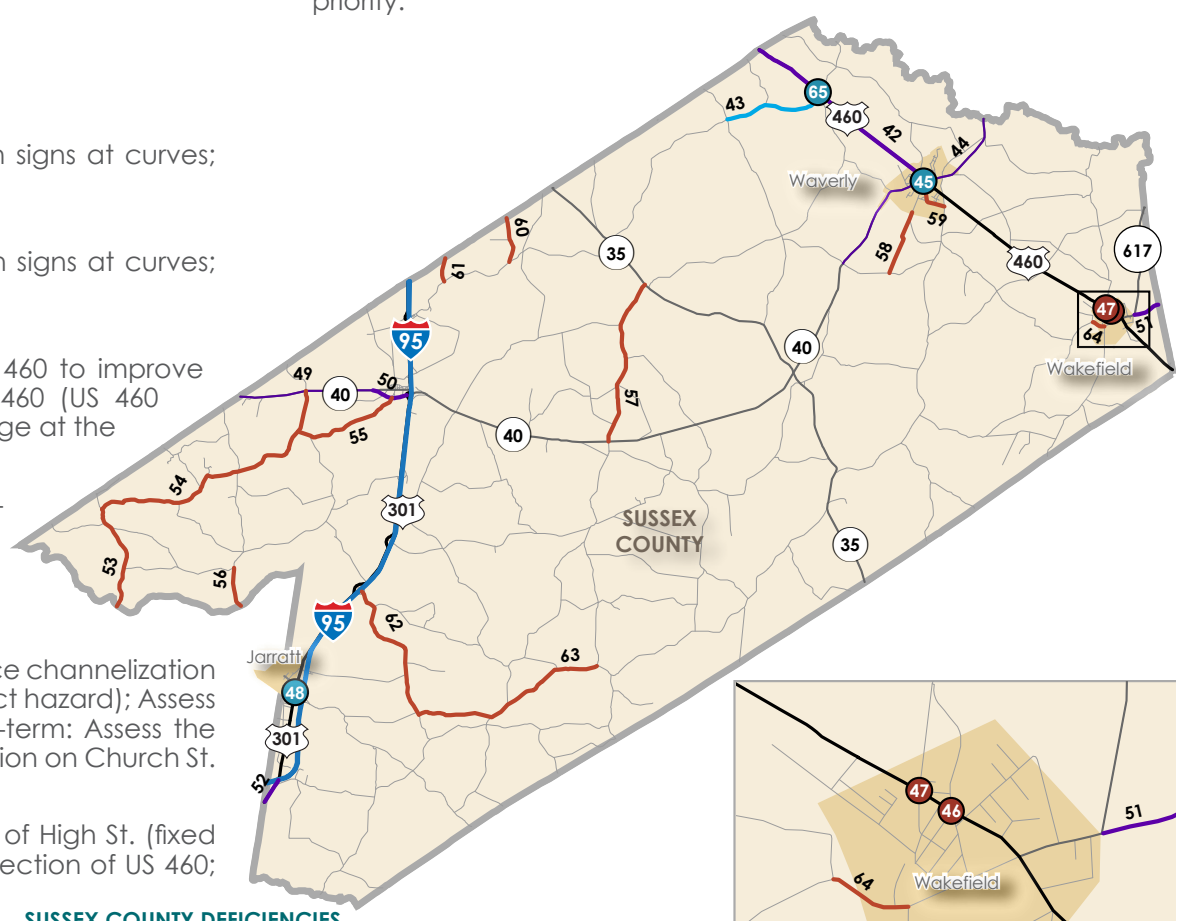
48 US 301 at VA-631 (Henry Rd.)/VA-139 (Jarratt Ave.)
Short-term: Install stop bar on southbound US 301 through lanes; restripe pavement marking on VA-139.

49 VA-40 from Dinwiddie C/L to VA-40 Bus.
Short-term: Install deer warning signs; Long-term: Widen to 4 lanes.

50 VA-40 from VA-40 Bus to I-95 Ramps
Short-term: Install speed reduction measures on VA-40 at the intersections.

51 VA-617 from VA-31 to Surry Co. Line
Short-term: Install horizontal alignment (W1) and chevron signs at curves.

52 US 301 from Greensville Co. Line to I-95 Ramps
Short-term: Angle crash problem resolved with signal installation at VA-631. This section was determined not to be a safety related priority.



SUSSEX COUNTY DEFICIENCIES

Intersection Deficiency	Segment Deficiency
Operation Deficiency	Operation Deficiency
Safety Deficiency	Safety Deficiency
Both Deficiencies	Geometric Deficiency
	Both Operation & Safety Deficiency

SUSSEX COUNTY RECOMMENDATIONS (continued)

53 **VA-619 from VA-681 to Greensville Co. Line**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

54 **VA-681 from VA-619 to VA-40**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

55 **VA-657 from VA-681 to VA T-1213**
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

56 **VA-630 from VA-656 to Greensville County Line**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

57 **VA-626 from VA-40 to VA-35**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

58 **VA-654 from VA-655 to Waverly City Limits S.**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

59 **T-653 from T-606 to VA T-654**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

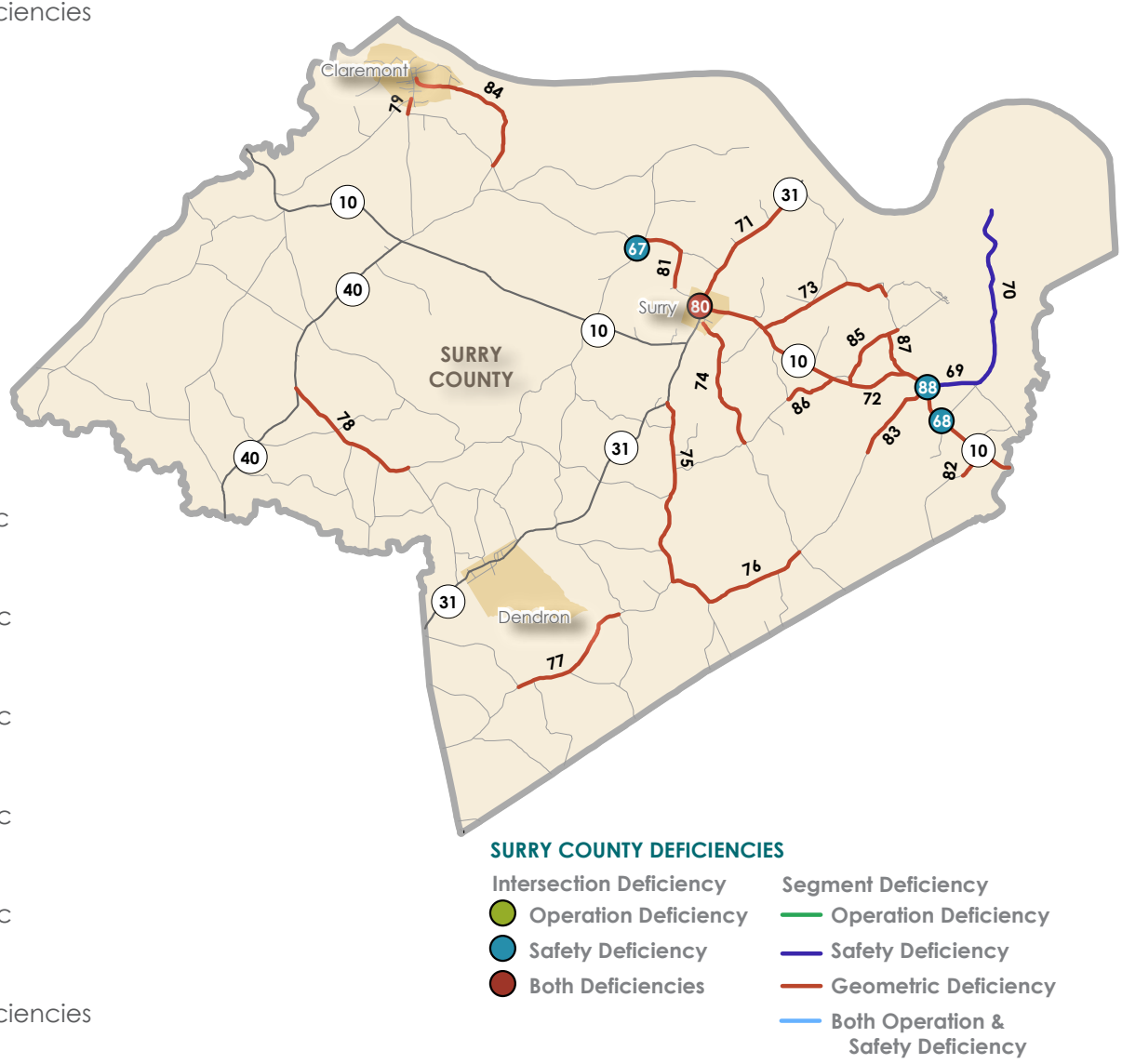
60 **VA-638 from VA-602 to Prince George Co. Line**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

61 **VA-623 from VA-602 to Prince George Co. Line**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

62 **VA-645 from VA-631 S to I-95**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

63 **VA-631 from VA-645 N to VA-735 W.**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

64 **T-620 from T-628 to Wakefield WCL**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).



65 **US 460 (General Mahone Hwy.)/VA-602 (Cabin Point Rd.)**
Short-term: Install new pavement markings on VA-602; Long-term: Assess intersection for signal warrants

66 **VA-40 from Dinwiddie Co. Line to VA-40 Business**
Short-term: Install deer warning signs; Long-term:Widen to 4 lanes.

SURRY COUNTY RECOMMENDATIONS

67 **VA-626 (Beaverdam Rd.)/VA-618 (Hollybush Rd.)**
Short-term: Install pavement markings including edge lines, centerline and stop bar. Repave the depression on the NE corner.

68 **VA-10 (Colonial Trail E.)/VA-650 (Mount Ray Dr.)/Hog Island Rd.**
Short-term: Install advance intersection warning signs (W2 series) on VA-10; install pavement marking on northbound Mount Ray Dr.

69 **VA-617 from VA-10 to VA-650**
Mid-term: Explore the feasibility of bike/trail system; Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

70 **VA-650 from VA-617 to James River**
Short-term: Install no passing (W14-3) and horizontal alignment (W2) signs at appropriate locations.

71 **VA-31 from VA-10 N to VA-637**
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

72 **VA-10 from VA T-1001 to Isle of Wight Co. Line**
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

73 **VA-634 from VA-665 to VA-10 E.**
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

74 **VA-626 from VA T-1001 to VA-616 S.**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

75 **VA-622 from VA-31 to VA-617 W.**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

76 **VA-617 from VA-622 E to VA-626**
Long-term: Reconstruct road to address geometric deficiencies (10-foot lanes).

77 **VA-617 from VA-604 W to VA-618 E.**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

78 **VA-615 from VA-40 to VA-31**
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

79 **VA-646 from VA-626 to VA-613**
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

80 **VA-10 (Colonial Trail E.)/N. VA-31 (Rolfe Hwy.)**
Short-term: Improve signal timings at the intersection; Long-term: Develop bikeways.

81 **VA-626 (Lebanon Rd.)/VA-618 (Southwark Rd.)**
Short-term: Reconstruct roadway to straighten curves, widen, and grade (improve horizontal and vertical alignment) and remove dips.

82 **VA-627 (Moonlight Rd.) from VA-10 E. to 0.5 Mi. S. of VA-10**
Short-term: Widen road, improve ditches, straighten curve.

83 **VA-617 (White Marsh Rd.) from VA-10 E. to 2.8 Mi. S. of VA-10**
Short-term: Reconstruct and widen the roadway, straighten curve.

84 **VA-609 (Sunken Meadow Rd./River Rd.) from VA-626 to TI1209**
Short-term: Rework road and improve curves.

85 **VA-633 (Chippokes Farm Rd.) from VA-10 E. to VA-634**
Short-term: Reconstruct and widen roadway.

86 **VA-616 (Golden Hill Rd.) from VA-10 E. to VA-632**
Short-term: Reconstruct roadway and straighten curve.

87 **VA-634 (Highgate Rd.) from VA-10 E. to VA-633**
Short-term: Reconstruct and widen roadway.

88 **VA-10 E. (Bacon Castle Trail) at VA-617 (Colonial E.)**
Short-term: Install a left-turn lane for eastbound VA-10.

GREENVILLE COUNTY RECOMMENDATIONS

89 US 301 from North Carolina State Line to Sussex Co. Line
Short-term: Install intersection safety improvements at problem locations; Mid-term: Construction of a sidewalk along east side of US 301.

90 US-301 (Sussex Dr.)/VA-614 (Otterdam Rd.)
Short-term: Paint pavement markings on westbound approach of Otterdam Rd.; Mid-term: Assess the intersection for signalization.

91 VA-608 from VA-610 to VA-680
Short-term: Install horizontal alignment (W1) and chevron signs at curves; stripe edge lines.

92 VA-611 from Brunswick Co. Line to VA-633
Short-term: Install horizontal alignment (W1) signs at curves.

93 VA-610 from US 301 to VA-614
Short-term: Install speed limit, curve warning and no passing (W14-3) signs at appropriate locations; Long-term: Construct a connector road from Slagles Lake Rd. to Purdy Rd. for access to new development.

94 VA-730 from VA-622 to VA-676
Long-term: Replace bridge.

95 VA-730 from VA-622 to Emporia SCL.
Short-term: Install horizontal alignment (W2) signs and chevrons at appropriate locations.

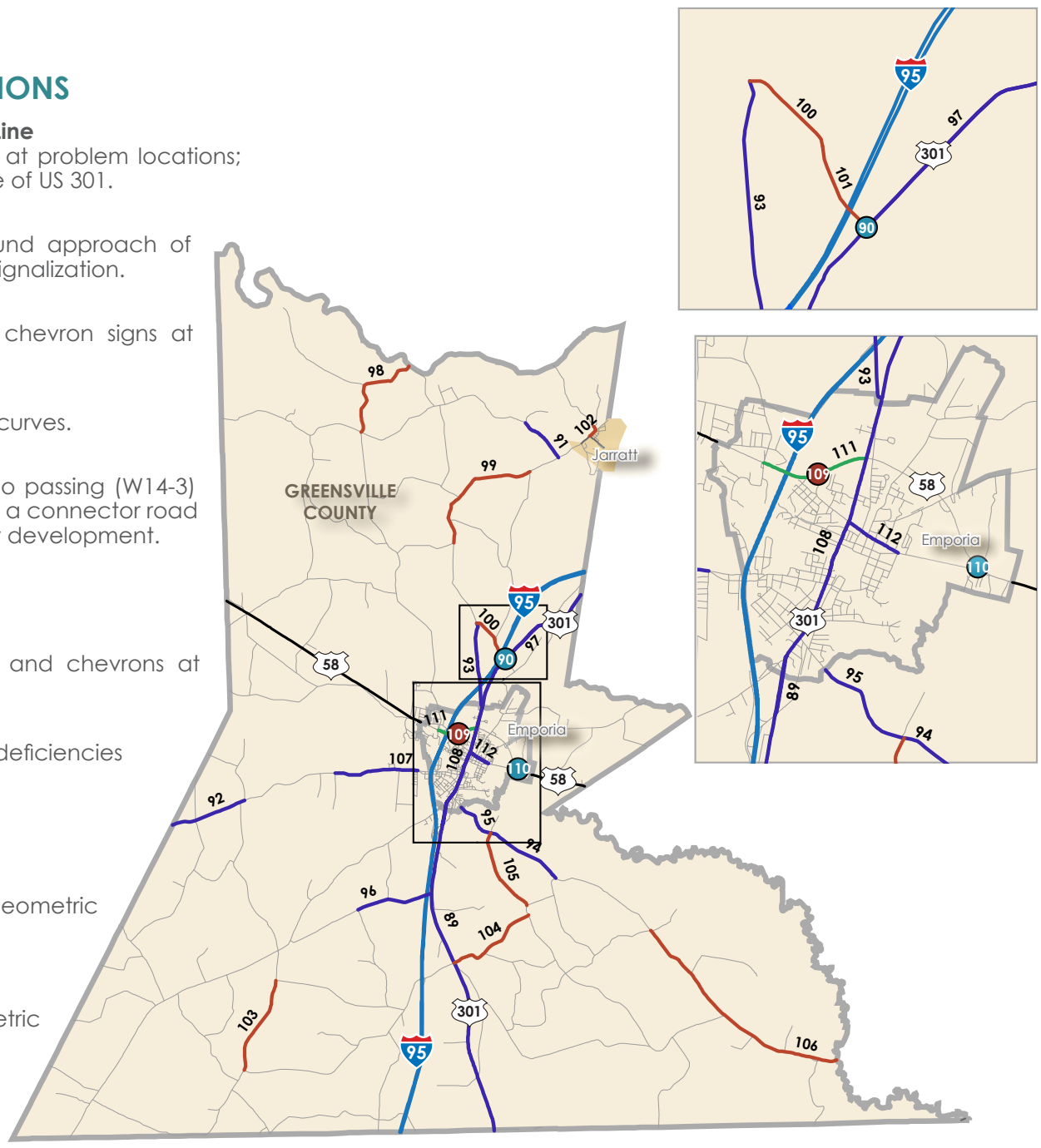
96 VA-639 from VA-650 to US 301
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes). Repair bridge over Fountain Creek.

97 US 301 from VA-614 to VA-665
Long-term: Replace bridge over CSX railroad.

98 VA-619 from Sussex Co. Line to VA-608
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

99 VA-610 from VA-613 to VA-614
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

100 VA-617 from VA-613 to VA-614
Long-term: reconstruct road to address geometric deficiencies (11-foot lanes).



101 VA-614 from VA-617 to US 301
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

102 VA-630 from VA-139 to VA-648
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

103 VA-633 from VA-632 to VA-621
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

104 VA-629 from VA-622 S to US 301
Long-term: Reconstruct road to address geometric deficiencies (12-foot lanes).

105 VA-622 from VA-629 N to VA-730 W.
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

106 VA-730 from VA-660 to Southampton Co. Line
Long-term: Reconstruct road to address geometric deficiencies (11-foot lanes).

107 VA-611 from VA-658 to VA-643
Short-term: Install raised pavement markers and rumble strips at appropriate locations.

108 US 301 from Brunswick Ave. to US 58 Bus.
Short-term: Restripe pavement markings on Meherrin River bridge; Mid-term: Construction of a sidewalk along east side of US 301 (6 yr.); construction of signal at hospital entrance. (Emporia)

109 US 58 (W. Atlantic St.)/Market Dr. (US 58 Bus.)
Short-term: Investigate possibility of installing crosswalks and pedestrian signals; Improve signal timings at the intersection; Mid-term: Provide second dedicated right turn lane on eastbound US 58 Bypass. (Emporia)

110 US 58 (W. Atlantic St.)/E. Atlantic St. (US 58 Bus.)
Short-term: Enhance horizontal alignment, truck warning and stop ahead signs on VA-602; restripe pavement markings on VA-602. (Emporia)

111 US 58 (W. Atlantic St.) from VA-619 (Purdy Rd.) to US 301 Ramps
Short-term: Extend right turn lanes at Market Dr. and Purdy Rd.; Long-term: Widen US 58 to six-lanes. (Emporia)

112 US 58 Bus. (E. Atlantic St.) from US 301 to Southampton Rd.
Short-term: Intersection improvements at US 301; Mid-term: Reconstruction without added capacity. (Emporia)

GREENSVILLE COUNTY DEFICIENCIES

Intersection Deficiency	Segment Deficiency
Operation Deficiency	Operation Deficiency
Safety Deficiency	Safety Deficiency
Both Deficiencies	Geometric Deficiency
	Both Operation & Safety Deficiency

Public Transportation

Deficiencies and recommendations were developed primarily from the CHSM plan for the region (DRPT, 2008). The recommended strategies address the needs and deficiencies identified by the plan. Demand-responsive transit is a vital service offered in many rural areas throughout the commonwealth because the providers offer transportation services to those with no other means of travel to necessary trip destinations. The CHSM Plan for the region also identifies the needs and deficiencies for demand-responsive transit (DRPT, 2008):

- 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, and people with lower incomes.;
- Build coordination among existing public transportation and human service transportation providers;
- Provide targeted shuttle services to access employment opportunities;
- Expand outreach and information on available transportation options in the region, including the establishment of a centralized point of access;

Demand-responsive transit is a vital service offered in many rural areas throughout the commonwealth.

- Implement new public transportation services or operate existing public transit services on more frequent basis;
- Establish or expand programs that train customers, human service agency staff, medical facility personnel, and others in the use and availability of transportation services;
- Provide flexible transportation options and more specialized one-to-one services through expanded use of volunteers;
- Expand access to taxi services and other private transportation operators; and
- Bring new funding partners to public transit/human service transportation.

The review of disadvantaged population groups determined that, other than in Emporia and limited commuter vanpooling and carpooling, there is limited access to public transportation for these populations. There are several census tract block group areas which had a high portion of one or more transportation disadvantaged groups according to the 2000 Census. These block groups had higher percentages of a particular group than their respective county's percentages. The expansion of fixed-route and flexible fixed-route transit service along the principal arterials including US 460 and the southern portion of Greensville County would provide better mobility and access to and from these areas and populations.

Land Use and Future Growth

A review of the jurisdictions' comprehensive plans, zoning, and proposed future land use determined where future growth areas could be. These locations are where the individual jurisdictions wish to direct future growth based on the presence of existing transportation infrastructure, water and sewer existing and future capacity, existing retail locations, and major employers. By directing development, and in particular businesses and industries, that move freight towards these growth areas, there is the potential to maximize the future performance of the region's transportation system and protect and enhance the region's existing agricultural landscape and setting.

The Dinwiddie County Comprehensive Plan formed a development concept where the county was divided into three planning areas – urban, planned growth and rural conservation. The goal of the planning objectives with regard to land use was to "ensure that sound land use and development practices are employed and guide future development in an efficient and serviceable manner which is protective of the County's predominantly rural character and concentrates development in designated areas."

The Greensville County Comprehensive Plan developed a future land use map to recommend development patterns in the county for the next two decades. A majority of the planned areas consist of low density residential development adjoining Emporia and Jarratt.

The Prince George County Comprehensive Plan has a generalized future land use plan and much of the area included for this plan is designated for agricultural use. The goal outlined for land use was to achieve a balanced land use system that provides sufficient and compatible land areas for all community land use needs, while protecting sensitive natural environments and important local historic and cultural resources.

Bicycle and Pedestrian Facilities

The primary source of recommendations was the individual jurisdictions' bike plans and/or comprehensive plans. According to the Tri-Cities Bikeway Plan Update dated August 2003, Dinwiddie County has initiated a "Trekking Dinwiddie Trail" project. This project aims to use a trail system to educate visitors and citizens alike, and link communities and historic battlefield sites in the County. Several trails for walking and biking are planned, connecting places such as Appomattox Riverside Park, Lake Chesdin, Petersburg National Battlefield, and Pamplin Historical Park with communities such as DeWitt, Carson, Sutherland, and Dinwiddie. The City of Emporia Comprehensive Plan lists specific recommendations for expanding the bikeway/pedestrian facilities in Emporia, including extending the existing bike trail along the north bank of the Meherrin River to the west toward the Walnut Heights area, and adding walking trails along the banks of the Meherrin River to help unify the two halves of the City. In addition, the Prince George County Plan and the 2004 Surry County Comprehensive Plan have specific recommendations for bike paths and pedestrian facilities. Lastly, one of the primary recommendations of the Appomattox River corridor plan was to develop a Regional Trail System. This would include the Lower Appomattox River Trail that could connect Chesterfield, Dinwiddie and Prince George Counties to the Cities of Colonial Heights, Petersburg and Hopewell. A detailed list of recommended bicycle and pedestrian facilities appears in the Technical Report.

This project aims to use a trail system to educate visitors and citizens alike, and link communities and historic battlefield sites in the County.

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-trailer trips, and preserving or possibly enhancing roadway level of service (LOS).

The Virginia Statewide Multimodal Freight study completed by the Virginia Department of Transportation (VDOT) and Virginia Department of Rail and Public Transportation (VDRPT) had taken a comprehensive look at Virginia's freight issues to identify critical needs and provide recommendations. The Interstate-95 corridor in the Emporia area and south and the US 460 corridor were identified as a "major truck bottlenecks" in Central Virginia. It also identified the CSX line between Airport Road and Emporia as a potential Mid-Atlantic Rail Operations Study (MAROps) improvement under the Virginia Clearance projects in a time frame of 5-10 years.

The US 460 location study studied the roadway from I-295 to the City of Suffolk and freight was an important component of the study. Norfolk Southern has proposed the construction of an intermodal facility in Prince George County near the US 460 and I-295 interchange and it was accepted by VDOT.

Airports

The *Virginia Air Transportation System Plan Update* contains forecasts of average annual growth rates through 2020 of aircraft based at both commercial and general aviation airports (DOAV, 2003). Dinwiddie County Airport has a base aircraft fleet mix of 81 aircraft (year 2005) and is projected to grow to a base fleet mix of 121 aircraft in 2020. Wakefield Municipal Airport has a base aircraft fleet mix of 35 aircraft (year 2005) and is projected to grow to a base fleet mix of 56 aircraft in 2020. Emporia-Greensville Regional Airport has a base aircraft fleet mix of 3 aircraft (year 2005) and is projected to remain at a base fleet mix of 3 aircraft through 2020.

During the Virginia Air Transportation System plan update, the Emporia-Greensville Airport requested a role change and it was recommended to be changed from General Aviation Community (GC) to General Aviation Regional (GR).

The Norfolk Southern Heartland Corridor Rail Project is projected to significantly enhance the CPDC's transportation and distribution capabilities by shortening rail shipments from Norfolk to the Midwest.

Another major rail project enhancing the CPDC's long-haul freight capability is the CSX National Gateway Project. This is also a multi-state project that extends north-south from North Carolina to Ohio running parallel to Interstate-95 through Virginia and includes a spur that connects to the Ports of Hampton Roads. The Heartland Corridor and the National Gateway intersect at Collier Yard in the City of Petersburg, making the CPDC well-suited to serve as an east coast hub for freight distribution.

Travel Demand Management

In rural areas, low residential densities and dispersed work destinations are not conducive to high public transportation use. A majority of the work commutes are to Chesterfield County and the City of Richmond. However, the CPDC region does have some concentration of work destinations, such as Emporia. Decreases in single-occupant vehicle trips are possible in and around the towns and on heavily traveled commuter routes. Various TDM strategies were outlined in the Tri-Cities Transportation Study Area Congestion Management System Operations Plan including site-specific programs and coordination with the Ridefinders programs, flex-time and assistance programs including guaranteed rides and van-lease programs. These are also expected to impact the rural areas of Dinwiddie and Prince George counties.

The programs and services of the CPDC will continue to be important tools for decreasing single-occupant vehicle trips, particularly during the peak hour.

Park and ride lots in the region are expected to continue to be of importance to the commuting population, particularly as in-migration from other parts of the Commonwealth continues. Greensville County outlined the strategy of two park-and-ride lots in Jarratt and north of the Virginia State line to improve access to the Tri-cities area and North Carolina. As migration from the surrounding metropolitan regions continues to affect both land use and employment, the ridesharing service currently supported by the CPDC is expected to serve an increasingly important role in managing the transportation system.

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.

PLAN ADOPTION

The 2035 Rural Long Range Transportation Plan for the CPDC Region was adopted by the Crater Planning District Commission on XX, 2011. 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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