Virginia Regional Transit West Central Division Transit Development Plan

Final Report

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Prepared for
West Central Division
Virginia Regional Transit

And

Virginia Department of
Rail and Public Transportation

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Chapter 1
Overview of Virginia Regional Transit's West Central Division

INTRODUCTION

The Virginia Department of Rail and Public Transportation (DRPT) requires that any public transit (bus, rail, ferry) operator receiving state funding prepare, adopt, and submit a Transit Development Plan (TDP) at least every six years. A TDP is a Short-Range Transit Plan that outlines the services that a grantee intends to implement during the six-year planning horizon, estimates what resources will be needed, and what funding opportunities are likely to be available. DRPT provides a set of TDP requirements that form the basis of the planning effort. This TDP is intended to serve as a management and policy document for Virginia Regional Transit's (VRT) West Central Division, provide DRPT with an up-to-date record of VRT's capital and operating budgets, as well as provide VRT with the basis for including capital and operating programs in the Six Year Improvement Program (SYIP), the Statewide Transportation Improvement Program (STIP), and the Constrained Long Range Transportation Plan (CLRTP).

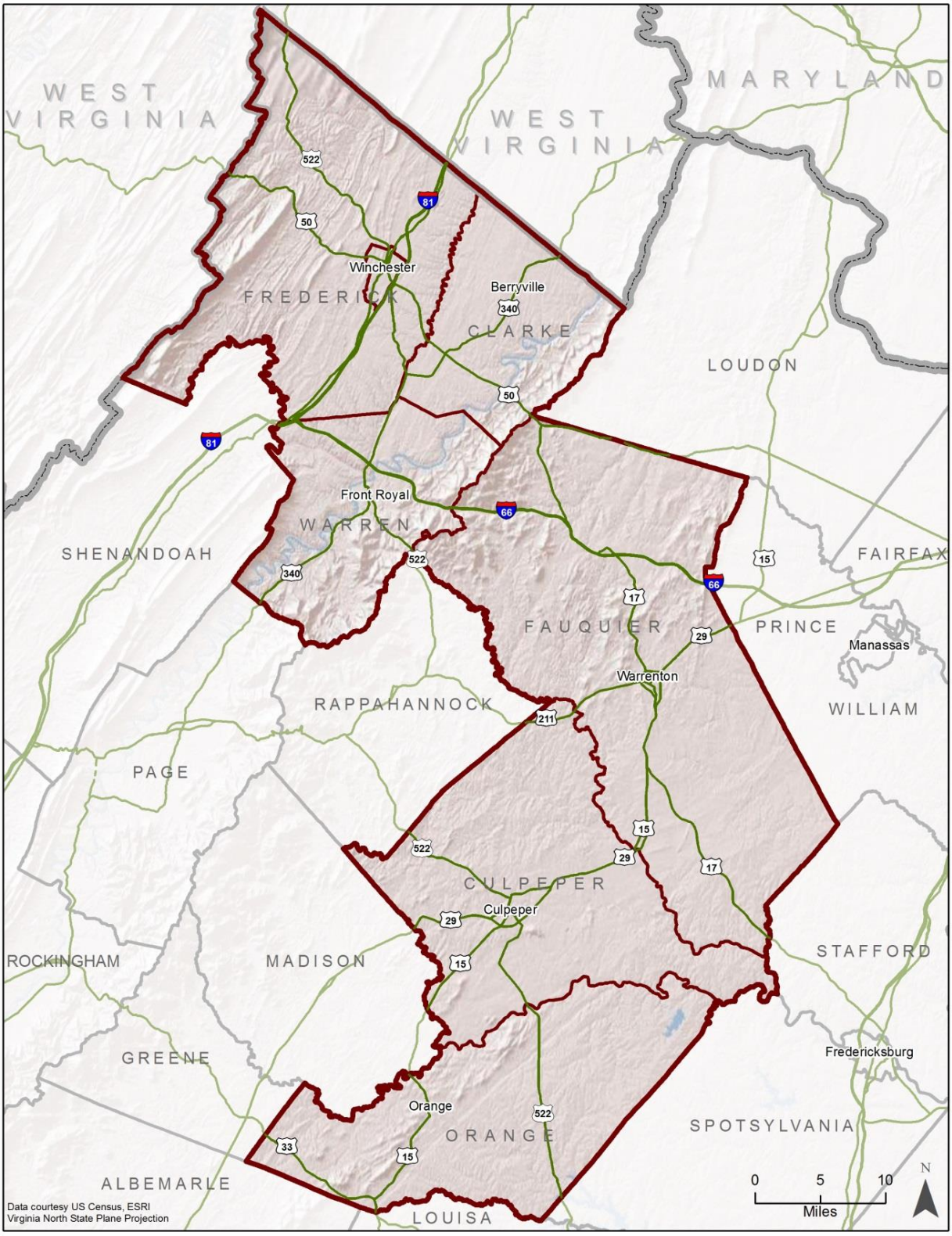
This first chapter of the TDP for VRT's West Central Division provides an overview of the transit program and provides background information and data that will be used for subsequent data collection, analysis, and eventual recommendations for the six-year plan.

BACKGROUND

VRT's West Central Division provides fixed and deviated-fixed route service in the northern Virginia towns of Culpeper, Front Royal, Orange, and Warrenton. The division also provides demand-response service in Clarke County, Culpeper County, the Town of Culpeper and is currently exploring opportunities to begin providing demand-response service in Frederick County. The entire West Central service area can be seen in Figure 1-1.

The West Central Division is located in the northern central portion of Virginia. The service area encompasses six counties and one city; including Orange, Culpeper, Fauquier, Warren, Clarke, and Frederick Counties and the City of Winchester. The region is in close proximity to the Washington, D.C. Metropolitan Area and other large cities such as Charlottesville and

Figure 1-1: Virginia Regional Transit West Central Region



Richmond. Major transportation corridors in the region include Interstates 66 and 81, and U.S. Routes 15, 17, 29, 211, and 522.

The combined population of the region according to the 2010 Census is 308,088. This is a 27% increase from the 2000 to the 2010 Census. The region is approximately 2,197 square miles and borders eleven Virginia counties and five West Virginia Counties.

HISTORY

Transit service in the West Central region began in 1998 when Congressman Frank Wolff contacted VRT after he had earmarked $25,000 in capital funds to begin public transportation in the Town of Warrenton. VRT worked with DRPT and a local non-profit that provided the local match to begin operating the Warrenton Circuit Rider. Around 2002, Culpeper County approached VRT and requested demand response service for the County. In 2003, the town of Warrenton was faced with the dilemma of losing its transit service since the non-profit providing local match funding could no longer support the Circuit Rider. Seeing the success and importance of public transportation, the Town of Warrenton began providing local funds and in-kind services (fuel and maintenance for vehicles).

In 2004, the County and Town of Culpeper expressed interest in beginning a trolley service. The service began operating that same year as a fixed route system with route deviations for ADA service. In 2008, a complementary ADA paratransit service was introduced and the trolley became a true fixed route.

The Town of Orange contacted VRT in 2000 about the potential of beginning public transportation. This service began independently of the other systems in the region. In 2008, the Town of Orange wanted to connect to Gordonsville. This connecting service has become very popular and has grown in both hours and ridership. Since 2008 service has been added based on the Town of Orange's direction.

The Town of Front Royal requested service around 2005 and Randolph Macon Academy has provided funding for weekend service for the Royal Trolley. VRT began operating demand response service eight hours every day in Clarke County in 2001. However, due to budget cuts, service hours have been decreased to four hours.

GOVERNANCE

VRT Board of Directors

VRT is governed by a Board of Directors consisting of ten members. Members are self-selected and recruited by current members of the board. Members are then nominated by the board and elected at the annual meeting. Term lengths are two years. The Board of Directors reviews all grant applications, planning documents, proposed service changes, and fare adjustments. Member of the Board of Directors include:

- Brian Wells, Chairman
- Mark McGregor, CEO/President
- Russ Neyman, Vice Chairman
- Noel Brown, Treasurer
- John Marsh, Secretary
- Charles Grant, Chairman Emeritus
- Maxie Brown
- Robert Chirles
- Randy Sutliff
- One Vacancy

Additionally, Gary Clemens serves as an advisory member Consumer Representative.

Culpeper Transit Advisory Board

Beyond the VRT Board of Directors, the Town of Culpeper has a Transit Advisory Board (TAB) that oversees the Culpeper Connector. The TAB consists of seven members representing the Culpeper County Department of Human Services, Rappahannock-Rapidan Community Services Board, Disability Services Board, Town of Culpeper Parking Authority, the faith community, and two citizens (one from the town and one from the county). The stated purpose of the board is to "encourage high ridership on the Culpeper Connector and County Express, solicit financial support from the business and civic community, maintain and expand bus services, and advise the Town Council and the Board of Supervisors on bus operations." Members of the TAB include:

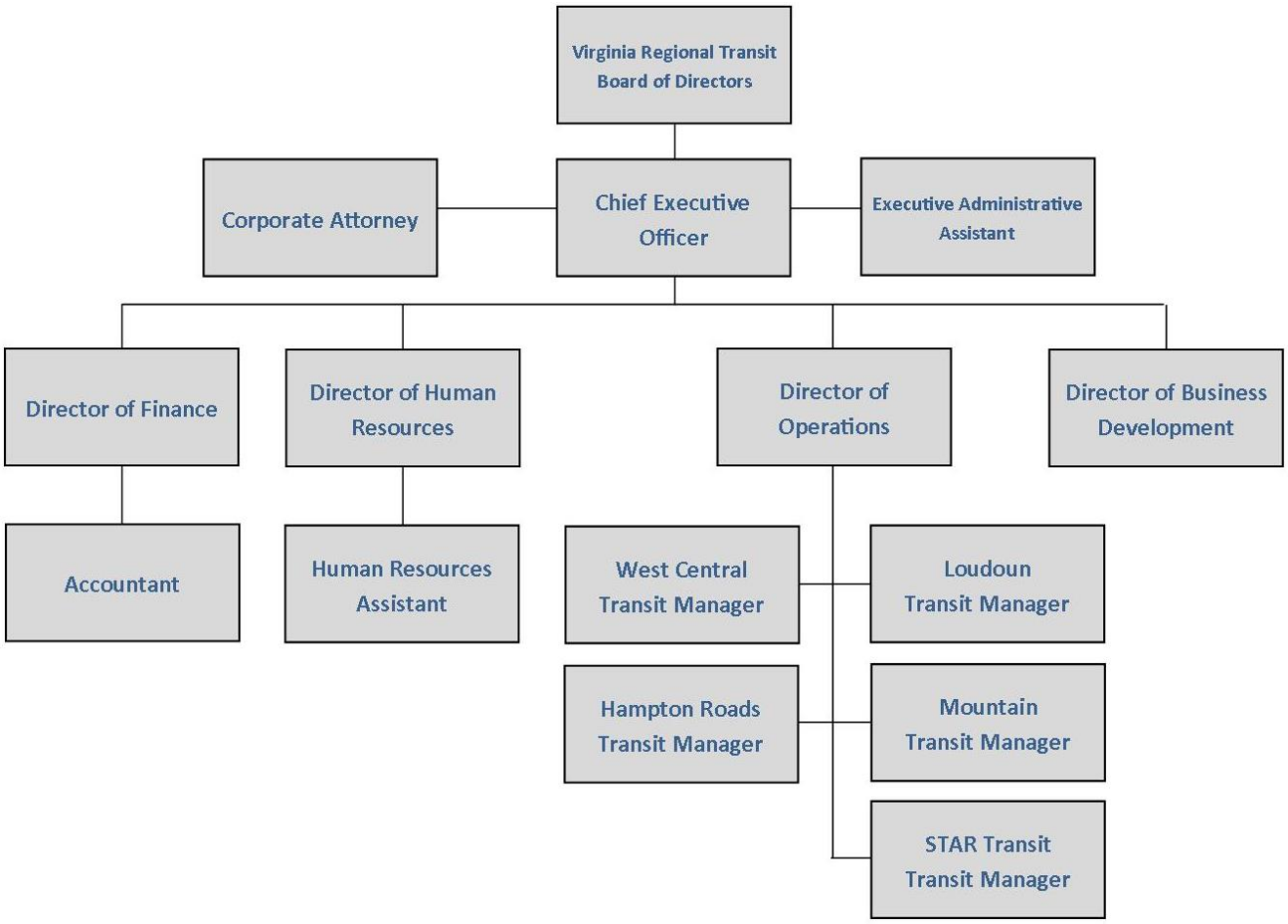
- Dorris Clatterbuck
- Elana Clements
- Doug George
- Caroline Graham
- Lanny Horton

- Alan Anstine
- One Vacancy

ORGANIZATIONAL STRUCTURE

VRT is a non-profit organization with direction provided by a Board of Directors consisting of ten members. Organizational management is provided by the Chief Executive Officer (CEO). Under the CEO, the organization is broken into four divisions: Financial, Human Resources, a route based Transit Region and a demand-response based Transit Region. Under the Regional Transit Directors each division has an individual manager. The organizational chart for VRT is provided in Figure 1-2.

Figure 1-2: Virginia Regional Transit's Organizational Structure



Source: Virginia Regional Transit

TRANSIT SERVICES PROVIDED AND AREAS SERVED

Circuit Rider

The Circuit Rider is a shuttle service available in the Town of Warrenton Monday through Friday from 7:30 a.m. to 5:30 p.m. and Saturday 8:30 a.m. to 11:30 a.m. The shuttle begins each circuit at the Warrenton Post Office and makes additional stops each hour before returning to the Post Office to begin another circuit. The route is actually divided into two routes, the Maroon and the Black. The Maroon Route serves the northern portion and the Black Route serves the southern portion of Warrenton. The two routes are interlined and serviced by one vehicle. The Circuit Rider's map and schedule can be seen in Figure 1-3.

Culpeper Trolley

The Culpeper Trolley is a shuttle service available in the Town of Culpeper with limited service into Culpeper County. The service operates Monday through Friday from 7:00 a.m. to 5:00 p.m. and Saturdays from 9:40 a.m. to 2:20 p.m. The trolley runs on 40 minute headways. The Culpeper Trolley consists of two routes; one running to the north of downtown and one running to the south. The Culpeper Trolley's map and schedule can be seen in Figure 1-4.

Front Royal Area Transit

Front Royal Area Transit (FRAT) provides fixed route shuttle service in the Town of Front Royal and limited service into Warren County. This service operates a north and a south loop route, on one hour headways, Monday through Friday from 8:30 a.m. to 5:00 p.m. Saturday service consists of one route that circulates the downtown portion of Front Royal from 1:00 p.m. to 6:00 p.m. on 30 minute headways. Sunday service operates from 1:00 p.m. to 6:00 p.m. on one hour headways. The Royal Trolley's map can be seen in Figure 1-5.

Town of Orange Transit

Town of Orange Transit (TOOT) operates two routes. There is a loop route in Orange that operates on one hour headways. It runs from 7:30 a.m. to 5:17 p.m. Monday through Friday and from 8:30 a.m. to 3:30 p.m. on Saturdays. TOOT also operates a route from Orange to Gordonsville approximately ten miles to the southwest of Orange. The Gordonsville route operates Monday through Friday and makes two morning trips, leaving Orange at 5:30 a.m. and 7:30 a.m. and two afternoon trips leaving Orange at 12:00 p.m. and 3:00 p.m. TOOT's map and schedule can be seen in Figure 1-6.

Figure 1-3: Circuit Rider Map



Figure 1-4: Culpeper Trolley Map

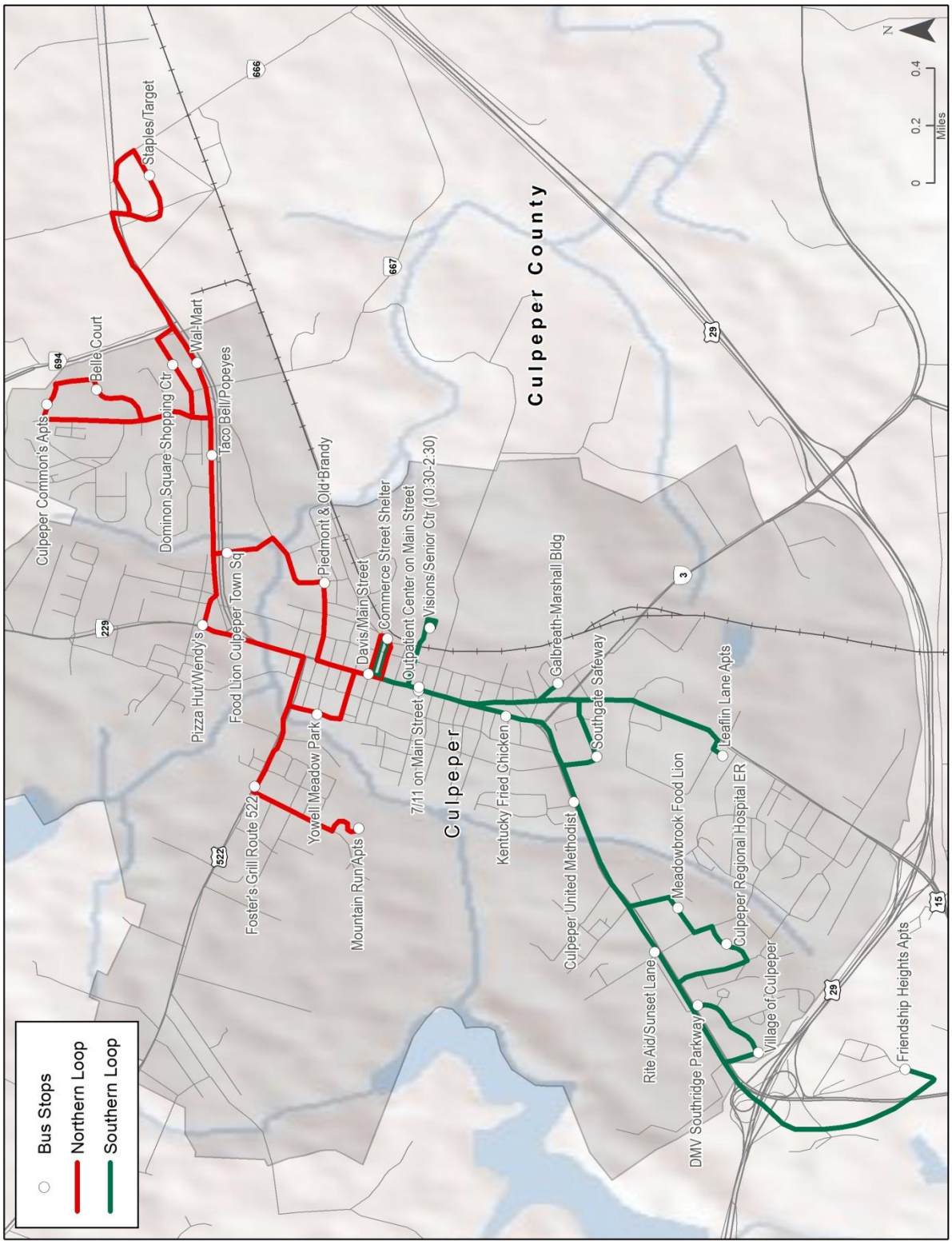


Figure 1-5: Royal Trolley Map

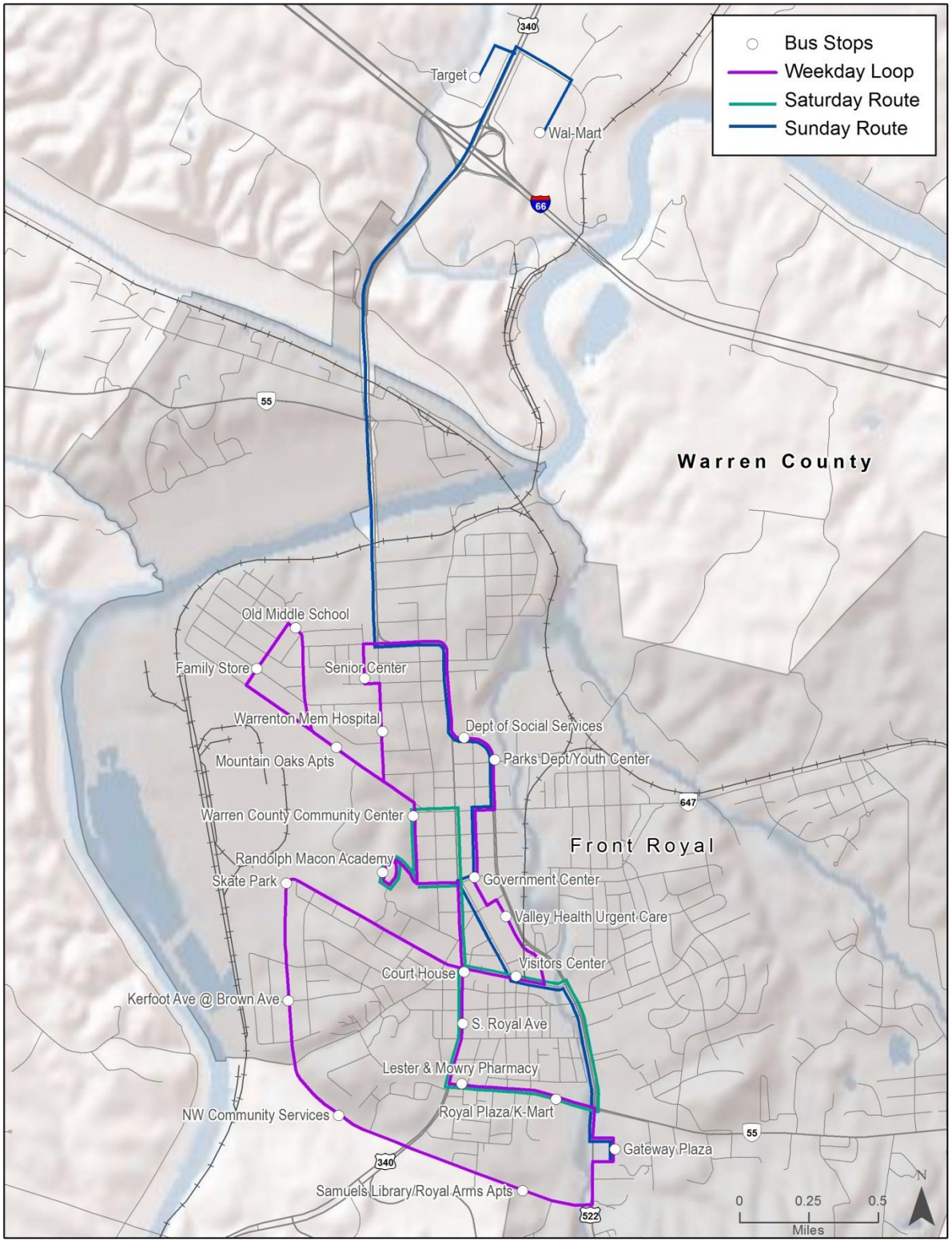
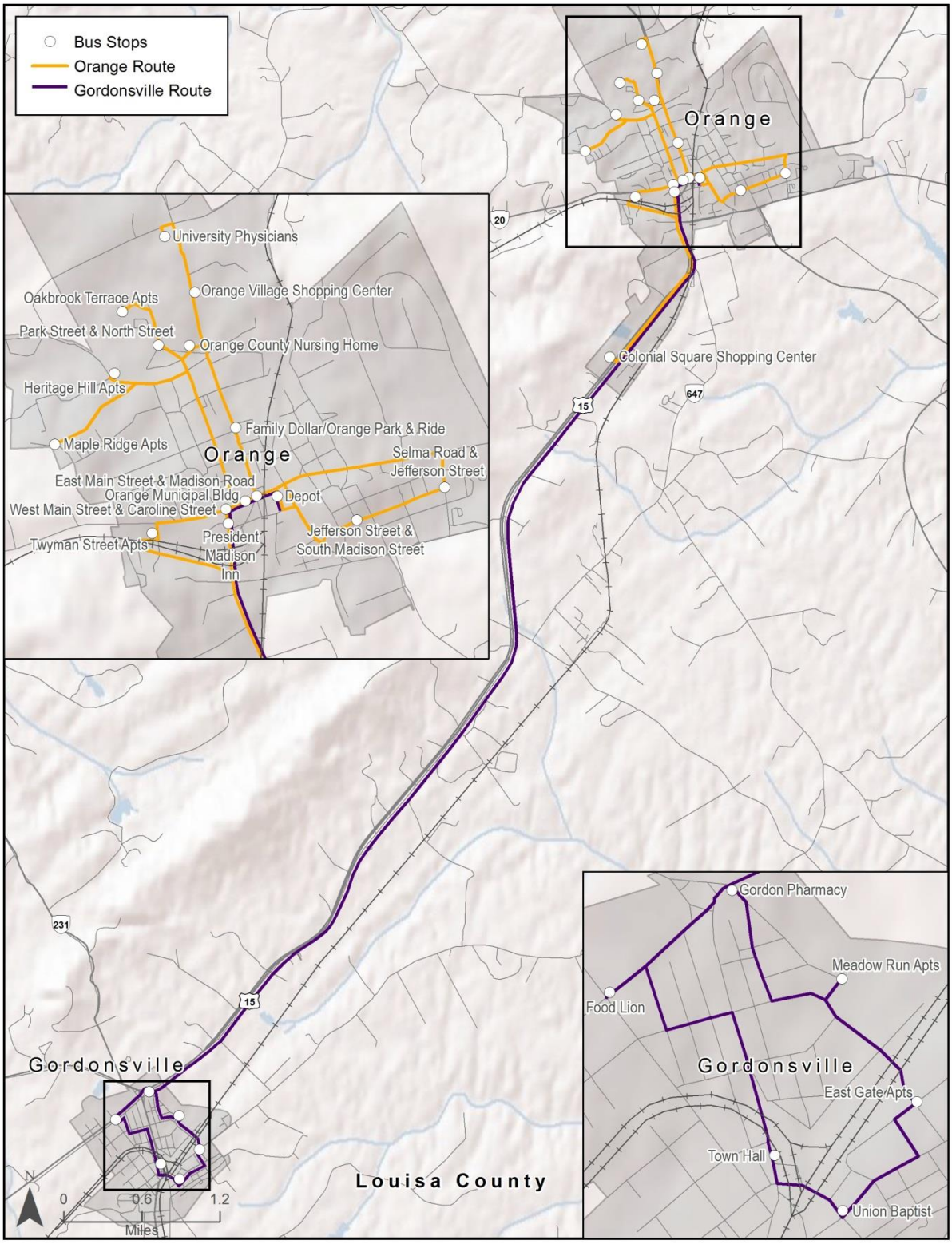


Figure 1-6: Town of Orange Transit Map



Demand Response

VRT provides demand response service throughout the West Central Region. Trips are available for medical appointments, shopping, and other basic needs. Reservations are required at least 24 hours in advance and fares may vary based on trip length. The administrative, operational, and maintenance functions for the demand response services are currently run out of VRT's Purcellville Facility. However, plans are underway to relocate these functions to VRT's Fishersville Facility.

Clarke County

VRT operates a robust general public demand response service in Clarke County. The service is operated Monday to Friday between 9:00 a.m. and 1:00 p.m. (end time approximate). The fare for the service is $1.00 per trip. This service serves all of Clarke County with service into Frederick County and the City of Winchester.

Culpeper County and the Town of Culpeper

Demand response service is provided in Culpeper County and the Town of Culpeper. The service runs between 7:30 a.m. and 5:00 p.m. Monday through Friday. The fare for the service is $1.00 per trip.

Fauquier County

VRT also operates demand response service in Fauquier County. The service is provided from 8:00 a.m. to 5:30 p.m. on Mondays, Wednesdays, and Fridays. This service operates throughout Fauquier County with the majority of trips running into the Town of Warrenton.

FARE STRUCTURE

Fares vary for each of the four systems and the demand response service provided in the West Central Region. Fares for the Circuit Rider are $0.50 per one-way trip on Tuesday through Saturday; service on Mondays is provided fare free. Fares for the Culpeper Trolley are $0.50 per one-way trip and tokens are available for purchase. Fares for Front Royal's Royal Trolley are $0.50 per one-way trip. Fares on the TOOT are $0.25 per one-way trip and service between the Towns of Orange and Gordonsville are $0.50 per one-way trip. Fares for the demand response service are $1.00 per one-way trip and may vary depending on trip length. Table 1-1 provides a breakdown of fares for each service within the West Central Region.

Table 1-1: Fare Structure for VRT West Central Transit Services

System	One-way Fare	Note
Circuit Rider	$0.50	Free on Mondays
Culpeper Trolley	$0.50	Tokens available
Royal Trolley	$0.50	
Town of Orange Transit	$0.25 in Orange $0.50 on Gordonsville route	
Demand Response	$1.00	Prices may vary for long trips

FLEET

VRT maintains individual vehicle fleets for each service area. This enables each locality the opportunity the select their preferred vehicle type and to brand their vehicles. The useful life of the following vehicle fleets is listed at 7 years and 200,000 miles for the trolley buses and 4 years and 100,000 miles for the cut-away vans.

Town of Warrenton / Fauquier County

Table 1-2: Town of Warrenton and Fauquier County Vehicle Fleet

No.	Current Route	Vehicle Identification Number (VIN)	Year	Make & Model	Lift or Ramp	Capacity	Current Mileage	Estimated Replacement
271	Circuit Rider	1GB6G5BG9C1136014	2012	Chevrolet Cutaway	Yes	20	105,452	2016
274	Demand Response	1GB6G5BG1C1136332	2012	Chevrolet Cutaway	Yes	20	71,032	2017
302	Spare	1FDFE4FS6DDA53016	2013	Ford Champion	Yes	20	9,999	2018

Culpeper

Table 1-3: County and Town of Culpeper Vehicle Fleet

No.	Current Route	Vehicle Identification Number (VIN)	Year	Make & Model	Lift or Ramp	Capacity	Current Mileage	Estimated Replacement
209	South Trolley	4UZAACDU19CAH6204	2009	Supreme Trolley Bus	Yes	30	70,060	2018
252	North Trolley	1F66F5DY7B0A11721	2010	Ford Supreme Trolley Bus	Yes	28	29,483	2019
261	Town of Culpeper ADA	1FDFE4FS8ADA65972	2010	Ford Supreme Cut-away	Yes	19	90,194	2016
269	Culpeper County Demand Response	1GB6G5BG7C1135864	2012	Chevrolet Supreme Cut-away	Yes	20	89,511	2017
312	Spare	1FDFE4FS3EDA52293	2014	Ford Champion Cut-away	Yes	20	11,602	2018
313	Spare	1FDFE4FS5EDA52294	2014	Ford Champion Cut-away	Yes	20	22,922	2018
257	Support	1FT7X2B60BEA81465	2011	Ford 250 Pickup	No	2	62,736	2018
284	Support	JN8AZ1MW9CW238613	2012	Nissan Murano	No	5	72,023	2019

Front Royal

Table 1-4: Town of Front Royal Vehicle Fleet

No.	Current Route	Vehicle Identification Number (VIN)	Year	Make & Model	Lift or Ramp	Capacity	Current Mileage	Estimated Replacement
201	Royal Trolley	4UZAACDU69CAD8550	2009	"Cable Car Concept" Trolley Bus	Yes	16	198,246	2016
260	Spare	4UZADEDU3BCGH1923	2011	Freightliner Supreme Trolley Bus	Yes	21	103,286	2019

Orange

Table 1-5: Town of Orange Vehicle Fleet

No.	Current Route	Vehicle Identification Number (VIN)	Year	Make & Model	Lift or Ramp	Capacity	Current Mileage	Estimated Replacement
185	TOOT Trolley	4UZAACBW18CZ61250	2008	Freightliner Trolley Bus	Yes	24	59,356	2019
301	Orange-Gordons-ville	1FDFE4FS4DDA53015	2013	Ford Champion Cut-away	Yes	20	28,658	2017

EXISTING FACILITIES

Culpeper Facility

The VRT Culpeper Facility is located at 1099 Brandy Knoll Court, Culpeper, Virginia 22701. The facility houses administrative offices, a maintenance facility, and vehicle storage area. The building is a total of 15,952 square feet which includes 6,320 square feet of administrative space, 7,370 square feet of vehicle maintenance space, and 2,262 square feet of storage space. The facility also features parking for 77 buses and 49 personal vehicles. Figure 1-7 provides a photograph of the front of the facility.

Figure 1-7: VRT Culpeper Facility



TRANSIT SECURITY PROGRAM

The Culpeper facility is completely fenced in with electric gates that require a code to open after hours and on weekends. All outdoor parking, the maintenance shop, and portions of the administrative office are monitored by CCTV. Additionally, all VRT revenue vehicles are equipped with camera systems and mobile radios.

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PROGRAM

The Culpeper Facility schedules ADA and demand response trips using Shah Transportation software. Vehicle maintenance records are also stored using Shah software.

As mentioned in the previous section, all VRT revenue vehicles are equipped with an on-board camera system and mobile radios for safety.

Also mentioned in the previous section, the Culpeper Facility is equipped with an in house camera system that covers the entire facility and vehicle parking area.

PUBLIC OUTREACH

VRT holds annual meetings with town managers and county administrators. VRT staff also attends town and county meetings as needed.

The VRT website has all fixed route schedules and route maps available for download as PDF documents. Only very basic information pertaining to demand response services is available.

Chapter 2
Goals, Objectives and Standards

GOALS AND ISSUES FOR THE TRANSIT DEVELOPMENT PLAN

An important first step in the development of the TDP is to meet with VRT staff to discuss the challenges, issues and goals regarding transit in the West Central VRT region. A discussion of the goals and issues was held during the TDP kick-off meeting with VRT on November 24th, 2014.

A summary of these challenges and issues are organized by service area and provided below:

Warren County and the Town of Front Royal

- The majority of commercial development and ridership is located in Warren County, outside of the Town of Front Royal. However, only the town is providing the local match required to run the service.
- Front Royal is committed to having a trolley bus for historical appeal. However, the trolley costs more to procure, maintain and operate. There may be a need to explore the cost effectiveness of various vehicles.
- There is no demand response service in Front Royal.
- The Virginia Inland Port and the Rappahannock Shenandoah Warren Region Jail has expressed interest in having transit service.
- Front Royal is poised for growth with its proximity to the I-66 and I-81 junction.

Fauquier County and the Town of Warrenton

- Great *potential* for expanded service based on trip generators in the service area.
- Previous annexation issues between the county and town prevent the town from annexing additional land.

Culpeper County and the Town of Culpeper

- Demand Response, ADA Paratransit, and Dialysis transportation is growing rapidly with only one bus carrying 40 to 50 people per day.

- Fixed route service is stable with modest growth.

Orange County and the Town of Orange

- TOOT is currently providing service to the Town of Gordonsville. Gordonsville has indicated to VRT that they would be interested in expanding that service.
- There is a need and desire for transit service within the county, but county funds are currently limited.

TRANSIT PROGRAM MISSION

Virginia Regional Transit has established the following mission statement:

> *"As a multifaceted organization, Virginia Regional Transit provides access to affordable transportation through passenger service, transit system management and other transit related services."*

This statement appears in the VRT 2010 Long Range Strategic Plan and in the VRT Annual Reports from 2010 through 2014.

TRANSIT PROGRAM GOALS AND OBJECTIVES

It is important that a transit program has specific goals and objectives, and service standards to guide and measure if the system is accomplishing its mission. VRT has not formally established updated written goals or objectives to focus its efforts since the 2010 Long Range Strategic Plan (noted below).

The following six goals appear in the VRT 2010 Long Range Strategic Plan:

1. "Increase ridership by providing transit services that are customer friendly, efficient, flexible, comfortable, easy to use, safe and affordable"
2. "Maintain a high level of passenger safety by using innovative ideas and technology"
3. "Improve service efficiency and ridership by utilizing information generated from data systems and stakeholder feedback, including customers, localities and Virginia Regional Transit staff"
4. "Maintain a high level of communication between riders and Virginia Regional Transit through the use of route signs on buses, clearly marked bus stops and widely distributed route schedules"

5. Adapt transit services to the specific needs and financial abilities of each local community"
6. "Insure that Virginia Regional Transit staff project a professional, capable, and efficient image of Virginia Regional Transit as the best, most experienced transit provider in Virginia"

KFH Group is drafting goals and objectives for the transit program as part of the TDP. Explicit goals and objectives for the individual systems of the West Central region have not been developed.

Goals are broad and general, providing policy guidance as to how the transit system's mission should be accomplished. Objectives provide more specific and tangible direction as to how transit goals can be met.

During the first TDP Advisory Committee meeting, committee members were asked to indicate some important topic areas that should be included within these draft goals. The following topic areas were discussed:

- Creating a cohesive, comprehensive system that reflects the diversity of the community.
- Providing mobility for people who cannot afford personal transportation, while remaining affordable.
- Working with area human service agency providers.
- Finding a balance between serving transit dependent and choice riders.
- Reaching out to new markets without reducing service for existing riders.
- Supporting the economic development goals of the localities.

Based on this discussion, the following goals and associated objectives have been drafted for the transit program in the region.

Goal 1: Provide cost efficient and effective public transportation services that support the mobility and economic development goals of the communities served.

Objectives:

- Evaluate and monitor system-wide performance to ensure appropriate allocation of resources.
- Consider changing or eliminating service that does not meet established performance standards.

- Consider the establishment of new services to meet regional mobility and economic development goals.

Goal 2: Maintain the current ridership base while seeking opportunities to increase ridership and serve new markets.

Objectives:

- Sustain and improve current public transit services to serve both transit-dependent and discretionary riders.
- Identify opportunities to better serve existing markets, such as providing service on additional days or extending hours of service.
- Identify opportunities to serve new markets by fully exploring the demand for service to neighboring "activity centers".

Goal 3: Maintain strong relationships with area human service transportation providers and neighboring transit programs to maximize mobility options in the region.

Objectives:

- Meet regularly with area human service agencies and other providers in the region to continue to improve mobility options for agency clients and the public, while reducing duplication where it may exist.
- Coordinate service and transfer opportunities with other transit providers in the region, where feasible.

Goal 4: Strengthen and market a brand identity for the transit program.

Objectives:

- Build and strengthen the chosen brand identity through marketing and advertising efforts.
  - Maintain accurate and up-to-date transit information on the VRT website.
  - Distribute system brochures throughout the communities served.

Goal 5: Responsibly leverage federal and state funds with local funds and fare revenue to ensure the financial viability of the system.

Objectives:

- Develop and monitor a multi-year financial plan.
- Research available federal and state funding programs to ensure the region is maximizing its federal and state transit funding opportunities.
- Review the fare structure annually to determine if fares are both affordable for riders and economical for the operations of the system.

- Explore additional partnership opportunities with local businesses, employers, educational institutions, and other community stakeholders to maximize financial support for transit.
- Identify and explore strategies to secure new revenue sources, such as advertising, fundraising, and/or other grant opportunities.

SERVICE STANDARDS

These draft goals, objectives, and service standards are being developed for the system as a component of the TDP process. Service standards are benchmarks by which service performance is evaluated. The service standards that were developed in the previous TDP have been incorporated in the current draft standards with additional benchmarks. The most effective service standards are straightforward and relatively easy to calculate and understand.

Category	Standard
Availability Service availability is a direct reflection of the level of financial resources available for the transit program.	**Service Coverage:** **Fixed Route:** Residential areas with population densities of at least 2,000 people per square mile. Major activity centers including employment, health/medical centers, high schools, shopping centers, social service agencies, and government centers. Hours: The first trip on a route in the peak direction of travel should leave no later than 6:30 a.m. and the last trip should leave no earlier than 6:00 p.m. On Saturdays, the first trip should leave no later than 8:00 a.m. and the last trip no earlier than 6:00 p.m. Frequency: Minimum all day service frequency is 60 minutes. ADA Paratransit: At least ¾ mile from fixed-routes. Demand-Response: Region-wide
Productivity (one-way trip/revenue hour)	**Fixed-Route:** Review service and consider modifications if productivity falls below the FY14 boardings per revenue hour levels: • Culpeper Connector 1: 6.48 • Culpeper Connector 2: 9.76 • Front Royal Trolley: 3.26 • Town of Orange Transit Circulator: 4.92 • Town of Orange Transit Gordonsville: 6.03 • Warrenton Circuit Rider: 7.08

Category	Standard
	Demand-Response: Review service and consider modifications if productivity falls below the FY14 boardings per revenue hour levels: • Clarke County: 3.68 • Culpeper County Express: 2.29 • Town of Culpeper ADA: 4.09 • Fauquier County: 1.47
Cost Efficiency (costs/revenue hour)	Review service and consider modifications if operating costs[1] exceed an average per vehicle revenue hour. • Clarke County: $120.64 • Culpeper Connector 1: $70.80 • Culpeper Connector 2: $70.80 • Culpeper County Express: $70.80 • Culpeper ADA: $70.80 • Front Royal Trolley: $45.76 • Fauquier County: $70.80 • Town of Orange Transit Circulator: $70.80 • Town of Orange Transit Gordonsville: $70.80 • Warrenton Circuit Rider: $70.80
Cost Effectiveness (costs/one-way trip)	Review service and consider modifications if operating costs exceed an average per passenger trip. • Clarke County: $29.06 • Culpeper Connector 1: $10.93 • Culpeper Connector 2: $7.25 • Culpeper County Express: $30.90 • Culpeper ADA: $17.32 • Front Royal Trolley: $41.04 • Fauquier County: $48.21 • Town of Orange Transit Circulator: $14.38 • Town of Orange Transit Gordonsville: $11.75 • Warrenton Circuit Rider: $10.00
Dependability	**On-time Performance:** 90 percent or greater (a vehicle leaving a scheduled time point no more than 1 minute early or 5 minutes late is considered on-time).

[1] Operating expenses for the Culpeper region services (Culpeper County Express, Fauquier demand response, Culpeper Connector, Culpeper ADA, and TOOT routes) were calculated by dividing the FY14 combined operating expenses and allocating them proportionally by the number of operating hours for each service. Therefore, cost per revenue hour for these services are the same.

Category	Standard
Public Information	Timetable, maps, and website maintained and updated as needed to be accurate.
Farebox Recovery (farebox revenue as a percentage of operating expense)	**Fixed-Route:** Farebox recovery ratio for the fixed-route service should be at least 20 percent. **Demand-Response:** Farebox recovery ratio for the Clark County demand response service should be at least 15 percent.

Process for Updating Goals, Objectives and Service Standards

Goals, objectives, and service standards should be examined on an annual basis to ensure that they are appropriate and in keeping with what the system is experiencing. If additional goals are envisioned, or if specific goals, objectives, or standards are no longer appropriate, represent under-achievement, or cannot reasonably be attained, VRT can update the measures to reflect current circumstances.

It is recommended that the annual review of goals, objectives, and service standards take place as part of the grant preparation cycle. Any changes for these measurement tools can be included in the annual TDP update.

Chapter 3
Service and System Evaluation and Transit Needs Analysis

INTRODUCTION

This chapter of the TDP focuses on two primary reviews. The first area of focus is a description and analysis of the recent performance of the transit systems which fall under VRT's West Central Division; including an analysis of trends, a peer analysis, recent ridership statistics, and the results of a passenger survey. The second area of focus provides an analysis of transit needs, including a review of relevant studies and plans and demographic and land-use analysis.

The core sections of Chapter 3 include:

1. System Evaluation
2. Peer Analysis
3. Financial Analysis
4. Recent Compliance Results
5. Rider Surveys
6. Stakeholder Opinions
7. Demographic and Land Use Analysis
8. Title VI Analysis
9. Review of Local Planning Documents

A more in-depth analysis of the rider surveys is presented in Appendix A and demographic data for each county is detailed in Appendix B.

SYSTEM EVALUATION

Trend Data

Table 3-1 provides the operating statistics for VRT's West Central Division for fiscal years 2012 to 2015 as reported by VRT. From 2012 to 2014 ridership decreased by 17 percent or by 22,951 one-way trips. In fiscal year 2015 it is estimated that the division's ridership will improve to

149,990 one-way trips or an increase of nine percent over FY 2014. The significant efficiency measure of cost per hour has improved from $70.63 in 2012 to $66.04 in 2015, or a seven percent reduction in cost. While the cost per hour has improved, the cost per trip has modestly risen from $10.62 in 2012 to $11.26 in 2015, or a six percent increase.

Table 3-1: VRT West Central Service Area Wide Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	161,117	142,390	138,166	149,990
Revenue Miles	298,363	283,482	284,124	309,014
Revenue Hours	24,224	24,115	25,753	25,576
Trips/Hour	6.65	5.90	5.37	5.86
Trips/Mile	0.54	0.50	0.49	0.49
MPH	12.32	11.76	11.03	12.08
Operating Costs	$1,710,829	$1,718,421	$1,903,370	$1,689,070
Cost/Trip	$10.62	$12.07	$13.78	$11.26
Cost/Hour	$70.63	$71.26	$73.91	$66.04

Source: Virginia Regional Transit

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Table 3-2 provides a breakout of performance data for each service operated under the West Central Division in fiscal year 2014. When possible the data is displayed by route for the fixed and deviated fixed-route services. For example, the Culpeper Trolley has a north and a south route which are displayed separately; however, the Warrenton Circuit Rider has a Maroon and a Black Route but route specific data was not available in this case.

Under fixed and deviated fixed-route services, the Culpeper Trolley had the greatest ridership with both routes completing a total of 58,254 one-way trips or 42 percent of the total ridership in the West Central Division. The Circuit Rider garnered the second highest ridership number with 21,000 trips. In productivity terms, the Culpeper Trolley also displayed the highest trip per hour rate with a combined average of 10.29 trips hour.

Within the ADA and demand response services in the region, Culpeper County Demand Response service had the highest usage in passenger trips with 9,334 one-way trip or 45 percent of the total demand response trips provided within the West Central Division. The Culpeper complimentary ADA service provided the second most trips with 8,242 one-way passenger trips. The ADA service was the most productive of the demand response services with an average of 4.09 trips per revenue hour. Of the county-wide demand response services, Culpeper County has the high number of trips per hour with 2.29.

Table 3-2: Fiscal Year 2014 Trend Data by Service

Services	Pass. Trips	Rev. Miles	Rev. Hours	Trips per Hour	Trips per Mile	MPH	Operating Cost	Cost per Trip	Cost per Hour
Fixed-route & Deviated Fixed-route Services									
Culpeper Trolley North	30,633	28,315	2,830	10.82	1.08	10.01	$218,787	$7.14	$77.31
Culpeper Trolley South	27,621	27,485	2,830	9.76	1.00	9.71	$218,787	$7.92	$77.31
Front Royal Area Trolley	13,186	33,166	4,081	3.23	0.40	8.13	$186,732	$14.16	$45.76
TOOT - Gordonsville	9,987	32,542	1,658	6.02	0.31	19.63	$128,180	$12.83	$77.31
TOOT - Orange	14,835	26,359	3,014	4.92	0.56	8.75	$233,012	$15.71	$77.31
Warrenton Circuit Rider	21,000	32,705	2,966	7.08	0.64	11.03	$229,301	$10.92	$77.31
Services Total	**117,262**	**180,572**	**17,379**	**6.75**	**0.65**	**10.39**	**$1,214,800**	**$10.36**	**$69.90**
ADA & Demand Response Services									
Clarke County	1,443	17,001	1,000	1.44	0.08	17.00	$118,560	$82.16	$118.56
Culpeper ADA	8,242	18,852	2,016	4.09	0.44	9.35	$155,857	$18.91	$77.31
Culpeper County	9,334	40,424	4,074	2.29	0.23	9.92	$314,961	$33.74	$77.31
Fauquier County	1,885	27,265	1,284	1.47	0.07	21.23	$99,266	$52.66	$77.31
Services Total	**20,904**	**103,542**	**8,374**	**2.50**	**0.20**	**12.36**	**$688,644**	**$32.94**	**$82.24**
FY 2014 Total	**138,166**	**284,114**	**25,753**	**5.37**	**0.49**	**11.03**	**$1,903,444**	**$13.78**	**$73.91**

Source: Virginia Regional Transit

System Profiles

The following subsection will present a profile for each of the four fixed-route and deviated fixed-route systems within the West Central service area. The profiles include stop level boarding data collect by VRT from April 6, 2015 to April 26, 2015.[1] In addition to the ridership information, the profiles will also show local trip generators and performance trends from FY 2012 to FY 2015.

[1] VRT stop level boarding data is presented as a total for this period of time. Typically stop level data represents "average" boardings for one day.

System Profile – Circuit Rider, Town of Warrenton, Fauquier County

Figure 3-1: Circuit Rider



The Town of Warrenton's Circuit Rider connects major destinations in the town, such as Wal-Mart and the Fauquier Hospital, to major residential developments. The route runs from Monday through Friday from approximately 7:30 a.m. to 5:30 p.m. and Saturday from 8:30 a.m. to 11:30 a.m. The Circuit Rider is split between two routes, a Maroon Route which serves the northern section of the town, and a Black Route which serves the southern portion of the town. The routes are interlined and operated by one vehicle which runs on hourly headways. The Circuit Rider can be seen in Figure 3-1 in front of the Fauquier County Health Department.

The Circuit Rider serves a number of land uses including downtown destinations, residential neighborhoods, shopping centers and government agencies in the Town of Warrenton. Some major destinations along the routes include the Fauquier Hospital, Giant, Department of Human Services, Post Office, Safeway, Wal-Mart, and the Warrenton Community Center.

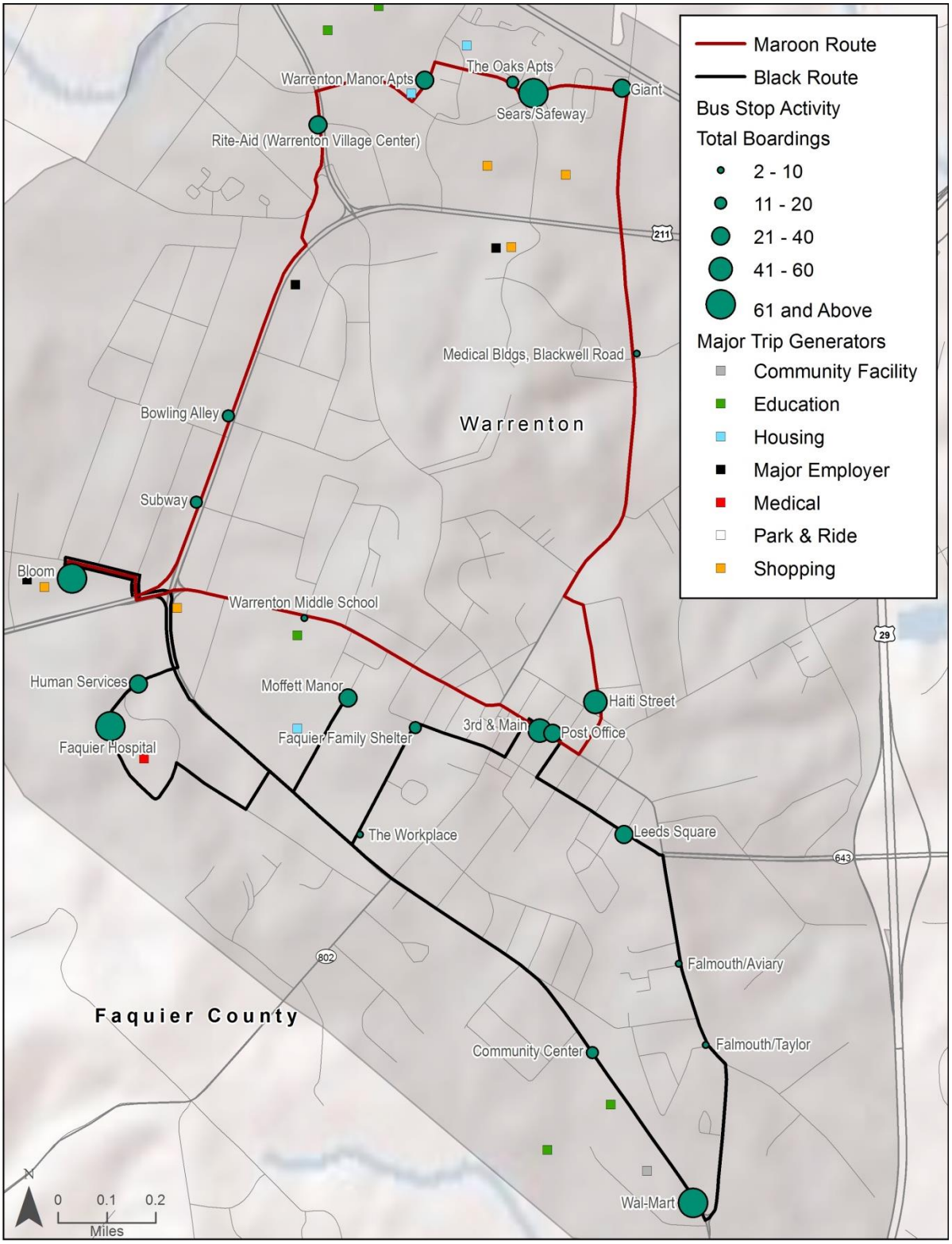
Ridership for the Circuit Rider mainly originates from the town's major shopping centers and the Fauquier Hospital. During the ridership counts, the highest used stops were Wal-Mart (165 boardings), Fauquier Hospital (132 boardings), and Food Lion (123 boardings).

Table 3-3: Circuit Rider Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	21,043	18,026	21,000	23,022
Revenue Miles	32,952	33,012	32,705	28,234
Revenue Hours	2,944	2,956	2,966	2,942
Trips/Hour	7.15	6.10	7.08	7.82
Trips/Mile	0.64	0.55	0.64	0.82
MPH	11.19	11.17	11.03	9.60
Operating Costs	$203,519	$234,470	$229,301	$216,667
Cost/Trip	$9.67	$13.01	$10.92	$9.41
Cost/Hour	$69.13	$79.32	$77.31	$73.64

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Figure 3-2: Circuit Rider Profile Map



System Profile – Culpeper Trolley, Town of Culpeper, Culpeper County

Figure 3-3: Culpeper Trolley



The Culpeper Trolley connects the town's major shopping centers, residential areas, and medical offices. The trolley is split between two different loops, a northern and a southern loop. These loops are interlined and operated by two separate vehicles. The routes run on forty minute headways, Monday through Friday from 7:00 a.m. to 5:00 p.m. and Saturday from 9:40 a.m. to 2:20 p.m.

The Culpeper Trolley serves a number of land uses including the downtown area, major residential developments, shopping centers, and institutional land uses of the Town of Culpeper. Service is also provided to select destinations within Culpeper County that border the town. Notable bus stop locations include the Belle Court Apartments, Culpeper Regional Hospital, Food Lion, Southgate Safeway and Wal-Mart.

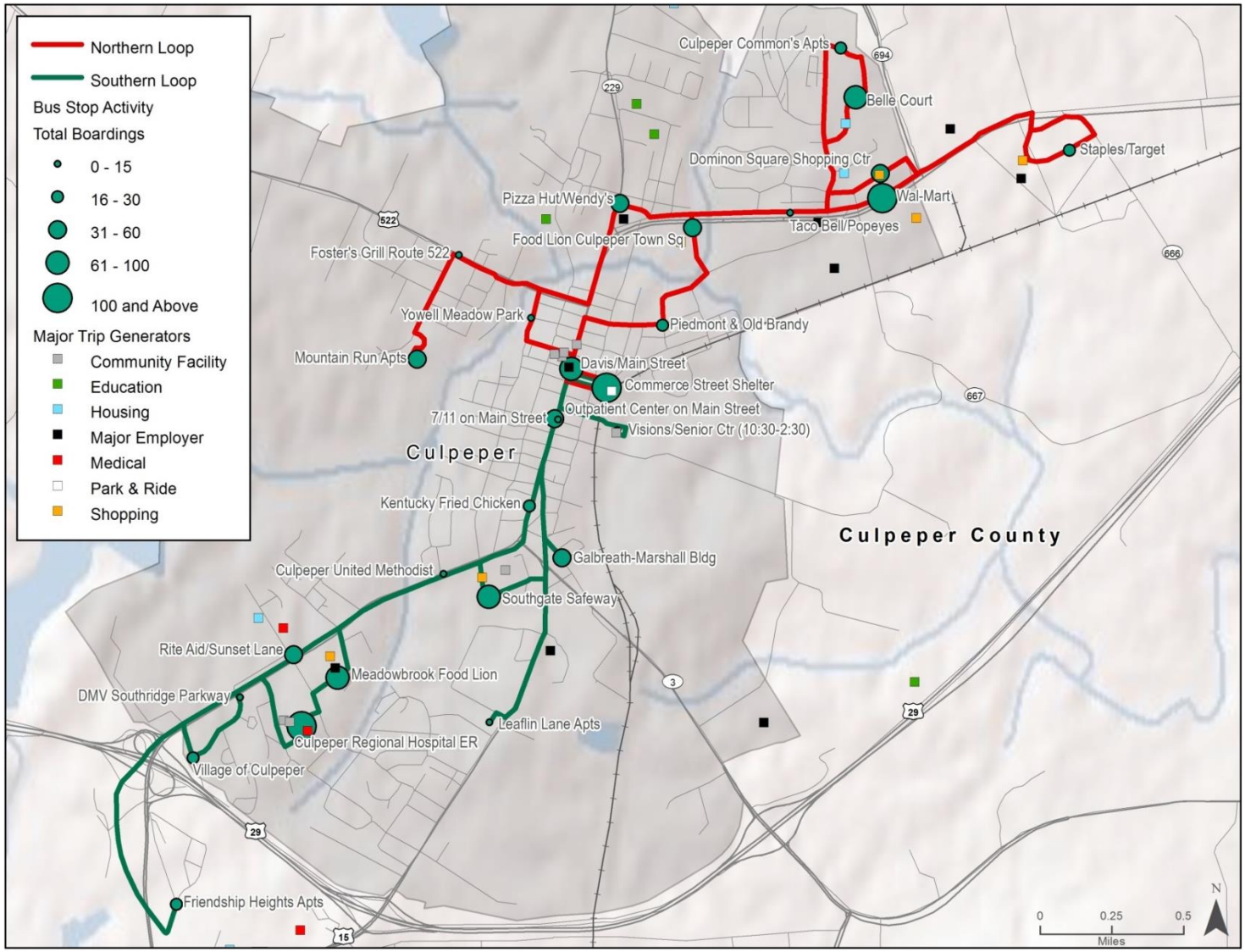
Ridership for the Culpeper Trolley mainly stems from the town's major shopping centers and medical centers. During the ridership counts, the most frequently used stops were the Commerce Street Transfer Point (243 boardings, pictured in Figure 3-3), Wal-Mart (143 boardings), and the Culpeper Hospital (101 boardings).

Table 3-4: Culpeper Trolley Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	71,177	60,054	58,254	61,242
Revenue Miles	61,236	55,150	55,800	57,677
Revenue Hours	5,610	5,640	5,660	5,568
Trips/Hour	12.69	10.65	10.29	11.00
Trips/Mile	1.16	1.09	1.04	1.06
MPH	10.92	9.78	9.86	10.36
Operating Costs	$387,819	$447,365	$437,575	$410,005
Cost/Trip	$5.45	$7.45	$7.51	$6.69
Cost/Hour	$69.13	$79.32	$77.31	$73.64

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Figure 3-4: Culpeper Trolley Profile Map



System Profile – Front Royal Area Transit, Town of Front Royal, Warren County

The Front Royal Trolley operates two loops through the Town of Front Royal's major shopping centers, residential areas, schools, and medical offices. Service is also provided at Wal-Mart and Target located in Warren County. The trolley runs Monday through Friday from 8:30 a.m. to 5:00 p.m. on one hour headways. A modified route runs on Saturday from 1:00 p.m. to 6:00 p.m. on thirty minute headways. Another route alignment runs on Sunday from 1:00 p.m. to 6:00 p.m. on one hour headways.

Figure 3-5: Front Royal Trolley



The Front Royal Trolley serves a number of land uses and destinations including downtown, major apartments, shopping centers, and public agencies. Notable bus stop locations include the Government Center, Randolph Macon Academy, Warren Community Center, and the Visitor's Center.

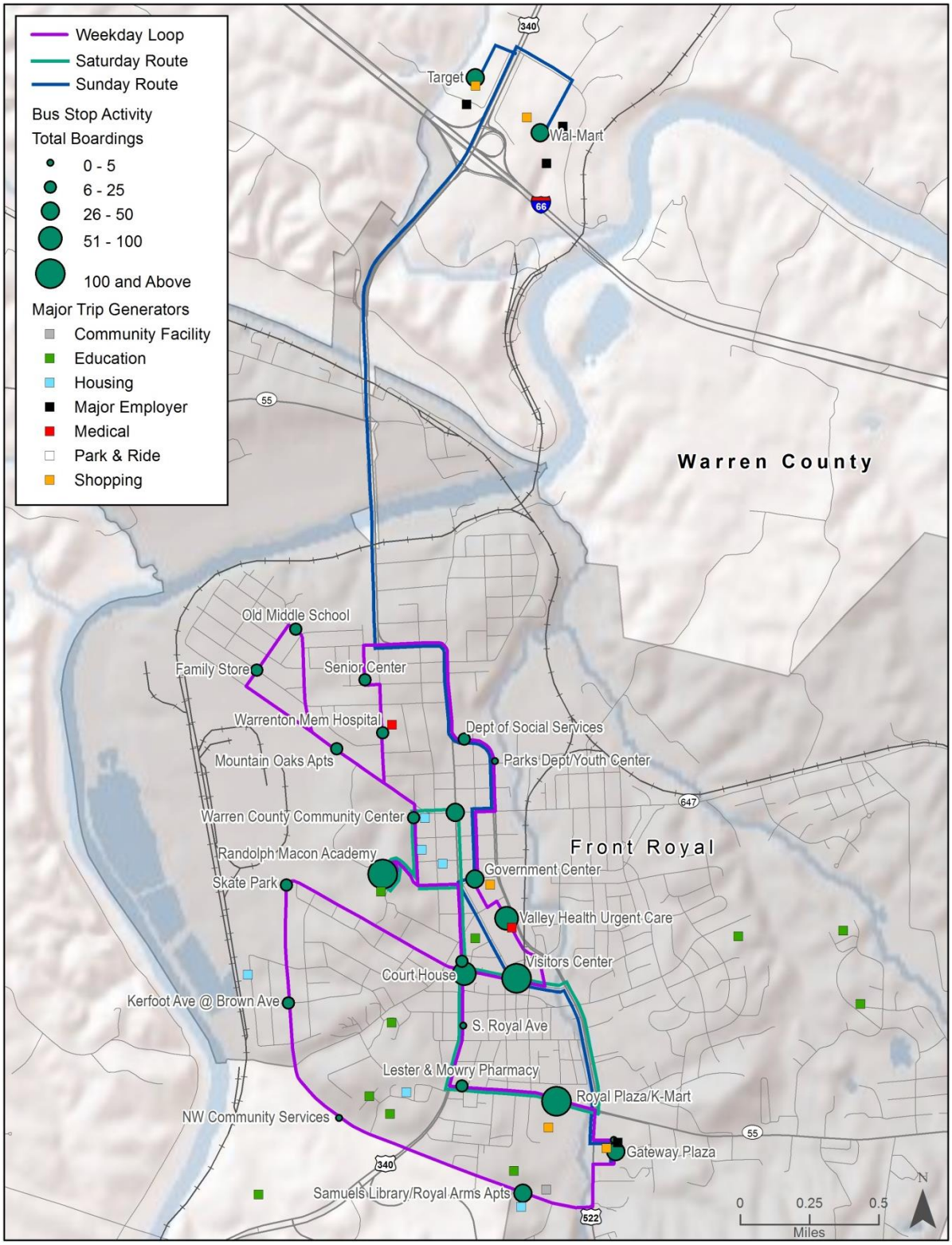
Ridership for the Front Royal Trolley germinates from the town's major shopping centers and downtown destinations. During the weekday ridership counts, the most commonly used stops were the Visitor's Center (58 boardings), Royal Plaza (45 boardings), and the Courthouse (38 boardings). The modified weekend route's most frequently used stops were Randolph Macon Academy (260 boardings), Target/Wal-Mart (90 boardings), and Royal Plaza (78 boardings).

Table 3-5: Front Royal Area Transit Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	17,073	17,330	13,186	17,097
Revenue Miles	31,689	30,387	33,166	30,821
Revenue Hours	3,878	4,063	4,081	4,138
Trips/Hour	4.40	4.27	3.23	4.13
Trips/Mile	0.54	0.57	0.40	0.55
MPH	8.17	7.48	8.13	7.45
Operating Costs	$146,068	$151,580	$186,732	$190,008
Cost/Trip	$8.56	$8.75	$14.16	$11.11
Cost/Hour	$37.67	$37.31	$45.76	$45.92

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Figure 3-6: Front Royal Trolley Profile Map



System Profile – Town of Orange Transit, Town of Orange, Orange County

Figure 3-7: Orange Trolley



The Town of Orange Transit operates two routes; the Orange Trolley which provides circulator service throughout the Town of Orange and the Gordonsville Route which provides express service from Orange to the Town of Gordonsville where the route makes six local stops. The Orange Trolley runs Monday through Friday from 7:30 a.m. to 5:17 p.m. and on Saturday from 8:30 a.m. to 3:30 p.m. The trolley runs on one hour headways during the week and on Saturdays. The Gordonsville Route performs four round trips each weekday; leaving from the Orange Depot at 5:30 a.m., 7:30 a.m., 12:00 p.m., and 3:00 p.m.

The Orange Trolley serves a number of areas and agencies around the Town of Orange. Land uses including downtown, major apartments, shopping centers, and government programs. Some major destinations along the trolley route include the Orange Depot (pictured in Figure 3-7), Food Lion, and the Orange Municipal Building. In Gordonsville, the bus serves major destinations such as Food Lion, Gordon Pharmacy, Town Hall, Union Baptist Church, and major apartment complexes.

Figure 3-8: TOOT Bus Stop Sign



Table 3-6 and Table 3-7, on the following page, show the performance and trend data for the Orange Trolley and the Gordonsville Route respectively. As seen in the tables, ridership on the Orange Trolley has decreased in recent years declining from 21,614 in 2012 to 15,612 in 2015; a 28 percent decrease.

Ridership for the Orange Trolley mainly originates from the town's major shopping centers. During the ridership counts, the primary stops used were the Orange Village Shopping Center (103 boardings), the Colonial Square Shopping Center (86 boardings), and the Twyman Street Apartments (80 boardings). Ridership counts were not performed on the Gordonsville Route. Figure 3-9 provides a map profiling the Orange Trolley's ridership and major trip generators for the area along the Trolley route and the Gordonsville Route.

Table 3-6: Town of Orange Transit – Orange Trolley Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	21,614	15,863	14,835	15,612
Revenue Miles	20,378	20,524	26,359	25,646
Revenue Hours	2,911	2,904	3,014	2,890
Trips/Hour	7.42	5.46	4.92	5.40
Trips/Mile	1.06	0.77	0.56	0.61
MPH	7.00	7.07	8.75	8.88
Operating Costs	$201,237	$230,345	$233,012	$212,779
Cost/Trip	$9.31	$14.52	$15.71	$13.63
Cost/Hour	$69.13	$79.32	$77.31	$73.64

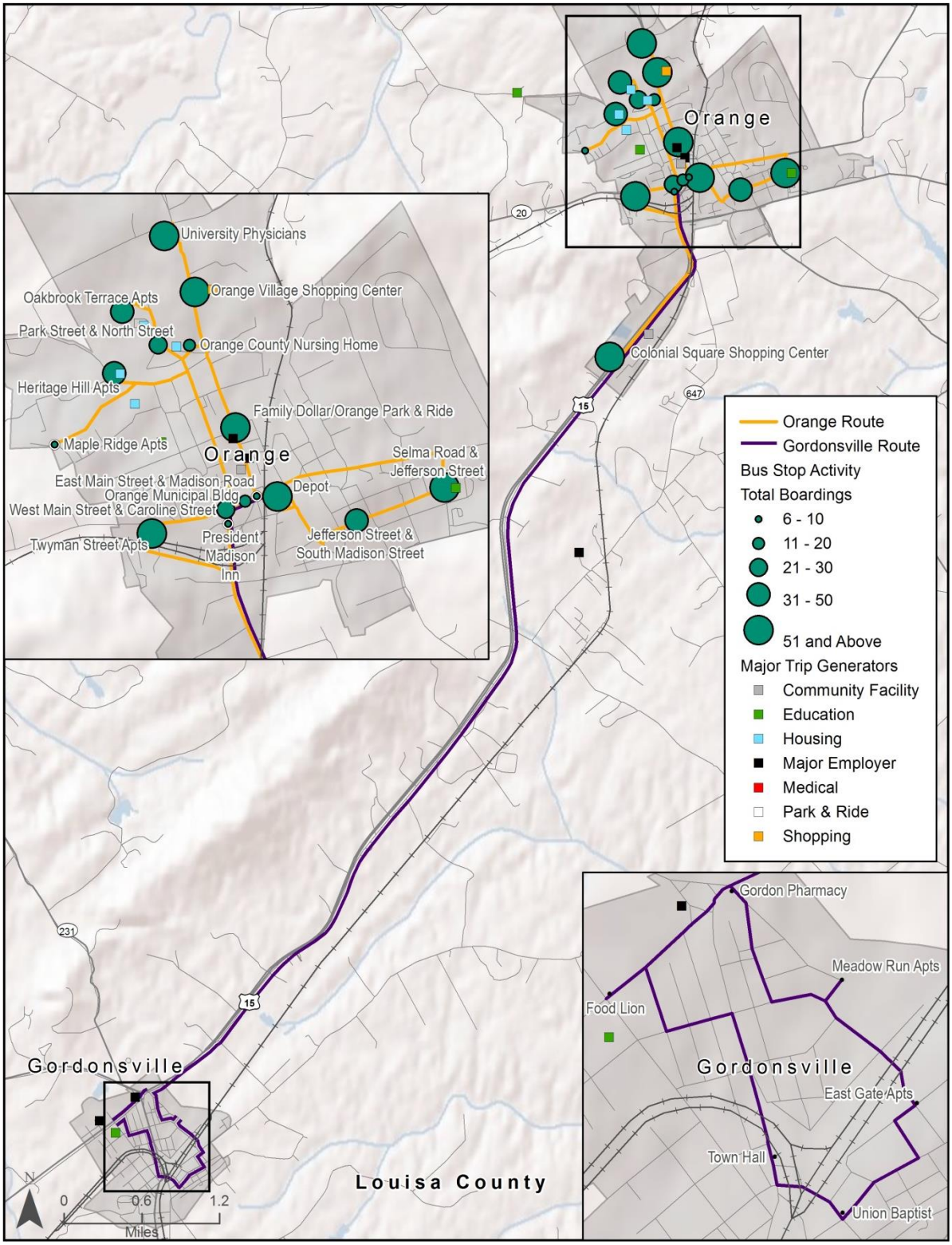
*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Table 3-7: Town of Orange Transit – Gordonsville Route Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	8,964	8,619	9,987	8,910
Revenue Miles	34,233	33,725	32,542	34,404
Revenue Hours	2,001	1,651	1,658	1,639
Trips/Hour	4.48	5.22	6.02	5.44
Trips/Mile	0.26	0.26	0.31	0.26
MPH	17.11	20.43	19.63	20.99
Operating Costs	$138,329	$130,957	$128,180	$120,704
Cost/Trip	$15.43	$15.19	$12.83	$13.55
Cost/Hour	$69.13	$79.32	$77.31	$73.64

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Figure 3-9: Town of Orange Transit Profile Map



Demand Response

Four separate demand response services are operated in the West Central Division including service in Clarke, Culpeper, and Fauquier Counties in addition to ADA service within the Town of Culpeper. The following section provides a brief outline of each service and performance trend data from fiscal year 2012 to 2015.

Clarke County Demand Response

Demand response service is provided in Clarke County Monday through Friday from approximately 9:00 a.m. to 1:00 p.m. The service is offered County-wide with service to destinations in Frederick County and the City of Winchester. Table 3-8 shows the performance data for Clarke County. Ridership on the service has been up and down in previous years, but if current estimations for 2015 occur, ridership would increase by 55 percent from 2014 to 2015.

Table 3-8: Clarke County Demand Response Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	1,325	1,677	1,443	3,180
Revenue Miles**	15,620	19,770	17,011	37,488
Revenue Hours	1,016	1,020	1,000	1,024
Trips/Hour	1.30	1.64	1.44	3.11
Trips/Mile	0.08	0.08	0.08	0.08
MPH	15.37	19.38	17.01	36.61
Operating Costs	$55,120	$57,200	$118,560	$120,640
Cost/Trip	$41.60	$34.11	$82.16	$37.94
Cost/Hour	$54.25	$56.08	$118.56	$117.81

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation
**Revenue miles were only available for FY 2014; miles for other years were extrapolated using a ratio of miles to trips

Culpeper ADA

ADA demand response service is provided throughout the Town of Culpeper, operating in conjunction with the Culpeper Trolley, running Monday through Friday from 7:00 a.m. to 5:00 p.m. and Saturday from 9:40 a.m. to 2:20 p.m. Table 3-9 provides the performance data for the Culpeper ADA service. Ridership on the service has been on a steady decline from 2012 to 2014 and if 2015 predictions hold true the ridership will have decreased by nineteen percent from 2012 to 2015. At the same time the key performance measure of trips per hour has also decreased from 4.82 in 2012 to 3.95 in 2015.

Table 3-9: Culpeper ADA Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	9,804	8,431	8,242	7,956
Revenue Miles	21,429	19,428	18,852	18,902
Revenue Hours	2,032	2,032	2,016	2,016
Trips/Hour	4.82	4.15	4.09	3.95
Trips/Mile	0.46	0.43	0.44	0.42
MPH	10.55	9.56	9.35	9.38
Operating Costs	$140,472	$161,178	$155,857	$148,450
Cost/Trip	$14.33	$19.12	$18.91	$18.66
Cost/Hour	$69.13	$79.32	$77.31	$73.64

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Culpeper County Express Demand Response

The Culpeper County Express demand response service is provided County-wide; Monday through Friday from 7:30 a.m. to 5:00 p.m. Table 3-10 provides the performance measures and annual trends for the service. Ridership on the Express has grown since 2012. Despite a decline in 2014, ridership on the Express is projected to grow by 39 percent from 2012 to 2015 and to grow by nineteen percent from 2014 to 2015.

Table 3-10: Culpeper County Express Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	7,973	10,335	9,334	11,120
Revenue Miles	47,325	43,440	40,424	49,829
Revenue Hours	2,561	2,540	4,074	4,032
Trips/Hour	3.11	4.07	2.29	2.76
Trips/Mile	0.17	0.24	0.23	0.22
MPH	18.48	17.10	9.92	12.36
Operating Costs	$177,042	$201,473	$314,961	$296,900
Cost/Trip	$22.21	$19.49	$33.74	$26.70
Cost/Hour	$69.13	$79.32	$77.31	$73.64

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

Fauquier County Demand Response

County-wide demand response service is also provided in Fauquier County. The service is provided Monday, Wednesday, and Friday from 8:00 a.m. to 5:30 p.m. Table 3-11 shows the performance data for the Fauquier County demand response service. Ridership on the service has declined from 2012 to 2014 by twelve percent and is expected to decline by two percent from 2014 to 2015.

Table 3-11: Fauquier County Performance and Trend Data

Performance Measures	FY 2012	FY 2013	FY 2014	FY 2015*
Passenger Trips	2,144	2,055	1,885	1,851
Revenue Miles	33,501	28,046	27,265	26,014
Revenue Hours	1,271	1,309	1,284	1,327
Trips/Hour	1.69	1.57	1.47	1.39
Trips/Mile	0.06	0.07	0.07	0.07
MPH	26.36	21.43	21.23	19.60
Operating Costs	$87,864	$103,830	$99,266	$97,730
Cost/Trip	$40.98	$50.53	$52.66	$52.80
Cost/Hour	$69.13	$79.32	$77.31	$73.64

*FY 2015 trips, miles, and hours were only available for October through January; data shown was factored for an annual estimation

PEER ANALYSIS

While it is most relevant for a transit agency to examine its own performance over time, it is valuable to know the operating statistics for transit programs that could be considered "peers," either by virtue of location, service area characteristics, or size, to see if local transit data is "in the ballpark" of typical peer operating data.

The study team used statewide data compiled by DRPT for the analysis, choosing peers that provide service in similar areas and across multiple jurisdictions in Virginia. The results of the peer analysis are shown in Tables 3-12 and 3-13.

The following programs were used as peers:

- Bay Aging: Warsaw, Virginia
- Danville Transit: Danville, Virginia
- District Three Public Transit: Marion, Virginia
- Virginia Regional Transit – Mountain Division: Staunton, Virginia
- WinTran: Winchester, Virginia

Given West Central's unique mix of fixed route and demand response operations special care was taken when selecting peers. Agencies such as Bay Aging, District Three, and VRT's Mountain Division were chosen based on their service mix of fixed route and demand response and the multi-jurisdictional service area that they serve.

The data compiled for the peer analysis was based on FY 2014. The data was obtained through the National Transit Database (NTD), DRPT, and VRT. The compiled peer data shows the following:

- The West Central Division has the largest service area population among its peers but provides a relatively small number of passenger trips when compared to similar agencies.

- The overall operating cost for West Central registers just above the peer average; whereas the vehicle revenue hours and miles fall below the peer average.

- The West Central Division performs 5.37 trips per revenue hour, below the average of 7.15 trips per hour.

- West Central's operating cost per trip is the highest amongst its peers at $13.78. This is largely due to the relatively high number of demand response trips and ranks just higher than Bay Aging which provides a robust demand response service operating at $12.70 per trip.

- The cost per hour is also very high when compared to the select peers. At an hourly rate of $73.91, the system is just higher than its sister service, VRT's Mountain Division which has an hourly rate of $58.40. These measures are well above the peer mean of $7.99 per trip.

Table 3-12: Selected Peer Service Comparison

System	UZA	Service Area Population	Number of Vehicles	Annual Pass. Trips	Total Operating Expenses	Vehicle Rev. Hours	Vehicle Rev. Miles
Bay Aging	No	150,000	56	159,474	$2,511,698	65,538	1,442,112
Danville Transit	No	48,411	9	295,243	$1,528,185	31,412	506,459
District Three Public Transit	No	190,020	49	198,473	$1,709,114	51,388	642,848
VRT West Central Division	No	275,247	13	138,166	$1,903,370	25,753	284,124
VRT Mountain Division	Yes	72,617	16	291,217	$1,525,807	26,126	374,516
WinTran	Yes	69,449	6	130,190	$928,944	17,589	198,778
Mean	**-**	**134,291**	**25**	**202,127**	**$1,684,520**	**36,301**	**574,806**

Table 3-13: Selected Peer Performance Comparison

System	Trips Per Hour	Trips Per Mile	Cost Per Trip	Cost Per Hour	Cost Per Mile
Bay Aging	3.02	0.14	$12.70	$38.32	$1.74
Danville Transit	12.12	0.77	$4.53	$42.66	$2.72
District Three Public Transit	3.86	0.31	$8.61	$33.26	$2.66
VRT West Central Division	5.37	0.49	$13.78	$73.91	$6.70
VRT Mountain Division	11.15	0.78	$5.24	$58.40	$4.70
WinTran	7.4	0.65	$7.14	$52.81	$4.67
Mean	**7.15**	**0.52**	**$8.67**	**$49.89**	**$3.87**

FINANCIAL ANALYSIS

Operating Budget

The FY 2015 operating budget for VRT's Culpeper District is $1.5 million. This figure does not include the Front Royal Trolley or the Clarke County demand response service which are combined in VRT's Staunton District. This discrepancy is due to the state grant application requirements that dictate that each service must apply for funding under its own Virginia Department of Transportation District. As a result of the comingling of services it is practically impossible to accurately incorporate the expenses for the Front Royal and Clarke County services within the operating budget.

Table 3-14, on the following page, provides the individual line item expenses for the Culpeper District for FY 2012 to 2015. The expenses shown for 2015 are the total budget expenses. VRT's fiscal year begins on October 1 and runs to September 30.

Capital Budget

Federal grant programs fund up to eighty percent of transit capital projects. VRT is obtaining these funds through the federal Section 5311 program. The other twenty percent is made up of state and local contributions. In Virginia there is currently no prescribed state allocation and the percent/amount of capital funding may vary from year to year depending on the availability of state funds. Table 3-15 provides the capital budget for FY2016. VRT is planning to apply for bus rehabilitation, renovation of their maintenance facility, replacement trolley buses, and spare vehicle parts.

Table 3-14: West Central Operating Actuals and Budget

Category	FY 2012 Expenses	FY 2013 Expenses	FY 2014 Expenses	FY 2015 Budget*
Operations Salaries & Wages	$475,165	$660,199	$564,619	$754,500
Administrative Salaries & Wages	$164,274	$159,899	$231,404	
Operations Fringe Benefits	$130,832	$157,663	$138,705	$194,750
Administrative Fringe Benefits	$34,072	$37,106	$32,214	
Education and Training	$4,677	$11,751	$6,694	$12,000
Cleaning Supplies	$3,354	$7,771	$3,420	$8,000
Motor Fuels and Lubricants	$192,856	$169,144	$171,722	$210,000
Tires & Tubes	$13,285	$15,188	$14,393	$15,296
Parts	$74,686	$47,255	$68,270	$47,255
Office Supplies & Materials	$29,267	$18,576	$20,634	$21,000
Data Processing Supplies	$0	$0	$0	$0
Other Supplies & Materials	$0	$0	$0	$0
Uniforms	$4,975	$4,516	$4,556	$5,772
Travel	$9,005	$9,136	$15,794	$10,304
Communication Services	$31,889	$44,907	$53,487	$45,000
Utilities	$17,109	$18,282	$21,090	$20,078
Printing and Reproduction	$277	$807	$81	$21,000
Contracted Repairs & Maintenance	$97,906	$67,421	$92,133	$69,000
Advertising & Promotion Media	$16,827	$20,136	$20,537	$20,177
Drug Testing Expenses	$3,508	$3,499	$5,337	$3,895
Office Rental	$0	$0	$0	$0
Service & Maintenance Contracts	$0	$0	$0	$0
Insurance & Bonding Liability	$41,688	$49,339	$59,544	$64,188
Insurance & Bonding W/C	$12,486	$19,456	$28,737	
Indirect Costs	$0	$0	$0	$0
Lease of Vehicles	$0	$0	$0	$0
Professional Legal Services	$3,706	$7,099	$7,602	$15,000
Professional Audit Services	$5,290	$12,426	$30,583	
Other Fixed Charges	$12,415	$4,264	$6,321	$4,500
Facility Maintenance	$0	$200	$200	$0
Total Expenses	**$1,379,550**	**$1,546,041**	**$1,598,078**	**$1,541,715**
Passenger Fares Revenue	$43,271	$36,400	$39,426	$38,500
Contract Revenue	$0	$0	$0	$0
Total Revenues	$43,271	$36,400	$39,426	$38,500
Deficit (Total Expenses - Total Revenues)	**$1,336,279**	**$1,509,641**	**$1,558,653**	**$1,503,215**
Federal Operating Assistance	$668,141	$754,820	$779,326	$751,608
Non-Federal Assistance	$668,138	$754,821	$779,327	$751,607

Source: Virginia Regional Transit

*The FY 2015 Budget did not break down select expenses (e.g. salaries & wages) as the expenses statements from previous years

Table 3-15: West Central Capital Budget FY2016

Description	Item Cost	Federal	State/Local
Bus Rehab/Renovation of Maintenance Facility	$25,000	$20,000	$5,000
Replace Trolley #185 and #194	$320,000	$256,000	$64,000
Purchase spare parts	$15,000	$12,000	$3,000
Total	**$360,000**	**$288,000**	**$72,000**

Source: Virginia Regional Transit, OLGA Database

RECENT COMPLIANCE RESULTS

The transit programs in the West Central region are funded through the federal S.5311 program which flows through DRPT, with the local transit agency considered a sub-recipient of federal funds. As such, DRPT is responsible for ensuring compliance with the federal regulations and guidance that are requirements of federal funding assistance. VRT has not been subject to a DRPT compliance review for some time; however, in November of 2009 VRT underwent a Voluntary Transit Bus Safety and Security Site Review. The review focused on six areas including:

1. Management
2. Equipment and Systems Operations and Maintenance
3. Human Resources
4. Safety Activities
5. Security Activities
6. Emergency/All-Hazards Management

The review report provides observations for each area and recommended actions with associated best practices. Recommended actions include appointing a safety officer, developing a dispatcher handbook, and developing an emergency preparedness plan/protocol. All actions included in the report are voluntary and there were no major compliance issues identified.

ON-BOARD RIDER SURVEYS

On-board rider surveys assess the current riders' trip characteristics, satisfaction with the service, and areas for improvement. On-board rider surveys were distributed on each fixed and deviated fixed-route under the West Central Division; including the Circuit Rider, Culpeper Trolley, Front Royal Trolley, and the Orange Trolley. The surveys were created by KFH Group with input and review provided by VRT and the DRPT. VRT distributed the surveys on the 16th, 20th, and 21st of May 2015. The following section reviews the major highlights from each survey. An in-depth analysis of each survey is provided in Appendix A.

Circuit Rider Survey Results

A total of 29 surveys were collected from riders on the Warrenton Circuit Rider. The top origins indicated on the survey were Food Lion (14%), Haiti Street (7%), and the Highland Commons (7%). The top destinations included Wal-Mart (25%), Food Lion (14%), and the hospital (11%). The most frequently cited trip purpose was shopping and errands (35%).

The average survey respondent did not have a car available for their trip (93%) and did not possess a valid driver's licenses (67%). When asked, if you were not riding transit how would you make this trip, the top response was to ride with family or friends (38%), followed by walking (36%), and a taxi (10%). Only 21 percent of survey respondents said that there were locations where they need to go that the trolley does not.

The top likes and dislikes for the Circuit Rider are shown in Table 3-16.

Table 3-16: Circuit Rider Likes and Dislikes

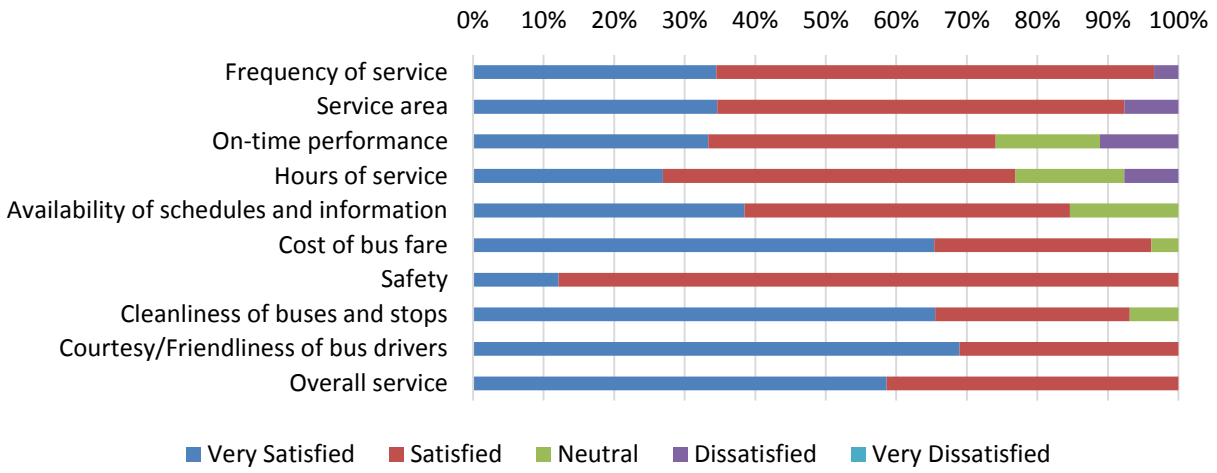
What Riders Like the Most	What Riders Like the Least
1. Friendly Drivers (25%) 2. Availability (11%) 3. Reliability (11%) 4. Affordability (11%) 5. Convenience (11%)	1. Bus can run late/off schedule (33%) 2. Not enough bus stops (10%) 3. Rude passengers (10%) 4. Off schedule on Mondays (10%) 5. Short service hours (10%)

When asked about potential service improvements the top responses were to extend service until later in the evening (19%), provide service to more places (13%) and more frequent service (12%).

The demographic makeup of survey respondents included 22 percent male and 78 percent female. The highest respondent rate was from the 26 to 55 year-old range (36%), with those aged 65 years or older making up 25 percent of respondents.

Riders were asked to rate their satisfaction levels in select categories including frequency of service, cost of bus fare, and overall service. The results are shown in Figure 3-10. The Circuit Rider did not receive any "very dissatisfied" responses and the category with the highest level of dissatisfaction was on-time performance, with hours of service and service area tied for second.

Figure 3-10: Circuit Rider Satisfaction Levels



Culpeper Trolley Survey Results

The Culpeper Trolley generated a total of one-hundred on-board surveys. The top origins indicated on the survey were the Commerce Street Bus Depot (26%), Culpeper Commons (8%), and Food Lion (8%). The top destinations included Wal-Mart (19%), the Commerce Street Bus Depot (10%), and Rite Aid (9%). The top trip purpose was shopping and errands (42%).

The average survey respondent did not have a car available for their trip (91%) and did not possess a valid driver's licenses (73%). When asked, if you were not riding transit how would you make this trip, the top response was to walk (49%), followed by riding with family/friends (25%), and they wouldn't have made the trip (16%). Fifty-nine percent of survey respondents said that there were locations where they need to go that the trolley does not. The most frequently mentioned places where the DMV (31%), Culpeper area schools (12%), and Full Circle (8%).

The top likes and dislikes for the Culpeper Trolley are shown in Table 3-17.

Table 3-17: Culpeper Trolley Rider Likes and Dislikes

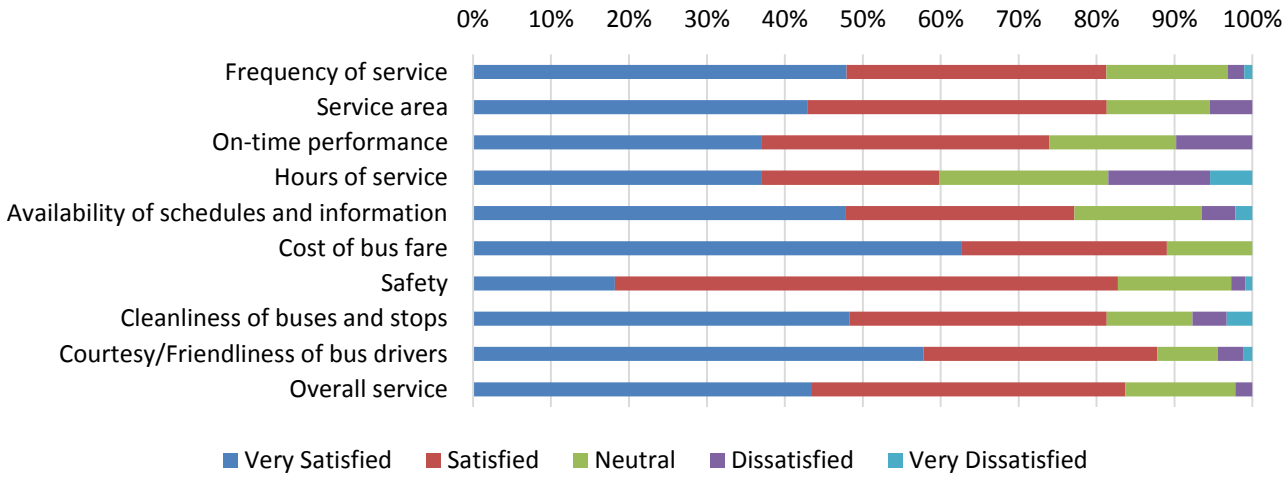
What Riders Like the Most	What Riders Like the Least
1. Affordable/Cheap (26%) 2. Friendly Drivers (22%) 3. Gets me where I need to go (18%) 4. Convenient (8%) 5. Everything (4%)	1. Hours are not long enough (28%) 2. Bus is not on time/runs late (15%) 3. Waiting for the bus (10%) 4. Rude people on the bus (8%) 5. Frequency (5%)

When asked about potential service improvements the top responses were to add additional weekend service (20%), extend service until later in the evening (19%), and more frequent service (18%).

The demographic makeup of survey respondents included 44 percent male and 56 percent female. The highest respondent rate was from the 26 to 55 year-old range (49%), with 18-25 year-olds making up 23 percent of respondents.

Riders were asked to rate their satisfaction levels in select categories including frequency of service, cost of bus fare, and overall service. The results are shown in Figure 3-11. The Culpeper Trolley received very few "very dissatisfied" responses with the category with the highest level of dissatisfaction being the hours of service followed by on-time performance.

Figure 3-11: Culpeper Trolley Satisfaction Levels



Front Royal Trolley Survey Results

A total of 26 surveys were collected from the Front Royal Trolley. The top origins indicated on the survey were Family Dollar (17%), the Gazebo on Main Street (11%), and Randolph Macon Academy (11%). The top destinations included Martin's (48%), Randolph Macon Academy (9%), and the Royal Arms Apartments (9%). The top trip purpose was shopping and errands (63%).

The average survey respondent did not have a car available for their trip (88%) and did not possess a valid driver's licenses (83%). When asked, "If you were not riding transit how would you make this trip?", the top response was to walk (62%), followed by taking a taxi (21%), and they wouldn't have made the trip (10%). Twenty-six percent of survey respondents said that there were locations where they need to go that the trolley does not go. When asked where the trolley should provide service the only response was to add Wal-Mart to the weekday route. The top likes and dislikes for the Front Royal Trolley are shown in Table 3-18.

Table 3-18: Front Royal Trolley Rider Likes and Dislikes

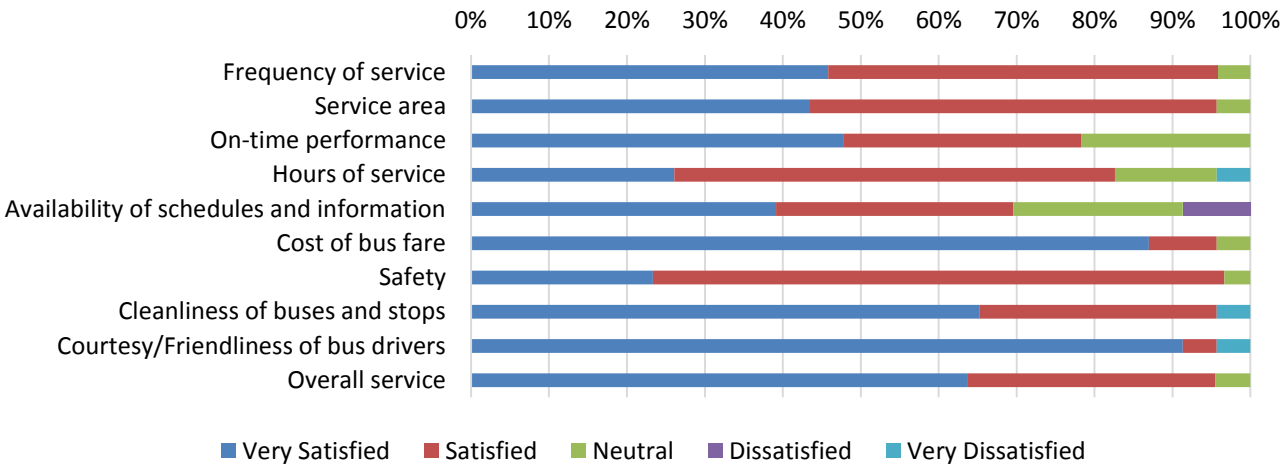
What Riders Like the Most	What Riders Like the Least
1. Friendly Drivers (38%) 2. Affordable/Cheap (14%) 3. Convenient (14%) 4. Friendly People (14%) 5. It's good to have around (10%)	1. Hard seats (33%) 2. Appearance of the buses (11%) 3. Long route (11%) 4. Not going to Wal-Mart (11%) 5. Frequency (11%)

When asked about potential service improvements the top responses were to add additional weekend service (20%), provide service to more places including Wal-Mart and Target (16%), and service later in the evening (12%).

The demographic makeup of survey respondents included an even 50/50 percent of males and females. The highest respondent rate was from those aged 17 or younger (31%), with 55-64 year-olds making up 27 percent of respondents. The relative young age of survey respondents is likely due to the high ridership generated by Randolph Macon Academy which is a college preparatory school for grades 6 through 12 and postgraduates.

Riders were asked to rate their satisfaction levels in select categories including frequency of service, cost of bus fare, and overall service. The results are shown in Figure 3-12. The area with the highest dissatisfaction level was the availability of schedules and information. Despite a handful of dissatisfied and very dissatisfied responses, all other categories received high satisfaction levels. All but three categories have satisfaction levels in the 90th percentile.

Figure 3-12: Front Royal Trolley Satisfaction Levels



Orange Trolley Survey Results

The Orange Trolley generated 41 on-board surveys. The top origins indicated on the survey were Belleview Avenue (5%), the Eastgate Apartments (5%), and the Town Hall (5%). The top destinations included Food Lion (29%), the Orange Depot (11%), and McDonalds (5%). The top trip purpose was shopping and errands (40%).

The average survey respondent did not have a car available for their trip (89%); however, 56 percent possess a valid driver's licenses. When asked, "If you were not riding transit how would you make this trip?", the top response was walk (39%), followed by riding with family or friends (35%), and they wouldn't have made the trip (15%). Thirty percent of survey respondents said that there were locations where they need to go that the trolley does not travel to. When asked where the trolley should provide service the responses were Culpeper, Route 20, and out of town.

The top likes and dislikes for the Orange Trolley are shown in Table 3-19.

Table 3-19: Orange Trolley Rider Likes and Dislikes

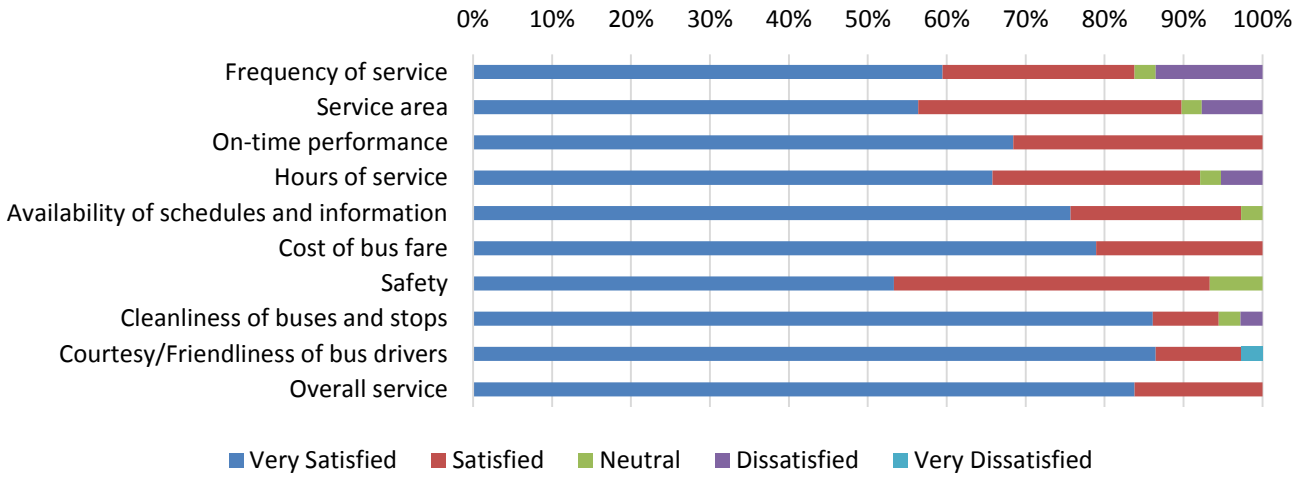
What Riders Like the Most	What Riders Like the Least
1. Affordable (32%) 2. Friendly drivers (21%) 3. Dependability (12%) 4. Good drivers (9%) 5. Meeting people and enjoying the ride (6%)	1. No weekend service (31%) 2. Needs additional hours (25%) 3. Crazy people (6%) 4. Downtime (6%) 5. Not enough trips every day (6%)

When asked about potential service improvements the top responses were service later in the evenings (24%), additional weekend service (15%), and more frequent service (11%).

The demographic makeup of survey respondents included 26 percent male and 74 percent female. The highest respondent rate was from the 55 to 64 year-old range (34%), with 26 to 55 year-olds making up 29 percent of respondents.

Riders were asked to rate their satisfaction levels in select categories including frequency of service, cost of bus fare, and overall service. The results are shown in Figure 3-13. The area with the highest levels of dissatisfaction for the trolley is frequency of service. When survey respondents were asked to rank the service as a whole everyone indicated that they were very satisfied or satisfied with the service.

Figure 3-13: Orange Trolley Satisfaction Levels



STAKEHOLDER INPUT

In addition to drawing on recent studies and plans, KFH Group conducted email and telephone stakeholder interviews in an attempt to gain information on public transportation needs in the VRT West Central service area. The following section presents the outcomes of these outreach efforts.

Stakeholder Input

An important task within the TDP process was the acquisition of more information about current public transportation trip patterns, rider characteristics, rider satisfaction with the service, and suggestions for service improvements as advocated by stakeholders. The stakeholder input process began by contacting county, town, and regional officials from each jurisdiction. Specific stakeholder input was collected via an email survey, and through detailed, one-on-one phone conversations/interviews. These stakeholders either work within the local government, or they represent another entity that interacts with, or may have an interest in, coordinating with VRT. The stakeholders contacted are listed below, followed by several themes that emerged from the conversations.[2]

- Sean Polster, Councilman, Town of Warrenton
- Paul McCulla, County Administrator, Fauquier County*
- Christopher Hively, Interim Town Manager, Town of Culpeper
- Ernie Hoch, County Administrator, Culpeper County*
- Martha Shickle, Executive Director, Northern Shenandoah Valley Region Commission
- David Ash, County Administrator, Clarke County*
- Steven Burke, Town Manager, Town of Front Royal*
- Greg Woods, Town Manager, Town of Orange*
- Doug Stanley, County Administrator, Warren County*
- Bryan David, County Administrator, Orange County
- Jenny Biche, Mobility Program Coordinator, Rappahannock-Rapidan Regional Commission
- Maxie Brown, Zoning Board Member, Town of Culpeper
- Sean O'Brien, Executive Vice President and COO, James Madison's Montpelier

[2] Agencies that KFH Group was unable to interview or did not respond are noted with asterisks.

The majority of these stakeholders have a working relationship with VRT, though the level of coordination and interaction vary. Stakeholder input provided the following valuable insight and input concerning transportation needs in the VRT West Central service area:

- Explore expanded hours of service – start earlier and run later (evenings)
- Weekend service, especially Saturdays
- Shorter wait times
- Ensuring "bus bound" citizens continue to have means to travel to services since they do not have other alternatives available to them
- Improved marketing for each service area
- Expand service to tourist attractions
- Link employees with employers
- Cross County lines
- Aging population (aging in place) that do not have the local family structure to fall back on when they cannot drive.
- Ensuring the elderly, disabled and autoless households have service, though doing so at a reasonable cost
- Major obstacle is funding – encourage private support

DEMOGRAPHICS AND LAND USE

This section provides a thorough examination of future population trends, demographics, transit dependent populations and a limited English proficiency analysis. The section then develops a land-use profile based on the area's major trip generators and commuting patterns. A detailed analysis of population density and transit dependent populations may be found in Appendix B.

Population Trends

As of 2010, the United States Census Bureau reported that the West Central service area, comprised of six counties, had a population of 275,247. The population of each county within the service area has grown from the 1990 Census to the 2010 Census. As seen in Table 3-20, the total service area has experienced a 34 percent growth rate from 1990 to 2010. The highest growth rate was seen in Frederick County (42%) and Culpeper County (40%) was not far behind. The slowest growth rate was in Clarke County (14%).

Future population projections developed by the Weldon Cooper Center for Public Service estimate that the West Central service area will experience a 35 percent growth rate over the next thirty years. Table 3-21 shows the projected populations for each county within the service area and provides a population breakdown by age group. The future population projections estimate the fastest growth rate will again occur in Frederick County (46%) followed by Culpeper County (36%).

Table 3-20: Historical Populations

County	1990 Population	2000 Population	2010 Population	1990-2000 Change	2000-2010 Change	1990-2010 Change
Clarke	12,101	12,652	14,034	4%	10%	14%
Culpeper	27,791	34,262	46,689	19%	27%	40%
Fauquier	48,741	55,139	65,203	12%	15%	25%
Frederick	45,723	59,209	78,305	23%	24%	42%
Orange	21,421	25,881	33,481	17%	23%	36%
Warren	26,142	31,584	37,535	17%	16%	30%
Total	**181,919**	**218,727**	**275,247**	**17%**	**21%**	**34%**

Source: United States Census Bureau

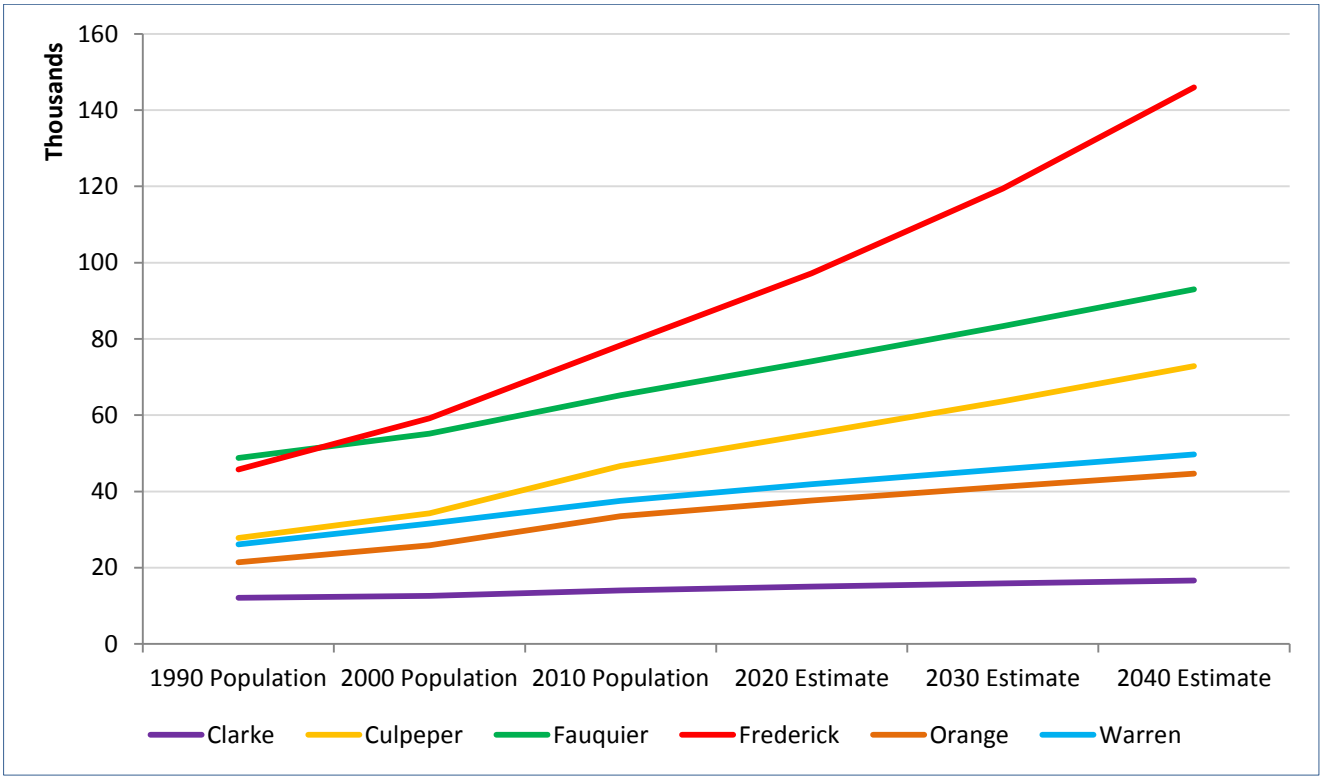
Table 3-21: Future Population Projections

County	2010		2020		2030		2040	
	Population	%	Population	%	Population	%	Population	%
Clarke	14,034	-	15,025	-	15,871	-	16,631	-
0-19 yrs	3,514	25%	3,356	22%	3,395	21%	3,712	22%
20-64 yrs	8,233	59%	8,549	57%	8,149	51%	8,440	51%
65+ yrs	2,287	16%	3,120	21%	4,327	27%	4,479	27%
Culpeper	46,689	-	55,102	-	63,614	-	72,835	-
0-19 yrs	13,244	28%	14,946	27%	16,368	26%	19,091	26%
20-64 yrs	27,747	59%	31,908	58%	35,479	56%	40,285	55%
65+ yrs	5,698	12%	8,248	15%	11,767	18%	13,459	18%
Fauquier	65,203	-	74,119	-	83,312	-	93,028	-
0-19 yrs	17,971	28%	18,803	25%	20,513	25%	23,360	25%
20-64 yrs	38,943	60%	42,585	57%	44,401	53%	49,276	53%
65+ yrs	8,289	13%	12,731	17%	18,398	22%	20,392	22%
Frederick	78,305	-	97,192	-	119,419	-	145,938	-
0-19 yrs	21,642	28%	25,373	26%	30,545	26%	37,789	26%
20-64 yrs	46,709	60%	56,653	58%	66,495	56%	80,864	55%
65+ yrs	9,954	13%	15,166	16%	22,379	19%	27,285	19%
Orange	33,481	-	37,649	-	41,206	-	44,662	-
0-19 yrs	8,378	25%	8,827	23%	9,226	22%	10,118	23%
20-64 yrs	19,040	57%	20,993	56%	21,687	53%	23,349	52%
65+ yrs	6,063	18%	7,829	21%	10,293	25%	11,195	25%
Warren	37,575	-	41,856	-	45,819	-	49,708	-
0-19 yrs	10,143	27%	10,539	25%	11,376	25%	12,560	25%
20-64 yrs	22,652	60%	24,911	60%	25,667	56%	27,721	56%
65+ yrs	4,780	13%	6,406	15%	8,776	19%	9,427	19%
Total	275,287	-	320,943	-	369,241	-	422,802	-
0-19 yrs	74,892	27%	81,844	26%	91,423	25%	106,630	25%
20-64 yrs	163,324	59%	185,599	58%	201,878	55%	229,935	54%
65+ yrs	37,071	13%	53,500	17%	75,940	21%	86,237	20%

Source: United States Census Bureau and the Weldon Cooper Center for Public Service

Figure 3-14 provides a visual illustration of the population growth for each county within the West Central service area.

Figure 3-14: County Population Trends

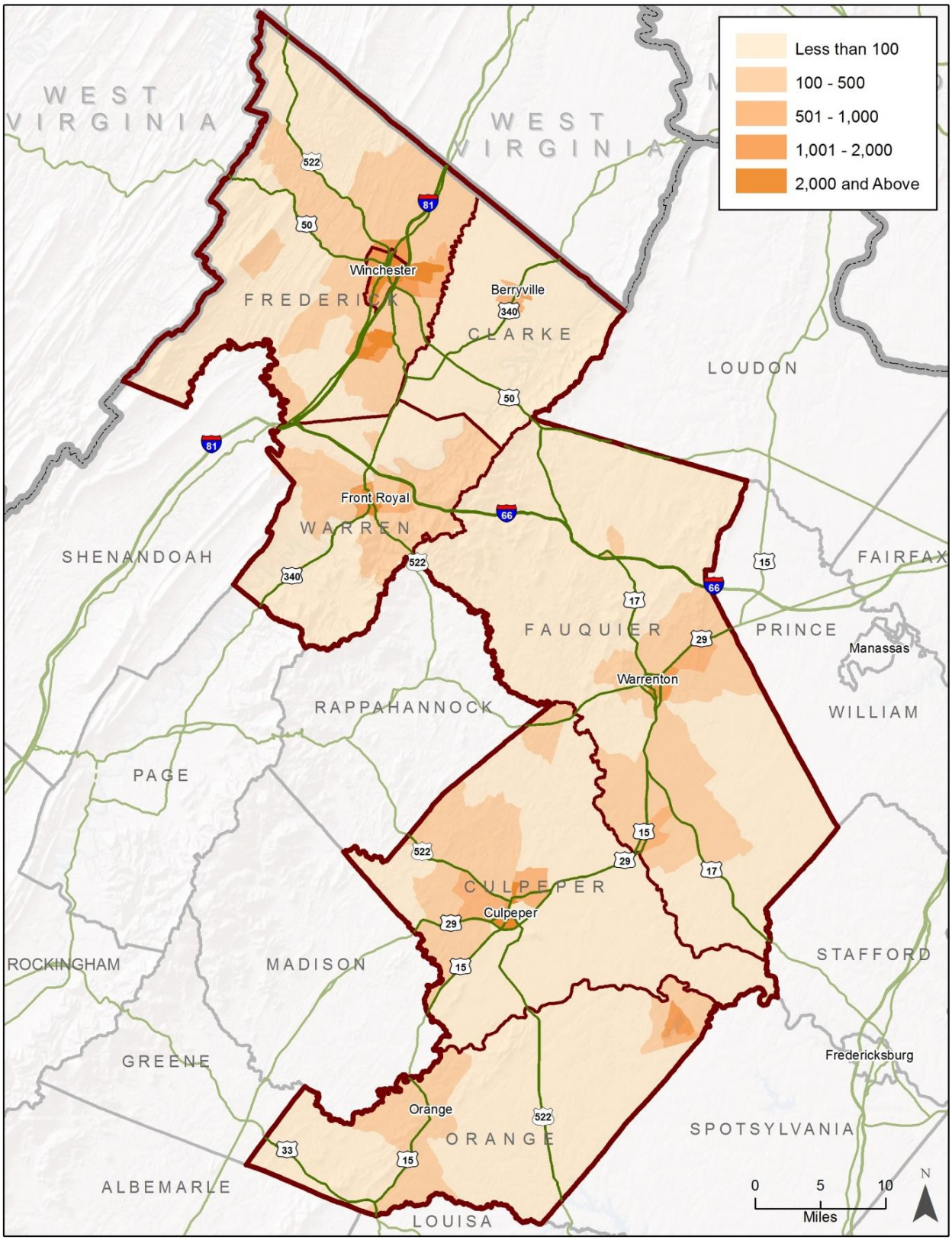


Population Density

Population density is a key factor in determining how rural or urban an area is, which in turn affects the type of public transportation that may be most viable. For instance, while exceptions will always exist, an area with a density above 2,000 persons per square mile will generally be able to sustain a frequent, daily fixed-route bus service. Conversely, an area with a population density below 2,000 persons per square mile may be better suited for a deviated fixed-route, flex schedule or dial-a-ride service.

Of the 180 census block groups that make up the West Central Division, there are 38 block groups that meet the 2,000 persons-per-square-mile minimum threshold for fixed-route service. These block groups are located in the Towns of Culpeper, Front Royal, and Warrenton in addition to the City of Winchester. The average population density of the West Central service area is approximately 137 persons per square mile. The population density for the West Central Division can be seen in Figure 3-15.

Figure 3-15: Population Density



Transit Dependent Populations

Public transportation needs are defined in part by identifying the relative size and location of those segments within the general population that are most likely to depend on transit services. These transit dependent populations include individuals who may not have access to a personal vehicle or are unable to drive themselves due to age or income status. Determining the location of transit dependent populations assisted the evaluation of current transit services and the extent to which they meet community needs.

For the purpose of developing a transit dependence index, block groups are classified relative to the study area as a whole using a five-tiered scale of "very low" to "very high." As referenced in Table 3-21, a block group classified as "very low" can still have a significant number of potentially transit dependent persons; "very low" means below the study area's average. At the other end of the spectrum, "very high" means greater than twice the study area's average.

Table 3-21: Transit Dependent Scoring

Number/Percentage of Vulnerable Persons or Households	Score Based on Potential Transit Dependence
<= the study area average	1 (Very Low)
> average and <= 1.33 times the average	2 (Low)
> 1.33 times the average and <= 1.67 times the average	3 (Moderate)
> 1.67 times the average and <=2 times the average	4 (High)
> 2 times the study area average	5 (Very High)

Transit Dependent Index

The Transit Dependence Index (TDI) is an aggregate measure that utilizes recent data from the American Community Survey (ACS) five-year estimates and the United States Decennial Census to display relative concentrations of transit dependent populations. Five factors make up the TDI calculation, as shown in the following formula:

TDI = PD x (AVNV + AVE + AVY + AVBP)

Where:

- PD = population density per square mile
- AVNV = amount of vulnerability based on no vehicle households
- AVE = amount of vulnerability based on elderly populations
- AVY = amount of vulnerability based on youth populations
- AVBP = amount of vulnerability based on below poverty populations

In addition to population density (PD), the factors above represent specific socioeconomic characteristics of the population in this region. For each factor, individual block groups were classified according to the prevalence of the vulnerable population relative to the service area average. The factors were then plugged into the TDI equation to determine the relative transit dependence of each block group (very low, low, moderate, high, or very high).

From a transit perspective, the TDI illustrates the areas of greatest overall need. It should be kept in mind that while some of the block groups show low need, they may in fact include major destinations that should be served by transit.

Figure 3-16 provides the results of the TDI analysis. As seen on the map, areas with very high transit needs are located in and around the City of Winchester, the Towns of Culpeper, Front Royal, and Warrenton, and a rural area of eastern Orange County near Lake of the Woods.

Transit Dependence Index Percentage

The Transit Dependence Index Percentage (TDIP) provides a complementary analysis to the TDI measure. It is nearly identical to the TDI measure with the exception of the population density factor. The TDIP for each block group in the study area was calculated with the following formula:

TDIP = DVNV + DVE + DVY + DVBP

Where:

- DVNV = degree of vulnerability based on autoless households
- DVE = degree of vulnerability based on elderly populations
- DVY = degree of vulnerability based on youth populations
- DVBP = degree of vulnerability based on below poverty populations

By removing the population per square mile factor the TDIP measures the degree rather than the amount of vulnerability. The TDIP represents the percentage of the population within the block group with the above socioeconomic characteristics, and it follows the TDI's five-tiered categorization of very low to very high. It differs in that it does not highlight the block groups that are likely to have higher concentrations of vulnerable populations only because of their population density.

As seen in Figure 3-17, without the population density metric, the level of need shifts to less populated areas to the north of Winchester, a downtown section of Front Royal, to the north of Warrenton, near the Lake of the Woods and to the west of the Town of Orange.

Figure 3-16: Transit Dependence Index

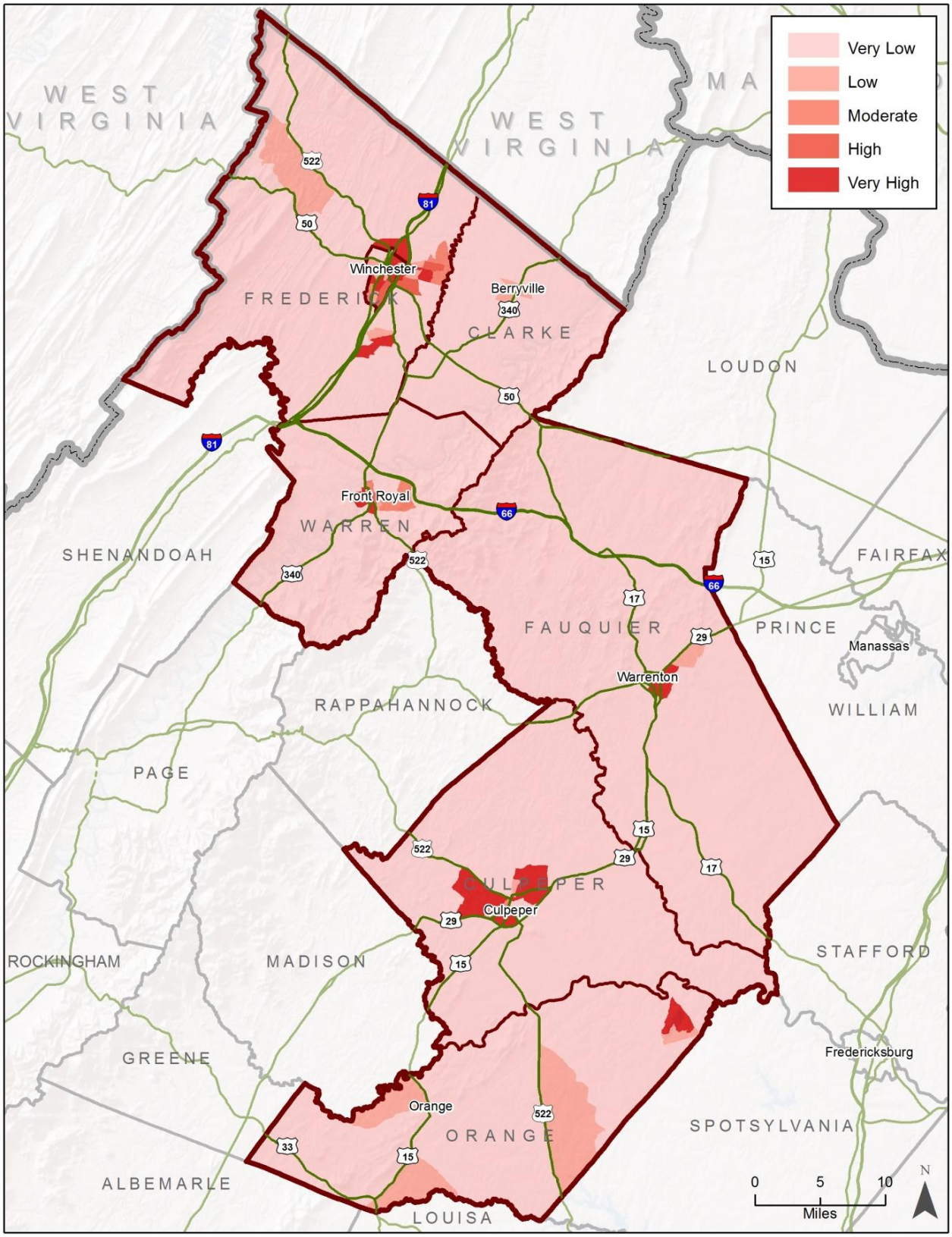
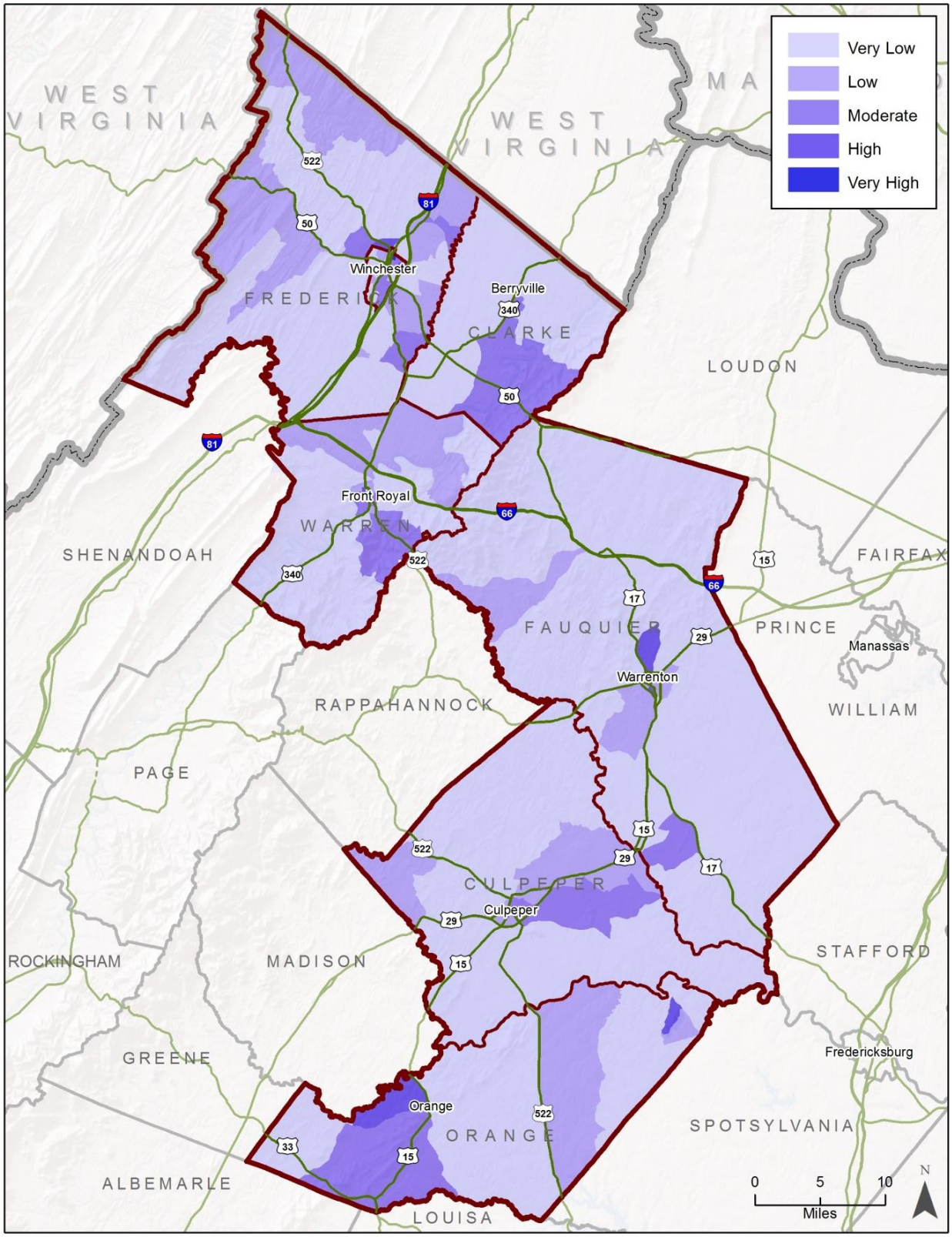


Figure 3-17: Transit Dependence Index Percentage



Autoless Households

Households without at least one personal vehicle are more likely to depend upon the mobility offered by public transit than those households with access to a car. Displaying this segment of the population is important because many land uses in the region are at distances too far for non-motorized travel. As seen in Figure 3-18, the block groups with the greatest density of autoless households are scattered throughout the service area. High concentrations exist in areas of northern Frederick County, just to the north of Winchester along Interstate 81, to the east and north of Warrenton, along the U.S. Route 15 corridor in Orange County, and along a band intersecting Culpeper County from east to west. Autoless households make up four percent of the West Central households.

Senior Adult Population

Individuals 65 years and older may scale back their use of personal vehicles as they age, leading to a greater reliance on public transportation compared to those in other age brackets. Illustrated in Figure 3-19, the block groups with the greatest densities of older adults are located in Frederick County along U.S. Route 15 near the border with West Virginia, in Winchester, Front Royal, a rural section of Fauquier County near the Hume area, and in Lake of the Woods. The over 65 population makes up fourteen percent of the population of the service area.

Youth Population

Youths and teenagers, aged ten to seventeen, who cannot drive or are just starting to drive but do not have an automobile available, appreciate the continued mobility from public transportation. As Figure 3-20 shows, relatively high youth populations are scattered throughout Culpeper, Fauquier, and Orange Counties. Concentrations also include rural areas of Frederick County and an area just to the east of Front Royal. The youth population makes up eleven percent of the total service area population.

Title VI Analysis

As part of the Civil Rights Act of 1964, Title VI prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving federal subsidies. This includes agencies providing federally funding public transportation. In accordance with Title VI, the following section examines the minority and below poverty populations in the service area. This section also summarizes the prevalence of residents with Limited-English Proficiency (LEP) in the service area.

Figure 3-18: Autoless Households

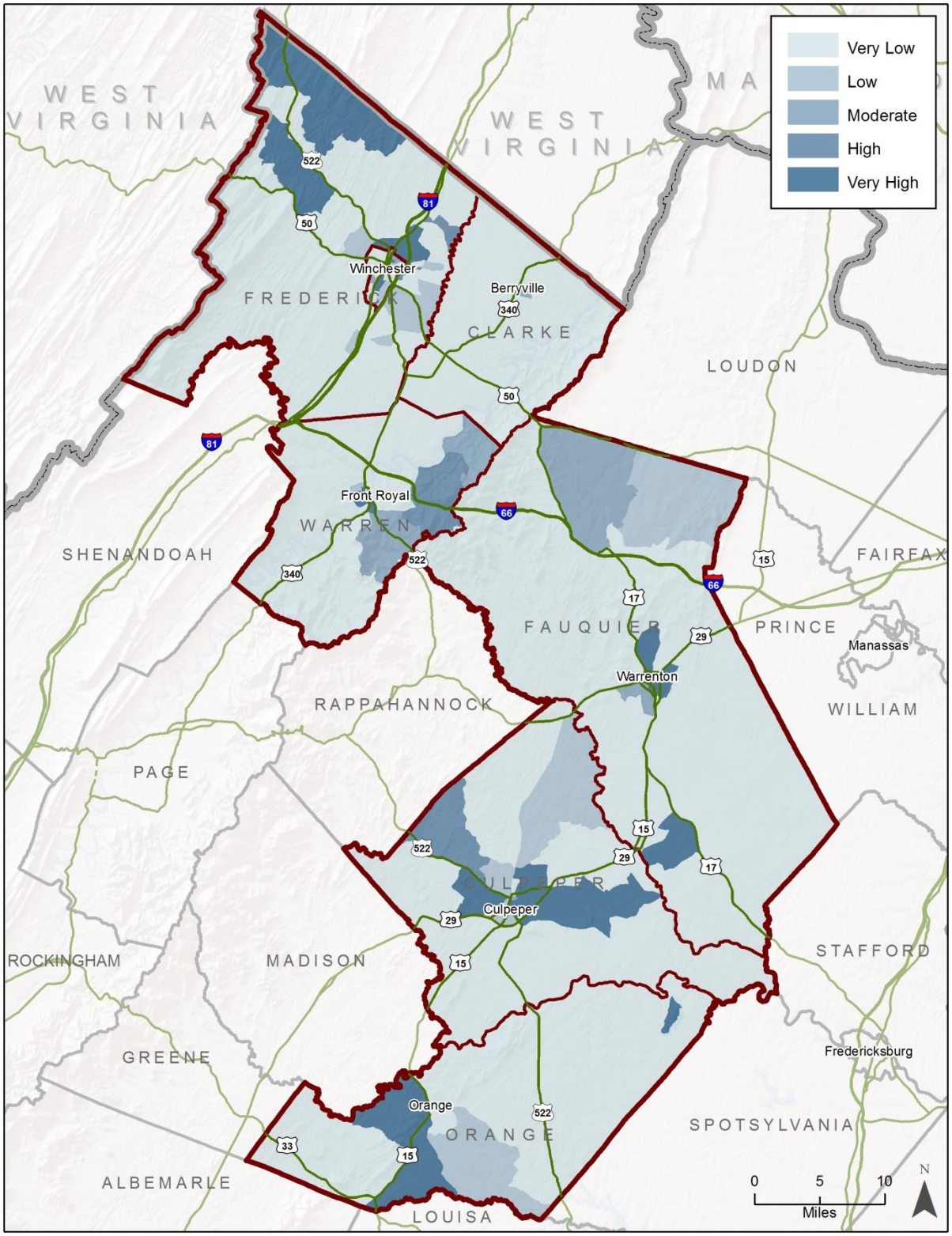


Figure 3-19: Senior Adult Population

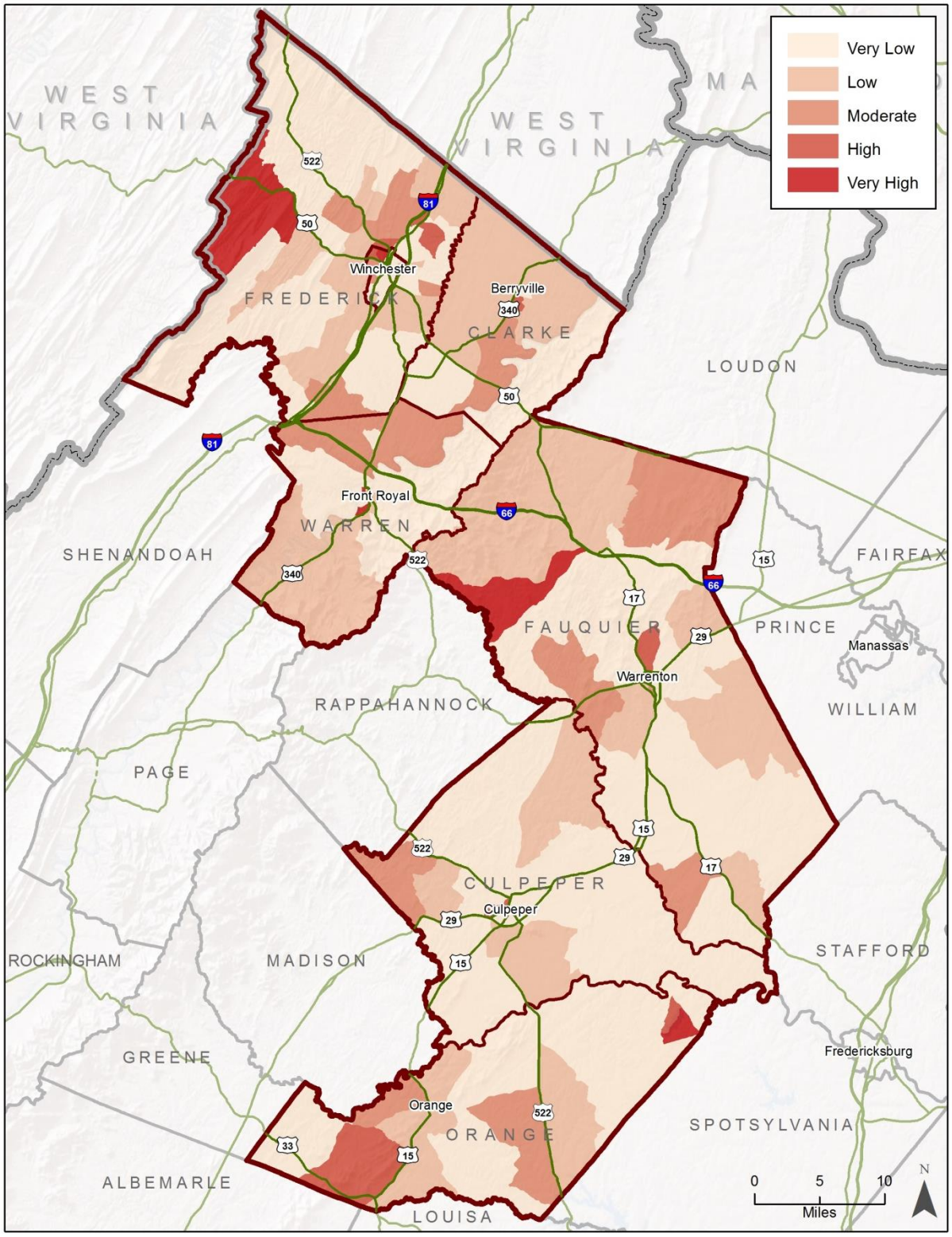
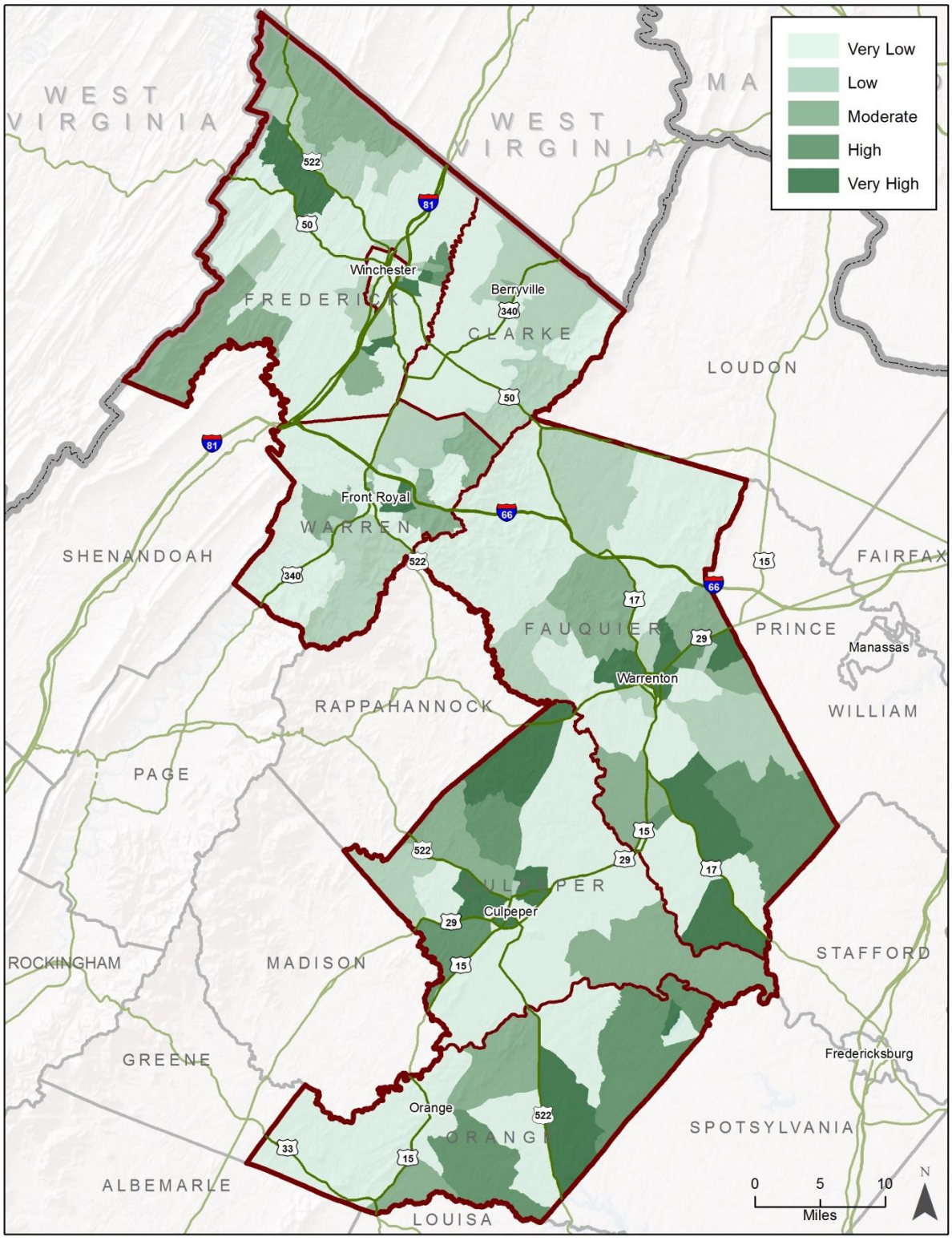


Figure 3-20: Youth Population



Minority Population

In accordance with Title VI of the Civil Rights Act of 1964, it is important to ensure that areas in the service area with a relative concentration of racial and/or ethnic minorities are not negatively impacted by any proposed alterations to existing public transportation services. To determine whether an alteration would have an adverse impact upon the service area's minority population, it is necessary to first understand where these relative concentrations of individuals reside. Figure 3-21 provides a geographical representation of the minority composition. Relative concentrations of minorities reside mainly in Culpeper and Orange Counties. Other areas with notable concentrations include the area in and surrounding the City of Winchester and the Town of Warrenton.

Low-Income Population

This socioeconomic group represents those individuals who earn less than the federal poverty level. These individuals face financial hardships that make the ownership and maintenance of a personal vehicle difficult, and thus they may be more inclined to depend upon public transportation. As seen in Figure 3-22, the block groups with large concentrations of below poverty populations are scattered throughout the entire service area. Very high and high concentrations exist in all counties with the exception of Clarke.

Limited-English Proficiency

In addition to equitably providing public transportation to individuals of diverse socioeconomic backgrounds, it is also important to realize the variety of languages spoken by area residents. According to the American Community Survey's five-year estimates for 2009-2013, English is the most predominately spoken language amongst all residents of the West Central Service area. As seen in Table 3-22, amongst the other languages spoken by residents, Spanish is the second most predominately spoken language and has a percent share greater than two in Clarke, Culpeper, Fauquier, Frederick, Orange, and Warren Counties. Other Indo-European languages have a percent share greater than two percent in Orange County.

Land-Use Profile

Major land-uses are identified as origins, from which a concentrated transit demand is generated, and destinations, to which both transit dependent persons and choice riders are attracted. They include educational facilities, major employers, human service agencies, high-density housing complexes, major shopping destinations and medical facilities. Major trip generators across the study area are shown in Figure 3-23.

Table 3-22: Limited English Proficiency by County

County of Residence	Clarke		Culpeper		Fauquier	
Population 5 years and older	13,478		44,112		62,218	
Language Spoken at Home:						
English	12,715	94%	40,268	91%	56,916	91%
Spanish	350	3%	2,819	6%	3,591	6%
Other Indo-European languages	283	2%	588	1%	1,151	2%
Asian/Pacific Island languages	74	1%	229	1%	413	1%
Other languages	56	0%	208	0%	147	0%
Speak non-English at Home	763	6%	3,844	9%	5,302	9%
Ability to Speak English:						
"Very Well" or "Well"	692	91%	3,089	80%	4,596	87%
"Not Well" or "Not at All"	71	9%	755	20%	706	13%
County of Residence	**Frederick**		**Orange**		**Warren**	
Population 5 years and older	74,640		32,013		35,565	
Language Spoken at Home:						
English	68,767	92%	29,850	93%	33,894	95%
Spanish	4,091	5%	977	3%	938	3%
Other Indo-European languages	863	1%	905	3%	425	1%
Asian/Pacific Island languages	741	1%	188	1%	178	1%
Other languages	178	0%	93	0%	130	0%
Speak non-English at Home	5,873	8%	2,163	7%	1,671	5%
Ability to Speak English:						
"Very Well" or "Well"	4,885	83%	1,847	85%	1,387	83%
"Not Well" or "Not at All"	988	17%	316	15%	284	17%

Source: United States Census Bureau, American Factfinder

Figure 3-21: Minority Population

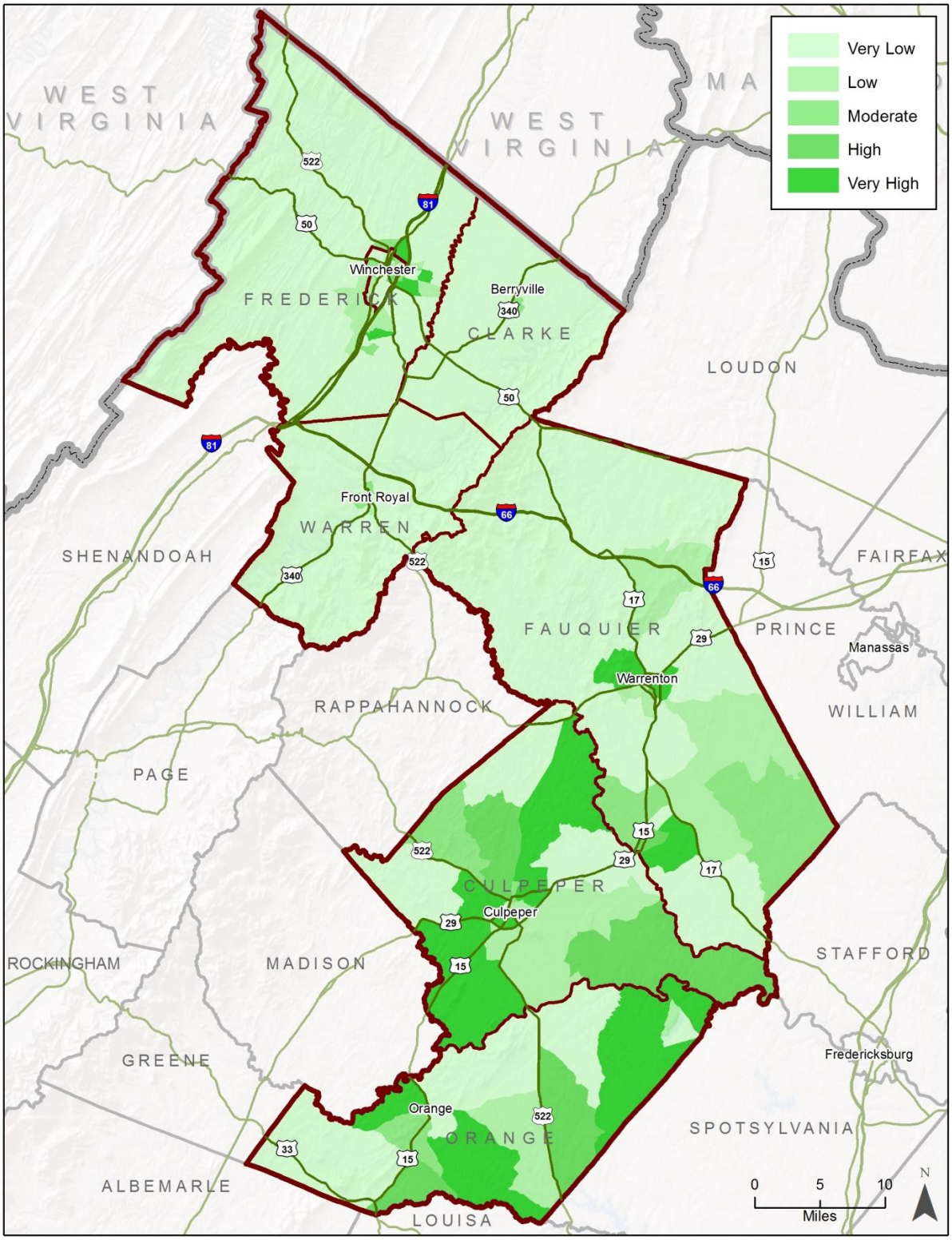


Figure 3-22: Low-Income Population

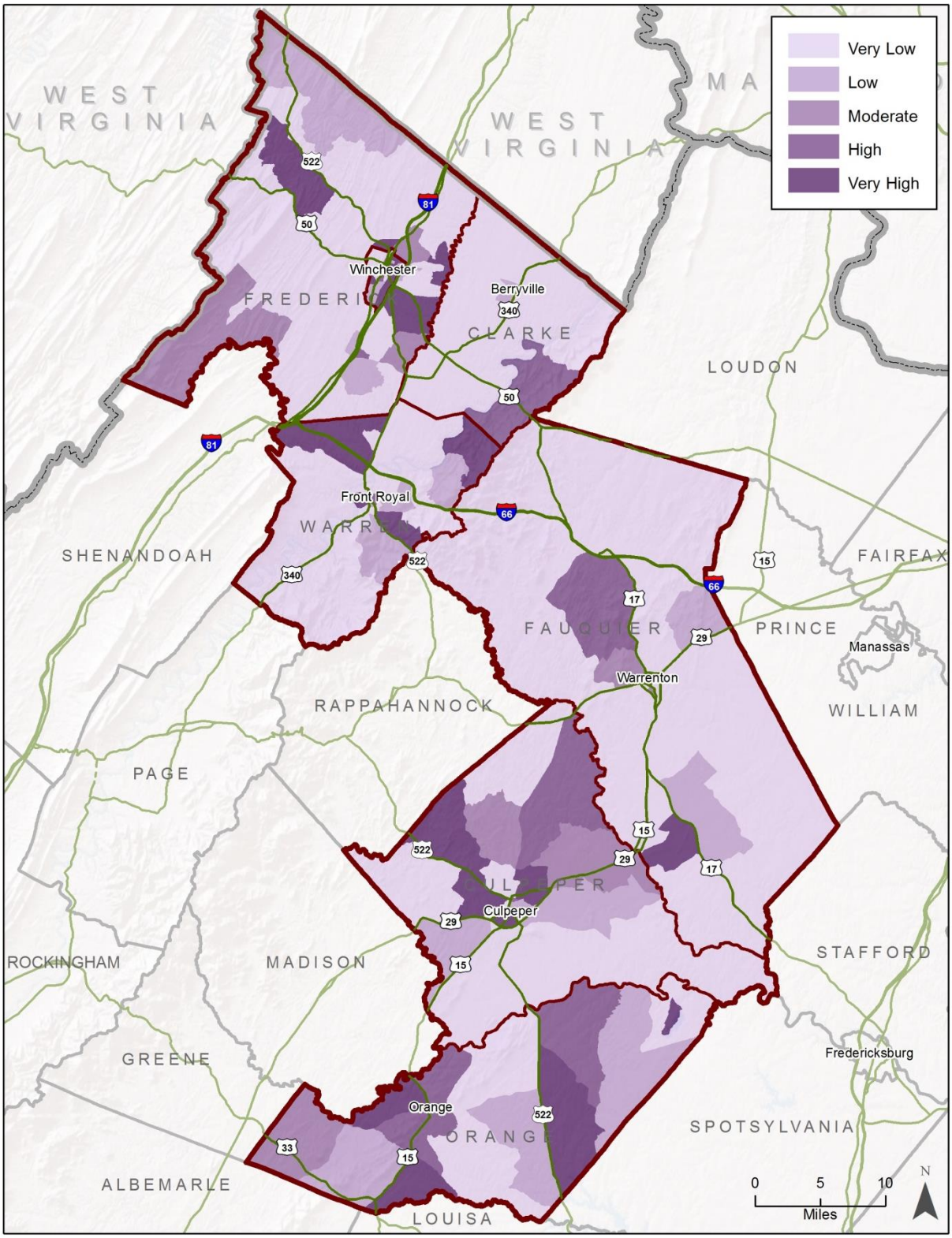
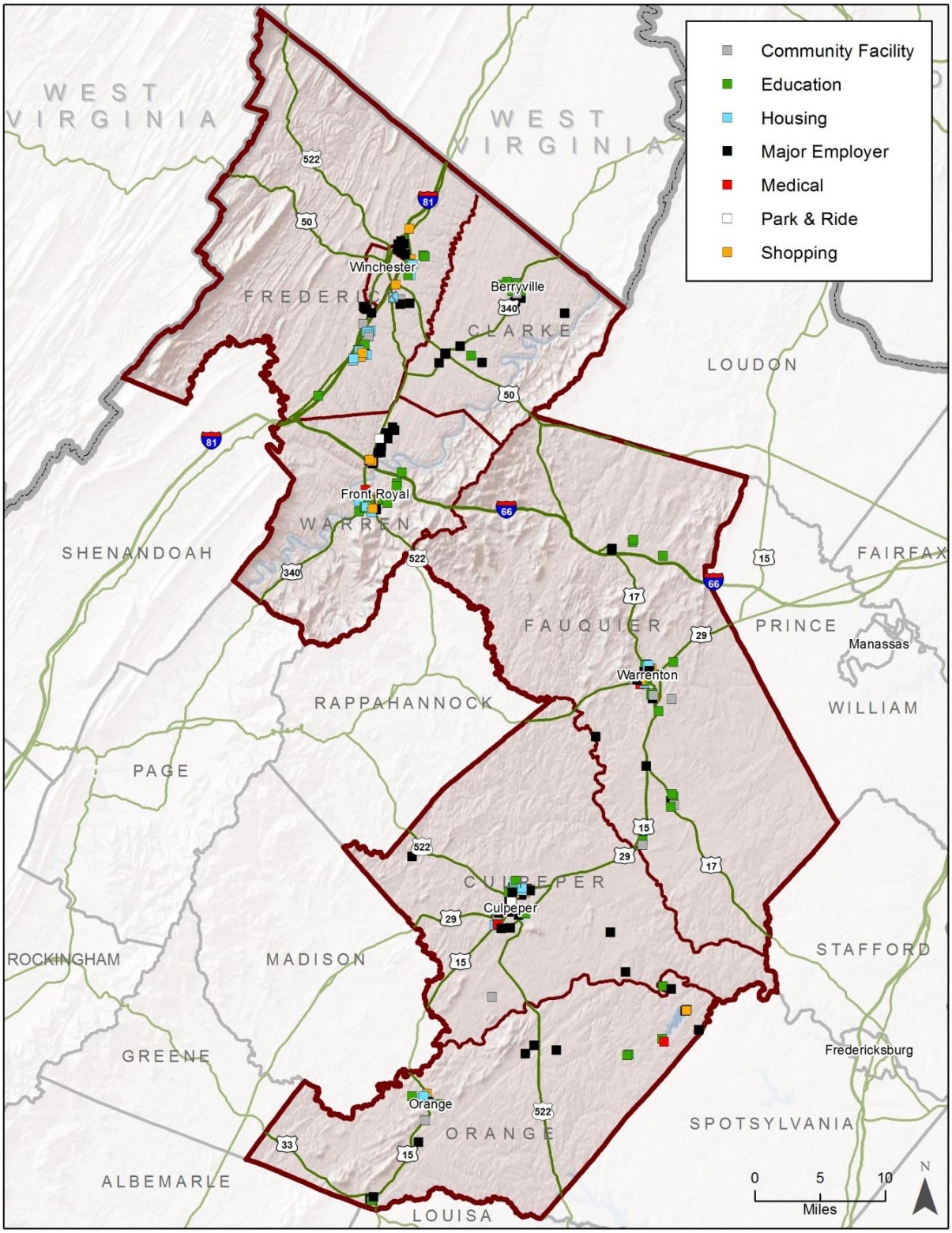


Figure 3-23: Major Trip Generators



Travel Patterns

An excellent source of data that provides an understanding of employee travel patterns is the United States Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) 2011 dataset. LEHD draws on federal and state administrative data from the Census, surveys, and administrative records. Table 3-23 shows that the most popular commuter destinations are the primary city or town within each county. Beyond localized commuting, the Washington, D.C. metropolitan area is a major destination with a large number of trips going to Arlington, Chantilly, and Washington, D.C. proper.

REVIEW OF PREVIOUS PLANS AND STUDIES

This section provides a review of relevant plans' studies that have been conducted in the West Central region. Each review provides a summary of the plan's contents and specific information pertinent to VRT and the TDP process. The summary provides a review of the following plans:

- Clarke County Comprehensive Plan
- Culpeper County Comprehensive Plan
- Fauquier County Comprehensive Plan
- Frederick County Comprehensive Plan
- Orange County Comprehensive Plan
- Town of Culpeper Comprehensive Plan
- Town of Front Royal Comprehensive Plan
- Town of Orange Comprehensive Plan
- Town of Warrenton Comprehensive Plan
- Warren County Comprehensive Plan

Following the review of each plan a summary map is provided in Figure 3-24 which shows the future growth areas in the West Central region.

Clarke County Comprehensive Plan

The 2013 Clarke County Comprehensive Plan was adopted by the Board of Supervisors on March 18, 2014. The guiding principles of the plan include managing residential growth, protecting agricultural land, protecting environmental and cultural resources, and encouraging business activity to broaden the tax base, particularly business related to agriculture.

The Berryville area has been identified in the comprehensive plan as the designated growth area of the County. The plan encourages business and residential development in this area "because Berryville contains the highest concentration of available public facilities and

Table 3-23: Top Five Work Destinations by Percentage of Resident Workers

Clarke County			**Culpeper County**			**Town of Culpeper**		
Destination	#	%	Destination	#	%	Destination	#	%
Berryville	737	9.9%	Culpeper	3,813	22.1%	Culpeper	1,577	30.4%
Winchester	569	7.6%	Warrenton	1,390	8.1%	Warrenton	356	6.9%
Leesburg	353	4.7%	Washington, DC	613	3.6%	Manassas	167	3.2%
Washington, DC	199	2.7%	Manassas	473	2.7%	Chantilly	121	2.3%
Ashburn	194	2.6%	Arlington	372	2.2%	Fredericksburg	101	1.9%
All Others	5,386	72.5%	All Others	10,576	61.3%	All Others	2,869	55.3%
Fauquier County			**Frederick County**			**Town of Front Royal**		
Destination	#	%	Destination	#	%	Destination	#	%
Warrenton	5,115	14.4%	Winchester	8,469	23.4%	Front Royal	1,629	25.2%
Washington, DC	1,390	3.9%	Front Royal	717	2.0%	Winchester	436	6.7%
Manassas	1,259	3.6%	Harrisonburg	619	1.7%	Washington, DC	166	2.6%
Arlington	1,036	2.9%	Leesburg	612	1.7%	Chantilly	139	2.1%
Chantilly	1,015	2.9%	Ashburn	492	1.4%	Arlington	136	2.1%
All Others	25,599	72.3%	All Others	25,267	69.8%	All Others	3,963	61.3%
Town of Gordonsville			**Orange County**			**Town of Orange**		
Destination	#	%	Destination	#	%	Destination	#	%
Charlottesville	70	6.0%	Orange	1,647	12.5%	Orange	386	17.9%
Orange	63	5.4%	Fredericksburg	613	4.6%	Charlottesville	130	6.0%
Richmond	49	4.2%	Charlottesville	596	4.5%	Culpeper	107	5.0%
Roanoke	29	2.5%	Culpeper	563	4.3%	Pantops	56	2.6%
Virginia Beach	29	2.5%	Gordonsville	249	1.9%	Gordonsville	51	2.4%
All Others	920	79.4%	All Others	9,530	72.2%	All Others	1,422	66.1%
Warren County			**Town of Warrenton**			**City of Winchester**		
Destination	#	%	Destination	#	%	Destination	#	%
Front Royal	3,399	20.3%	Warrenton	1,021	21.7%	Winchester	3,602	34.3%
Winchester	1,041	6.2%	Washington, DC	198	4.2%	Harrisonburg	213	2.0%
Washington, DC	460	2.7%	Manassas	149	3.2%	Front Royal	205	2.0%
Chantilly	410	2.4%	Arlington	138	2.9%	Leesburg	157	1.5%
Arlington	375	2.2%	Chantilly	135	2.9%	Berryville	134	1.3%
All Others	11,076	66.2%	All Others	3,060	65.1%	All Others	6,187	58.9%

Source: United States Census Bureau OnTheMap Application, LEHD Origin-Destination Data, 2011

infrastructure, it is the most appropriate place for growth." Other areas where less intensive growth is encouraged are the two major intersections in the County, including U.S. Route 50/17 and 340, and U.S. Routes 340 and 522.

The overarching objective for the transportation component of the plan is the to "ensure that the County's transportation system provides safe and efficient means for all modes of travel for citizens and visitors through coordinated land use decision-making and judicious use of limited fiscal resources." While the transportation section of the plan does not make specific mention of public transportation, the energy conservation and sustainability section encourages the reduction of single occupant vehicles in favor of ridesharing, public transit, bicycle, and pedestrian accommodations.

Culpeper County Comprehensive Plan

The 2010 Culpeper County Comprehensive Plan serves as a guide to "maintain the County's rural character and avoid becoming a bedroom community to the nearby metropolitan area around Washington, D.C." The plan stresses the need to "maintain and expand its economic base to support and address the needs of citizens of the County."

Future business and residential development in the County is recommended to be targeted towards the "village centers;" including Brandy Station/Elkwood, Clevenger's Corner, and the Town of Culpeper. Each area is intended to forge a unique identity for the County and serve to preserve the farmland in-between these destinations.

The plan's transportation vision is to "create a County-wide multi-modal transportation plan that fosters the movement of people and goods in an efficient manner and effectively promotes economic development while maintaining a predominantly rural development pattern." The public transportation component of the plan includes VRT's Culpeper Trolley and notes that additional buses are desired for the future. The plan also documents the transportation provided by the Rappahannock-Rapidan Regional Commission, including the Foothills Area Mobility System and rideshare program.

Fauquier County Comprehensive Plan

The Fauquier County Comprehensive Plan outlines ten goals for its twenty year planning horizon. The goals include enhance the quality of life for County residents, protecting and promoting the agricultural industry, encouraging economic development that supports other adopted goals, and encouraging the development of a transportation system that promotes efficient movement and causes a minimal impact on the environmental quality and scenic nature of the County.

Future development in Fauquier County is directed into service districts where pre-existing infrastructure is already present. The plan states that "commercial development in this planning period will probably not include the development of regional facilities due to Fauquier County's proximity to existing facilities in Prince William, Loudoun, and Fairfax counties." Warrenton is expected to continue as the major commercial center of the County. The plan also states that "there is a possibility of expanding neighborhood facilities in Remington, Bealeton, Marshall, and New Baltimore."

The public transportation component of the plan does not mention the Warrenton Circuit Rider. However, it does state that the role of ridesharing is increasing in importance, especially for commuters into the northern Virginia and Washington, D.C. region.

Frederick County Comprehensive Plan

Frederick County's 2030 Comprehensive Plan was adopted by the Board of Supervisors on July 14, 2011. The plan's vision statement is "insuring the quality of life for all Frederick County citizens by preserving the past and planning for the future through sound fiscal management."

In the plan, future development is slated for areas around the City of Winchester and along the Interstate 81 corridor immediately surrounding the City. The plan stresses a desire to maintain the County's agricultural and rural character by targeting all future development to the Winchester area. Areas to the immediate east of the City, along U.S. Route 50 and Virginia State Route 7 are also targeted locations for future development.

While the plan does not reference any active transit operations, it states that "it is expected that transit will begin to play a larger role in Frederick County's transportation network," and transit "would likely begin with on demand type services for the special needs populations, elderly, and disabled."

Orange County Comprehensive Plan

The vision for the 2010 Orange County Comprehensive Plan is to "sustain the rural character of Orange County while enhancing and improving the quality of life for all its citizens." The underlying principles of the plan include retaining the characteristics of the community, promoting a vibrant community, and wisely planning for land use and resource decisions.

Future development areas in the County, or Economic Development zones as referenced in the plan, are planned along the U.S. Route 15 corridor from Orange to Gordonsville, the area to the

immediate east of Lake of the Woods, and an industrial area to the northeast of the intersection of U.S. Route 522 and Virginia State Route 20.

The plan does not specifically mention public transportation, but it does include a relevant strategy - "coordinate the regional transportation needs of other surrounding localities, including a phased implementation of an intermodal network by coordinating planning efforts with the Towns of Orange and Gordonsville."

Warren County Comprehensive Plan

The vision of the Warren County Comprehensive Plan is to "maintain and enhance the quality of life for the residents of Warren County." The plans guiding principles include maintaining an adequate supply of sustainable and clean surface and ground water, clean air, farming, maintaining scenic views, protecting the rural character, maintaining quality educational facilities, and practicing sound fiscal management.

The Warren County plan does not go into great detail regarding future development. The plan states that any "future development should be carefully managed to ensure that development occurs in a manner beneficial to all County residents." The plan does go on to detail the service provided by VRT under the Front Royal Area Transit system. However, the plan does not offer any objectives or goals for the future of transit within the County.

Town of Culpeper Comprehensive Plan

The 2010 Comprehensive Plan for the Town of Culpeper was adopted by the Town Council on September 14, 2010. The plan's vision is to "promote development and investment to create long-term sustainability through a coordinated effort which ensures that there is a balance between aesthetics, economics, public health and safety, and transportation and public services that can be maintained over the long-term resulting in a community that is equal to or better than the present day Town of Culpeper."

The plan calls for a revitalization of the downtown area with form-based design and infill development of business and retail. The plan targets all new residential developments to neighbor existing developments within the town. The plan also calls for creating employment centers in the eastern portion of the town in previously undeveloped areas.

The plan calls for the potential to coordinate with private transportation groups to provide public bus service throughout the Town of Culpeper. One specific recommendation under the transportation section of the plan is to "acquire funds from the 5311 Rural Transportation Program or other sources as they become available, designating a staff position to monitor

available and relevant funding options for local projects, and use the coordination with other agencies to focus on the funding opportunities."

Town of Front Royal Comprehensive Plan

The Town of Front Royal's Comprehensive Plan is currently being updated. The study team was not able to review a complete copy of the comprehensive plan, but certain sections of the plan were made available by the Town of Front Royal for this analysis.

The vision for the Front Royal Comprehensive Plan is to maintain and promote Front Royal into a "vibrant town which will serve as a well-connected hub of the county and the surrounding region, with a strong and well-preserved historic core focused on arts and cultural amenities, a diverse economy, and benefit from continual collaboration between the town and county, preserved its historic character by preserving, rehabilitating, and restoring its historic buildings, and natural environment, encourage a popular and unique tourist and travel destination, and creating a lifelong community for people of all demographic groups."

Future development is slated for the downtown Front Royal area where increased densities are desired. "Big-box retail should remain concentrated in its current locations." The plan sets the goal of making Front Royal a walkable and bicycle friendly community where new residential and local retail should be located in close proximity to downtown. The plan also seeks development that will "accommodate the population's changing needs including the desire for older residents to age in place."

The plan does not mention the public transportation provided under the Front Royal Area Transit agency, but it does state its intention to conform with the SUPERNoVA Transit Plan under development by DRPT.

Town of Orange Comprehensive Plan

The Town of Orange's Comprehensive Plan was adopted in September 2006. The vision of the plan is to maintain a historic courthouse town that is a cultural center and county seat for Orange County. It further denotes creating a gateway to James Madison's Montpelier, creating a thriving business community, and becoming a business and economic crossroads (U.S. Route 15 and State Route 20). The Town of Orange "will become a better small, rural town, not a large, urban city."

The Town encourages "development and redevelopment of middle-upper income homes." Additionally, the plan states that "affordable and workforce housing will be designed and constructed as well as any other home and will be interspersed within the new planning sectors

rather than clustered in traditional low-income projects." The plan also includes that the goal of the Town is to maintain a stable population ranging between 8,000 and 10,000 residents.

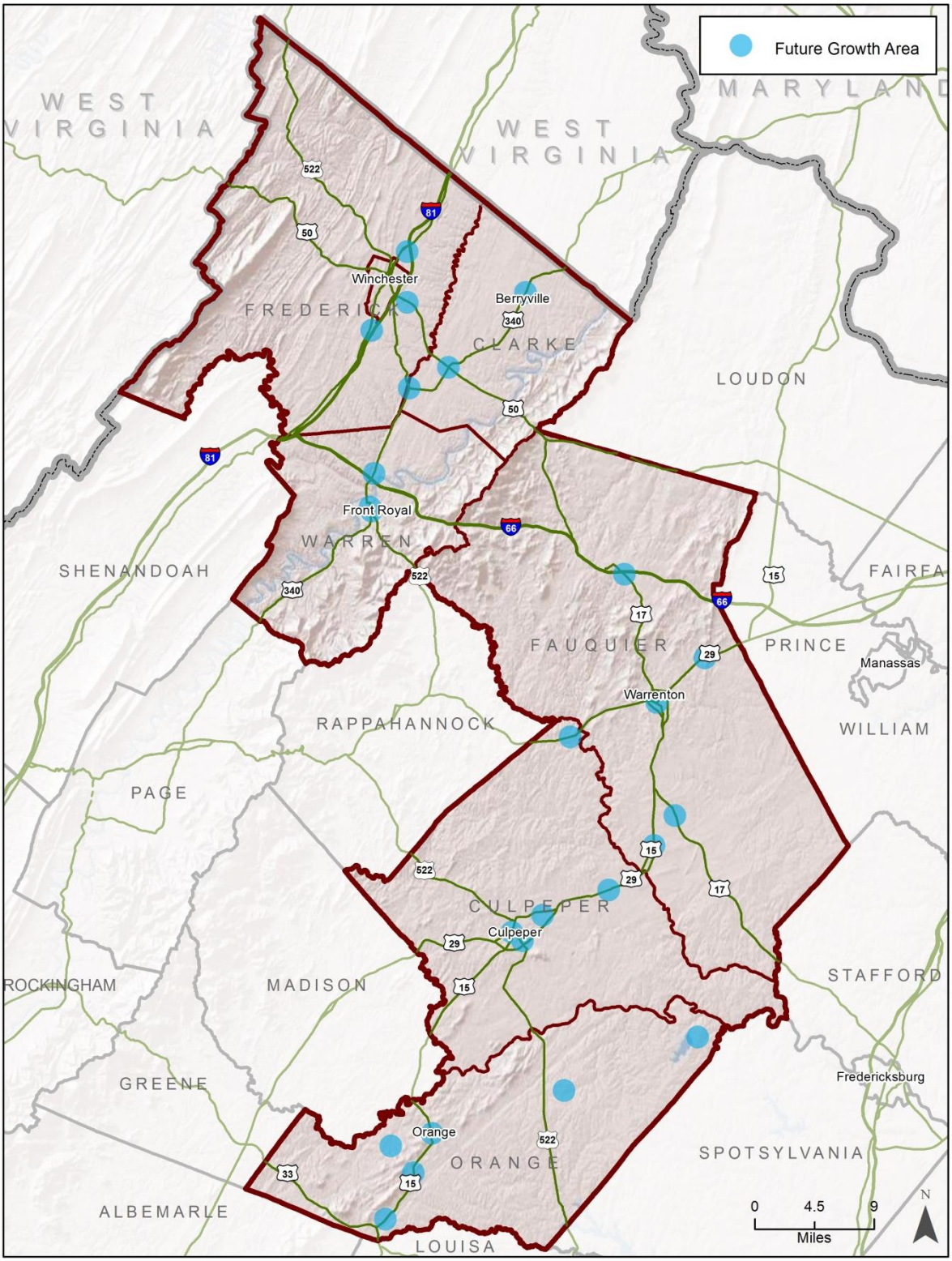
The transportation section of the plan does not mention public transportation, but does champion creating a new passenger terminal in Orange County just to the south of the Town of Orange.

Town of Warrenton Comprehensive Plan

The 2000 to 2025 Warrenton Comprehensive Plan was adopted in June 2002. The plan states that there are few opportunities for future development in the Town of Warrenton due to the current build out. "The remaining land in the Town is difficult to develop at best and will not yield the typical density of previous development." However, there are opportunities for consolidation of developments, such as infill. The plan recommends that any potential future development within the Town's limits should include higher densities and higher intensity land use.

The transportation and circulation section of the plan includes an objective that "encourages the development of a safe, efficient, and multi-transportation system for the movement of people, goods, and services, in and around the Town, which is consistent with the historic fabric, land use pattern and expected future fiscal needs of the Town." The plan does not feature any other specific information regarding public transportation.

Figure 3-24: Future Growth Areas in the West Central Region



CHAPTER SUMMARY

The system evaluation and needs analysis involved collecting and reviewing data from many different sources including performance data, boarding counts, passenger surveys, stakeholder interviews, demographics, and land use plans. Through the analysis of this data it is clear that there is need and demand for additional transit across the West Central region.

Some of the important conclusions from this chapter include:

- Passenger trips on the four local transit systems have been highly variable with the Culpeper Trolley and the Orange Trolley suffering heavy losses in passenger trips over the past four years.
- The results of the on-board surveys revealed that passengers are overwhelmingly satisfied with the services being provided but they would like to see improved on-time performance and later service hours.
- Input from area stakeholders reinforced the results of the passenger surveys; they called for extended hours, weekend service, improved marketing, and transit across county lines.
- Population growth is expected in each county of the service area to 2040 and the number of those aged 65 and above is expected to grow at an even faster rate than the general population.
- The demographic analysis showed that transit dependent populations are located throughout the service area with many concentrations in rural areas.
- The travel patterns identified in the LEHD analysis indicated that much of the travel outside of the West Central region is to the Washington D.C. metropolitan area and to the City of Charlottesville.
- Furthermore, the review of local land use plans identified a desire to maintain the area as agricultural and rural in nature; while future land development should be directed to existing towns and village centers in the region.

The results of the system evaluation and the priorities identified in this needs analysis will form the service alternatives and improvements discussed in the next chapter of the TDP.

Chapter 4
Alternatives

INTRODUCTION

This chapter will outline a series of service alternatives that meet the identified transit needs of VRT's West Central Division. The alternatives contained within were developed based on the analysis of current service levels, demographic information, and input received from riders and stakeholders. The alternatives will be presented to DRPT and VRT to identify those projects which should be pursued during the TDP's six-year planning horizon and long term, or vision, projects.

In this chapter, the alternatives are categorized first by service area and then are divided into either short/mid-term or long-term. The short/mid-term alternatives incur minimal costs, allowing for implementation during the TDP's six-year planning horizon. In contrast, the long-term alternatives include vision projects which may not fall within the implementation timeframe of this TDP but should be considered as warranted by emerging needs and available funding.

WEST CENTRAL REGION – COLLECTIVE OPPORTUNITIES

Short and Mid-Term Alternatives

Increase Community Marketing

VRT should continue to promote a positive image throughout the communities of the region by enhancing community marketing. The need for additional marketing and information was touted by stakeholders from each community within the West Central region. Additional transit information may also help stabilize varied ridership on some of West Central's services where the Culpeper Trolley and TOOT suffered a dramatic decrease from FY 2012 to FY 2014. Additional information was also cited on the rider surveys as a need; the results of the FRAT rider survey showed that the only satisfaction indicator to garner a dissatisfied response was the availability of schedules and information.

This alternative calls for additional funding to increase the promotion of the West Central Region's general public services (currently Circuit Rider, Culpeper Trolley, FRAT, and TOOT) and focus on the fact they are open to and usable by anyone without eligibility restrictions. This effort could also be used to promote any future general public services. Suggested marketing initiatives include creating brochures with service hours, fares, and VRT contact information which would be distributed to local businesses, libraries, human service agencies, etc.; developing signage or posters to alert the general public to VRT's services; and improvements to the VRT website.

Advantages

- Improves the visibility of VRT to all residents of the service area.
- Increases the availability of information to the general public and riders alike.

Disadvantages

- Would require additional costs for design and reproduction services.
- Additional administrative oversight.

Expenses

- Would incur moderate expenses (roughly $5,000 to $10,000) for designing and printing the informational and advertising materials.
- Printing and reproduction costs are part of VRT's operating budget and could be funded through typical funding ratios.

Ridership

- Providing more information about VRT's services for the public may result in a small increase in ridership, but predicting this change is difficult.
- Additional knowledge about the availability of transit to the broader community could result in more support for transit even among non-users.

Long-Term Alternatives

Address the Growing Rural Population

The population of each jurisdiction within the West Central Region is projected to continue growing into the foreseeable future. Much of the population growth will not be serviceable by the current fixed and deviated fixed route services. VRT currently provides demand-response service in Clarke, Culpeper, and Fauquier Counties but does not offer such a service in Orange or Warren Counties. According to the Orange County Comprehensive Plan, development

growth is expected in the eastern portion of the County near Lake of the Woods and along the U.S. Route 15 corridor passing through the County. In Warren County, the Comprehensive Plan is directing new development to the north of Interstate 66.

This recommendation calls for introducing demand-response service in Orange and Warren Counties. To gauge potential demand, it is pertinent to apply the usage rates of Clarke and Culpeper County's demand-response services which receive 0.10 and 0.19 trips per capita respectfully. Using the conservative estimate of 0.10 trips per capita, it is estimated that there would be a demand of 3,500 trips in Orange County and 3,900 trips in Warren County. Based on the current trips per hour ratio of the Clark County demand-response service (1.44 trips per hour), a new service would require about 5,000 additional vehicle hours in Orange County and about 5,600 in Warren County. Assuming an annual vehicle availability of approximately 1,800 to 2,000 vehicle hours, and a spare ratio of 20 percent, three vehicles would be needed for each service for a total of five vehicles in service and a spare that could be rotated based on demand.

County-wide demand-response service should be phased in order to manage demand and maintain productivity. The implementation phase could consist of limited days and hours to gauge demand and interest in the service.

Advantages

- Increases transportation choices and mobility throughout the region.
- May enable transfers to the fixed and deviated fixed route systems.

Disadvantages

- Requires local contributions from Orange and Warren Counties.
- Expensive to implement.

Expenses

- Assuming 5,000 additional service hours at the FY2014 demand-response per hour rate of $77.31, service in Orange County would cost about $386,000.
- Assuming 5,600 additional service hours in Warren County would cost about $433,000 based on the FY2014 cost per hour.
- Capital funding would also be required to purchase the additional vehicles required to run the service.

Ridership

- Estimated annual ridership in Orange County is likely to be about 3,500 trips based on 0.10 trips per capita.
- Estimated annual ridership in Warren County is likely to be about 3,900 trips based on 0.10 trips per capita.

CIRCUIT RIDER, TOWN OF WARRENTON

Short and Mid-Term Alternatives

Install Bus Stop Signs

The Town of Warrenton does not currently have bus stop signs. Of the four fixed services in the West Central Region, the Circuit Rider is the only service not to feature bus stop signage. VRT purchased forty (40) bus stop signs, however, the locality has not installed them to date. Bus stop signs provide many benefits to transit systems including increased awareness in the community and reduced uncertainty regarding bus stop locations. This proposal recommends installing bus stop signs at each scheduled stop location within the Town of Warrenton.

Advantages

- Eases uncertainty about bus stop locations.
- Serves as a marketing tool.
- Established bus stop locations allow for infrastructure improvements (benches, shelters, etc.) which may serve to entice new riders and satisfy current riders.

Disadvantages

- Associated capital expenses.
- Must maintain bus stop location.
- May be a challenge to secure permission to mount bus stop signage at some locations.
- Bus stop improvements (benches, shelters, etc.) must meet ADA requirements.

Expenses

- Bus stop signage typically costs $75 per sign.
- Installation costs may vary depending upon whether the signs are mounted to existing utility poles and street signs or if a new pole is required.

Ridership

- Bus stop signage more than likely will not have a dramatic change on ridership, but it may entice additional riders.

Adjust Route Schedule

Results for the Circuit Rider's Passenger Survey revealed that the highest level of service dissatisfaction stemmed from the system's on-time performance. In addition, approximately 33 percent of riders indicated that that buses routinely ran late which, when compounded, could lead to skipped runs.

In order for buses to run on time the headways must be adequate enough to allow for the actual running time and recovery time. The Circuit Rider's current headways are 60 minutes. Generally, running times are affected by the length of the route and the local operating environment such as congestion, travel time between stops, and dwell time for passenger boarding and alighting. When running times are either equal to or greater than scheduled headways it then becomes a challenge to stay on schedule and on time.

This proposal calls for increasing the current headways to more accurately reflect the demand patterns throughout the day. It is difficult to predict the additional time needed to correct the timing issues without an on-time performance analysis. Certain time periods during the day may experience more frequent delays and timing issues. To accurately identify these periods an on-time performance analysis should be conducted to determine when the bus begins to fall behind schedule.

Advantages

- Provides more accurate bus stop times for riders.
- Allows drivers to meet time points.
- Increases the reliability of the fixed-routes.
- Improves the quality of service and ride for passengers.

Disadvantages

- Could impact some commute times for riders.
- Reduces the number of runs per day.
- Reduces frequency of service.

Expenses

- Operationally cost neutral.
- Would require re-designing the schedule.

Ridership

- Reduced frequency may deter some riders.
- Accurate reflection of travel time will make the service more reliable.

Long-Term Alternatives

Realign the Maroon Route to Serve the Fauquier Hospital

This alternative proposes adjusting the Maroon Route to serve the Fauquier Hospital; and as a result – the Human Services Department, the Workplace, and the Fauquier Family Shelter. Currently the Maroon Route, following the "Bloom" stop, heads eastbound on Waterloo Street to serve the Warrenton Middle School and then continues to the bus stop at the intersection of 3rd Street and Main Street where the vehicle switches to the Black Route. As shown in Figure 4-1, this alternative would eliminate this segment of the Maroon Route that serves Waterloo Street and would require the removal of the Middle School stop which is one of the least active stops within the system. The proposed alignment would route the Maroon Bus south on Business Route 17 to serve the Fauquier Hospital and then turning left on Keith Street similar to the Black Route. The route extension would add approximately four minutes and 0.8 miles to the Maroon Route.

Advantages

- Would provide more frequent service to the Fauquier Hospital which is the busiest stop along the Circuit Rider's route.
- Route would avoid the extremely low ridership zone along Waterloo Street.
- Does not require additional resources.

Disadvantages

- The proposed route realignment would add four minutes to the Maroon Route's running time.
- The routing would eliminate service to the Warrenton Middle School.

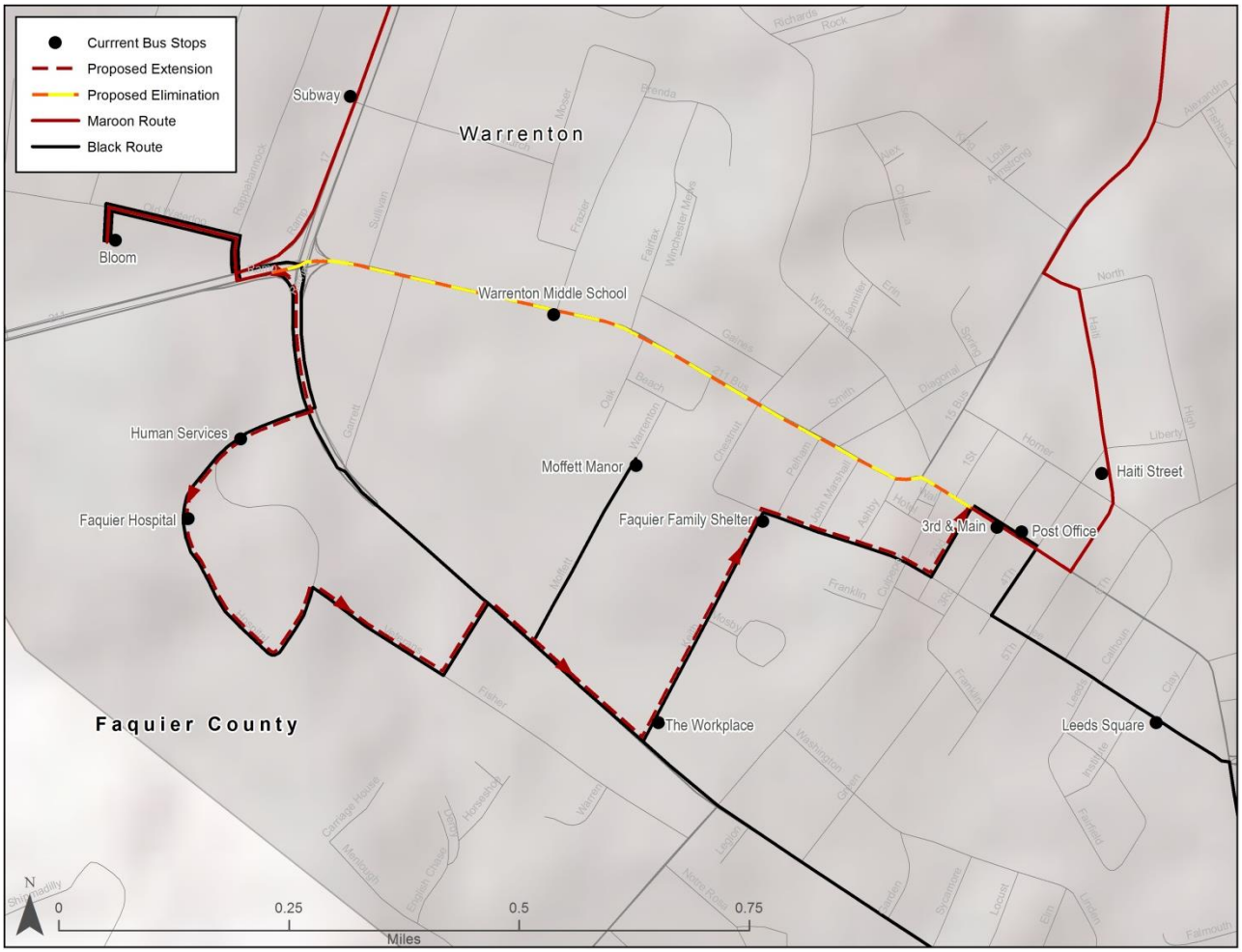
Expenses

- Operational cost neutral.
- Would require schedule redesign and marketing to alert riders and the public.

Ridership

- Realignment will make trips to and from the hospital much more convenient, which may increase ridership.

Figure 4-1: Proposed Maroon Loop Route Realignment



Acquire an Additional Vehicle and Modify Route Structure

As ridership continues to grow, future demand may facilitate the addition of a second vehicle. With a second vehicle, the Circuit Rider could provide much more frequent service, up to 30 minute headways. However, with the use of the second vehicle, the route structure of the service should be modified to increase mobility and frequency. The following alternatives examine the possibilities:

Alternative A

- Continue operating the Black and Maroon Routes with a dedicated vehicle for each route.
- Headways would be decreased to approximately 30 minutes for each route.
- Transfer location would be located downtown near the Post Office bus stop.

Alternative B

- Begin operating a bi-directional loop (Figure 4-2).
- Clock-wise and counter clock-wise service would shorten trip lengths.

Advantages

- Increases mobility for riders.
- Improves the reliability and convenience of the service.
- Would eliminate the need for a transfer location.

Disadvantages

- Associated capital costs and increased operating costs.
- Operating costs would be effectively doubled with an additional 3,000 service hours required annually.
- Requires increased local contributions.

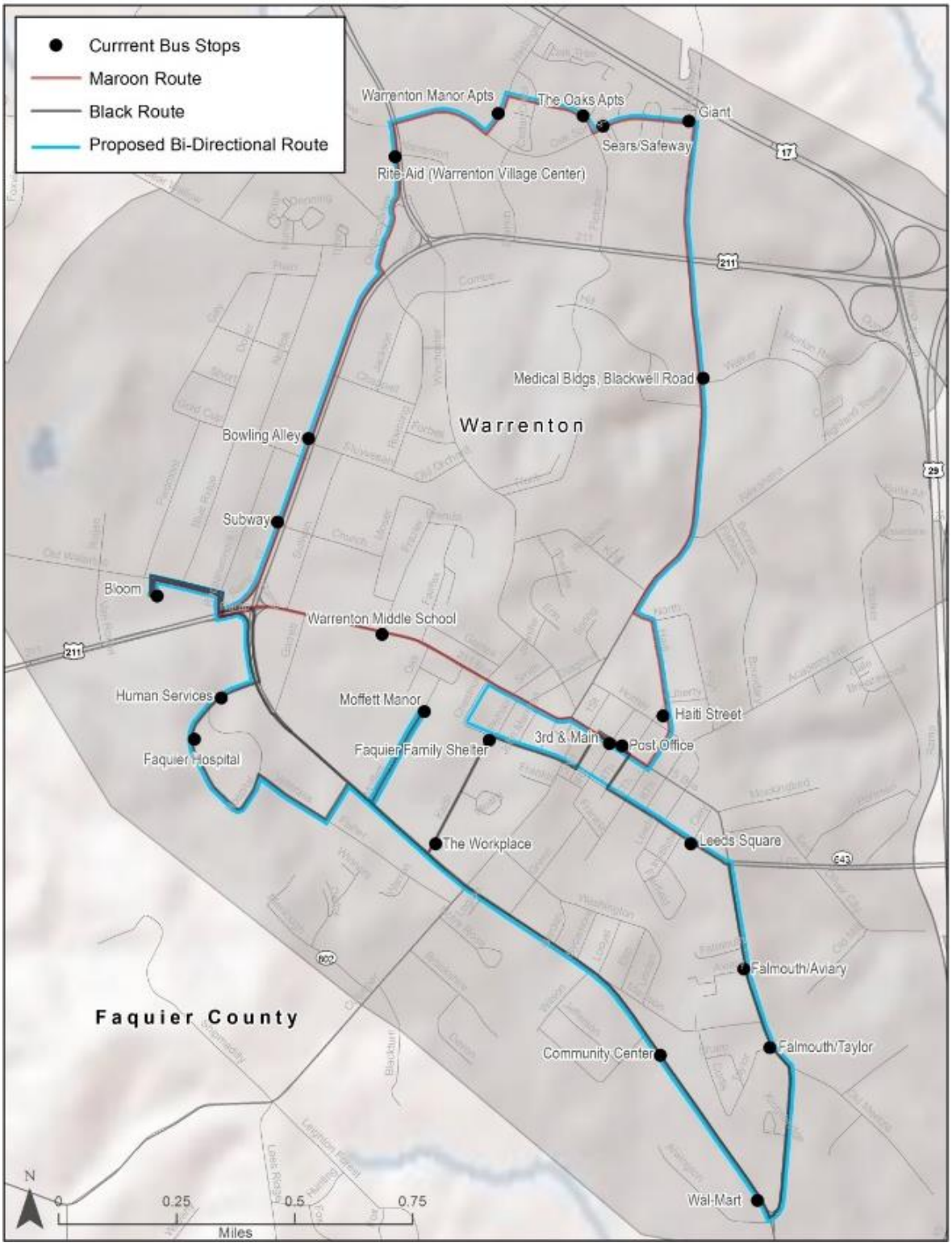
Expenses

- Associated capital vehicle costs (ranging between $65,000 and $85,000 for one vehicle).
- Administrative and operating costs would also rise in conjunction with the new vehicle.
- Vehicle and operating costs would be eligible for funding through the S.5311 funding program.

Ridership

- With more convenient and reliable service, ridership should increase.
- Decreasing headways to 30 minutes may also attract choice riders to the service.

Figure 4-2: Proposed Bi-Directional Service in the Town of Warrenton



CLARKE COUNTY DEMAND RESPONSE

Short and Mid-Term Alternatives

Additional Service

Rural passenger trips are surging in Clarke County. If current estimations hold true, ridership on the demand-response service will have increased by 55 percent from FY 2014 to FY 2015. In order to meet this growing demand, this alternative proposes extended service hours.

Clarke County's current demand-response service runs Monday through Friday from 9:00 a.m. to 1:00 p.m. Extending the service hours into the afternoon would increase the number the trips and may make the service more appealing to other would-be riders.

For each additional service hour added onto the service, the annual accumulation would be roughly 250 hours. Two options are proposed, the first is to add two hours of service until 3:00 p.m. adding 500 annual hours. The second is to add four hours of daily service, therefore, extending the service until 5:00 p.m. which would effectively double the current service level. In order to make this alternative possible, it is essential to demonstrate demand. One of the best methods may be to incrementally expand service hours; where one additional hour is added in the upcoming fiscal year which would give VRT the opportunity to gauge the effectiveness of the expansion.

Advantages

- Increased mobility for residents of Clarke County.
- Increased passenger trips and fare revenue.

Disadvantages

- Additional funding would be required.
- May require an additional driver.

Expenses

- Each additional hour of service would cost approximately $30,000 annually.
- Expanding the service to 3:00 p.m. would cost around $60,000 and to 5:00 p.m. the jurisdiction would incur an annual cost of approximately $120,000.

Ridership

- Ridership should increase as a result of the additional service hours.

Long-Term Alternatives

Additional Vehicle

Beyond extending service hours, the addition of an extra vehicle would truly increase mobility in the County. With ridership increasing there is an increasing demand for an extra vehicle.

Advantages

- Increased service for passengers.
- Would alleviate any needs to deny trips as service expands.

Disadvantages

- Would require additional capital funding.
- Would require an additional driver, maintenance, and ancillary costs.

Expenses

- Associated capital costs for an additional vehicle could range from $65,000 to $85,000.
- Increased administrative and operational costs.

Ridership

- With increased supply, the demand for ridership would be expected to increase.

CULPEPER TROLLEY, TOWN OF CULPEPER

Short and Mid-Term Alternatives

Limited service to the Friendship Heights and Leaflin Apartments

The Southern Loop of the Culpeper Trolley currently serves the Friendship Heights and Leaflin Lane Apartments. Both of these apartment complexes are located in rural areas that require the bus to travel great distances to reach each property. In addition, both apartments represent a very small percent of the rider activity within the system; Leaflin Lane Apartments had nine boardings and alighting and Friendship Heights Apartments had a total of 19 over the course of one week according to VRT statistics.

This alternative proposes limiting service to both apartment complexes. Figure 4-3 provides a map of the route segments where limited service is proposed. Limiting the route length of the Southern Loop will also assist in quelling the negative feedback regarding late and off-schedule buses from the rider survey.

Limiting the service may be accomplished through instituting a deviation request policy or only offering service to the two apartment complexes during select runs. Instituting a deviation policy would require administrative coordination to take requests and alert drivers when an originating trip is requested from either apartment complex. Riders wishing to end their trip at either apartment complex would be able to inform the driver once they board the vehicle. The other option for limited service would scale back service from the apartment complexes through a limited schedule. For example, only morning and afternoon runs would serve the apartment complexes.

The segment linking the Friendship Heights Apartments to the regular route is approximately 5 minutes of travel time for a total of 1.8 miles. The segment linking the Leaflin Lane Apartments is approximately 4 minutes of travel time totaling 1.2 miles. If both segments were eliminated from the route it would total a savings of nearly 10 minutes for the Southern Loop.

Advantages

- Improved on-time performance.
- Would limit service to two low performing stops.

Disadvantages

- Reduction in service to and from the Friendship Heights and Leaflin Lane Apartments.
- Service reduction could make the service less appealing for current and potential riders.

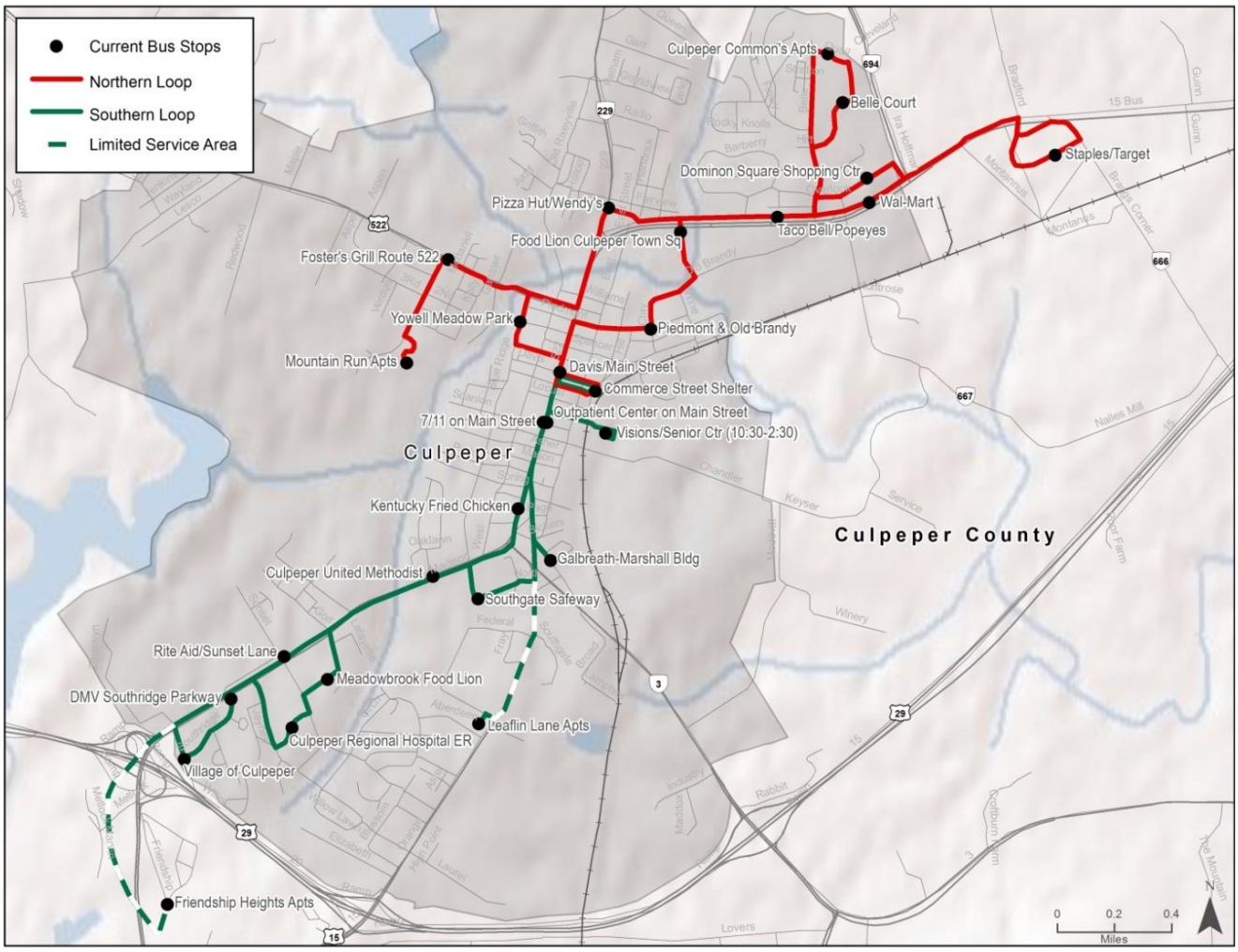
Expenses

- Operational cost neutral.
- Would require schedule redesign and marketing campaign to alert riders and the public.

Ridership

- Ridership is projected to remain stable with the modification.
- Reduced service may dissuade some riders, but the resulting time savings may attract other riders.

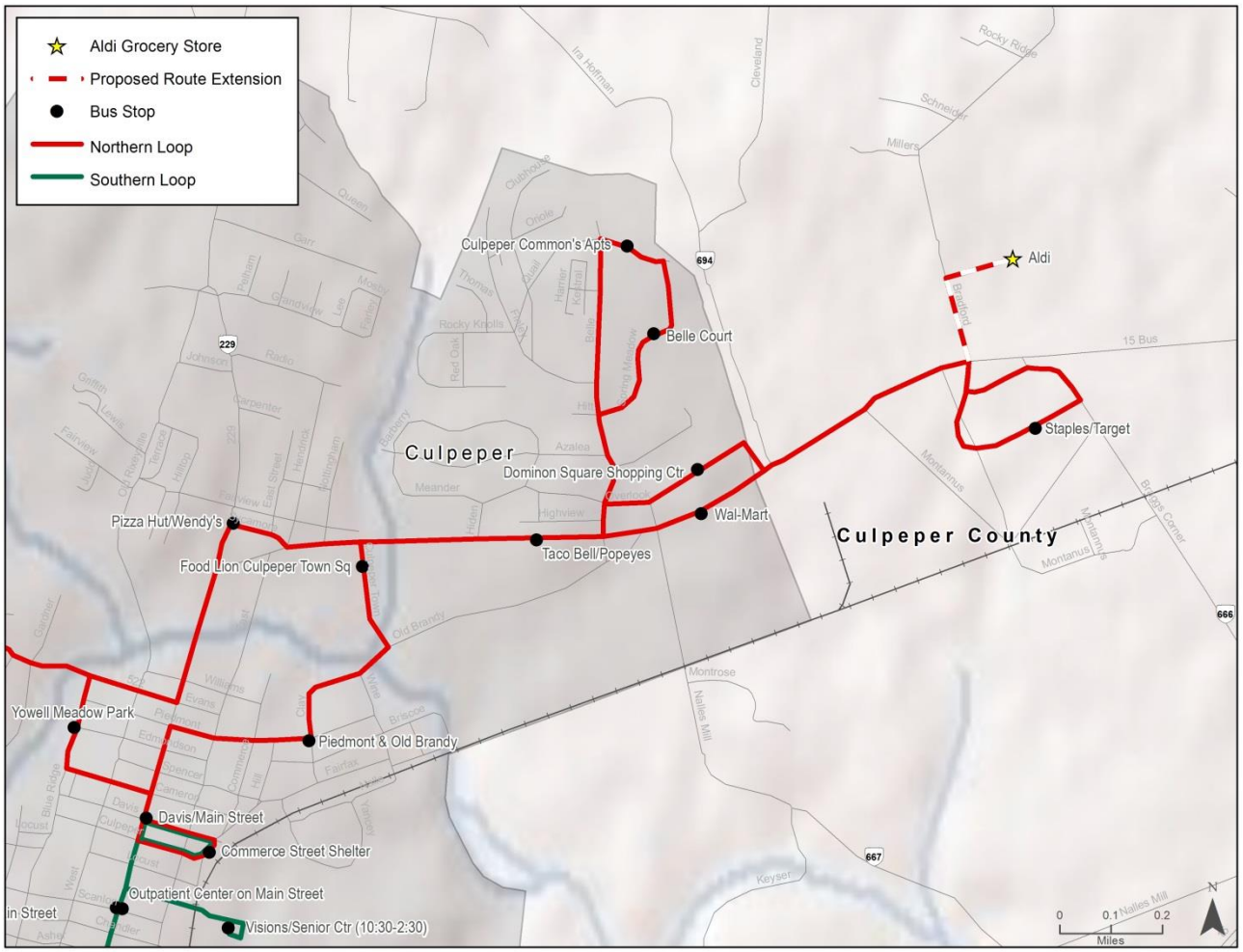
Figure 4-3: Proposed Limited Service Areas



Service to Aldi

The Aldi Grocery Store along Business Route 15 was the top destination where direct service was desired on the rider survey and by riders during a field visit. The Aldi grocery store is located in a strip shopping center directly across from the Staples/Target stop. As seen in Figure 4-4, providing service to Aldi would not require a major time commitment for the Northern Loop. It would require approximately two to four minutes entering and exiting the shopping center.

Figure 4-4: Proposed Service to Aldi



Advantages

- Provide service to grocery store and other shopping destinations.

Disadvantages

- Service would add additional running time to the Northern Loop.

Expenses

- Operational cost neutral.
- Would require redesigned schedules.

Ridership

- Expanding service to a new destination will more than likely increase the number of passenger trips.

Long-Term Alternatives

Provide Service to the New DMV Location

One of the top requests from the rider survey was to provide service to the new Virginia Department of Motor Vehicles (DMV) location along Lovers Lane (see Figure 4-5). Serving the location under the current route structure would add approximately eight minutes and four miles to the Southern Loop branching from the segment serving the Leaflin Lane Apartments. Given the current headway of 40 minutes, service to the DMV would not be possible without significant route modifications or the addition of a new route.

This proposal recommends implementing service to the new DMV location. This was selected as a long term alternative due to its location and the increase in funding which would be necessary to provide service. In the future when additional funding is available or the need for service to the Lovers Lane area increases, service to this area should be considered.

Advantages

- Responds to articulated community need.

Disadvantages

- Would require an additional dedicated vehicle to provide regular service.
- Area surrounding DMV is rural in nature and does not feature other major destinations.

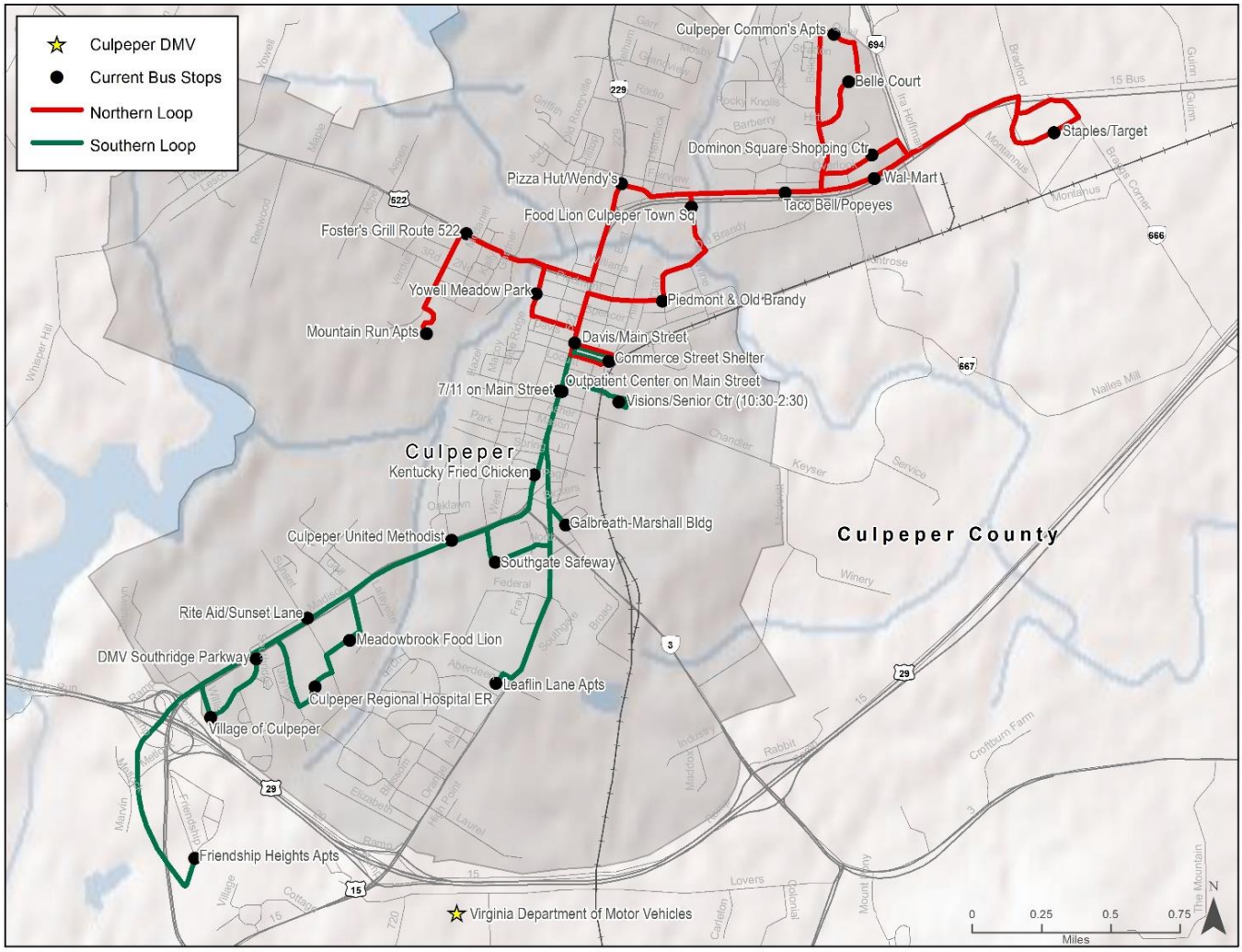
Expenses

- Using the Culpeper Trolley's cost per hour rate of $77.31 the service would require an additional $200,000 for frequent and sustained service.
- Associated capital vehicle costs (ranging between $65,000 and $85,000 for one vehicle).

Ridership

- It is anticipated that ridership would increase if the route and schedule were redesigned to better meet the needs of potential passengers.

Figure 4-5: New Department of Motor Vehicles Location

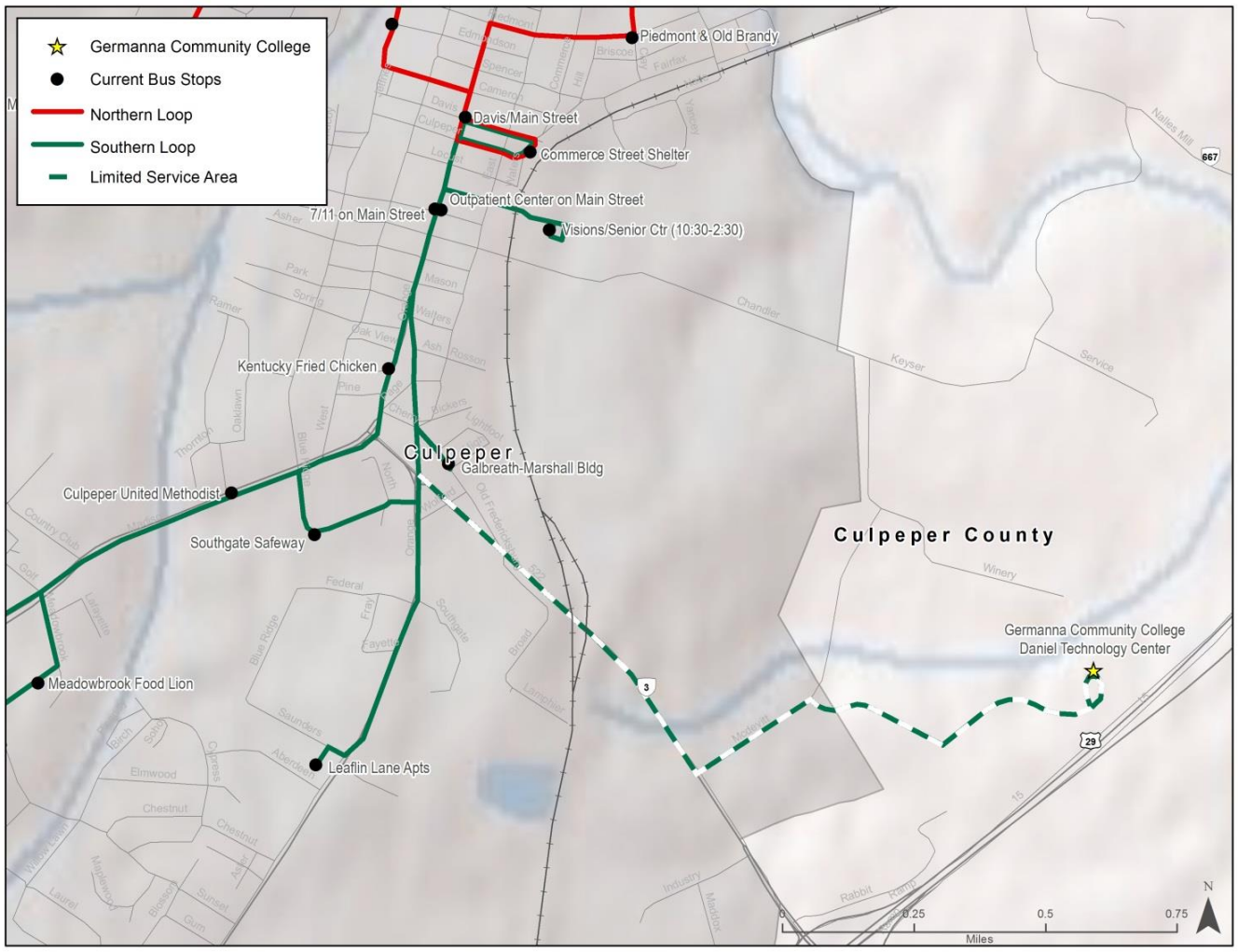


Service to Germanna Community College

A link off of the Southern Loop route to Germanna Community College Daniel Technology Center was expressed as a future need (see Figure 4-6). The facility was designed primarily for workforce development instruction and technology training. A wide variety of credit classes are also offered. Since the College is so close to the route (less than 1.5 miles) service may be accomplished through instituting a deviation request policy or only offering service during select runs. Similar to the *Limited Service to the Friendship Heights and Leaflin Apartments* alternative above, instituting a deviation policy would require administrative coordination to take requests and alert drivers when an originating trip is requested from the College. Riders wishing to end their trip at the College would be able to inform the driver once they board the vehicle. The other option for limited service would scale back service to/from the College

through a limited schedule. For example, only one or two morning and afternoon runs would serve the College.

Figure 4-6: Proposed Service Extension to Germanna Community College



Cost Neutral Option to serve Wal-Mart and Target

The Front Royal Trolley provides good geographical coverage of the area, serving the key destinations in the Town. The key stops that were identified by VRT's ridership counts were Randolph Macon Academy, Royal Plaza, Valley Health Urgent Care, the Court House, and Target and Wal-Mart. What is surprising is that the Target and Wal-Mart usage was all from Sunday service only. Corroborating this alternative is the on-board survey where 16% of the respondents (the second highest total) requested service to Wal-Mart and Target. Therefore,

the focus of this alternative is to suggest cost neutral changes to the existing weekday service to service the areas with the highest ridership.

Alternative A

- Continue to run the Weekdays South Loop along the current schedule.
- Every other trip (the non South Loop run), operate the Weekdays North Loop.
- Every other trip (the non South Loop run), operate modified Sunday service route – direct non-stop service between Visitor's Center and Target/Wal-Mart.

Alternative B

- Continue to run the Weekdays North Loop along the current schedule.
- Every other trip (the non North Loop run), operate the Weekdays South Loop.
- Every other trip (the non North Loop run), operate modified Sunday service route – direct non-stop service between Visitor's Center and Target/Wal-Mart.

Alternative C

- Continue to run the Weekdays South Loop and Weekdays North Loop as scheduled with the following modifications to the schedule.
- The first trip of the day (8:30 am) and fifth trip of the day (1:00 pm) would operate the Sunday route.

Advantages

- By providing service to Target/Wal-Mart on a daily basis makes Front Royal Trolley more convenient and appealing for riders.
- Uses data from on-off counts to maximize service along high ridership corridors and to/from key origins and destinations.
- Is cost neutral.
- Responds to articulated community need.

Disadvantages

- Route adjustments would require an education campaign to alert riders and reduce confusion during implementation.
- Any route and schedule adjustments would require an update to the print and web materials.
- Regular service to some destinations would no longer be consistently served on an hourly basis.
- Unclear if the Town of Front Royal would be willing to support daily service to Target/Wal-Mart which is located in Warren County.

Expenses

- The route adjustments are cost-neutral.
- Schedule redesign and printing would incur minimal costs.

Ridership

- It is anticipated that ridership would increase if the route and schedule were redesigned to better meet the needs of potential passengers.

Expanded Weekday Service Hours

The Front Royal Trolley provides service on its two loop routes Monday through Friday from 8:30 a.m. to 5:00 p.m. This span can be problematic for many who work outside of traditional shifts; rider surveys indicated that later evening hours in particular was a priority improvement (12% of respondents – third highest requested this improvement).

This alternative would extend morning and evening hours Monday through Friday on both routes. Adding one hour in the morning and two hours in the evening would accommodate greater employment opportunities, especially if combined with the daily service to Wal-Mart/Target. If the proposed hours are assumed, it would result in about 750 additional hours of service (service starting at 7:30 a.m. and ending at 7:00 p.m.).

Advantages

- Provides an extra three hours of service for riders, offering expanded mobility for customers on weekdays.
- Addresses a need for extended hours articulated in the rider surveys.
- Utilizes current vehicles.

Disadvantages

- Extended hours would increase annual operating expenses.
- Adds service that is not likely to be as productive as service during other parts of the day.
- There would be additional mileage on current vehicles, thereby accelerating the need to replace vehicles in the current fleet.

Expenses

- Using Front Royal Trolley's FY14 operating cost $45.76 per hour; one additional morning hour and two additional evening hours Mondays through Fridays would cost about $34,500 annually in operating expenses. No additional capital would be required.
- Schedule redesign and printing would incur minimal costs.

Ridership

- The average ridership per revenue hour was 3.23 passenger trips per revenue hour for FY14. However, data from the previous two fiscal years, as well as from the first quarter of FY15 had passenger trips per hour ranging from 4.40 to 4.13. Assuming that the fringe hours of service that are added will have below average ridership, the study team used the FY 2014 passenger trips per revenue hour. Thus it is estimated that about 2,400 additional passenger trips per year would be generated by an additional three hours of service.

Realign Saturday Service and Expand the Hours

The Front Royal Trolley currently operates Saturday service from 1:00 p.m. to 6:00 p.m. on a 30-minute headway to a few select locations – including Randolph Macon, the Visitor's Center, Gateway Plaza and Royal Plaza. This alternative proposes to extend the route coverage as well as increase the hours served. Specifically, it is proposed that Saturday service follow the same route structure as Sunday and start service two hours earlier (11:00 a.m.) and end two hours later (8:00 p.m.), though run on a 60-minute headway. Adding two hours in the morning and two hours in the evening would support further shopping and employment opportunities, notably if combined with the service to Wal-Mart/Target. If the proposed hours are assumed, it would result in about 200 additional hours for service.

Advantages

- Provides an extra four hours of service for riders, offering expanded mobility for customers on Saturdays.
- Addresses a need for extended hours articulated in the rider surveys.
- By providing service to Target/Wal-Mart on Saturdays, it makes Front Royal Trolley more convenient and appealing for riders and responds to second articulated community need.

Disadvantages

- Headways would go from 30 minutes to 60 minutes.
- Extended hours would increase annual operating expenses.

- Adds service that is not likely to be as productive as service during other parts of the day.
- There would be additional mileage on current vehicles, thereby accelerating the need to replace vehicles in the current fleet.
- Unclear if the Town of Front Royal would be willing to support daily service to Target/Wal-Mart which is located in Warren County.

Expenses

- Using Front Royal Trolley's FY14 operating cost $45.76 per hour; two additional morning hours and two additional evening hours on Saturdays would cost just over $9,000 annually in operating expenses. No additional capital would be required.
- Schedule redesign and printing would incur minimal costs.

Ridership

- Similar to the extended weekday hours, assuming that the fringe hours of service that are added will have below average ridership, the study team used the FY 2014 3.23 passenger trips per revenue hour. Thus it is estimated that about 650 additional passenger trips per year would be generated by adding four hours of Saturday service.

Sunday Service – Expand the Hours

The Front Royal Trolley currently operates Sunday service from 1:00 p.m. to 6:00 p.m. on 60-minute headways to a few key locations – including Randolph Macon, the Visitor's Center, Gateway Plaza, and Royal Plaza. This alternative proposes to extend the hours served along this route. Specifically, it proposes that Sunday service start service two hours earlier (11:00 a.m.) and end one hour later (7:00 p.m.). Adding two hours in the morning and one hour in the evening would support further social, religious, shopping and employment opportunities. If the proposed hours are assumed, it would result in about 150 additional hours of service.

Advantages

- Provides an extra three hours of service for riders, offering expanded mobility for customers on Saturdays.
- Addresses a need for extended hours articulated in the rider surveys.

Disadvantages

- Extended hours would increase annual operating expenses.
- Adds service that is not likely to be as productive as service during other parts of the day.

- There would be additional mileage on current vehicles, thereby accelerating the need to replace vehicles in the current fleet.

Expenses

- Using Front Royal Trolley's FY14 operating cost $45.76 per hour; two additional morning hours and one additional evening hour on Sundays would cost just under $7,000 annually in operating expenses. No additional capital would be required.
- Schedule redesign and printing would incur minimal costs.

Ridership

- Again, FY 2014 3.23 passenger trips per revenue hour were utilized to determine ridership. Thus it is estimated that about 500 additional passenger trips per year would be generated by adding three hours of Sunday service.

Service Expansion – Commuter Shuttle Bus

The Front Royal Trolley does not currently provide service to three of the primary employment centers in the region: the Virginia Inland Port, RSW Regional Jail, Riverton Commons (anchored by Wal-Mart), and Crooked Run Center (anchored by Target) – which are within 3.5 miles of one another. Input from transit staff and through the on-board surveys identified these as key destinations to foster employment opportunities. This alternative proposes adding three shuttle trips to these activity centers – an early morning trip prior to the start of the Weekdays South Loop, a mid-day 1:00 p.m. run that would replace the existing 1:00 Weekdays South Loop and 1:30 Weekdays North Loop (the Weekdays South Loop would then resume service at 2:00 p.m.), and finishing with an end of the day run after the last Weekdays North Loop. If the proposed two additional hours are implemented, it would result in about 500 additional hours of service. The proposed route may be seen in Figure 4-7.

Advantages

- Offers additional mobility for Front Royal Trolley users, facilitating employment trips, and supports shopping as well.
- Addresses a need articulated in the rider survey.
- Utilizes current vehicles.

Disadvantages

- Would increase the annual operating expenses.
- Adds service that is not likely to be as productive as service during other parts of the day.

- There would be additional mileage on current vehicles, thereby accelerating the need to replace vehicles in the current fleet.

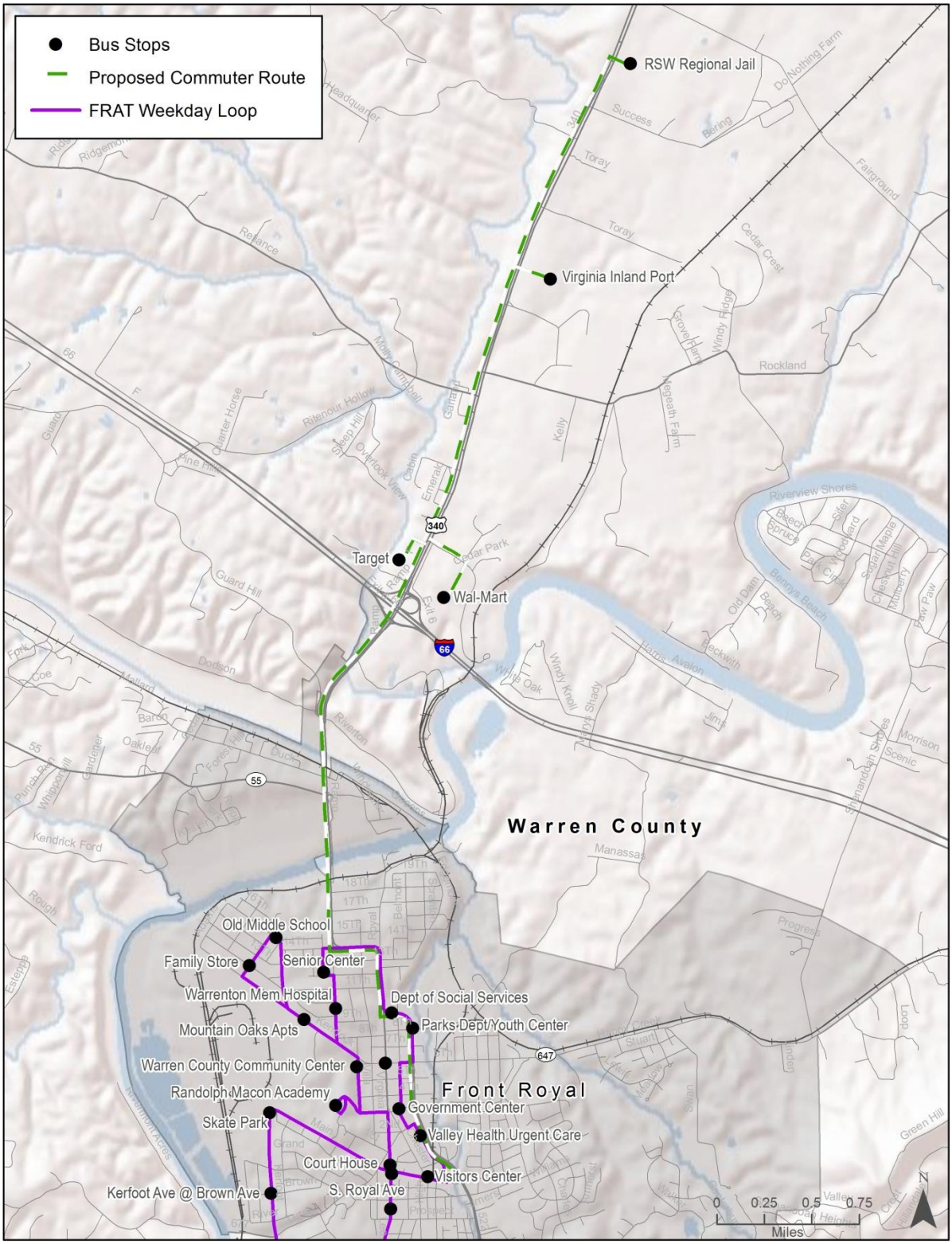
Expenses

- Using Front Royal Trolley's FY14 operating cost $45.76 per hour; two additional hours each weekday would cost just under $23,000 annually in operating expenses. No additional capital would be required.
- Schedule redesign and printing would incur minimal costs.

Ridership

- Assuming similar ridership to current weekday service, 400 annual service hours are likely to generate about 1,600 trips.

Figure 4-7: Proposed Commuter Service



Long-Term Alternatives

Increased Weekday Route Frequency

The redesign of the weekday's schedule to serve Target/Wal-Mart daily necessitated changing the frequency of at least one of the loops (depending upon which alternative option was chosen above). This alternative proposes increasing frequencies back to 60 minutes throughout the day and evening, Monday through Friday (7:30 a.m. to 7:00 p.m.) by adding an additional vehicle. Survey respondents noted the need for more frequent service, coupled with service to Wal-Mart. Adding twelve hours of service daily, Monday through Friday, would result in about 3,000 additional hours for service.

Advantages

- Improves access and makes the Front Royal Trolley easier and more convenient to use.
- Addresses the need for higher frequency service articulated in surveys.
- Anticipates future growth in ridership.

Disadvantages

- Increasing frequencies may reduce productivity and add to annual operating costs (as service would double but ridership likely would not).
- Requires additional vehicle and driver.

Expenses

- Using Front Royal Trolley's FY14 operating cost $45.76 per hour, the operating costs to implement 60 minute service on all routes during the day Monday through Friday are estimated to be about $137,500 annually.
- One additional bus trolley would also be needed, costing about $160,000 if purchased directly by the municipality and not part of the operating contract.
- Schedule redesign and printing would incur minimal costs.

Ridership

- Assuming average ridership (3.23 passenger trips per revenue hour), 60 minute service on the routes throughout the day is likely to generate about 9,700 additional trips per year

Service Expansion – Shuttle Bus to Lord Fairfax Community College

The Lord Fairfax Community College (LFCC) is a comprehensive, multi-campus public institution of higher education, with one of these locations in Middletown. This alternative proposes adding three shuttle trips to LFCC, which is about 12-15 miles north of the Visitor's Center (depending upon the route) – an early morning trip, a mid-day run, and an end of the day run. If the proposed three additional hours are implemented, it would result in about 750 additional hours of service.

Advantages

- Provides a transit option for residents attend classes at the College.
- Provides a transportation alternative to employment opportunities.
- Makes the College location more attractive.

Disadvantages

- Limited service less appealing for current and potential riders.
- Adds service that is not likely to be as productive as service during other parts of the system.
- Additional capital required.

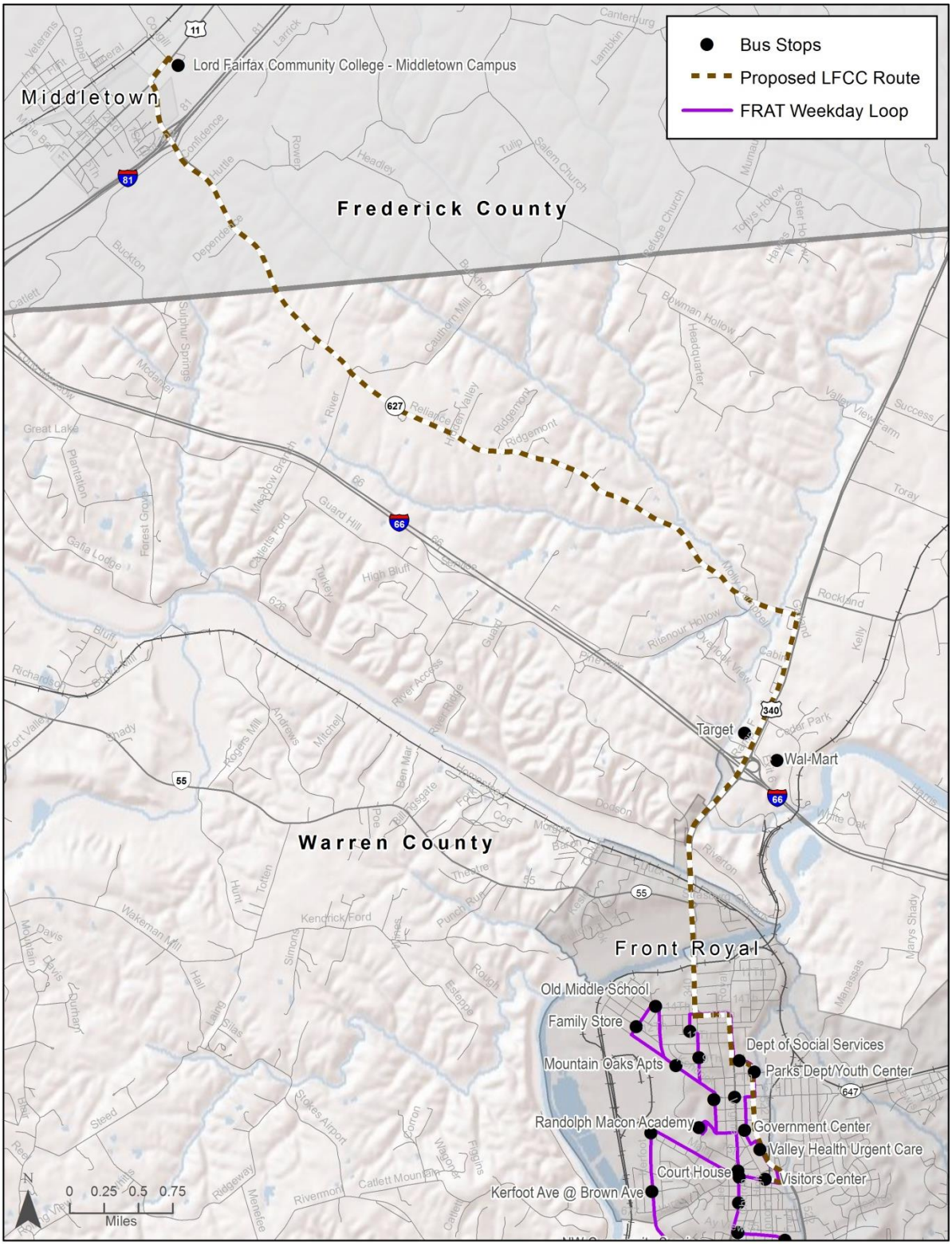
Expenses

- Using Front Royal Trolley's FY14 operating cost $45.76 per hour; three additional hours each weekday would cost just under $35,000 annually in operating expenses.
- Associated capital vehicle costs (ranging between $65,000 and $85,000 for one vehicle).
- Would require schedule redesign and marketing campaign to alert riders and the public.

Ridership

- Assuming average ridership (3.23 passenger trips per revenue hour), 3 additional hours of service to LFCC weekdays is likely to generate about 2,400 additional trips per year

Figure 4-8: Proposed LFCC Shuttle



Explore Cost Effectiveness for Using Trolley Buses

Modern-day trolleys are basically "dressed up" buses. The older-style trolleys cannot meet current handicapped-access regulations and fuel-efficiency standards. To keep existing riders, and encourage new ones, a transit system needs a somewhat modern vehicle that is going to be up-to-date with the latest amenities. At the heart of the issue is comfort and cost. Does the system want to keep the wood-bench interior typical of trolleys or go with plusher seating catering to regular riders. Nostalgia comes at a premium price, where the cost of a new trolley is around $160,000 (based on FY16 SYIP), typically $50,000 to $100,000 more for the same vehicle without the trolley features (30-ft. bus is $75,000 as listed in FY16 SYIP).

TOWN OF ORANGE TRANSIT, TOWN OF ORANGE

Short and Mid-Term Alternatives

Increase Level of Service to Gordonsville

The Town of Orange Transit provides four round trips daily from the Town of Orange to the Town of Gordonsville, which is detailed in Chapter 3. The shortcoming of this service, beyond the limited number of trips, is there is not a later morning trip and only one early afternoon return trip. This alternative proposes adding another later morning trip leaving the Orange Depot at 9:00 a.m. and a late afternoon return trip from Gordonsville leaving 4:30 p.m. and arriving at the Orange Depot at 5:30 p.m. If the proposed hours are assumed, it would result in about 500 additional hours for service.

Advantages

- Provides an extra morning and afternoon trip for riders, offering expanded mobility for customers.
- By providing additional service between the Town of Orange and the Town of Gordonsville, it makes TOOT more convenient and appealing for riders.

Disadvantages

- Extended hours would increase annual operating expenses.
- There would be additional mileage on current vehicles, thereby accelerating the need to replace vehicles in the current fleet.

Expenses

- Using TOOT's FY14 operating cost $77.31 per hour; two additional hours Monday through Friday would cost just about $39,000 annually in operating expenses. No additional capital would be required.
- Schedule redesign and printing would incur minimal costs.

Ridership

- The average ridership per revenue hour was 6.02 passenger trips per revenue hour for FY14. Assuming that the added trips would have consistent ridership, the study team used the FY 2014 passenger trips per revenue hour. Thus it is estimated about 3,000 additional passenger trips per year would be generated by adding these two trips.

Increased Weekday Route Frequency

TOOT provides excellent geographical coverage of the area, serving the key destinations in the Town which is supported by the high and equally distributed boardings by stop. By evaluating the service route and ridership patterns, it became clear a second vehicle would greatly enhance the service. By adding a second vehicle, two major accomplishments would be achieved: 1) would reduce headways to 30 minutes and 2) provide riders a more direct route. Adding a second vehicle to the current schedule (7:30 a.m. to around 5:30 p.m.) adds 10 hours of service Monday through Friday, or about 2,500 hours annually.

Alternative A

- Run the current route in reverse.

Advantages

- Improves access and makes TOOT easier and more convenient to use.
- Addresses the need for higher frequency service articulated in surveys, longest trip should be only 30 minutes.
- Anticipates future growth in ridership.

Disadvantages

- Increasing frequencies may reduce productivity and add to annual operating costs (as service would double but ridership likely would not).
- Requires additional vehicle and driver.

Alternative B

- Split the service into two routes – a north route and south route which utilizes the Depot as the transfer point.

Advantages

- Improves access and makes the Front Royal Trolley easier and more convenient to use.
- More direct and linear service.
- Anticipates future growth in ridership.

Disadvantages

- Increasing frequencies may reduce productivity and add to annual operating costs (as service would double but ridership likely would not).
- Would necessitate transfer on some trips – though this could be avoided if the buses interline.
- Requires additional vehicle and driver.

Expenses

- Using TOOT's FY14 operating cost $77.31 per hour; 10 additional hours, Monday through Friday, would cost about $195,000 annually in operating expenses.
- One additional bus trolley would also be needed, costing about $160,000 if purchased directly by the municipality and not part of the operating contract.
- Schedule redesign and printing would incur minimal costs.

Ridership

- The average ridership per revenue hour was 4.92 passenger trips per revenue hour for FY14. Assuming that the added trips would have consistent ridership, the study team used the FY 2014 passenger trips per revenue hour. Thus it is estimated that about 12,300 additional passenger trips per year would be generated by doubling the frequency of service.

Long-Term Alternatives

Service to Montpelier

Interest was expressed during the study to provide a link from the Town of Orange to Montpelier (see Figure 4-9). The Montpelier estate features a mansion, garden, historic buildings, exhibits, archaeological sites, picnicking, and forests trails. This connectivity would

benefit both locals and tourists. Since Montpelier is so close to the Town or Orange (5.5 miles) four roundtrips are proposed – two additional hours per weekday. This would result in about 500 additional hours for service.

Advantages

- Provides a transit option for residents and visitors.
- Provides a transportation alternative to employment opportunities.
- Makes the local historical site more attractive and draw more visitors.
- Additional capital would not be needed if service hours did not overlap the Gordonsville Route service.

Disadvantages

- This route lies outside of Town of Orange limits.
- Additional service would increase annual operating expenses.

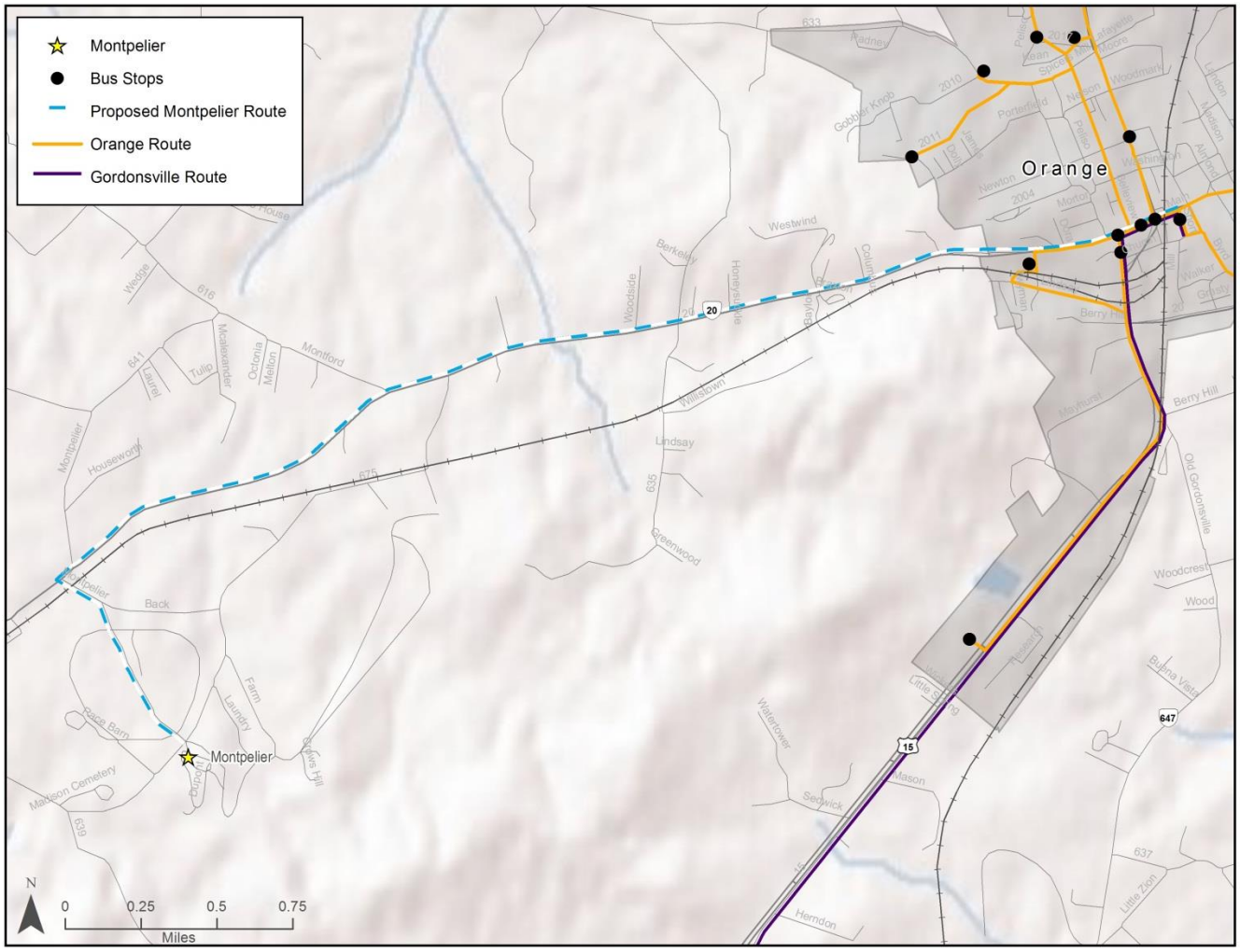
Expenses

- Using TOOT's FY14 operating cost $77.31 per hour; two additional hours Monday through Friday would cost just about $39,000 annually in operating expenses. No additional capital would be required if using the Gordonsville Route vehicle.
- Schedule redesign and printing would incur minimal costs.

Ridership

- Since there is not another tourist shuttle for the service area, the FY14 average ridership per revenue hour was used to determine ridership. Therefore, it is estimated that about 2,500 additional passenger trips per year would be generated by adding these four round trips.

Figure 4-9: Proposed Route from Orange to Montpelier



Chapter 5
Operations Plan

INTRODUCTION

The development of the VRT West Central TDP has included four chapters (documented in Chapters 1-4), which provided an overview of transportation; discussed goals, objectives, and standards; analyzed the need for transit services; and proposed financially constrained and vision alternatives for systems in VRT's West Central Division to implement over the next six years. The process has been guided by VRT staff and input from DRPT and area stakeholders.

This chapter provides the Operations Plan which describes the service improvements and expansions that has recommended for implementation over the TDP's six-year timeframe. It details the specific projects broken down into financially constrained and vision categories. While the former follow a six year timeline, the latter is indeterminate, as the year of possible implementation is unknown. The TDP recognizes current financial constraints while allowing system's operated by VRT to adapt to changing circumstances, and consider accelerated implementation during its yearly reviews.

The operational improvements and service characteristics of expansion projects are described below. Focusing first on the financially constrained category, systems in VRT's West Central Division can better achieve its transportation program goals. Chapters 6 and 7 provide companion capital and financial plans associated with these projects.

SERVICE PROJECTS

This section will detail the specific service projects for VRT's West Central Division, broken down into short, mid, and vision based on the prioritization of the projects for each local system. While short-term projects are intended to follow a one to three year timeline and mid-term projects are intended to follow a four to six six-year timeline, the vision projects are presented in sequential phases as the implementation year is unknown.

The operational changes included in this chapter include cost estimates that are based on the FY 2014 actual expenses submitted to DRPT. The service revenue hours for FY 2014 was also used for purposes of this analysis. This Operations Plan presents the following projects, organized by the timeline of implementation:

WEST CENTRAL REGION – EACH SYSTEM

Short-Term Projects

The following projects are recommended for implementation in the first two years of the TDP. These projects were identified as short-term to address the more immediate needs of the systems.

Increase Community Marketing

This project involves increasing marketing efforts and public information of current general public services, focusing on the ease and convenience of the service. The systems in the West Central Division currently use limited methods of public outreach including a system map and schedules and the VRT website to educate riders and the general public about transit services. Often publicly unrecognized but very important are the drivers who are also valuable resource in providing suggestions to improve the service. While current riders typically are able to find information about local transit services, there is a sense that a large part of the community still does not know about the service VRT offers in each jurisdiction.

It is recommended that each local system, on behalf of VRT, request technical assistance from DRPT to develop a modest marketing plan. Such technical assistance could be funded through the Rural Transit Assistance Program. The marketing plan would document current marketing and public outreach activities, and identify marketing goals and related strategies. The marketing plan could take into account public input provided through the TDP process, and identify ways to build partnerships with community organizations and improve public outreach.

Even if organizations and businesses do not have employees or patrons who currently ride public transit, it is important to generate community support for the public service that each system provides. Good marketing and public information efforts help achieve this goal. Marketing efforts should highlight that many members of the community experience a higher quality of life with transit services. Seniors, individuals with disabilities, and residents who do not have a car are able to live independently because of transit services in their jurisdiction. Transit helps residents access jobs and students to attend classes. While most existing riders use transit because they do not have access to a car or the ability to drive, transit also provides an important alternative to those who might choose to use transit in the future. In terms of public information, VRT should continue to maintain accurate information about the route, schedule, fares, and service policies on their website, as well as include this material on local jurisdictional websites.

- Each transit system should implement marketing efforts in FY 2016 through the Federal Transit Administration's Rural Transit Assistance Program (RTAP). Funding is available up to $2,500, with no required local match.

- Updates to marketing materials will be necessary every year following implemented service changes, corresponding to implementation of expanded service hours and days, as well as for any new service. It is proposed that $500 for these expenses be included in those corresponding fiscal years.

- Increased marketing may result in a small increase in ridership, but predicting this change is difficult. Additional community-wide knowledge of the services could result in more support for transit even among non-users.

CIRCUIT RIDER, TOWN OF WARRENTON

Short-Term Projects

Install Bus Stop Signs

The Town of Warrenton is the only fixed route service in the West Central Region that does not currently have bus stop signs. Fortuitously the locality currently owns forty (40) bus stop signs from a recent capital grant purchase. This project focuses on installing the new signs throughout the system.

- Installing bus stop signs at each scheduled stop location within the Town of Warrenton.

- Creating and maintaining a detailed inventory of bus stops with signage.

Adjust Route Schedule

The Circuit Rider Maroon and Black routes operate as fixed route service weekdays on a sixty minute headway (each route is thirty minutes in length – one interlined bus). Although ideally the hourly headway is attractive to passengers, in actuality it is longer than this since the system is unable to perform on-time based on the schedule. The focus of this recommendation is to keep the structure of each route pairing the same, however, to increase the headways to ninety minutes (45 minutes for each individual route) to better correspond to the actual running times.

- This change is cost-neutral with regard to operating cost. This change will necessitate a revision of the schedules (as do some other changes included within this plan). The cost

to revise the schedules is included with the discussion of improved passenger information and infrastructure.

- This change is not expected to have a significant impact on ridership, though more riders may be attracted to the service based on improved on-time performance and the maturing system.

Mid-Term Projects

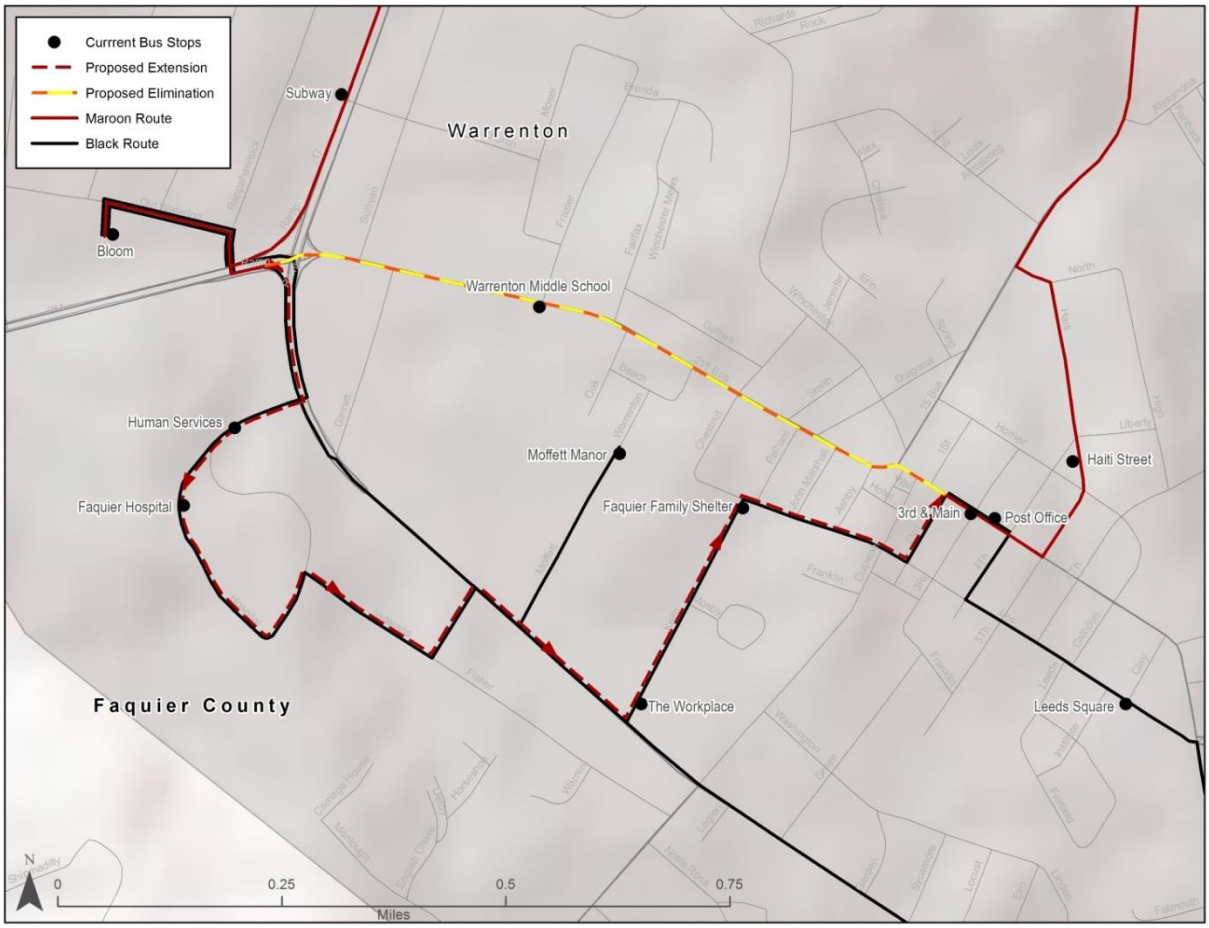
The following projects are recommended for implementation in year three through six of the TDP's timeframe. These projects were identified as mid-term because they require additional resources and/or comprehensive system-wide modifications.

Realign the Maroon Route to Serve the Fauquier Hospital

This recommendation calls for adjusting the Maroon Route to serve the Fauquier Hospital; and as a result – the Human Services Department, the Workplace, and the Fauquier Family Shelter. Currently the Maroon Route, following the "Bloom" stop, heads eastbound on Waterloo Street to serve the Warrenton Middle School and then continues to the bus stop at the intersection of 3rd Street and Main Street where the vehicle switches to the Black Route. Figure 5-1 portrays the adjustments to the existing Maroon Route that aims to provide more frequent service to the Fauquier Hospital which is the busiest stop along the Circuit Rider's route. The proposed routing will add approximately four minutes and 0.8 miles to the Maroon Route.

- Re-designing and re-printing the current Route and Schedule Guide.
- Marketing the new route through local flyers and on-board buses.
- This change is not expected to have a significant impact on ridership, though more riders may be attracted to the service based on improved service to key stops.
- This change is cost-neutral with regard to operating and capital cost.

Figure 5-1: Maroon Loop Route Realignment



Vision Projects

The following proposals describe longer term vision projects that may not fall within the implementation timeframe of this TDP, but which address needs identified during the public outreach effort. DT should consider implementing these projects when warranted by emerging needs.

Increased Service - Modify Route Structure

As demand for service continues to grow, more service would be required to support the ridership. This would necessitate a second vehicle thus providing more frequent service. Thirty to forty-five minute headways would be achieved (depending upon the route structure) under this recommendation. Two possibilities would exist: 1) continue operating the Black and Maroon Routes with a dedicated vehicle for each route, or 2) begin operating a bi-directional loop (Figure 5-2).

- Increases mobility, more reliable service, and better convenience.
- Develop marketing campaign that promotes the new enhanced service and schedules.
- The increased service results in about 3,000 total additional revenue hours – about $230,000 (based on FY2014 data).
- Capital cost for an additional vehicle is around $75,000.

CLARKE COUNTY DEMAND RESPONSE

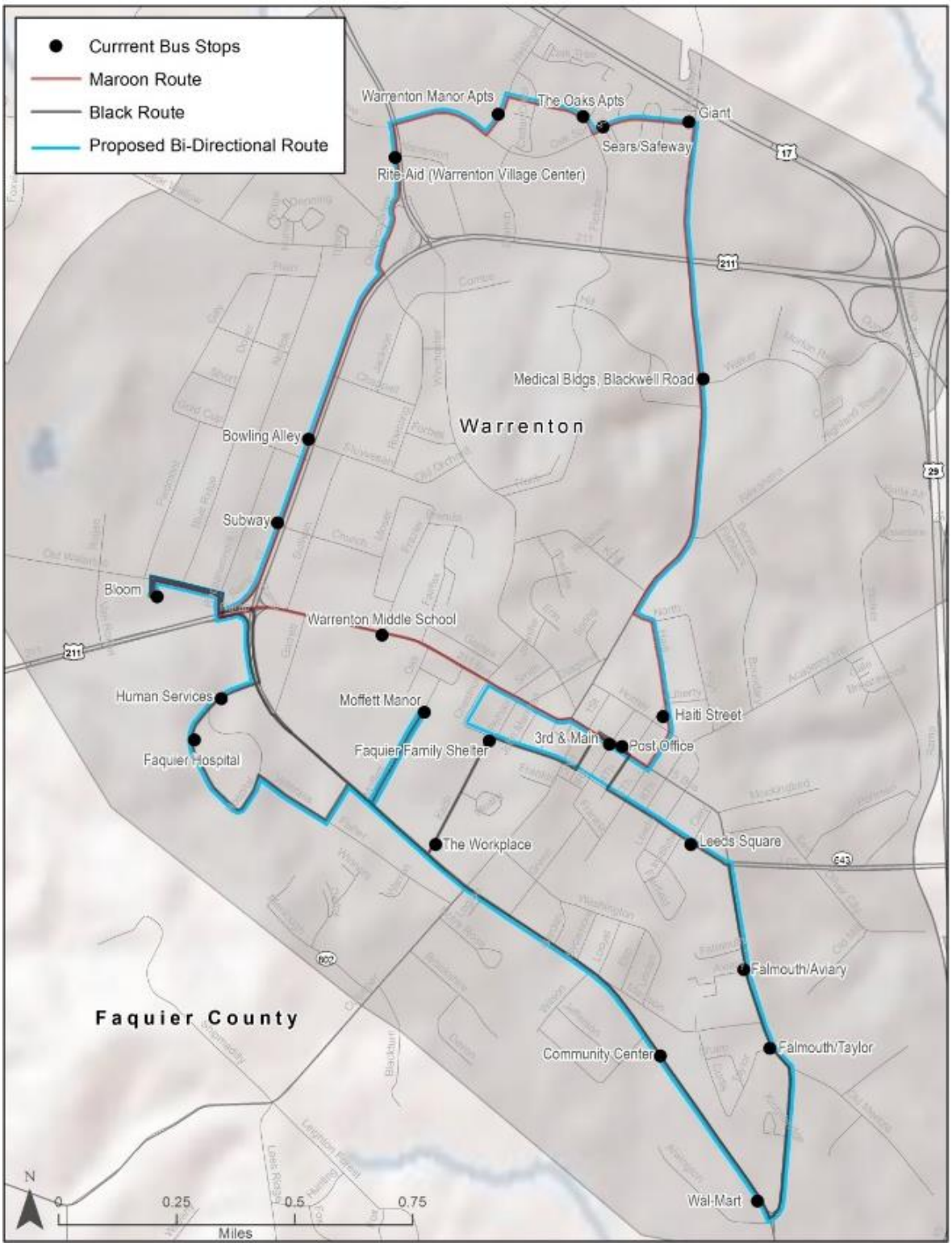
Mid-Term Projects

Additional Service Hours

The demand for Clarke County's demand response service is growing, as evident by the 55 percent increase in ridership over the last two fiscal years. To support transit riders, as well as to continue to grow demand for the service, additional service hours are recommended. Currently Clarke County's demand response service ends at 1:00 p.m. Two additional hours each weekday allowing service to run until 3:00 p.m. is advised.

- Would add 500 annual operating hours.
- $60,000 annually would be needed to support the additional service (based on FY2014 cost per hour of $118.56).

Figure 5-2: Circuit Rider Bi-Directional Service Route



Vision Projects

Further Additional Service Hours

To truly be considered "all day" service, an additional two hours of service to Clarke County's demand response hours. This would permit more freedom to transit riders, by creating both employment and shopping opportunities. Clarke County's demand response service under this scenario would now operate from 9:00 a.m. to 5:00 p.m.

- Would add 500 annual operating hours.
- $60,000 annually would be needed to support the additional service (based on FY2014 cost per hour of $118.56).

Expanded Service

To further increase options and availability for Clarke County residents, the addition of an extra vehicle would increase mobility. A second vehicle permits more passenger service by doubling per hour ridership opportunities.

- Would double annual operating hours – contingent upon the schedule.
- Annual operating cost would correspond to the daily service hours.
    - $120,000 for current service level of 9:00 a.m. to 1:00 p.m.
    - $180,000 for service covering 9:00 a.m. to 3:00 p.m.
    - $240,000 for service covering 9:00 a.m. to 5:00 p.m.

CULPEPER TROLLEY, TOWN OF CULPEPER

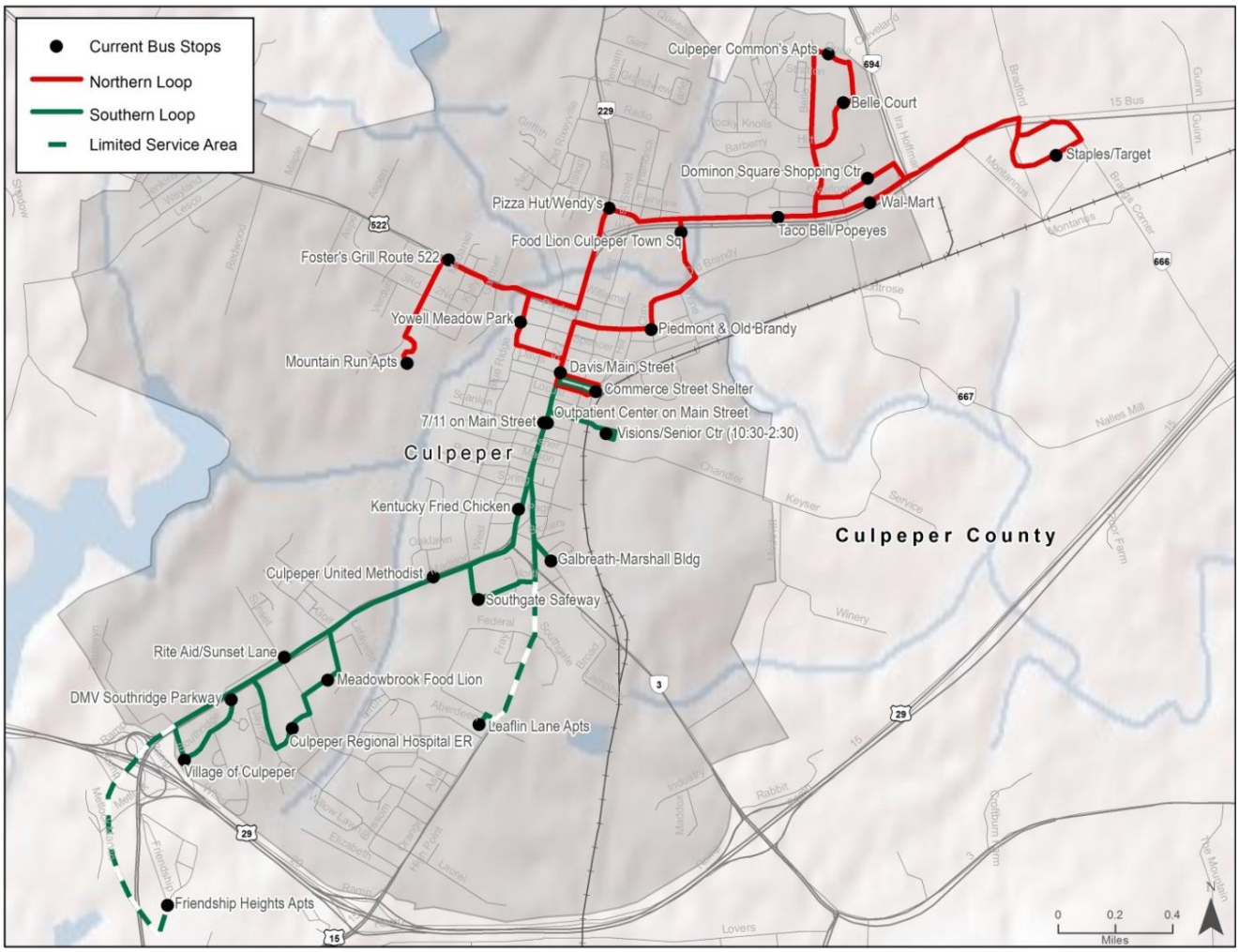
Short-Term Alternatives

Adjusting the Southern Loop Route - Limited Service to the Friendship Heights and Leaflin Apartments

Based on limited ridership and the proximity of these stops, it is recommended that the Southern Loop of the Culpeper Trolley provide limited service to both apartment complexes. Figure 5-3 provides a map of the route segments where limited service is advised. Two options are available to accomplish this change: 1) instituting a deviation request policy, or 2) offering service to the two apartment complexes only during select runs.

- This change is cost-neutral with regard to operating cost.
- This change will necessitate a revision of the schedules.
- This change is not expected to have a significant impact on ridership, though more riders may be attracted to the service based on improved on-time performance.

Figure 5-3: Adjusted Southern Loop Route

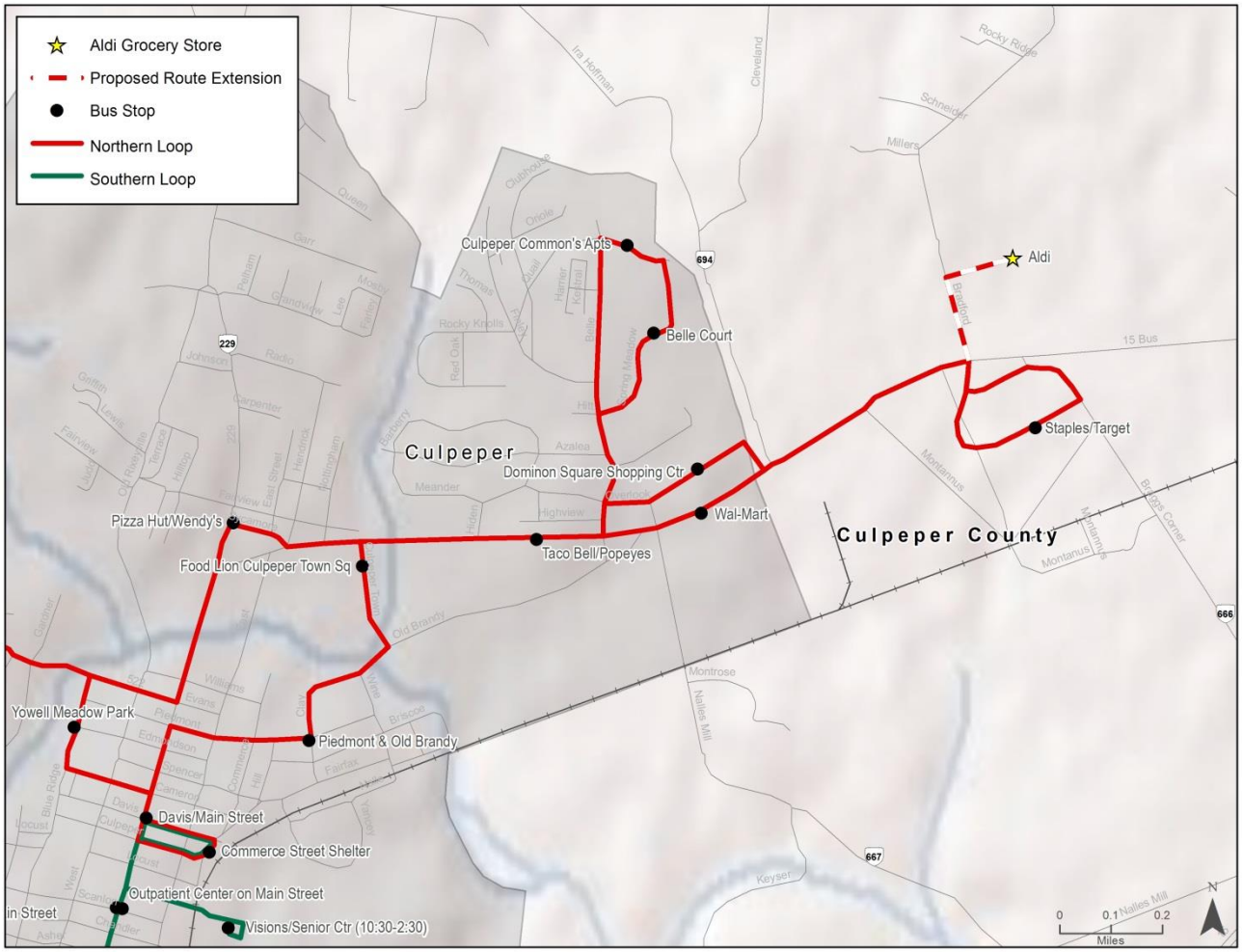


Adjusting the Northern Loop Route – Service to Aldi

This recommendation addresses the top requested destination proposed in the riders survey – service to the Aldi Grocery Store along Business Route 15. The Aldi grocery store is located in the shopping center directly across from the Staples/Target along the Northern Loop route, as seen in Figure 5-4. Providing service to Aldi would require a nominal time commitment (approximately 2 to 4 minutes).

- This change is cost-neutral with regard to operating cost.
- This change will necessitate a revision of the schedules.
- This change is not expected to have a significant impact on ridership, though more riders may be attracted to the service based on feedback collected.

Figure 5-4: Adjusted Northern Loop Route – Adding Service to Aldi



Mid-Term Alternatives

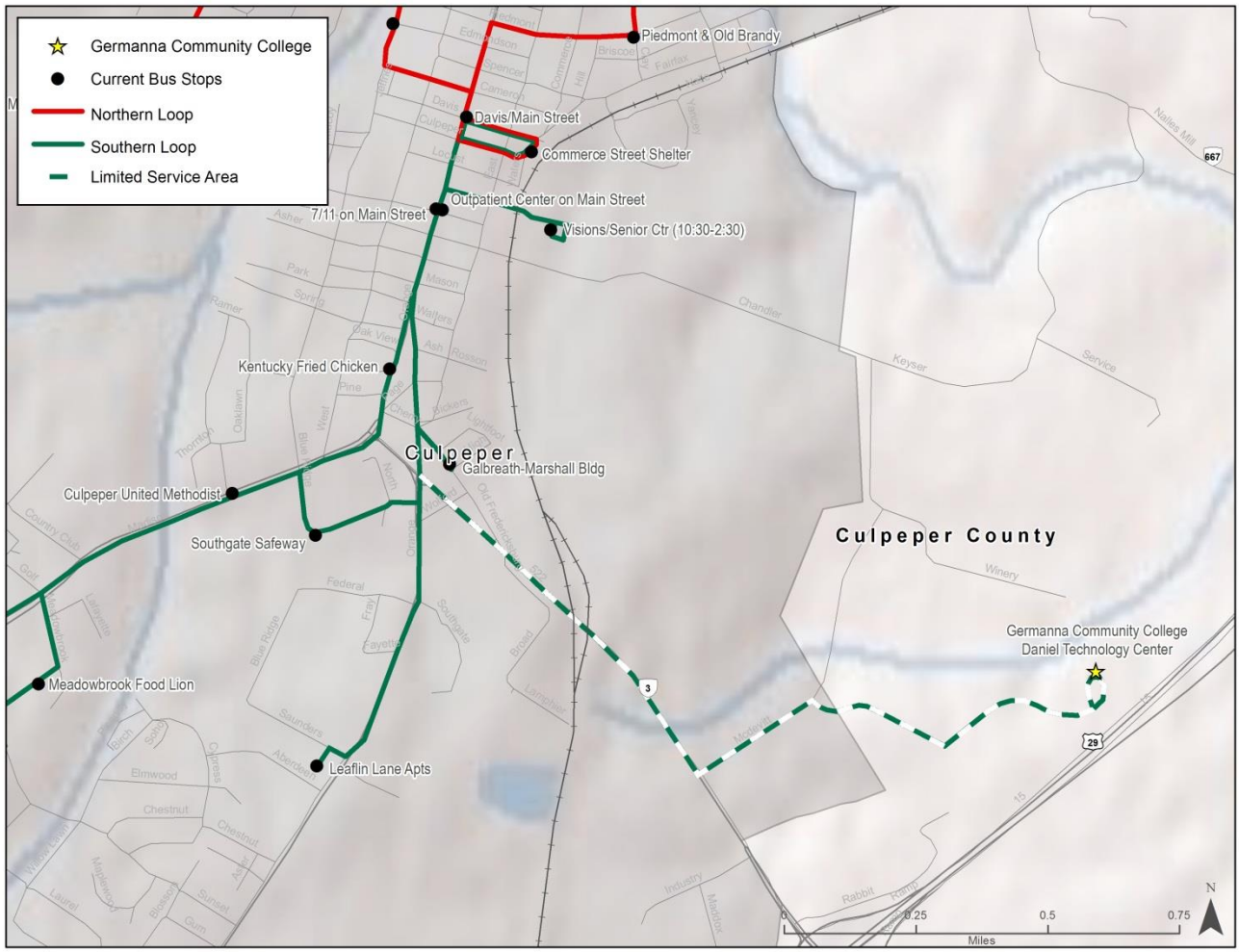
Service to Germanna Community College

As the locality's key workforce development instruction and technology training facility, the Germanna Community College Daniel Technology Center is an important component to the

well-being of the community that is not being fully utilized. A link off of the Southern Loop route is recommended as shown in Figure 5-5. Due to the close location to the existing Southern Loop route two options are available to accomplish this change: 1) instituting a deviation request policy, or 2) offering service to the college only during select runs.

- This change is cost-neutral with regard to operating cost.
- This change will necessitate a revision of the schedules.
- This change is not expected to have a significant impact on ridership, though more riders may be attracted to the service based on improved access to employment and training opportunities.

Figure 5-5: Link to Germanna Community College along the Southern Loop Route



FRONT ROYAL AREA TRANSIT, TOWN OF FRONT ROYAL

Short-Term Alternatives

Daily Weekday Service to Wal-Mart and Target

This recommendation calls for establishing weekday service to Wal-Mart and Target. These two neighboring destinations are key rider points of interest. These locations scored very high during on/off counts even though service is only offered on Sundays. Strengthening this data was the high response rate from the on-board surveys requesting service to Wal-Mart and Target. The emphasis of this alternative is to modify existing weekday service so that changes would be cost neutral. Specifically, three options would accomplish this:

1.) Continue to run the Weekdays South Loop along the current schedule. Every other trip (the non South Loop run), operate the Weekdays North Loop. Every other trip (the non South Loop run), operate modified Sunday service route – direct non-stop service between Visitor's Center and Target/Wal-Mart.

2.) Continue to run the Weekdays North Loop along the current schedule. Every other trip (the non North Loop run), operate the Weekdays South Loop. Every other trip (the non North Loop run), operate modified Sunday service route – direct non-stop service between Visitor's Center and Target/Wal-Mart.

3.) Continue to run the Weekdays South Loop and Weekdays North Loop as scheduled with the following modifications to the schedule. The first trip of the day (8:30 am) and fifth trip of the day (1:00 pm) would operate the Sunday route.

- This change is cost-neutral with regard to operating cost.
- This change will necessitate a revision of the schedules based on the option chosen.
- This change should generate increased ridership based on expressed desire of riders.

Mid-Term Alternatives

Expanded Weekday Service Hours

The Front Royal Trolley currently operates Monday through Friday from 8:30 a.m. to 5:00 p.m. To spur ridership, employment, and shopping opportunities, extended morning and evening hours are suggested (based on rider surveys indicated that later evening hours in particular was a priority improvement). Specifically, service would start one hour earlier and run two hours later in the evening (service starting at 7:30 a.m. and ending at 7:00 p.m.).

- Expands mobility for workers, shoppers and leisure trips, and better convenience.
- Marketing material for the new enhanced service and schedules.
- The increased service results in about 750 total additional revenue hours – about $34,500 (based on FY2014 data of $45.76 per hour).
- Utilizes current capital.

Realign Saturday Service and Expand the Hours

This recommendation proposes extending the route coverage as well as increase the hours served for the Saturday route. The Front Royal Trolley currently operates Saturday service from 1:00 p.m. to 6:00 p.m. on a 30-minute headway to a few select locations. The proposed route realignment recommends the same route structure as Sunday, however, service should start two hours earlier (11:00 a.m.) and end two hours later (8:00 p.m.). To accomplish this service would need to run on a 60-minute headway.

- Provides expanded service coverage and hours on Saturdays.
- Marketing material for the new enhanced service and schedules.
- The increased service results in about 200 total additional revenue hours – about $9,000 (based on FY2014 data of $45.76 per hour).
- Utilizes current capital.

Expanded Sunday Service Hours

The Front Royal Trolley currently operates Sunday service from 1:00 p.m. to 6:00 p.m. on 60-minute headways to a few key locations. Due to the high ridership and rider input, it is recommended that Sunday service start service two hours earlier (11:00 a.m.) and end one hour later (7:00 p.m.).

- Provides expanded service coverage that supports further social, religious, shopping and employment opportunities.

- Marketing material for the new enhanced service and schedules.
- The increased service results in about 150 total additional revenue hours – about $7,000 (based on FY2014 data of $45.76 per hour).

- Utilizes current capital.

Service Expansion – Commuter Shuttle Bus

A key component of the TDP is to foster economic growth and employment opportunities. To tackle this it is recommended that weekday service be designed to the primary employment centers in the region (displayed in Figure 5-6): the Virginia Inland Port, RSW Regional Jail, Riverton Commons (anchored by Wal-Mart), and Crooked Run Center (anchored by Target). Three daily shuttle trips to these activity centers would be implemented – an early morning trip prior to the start of the Weekdays South Loop, a mid-day 1:00 p.m. run that would replace the existing 1:00 Weekdays South Loop and 1:30 Weekdays North Loop (the Weekdays South Loop would then resume service at 2:00 p.m.), and finishing with an end of the day run after the last Weekdays North Loop.

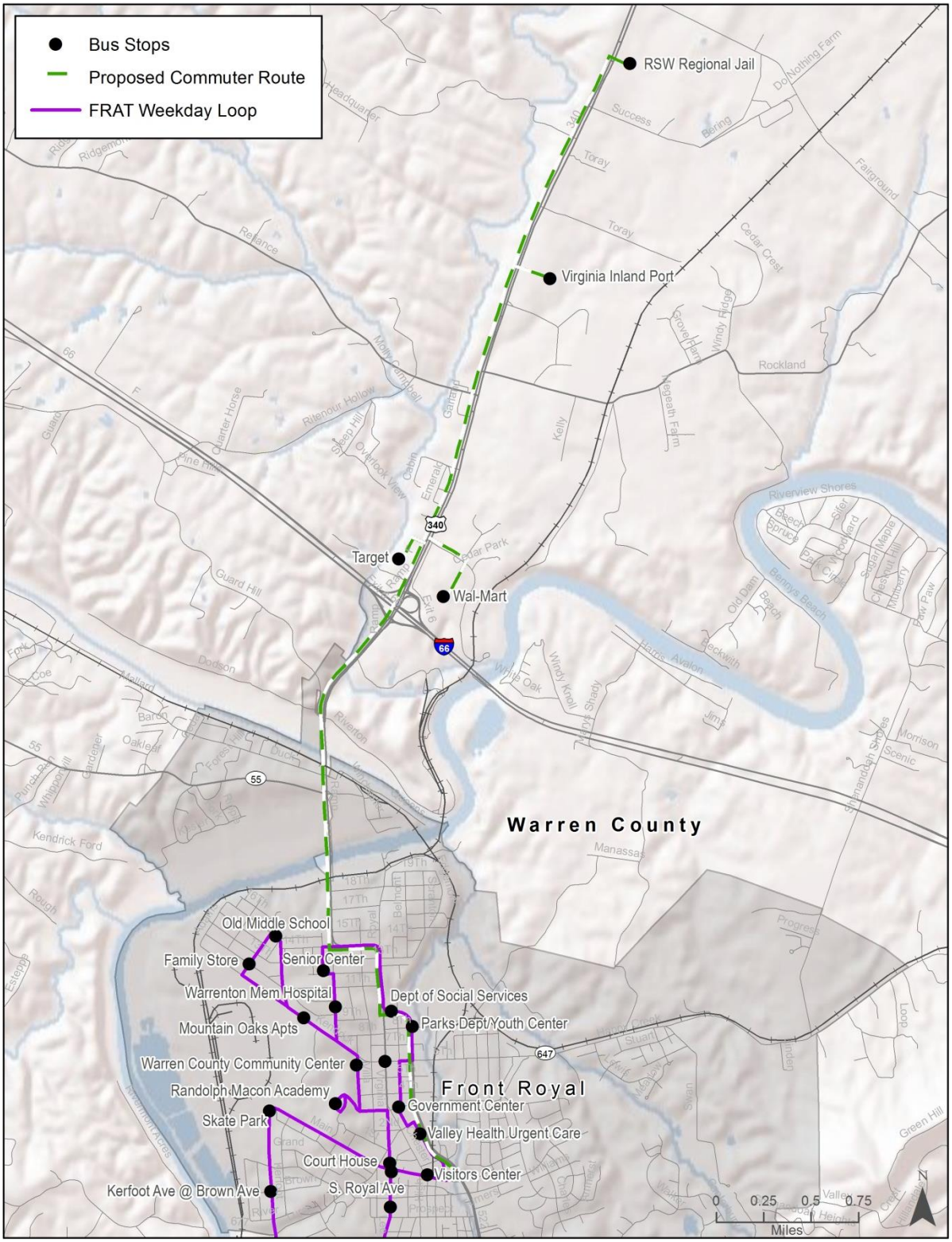
- Strongly addresses employment shopping trips.

- Requires marketing material for the new enhanced service and schedules.

- The increased service results in about 500 total additional revenue hours – about $23,000 (based on FY2014 data of $45.76 per hour).

- Utilizes current capital.

Figure 5-6: Commuter Shuttle



Vision Projects

Increased Weekday Route Frequency

This recommended service dovetails with the short-term project: *Increased Weekday Route Frequency*. The redesign of the weekday's schedule involved changing the frequency of at least one of the loops. By adding an additional vehicle, frequencies again would be 60 minutes throughout the day and evening, Monday through Friday (7:30 a.m. to 7:00 p.m.). Survey respondents noted the need for more frequent service, coupled with service to Wal-Mart. Adding twelve hours of service daily, Monday through Friday.

- Would result in about 3,000 additional hours for service.
- $137,500 annually would be needed to support the additional frequent and sustained service (based on FY2014 cost per hour of $45.76).
- Would require an additional dedicated vehicle to provide regular service.
- Capital cost for an additional vehicle is around $75,000.

Service Expansion – Shuttle Bus to Lord Fairfax Community College

As noted in the mid-term expansion recommendation, economic growth and employment opportunities, along with education is vital to a jurisdiction's growth and sustainability. This expansion targets service to the Lord Fairfax Community College (LFCC) in Middletown. Three round-trip shuttle runs to LFCC from the Visitor's Center would be implemented – an early morning trip, a mid-day run, and an end of the day run.

- Would result in about 750 additional hours for service.
- $35,000 annually would be needed to support the additional frequent and sustained service (based on FY2014 cost per hour of $45.76).
- Would require an additional dedicated vehicle to provide regular service.
- Capital cost for an additional vehicle is around $75,000.

Demand Response Service in Warren County

It is recommended that demand-response service be implemented in Warren County. Warren County's population is projected to continue growing into the foreseeable future, though it is anticipated that a large amount of this growth will not be serviceable by the current fixed route

service. It is estimated that there is demand for 3,900 trips equating to 5,600 vehicle hours requiring three vehicles. However, county-wide demand-response service should be phased in order to manage demand and maintain productivity. The implementation phase could consist of limited days and hours to gauge demand and interest in the service.

- Would result in about 2,000 additional hours for service for each vehicle employed.
- $155,000 annually would be needed to support each vehicle added for service (based on FY2014 cost per hour of $77.31 for demand-response service Culpeper and Fauquier Counties).
- Would require an additional dedicated vehicle to provide regular service.
- Capital cost for an additional vehicle is around $75,000.

TOWN OF ORANGE TRANSIT, TOWN OF ORANGE

Mid-Term Projects

Increase Level of Service to Gordonsville

This recommendation is to increase the number of daily Town of Orange Transit (TOOT) round trips. This option adds another later morning trip leaving the Orange Depot at 9:00 a.m. and a late afternoon return trip from Gordonsville leaving 4:30 p.m. and arriving at the Orange Depot at 5:30 p.m.

If the proposed hours are assumed, it would result in about 500 additional hours for service.

- Strongly enhances the link between the Towns of Orange and Gordonsville
- Requires marketing material for the new enhanced service and schedules.
- The increased service results in about 500 total additional revenue hours – about $39,000 (based on FY2014 data of $77.31 per hour).
- Utilizes current capital.

Increased Weekday Route Frequency

To greatly enhance service to this mature system, it is recommended that a second vehicle be added. TOOT serves all the key destinations in the Town, therefore, adding frequency to the

service would significantly boost the service. Specifically a second vehicle will reduce headways to 30 minutes and provide riders a more direct route. Two options are available to TOOT for this upgraded service: 1) run the current route in reverse, or 2) split the service into two routes – a north route and south route which utilizes the Depot as the transfer point.

Adding a second vehicle to the current schedule (7:30 a.m. to around 5:30 p.m.) adds 10 hours of service Monday through Friday, or about 2,500 hours annually.

- Increases mobility, more reliable service, and better convenience.
- Develop marketing campaign that promotes the new enhanced service and schedules.
- The increased service results in about 2,500 total additional revenue hours – about $194,000 (based on FY2014 data).
- Capital cost for an additional bus trolley is around $160,000.

Vision Projects

Service to Montpelier

Montpelier is located just outside the Town of Orange, but currently there is no transit link. This plan advocates service from the Town of Orange to Montpelier to access the Montpelier estate features for both locals and tourists. Four roundtrips are proposed – two additional hours per weekday.

This would result in about 500 additional hours for service.

- Would result in about 500 additional hours for service.
- $39,000 annually would be needed to support this service (based on FY2014 cost per hour of $77.31).
- Utilizes current capital if using the Gordonsville Route vehicle.

Demand Response Service in Orange County

It is recommended that demand-response service be implemented in Orange County. As noted earlier in the study, development growth is expected in the eastern portion of the County near Lake of the Woods and along the U.S. Route 15 corridor passing through the County. Unfortunately a great deal of this development will not be serviceable by the current fixed route service. Thus, it is estimated that there is demand for 3,500 trips requiring 5,000 vehicle

hours – three vehicles. To tackle this project, however, county-wide demand-response service should be phased in to better gauge demand and maintain productivity. The implementation phase could consist of limited days and hours to determine demand and interest in the service.

- Would result in about 2,000 additional hours for service for each vehicle employed.
- $155,000 annually would be needed to support each vehicle added for service (based on FY2014 cost per hour of $77.31 for demand-response service Culpeper and Fauquier Counties).
- Would require an additional dedicated vehicle to provide regular service.
- Capital cost for an additional vehicle is around $75,000.

PLANNED SERVICE LEVELS

Table 5-1 summarizes the levels of service planned for the recommendations included in this chapter. The TDP identifies an implementation year for each project for planning purposes by jurisdiction, but actual implementation may be impacted by the availability of funding, partnerships with organizations, and other changes that may arise.

Table 5-1: Existing Service Levels and Proposed Service Implications

Years of Planned Deployment	Service Project	Annual Revenue Hours	Annual Revenue Miles
West Central Region – Each System			
FY2016	Increase Community Marketing		
Circuit Rider – Town of Warrenton			
Existing[1]	Current Circuit Rider Service	2,966	32,705
FY2016	Install Bus Stop Signs	No change	No change
FY2019	Realign the Maroon Route to Serve the Fauquier Hospital	165	2,000
N/A – Vision	Increased Service - Modify Route Structure	May Vary	May Vary
Clarke County Demand Response			
Existing[1]	Demand Response Service	1,000	17,001
FY2019	Additional Service Hours	500	8,500

Years of Planned Deployment	Service Project	Annual Revenue Hours	Annual Revenue Miles
N/A – Vision	Additional Service Hours	500	8,500
Culpeper Trolley – Town of Culpeper			
Existing[1]	Current Circuit Rider Service	5,660	55,800
FY2017	Adjusting the Southern Loop Route - Limited Service to the Friendship Heights and Leaflin Apartments	No Change	No Change
FY2017	Adjusting the Northern Loop Route – Service to Aldi	No Change	No Change
FY2020	Service to Germanna Community College	No Change	No Change
N/A – Vision	Provide Service to the New DMV Location	May Vary	May Vary
Front Royal Area Transit – Town of Front Royal			
Existing[1]	Current FRAT Service	4,081	33,166
FY2017	Cost Neutral Option to serve Wal-Mart and Target	No Change	No Change
FY2021	Expanded Weekday Service Hours	750	6,750[2]
FY2019	Realign Saturday Service and Expand the Hours	200	1,800[2]
FY2020	Expanded Sunday Service Hours	150	1,350[2]
FY2021	Service Expansion – Commuter Shuttle Bus	500	4,500[2]
N/A – Vision	Increased Weekday Route Frequency	3,000	27,000[2]
N/A – Vision	Service Expansion – Shuttle Bus to Lord Fairfax Community College	750	6,750[2]
N/A – Vision	Demand Response Service in Warren County – Per Vehicle	2,000	18,000[2]
Town of Orange Transit – Town of Orange			
Existing[1]	Current TOOT Service	4,081	58,901
FY2019	Increase Level of Service to Gordonsville	500	10,000[3]
FY2021	Increased Weekday Route Frequency	2,500	22,500[2]
N/A – Vision	Service to Montpelier	500	4,500[2]
N/A – Vision	Demand Response Service in Orange County – Per Vehicle	2,000	18,000[2]

Notes:
[1]Existing service based on Fiscal Year 2014
[2]Calculated miles based on vehicles average 9 mph
[3]Calculated miles based on vehicles average 20 mph

ESTABLISH ON-GOING TRANSIT ADVISORY BOARD/COMMITTEE

The Town of Culpeper is the only VRT West Central Division jurisdiction that currently has a Transit Advisory Board (TAB) or transit advisory committee (TAC) in place. Many transit agencies have found that it is helpful for them to have a TAB/TAC beyond just the requirements for a TDP. A TAB/TAC is comprised of community stakeholders who have an interest in preserving and enhancing transit in the community.

The role of a TAB/TAC is to help the transit program better meet mobility needs in the community by serving as a link between the citizens served by the various entities and public transportation. A TAB/TAC is a good community outreach tool for transit programs, as having an ongoing dialogue with stakeholders allows for a greater understanding for transit staff of transit needs in the community, as well as greater understanding by the community of the various constraints faced by the transit program. A TAB/TAC also typically serves in an advisory capacity for other transit initiatives..

For all of the jurisdictions (except the Town of Culpeper), it is suggested that they create a TAB/TAC serving in an advisory capacity for the service. This will allow for enhanced local and regional coordination, enabling transit needs to be met in the most effective manner. It is proposed that this TAB/TAC meet twice a year -- once prior to the grant cycle so that new initiatives can be coordinated, and once mid-way through the funding year.

Chapter 6
Capital Improvement Program

INTRODUCTION

This chapter of the TDP describes the major capital projects (vehicles, facilities, and equipment) needed to support the provision of public transportation for the six-year period covered by this TDP. It outlines the capital infrastructure projects needed to implement the service recommendations described in the Operating Plan. The Capital Improvement Program (CIP) provides the basis for VRT's West Central Division's requests to DRPT for federal and state funding for capital replacement, rehabilitation, and expansion projects. The recommendations in the CIP are projects for which VRT reasonably anticipates local funding to be available. The recommendations for different types of capital projects including vehicles, facilities, passenger amenities, tools and equipment, and technology upgrades are described below. The descriptions identify the capital projects already programmed in VRT's existing CIP, as well as additional projects recommended in the TDP. The costs associated with these capital projects are provided in the next chapter with the Financial Plan.

VEHICLE REPLACEMENT AND EXPANSION PLAN

This section presents the details of the vehicle expansion and replacement plan including vehicle useful life standards, characteristics of the new vehicles, and estimated costs. A vehicle expansion and replacement plan is necessary to maintain a high quality fleet and dispose of vehicles beyond their useful life. This plan is especially important since VRT's service covers a large geographic region. The capital plan for the vehicles was developed by applying FTA/DRPT vehicle replacement standards to the current vehicle fleet inventory, which was presented in Chapter 1.

Useful Life Standards

The useful life standards used by DRPT are developed based on the manufacturer's designated vehicle life-cycle and the results of independent FTA testing. If vehicles are allowed to exceed their pre-scripted useful life they become much more susceptible to break-downs which may increase operating costs and decrease the reliability of scheduled service. DRPT's vehicle useful life policy, shown in Table 6-1, is provided in the State's Section 5311 State Management Plan.

Table 6-1: DRPT's Vehicle Useful Life Policy

Vehicle Type	Useful Life
Service Vehicle	Minimum of 4 Years or 100,000 Miles
Vans	Minimum of 4 Years or 100,000 Miles
Body on Chassis Vehicles	Minimum of 4 Years or 100,000 Miles
Light Duty Bus (25'-35')	Minimum of 5 Years or 150,000 Miles
Medium Duty Bus (25'-35')	Minimum of 7 Years or 200,000 Miles
Heavy Duty Bus (~30')	Minimum of 10 Years or 350,000 Miles
Heavy Duty Bus (35' – 40')	Minimum of 12 Years or 500,000 Miles

Source: DRPT's Section 5311 State Management Plan (January 2015)

Vehicle Plan – Baseline Estimate

VRT operates a variety of vehicles including Trolley Buses, Medium-Duty Buses, Light-Duty Buses, and service vehicles. DRPT's useful life policy was applied to the existing fleet, by vehicle type; to develop an estimate of VRT's capital needs – to maintain current service levels – for the next six years. Table 6-2 provides VRT's existing fleet inventory with the estimated fiscal years that each vehicle should be programed for replacement.

Table 6-2: VRT's West Central Division's Vehicle Inventory with Replacement Years Baseline Estimate

No.	Current Route	Year	Make & Model	Lift or Ramp	Capacity	Current Mileage	Estimated Replacement Year
Town of Warrenton / Fauquier County							
271	Circuit Rider	2012	Chevrolet Cutaway	Yes	20	105,452	2017
274	Demand Response	2012	Chevrolet Cutaway	Yes	20	71,032	2017
302	Spare	2013	Ford Champion	Yes	20	9,999	2018
Town of Culpeper / Culpeper County							
209	South Trolley	2009	Supreme Trolley Bus	Yes	30	70,060	2017
252	North Trolley	2010	Ford Supreme Trolley Bus	Yes	28	29,483	2017
261	Town of Culpeper ADA	2010	Ford Supreme Cut-away	Yes	19	90,194	2018

No.	Current Route	Year	Make & Model	Lift or Ramp	Capacity	Current Mileage	Estimated Replacement Year
269	Demand Response	2012	Chevrolet Supreme Cut-away	Yes	20	89,511	2017
312	Spare	2014	Ford Champion Cut-away	Yes	20	11,602	2018
313	Spare	2014	Ford Champion Cut-away	Yes	20	22,922	2019
257	Support	2011	Ford 250 Pickup	No	2	62,736	2018
284	Support	2012	Nissan Murano	No	5	72,023	2017
Town of Front Royal							
201	Royal Trolley	2009	"Cable Car Concept" Trolley Bus	Yes	16	198,246	2017
260	Spare	2011	Freightliner Supreme Trolley Bus	Yes	21	103,286	2018
Town of Orange							
185	TOOT Trolley	2008	Freightliner Trolley Bus	Yes	24	59,356	2016
301	Orange-Gordonsville	2013	Ford Champion Cut-away	Yes	20	28,658	2018

Vehicle Plan

The annual schedule for vehicle replacement and expansion is shown in Table 3. This plan only recommends one expansion vehicle of the revenue vehicle fleet for its six-year horizon, thought this is based on TOOT implementing the increased weekday route frequency project in FY2021.

The schedule included in Table 6-3 is based on estimates, actual vehicle needs may vary depending upon service changes and unexpected economic or societal shifts. Table 3 follows the recommended replacement years for vehicles shown in Table 2 and includes an additional service vehicle for FY 2017.

When removing vehicles from service, VRT will follow DRPT guidelines as described in the Section 5311 State Management Plan. VRT must send its disposition request to DRPT, which will grant approval or disapproval for disposition. DRPT may offer the vehicles to other Section 5311 recipients that are in need. Otherwise, VRT may dispose of the vehicles and use the proceeds to support transportation services.

Table 6-3: Vehicle Replacement and Expansion Schedule

Type of Vehicle	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Replacement	**1**	**7**	**6**	**1**	**1**	**1**
Bus 30-ft. BOC	1	4	3	1	1	1
Trolley Bus	0	2	2	0	0	0
Support Vehicle	0	1	1	0	0	0
Expansion	**0**	**0**	**0**	**0**	**0**	**0**
Bus 30-ft. BOC	0	0	0	0	0	0
Trolley Bus	0	0	0	0	0	1
Support Vehicle	0	0	0	0	0	0
Total Vehicles	**1**	**7**	**6**	**1**	**1**	**2**

Estimated Vehicle Costs

The replacement or expansion vehicle costs are presented in Table 6-4. These costs are based on the FY 2016 Six Year Improvement Program (SYIP). For fiscal years 2017 to 2021 VRT's Six Year Capital Improvement Plan (that is submitted to DRPT annually) values were applied. These cost estimates will be used to develop the capital budget, which is included with the Financial Plan in the next chapter.

Table 6-4: Estimated Costs of New Vehicles

Fiscal Year	Bus 30-ft. BOC	Trolley Bus	Support Vehicle
2016	$75,000	$160,000	$30,000
2017	$75,000	$165,000	$30,000
2018	$76,000	$170,000	$30,000
2019	$77,000	$175,000	$30,000
2020	$78,000	$180,000	$30,000
2021	$79,000	$185,000	$30,000

FACILITIES

VRT has multiple facilities within the West Central Division's region. Prior to this TDP, VRT has programmed $45,000 in FY 2017 capital assistance for renovation of one of their maintenance facilities. According to the VRT's Six Year Capital Improvement Plan, VRT has also budgeted for $50,000 in FY 2019 for facility paving and sealing, $75,000 in FY 2020 and $25,000 in FY 2021 respectively for maintenance facility repairs.

PASSENGER AMENITIES

Another capital project is the installation of bus stop signs. Bus stop amenities support the growth of the system and should be considered for installation when funds become available. Prior to the TDP planning process, VRT has programmed the purchase of 20 bus stop signs in FY 2018 into their Six Year Capital Improvement Plan.

EQUIPMENT

There are few recommendations for equipment within the TDP timeframe, although needs may change in future years. Specifically, purchasing tire changer lift equipment, maintenance tools, and spare parts for maintenance are required to assist in operation of the system. These capital purchases are already programmed in the Six Year Capital Improvement Plan.

TECHNOLOGY

The procurement of new technology has not been recommended in the TDP and is not currently programmed in the SYIP.

Chapter 7
Financial Plan

INTRODUCTION

This chapter provides a financial plan for funding existing and proposed VRT West Central Division services for the six-year planning period. The financial plan addresses both operations and capital budgets, focusing on financially constrained project recommendations. It should be noted that there are currently a number of unknown factors that will likely affect transit finance over the course of this planning period, including the future economic condition of the region and the Commonwealth of Virginia, and the availability of funding from the federal Section 5311 program, the Commonwealth Transportation Fund, and local sources.

OPERATING EXPENSES AND FUNDING SOURCES

Table 7-1 provides a financial plan for the operation of VRT's services under the financially constrained six-year plan. As discussed in the Operations Plan (Chapter 5), the financially constrained plan projects are moderate in scope, reflecting the current economic climate and the anticipated availability of local match. The top half of the table summarizes the annual revenue hours of service for the existing transit program as well as the service projects that are recommended. The bottom half of the table provides operating cost estimates and funding sources associated with these service projects. A number of assumptions used in developing the operating cost estimates are described below.

It is anticipated that the level of service in terms of revenue service hours will remain level during the short-term period and the increase if TDP proposed projects are implemented. Thus, the recommended projects will not always affect the number of revenue service hours. Depending upon the service recommendation, projects often utilize existing vehicles.

In Table 7-1 the Base Year represents actual expenses and revenue incurred in FY2015 provided by VRT. For FY2016 the expenses and revenues are based on the FY2016 Capital Improvement Plan. The projected cost per revenue hour and operating costs to maintain the current level of service between FY2017 and FY2021 is based on a 3 percent annual inflation rate.

Based on the recommended projects, beginning in FY2019, the total operating expense could potentially increase by $267,500 VRT Division wide. In FY 2020 it would only go up a nominal $75,000. The largest jump would occur in FY 2021 if all projects are implemented – an increase of $712.500.

Under the anticipated funding sources, the FY2015 Base and FY2016 amounts for federal funding and farebox revenue are from the FY2015 and FY2016 DRPT OLGA worksheet respectively. The federal and state formula assistance in FY2016 and beyond assumes fifty percent federal funding, 18 percent state funding, and a local match of 32 percent. These allocations are based on allocations in the FY2015 and FY2016 SYIP. It is understood that DRPT is not committing to those funding levels. Specific funding amounts are determined during the annual SYIP adoption and budget cycle. In years 2017 to 2021 of the financial plan, the total projected operating expenses account for a three percent inflation associated with maintaining the current level of service as well as service expansions.

The federal, state and local funding source amounts are based on the net operating deficit. The net operating deficit is calculated by subtracting the farebox and advertising revenues from the total operating expenses. For FY2015 and FY2016 the farebox revenue is derived from the FY2015 and FY2016 SYIP. For FY2017 and beyond, the farebox revenue is based on a recovery rate of two and half (2.5) percent.

Table 7-1: VRT West Transit TDP Financial Plan for Operations

Projects (1)	FY 2015 Base	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
West Central Region - Systemwide							
Increased marketing	-	-	-	-	-	-	-
Circuit Rider - Town of Warrenton							
Current Annual Revenue Hours	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Install Bus Stop Signs	-	-	-	-	-	-	-
Realign the Maroon Route to Serve the Fauquier Hospital	-	-	-	-	165	165	165
Subtotal Transit Service Hours	2,966	2,966	2,966	2,966	3,131	3,131	3,131
Clarke County Demand Response							
Current Annual Revenue Hours	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Additional Service Hours	-	-	-	-	500	500	500
Subtotal Transit Service Hours	1,000	1,000	1,000	1,000	1,500	1,500	1,500
Culpeper Trolley - Town of Culpeper							
Current Annual Revenue Hours	5,660	5,660	5,660	5,660	5,660	5,660	5,660
Adjusting the Southern Loop Route - Limiting Service	-	-	-	-	-	-	-
Adjusting the Northern Loop Route - Service to Aldi	-	-	-	-	-	-	-
Service to Germanna Community College	-	-	-	-	-	-	-
Subtotal Transit Service Hours	5,660	5,660	5,660	5,660	5,660	5,660	5,660
Front Royal Area Transit - Town of Front Royal							
Current Annual Revenue Hours	4,081	4,081	4,081	4,081	4,081	4,081	4,081
Cost Neutral Option to serve Wal-Mart and	-	-	-	-	-	-	-

Projects (1)	FY 2015 Base	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Target							
Expanded Weekday Service Hours	-	-	-	-	-	-	750
Realign Saturday Service and Expand the Hours	-	-	-	-	200	200	200
Expanded Sunday Service Hours	-	-	-	-	-	150	150
Service Expansion – Commuter Shuttle Bus	-	-	-	-	-	-	500
Subtotal Transit Service Hours	4,081	4,081	4,081	4,081	4,281	4,431	5,681
Town of Orange Transit - Town of Orange							
Current Annual Revenue Hours	2,966	2,966	2,966	2,966	2,966	2,966	2,966
Increase Level of Service to Gordonsville	-	-	-	-	500	500	500
Increased Weekday Route Frequency	-	-	-	-	-	-	2,500
Subtotal Transit Service Hours	2,966	2,966	2,966	2,966	3,466	3,466	5,966
VRT West Central Total Service Hours	**16,673**	**16,673**	**16,673**	**16,673**	**18,038**	**18,188**	**21,938**

[1] Implementation years are estimated – subject to funding availability. Base revenue hours estimated from FY 2015 data.

Table 7-1: VRT West Transit TDP Financial Plan for Operations (continued)

Projects	FY2015 Base	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Projected Operating Expenses							
Cost Per Revenue Hour (2) (3)	$73.91	$76.13	$78.41	$80.76	$83.19	$85.68	$88.25
Current Level of Service	$1,232,301	$1,269,270	$1,307,349	$1,346,569	$1,500,515	$1,558,383	$1,936,081
West Central Region - Systemwide							
Increased marketing	-	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Circuit Rider - Town of Warrenton							
Town of Warrenton Install Bus Stop Signs	-	-	-	-	-	-	-
Realign the Maroon Route to Serve the Fauquier Hospital	-	-	-	-	$13,726	$14,138	$14,562
Clarke County Demand Response							
Additional Service Hours	-	-	-	-	$41,593	$42,841	$44,126
Culpeper Trolley - Town of Culpeper							
Adjusting the Southern Loop Route - Limiting Service	-	-	-	-	-	-	-
Adjusting the Northern Loop Route - Service to Aldi	-	-	-	-	-	-	-
Service to Germanna Community College	-	-	-	-	-	-	-
Front Royal Area Transit - Town of Front Royal							

Projects	FY2015 Base	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Cost Neutral Option to serve Wal-Mart and Target	-	-	-	-	-	-	-
Expanded Weekday Service Hours	-	-	-	-	-	-	$66,189
Realign Saturday Service and Expand the Hours	-	-	-	-	$16,637	$17,136	$17,650
Expanded Sunday Service Hours	-	-	-	-	-	$12,852	$13,238
Service Expansion – Commuter Shuttle Bus	-	-	-	-	-	-	$44,126
Town of Orange Transit - Town of Orange							
Increase Level of Service to Gordonsville	-	-	-	-	$41,593	$42,841	$44,126
Increased Weekday Route Frequency	-	-	-	-	-	-	$220,631
VRT West Central Total Operating Expenses	**$1,232,301**	**$1,270,270**	**$1,308,349**	**$1,347,569**	**$1,615,065**	**$1,689,191**	**$2,401,730**

[2] Used VRT West Central Division's FY 2014 combined systems' cost per hour.
[3] Assumes 3% rate of inflation each year.

Table 7-1: VRT West Transit TDP Financial Plan for Operations (continued)

Anticipated Funding Sources	FY2015 Base	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Federal							
Section 5311	$600,747	$618,757	$637,320	$656,440	$786,844	$822,981	**$1,170,343**
RTAP		$1,000	$1,000	$1,000	$1,000	$1,000	**$1,000**
Subtotal, Federal	$600,747	$619,757	$638,320	$657,440	$787,844	$823,981	**$1,171,343**
State							
Formula Assistance	$216,269	$222,932	$229,615	$236,498	$283,444	$296,453	$421,504
Subtotal, State	$216,269	$222,932	$229,615	$236,498	$283,444	$296,453	$421,504
Local							
Local Contribution	$384,478	$395,824	$407,705	$419,942	$503,400	$526,528	$748,840
Revenues- Farebox (1)	$30,808	$31,757	$32,709	$33,689	$40,377	$42,230	$60,043
Total Local	$415,286	$427,581	$440,413	$453,631	$543,777	$568,758	$808,883
Total Projected Operating Revenues	**$1,232,301**	**$1,270,270**	**$1,308,349**	**$1,347,569**	**$1,615,065**	**$1,689,191**	**$2,401,730**

[1] Farebox recovery rates estimated at 2.5%.

Vision projects are projects that may not fall within the implementation timeframe of this TDP, but which address needs identified during the public outreach effort. Table 7-2 details the projects in the vision plan, which is not constrained to reflect the availability of funding. If one assumes that the vision projects are implemented, the total annual budget for transit service would grow by $1,090,173 (in FY 2015 dollars). The cost is calculated in constant FY 2015 dollars due to the undetermined timeline associated with the project.

Federal funds are shown to increase with inflation, along with the expenses. A 3% annual rate of inflation has been applied, along with additional increases to reflect enhanced hours of service. State funds are also included, using the typical current funding level, which is about 18% of the net deficit.

Capital Expenses and Funding Sources

During FY 2018, state capital funding levels are projected to permanently decline by approximately 62%.[1] Commonly referred to as the "fiscal cliff," this reduction in capital funding will have wide sweeping effects for all transit systems in the Commonwealth. For VRT's transit systems this reduction will require an increase in local funding to secure federal funding for the capital projects included in this plan.

While federal funding is expected to remain at eighty percent of the project cost, the amount of state funding will vary depending upon the type of capital project. As seen in Figure 7-1, beginning in FY 2019, the state's match for vehicle replacement and expansion (Tier 1 – Rolling Stock) will decrease over a two year period. Whereas during the same period, the state's match for infrastructure and facilities (Tier 2 – Infrastructure) will drop to minimal levels and other capital equipment (Tier 3 – Other) will lose state funding.

Table 7-2: VRT West Central Transit TDP Financial Plan for Operations – Vision

Projects (1)	Base Year	Phase 1
Current Annual Revenue Hours	**16,673**	
Circuit Rider - Increased Service - Modify Route Structure		-
Clarke County Demand Response - Additional Service Hours		-
Culpeper Trolley - Provide Service to the New DMV Location		-
Fronty Royal Area Transit - Increased Weekday Route Frequency		-
Fronty Royal Area Transit - Shuttle Bus to Lord Fairfax Community College		-
Fronty Royal Area Transit - Demand Response Service in Warren County		-
Town of Orange - Service to Montpelier		-
Town of Orange - Demand Response Service in Orange County		-
Total Transit Service Hours	**16,673**	-
Projected Operating Expenses		
Cost Per Revenue Hour	$73.91	
Current Level of Service	$1,232,301	
Circuit Rider - Increased Service - Modify Route Structure		$221,730

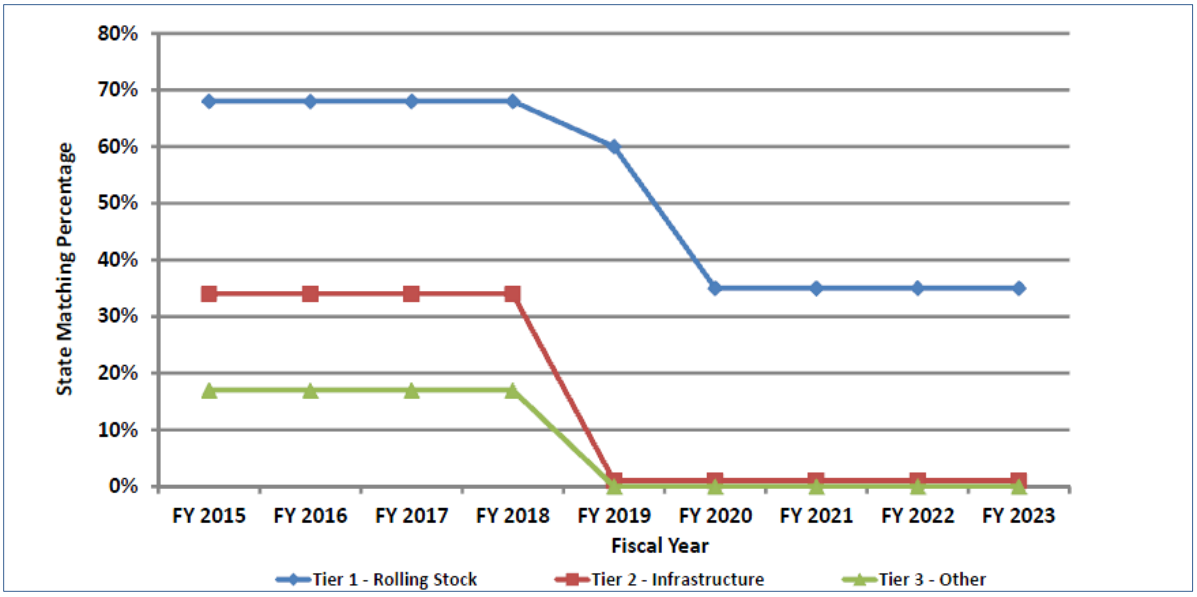
[1] Transit Capital Funding Issues, DRPT Presentation to the Commonwealth Transportation Board, January 13, 2015.

Projects (1)	Base Year	Phase 1
Clarke County Demand Response - Additional Service Hours		$36,955
Culpeper Trolley - Provide Service to the New DMV Location		$221,730
Fronty Royal Area Transit - Increased Weekday Route Frequency		$221,730
Fronty Royal Area Transit - Shuttle Bus to Lord Fairfax Community College		$55,433
Fronty Royal Area Transit - Demand Response Service in Warren County		$147,820
Town of Orange - Service to Montpelier		$36,955
Town of Orange - Demand Response Service in Orange County		$147,820
Total Projected Operating Expenses	-	$1,090,173

[1] *Implementation year is undetermined. Implementation will be based on funding availability.*

Anticipated Funding Sources	Base Year	Phase 1
Federal		
Section 5311	$600,747	$531,459
State		
Formula Assistance	$216,269	$191,325
Local		
Local Contribution	$384,478	$340,134
Revenues- Farebox (1)	$30,808	$27,254
Total Local	$415,286	$367,388
Total Projected/Proposed Operating Funds/Revenues	**$1,232,301**	**$1,090,173**

Figure 7-1: DRPT's Transit Capital Projected State Match Percentage



Source: Transit Capital Funding Issues, DRPT Presentation to the Commonwealth Transportation Board, January 13, 2015.

Replacement & Expansion Vehicle Expenses and Funding

Table 7-3 offers the financial plan for Tier 1 projects including vehicle expansion and replacement over the six-year period. Eligible activities for funding under Tier 1 include[2]:

- Replacement and expansion vehicles
- Assembly line inspection
- Fare collection equipment
- Automated passenger counters
- On-vehicle radios and communication equipment
- Surveillance cameras
- Aftermarket installation of farebox, radios, and surveillance cameras
- Vehicle tracking hardware and software
- Rebuilds and mid-life repower of rolling stock

Over this plan's six-year timeline a total of one expansion and eighteen replacement vehicles/vehicle rebuilds are recommended in addition to funding for the associated fare collection equipment.

Table 7-3: Tier 1 Projected Capital Expenses and Funding

Tier 1 Capital Needs	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Vehicle Costs						
Replacement	$75,000	$630,000	$568,000	$77,000	$78,000	$79,000
Expansion	$0	$0	$0	$0	$0	$185,000
Total Costs	**$75,000**	**$630,000**	**$568,000**	**$77,000**	**$78,000**	**$264,000**
Anticipated Funding Sources						
Federal	$60,000	$504,000	$454,400	$61,600	$62,400	$211,200
State	$10,200	$85,680	$77,248	$10,472	$10,608	$35,904
Local	$4,800	$40,320	$36,352	$4,928	$4,992	$16,896
Total Funding	**$75,000**	**$630,000**	**$568,000**	**$77,000**	**$78,000**	**$264,000**

Federal Section 5311 funding will continue to provide eighty percent of capital funding; however, the pending fiscal cliff will directly impact the percentage of required state and local matches. The funding split is based on recommendations from the Commonwealth Transportation Board in response to the fiscal cliff. Beginning in FY2019, state funding for Tier 1 projects will decrease from approximately 68 percent to sixty percent and to approximately 35 percent in FY2020 and the projected future.

[2] DRPT FY2015 Revised Budget. http://www.drpt.virginia.gov/media/1293/fy15-drpt-agency-budget-revised.pdf

Infrastructure Facilities Expenses and Funding

Table 7-4 provides the financial plan for infrastructure facilities, considered Tier 2 capital projects. Eligible activities under this funding tier include[3]:

- Construction of infrastructure or facilities for transit purposes
- Real estate used for a transit purpose
- Signage
- Surveillance/security equipment for facilities
- Rehabilitation or renovation of infrastructure and facilities
- Major capital projects

Projects identified as infrastructure facilities include the engineering, design, and construction of an extension to the mass transit facility, resurfacing the access lane leading to the mass transit facility, bus stop amenities, and bicycle racks for bus stops and select buses.

[3] DRPT FY2015 Revised Budget. http://www.drpt.virginia.gov/media/1293/fy15-drpt-agency-budget-revised.pdf

Table 7-4: Tier 2 Projected Capital Expenses and Funding

Tier 2 Capital Needs	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Transit Infrastructure Facilities						
Bus Rehab/Renovation of Maint Facility	$25,000	-	-	-	$75,000	$25,000
Purchase Spare Parts, ACM Items	$15,000	-	$100,000	-	-	$15,000
Purchase Shop Equipment	-	$25,000	-	-	-	-
Bus Stop Signs	-	-	$4,840	-	-	-
Property Tools	-	-	$4,840	-	-	$15,000
Total Costs	**$40,000**	**$25,000**	**$109,680**	**$0**	**$75,000**	**$55,000**
Anticipated Funding Sources						
Federal	$32,000	$20,000	$87,744	$0	$60,000	$44,000
State	$2,720	$1,700	$7,458	$0	$5,100	$3,740
Local	$5,280	$3,300	$14,478	$0	$9,900	$7,260
Total Funding	**$40,000**	**$25,000**	**$109,680**	**$0**	**$75,000**	**$55,000**

Capital federal funding for infrastructure facilities will remain at eighty percent while state funds will provide 34 percent of the required remaining 20 percent match until FY 2019 when state funding will drop to minimal levels.

Other Capital Expenses and Funding Sources

Other capital expenses, considered Tier 3 capital projects, are presented in Table 7-5. Capital projects eligible for funding under this tier include[3]:

- All support vehicles
- Shop equipment
- Spare parts
- Hardware and software not installed on a vehicle
- Project development expenses for capital projects
- Office furniture and other equipment
- Handheld radios
- Landscaping
- Other transit-related capital items

VRT's other capital expenses consist of acquiring expansion and replacement support vehicles.

Table 7-5: Tier 3 Projected Capital Expenses and Funding

Tier 3 Capital Needs	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Other Capital Costs						
Support Vehicle	$0	$30,000	$30,000	$0	$0	$0
Total Costs	**$0**	**$30,000**	**$30,000**	**$0**	**$0**	**$0**
Anticipated Funding Sources						
Federal	$0	$24,000	$24,000	$0	$0	$0
State	$0	$1,020	$1,020	$0	$0	$0
Local	$0	$4,980	$4,980	$0	$0	$0
Total Funding	**$0**	**$30,000**	**$30,000**	**$0**	**$0**	**$0**

Funding for other capital projects will consist of 80 percent federal funding with a variable mix of state and local funding match. Of the required 20 percent match, the state will currently provide seventeen percent of the total leaving VRT the responsibility of acquiring the remaining 83 percent. Following the impending fiscal cliff in FY2018, state funding is anticipated to be eliminated leaving the VRT responsible for providing the full required local match.

Total Capital Expenses over TDP Timeframe

Table 7-6 presents a summary of the total capital program categorized by tier. Under each tier, the projects are listed by fiscal year. Projects are determined every year based on statewide need. Total projected capital expenses and funding are displayed covering the TDP timeframe.

Table 7-6: VRT West Central Transit Capital Budget

	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Tier 1 Costs						
Replacement	$75,000	$630,000	$568,000	$77,000	$78,000	$79,000
Expansion	-	-	-	-	-	$185,000
Subtotal Costs	**$75,000**	**$630,000**	**$568,000**	**$77,000**	**$78,000**	**$264,000**
Tier 2 Costs						
Bus Rehab/Renovation of Maint Facility	$25,000	-	-	-	$75,000	$25,000
Purchase Spare Parts, ACM Items	$ 15,000	-	$ 100,000	-	-	$15,000
Purchase Shop Equipment	-	$25,000	-	-	-	-
Bus Stop Signs	-	-	$ 4,840.0	-	-	-
Property Tools	-	-	$4,840	-	-	$15,000
Subtotal Costs	**$40,000**	**$25,000**	**$109,680**	**$0**	**$75,000**	**$55,000**
Tier 3 Costs						
Support Vehicle	$0	$30,000	$30,000	$0	$0	$0
Subtotal Costs	**$0**	**$30,000**	**$30,000**	**$0**	**$0**	**$0**
Total Capital Costs	**$115,000**	**$685,000**	**$707,680**	**$77,000**	**$153,000**	**$319,000**
Anticipated Funding Sources						
Federal	$92,000	$548,000	$566,144	$61,600	$122,400	$255,200
State	$12,920	$88,400	$85,726	$10,472	$15,708	$39,644
Local	$10,080	$48,600	$55,810	$4,928	$14,892	$24,156
Total Funding	**$115,000**	**$685,000**	**$707,680**	**$77,000**	**$153,000**	**$319,000**

Chapter 8
Monitoring and Evaluation

INTRODUCTION

As described in the introduction in Chapter 1, this TDP is a guiding document that should be reviewed and updated to reflect any changes in community priorities, funding availability or other factors that may impact VRT's services. Several analyses regarding operations, service performance, community transportation needs and service alternatives have been completed as part of the TDP process. Chapters 5 and 6 detailed the recommended operations and capital projects, respectively, and Chapter 7 provided the financial plan for these recommendations. It is important to remember that the TDP is a planning document. As such, when it comes time to develop grant applications and implement projects, VRT staff should revisit the TDP to ensure that the recommendations are appropriate and feasible given community needs and fiscal realities.

This chapter describes the processes that are recommended to periodically monitor and evaluate the progress that VRT has made in implementing the TDP. Such processes include integrating TDP projects with relevant planning documents, monitoring service performance and submitting an annual update to DRPT. Monitoring and evaluation efforts are particularly important to ensure that DRPT is meeting the goals, objectives and standards that were described in Chapter 2.

COORDINATION WITH OTHER PLANS AND PROGRAMS

Chapter 3 included the review of various transportation and land use plans developed by a number of agencies and municipalities around the VRT West Central Division region. The purpose of this review was to ensure that the TDP is consistent with local and regional transportation goals and efforts. If relevant plans are updated in the coming years, VRT staff should seek to participate in efforts to ensure that projects recommended in this TDP are included in these area plans and studies where fitting.

The formation of a formal TAC in service areas that do not currently have one is recommended as a means to provide a mechanism to ensure that the projects incorporated within this TDP are included in internal and external plans in the region and statewide (where appropriate). At the state level, DRPT should ensure that the recommended projects from this TDP are incorporated into the public transportation element of the DRPT State Transportation Improvement Program (STIP) and Six-Year Improvement Plan (SYIP).

SERVICE PERFORMANCE MONITORING

Chapter 2 included several proposed performance standards for VRT's systems, the purpose of which was to develop some objective measurements that VRT can use to monitor transit service performance in the future and make performance-based service planning decisions.

Should any services fail to meet the performance standards for two consecutive quarters, VRT should review the specific route or service and identify strategies to improve performance, or update the performance standards as warranted by changes in circumstance. The results of this regular monitoring should be shared with future TACs and DRPT through the annual TDP update.

ANNUAL TDP MONITORING

It is recommended that VRT engage in several different monitoring activities on an annual basis which will be reported to DRPT in an annual TDP update. The service performance monitoring described above helps to determine whether goals are being met to deliver service that is cost-effective and safe. It is also important to evaluate the extent to which VRT is meeting its goals to provide service that is reliable and user-friendly and enables area residents to be independent and engaged in the community. Effective approaches to collect data for such monitoring efforts include conducting public meetings and surveys on an annual basis.

DRPT guidance currently requires that grantees submit an annual TDP update letter that describes the progress that has been made toward implementing the adopted TDP. While the TDP has planned for the implementation of service improvements in particular years, the actual implementation may be delayed to future years if the proposed funding arrangements do not come to fruition or community priorities change. In this case, the TDP may need to be updated during the six-year planning period to reflect such changes. VRT's annual update to DRPT should document the results of the activities described above and include the following elements:

- Operating statistics for the twelve-month period, including the ridership attributed to any new proposals implemented as a result of the TDP.
- Any changes to system goals, objectives or service standards.
- A description of any service or facility improvements that have been implemented during the twelve-month period.
- An update to the TDP recommendations to identify additional projects, deferment of projects to later years, or elimination of projects.
- Updates to the financial plan to more accurately reflect current funding scenarios.

Appendix A
On-Board Survey Results

CIRCUIT RIDER, TOWN OF WARRENTON

1. Which route are you currently riding?		
Response	**Count**	**Percent**
Maroon	20	71%
Black	8	29%
Total	**28**	**100%**

2. Where did you get on the bus?		
Response	**Count**	**Percent**
Food Lion	4	14%
Haiti Street	2	7%
Highland Commons	2	7%
The Oaks	2	7%
Walker Drive	2	7%
WalMart	2	7%
Warrenton Manor	2	7%
27 Walker Dr	1	4%
3rd & Main	1	4%
5TH & Main Street	1	4%
86 Haiti Street	1	4%
Blackwell Rd	1	4%
Giant Grocery	1	4%
Leads square off Main St	1	4%
Moffet Manor	1	4%
Oak apartments	1	4%
Overlook Nursing Home	1	4%
Piedmont Family Practice	1	4%

2. Where did you get on the bus?		
Response	**Count**	**Percent**
Shelter	1	4%
Total	**28**	**100%**

3. Where are you getting off the bus?		
Response	**Count**	**Percent**
Wal-Mart	7	25%
Food Lion	4	14%
Hospital	3	11%
Safeway	2	7%
Waterloo Road	2	7%
Blackwell Rd Dr. Office	1	4%
ER	1	4%
Hair designs	1	4%
Highland Commons	1	4%
Leeds Square	1	4%
Piedmont Medical Center	1	4%
Ruby Tuesday	1	4%
Social Services	1	4%
Thrift Store	1	4%
Warrenton Manor	1	4%
Total	**28**	**100%**

4. Did you or will you have to transfer buses to reach your destination?		
Response	**Count**	**Percent**
Yes	1	4%
No	27	96%
Total	**28**	**100%**

5. What route will you transfer to or did you transfer from?		
Response	**Count**	**Percent**
Maroon	1	100%
Black	0	0%
Total	**1**	**100%**

6. What is the purpose of your trip today?		
Response	**Count**	**Percent**
Work	6	19%
Social/Recreation	2	6%
Shopping/Errands	11	35%
School	1	3%
Medical	8	26%
Government Agency	2	6%
Other:	1	3%
Festival	1	-
Total	**31**	**100%**

7. How often do you use the Circuit Rider?		
Response	**Count**	**Percent**
5 days per week or more	10	33%
2-4 days per week	12	40%
Once/week	5	17%
2-3 days per month	2	7%
Once/month	1	3%
Less than once/month	0	0%
Total	**30**	**100%**

8. Was a car available for this trip?		
Response	**Count**	**Percent**
Yes	2	7%
No	26	93%
Total	**28**	**100%**

9. Do you have a driver's license?		
Response	**Count**	**Percent**
Yes	10	33%
No	20	67%
Total	**30**	**100%**

11. If you were not riding transit how would you make this trip?		
Response	**Count**	**Percent**
Drive myself	2	5%
Walk	14	36%
Ride with family/friends	15	38%
Taxi	4	10%
Bicycle	1	3%
Wouldn't make this trip	3	8%
Total	**39**	**100%**

12. Are there locations where you need to go that the Trolley does not serve?		
Response	**Count**	**Percent**
Yes	6	21%
No	23	79%
Total	**29**	**100%**
Where?		
29 North Corridor	*1*	17%
29 Bypass	*1*	17%
Culpeper	*1*	17%
Harris Teeter	*1*	17%
McDonalds	*1*	17%
Walgreens	*1*	17%
Total	**6**	**100%**

13. What do you like most about the Circuit Rider?		
Response	**Count**	**Percent**
Friendly Drivers	7	25%
Availability	3	11%
Reliability	3	11%
Affordability	3	11%
Convenience	3	11%
Dependable	3	11%
Free Mondays	2	7%
Friendly Passengers	2	7%
On-time	1	4%

13. What do you like most about the Circuit Rider?		
Response	**Count**	**Percent**
Starts early in the morning	1	4%
Total	**28**	**100%**

14. What do you like least about the Circuit Rider?		
Response	**Count**	**Percent**
Bus can run late/off schedule	7	33%
Additional bus stops	2	10%
Rude passengers/Passengers on cell phones	2	10%
Off schedule on Mondays	2	10%
Need longer hours	2	10%
Off scheduled due to ADA passengers	2	10%
Rude drivers	1	5%
It does not go everywhere	1	5%
The service does not run 7 days per week	1	5%
Wait time	1	5%
Total	**21**	**100%**

15. Which of the following potential improvements would be most useful to you?		
Response	**Count**	**Percent**
More frequent service	8	12%
Shorter travel time	5	7%
Service earlier in the morning	6	9%
Service later in the evening	13	19%
Additional weekend service	5	7%
Stop improvements (signs, benches, shelters)	5	7%
Service to more places	9	13%
Where?		
29 North Restaurants	*1*	-
Culpeper	*2*	-
Harris Teeter	*3*	-
Walgreens	*3*	-
Additional park and ride opportunities	3	4%
Where?		
Culpeper	*1*	-
Harris Teeter	*1*	-
Haytide	*1*	-
Real-time schedule information	14	21%
Where?		
At the stop	*4*	-
On my phone	*8*	-
On my computer	*2*	-
Total	**68**	**100%**

16. Are you:		
Response	**Count**	**Percent**
Male	4	22%
Female	14	78%
Total	**18**	**100%**

17. Age		
Response	**Count**	**Percent**
Under 17 years	1	4%
18-25 years	6	21%
26-55 years	10	36%
56-64 years	4	14%
65 years and older	7	25%
Total	**28**	**100%**

18. Satisfaction Levels										
Category	**Very Satisfied**		**Satisfied**		**Neutral**		**Dis-satisfied**		**Very Dis-satisfied**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Frequency of service	10	34%	18	62%	0	0%	1	3%	0	0%
Service area	9	35%	15	58%	0	0%	2	8%	0	0%
On-time performance	9	33%	11	41%	4	15%	3	11%	0	0%
Hours of service	7	27%	13	50%	4	15%	2	8%	0	0%
Availability of schedules and information	10	38%	12	46%	4	15%	0	0%	0	0%
Cost of bus fare	17	65%	8	31%	1	4%	0	0%	0	0%
Safety	4	100%	29	0%	0	0%	0	0%	0	0%
Cleanliness of buses and stops	19	66%	8	28%	2	7%	0	0%	0	0%
Courtesy/Friendliness of bus drivers	20	69%	9	31%	0	0%	0	0%	0	0%
Overall service	17	59%	12	41%	0	0%	0	0%	0	0%

CULPEPER TROLLEY, TOWN OF CULPEPER

1. Which route are you currently riding?		
Response	**Count**	**Percent**
Northern Loop	60	63%
Southern Loop	36	38%
Total	**96**	**100%**

2. Where did you get on the bus?		
Response	**Count**	**Percent**
Commerce Street Bus Depot	22	26%
Culpepper Commons	7	8%
Food Lion	7	8%
Wal-Mart	6	7%
Methodist Church	5	6%
Belle Court apartments	4	5%
Mountain Run Apartments	3	4%
Mountain View Apartments	3	4%
Safeway	3	4%
7-11	2	2%
Friendship Heights	2	2%
Hospital	2	2%
Piedmont Street	2	2%
Taco Bell	2	2%
Willis Lane	2	2%
300 Concord Place	1	1%
Carter Bank Trust	1	1%
Depot Human Services	1	1%
Downtown	1	1%
Piedmont Street	1	1%
In front of Microtel Hotel	1	1%
KFC	1	1%
Leaflin Lane	1	1%
Lutheran Church	1	1%
Meadowbrook	1	1%

2. Where did you get on the bus?		
Response	**Count**	**Percent**
Meadows	1	1%
Virginia Ave	1	1%
Virginia Avenue & First Street	1	1%
Total	**85**	**100%**

3. Where are you getting off the bus?		
Response	**Count**	**Percent**
Wal-Mart	16	19%
Commerce Street Bus Depot	9	10%
Rite Aid	8	9%
Food Lion	6	7%
Belle Court Apartments	5	6%
Hospital	5	6%
Mountain Run Apartments	4	5%
Target	4	5%
Walgreens	3	3%
KFC	2	2%
Safeway	2	2%
501 N West St	1	1%
7-11 Stop 229	1	1%
Anywhere	1	1%
BB&T	1	1%
Commons	1	1%
Culpepper	1	1%
Culpepper Hospital	1	1%
Daycare	1	1%
Dominion Square	1	1%
East Piedmont	1	1%
Friendship Heights	1	1%
Gold's Gym	1	1%
Human Resources	1	1%
Lafayette Place	1	1%
Library	1	1%
Martins	1	1%

3. Where are you getting off the bus?		
Response	**Count**	**Percent**
Methodist Church	1	1%
Mt. Vine Drive	1	1%
N Redmont St	1	1%
Subway	1	1%
Village	1	1%
Virginia Avenue	1	1%
Total	**86**	**100%**

4. Did you or will you have to transfer buses to reach your destination?		
Response	**Count**	**Percent**
Yes	38	40%
No	56	60%
Total	**94**	**100%**

5. What route will you transfer to or did you transfer from?		
Response	**Count**	**Percent**
Northern Loop	22	65%
Southern Loop	12	35%
Total	**34**	**100%**

6. What is the purpose of your trip today?		
Response	**Count**	**Percent**
Work	27	24%
Social/Recreation	12	11%
Shopping/Errands	48	42%
School	3	3%
Medical	10	9%
Government Agency	4	4%
Other:	9	8%
Home	*3*	-
Library	*1*	-
Total	**113**	**100%**

7. How often do you use the Culpeper Trolley?		
Response	**Count**	**Percent**
5 days per week or more	36	37%
2-4 days per week	38	39%
Once/week	9	9%
2-3 days per month	5	5%
Once/month	4	4%
Less than once/month	5	5%
Total	**97**	**100%**

8. Was a car available for this trip?		
Response	**Count**	**Percent**
Yes	9	9%
No	86	91%
Total	**95**	**100%**

9. Do you have a driver's license?		
Response	**Count**	**Percent**
Yes	25	27%
No	69	73%
Total	**94**	**100%**

11. If you were not riding transit how would you make this trip?		
Response	**Count**	**Percent**
Drive myself	1	1%
Walk	42	49%
Ride with family/friends	21	25%
Taxi	6	7%
Bicycle	1	1%
Wouldn't make this trip	14	16%
Total	**85**	**100%**

12. Are there locations where you need to go that the Trolley does not serve?		
Response	**Count**	**Percent**
Yes	34	59%
No	24	41%
Total	**58**	**100%**
Where?		
DMV	8	31%
Culpepper Schools	3	12%
Full Circle	2	8%
Belle Avenue	1	4%
Church	1	4%
Everything	1	4%
Falls Church	1	4%
Home	1	4%
Laundromat	1	4%
Lowes	1	4%
Main St, North	1	4%
Numerous locations	1	4%
Orange	1	4%
Skating Ring	1	4%
Walmart	1	4%
Warrenton	1	4%
Total	**26**	**100%**

13. What do you like most about the Culpeper Trolley?		
Response	**Count**	**Percent**
Affordable/Cheap	19	26%
Friendly drivers	16	22%
Gets me where I need to go	13	18%
Convenient	6	8%
Everything	3	4%
Availability	2	3%
Cleanliness	2	3%
Trolley buses	2	3%
Bus Stops	1	1%
Its comfortable	1	1%
Neat	1	1%
On time	1	1%
Reliable	1	1%
Rust	1	1%
Schedule	1	1%
Service is good	1	1%
Service saves a lot of time	1	1%
The concept of buses	1	1%
Total	**73**	**100%**

14. What do you like least about the Culpeper Trolley?		
Response	**Count**	**Percent**
Hours of operation are not long enough	11	28%
Bus not on time/Late	6	15%
Waiting for the bus	4	10%
Rude people on the bus	3	8%
Frequency	2	5%
No service on Sunday	2	5%
Access for double stroller	1	3%
Going over speed bumps	1	3%
Hot sometimes	1	3%
Must cross 29 to Safeway	1	3%
No seatbelts	1	3%
Perfect for needs	1	3%

14. What do you like least about the Culpeper Trolley?		
Response	**Count**	**Percent**
Schedule	1	3%
Short hours on weekends	1	3%
Stop and go	1	3%
The management	1	3%
The seats are very hard	1	3%
The system	1	3%
Total	**40**	**100%**

15. Which of the following potential improvements would be most useful to you?		
Response	**Count**	**Percent**
More frequent service	40	15%
Shorter travel time	15	6%
Service earlier in the morning	21	8%
Service later in the evening	51	19%
Additional weekend service	54	20%
Stop improvements (signs, benches, shelters)	16	6%
Service to more places	33	12%
Where?		
Southern Culpeper	*1*	-
Warrenton	*1*	-
Lowes	*1*	-
DMV	*2*	-
Public Schools	*1*	-
Full Circle Thrift Shop	*1*	-
Floyd T Binns	*1*	-
Mountain Run Apartments	*1*	-
Total	*9*	-
Additional park and ride opportunities	3	1%
Where?		
Southern Culpeper	*1*	-
Public Schools	*1*	-
Real-time schedule information	32	12%
Where?		
At the stop	*24*	-
On my phone	*8*	-
On my computer	*0*	-
Total	**265**	**100%**

16. Are you:		
Response	**Count**	**Percent**
Male	31	44%
Female	40	56%
Total	**71**	**100%**

17. Age		
Response	**Count**	**Percent**
Under 17 years	3	3%
18-25 years	22	23%
26-55 years	47	49%
56-64 years	14	15%
65 years and older	10	10%
Total	**96**	**100%**

18. Satisfaction Levels										
Category	**Very Satisfied**		**Satisfied**		**Neutral**		**Dis-satisfied**		**Very Dis-satisfied**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Frequency of service	46	48%	32	33%	15	16%	2	2%	1	1%
Service area	39	43%	35	38%	12	13%	5	5%	0	0%
On-time performance	34	37%	34	37%	15	16%	9	10%	0	0%
Hours of service	34	37%	21	23%	20	22%	12	13%	5	5%
Availability of schedules and information	44	48%	27	29%	15	16%	4	4%	2	2%
Cost of bus fare	57	63%	24	26%	10	11%	0	0%	0	0%
Safety	20	22%	71	79%	16	18%	2	2%	1	1%
Cleanliness of buses and stops	44	48%	30	33%	10	11%	4	4%	3	3%
Courtesy/Friendliness of bus drivers	52	58%	27	30%	7	8%	3	3%	1	1%
Overall service	40	43%	37	40%	13	14%	2	2%	0	0%

FRONT ROYAL TROLLEY, TOWN OF FRONT ROYAL

1. Which route are you currently riding?		
Response	**Count**	**Percent**
North Loop	14	54%
South Loop	5	19%
Saturday	7	27%
Sunday	0	0%
Total	**26**	**100%**

2. Where did you get on the bus?		
Response	**Count**	**Percent**
Family Dollar	3	17%
Gazebo Main Street	2	11%
Randolph Macon Academy	2	11%
Visitor Center	2	11%
210 E Main Street	1	6%
214 West Main Street	1	6%
ADS Virginia Avenue	1	6%
Corner of 4th & Warren	1	6%
Criser Road	1	6%
Food Lion	1	6%
Martins	1	6%
Plaza	1	6%
Social Services	1	6%
Total	**18**	**100%**

3. Where are you getting off the bus?		
Response	**Count**	**Percent**
Martins	11	48%
Just Riding	2	9%
Randolph Macon Academy	2	9%
Royal Arms Apartments	2	9%
Royal Plaza	2	9%

3. Where are you getting off the bus?		
Response	**Count**	**Percent**
Community Center	1	4%
Food Lion	1	4%
Library	1	4%
Ressie Jeffries E.S.	1	4%
Total	**23**	**100%**

4. Did you or will you have to transfer buses to reach your destination?		
Response	**Count**	**Percent**
Yes	0	0%
No	26	100%
Total	**26**	**100%**

5. What route will you transfer to or did you transfer from?		
Response	**Count**	**Percent**
North Loop	0	0%
South Loop	0	0%
Saturday	0	0%
Sunday	0	0%
Total	**0**	**100%**

6. What is the purpose of your trip today?		
Response	**Count**	**Percent**
Work	2	7%
Social/Recreation	1	3%
Shopping/Errands	20	67%
School	3	10%
Medical	1	3%
Government Agency	0	0%
Other:	3	10%
Just Riding	*2*	-
Total	**30**	**100%**

7. How often do you use the Front Royal Trolley?		
Response	**Count**	**Percent**
5 days per week or more	6	23%
2-4 days per week	13	50%
Once/week	6	23%
2-3 days per month	0	0%
Once/month	0	0%
Less than once/month	1	4%
Total	**26**	**100%**

8. Was a car available for this trip?		
Response	**Count**	**Percent**
Yes	3	12%
No	22	88%
Total	**25**	**100%**

9. Do you have a driver's license?		
Response	**Count**	**Percent**
Yes	4	17%
No	20	83%
Total	**24**	**100%**

11. If you were not riding transit how would you make this trip?		
Response	**Count**	**Percent**
Drive myself	0	0%
Walk	18	62%
Ride with family/friends	2	7%
Taxi	6	21%
Bicycle	0	0%
Wouldn't make this trip	3	10%
Total	**29**	**100%**

12. Are there locations where you need to go that the Trolley does not serve?		
Response	**Count**	**Percent**
Yes	6	26%
No	17	74%
Total	**23**	**100%**
Where?		
Wal-Mart during the week	5	100%

13. What do you like most about the Front Royal Trolley?		
Response	**Count**	**Percent**
Friendly driver	8	38%
Cheap	3	14%
Convenient	3	14%
Friendly People	3	14%
It's good to have around	2	10%
Availability	1	5%
Nice to ride	1	5%
Total	**21**	**100%**

14. What do you like least about the Front Royal Trolley?		
Response	**Count**	**Percent**
Hard Seats	3	33%
Appearance of the bus	1	11%
Long route	1	11%
Not going to Wal-Mart	1	11%
Sometimes the Trolley doesn't come on time	1	11%
The time intervals between buses	1	11%
The trolley breaks down sometimes	1	11%
Total	**9**	**100%**

15. Which of the following potential improvements would be most useful to you?		
Response	**Count**	**Percent**
More frequent service	6	12%
Shorter travel time	3	6%
Service earlier in the morning	4	8%
Service later in the evening	6	12%
Additional weekend service	10	20%
Stop improvements (signs, benches, shelters)	5	10%
Service to more places	8	16%
Where?		
Wal-Mart	3	-
Target	1	-
Additional park and ride opportunities	1	2%
Real-time schedule information	6	12%
Where?		
At the stop	4	-
On my phone	1	-
On my computer	1	-
Total	**49**	**100%**

16. Are you:		
Response	**Count**	**Percent**
Male	8	50%
Female	8	50%
Total	**16**	**100%**

17. Age		
Response	**Count**	**Percent**
Under 17 years	8	31%
18-25 years	5	19%
26-55 years	2	8%
56-64 years	7	27%
65 years and older	4	15%
Total	**26**	**100%**

18. Satisfaction Levels										
Category	**Very Satisfied**		**Satisfied**		**Neutral**		**Dis-satisfied**		**Very Dis-satisfied**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Frequency of service	11	46%	12	50%	1	4%	0	0%	0	0%
Service area	10	43%	12	52%	1	4%	0	0%	0	0%
On-time performance	11	48%	7	30%	5	22%	0	0%	0	0%
Hours of service	6	26%	13	57%	3	13%	0	0%	1	4%
Availability of schedules and information	9	39%	7	30%	5	22%	2	9%	0	0%
Cost of bus fare	20	87%	2	9%	1	4%	0	0%	0	0%
Safety	7	96%	22	0%	1	4%	0	0%	0	0%
Cleanliness of buses and stops	15	65%	7	30%	0	0%	0	0%	1	4%
Courtesy/Friendliness of bus drivers	21	91%	1	4%	0	0%	0	0%	1	4%
Overall service	14	64%	7	32%	1	5%	0	0%	0	0%

ORANGE TROLLEY, TOWN OF ORANGE

1. Which route are you currently riding?		
Response	**Count**	**Percent**
Orange	20	49%
Gordonsville	21	51%
Total	**41**	**100%**

2. Where did you get on the bus?		
Response	**Count**	**Percent**
222 Belleview Avenue	2	5%
Eastgate Apartments	2	5%
Town Hall	2	5%
186 Peliso Drive, Orange VA	1	3%
200 High Street	1	3%
202 Allan Street	1	3%
202 Duke Street	1	3%
202 Park Street	1	3%
255 Spicers Mill Road	1	3%
277 Belleview Avenue	1	3%
279 Belleview Avenue	1	3%
408 Park Street	1	3%
5800 Round Hill Meadows	1	3%
6116 Round Hill Meadows	1	3%
Baker Street	1	3%
Berry Street Apartments	1	3%
Browntown Road	1	3%
Cobb Street	1	3%
CVS	1	3%
Dellbrook Terrace	1	3%
Orange Depot	1	3%
East Main Street	1	3%
East Street	1	3%
Economy Propane	1	3%
Library	1	3%
Madison Run Park	1	3%

2. Where did you get on the bus?		
Response	**Count**	**Percent**
Mt. Track Road	1	3%
Nursing Home	1	3%
Oakbrook Terrace	1	3%
Orange Post Office	1	3%
Round Hill Meadows	1	3%
Stonewall Avenue	1	3%
TOOT Bus Route	1	3%
Twyman Street	1	3%
Total	**37**	**100%**

3. Where are you getting off the bus?		
Response	**Count**	**Percent**
Food Lion	11	29%
Depot	4	11%
McDonalds	2	5%
Therapy Service	2	5%
UVA Medical Center	2	5%
277 Belleview Avenue	1	3%
3rd Street	1	3%
7-11 Orange	1	3%
Colonial Shopping Center	2	5%
Comfort Inn	1	3%
Country Cooking	1	3%
CVS	1	3%
Food Bank	1	3%
Harpon Drive	1	3%
Heritage Hill Apartments	1	3%
Home	1	3%
Maxway in Orange	1	3%
Regional Jail	1	3%
Route 15	1	3%
Stonewall Avenue	1	3%
Tayman Street	1	3%
Total	**38**	**100%**

4. Did you or will you have to transfer buses to reach your destination?		
Response	**Count**	**Percent**
Yes	16	42%
No	22	58%
Total	**38**	**100%**

5. What route will you transfer to or did you transfer from?		
Response	**Count**	**Percent**
Orange	14	88%
Gordonsville	2	13%
Total	**16**	**100%**

6. What is the purpose of your trip today?		
Response	**Count**	**Percent**
Work	6	13%
Social/Recreation	5	11%
Shopping/Errands	19	40%
School	0	0%
Medical	10	21%
Government Agency	3	6%
Other:	4	9%
Country Cooking	*1*	-
Business	*1*	-
Food Bank	*1*	-
Total	**47**	**100%**

7. How often do you use the Orange Trolley?		
Response	**Count**	**Percent**
5 days per week or more	13	32%
2-4 days per week	21	51%
Once/week	6	15%
2-3 days per month	1	2%
Once/month	0	0%
Less than once/month	0	0%
Total	**41**	**100%**

8. Was a car available for this trip?		
Response	**Count**	**Percent**
Yes	4	11%
No	31	89%
Total	**35**	**100%**

9. Do you have a driver's license?		
Response	**Count**	**Percent**
Yes	20	56%
No	16	44%
Total	**36**	**100%**

11. If you were not riding transit how would you make this trip?		
Response	**Count**	**Percent**
Drive myself	3	7%
Walk	18	39%
Ride with family/friends	16	35%
Taxi	1	2%
Bicycle	1	2%
Wouldn't make this trip	7	15%
Total	**46**	**100%**

12. Are there locations where you need to go that the Trolley does not serve?		
Response	**Count**	**Percent**
Yes	12	30%
No	28	70%
Total	**40**	**100%**
Where?		
Culpeper	*3*	43%
Route 20	*3*	43%
Out of Town	*1*	14%
Total	**7**	**100%**

13. What do you like most about Orange Transit?		
Response	**Count**	**Percent**
Affordable	11	32%
Friendly Drivers	7	21%
Dependability	4	12%
The Driver	3	9%
Meeting people and enjoying the ride	2	6%
Always on Time	1	3%
Availability	1	3%
Cleanliness	1	3%
Convenient	1	3%
Need more trips	1	3%
They charge a lot	1	3%
Transportation	1	3%
Total	**34**	**100%**

14. What do you like least about the Orange Transit?		
Response	**Count**	**Percent**
No weekend service	5	31%
Needs additional hours	4	25%
Crazy People	1	6%
Down time	1	6%
Not enough trips every day	1	6%
Not enough stops	1	6%

14. What do you like least about the Orange Transit?		
Response	**Count**	**Percent**
Route too long	1	6%
Rude people	1	6%
When people get on that aren't clean	1	6%
Total	**16**	**100%**

15. Which of the following potential improvements would be most useful to you?		
Response	**Count**	**Percent**
More frequent service	12	11%
Shorter travel time	10	9%
Service earlier in the morning	3	3%
Service later in the evening	26	24%
Additional weekend service	16	15%
Stop improvements (signs, benches, shelters)	6	6%
Service to more places	7	6%
Where?		
Culpeper	2	-
Additional park and ride opportunities	3	3%
Where?		
Charlottesville Mall	1	-
Culpeper	1	-
Real-time schedule information	26	24%
Where?		
At the stop	20	-
On my phone	6	-
On my computer	0	-
Total	**109**	**100%**

16. Are you:		
Response	**Count**	**Percent**
Male	9	26%
Female	25	74%
Total	**34**	**100%**

17. Age		
Response	**Count**	**Percent**
Under 17 years	0	0%
18-25 years	9	24%
26-55 years	11	29%
56-64 years	13	34%
65 years and older	5	13%
Total	**38**	**100%**

18. Satisfaction Levels										
Category	**Very Satisfied**		**Satisfied**		**Neutral**		**Dis-satisfied**		**Very Dis-satisfied**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Frequency of service	22	59%	9	24%	1	3%	5	14%	0	0%
Service area	22	56%	13	33%	1	3%	3	8%	0	0%
On-time performance	26	68%	12	32%	0	0%	0	0%	0	0%
Hours of service	25	66%	10	26%	1	3%	2	5%	0	0%
Availability of schedules and information	28	76%	8	22%	1	3%	0	0%	0	0%
Cost of bus fare	30	79%	8	21%	0	0%	0	0%	0	0%
Safety	8	53%	6	40%	1	7%	0	0%	0	0%
Cleanliness of buses and stops	31	86%	3	8%	1	3%	1	3%	0	0%
Courtesy/Friendliness of bus drivers	32	86%	4	11%	0	0%	0	0%	1	3%
Overall service	31	84%	6	16%	0	0%	0	0%	0	0%

Appendix B
Demographic Analysis by County for the VRT West Central Service Area

POPULATION DENSITY

Population density is a key factor in determining how rural or urban an area is, which in turn affects the type of public transportation that may be most viable. For instance, while exceptions will always exist, an area with a density above 2,000 persons per square mile will generally be able to sustain a frequent, daily fixed-route bus service. Conversely, an area with a population density below 2,000 persons per square mile may be better suited for a deviated fixed-route, flex schedule or dial-a-ride service.

Clarke County

Of the six counties in the VRT West Central service area, Clarke County has the smallest population, 14,034 according to Census 2010. The county has fewer than 100 persons per square mile, except Census block groups in and around Berryville. No block groups in Clarke County have greater than 2,000 persons per square mile. Figure B-1 illustrates population density in Clarke County.

Culpeper County

Culpeper County has a total population of 46,689 according to Census 2010. As seen in Figure B-2, the Census block groups with the highest population density are located in and around the town of Culpeper, where there are three block groups with greater than 2,000 persons per square mile. All block groups east of US Route 15 have fewer than 100 persons per square mile. Culpeper County's population is clustered in the western portion of the county.

Fauquier County

According to Census 2010 Fauquier County has a population of 65,203. The town of Warrenton has the highest population density; two block groups there have a population density of greater than 2,000 persons per square mile, and the block groups surrounding the town have relatively

Figure B-1: Clarke County Census Block Groups 2010 Population Density

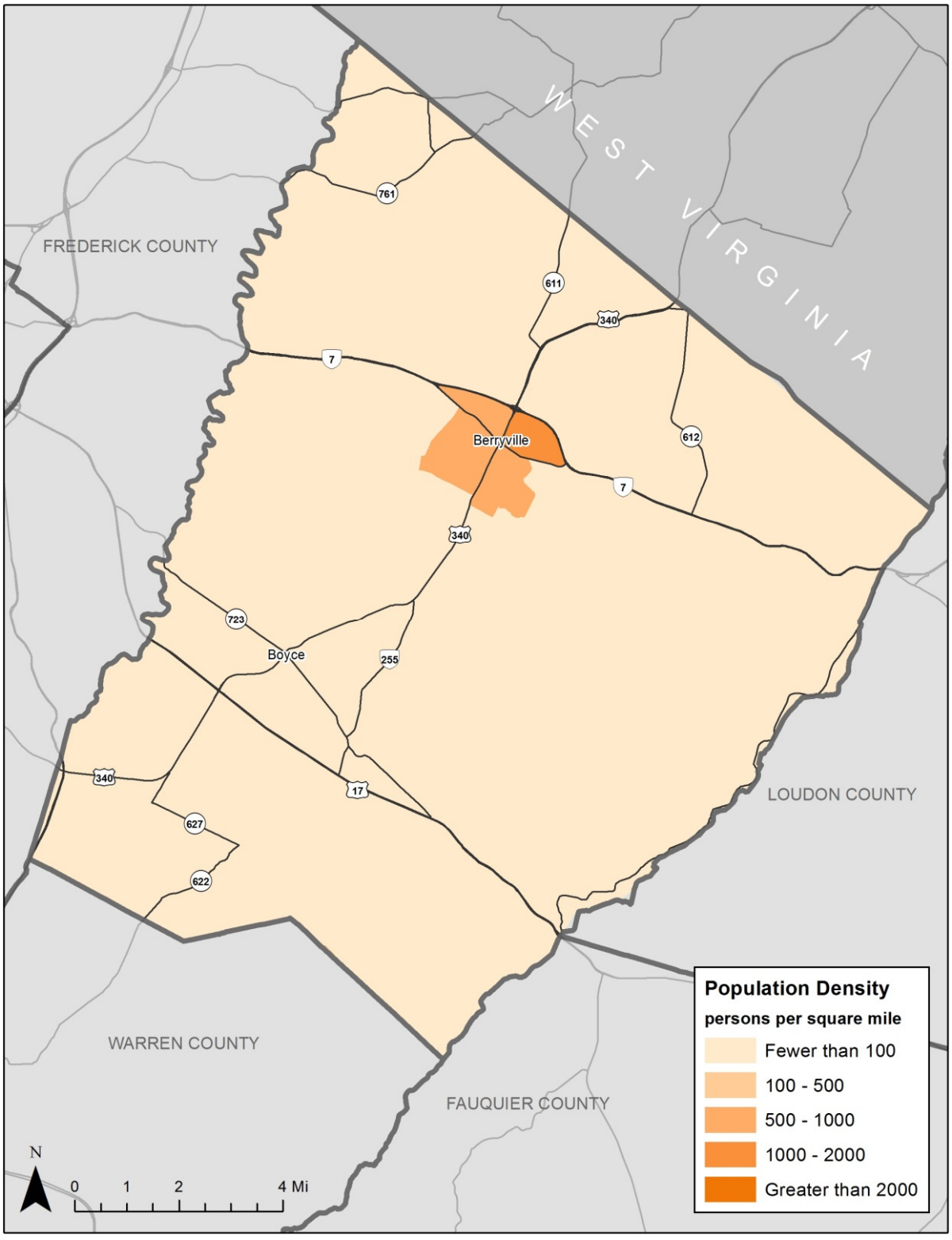
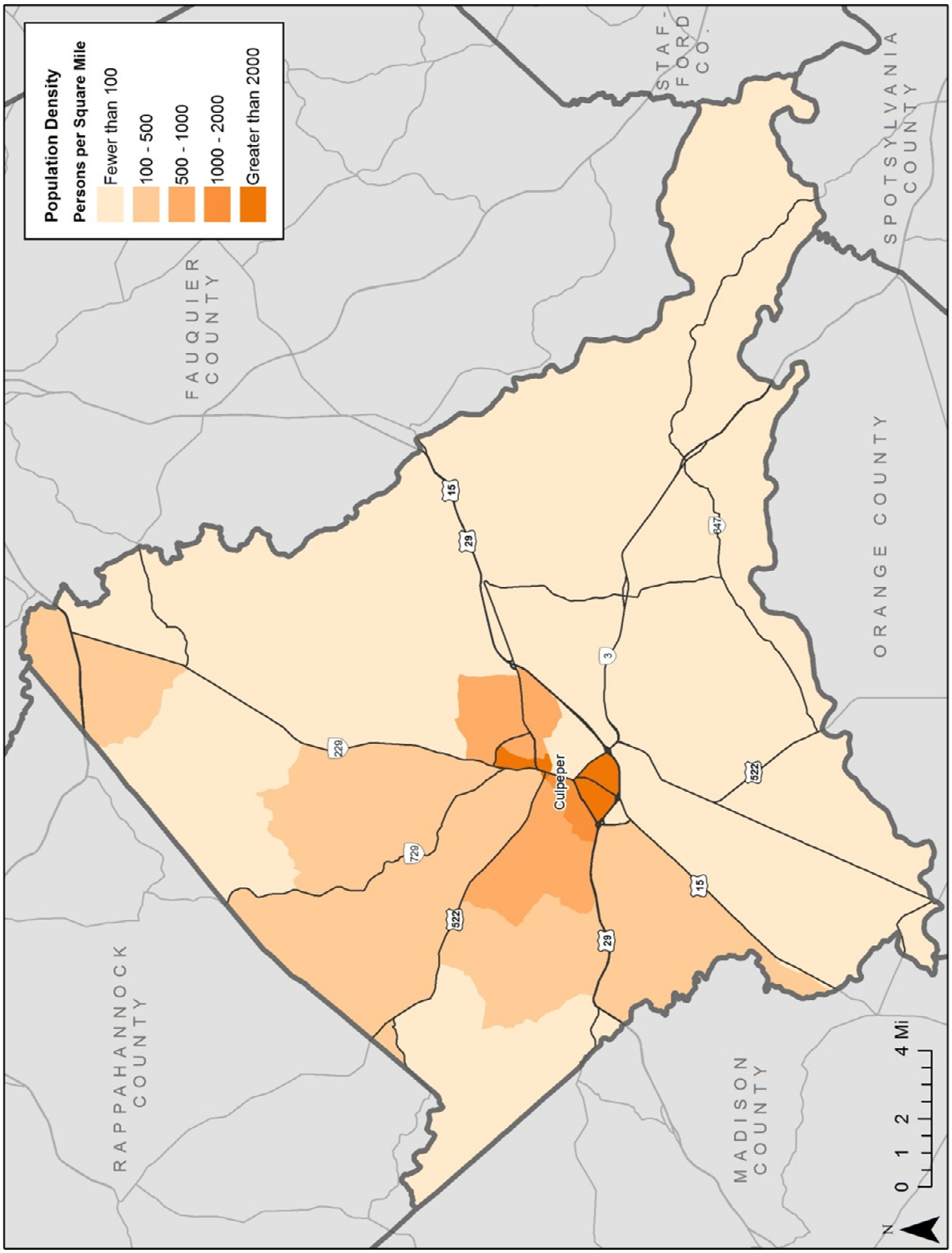


Figure B-2: Culpeper County Census Block Groups 2010 Population Density



higher population densities. There is another cluster of relatively high population density in and around the town of Remington, and in the block group at the eastern junction of US Route 17 and Interstate 66. The population density for Fauquier County is shown in Figure B-3.

Frederick County

Frederick County's population according to the Census 2010 is 78,305. The population density is highest around Winchester and to the east of Interstate 81. As seen in Figure B-4, nine block groups in Frederick County have greater than 2,000 persons per square mile; to the east of Winchester along Virginia Route 7 and south of Winchester between US Route 522 and Virginia Route 631. Much of the western half of Frederick County has a population density of fewer than 100 persons per square mile.

Orange County

Orange County has a total population of 33,481 according to Census 2010. Much of the county has a population density below 100 persons per square mile. The Census block groups along US Route 15, which connects the towns of Orange and Gordonsville, have a higher population density. The most densely populated block group in Orange County is the private community Lake of the Woods, located at the eastern tip of the county. Figure B-5 displays the population density in Orange County.

Warren County

Warren County has a population of 37,575 according to the Census 2010. Figure B-6 shows that population density is highest in and around the town of Front Royal, with six block groups having greater than 2,000 persons per square mile and four with between 1,000 and 2,000 persons per square mile. The northeastern portion of the county and the block groups along VA Route 55 have higher population densities than the southern portion of the county along US Route 340 and VA Route 649.

Figure B-3: Fauquier County Census Block Groups 2010 Population Density

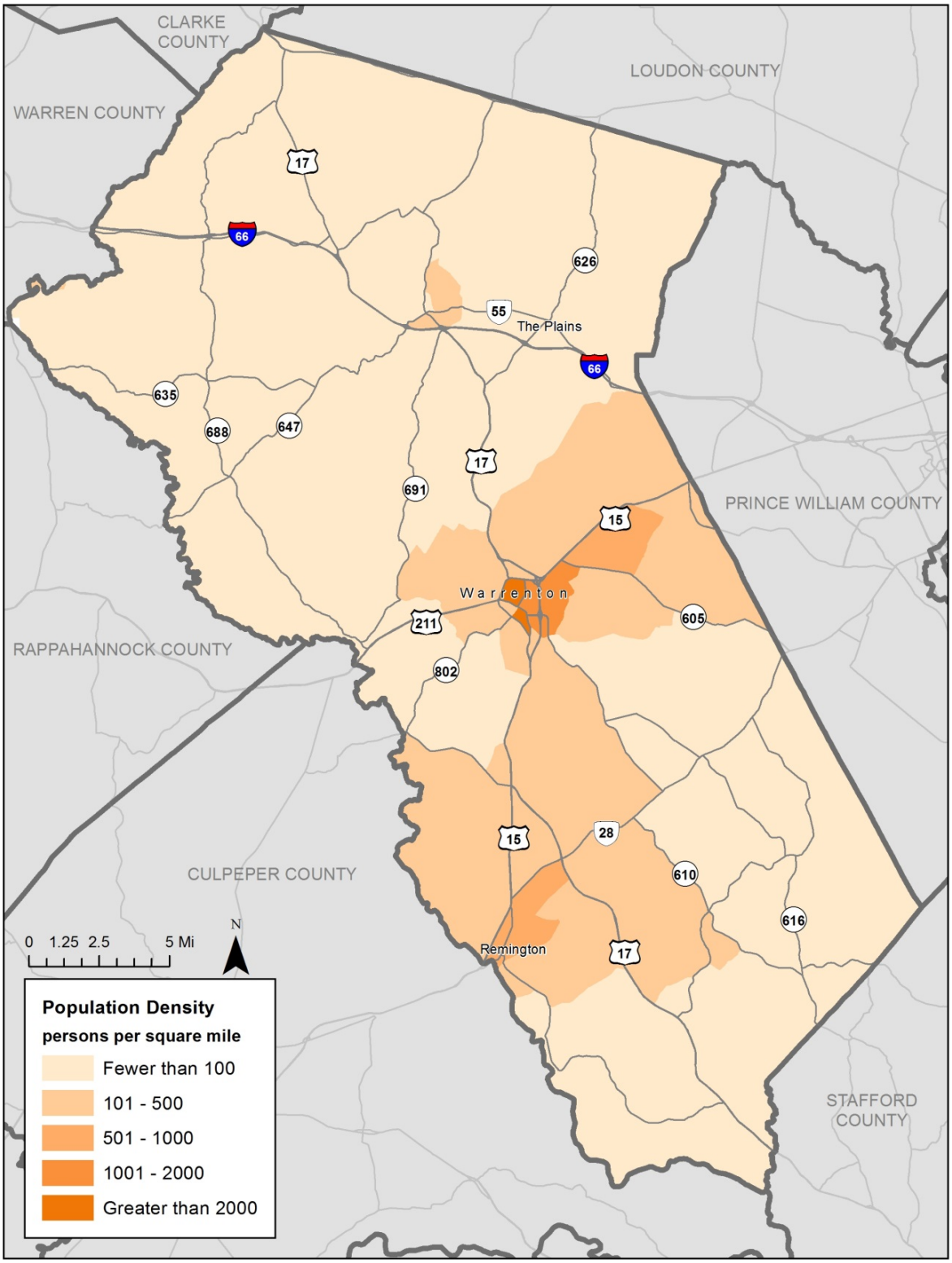


Figure B-4: Frederick County Census Block Groups 2010 Population Density

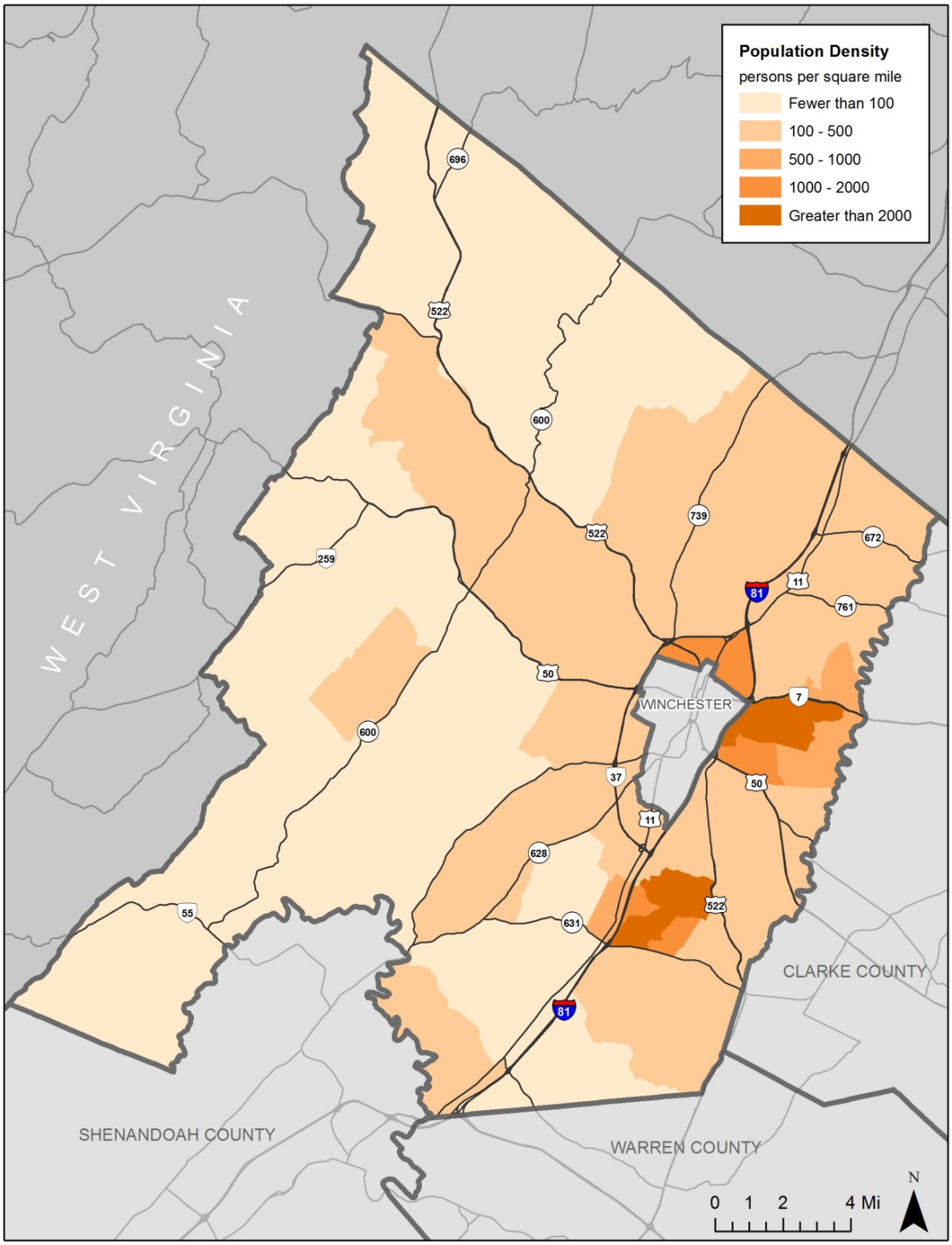


Figure B-5: Orange County Census Block Groups 2010 Population Density

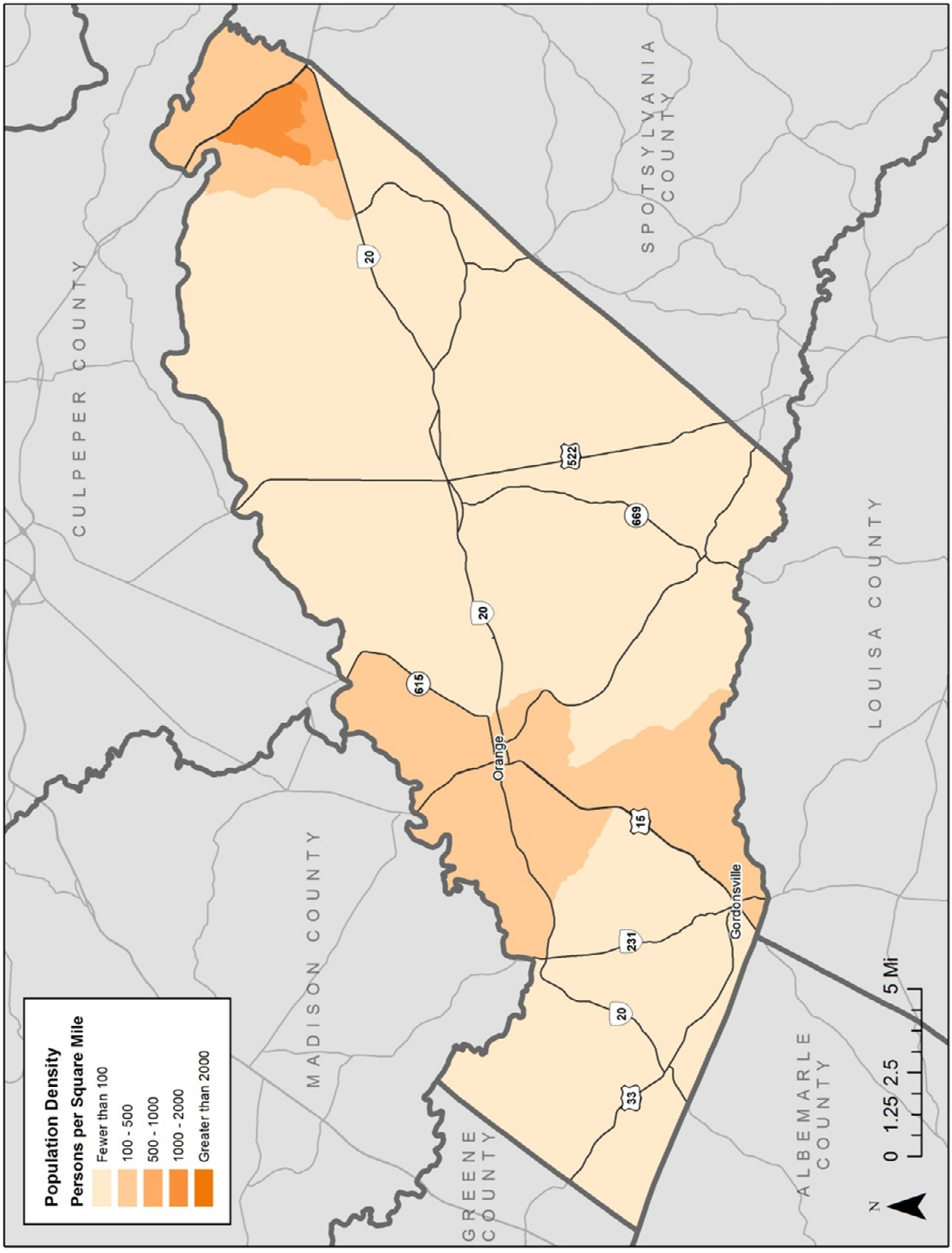
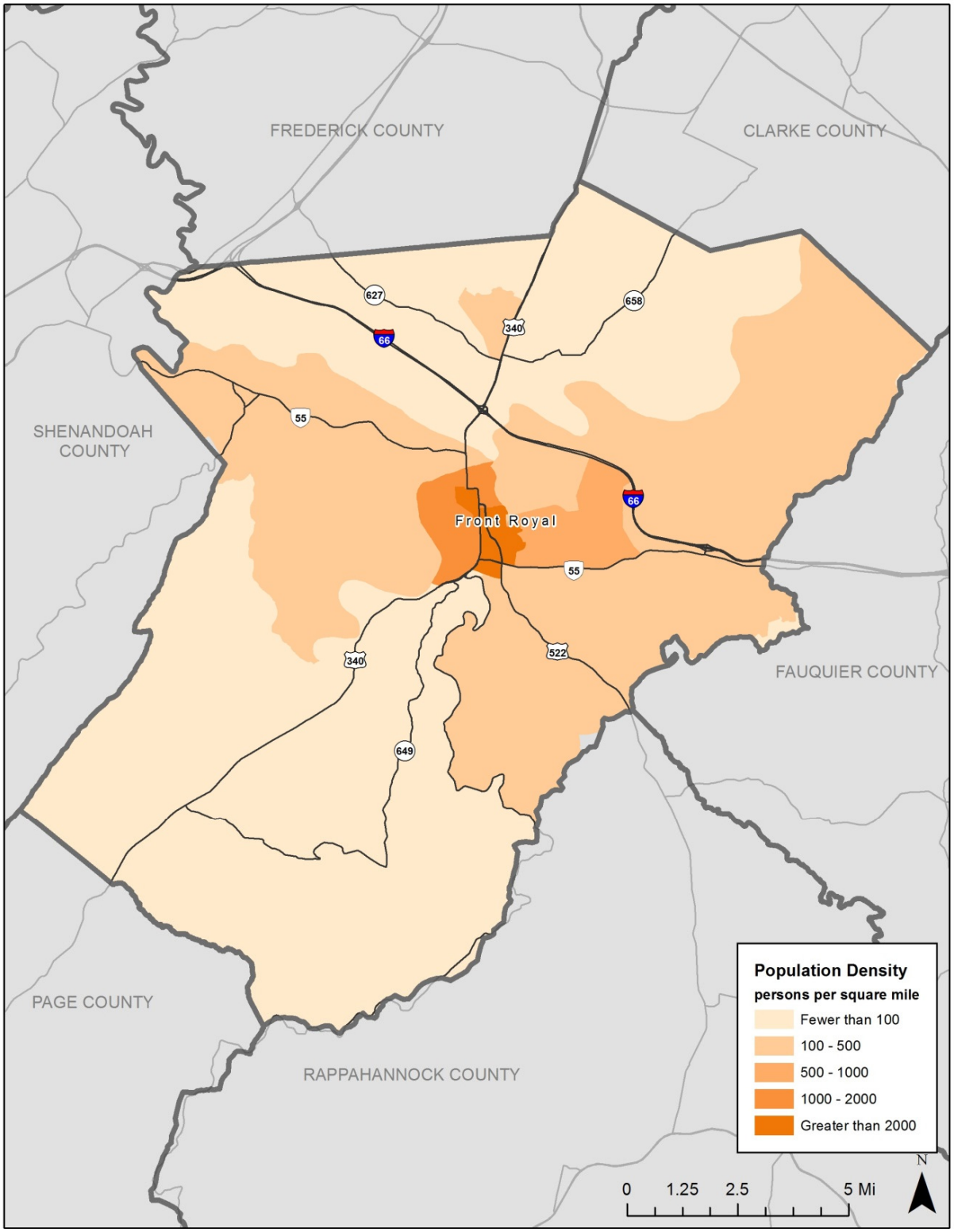


Figure B-6: Warren County Census Block Groups 2010 Population Density



TRANSIT DEPENDENT POPULATION CLASSIFICATION SCALE

Public transportation needs are defined in part by identifying the relative size and location of those segments within the general population that are most likely to depend on transit services. These transit dependent populations include individuals who may not have access to a personal vehicle or are unable to drive themselves due to age or income status. Determining the location of transit dependent populations assisted the evaluation of current transit services and the extent to which they meet community needs.

For the purpose of developing a transit dependence index, block groups are classified relative to the study area as a whole using a five-tiered scale of "very low" to "very high." A block group classified as "very low" can still have a significant number of potentially transit dependent persons; as "very low" means below the study area's average. At the other end of the spectrum, "very high" means greater than twice the study area's average. The exact specifications for each score are summarized in the Table B-1 below.

Table B-1: Transit Dependent Scoring

Number/Percentage of Vulnerable Persons or Households	Score Based on Potential Transit Dependence
<= the study area average	1 (Very Low)
> average and <= 1.33 times the average	2 (Low)
> 1.33 times the average and <= 1.67 times the average	3 (Moderate)
> 1.67 times the average and <=2 times the average	4 (High)
> 2 times the study area average	5 (Very High)

TRANSIT DEPENDENCE INDEX

The Transit Dependence Index (TDI) is an aggregate measure that utilizes recent data from the American Community Survey (ACS) five-year estimates and the United States Decennial Census to display relative concentrations of transit dependent populations. Five factors make up the TDI calculation, as shown in the following formula:

$$TDI = PD \times (AVNV + AVE + AVY + AVBP)$$

Where:

- PD = population density per square mile
- AVNV = amount of vulnerability based on no vehicle households
- AVE = amount of vulnerability based on elderly populations

- AVY = amount of vulnerability based on youth populations
- AVBP = amount of vulnerability based on below poverty populations

In addition to population density (PD), the factors above represent specific socioeconomic characteristics of the population in this region. For each factor, individual block groups are classified according to the prevalence of the vulnerable population relative to the service area average. The factors are then plugged into the TDI equation to determine the relative transit dependence of each block group (very low, low, moderate, high, or very high).

From a transit perspective, the TDI illustrates the areas of greatest overall need. It should be kept in mind that while some of the block groups show low need, they may in fact include major destinations that should be served by transit.

Clarke County

There are two Census block groups in Clarke County with a "Low" Transit Dependent Index classification. The rest of Clarke County is classified as "Very Low." Figure B-7 provides a map of the TDI classification by block group in Clarke County.

Culpeper County

There are four block groups in Culpeper County with a "Very High" TDI classification. These block groups are located in and around the town of Culpeper. Nearly all of the other block groups in the county are classified "Very Low." See Figure B-8 for an illustration of Culpeper County's TDI measure.

Fauquier County

As seen in Figure B-9, the transit dependent populations in Fauquier County are centered around the town of Warrenton, where there are two block groups with a TDI classification ranked as "Very High." Two adjacent block groups have "Moderate" and "Low" TDI respectively. The remaining block groups in the county have a "Very Low" TDI.

Frederick County

There are seven block groups in Frederick County with a TDI classified as "Very High." They are located immediately north and east of Winchester, where there are additional block groups with "Low," "Moderate," and "High" TDI, and south of Winchester between US Route 522, Interstate 81, and Virginia Route 631, where there is also a block group with "Low" TDI. There is

Figure B-7: Clarke County Census Block Groups Transit Dependent Index

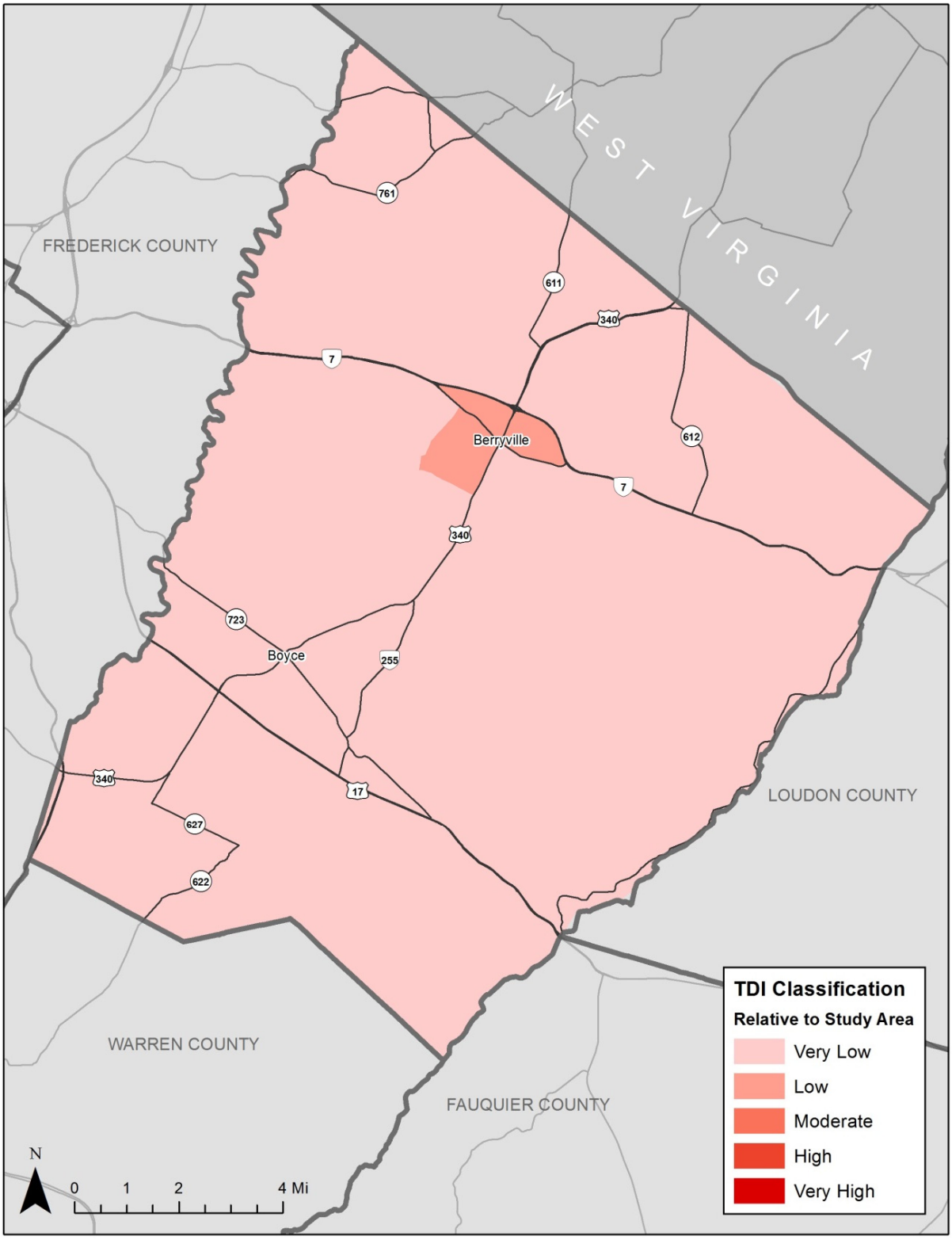


Figure B-8: Culpeper County Census Block Groups Transit Dependent Index

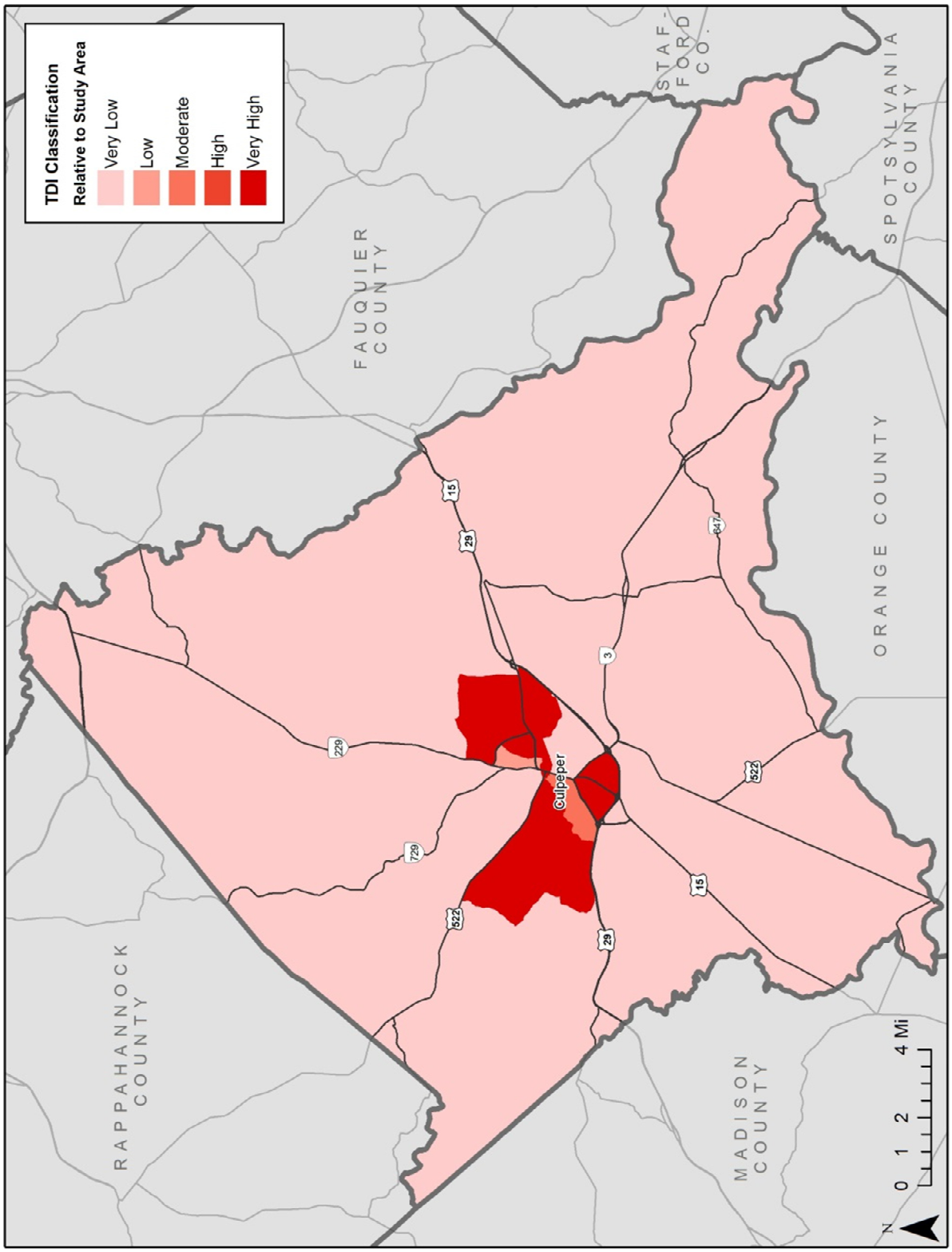
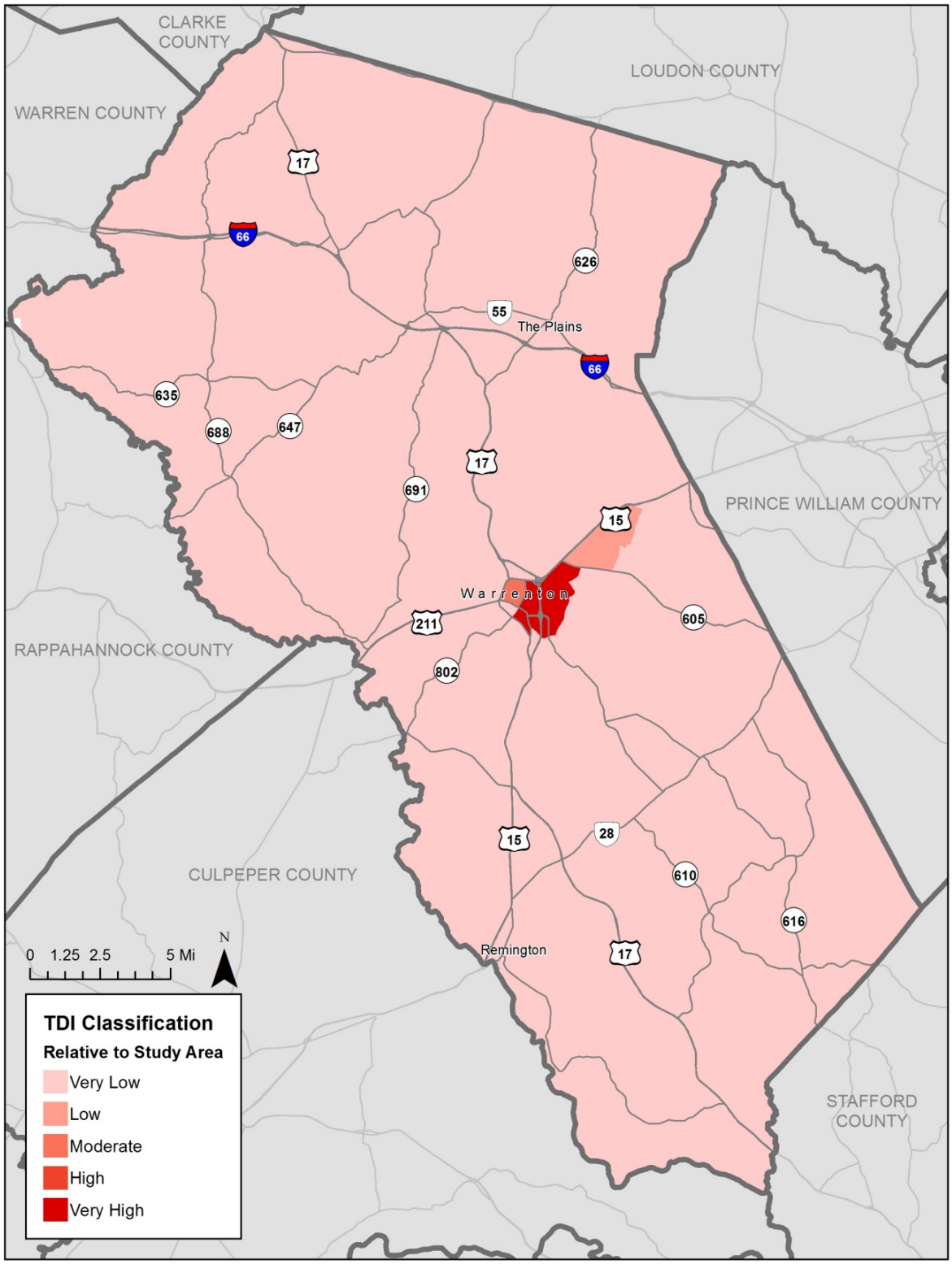


Figure B-9: Fauquier County Census Block Groups Transit Dependent Index



another block group in the western county, between US Route 522 and US Route 50, primarily west of Virginia Route 600. The remaining block groups have "Very Low" TDI. Figure B-10 shows the TDI classifications in Frederick County.

Orange County

As seen in Figure B-11, two block groups in the private gated community Lake of the Woods have a "Very High" TDI classification. An adjacent block group is classified "Low." Three other block groups in Orange County have a "Low" TDI classification; one along the east side of US Route 522, another in Gordonsville and to the east, along US Route 15, and one in the town of Orange and to the west, on the north side of Virginia Route 20.

Warren County

The west side of the town of Front Royal has four block groups with the highest TDI classification. Also in Front Royal are block groups with "High," "Moderate," and "Low" TDI classifications. East of Front Royal there is another block group, between Interstate 66 and Virginia Route 55, with a "Moderate" TDI classification. Figure B-12 provides a map of the transit dependent areas in Warren County.

Figure B-10: Frederick County Census Block Groups Transit Dependent Index

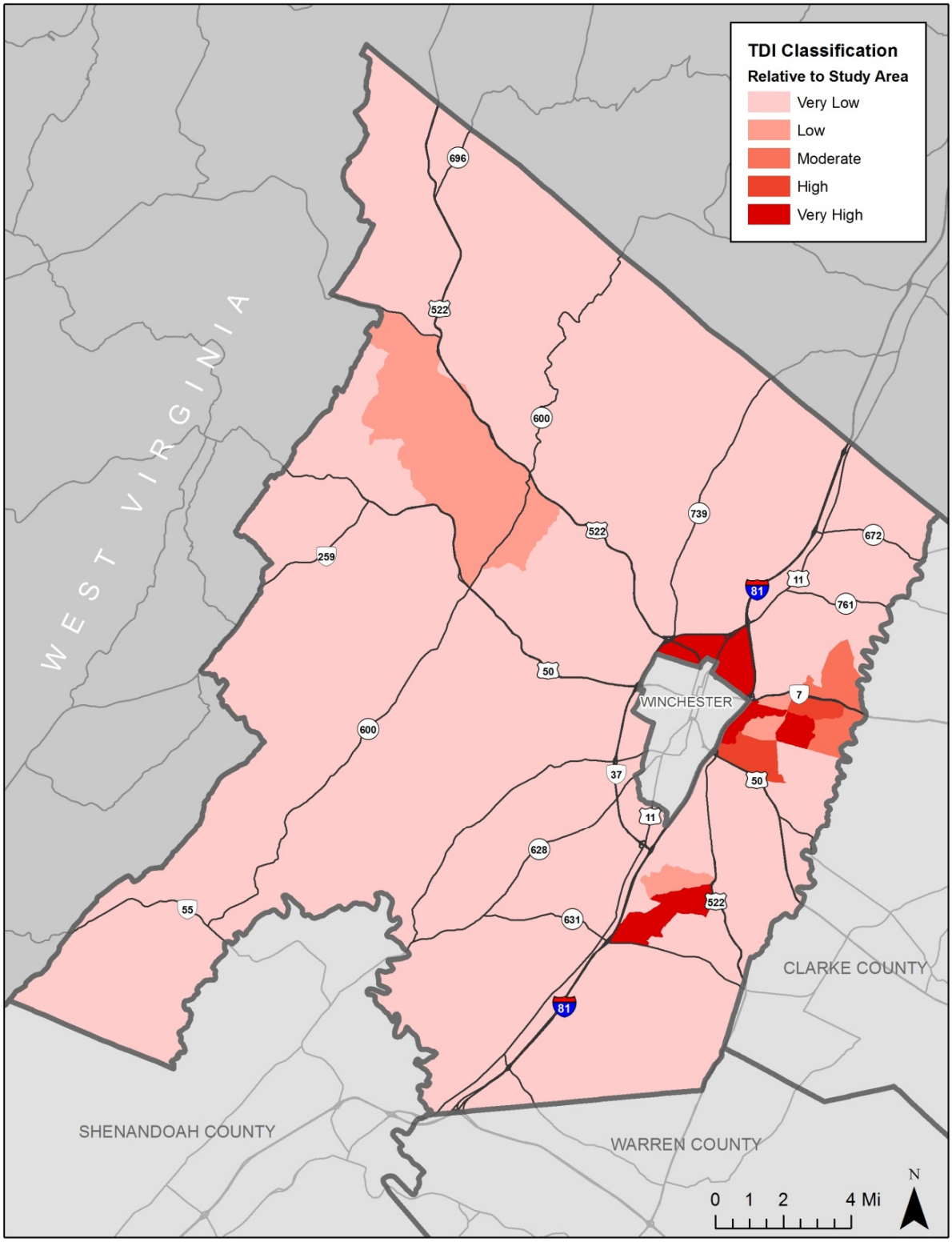


Figure B-11: Orange County Census Block Groups Transit Dependent Index

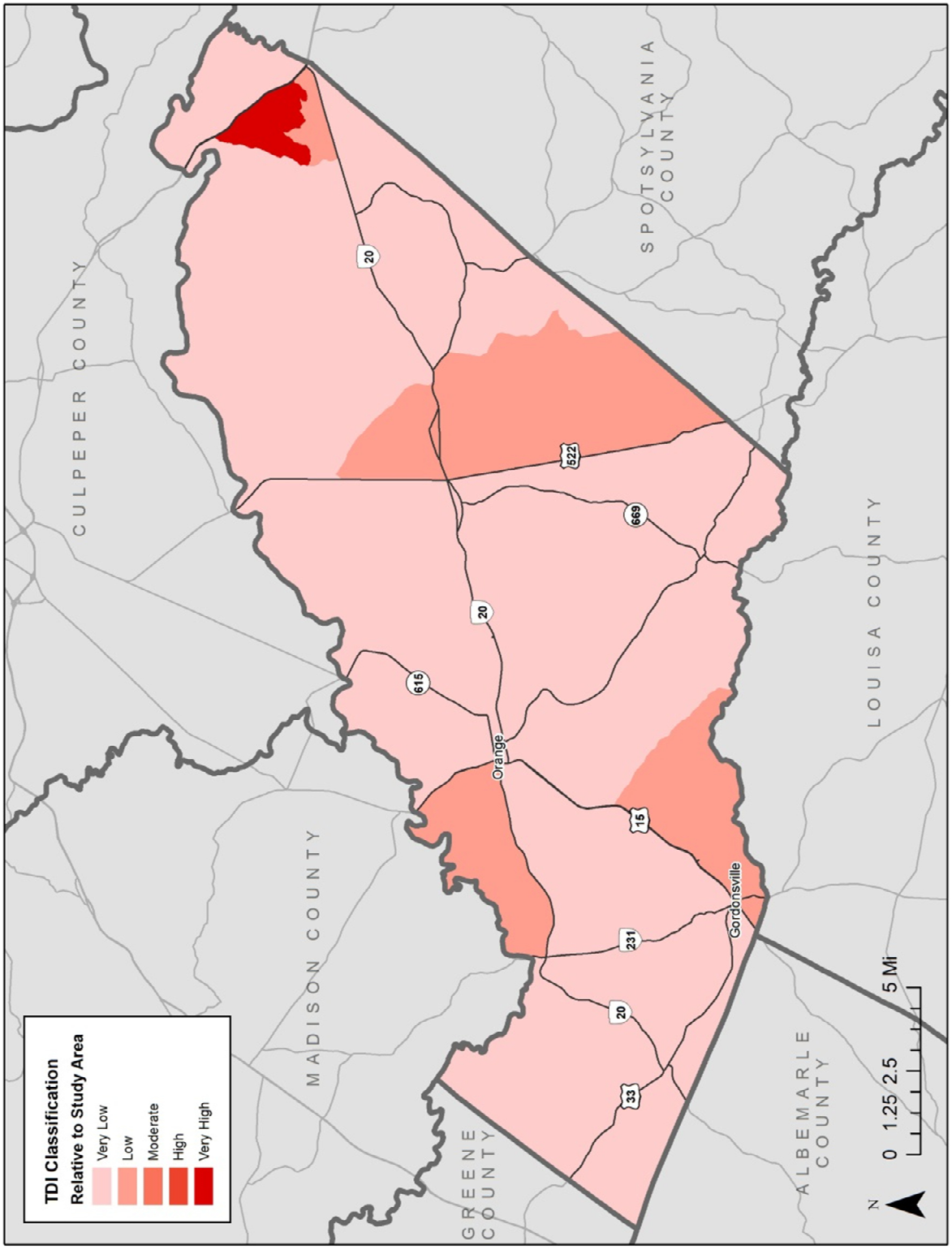
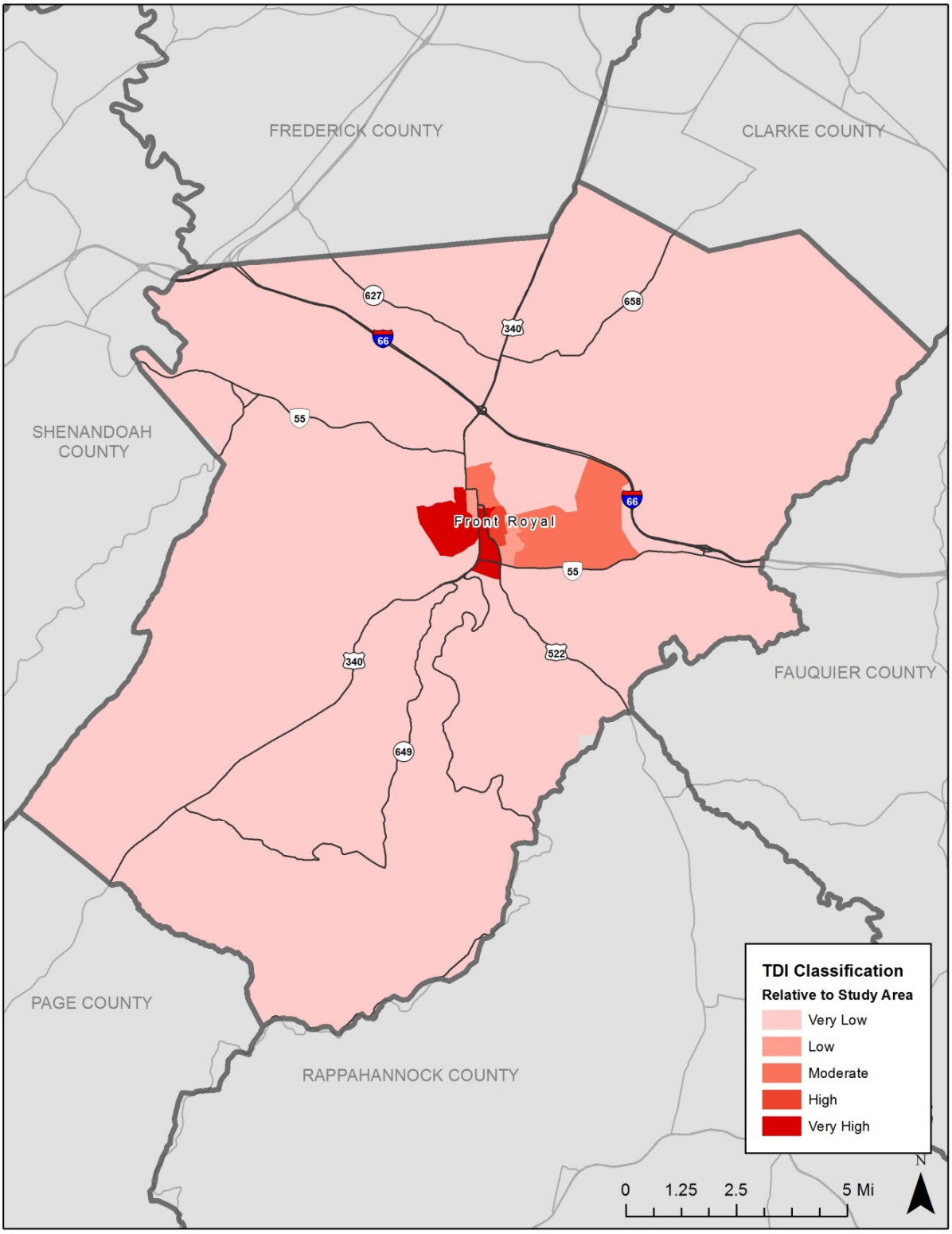


Figure B-12: Warren County Census Block Groups Transit Dependent Index



TRANSIT DEPENDENCE INDEX PERCENTAGE

The Transit Dependence Index Percentage (TDIP) provides a complementary analysis to the TDI measure. It is nearly identical to the TDI measure with the exception of the population density factor. The TDIP for each block group in the study area was calculated with the following formula:

TDIP = DVNV + DVE + DVY + DVBP

Where:

- DVNV = degree of vulnerability based on autoless households
- DVE = degree of vulnerability based on elderly populations
- DVY = degree of vulnerability based on youth populations
- DVBP = degree of vulnerability based on below poverty populations

By removing the population per square mile factor the TDIP measures the degree rather than the amount of vulnerability. The TDIP represents the percentage of the population within the block group with the above socioeconomic characteristics, and it follows the TDI's five-tiered categorization of very low to very high. It differs in that it does not highlight the block groups that are likely to have higher concentrations of vulnerable populations only because of their population density.

Clarke County

The two block groups that comprise the southern quarter of Clarke County have a "Moderate" TDIP classification. A block group on the south side of Berryville also has a "Moderate" classification. The remaining block groups in Clarke County are classified as "Very Low" TDIP. Figure B-13 illustrates the TDIP classification in Clarke County.

Culpeper County

As seen in Figure B-14, the two block groups in Culpeper County with the highest TDIP classification are both partially within the town of Culpeper. One block group is completely within the town of Culpeper and the other extends from the town of Culpeper east nearly to the Fauquier County border. Other block groups in and around the town of Culpeper have a "Low" TDIP classification. There is also a block group with a "Low" TDIP classification at the western tip of the county.

Figure B-13: Clarke County Census Block Groups Transit Dependent Index Percentage

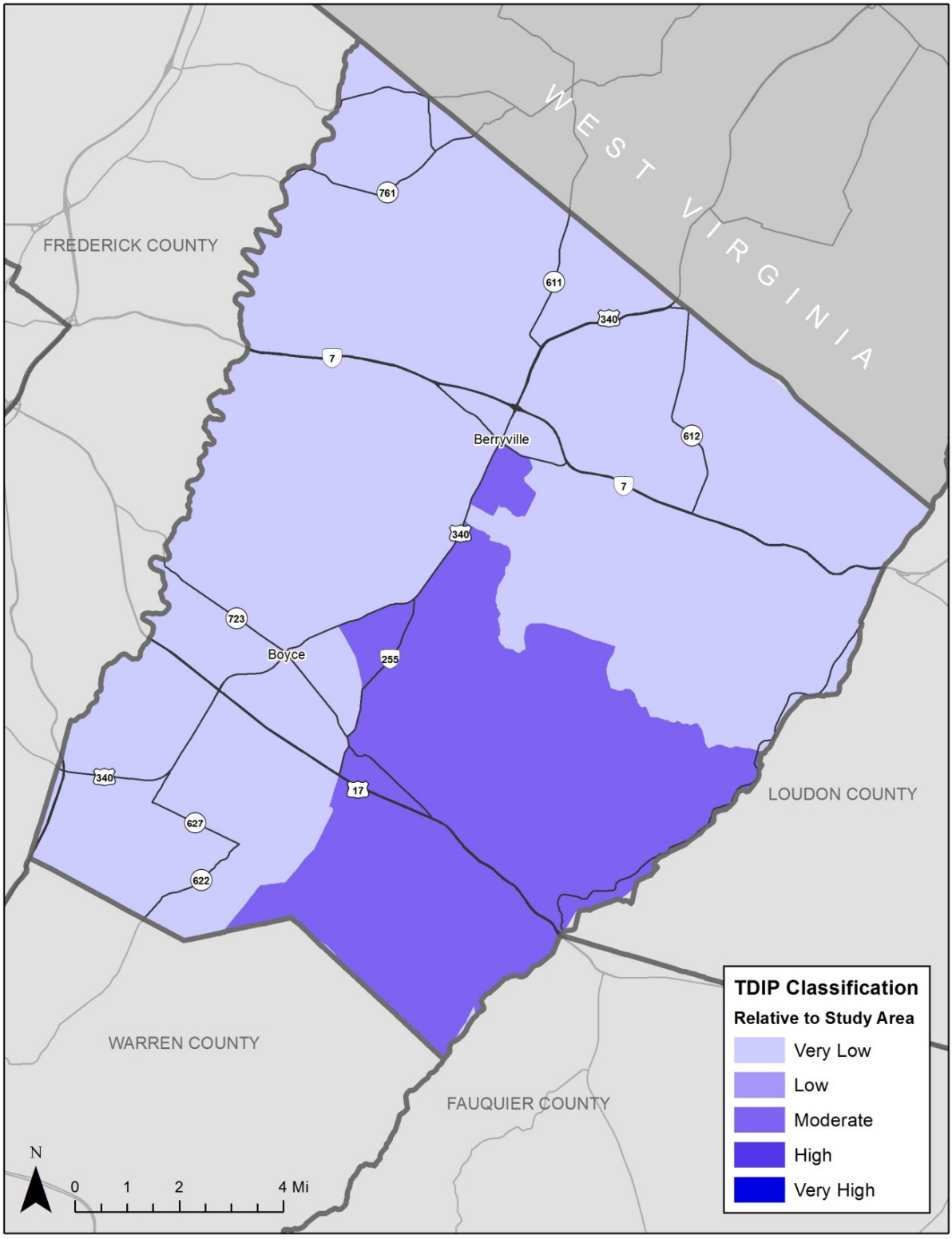
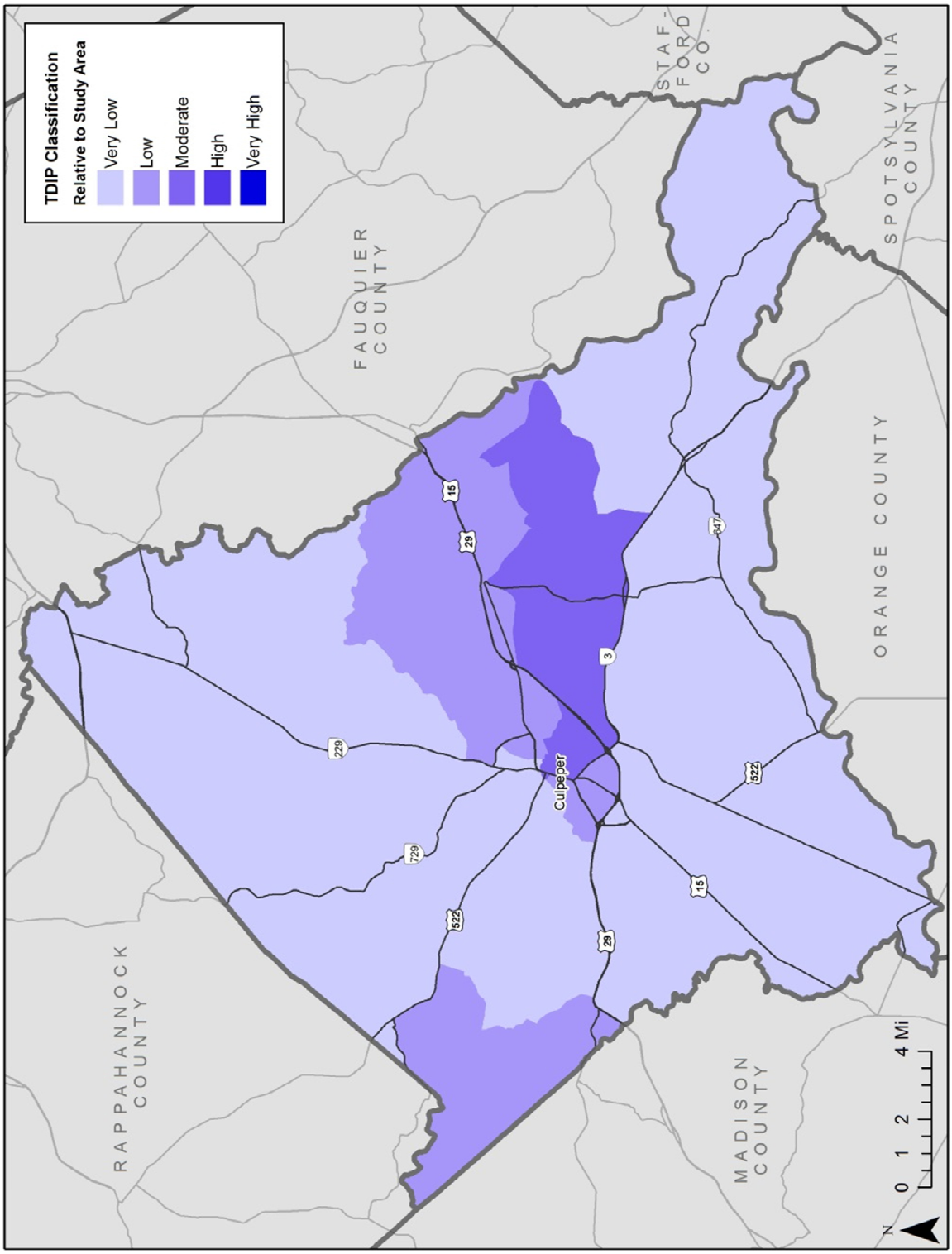


Figure B-14: Culpeper County Census Block Groups Transit Dependent Index Percentage



Fauquier County

Figure B-15 shoes that there are two block groups in and around Warrenton that are classified as "High" TDIP. Near Remington there is one block group with a "Moderate" TDIP classification. In Warrenton, and to the east and south the block groups have a "Low" TDIP classification. Additionally, the block group between Virginia Routes 635 and 647 has a "Low" TDIP classification.

Frederick County

The highest TDIP classification in Frederick County ("High") can be found in a block group just north of Winchester, west of US Route 11. There are three block groups in the county with a "Moderate" TDIP classification. One is adjacent to the west of the "High" TDIP block group. The others are on the eastern border with Clarke County — one along US Route 522 and the other along Virginia Route 761. There are several "Low" TDIP block groups along the Clarke County border and in the north and west along the West Virginia border, as well as along Virginia Route 600 south of US Route 50. Figure B-16 shows the TDIP classifications in Frederick County.

Orange County

Two block groups in Orange County have a "High" TDIP classification: One, in the east, is part of the private community, Lake of the Woods. The other is partly within the town of Orange and extends to the Madison County border between US Route 15 and Virginia Route 20. The three block groups south of Route 20 and along US Route 15 near Gordonsville have a "Moderate" TDIP classification. The block groups on the east side of US Route 522 have a "Low" TDIP classification, as do the remaining Lake of the Woods block groups. Figure B-17 shows the TDIP for all of Orange County.

Warren County

In Warren County there is one block group with a "High" TDIP classification, in Front Royal. Four block groups in Front Royal have a "Moderate" TDIP classification. Southeast of Front Royal, the two block groups on either side of US Route 522 also have a "Moderate" TDIP classification. Three block groups in Front Royal have a "Low" TDIP classification, as well three block groups in northern Warren County, along Interstate 66 west of US Route 340, along Virginia Route 658, and on the Fauquier County border north of Interstate 66. All other block groups are classified as "Very Low" TDIP. Figure B-18 provides the TDIP for Warren County.

Figure B-15: Fauquier County Census Block Groups Transit Dependent Index Percentage

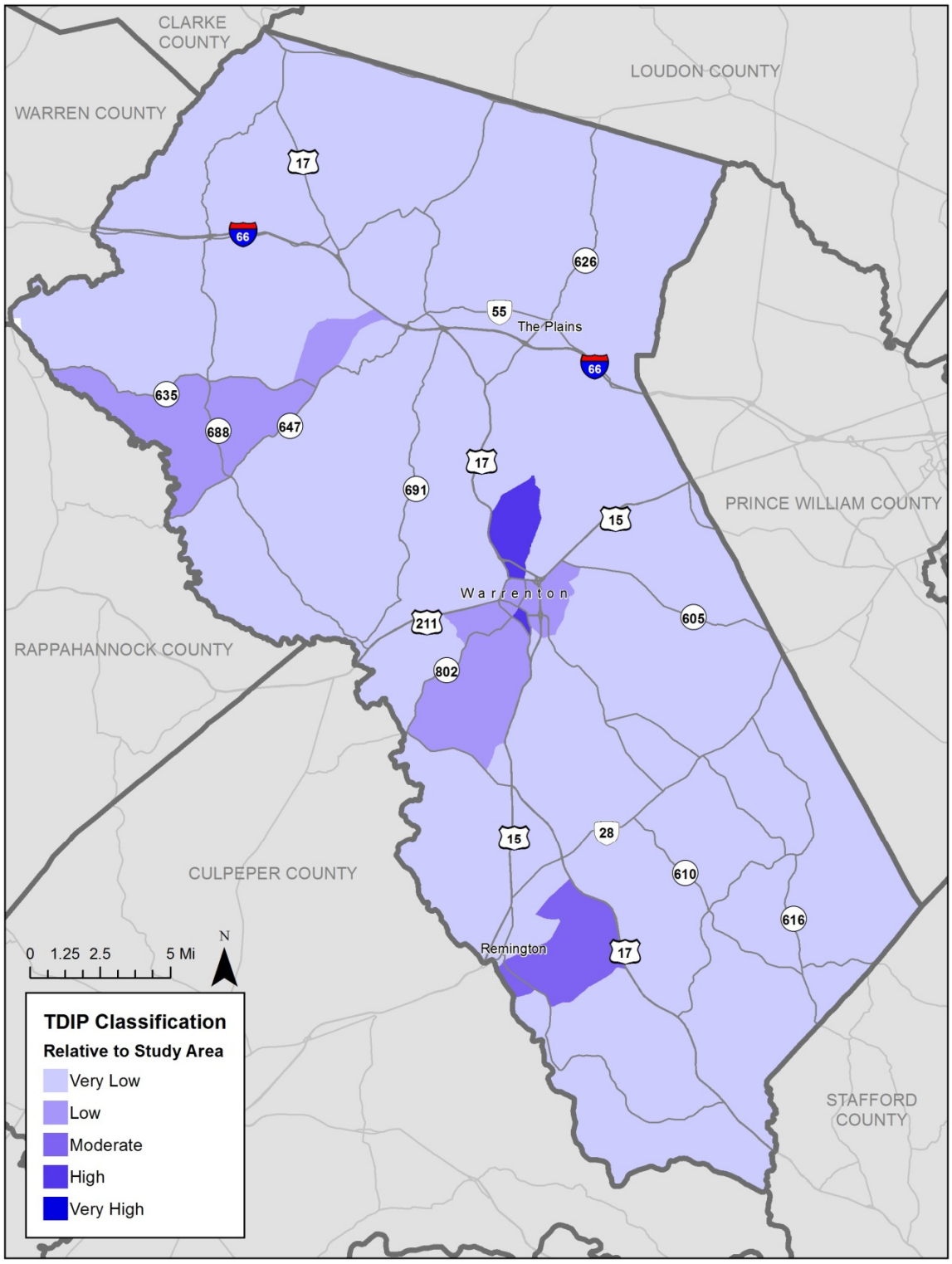


Figure B-16: Frederick County Census Block Groups Transit Dependent Index Percentage

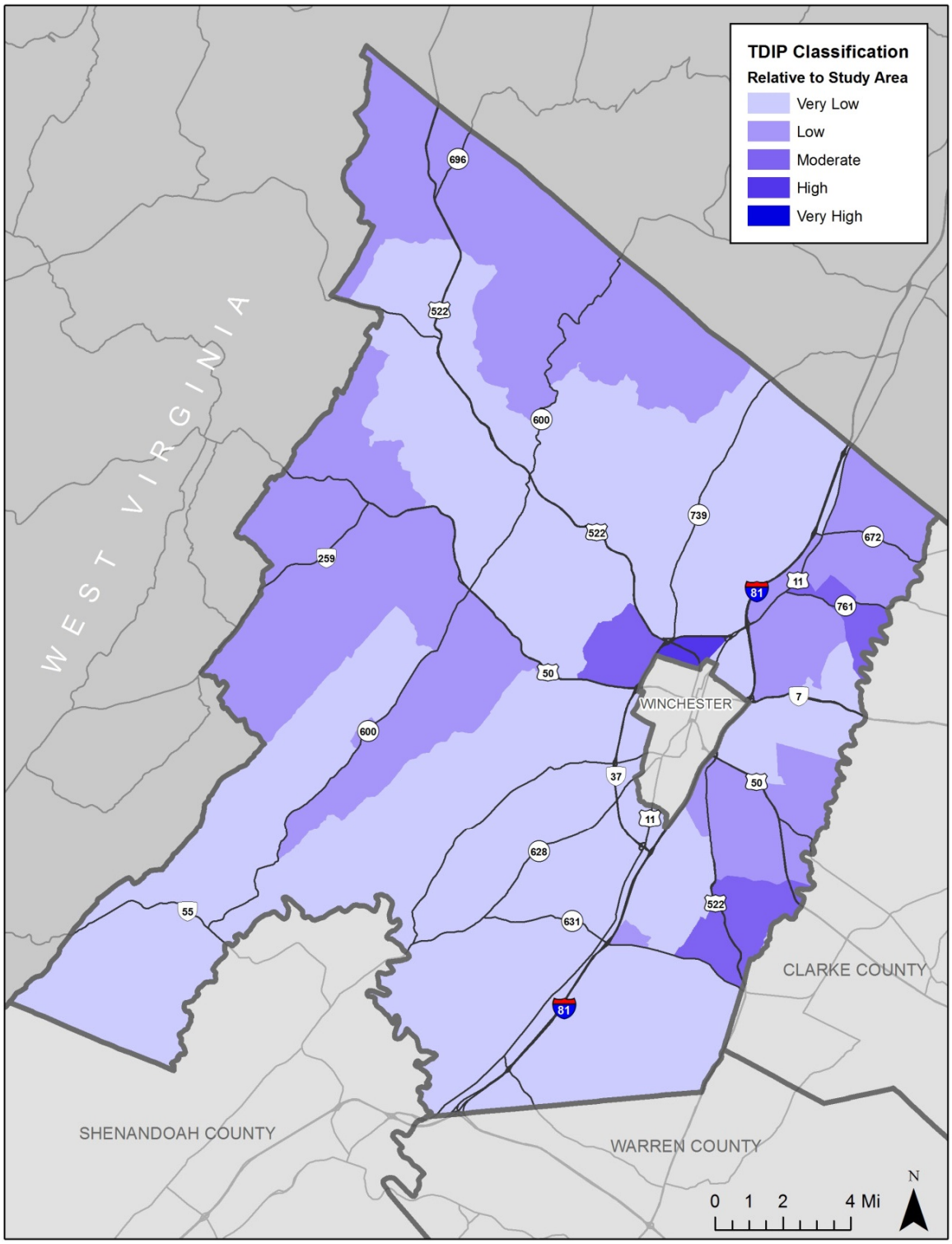


Figure B-17: Orange County Census Block Groups Transit Dependent Index Percentage

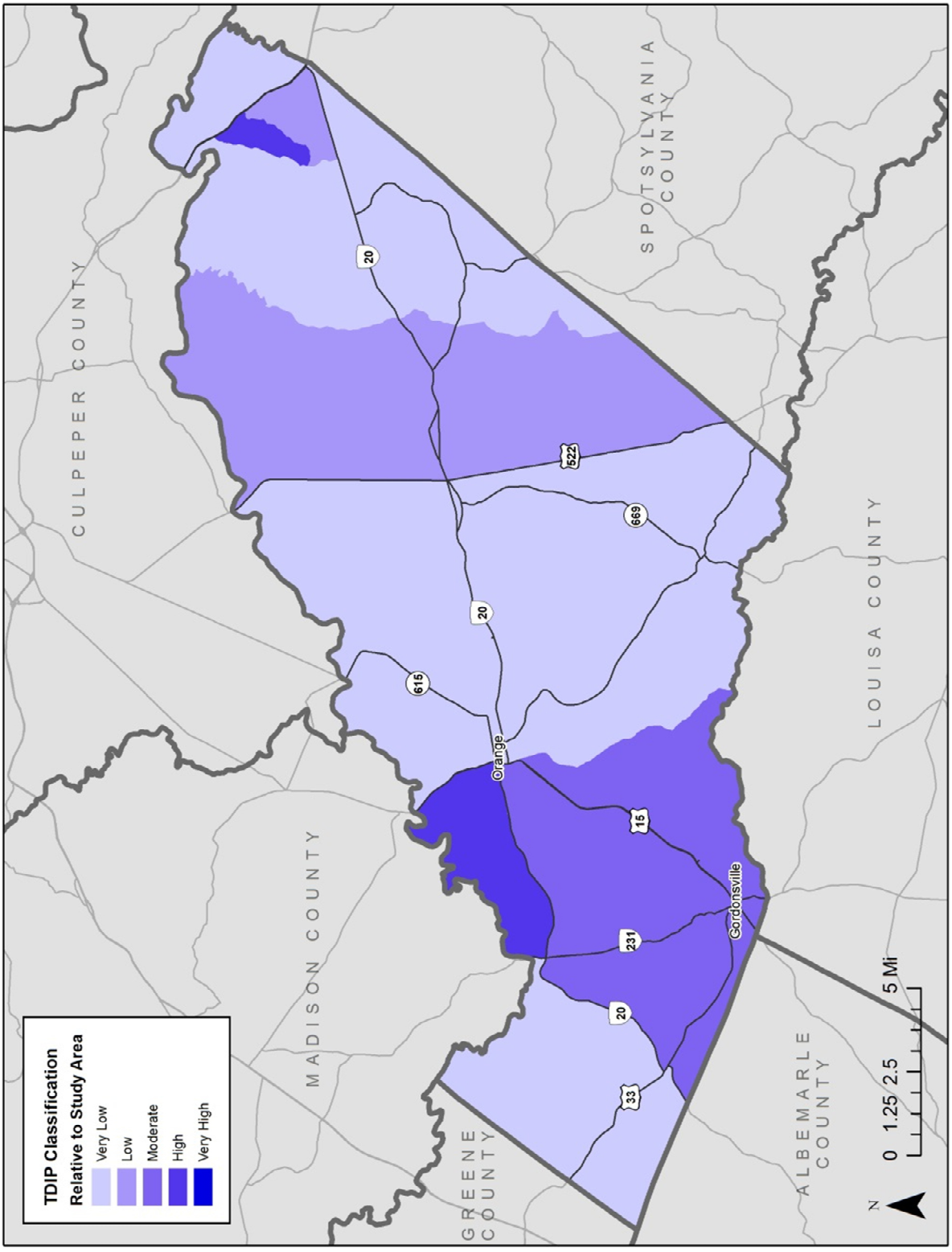
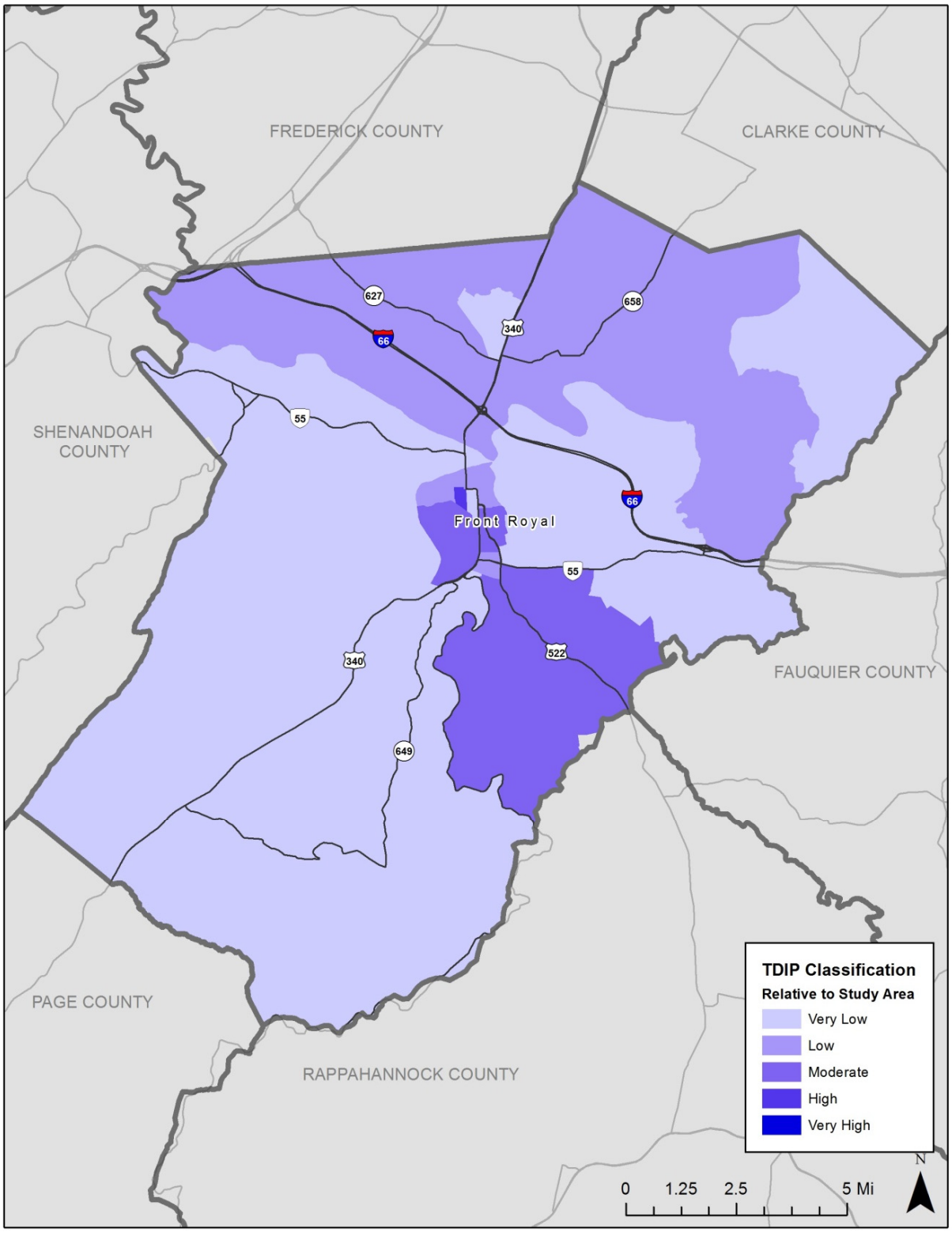


Figure B-18: Warren County Census Block Groups Transit Dependent Index Percentage



AUTOLESS HOUSEHOLDS

Households without access to at least one personal vehicle are more likely to depend on public transit than households with personal vehicles available. Displaying this segment of the population is important because many land uses in the region are at distances too far for non-motorized travel.

Clarke County

In Clarke County, the highest percentages of autoless households can be found in two block groups: One in Berryville, and one along US Route 340 and Virginia Route 255 and extending to the Warren County border. The remainder of Clarke County has fewer than the area average of autoless households. Figure B-19 illustrates the relative densities of autoless households in Clarke County.

Culpeper County

In Culpeper County there are two block groups with greater than twice the area average number of autoless households. One is entirely within the town of Culpeper, and the other extends from the town of Culpeper east, nearly to the Fauquier County border. One block group to the northeast of the town of Culpeper has between 1.67 and 2 times the area average number of autoless households. There are two block groups west of the town of Culpeper with between 1 and 1.33 times the area average of autoless households. Figure B-20 provides an illustration of the autoless households in Culpeper County.

Fauquier County

As seen in Figure B-21, Fauquier County has four Census block groups with greater than two times the area average number of autoless households. Three are located in and around Warrenton, on the north and east sides of town. The other is located between Remington and US Route 17. There are several block groups in and around Warrenton with relatively high proportions of autoless households. The block groups on the Loudon County border east of US Route 17 have between one and 1.33 times the area average percentage of autoless households.

Frederick County

Figure B-22 shows that the highest percentage of autoless households in Frederick County is to the north of Winchester, between US Routes 50 and 522, and to the northeast of Winchester, along Virginia Route 761. These three block groups have greater than two times the area

Figure B-19: Clarke County Census Block Groups Autoless Households

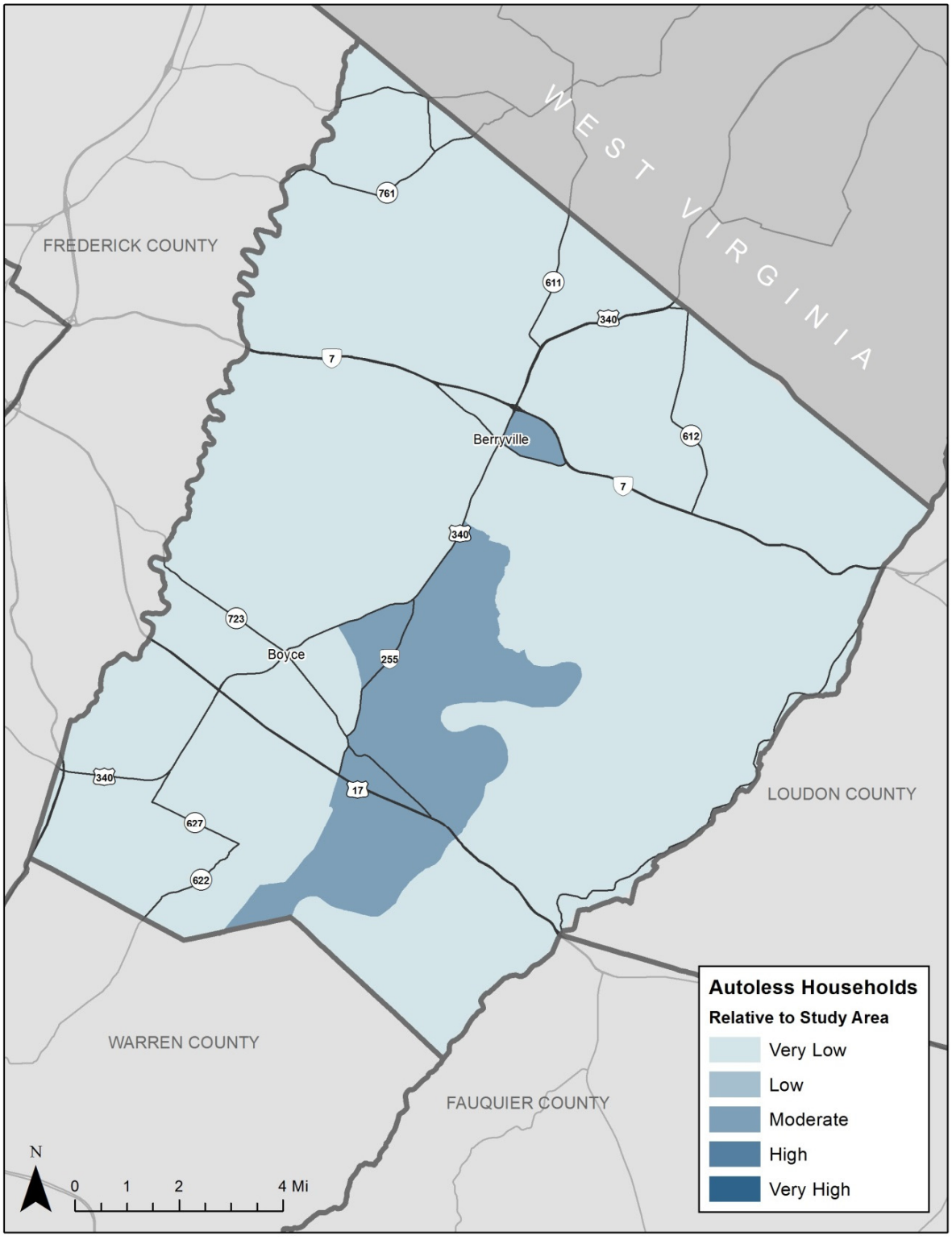


Figure B-20: Culpeper County Census Block Groups Autoless Households

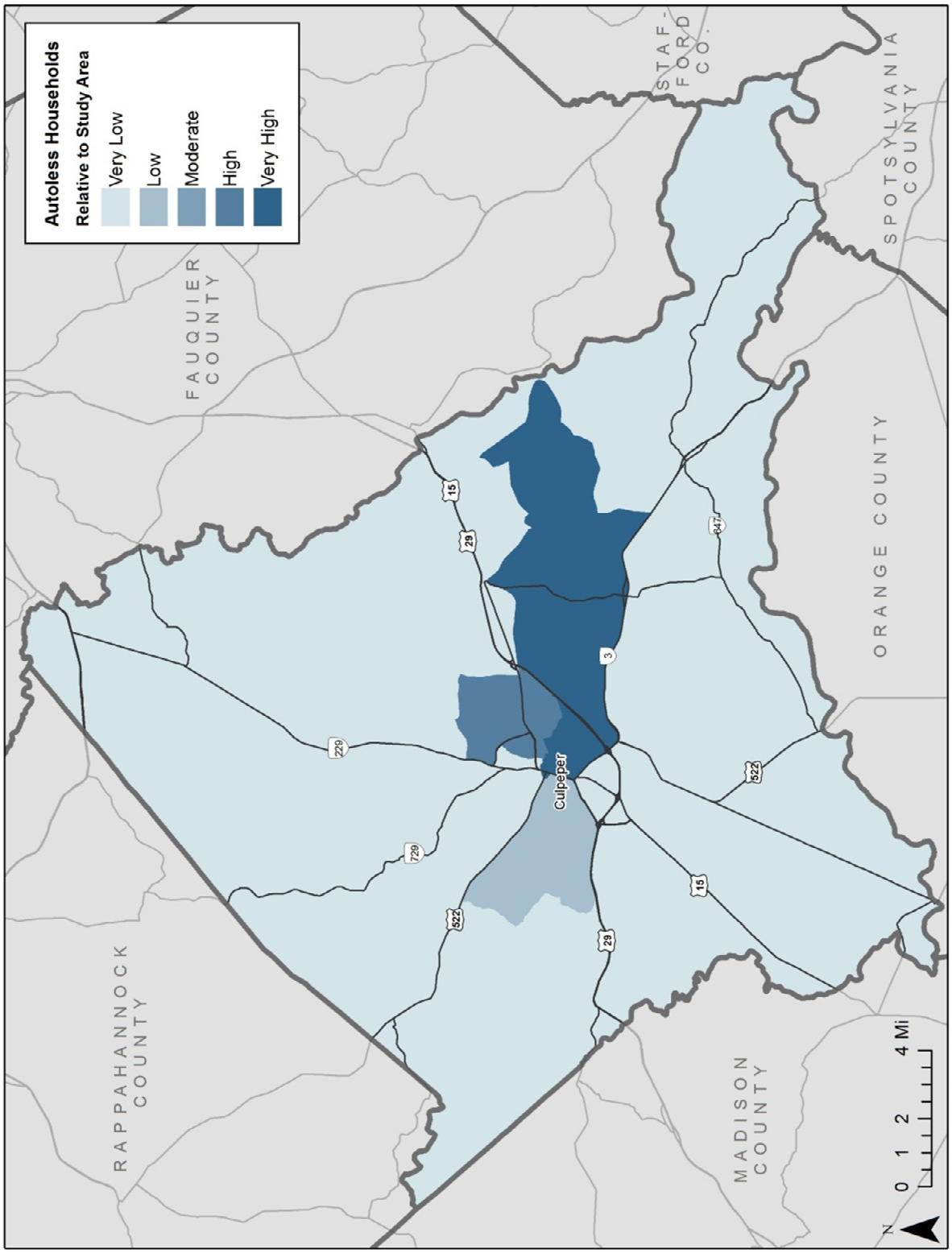


Figure B-21: Fauquier County Census Block Groups Autoless Households

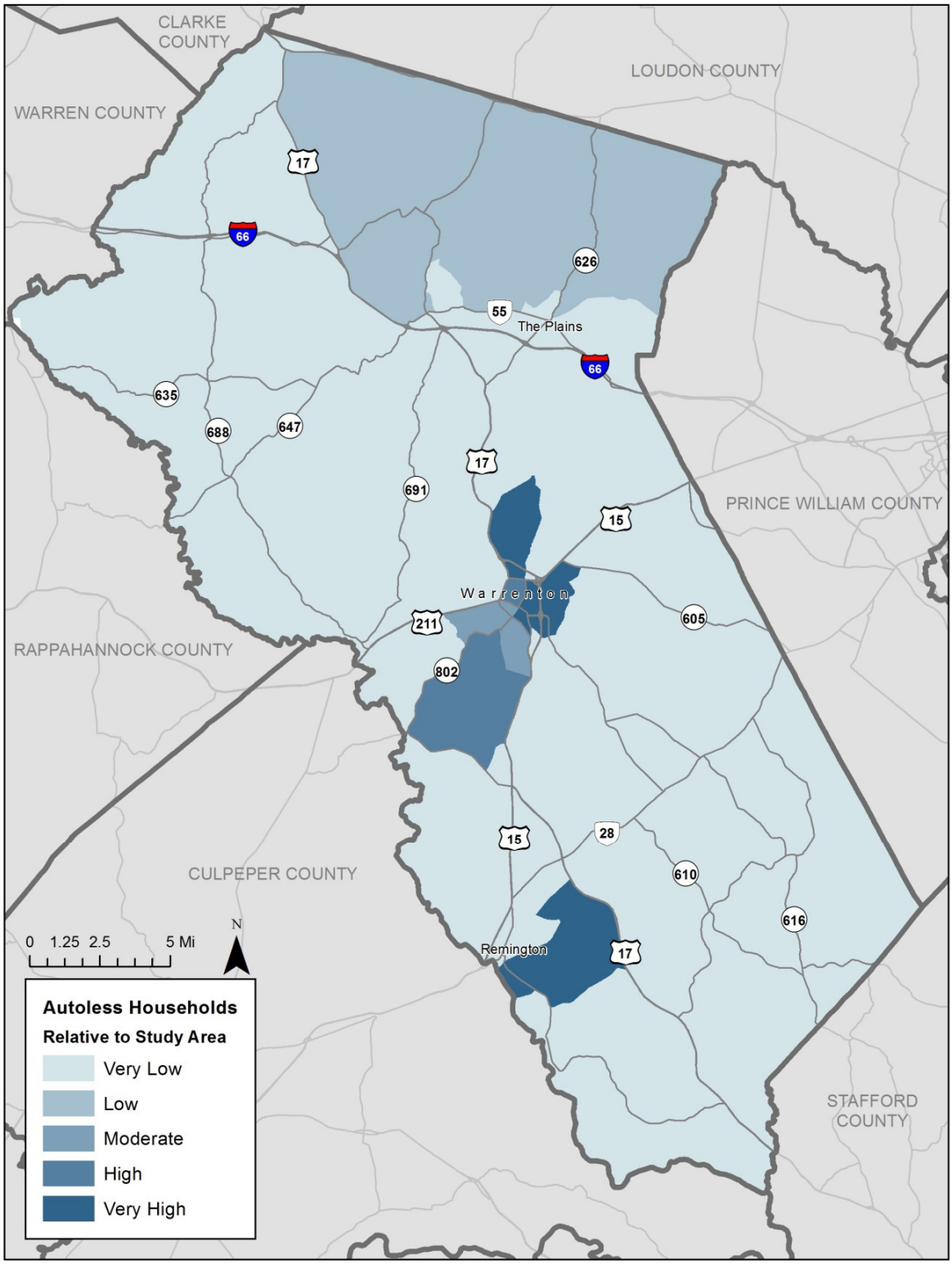
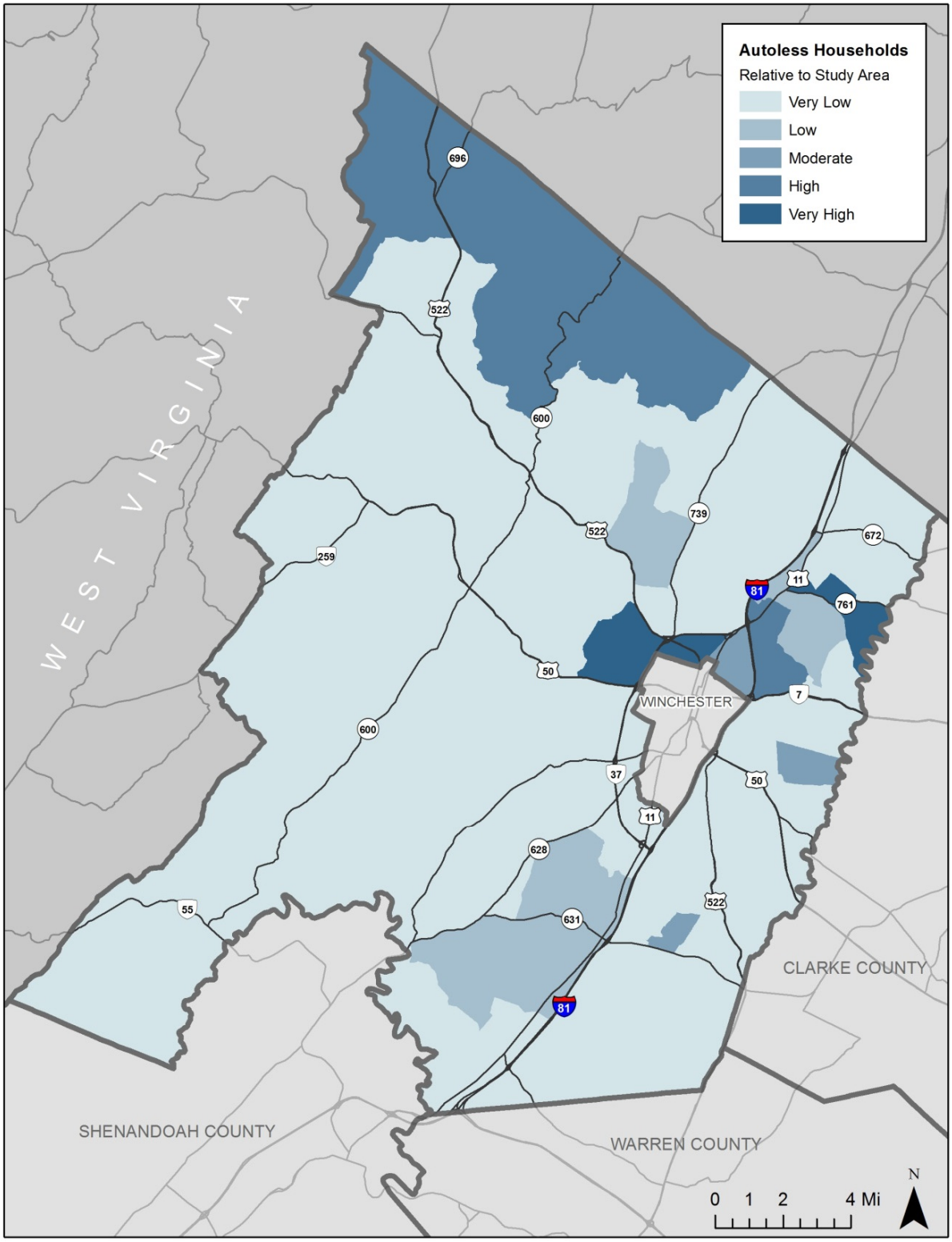


Figure B-22: Frederick County Census Block Groups Autoless Households



average percentage of autoless households. The northernmost block group in Frederick County also has a high percentage of households with no vehicles.

Orange County

There are three block groups in Orange County with greater than two times the area average percentage of autoless households. West of the town of Orange, these block groups extend from the Madison County border south to the Louisa County border east of Gordonsville. There is a block group in the east of the county with a high percentage of households with no vehicles. The remainder of the county has an average percentage or lower of autoless households. Figure B-23 shows the autoless household distribution in Orange County.

Warren County

In Warren County the highest percentages of autoless households are in four block groups in Front Royal. As seen in Figure B-24, the northwesternmost block group in Front Royal has a high percentage of autoless households, as does the block group on the northern side of Interstate 66 at the Fauquier County border. The block groups on either side of US Route 522 have higher than the area average percentage of autoless households. All other block groups are have a percentage of autoless households less than or equal to the area average.

Figure B-23: Orange County Census Block Groups Autoless Households

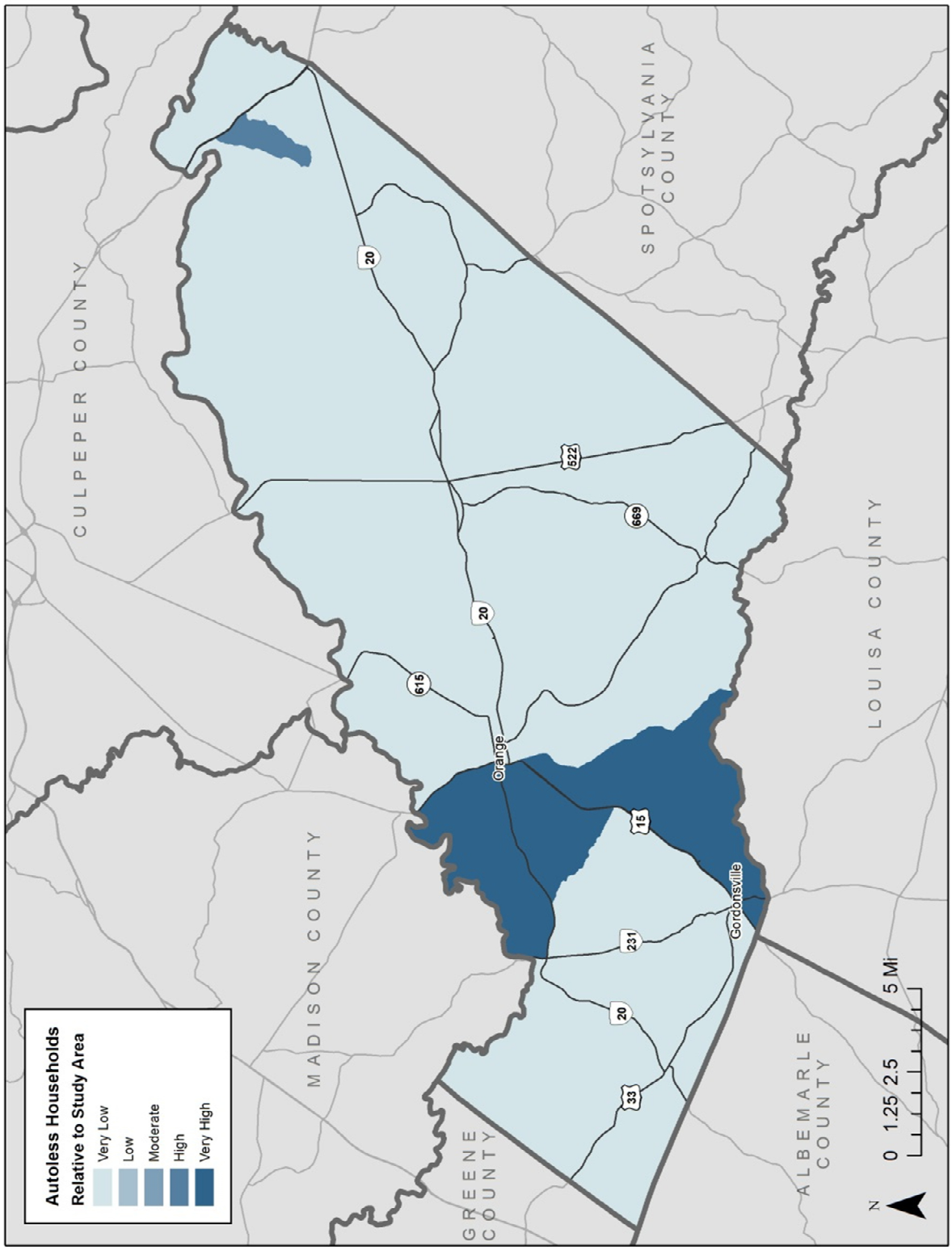
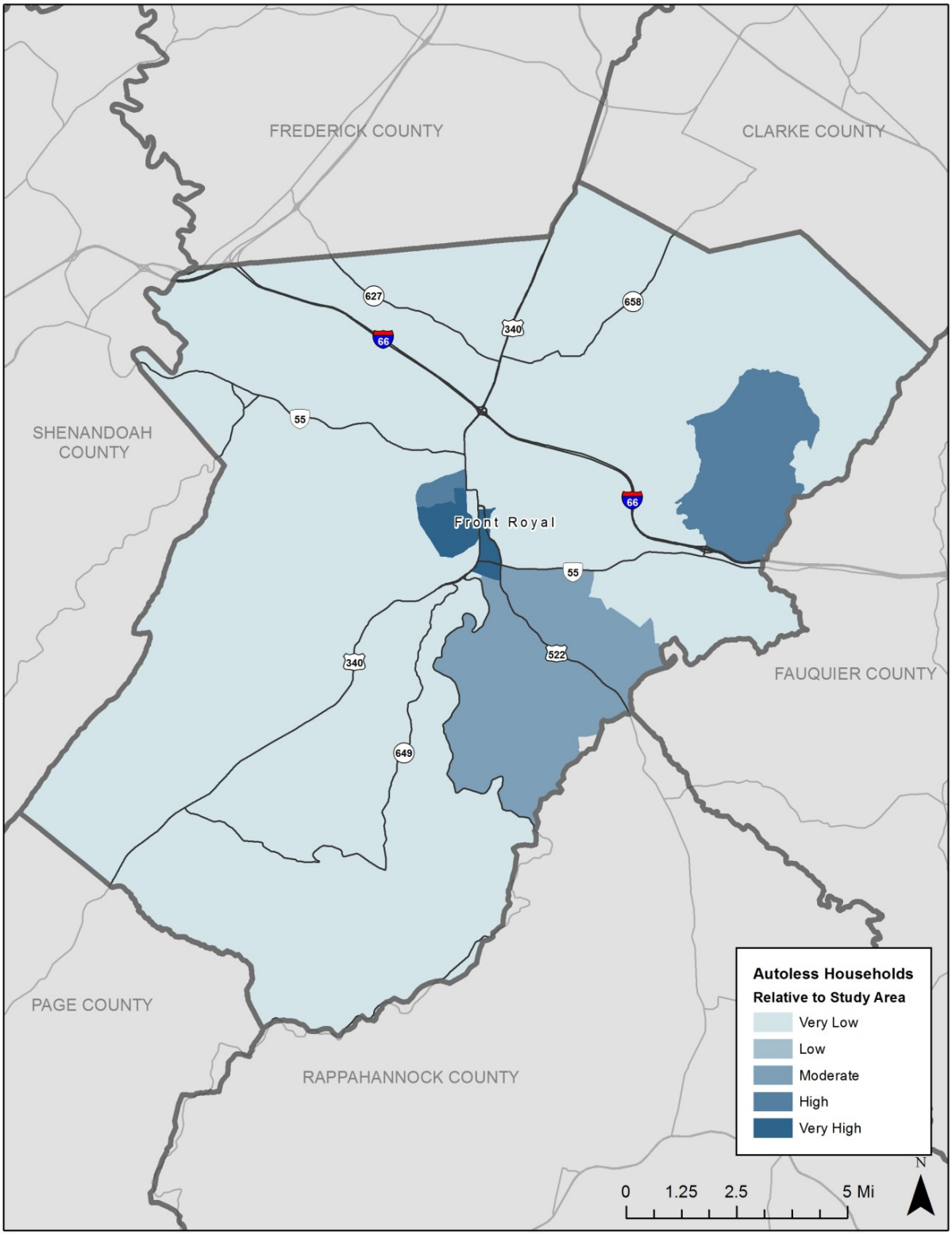


Figure B-24: Warren County Census Block Groups Autoless Households



SENIOR ADULT POPULATION

Individuals 65 years-old and older may scale back their use of personal vehicles as they age, leading to a greater reliance on public transportation compared to those in other age brackets.

Clarke County

Most of Clarke County has greater than the area average senior adult population. The block group that makes up the south side of Berryville has the highest percentage in the county. The block group along US Route 340 and Virginia Route 255 has approximately 1.5 times the area average percentage of senior adults. This block group also borders Warren County. Excepting this block group, all other block groups that border Warren, Fauquier, and Loudon Counties, as well the block group that comprises the east side of Berryville, have a percentage of senior adults that is equal to or less than the area average. All remaining block groups have greater than the area average percentage of senior adults. Figure B-25 depicts the senior adult population in Clarke County.

Culpeper County

As seen in Figure B-26, a block group on the west side of the town of Culpeper has the highest percentage of senior adults in Culpeper County. The westernmost block group in the county also has a relatively high number of seniors (between 1.33 and 1.67 times the area average). The adjacent block group between US Route 522 and US Route 29 has a higher percentage of seniors than the area average, as does the block group between Virginia Route 229 and the Fauquier County border and the block group between Virginia Route 3 and the Orange County border.

Fauquier County

There is one block group in Fauquier County with greater than twice the area average percentage of senior adults. It extends from Interstate 66 southwest to the Rappahannock County border between Virginia Routes 635 and 647. The block group with the next highest percentage of senior adults is north of Warrenton to the east of US Route 17. On the south side of Warrenton there is a block group with moderately higher than average senior adults percentage. The block group north of the junction of Virginia Routes 688 and 691 and the block group between US Route 211 and Virginia Route 802 also have a moderately higher proportion of senior adults than the area average. There are two other block groups with moderately higher than average percentages of senior adults: One is south of Remington between US Route 17 and the Culpeper County border. The other is along Virginia Route 626 north of The Plains. The northwestern corner of the county has slightly higher than average percentages of senior

Figure B-25: Clarke County Census Block Groups Senior Adult Population

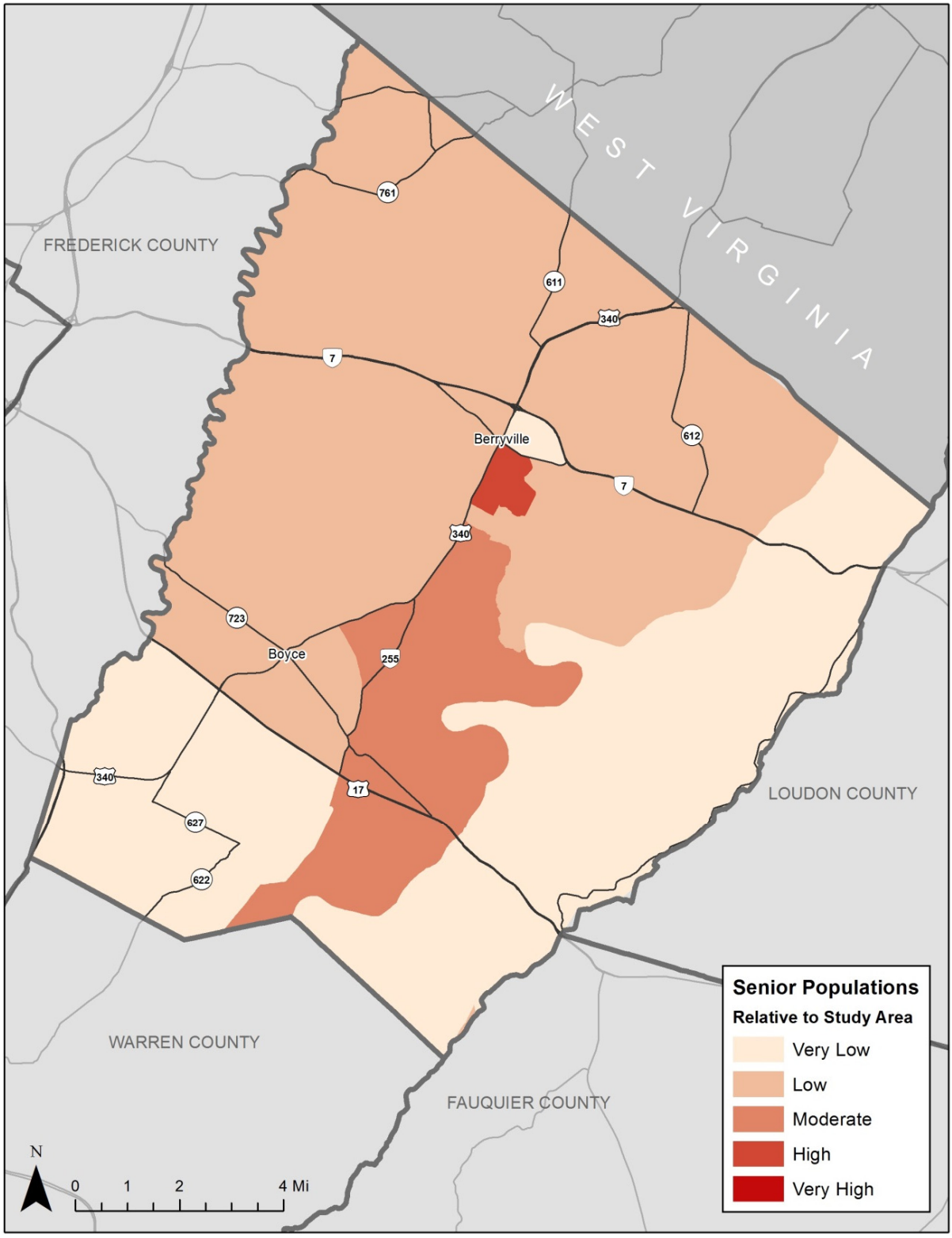
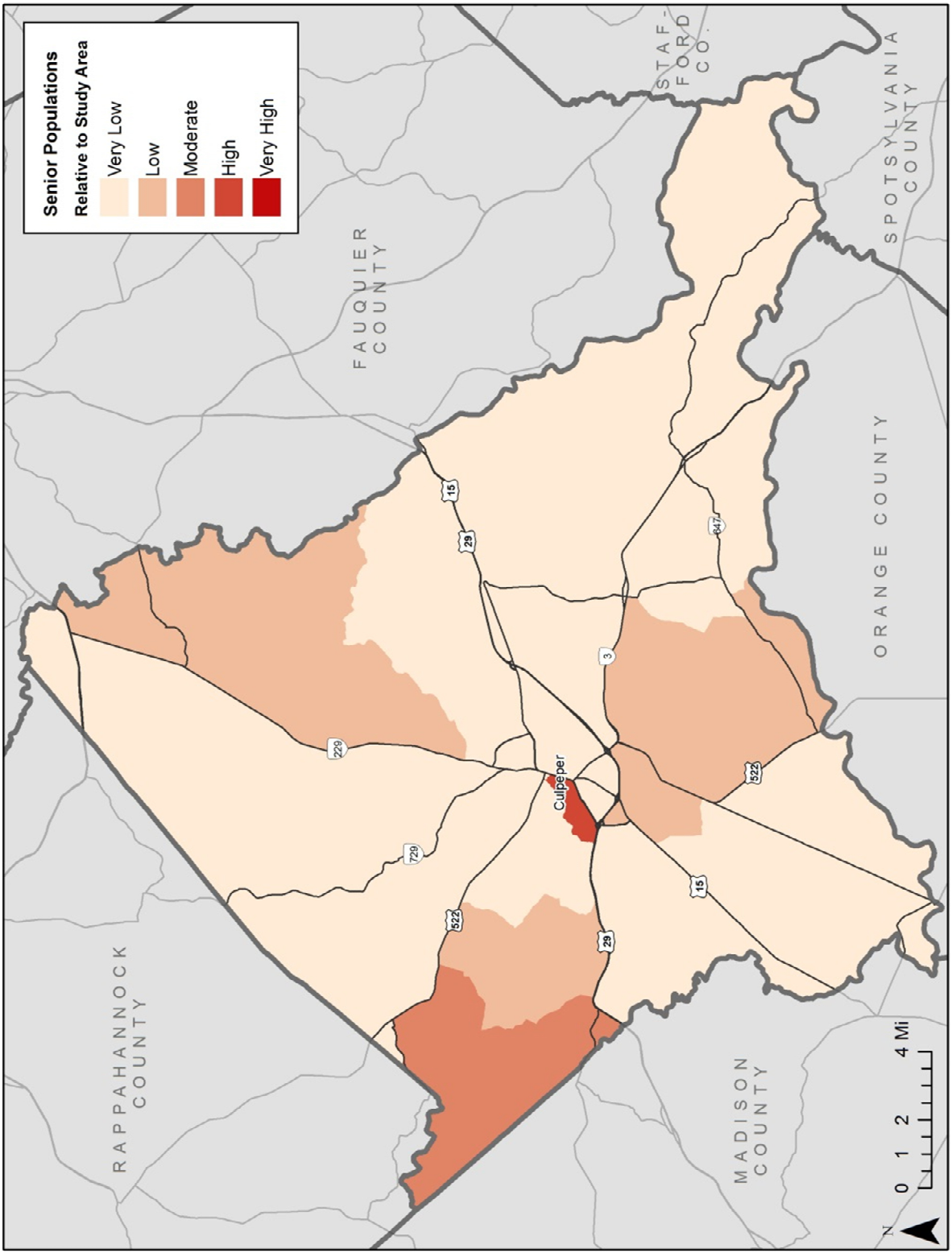


Figure B-26: Culpeper County Census Block Groups Senior Adult Population



adults, as do the block groups along the Prince William County border north of US Route 15 and on either side of Virginia Route 28. The block group east of US Route 17 at the Stafford County border and the block groups between US Routes 211, 15, and 17 also have slightly higher than average percentages of senior adults. The remaining block groups have percentages of senior adults that are equal to or less than the area average. Figure B-27 provides the distribution of the senior adult population in Fauquier County.

Frederick County

As seen in Figure B-28, there is one Census block group in Frederick County with greater than two times the area average percentage of senior adults, and it extends from the western border with West Virginia to the junction of US Route 50 and Virginia Route 600. The next highest percentages of senior adults are found in two block groups near Winchester. One is adjacent to the city and south of Virginia Route 37. The other is to the northeast of Winchester around the junction of US Route 11 and Virginia Route 761. Moderately higher than average senior adult percentages are found between Interstate 81 and Virginia Route 739, in the block group near the junction of US Route 522 and Virginia Route 37, at the Clarke County border between US Route 50 and Virginia Route 7, and in the block group at the Warren County border.

Orange County

Two block groups in Orange County have two times or greater the area average percentage of senior adults, and they are both part of the private community Lake of the Woods, in the east of the county. Figure B-29 shows that the other Lake of the Woods block group also has a much higher than average percentage of seniors, as does the block group on west of Gordonsville between US Route 15 and Virginia Route 20. The block group west of the town of Orange has moderately higher than average percentage of seniors, as does the block group west of US Route 522 south of Virginia Route 20. The block groups around the town of Orange and along US Route 15 and the east side of US Route 522 all have slightly higher than average percentages of senior adults.

Warren County

Two block groups in Warren County have percentages of senior adults two times or more than the area average. One is located in northwest Front Royal and the other in southwestern Front Royal. The block groups in the north, except for one northeast of the junction of US Route 340 and Virginia Route 627, have between 33 and 67 percent higher percentages of senior adults. The entire southern portion of the county and parts of Front Royal have slightly higher than average percentages of senior adults. A map of senior adults in Warren County is shown in Figure B-30.

Figure B-27: Fauquier County Census Block Groups Senior Adult Population

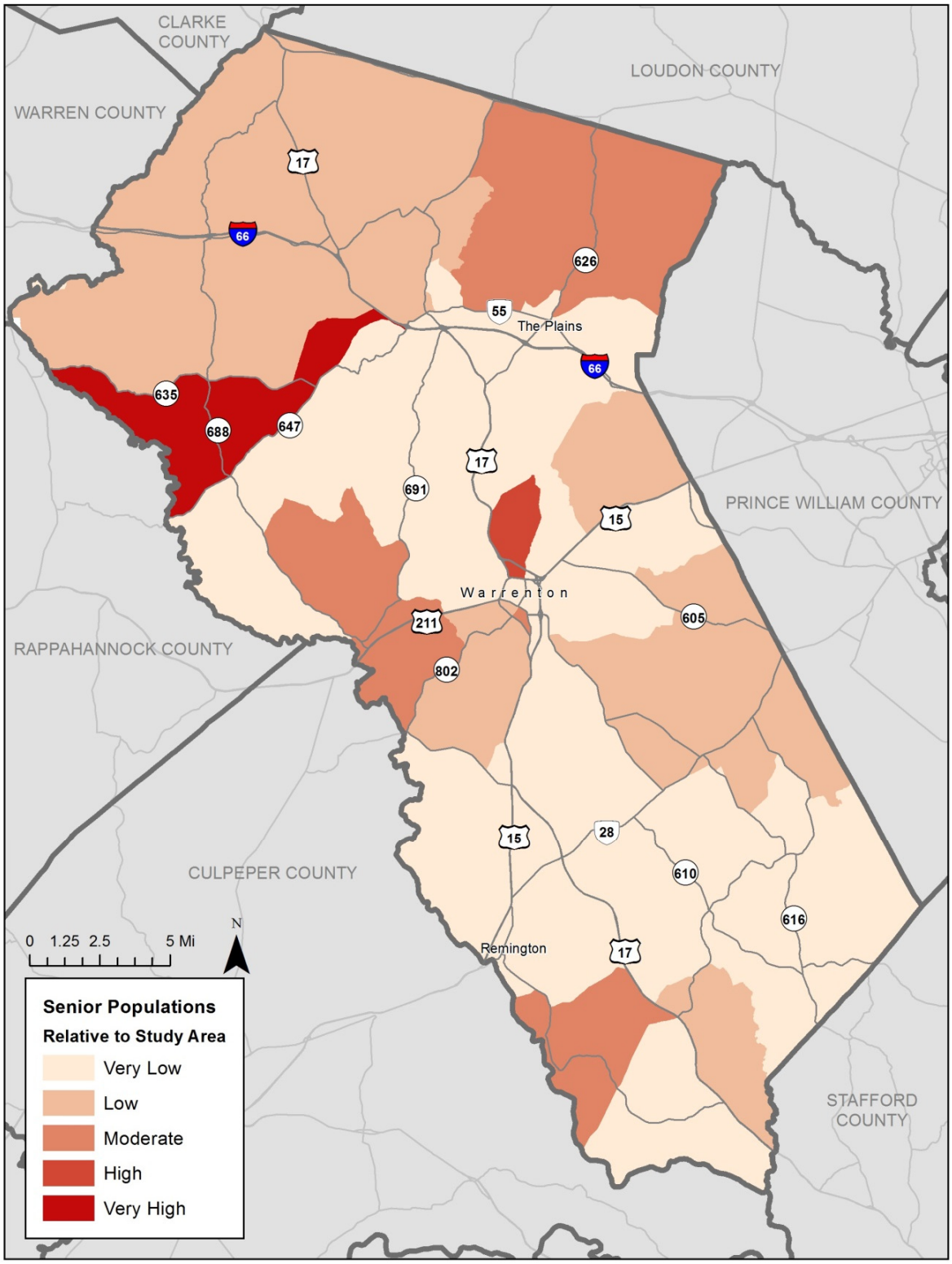


Figure B-28: Frederick County Census Block Groups Senior Adult Population

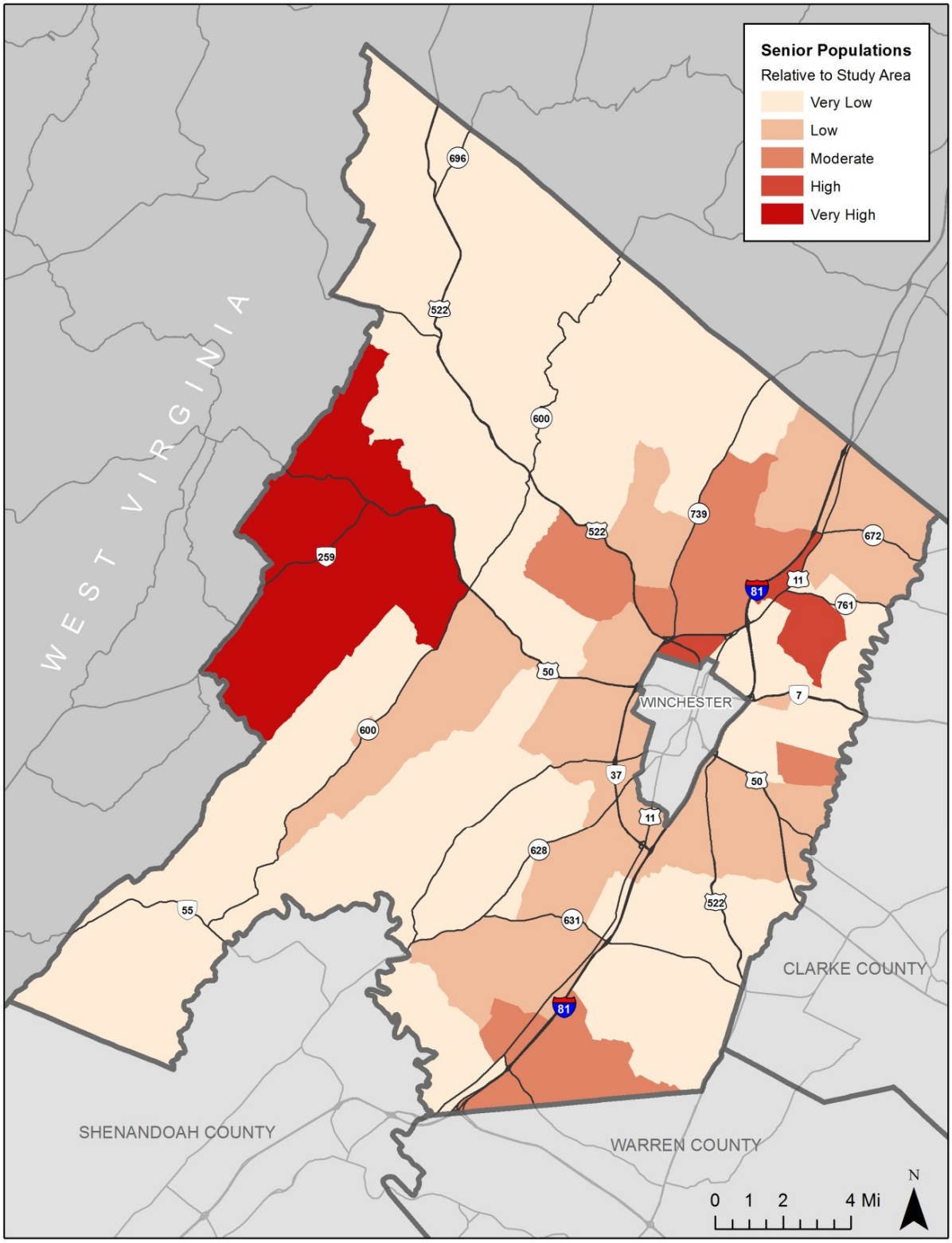


Figure B-29: Orange County Census Block Groups Senior Adult Population

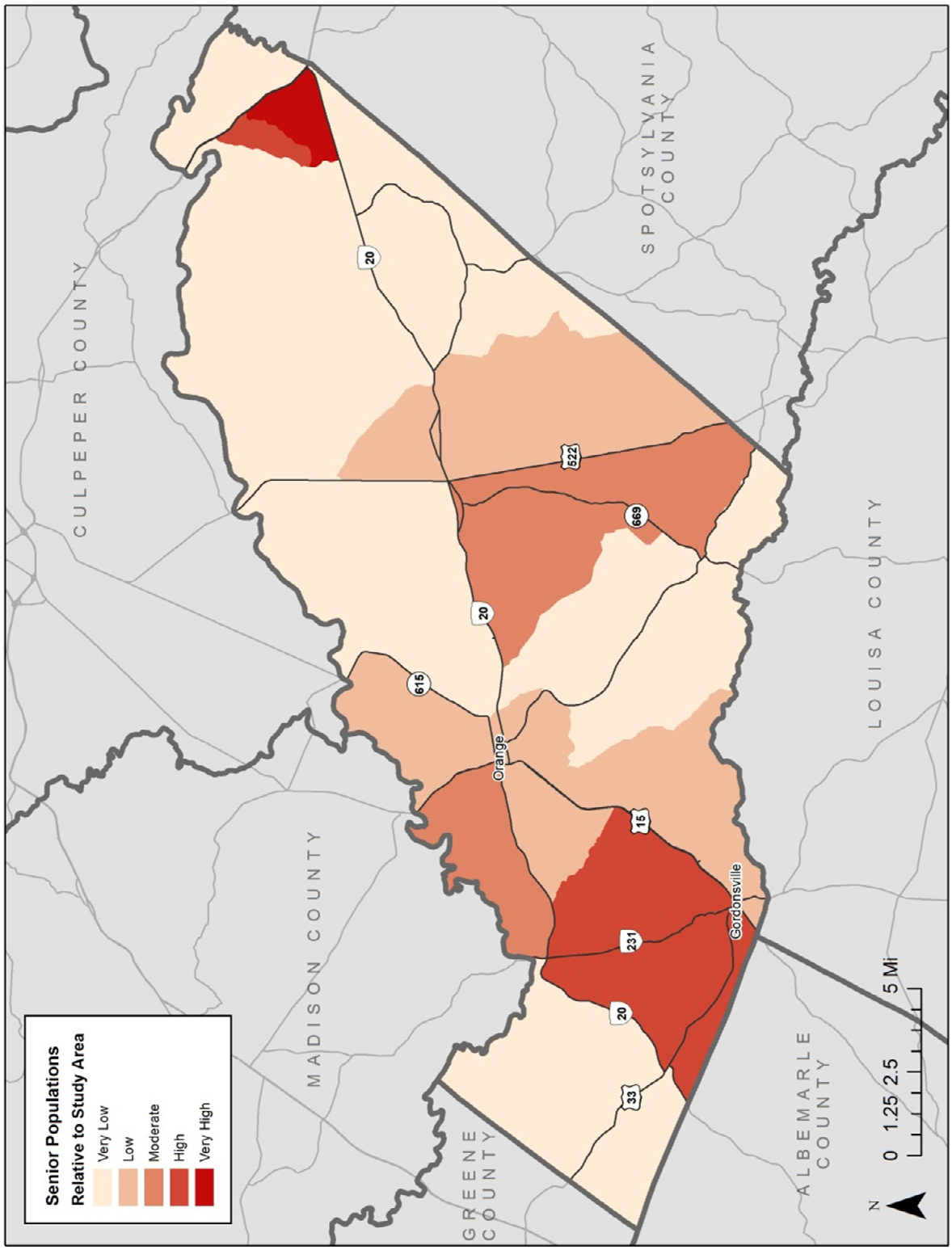
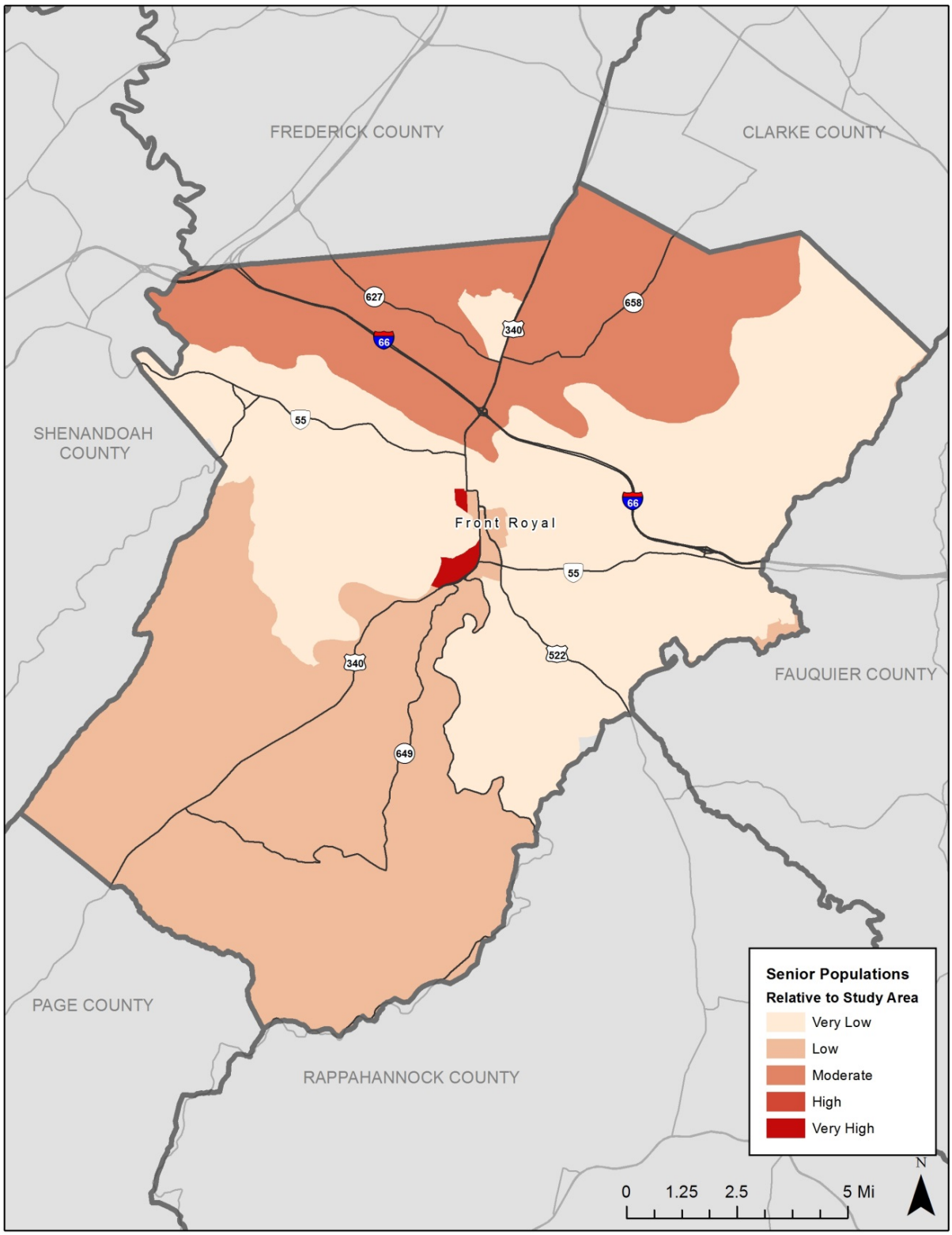


Figure B-30: Warren County Census Block Groups Senior Adult Population



YOUTH POPULATION

Youths and teenagers, aged ten to seventeen, who cannot drive or are just starting to drive but do not have an automobile available, appreciate the continued mobility from public transportation.

Clarke County

In Clarke County there are seven Census block groups that have greater than the area average percentage youth population. Five block groups have between 33 and 67 percent greater proportions of the population aged ten to seventeen. These five block groups extend from the southern tip of the county north to the West Virginia border. Two block groups have a percentage of youth between 1 and 1.33 times the area average. The remaining four Census block groups have less than or equal the area average percentage of population aged ten to seventeen. Clarke County is shown in Figure B-31.

Culpeper County

As seen in Figure B-32, ten of the twenty block groups in Culpeper County have a greater percentage of youth population than the area average. The block group in Culpeper County with the highest percentage of population aged ten to seventeen is on the Rappahannock County border west of Virginia Route 229. The next highest percentages are found in block groups also on the Rappahannock County border, in the far western and northern tips of the county, respectively. Several other block groups have a proportion of youth population higher than the area average, including block groups north and south of the town of Culpeper, along US Routes 29 and 15 at the Fauquier County border, and in the southeastern tip of the county around the junction of Virginia Routes 3 and 647. The other ten block groups in the county have percentages of the population aged ten to seventeen that are less than or equal to the area average.

Fauquier County

The southernmost block group in Fauquier County has the highest proportion of population aged ten to seventeen years, with between 1.67 and 2 times the area average. The block groups north of Remington, north of Warrenton, and south of US Route 15 at the Prince William County border are the next highest, with between 1.33 and 1.67 times the area average. Block groups in the northwest, northeast, in and to the south of Warrenton, and in and east of Remington have proportions of the population aged ten to seventeen that are less than or equal to the area average. The remaining block groups have greater than the area average but not more than 33 percent greater. Fauquier County is shown in Figure B-33.

Figure B-31: Clarke County Census Block Groups Youth Population

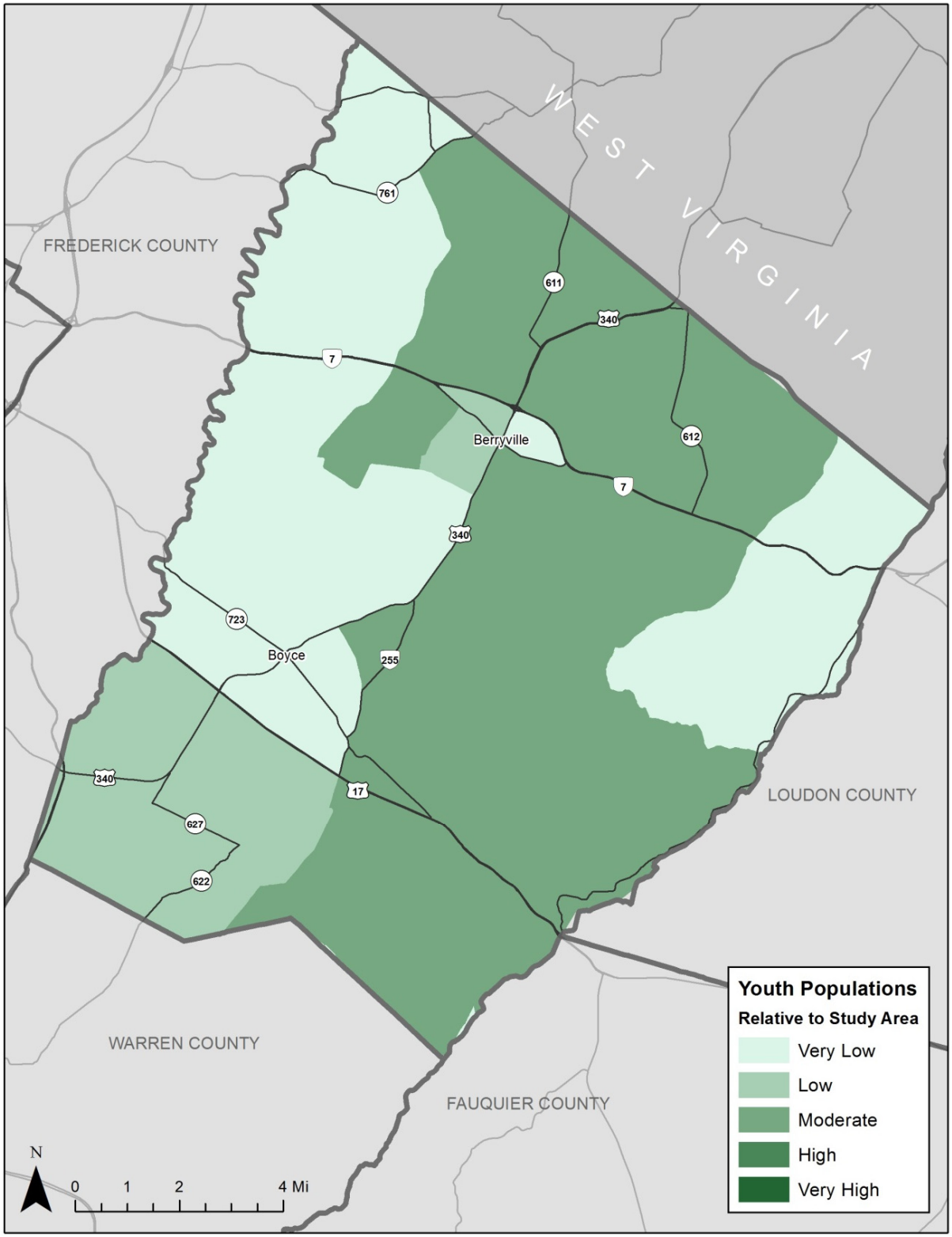


Figure B-32: Culpeper County Census Block Groups Youth Population

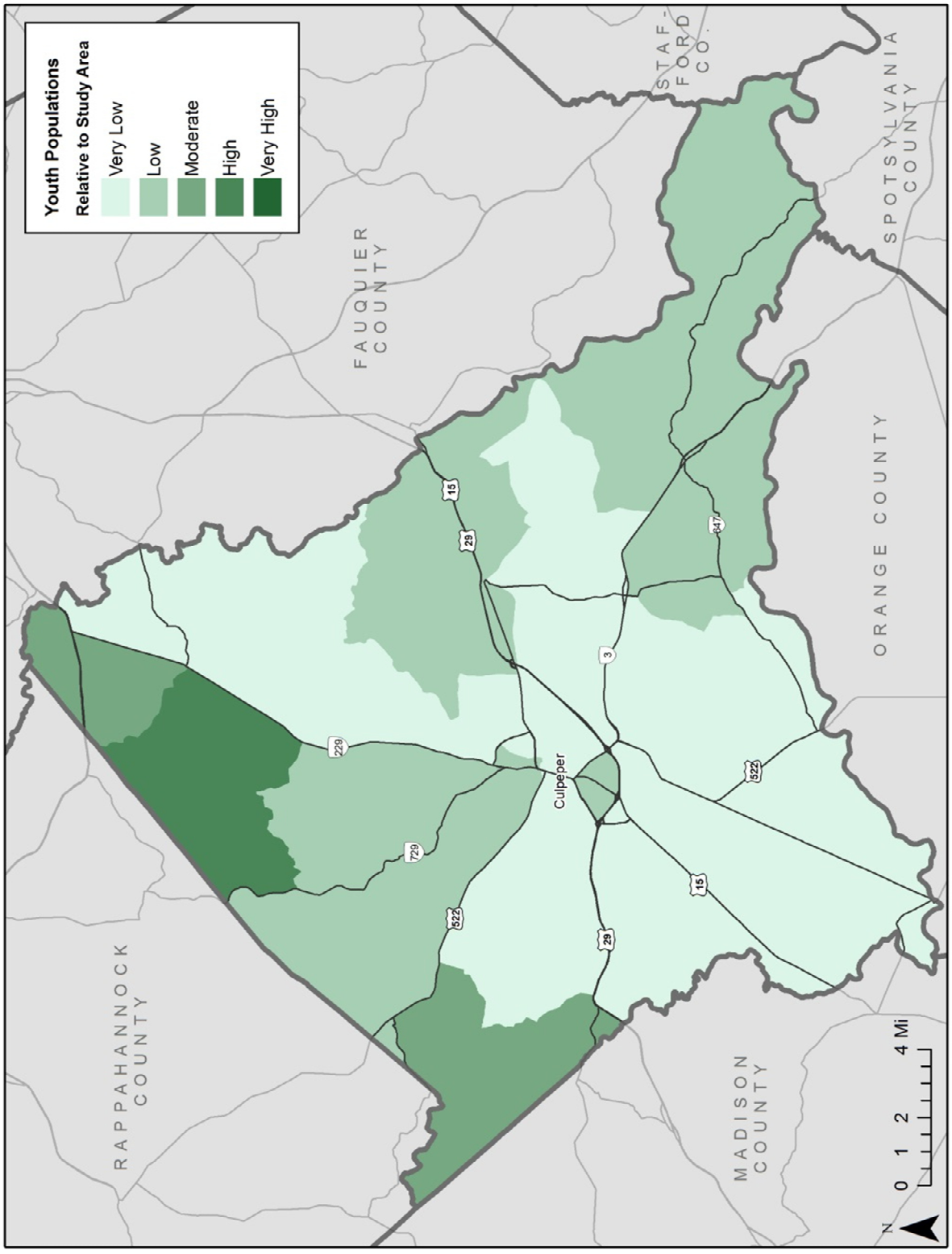
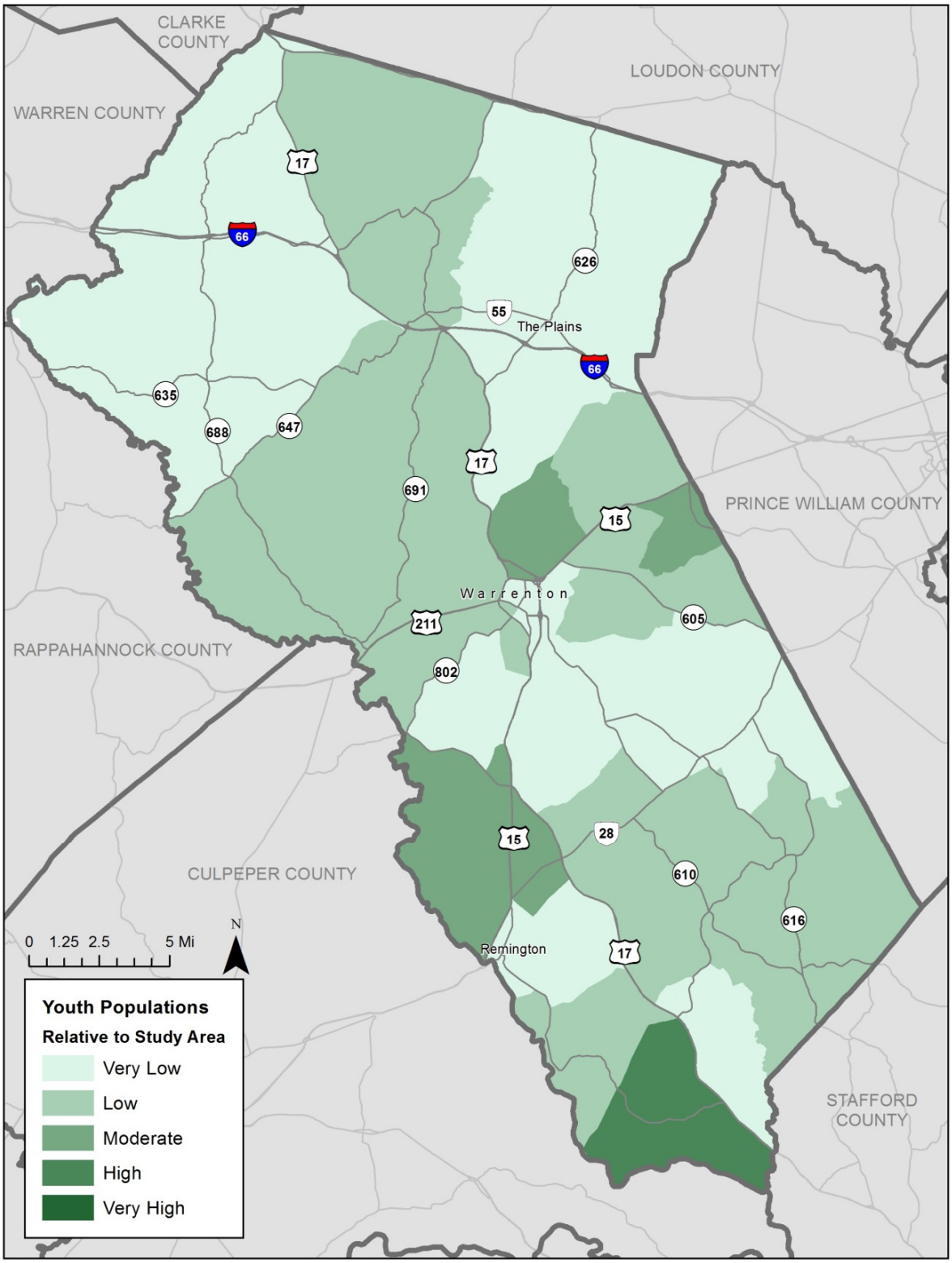


Figure B-33: Fauquier County Census Block Groups Youth Population



Frederick County

Most striking about the proportion of youth population in Frederick County block groups is that the block groups surrounding Winchester, excepting those between US Route 50 and Virginia Route 7, have less than or equal the area average percentage of population aged ten to seventeen years. The block groups along the northern border with West Virginia all have greater than the area average. The block group south of the junction of US Route 50 and Virginia Route 600 has the highest proportion of population aged ten to seventeen years. Frederick County is shown in Figure B-34.

Orange County

In Orange County, the Census block group with the highest proportion of population aged ten to seventeen years is bounded by the Culpeper County border, US Route 522, and Virginia Routes 20 and 615. Some block groups in the east and south of the county also have higher than average percentages of population aged ten to seventeen. Block groups in western Orange County, including in the towns of Orange and Gordonsville, have less than or equal the area average proportion of population aged ten to seventeen years. Orange County is shown in Figure B-35.

Warren County

The Census block group with the highest proportion of population aged ten to seventeen years is in Front Royal, east of US Route 340. North of Front Royal, also on the east side of US Route 340, there is another block group with a relatively high proportion of youth population. South of Front Royal, south of US 522, there is also a high proportion of youth. In the southern half of Warren County, the block groups all have greater than the average proportion of population aged ten to seventeen years. Warren County is shown in Figure B-36.

Figure B-34: Frederick County Census Block Groups Youth Population

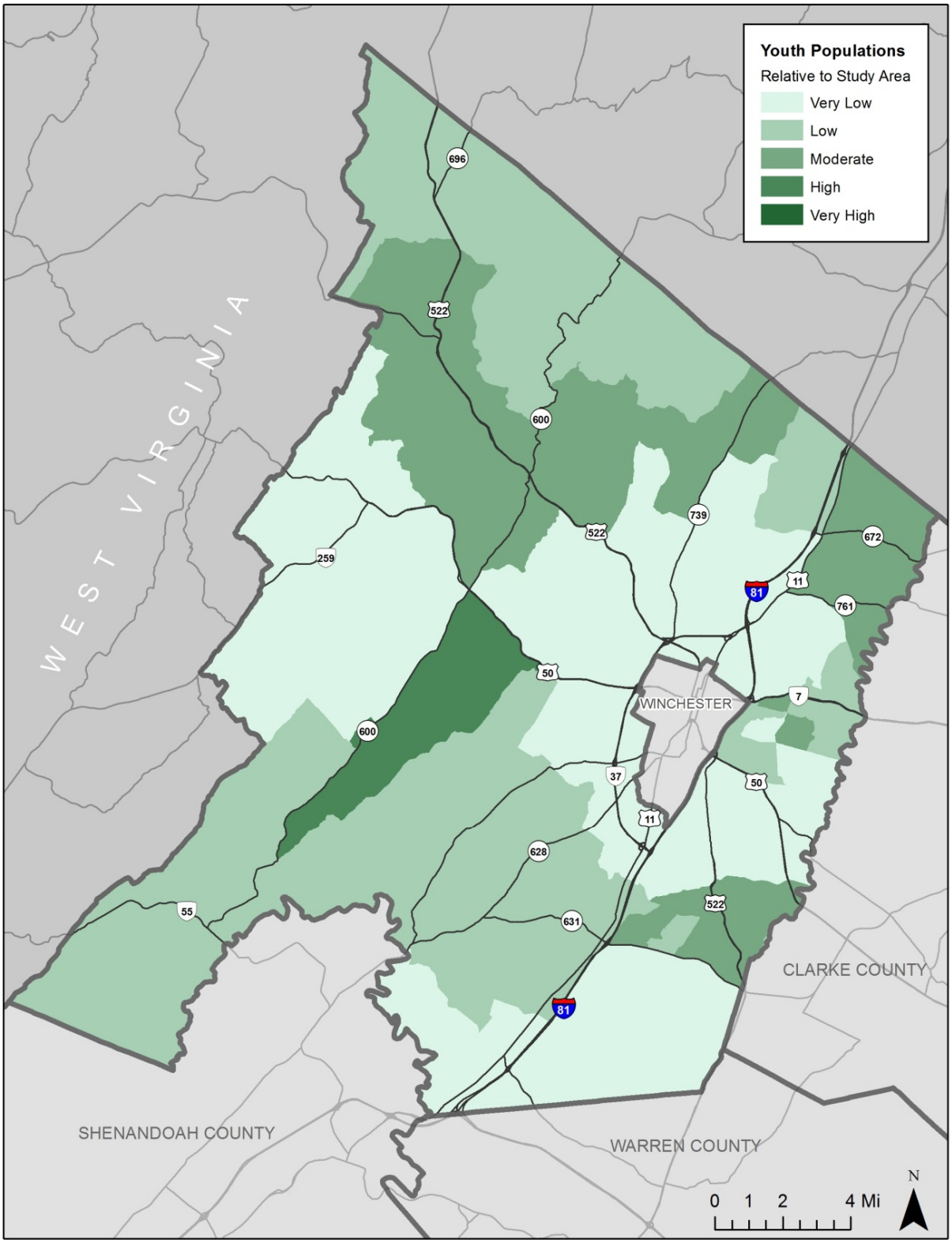


Figure B-35: Orange County Census Block Groups Youth Population

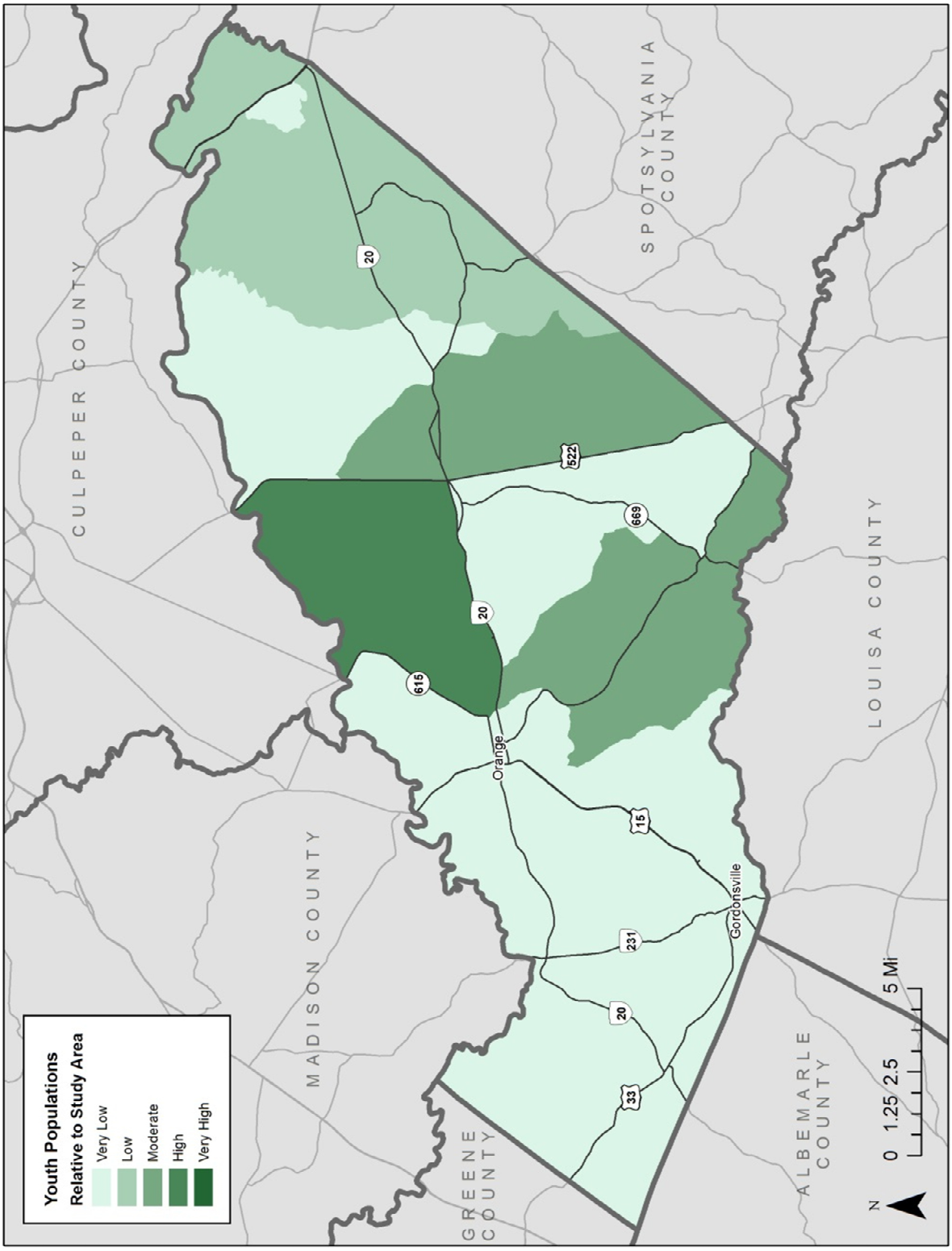
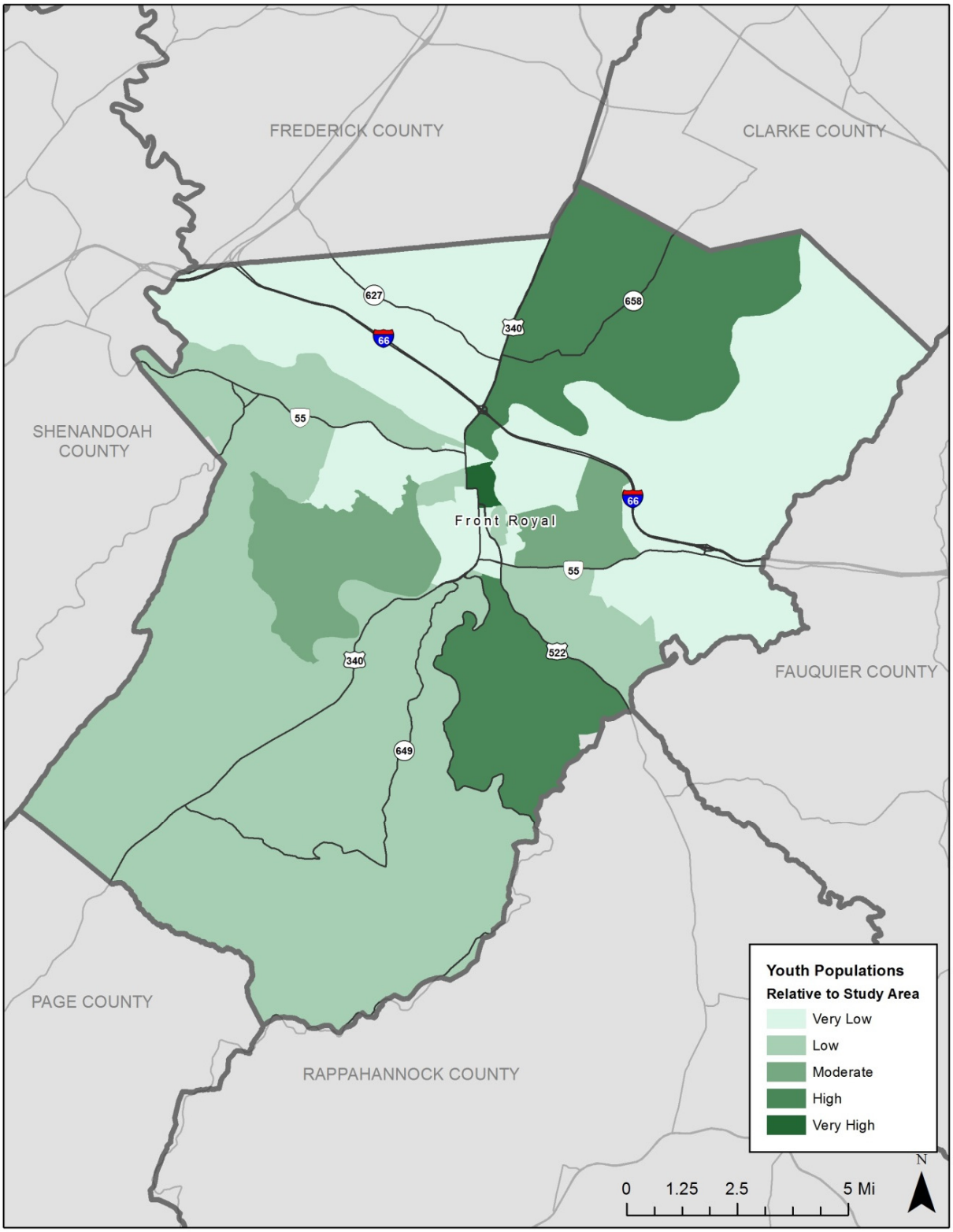


Figure B-36: Warren County Census Block Groups Youth Population



POPULATION WITH DISABILITIES

Those in the population with developmental or physical disabilities may be unable to operate a vehicle and thus may be more likely to rely on public transportation.

Clarke County

All three Census tracts in Clarke County have less than or equal the area average percentage of population with disabilities. Clarke County is shown in Figure B-37.

Culpeper County

Four of the eight Census tracts in Culpeper County have greater than the area average proportion of the population with disabilities. These four tracts are in the west of the county around but not including the center of the town of Culpeper. Culpeper County is shown in Figure B-38.

Fauquier County

Six of the seventeen Census tracts in Fauquier County have greater than the area average proportion of population with disabilities. Block groups in the northwest, southeast, and from north of Remington to the west side of Warrenton have higher than average proportions of population with disabilities. Fauquier County is shown in Figure B-39.

Frederick County

Seven of the fourteen Census tracts in Frederick County have less than or equal the area average proportion of population with disabilities. Six of these tracts are to the south of Winchester. The other is at the northern corner of the county. The tracts in the eastern and southeastern corners have the highest percentages of population with disabilities. Frederick County is shown in Figure B-40.

Figure B-37: Clarke County Census Tracts Population With Disabilities

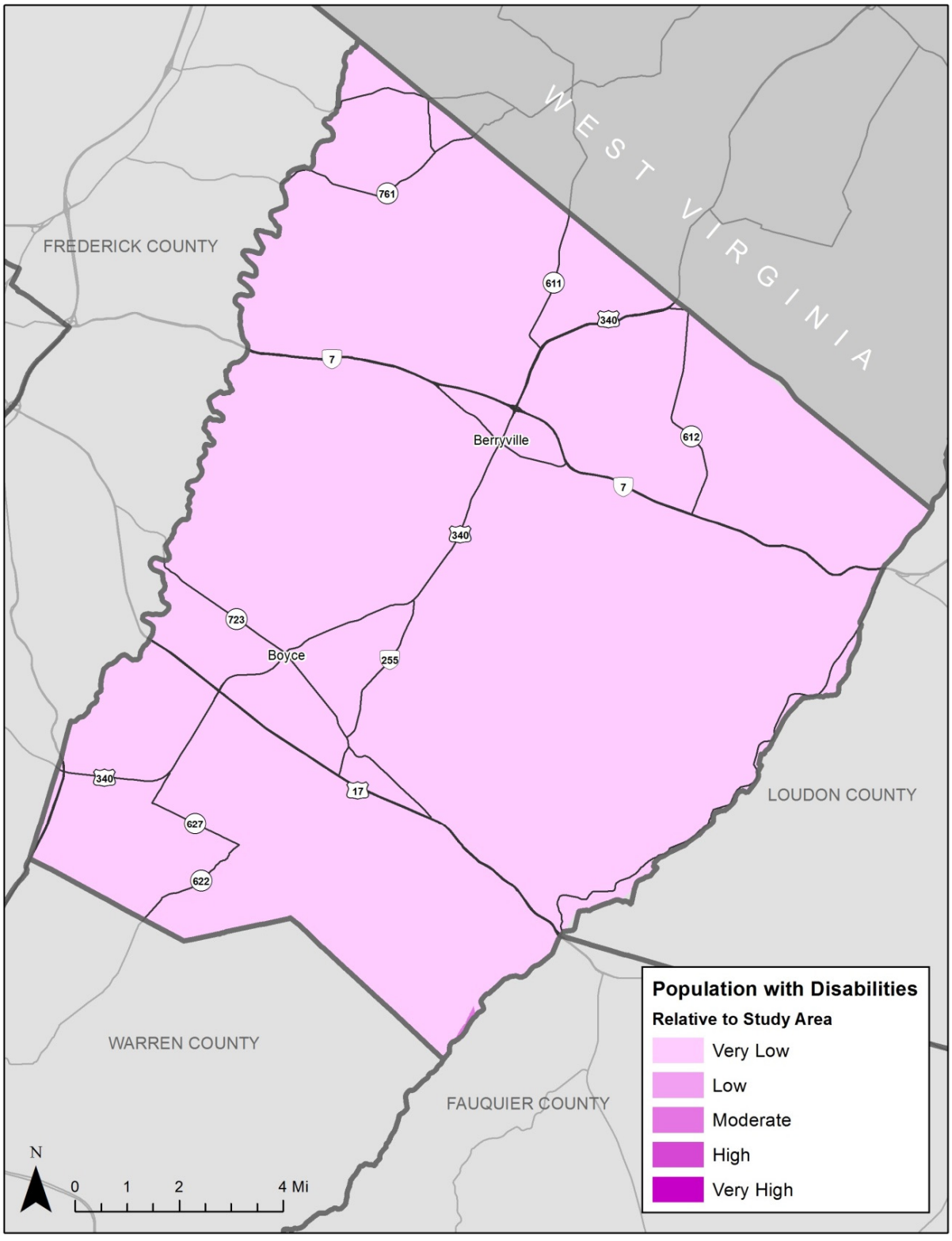


Figure B-38: Culpeper County Census Tracts Population With Disabilities

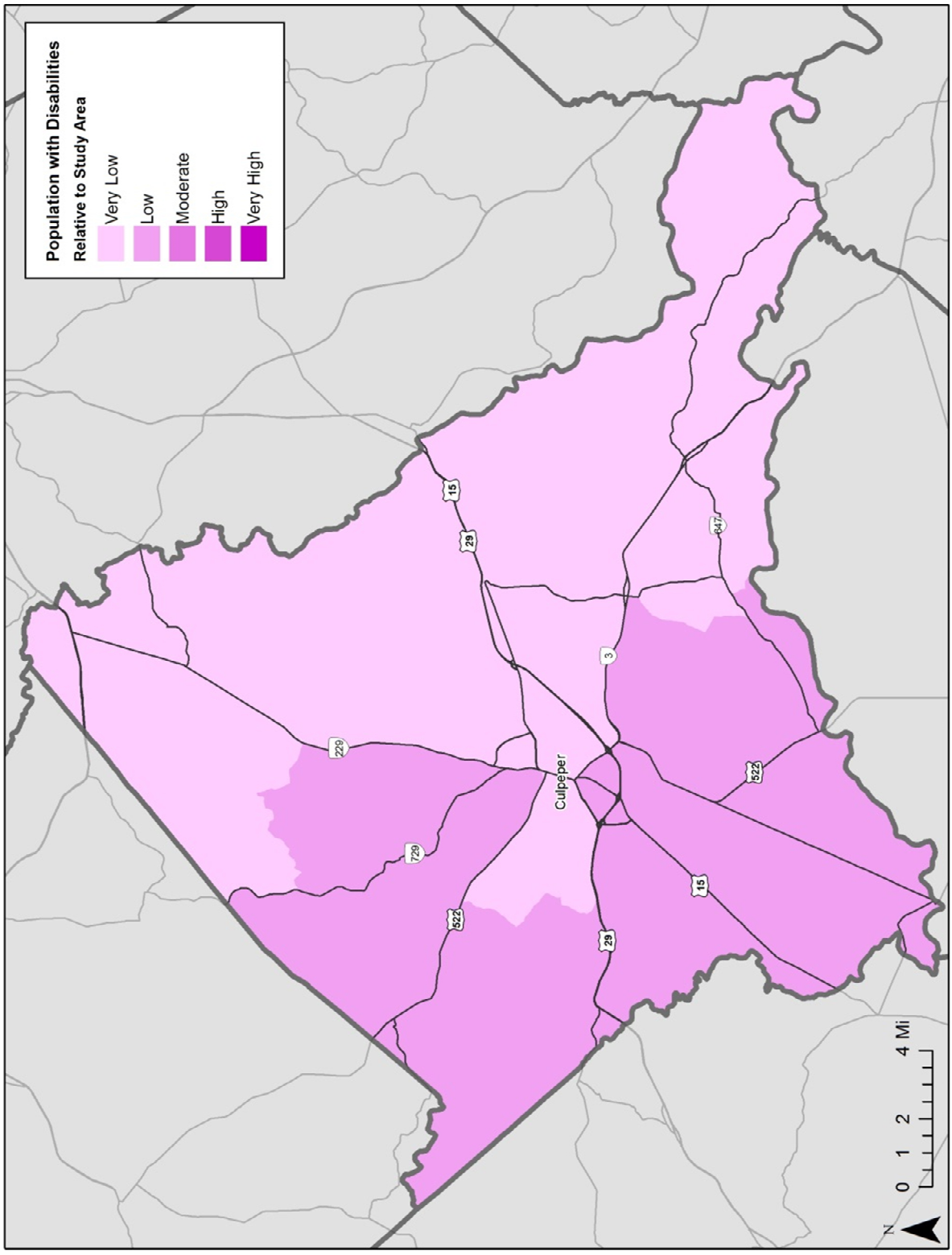


Figure B-39: Fauquier County Census Tracts Population With Disabilities

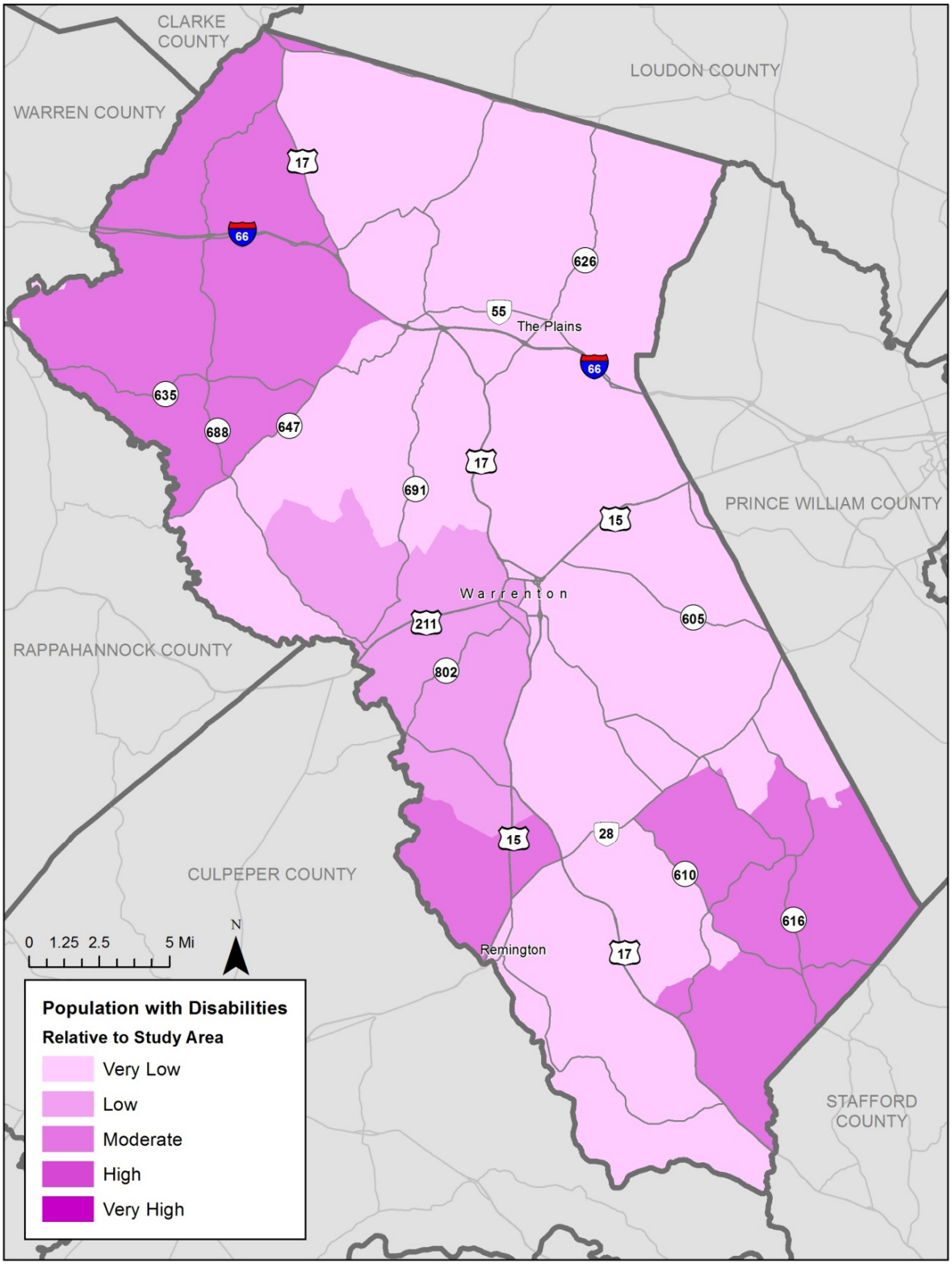
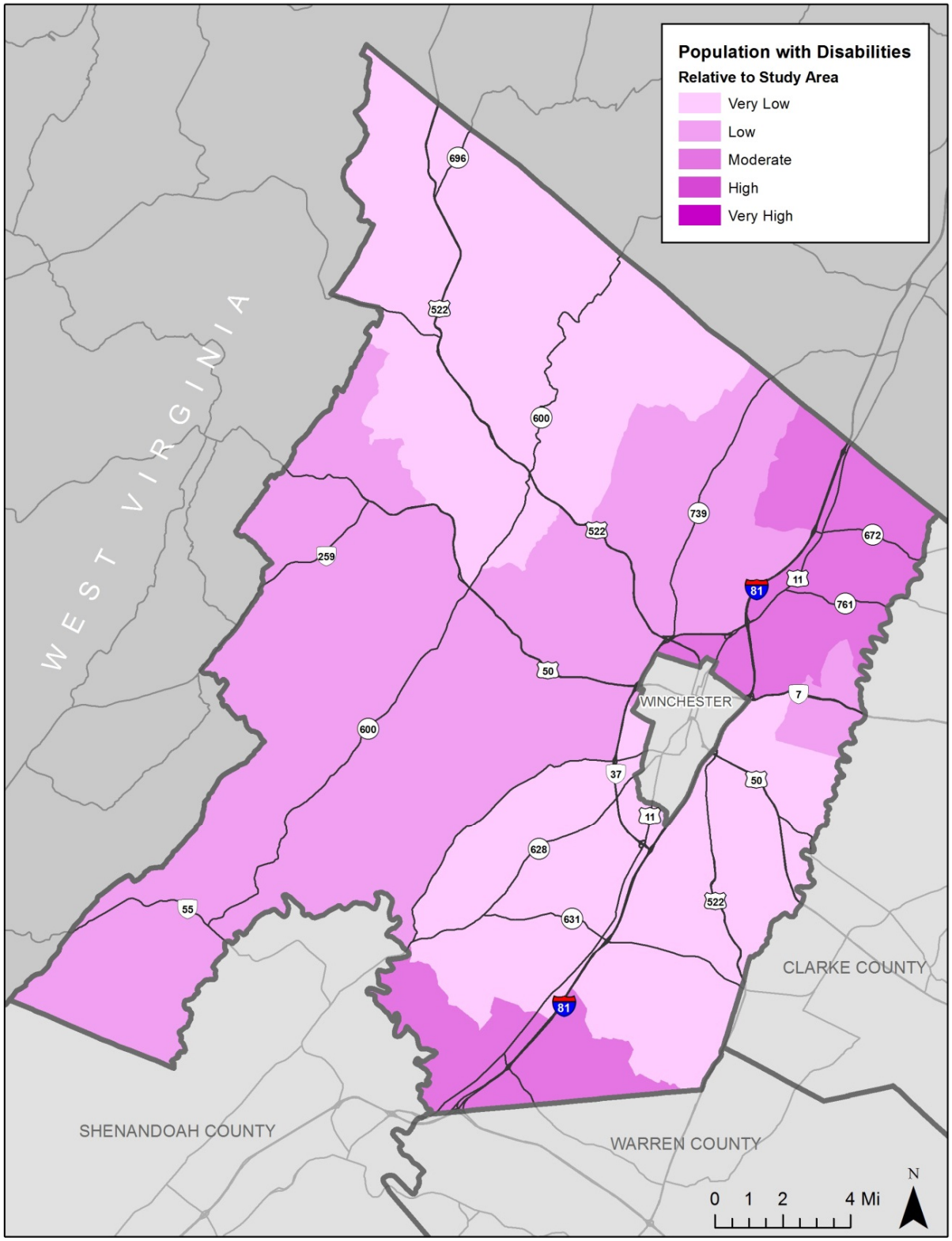


Figure B-40: Frederick County Census Tracts Population With Disabilities



Orange County

There are five Census tracts in Orange County. The two tracts in the west that include the towns of Orange and Gordonsville have greater than the area average proportion of population with disabilities. The two tracts in the east also have a higher proportion of population with disabilities, although not to the extent as in western Orange County. The proportion of population with disabilities of the tract in the middle is less than or equal to the area average. Orange County is shown in Figure B-41.

Warren County

Census tracts in north of Front Royal have the highest proportion of population with disabilities. Tracts west of Front Royal are next highest. Tracts in the east and south of Warren County have proportions of population with disabilities less than or equal to the area average. Warren County is shown in Figure B-42.

Figure B-41: Orange County Census Tracts Population With Disabilities

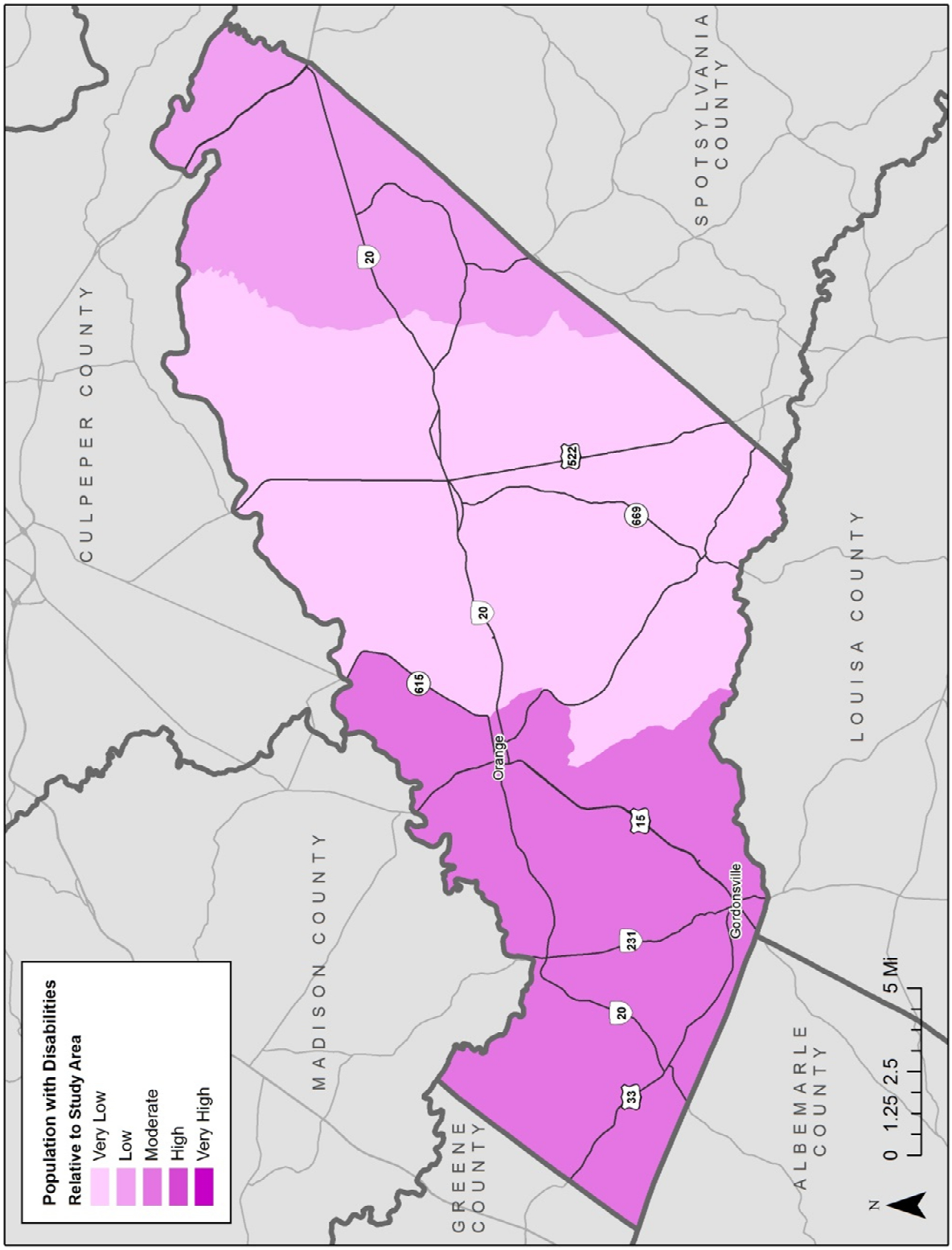
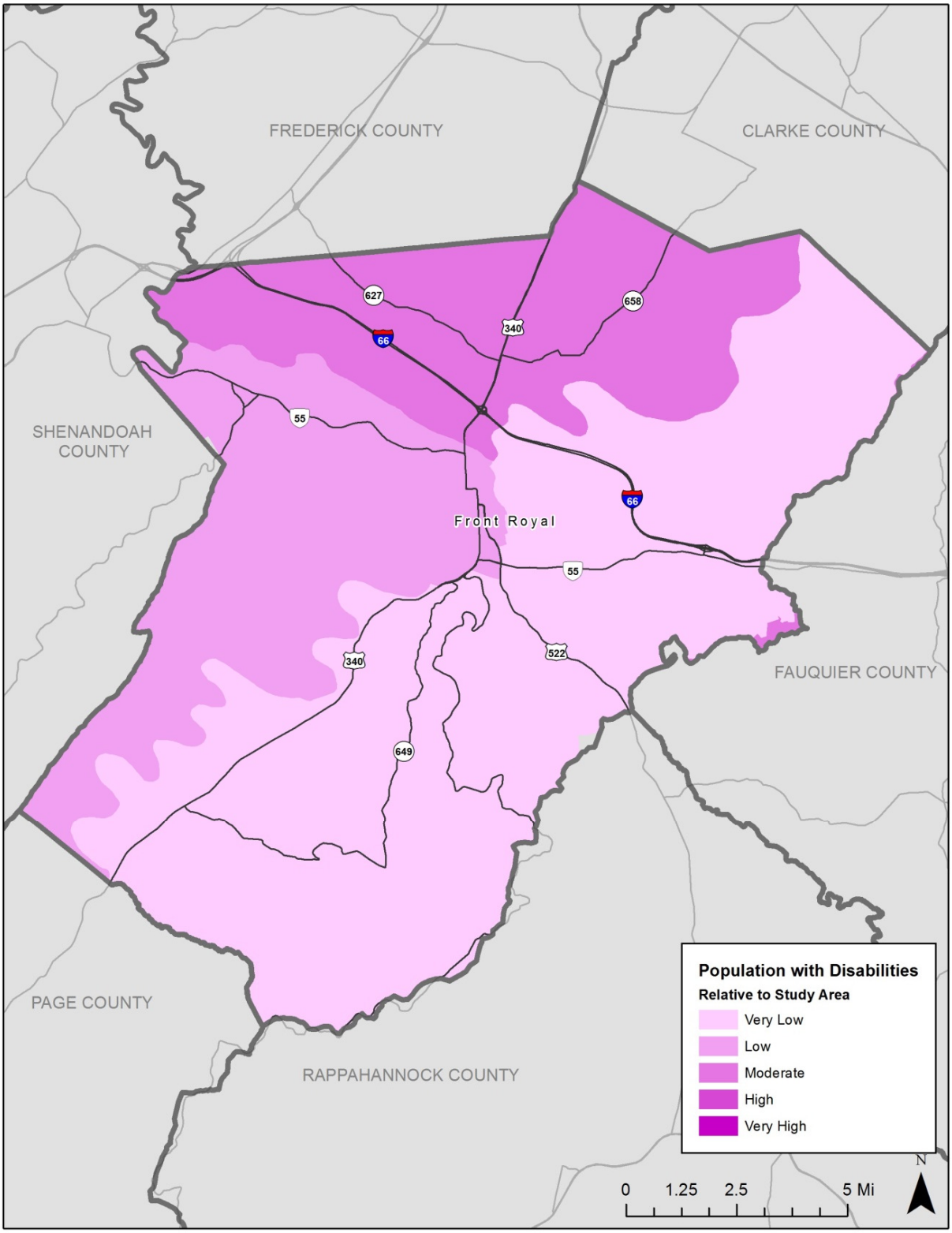


Figure B-42: Warren County Census Tracts Population with Disabilities



TITLE VI ANALYSIS

As part of the Civil Rights Act of 1964, Title VI prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving federal subsidies. This includes agencies providing federally funding public transportation. In accordance with Title VI, the following section examines the minority and below poverty populations in the service area.

MINORITY POPULATION

In accordance with Title VI of the Civil Rights Act of 1964, it is important to ensure that areas in the service area with a relative concentration of racial and/or ethnic minorities are not negatively impacted by any proposed alterations to existing public transportation services.

Clarke County

There is only one block group in Clarke County with greater than the area average proportion of minority populations. It is located east of US Route 340 at the southern edge of Berryville. All other block groups have less than or equal the area average minority population percentage. Clarke County is shown in Figure B-43.

Culpeper County

There are six Census block groups in Culpeper County with greater than two times the area average proportion of minority populations: between the Fauquier County border and Virginia Route 229, west of the town of Culpeper south of US Route 522, the south side of the town of Culpeper, and south of US Route 29 along the borders with Madison and Orange Counties. Six block groups have minority population proportions equal to or less than the area average: in the north of the county, around US Routes 15 and 29 at the Fauquier County border, in the town of Culpeper, and in the far west of the county. Culpeper County is shown in Figure B-44.

Fauquier County

Three Census block groups in Fauquier County have greater than two times the area average minority population proportion. Two are on the outskirts of Warrenton, on the east and west sides, respectively, and the other is in and east of Remington. The southeast county has higher than average proportions of minority populations, as does the area around and south of The Plains. Fauquier County is shown in Figure B-45.

Figure B-43: Clarke County Census Block Groups Minority Population

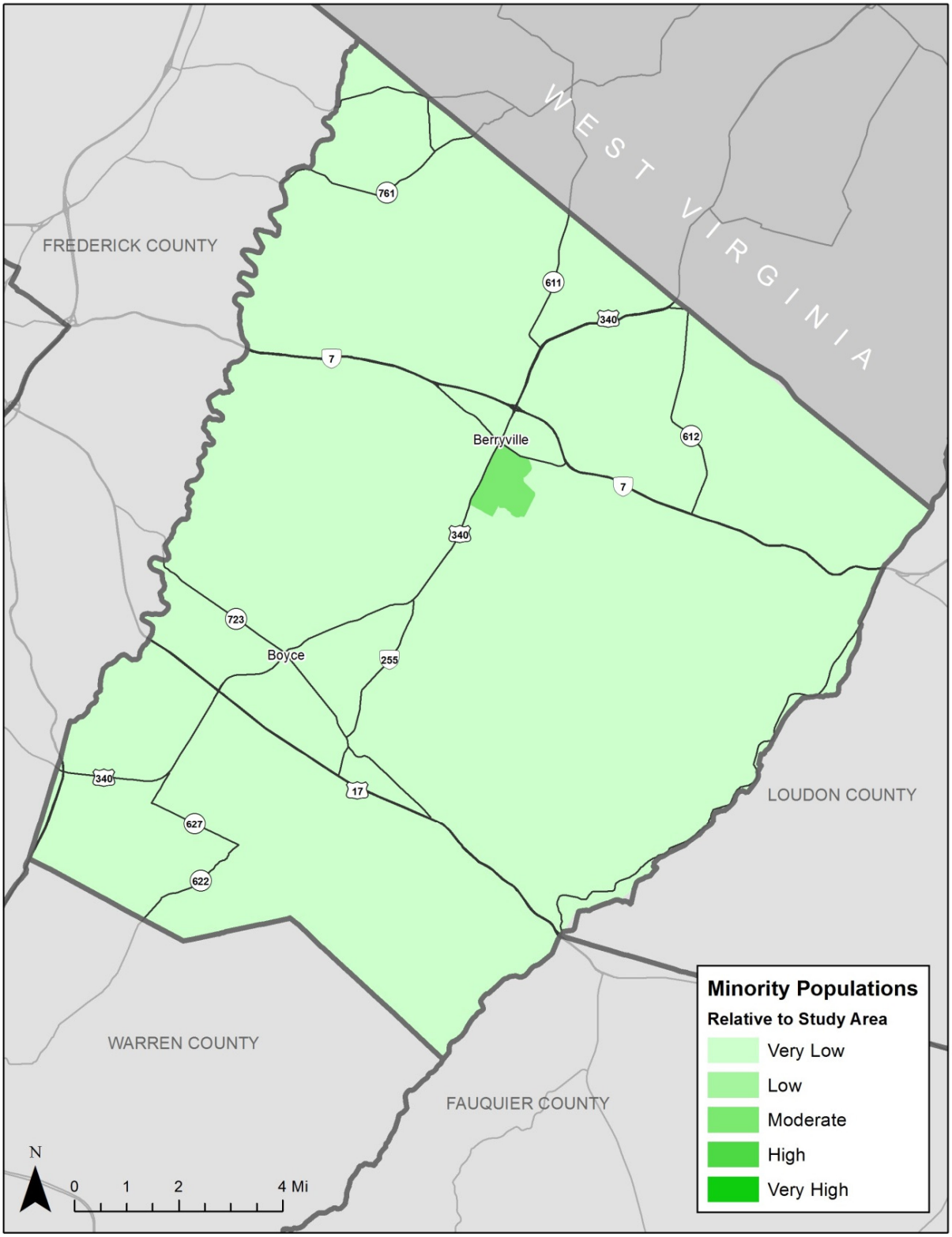


Figure B-44: Culpeper County Census Block Groups Minority Population

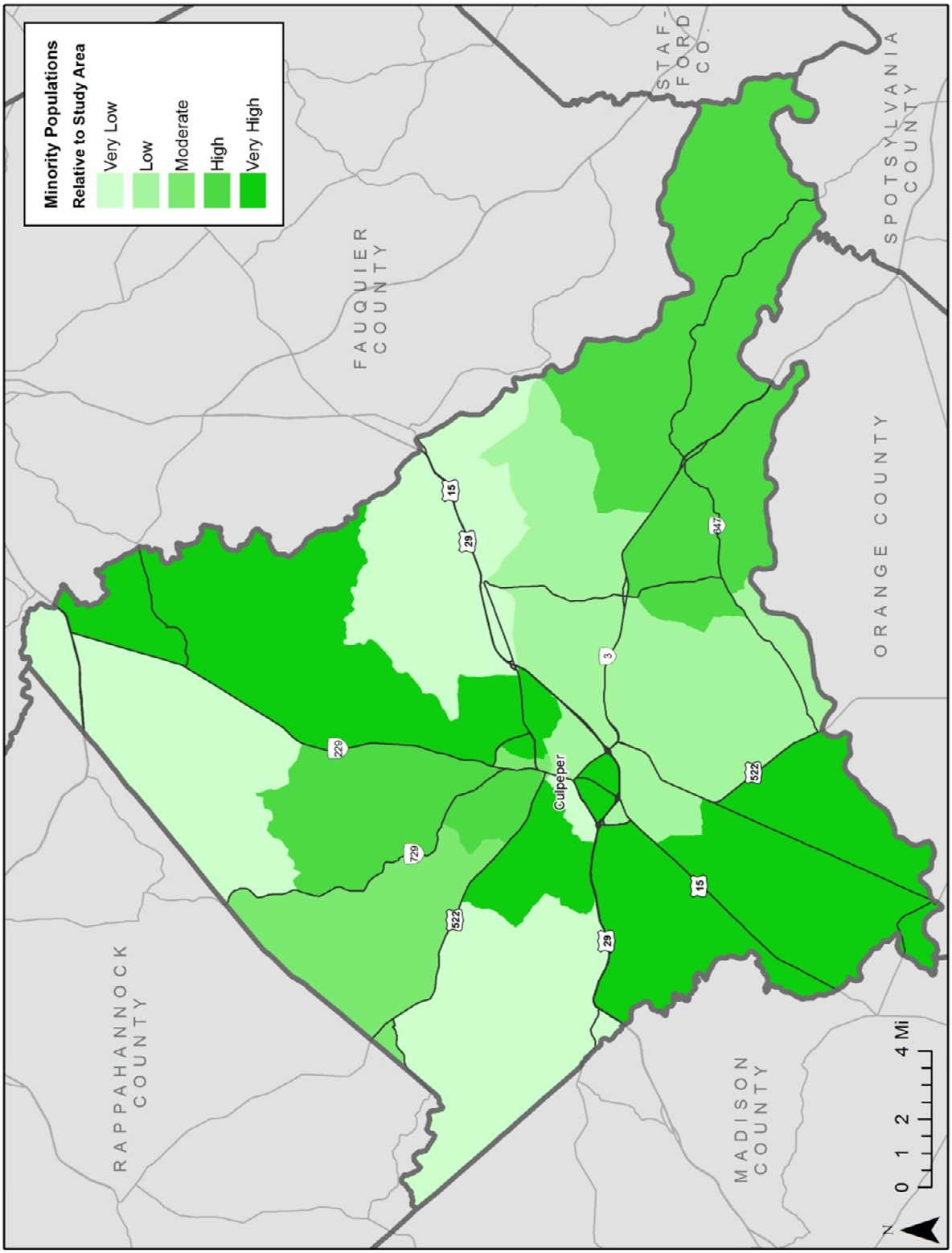
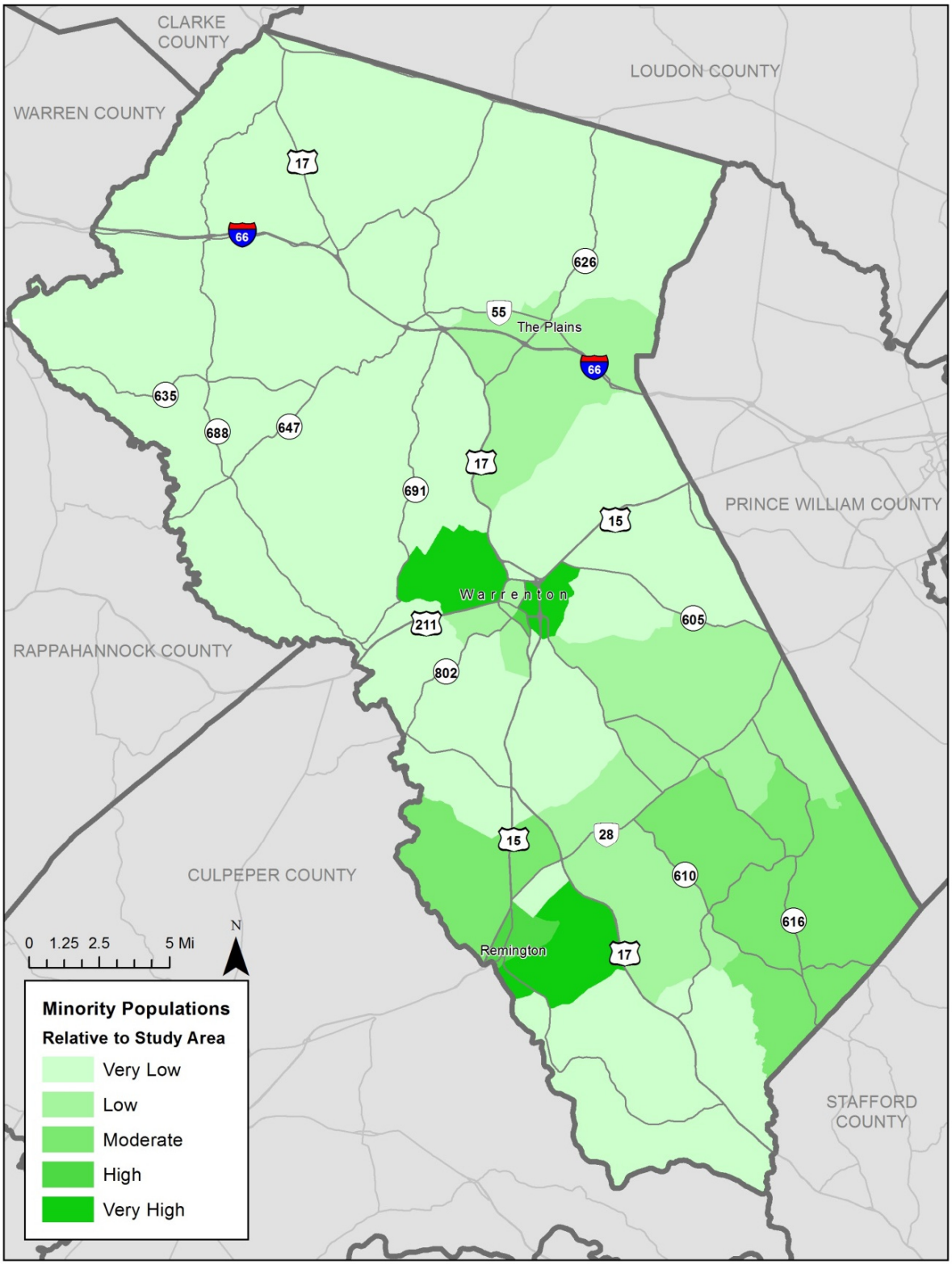


Figure B-45: Fauquier County Census Block Groups Minority Population



Frederick County

Frederick County has four block groups with greater than two times the area average minority population proportion. All four are in the Winchester area and east of US Route 11. Several other block groups in the Winchester vicinity have greater than the area average minority population proportion. Thirty-five of the 46 Census block groups in Frederick County have proportions of minority populations less than or equal to the area average. Frederick County is shown in Figure B-46

Orange County

There are four block groups in Orange County with two or more times the area average percentage minority population. They are the block group northwest of the town of Orange between Virginia Route 20 and the Madison County border, the block group south of Virginia Route 20 and extending to the Louisa County border, and the two block groups in the far eastern section of the county that border Spotsylvania and Culpeper Counties. Block groups east of Gordonsville and also east of US Route 522 have relatively high proportions of minority populations. Orange County is shown in Figure B-47.

Warren County

There are only three block groups in Warren County with minority populations' percentages greater than the area average, all in Front Royal. The remaining block groups have proportions of minority populations less than or equal to the area average. Warren County is shown in Figure B-48.

Figure B-46: Frederick County Census Block Groups Minority Population

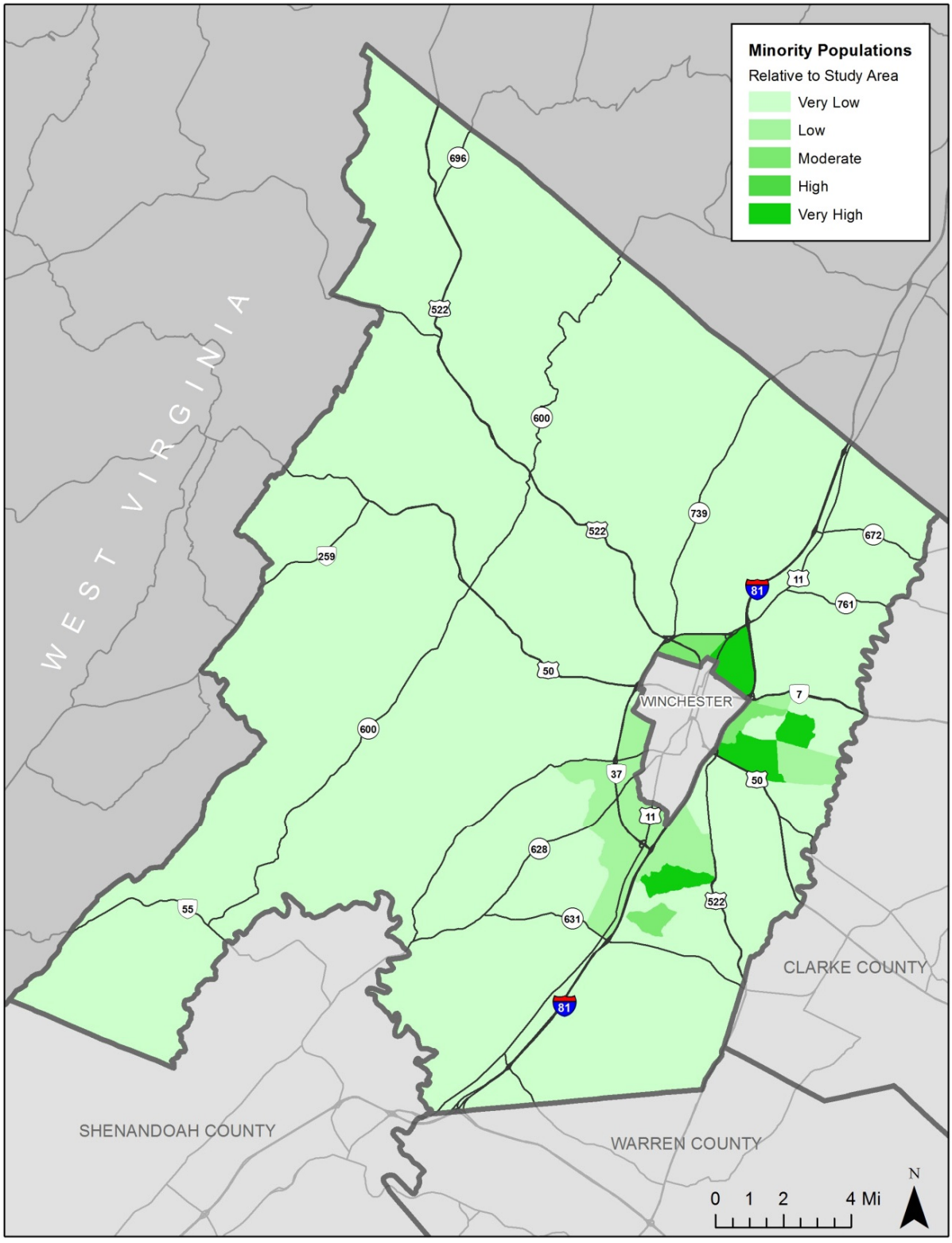


Figure B-47: Orange County Census Block Groups Minority Population

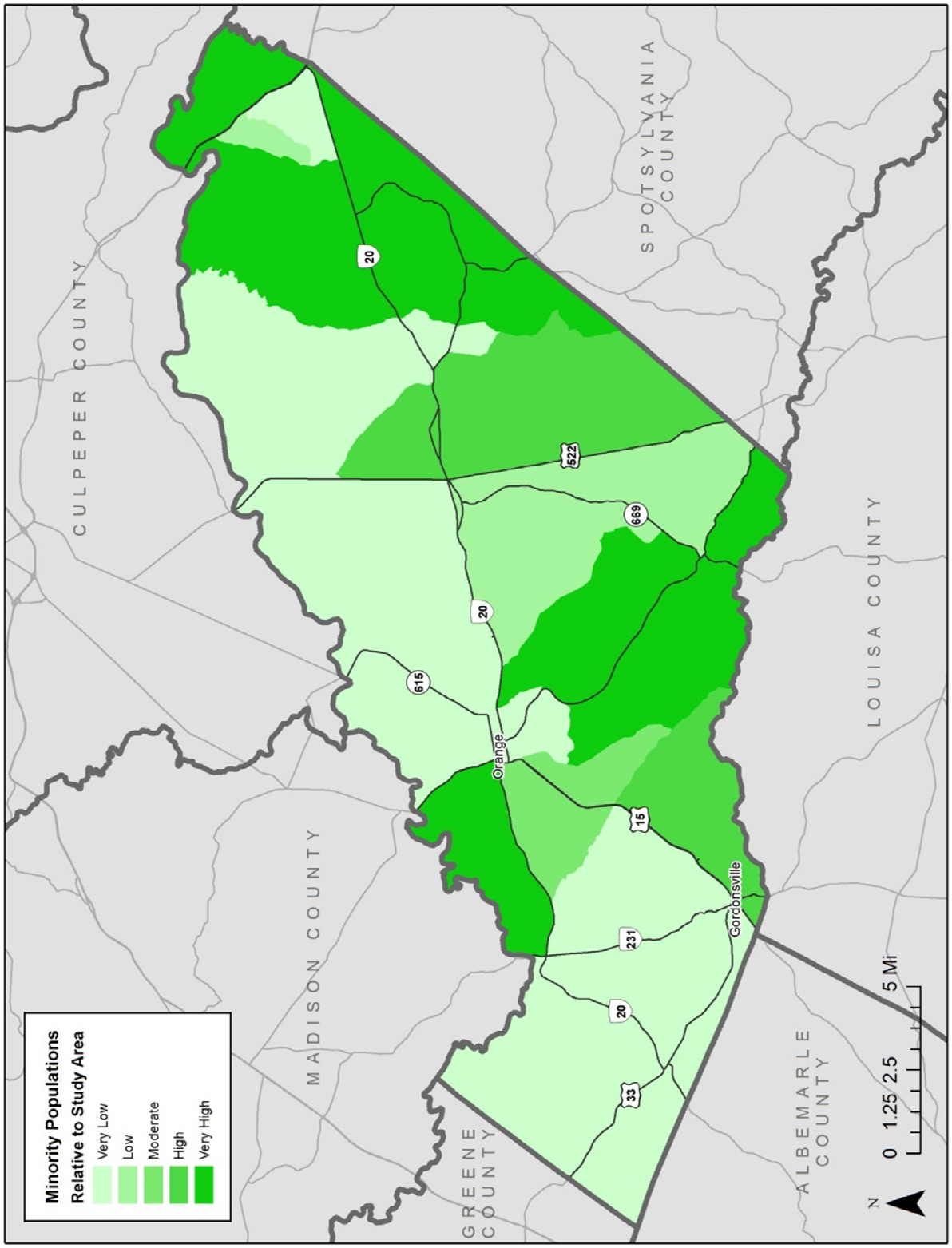
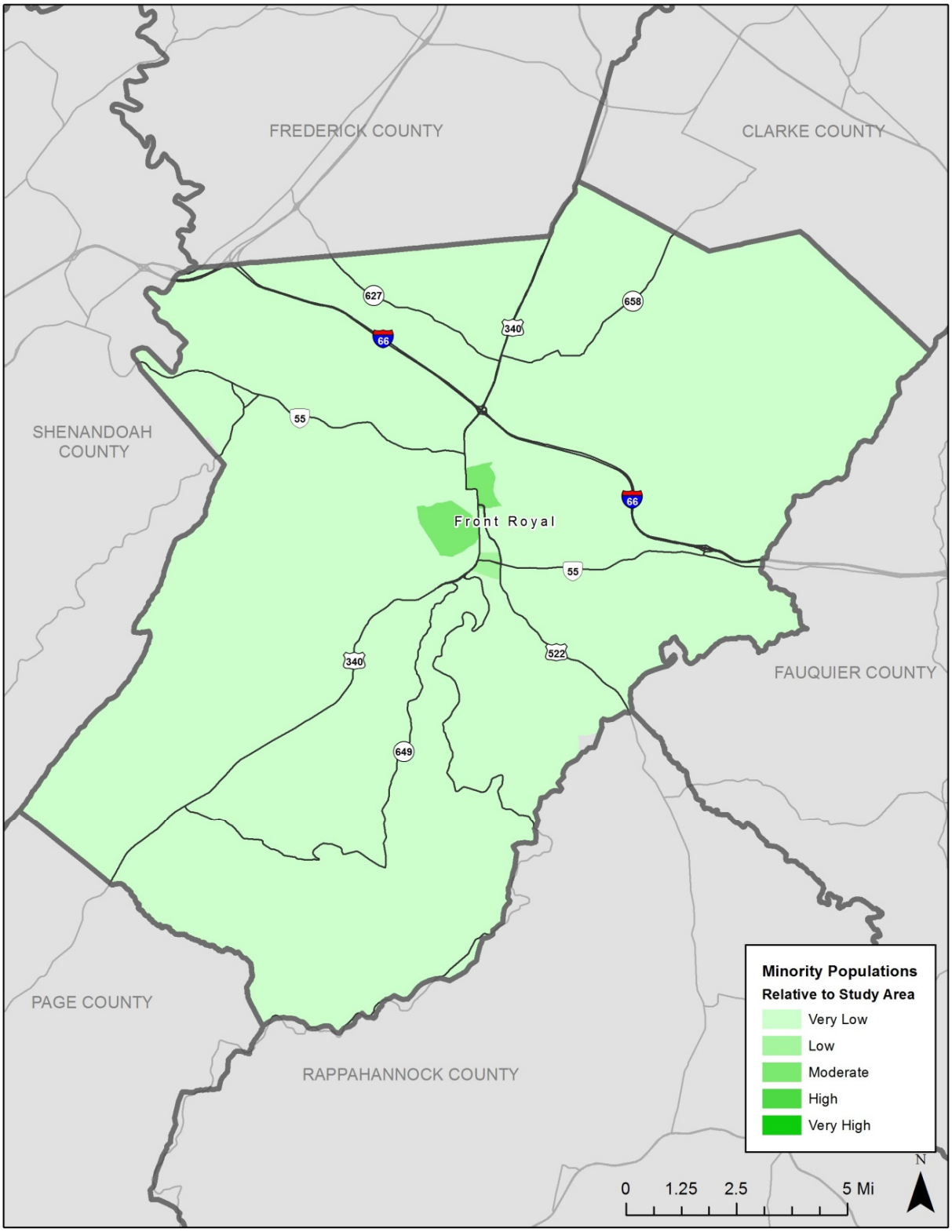


Figure B-48: Warren County Census Block Groups Minority Population



BELOW-POVERTY POPULATION

This socioeconomic group represents those individuals who earn less than the federal poverty level. These individuals face financial hardships that make the ownership and maintenance of a personal vehicle difficult, and thus they may be more inclined to depend upon public transportation.

Clarke County

Clarke County has one block group with greater than two times the area average proportion of population below poverty level. It is the southernmost block group, bordering Loudon, Fauquier, and Warren Counties. The south side of Berryville has the only other block group with a higher percentage of below-poverty population than the area average. Clarke County is shown in Figure B-49.

Culpeper County

A single block group in the town of Culpeper has more than two times the area average below-poverty population percentage. Another block group in the town of Culpeper has a relatively high percentage of population below poverty level, as does the block group at the Fauquier County border around US Routes 15 and 29. The western and southern county has relatively lower proportions of population below poverty. Culpeper County is shown in Figure B-50.

Fauquier County

Only five block groups in Fauquier County have below-poverty population percentages above the area average. Two in Warrenton, one east of Remington, and two on around the junction of Virginia Route 691 and Interstate 66. The other 31 block groups have less than or equal the area average proportion of population living below poverty level. Fauquier County is shown in Figure B-51.

Frederick County

Frederick County has two block groups with greater than two times the area average below-poverty population proportion. They are both southwest of Winchester, along US Routes 50 and 522. The block group to the northwest of Winchester has a high percentage of below-poverty population. Excepting two block groups (one south of US Route 522 and one in the southwest corner of the county) the western part of the county has less than or equal the area average proportion of population below poverty level.Frederick County is shown in Figure B-52.

Figure B-49: Clarke County Census Block Groups Below-Poverty Population

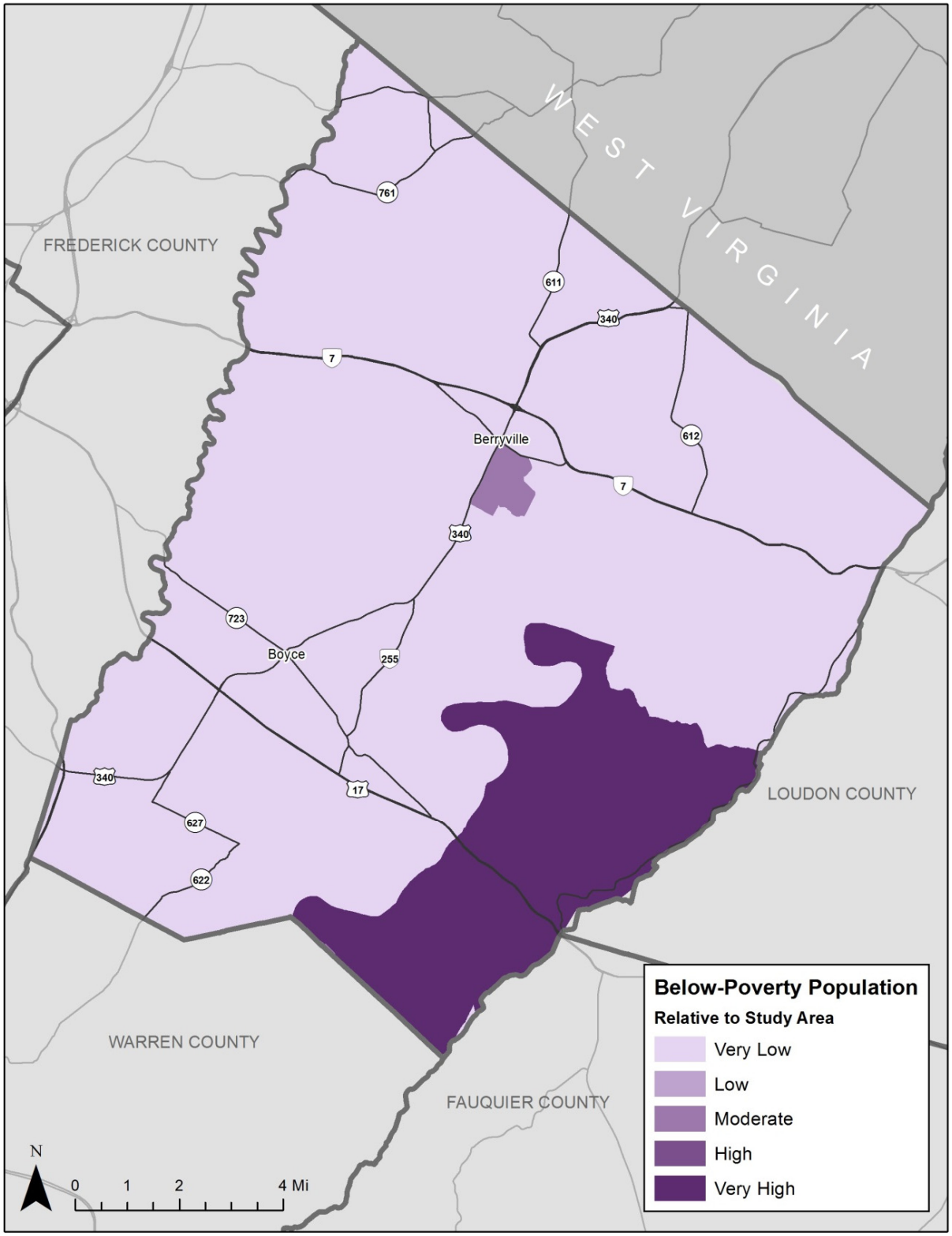


Figure B-50: Culpeper County Census Block Groups Below-Poverty Population

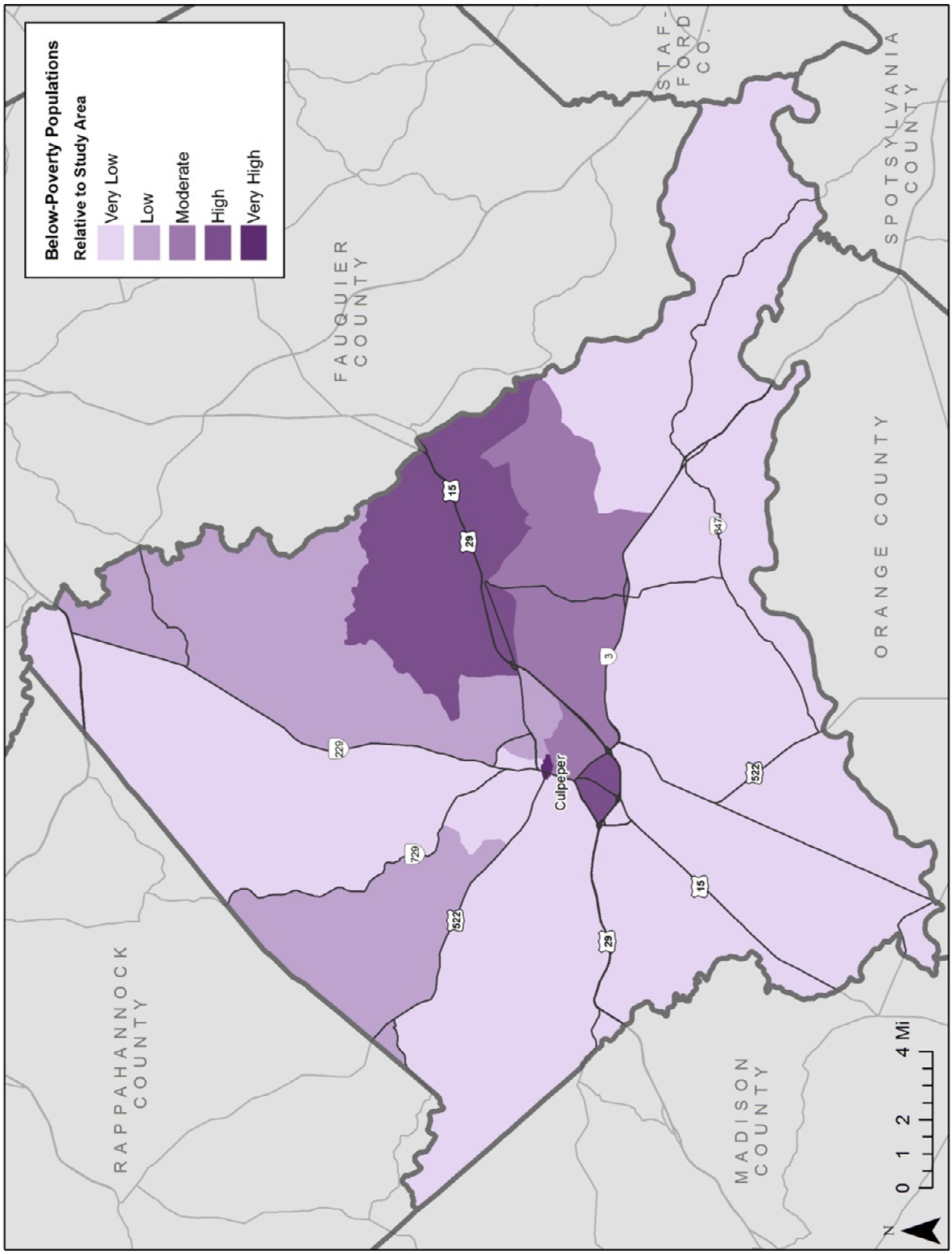


Figure B-51: Fauquier County Census Block Groups Below-Poverty Population

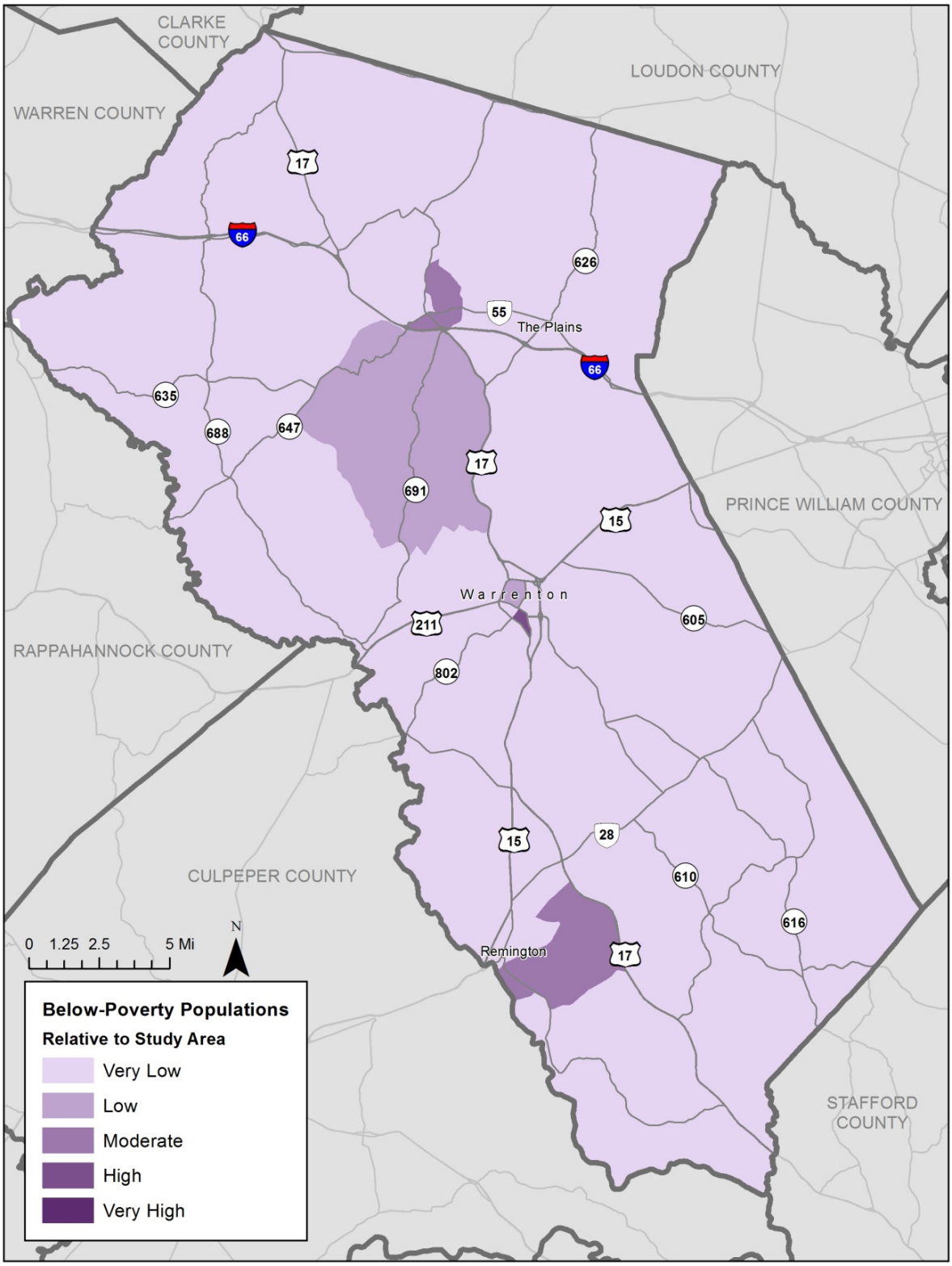
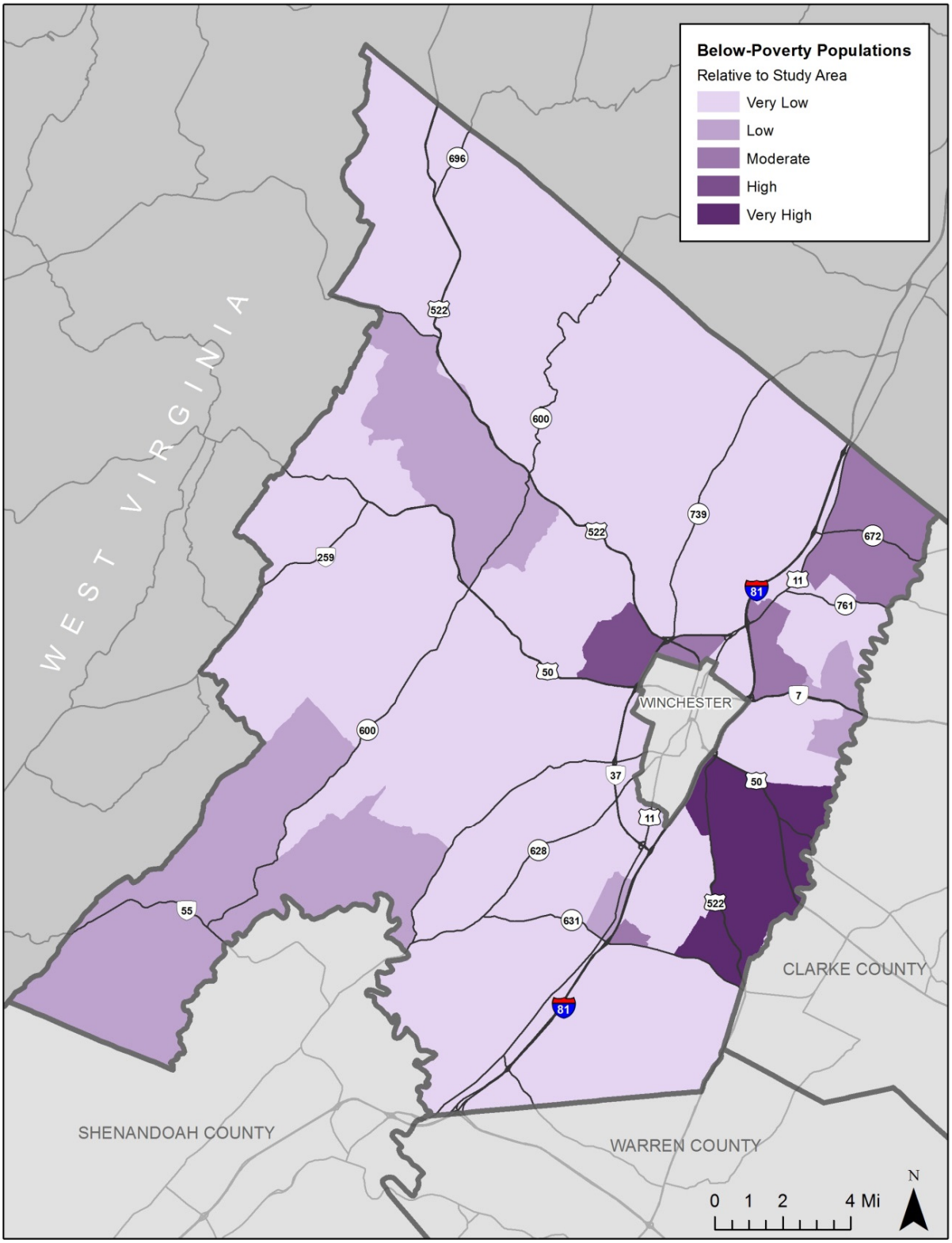


Figure B-52: Frederick County Census Block Groups Below-Poverty Population



Orange County

There are two block groups in Orange County with greater than two times the area average proportion of the population below poverty level. One extends from the town of Orange to the Madison County border between US Route 15 and Virginia Route 20. The other is at the Culpeper County border east of US Route 522. Block groups around Gordonsville also have high proportions of the population under poverty level. Orange County is shown in Figure B-53.

Warren County

There are two block groups in Warren County with greater than two times the area average proportion of population below poverty level. One is in Front Royal east of US Route 340. The other extends from the junction of US Route 522 and Virginia Route 55 to the Fauquier County border. Other Front Royal block groups have high proportions of below-poverty population. The block group along Interstate 66 west of US Route 340 also has a high proportion of population below poverty level. Warren County is shown in Figure B-54.

Figure B-53: Orange County Census Block Groups Below-Poverty Population

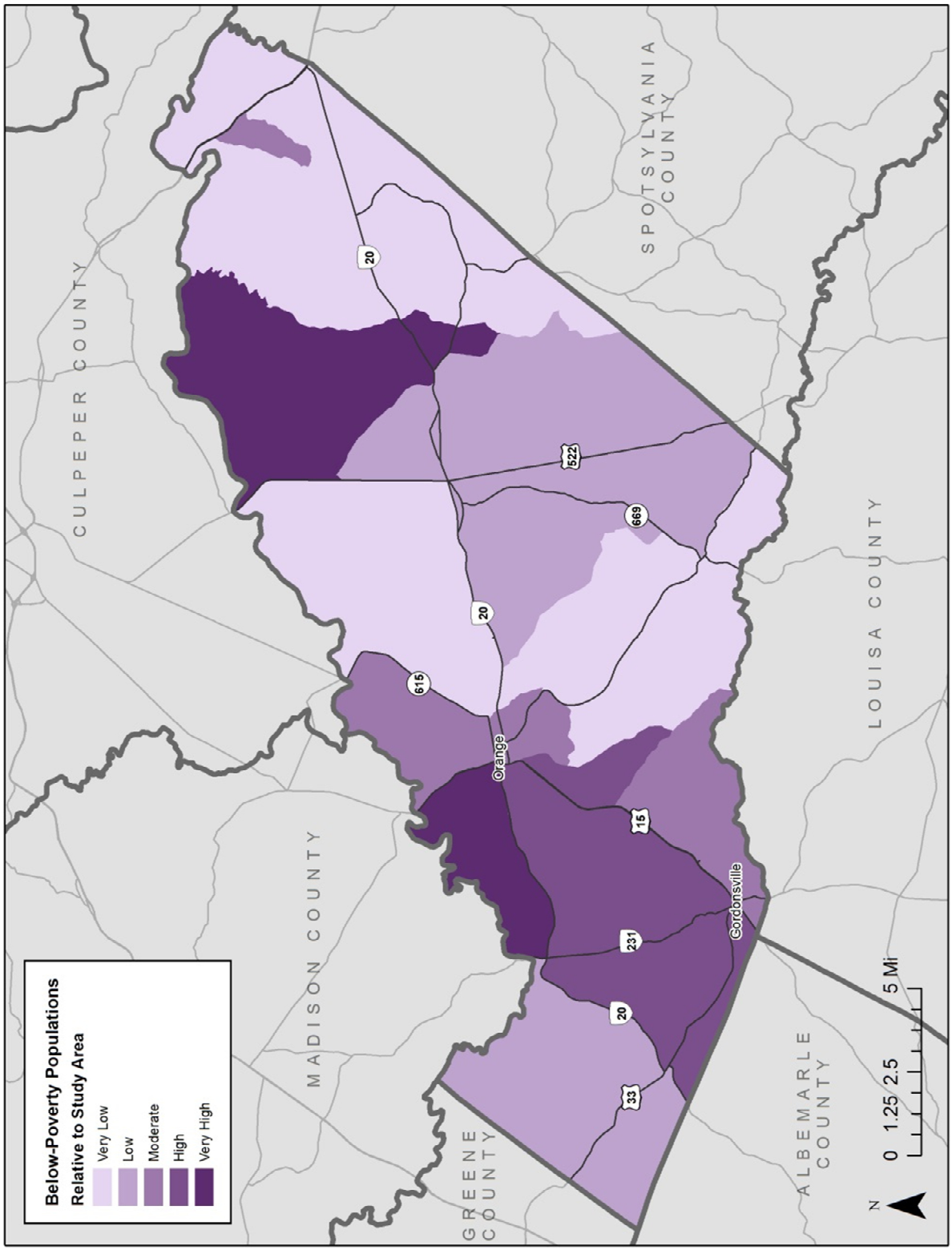


Figure B-54: Warren County Census Block Groups Below-Poverty Population

