



Chapter 3

Existing Conditions



INTRODUCTION



The Tide light rail transit in Hampton Roads, VA.

INFORMATION

The study initiated a comprehensive data collection and information assimilation effort early in the planning process. This data collection effort was used to help the project team and stakeholders establish a comprehensive base of information and understanding for the study area. Published plans, reports, and studies; geographic information system (GIS) data; forecasts; projections; analytic tools; and other pertinent information was compiled and processed during this task. This chapter summarizes existing transit, transportation demand management (TDM), demographic, and transportation system conditions in the Super NoVa area.

TRANSIT PLANNING, PROGRAMMING, AND FUNDING

The Virginia Department of Rail and Public Transportation (DRPT) is a state agency that reports to the Secretary of Transportation. DRPT has three primary areas of activity—rail, public transportation, and commuter services—that focus on the movement of people and goods and the expansion of transportation choices in Virginia. DRPT works closely with the Virginia Department of Transportation (VDOT) but is a separate agency.

DRPT differs from VDOT, which owns and operates many of Virginia's roads, because they partner with transportation operators, TDM agencies, other state agencies, metropolitan planning organizations (MPO), and government officials by providing funding, planning, and programming support. In many cases, local and regional transportation agencies play a lead role in defining the rail and public transportation initiatives for their areas. DRPT provides support for many of these initiatives by offering technical and funding assistance. The Super NoVa Transit/TDM Vision Plan is the first planning effort to explore the entire super region study area. The following regional bodies are responsible for planning within the Super NoVa area; however, none cover the entire area.

MPOs are federally mandated and funded transportation policy organizations comprised of representatives from member local jurisdictions and transportation agencies. There are four MPOs in the Super NoVa study area:

- **Metropolitan Washington Council of Governments (MWCOCG)** — This regional organization is comprised of 21 local governments in Washington D.C., Maryland, and Virginia. The National Capital Region Transportation Planning Board (TPB) is the MPO for the MWCOCG area.
- **Fredericksburg Area Metropolitan Planning Organization (FAMPO)** — Membership is from the City of Fredericksburg and Spotsylvania and Stafford Counties, VA.
- **Winchester Frederick County Metropolitan Planning Organization (WinFred MPO)** — Membership is from the City of Winchester and Frederick County, VA.
- **Hagerstown-Eastern Panhandle Metropolitan Planning Organization (HEPMPO)** — Membership is from Berkeley and Jefferson County in West Virginia; the municipalities of Martinsburg, Ranson, Charles Town, Shepherdstown, Harpers Ferry, and Bolivar (all in West Virginia); and a small portion of Franklin County, PA.

Planning District Commissions (PDC) are regional subdivisions of Virginia meant to encourage and facilitate local government cooperation and state-local cooperation in addressing regional problems and opportunities in planning and implementing public policies and services. PDCs are chartered by Virginia Code. PDCs may staff MPOs for transportation planning purposes. The following are PDCs in the study area:

- Northern Virginia Regional Commission (NVRC)
- Northern Shenandoah Valley Regional Commission (NSVRC)

- Rappahannock-Rapidian Regional Commission (RRRC)
- George Washington Regional Commission (GWRC)

The Northern Virginia Transportation Authority (NVTA) was created by the General Assembly and is responsible for long-range transportation planning in Northern Virginia. Based on regional consensus, NVTA sets regional transportation policies and priorities and allocates funding. NVTA includes the Counties of Arlington, Fairfax, Loudoun, and Prince William and the Cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park. DRPT grant funding for all member jurisdictions is given to NVTA for allocation to member jurisdictions.

TRANSIT AND TDM AGENCIES

Transit and TDM services in Virginia are typically provided by a single locality or by a group of jurisdictions acting as a transportation district to facilitate regional transportation solutions to problems that transcend individual localities' borders. In addition to DRPT funding, agencies receive funding for TDM from their locality or localities. Transit and TDM agencies are directly involved in long-range and year-to-year planning and programming. The transit and TDM agencies in the study area are discussed in subsequent sections of this chapter.

TRANSIT SYSTEM OPERATION



Richmond Highway Express in Alexandria, VA.

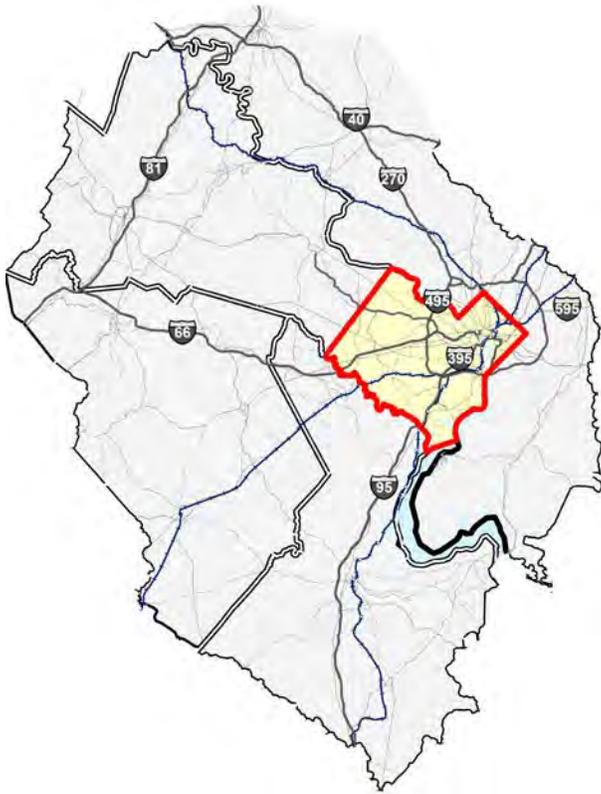
There are several public transit systems operating in the defined Super NoVa region. For purposes of this study, they have been organized into the following geographic areas:

- **Inner Subarea** – Washington, D.C.; Arlington County; Cities of Alexandria, Falls Church, and Fairfax; and Fairfax County
- **Northwest Subarea** – Loudoun County, Clarke County; Frederick County; City of Winchester; and Jefferson and Berkeley Counties, WV
- **West Subarea** – Fauquier County, Warren County, Shenandoah County, Rappahannock County, Culpeper County, and Orange County
- **South Subarea** – Prince William County, Cities of Manassas and Manassas Park, Stafford County, Spotsylvania County, City of Fredericksburg, King George County, and Caroline County
- **Maryland Subarea** – Washington County, Frederick County, Montgomery County, Prince George’s County, and Charles County

Existing service information also was collected for regional rail systems. Regional rail service providers in the Super NoVa region include the Washington Metropolitan Area Transit Authority (WMATA), Virginia Railway Express (VRE), Maryland Area Regional Commuter (MARC), and Amtrak. The following information was collected for each transit system:

- Existing Transit Service Characteristics
 - Type of Services Provided
 - Service Area
 - Service Hours
 - Park-and-Ride Lots
 - Connectivity to Other Transit Systems and Regional Rail
 - Service Statistics (Ridership, Peak Vehicles, Miles, and Hours of Service)
- Short-Range Transit Plans
- Long-Range Transit Plans

Transit agency profiles are provided in the **Appendix**, with transit systems organized by geographic area. A summary of each transit agency and transit services is provided on the following page.



Inner subarea.

INNER SUBAREA BUS TRANSIT SYSTEMS

Arlington County



Potomac and Rappahannock Transportation Commission (PRTC) Omniride. Source: PRTC.

Arlington Transit (ART) is the primary local transit service provider in Arlington County. ART has 13 fixed route lines and provides service 7 days a week. ART service connects to nine Metrorail stations, and provides connections to WMATA Metrobus service, the D.C.

Circulator, Alexandria DASH, Fairfax Connector, Loudoun County Transit (LC Transit), Potomac and Rappahannock Transportation Commission (PRTC) Omniride, Georgetown University Shuttles, and VRE commuter rail service. Fiscal year 2010 fixed route ridership indicated that ART carried approximately 2 million passenger trips. WMATA's Metrobus also provides bus service within Arlington County. Paratransit service is provided through Star Transit and MetroAccess.

City of Alexandria



Alexandria DASH.

The primary local transit service provider in Alexandria is the Alexandria Transit Company, also known as DASH. There are nine routes operated by DASH, with service provided 7 days a week. DASH operates nine

routes and one trolley route. DASH connects to five Metrorail Stations, WMATA Metrobus, ART, Fairfax Connector, LC Transit, PRTC Omniride, VRE Commuter Rail, and Amtrak. Fiscal year 2010 fixed route ridership indicated that DASH carried 4.3 million passenger trips. Metrobus also provides bus service within the City of Alexandria. Paratransit service is provided by the City of Alexandria Department of Transportation & Environmental Services' DOT paratransit program and MetroAccess.

City of Fairfax

The primary local transit service provider in the City of Fairfax is the Fairfax City-University Energysaver (CUE), operated by the City of Fairfax. The CUE has two fixed routes and operates 7 days a week. Both CUE routes connect to the Vienna/Fairfax-GMU Metrorail Station. CUE also provides connections to WMATA Metrobus, George Mason University shuttle service, and the Fairfax Connector. Fiscal year 2010 fixed route ridership indicated that CUE carried more than 900,000 passenger trips. Metrobus also provides bus service within the City of Fairfax. Paratransit service is provided by City Wheels (a paratransit taxi service) and MetroAccess.

Fairfax County



Fairfax Connector. Source: Fairfax County.

The primary local transit service provider in Fairfax County is the Fairfax Connector, which operates 68 fixed routes and circulators. Service is provided 7 days a week, with 24-hour weekday service on select routes. The

Fairfax Connector provides service to numerous park-and-ride lots located in the county, and to several Metrorail stations. Connections also are possible to the City of Fairfax CUE, LC Transit, DASH, and PRTC service. Fiscal year 2010 ridership was more than 9.6 million passenger trips. Metrobus also provides bus service within Fairfax County. Paratransit service in the county is provided through Fastran (provided by the county) and MetroAccess.

Washington, D.C.

The D.C. Circulator, operated by the District Department of Transportation (DDOT), provides high frequency bus service in the District of Columbia and in Rosslyn. Service is provided 7 days a week. The Circulator provides connections to Metrorail stations, VRE, MARC, and Amtrak at Union Station. There also are connections to Metrobus and ART bus service.

Regional Bus Service



Washington Metropolitan Area Transit Authority MetroBus.

WMATA provides Metrobus service throughout the inner subarea, with service in Washington, D.C., Montgomery and Prince George's Counties in Maryland; Fairfax and Arlington Counties; and the Cities of Falls Church, Fairfax, and Alexandria. Service is provided 7 days a week, with

some routes operating 24-hours. Metrobus service connects to Metrorail, Amtrak, MARC, and VRE regional rail services and provides connections to all locally-operated systems, such as ART, DASH, Fairfax Connector, CUE, PRTC, and LC Transit. Fiscal year 2010 Metrobus ridership was more than 128 million passenger trips. MetroAccess provides corresponding paratransit service in the Metrobus service area.

NORTHWEST SUBAREA BUS TRANSIT SYSTEMS



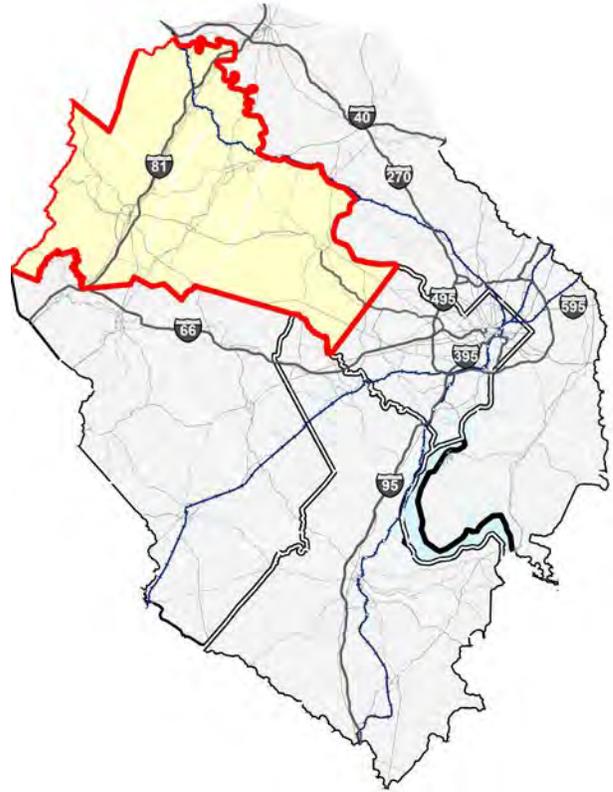
Tysons Express. Source: Loudoun County.

Loudoun County

Loudoun County is served by two bus systems—LC Transit and Virginia Regional Transit (VRT). LC Transit provides service between park-and-ride lots in Loudoun County and the

Washington, D.C. metropolitan central area. Destinations in the inner area include Rosslyn, the State Department, the Ronald Reagan Building, the Pentagon, the Navy Yard area, and Crystal City. Destinations outside of the inner area include Tysons Center and West Falls Church Metrorail Station. Some reverse commute service is provided from West Falls Church. LC Transit service is weekdays only, with most service operating in the a.m. and p.m. peak periods. LC Transit provides connections to Metrorail stations and other regional rail service at Union Station. Fiscal year 2010 ridership was approximately one million passenger trips.

VRT provides local fixed route service (via 11 routes) and countywide demand response service in Loudoun County.



Northwest subarea.

Service is provided 7 days a week. VRT service includes connections to the West Falls Church Metrorail Station and to Fairfax Connector and Metrobus service. Fiscal year 2010 ridership was approximately 700,000 passenger trips.

City of Winchester/Frederick County

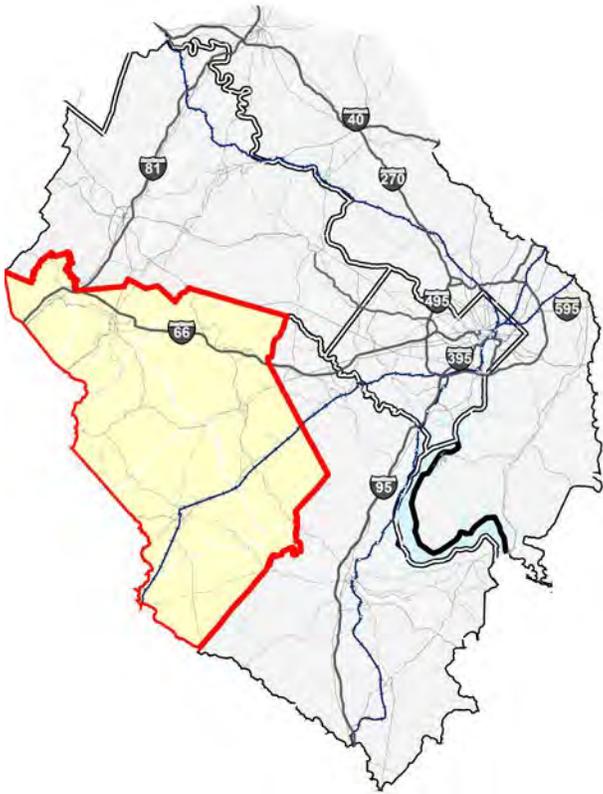
WinTran operates six fixed routes and one trolley route, and provides Americans with Disabilities (ADA) paratransit service in the City of Winchester. Service is provided Monday through Saturday. Fiscal year 2010 fixed route ridership was approximately 100,000 passenger trips.

Clark County

VRT provides demand response service in Clark County. Service is offered 3 days a week. Passengers can request service to the City of Winchester, with connection opportunities to WinTran. Fiscal year 2010 ridership was approximately 2,000 passenger trips.

Berkeley and Jefferson Counties, WV

PanTran is the local transit service provider in these two counties. There are five deviated fixed routes that serve Martinsburg, Harpers Ferry, Shepherdstown, and Charles Town, in addition to demand response service in Inwood and Hedgesville. Service is provided Monday through Saturday. PanTran provides connections to MARC and Amtrak rail service. Fiscal year 2010 total ridership (fixed route and demand response) was more than 160,000 passenger trips.



West subarea.

WEST SUBAREA BUS TRANSIT SYSTEMS

Fauquier County

Circuit Rider, operated by VRT provides fixed local route service in the Town of Warrentown. Service is operated Monday through Saturday via two routes. Countywide paratransit service also is provided. CircuitRider service connects to regional Tri-County Connector service (Fauquier, Culpeper, and Orange Counties). Fiscal year 2010 fixed route ridership was more than 31,000 passenger trips.

Culpeper County

Culpeper Trolley is operated by VRT, with two fixed routes operating in the Town of Culpeper and countywide ADA paratransit service. Service is provided Monday through Saturday. The Culpeper Trolley connects to regional Tri-County Connector service (Fauquier, Culpeper and Orange Counties). Fiscal year 2010 ridership (fixed route and paratransit) was nearly 70,000 passenger trips.

Town of Orange

The “Toot” provides local route service in the Town of Orange. Service is provided by VRT. One route deviates to meet ADA paratransit service requirements. Service is

provided Monday through Saturday. This route connects to the regional Tri-County Connector service. Fiscal year 2010 ridership was nearly 26,000 passenger trips.



The “Toot”. Source: Town of Orange.

Warren County/Front Royal

The Front Royal Area Transit (FRAT) is operated by VRT in the Town of Front Royal. There are two routes that deviate to meet ADA paratransit service requirements. Service is provided 7 days a week. Fiscal year 2010 ridership was more than 12,600 passenger trips.

Regional Bus Services

As noted in some of the individual county descriptions, the Tri-County Connector provides regional service between Fauquier, Culpeper, and Orange Counties. Service is provided on weekdays only. This service is operated by VRT. There also is regional, privately operated bus service from the West subarea into Washington, D.C. This service operates from Culpeper and Warrenton, and includes stops at the Rosslyn Metrorail station and various locations within the District. The service is operated by Academy Bus Lines, with one morning and one afternoon trip. Service originates at the Culpeper Sports Complex and includes a stop at the Warrenton commuter lot (Route 29 and Route 605). Ridership information was not available.

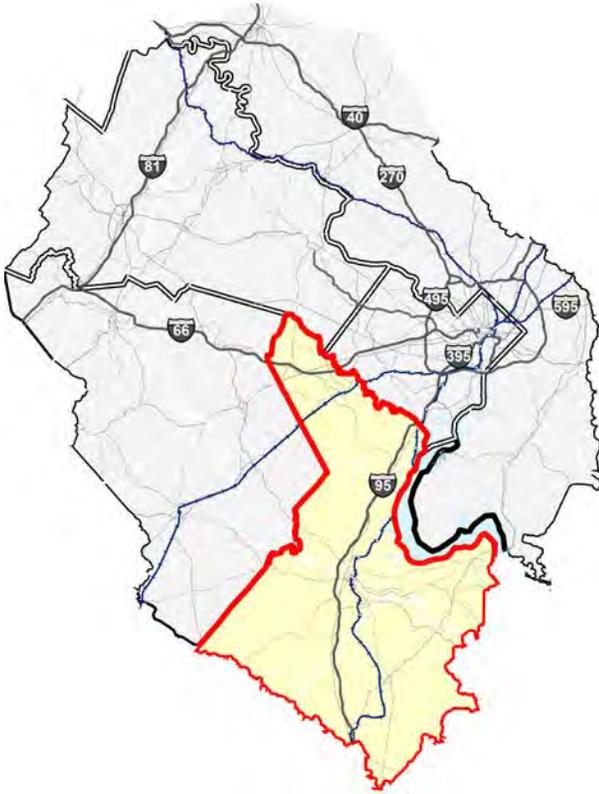
SOUTH SUBAREA BUS TRANSIT SYSTEMS

Prince William County

The PRTC provides regional and local bus service for Prince William County. PRTC operates 17 commuter routes (OmniRide) that provide connections to D.C. and Arlington Metrorail and VRE stations and Amtrak and MARC rail service at Union Station. Service operates out of numerous park-and-ride lots along the I-66 and I-95 corridors. OmniLink provides local flex route/demand response service within the county. There is one local fixed route service (the Cross County Connector). OmniMatch provides ridematching services for county residents. Fiscal year 2010 ridership was nearly 3.2 million passenger trips.



Potomac and Rappahannock Transportation Commission (PRTC) Omniride. Source: PRTC.



South subarea.

Spotsylvania, Stafford, King George, and Caroline Counties and City of Fredericksburg

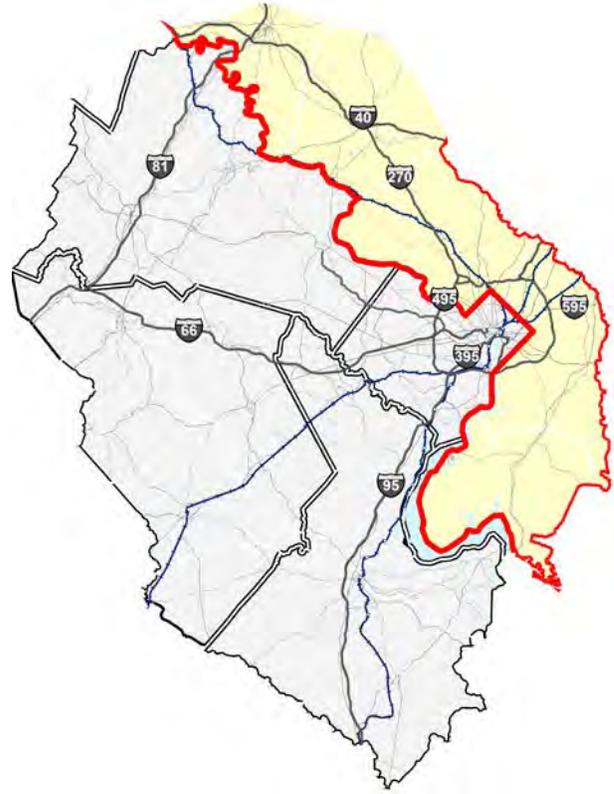
Fredericksburg Regional Transit (FRED) provides local deviated fixed route service in the Fredericksburg area, including service to the University of Mary Washington, and VRE feeder routes. Service is primarily focused on the more densely developed areas of the City of Fredericksburg, the northern Spotsylvania County area, Stafford County, and select areas in King George and Caroline Counties. Service is provided on weekdays. FRED includes service to area commuter park-and-ride lots and to the VRE Fredericksburg Station. Fiscal year 2010 ridership was more than 510,000 passenger trips.



Fredericksburg Regional Transit.

Regional Bus Service

The Martz Group and Quick's Bus Company provides privately-operated commuter bus service in the South subarea. Service is provided along I-95 between park-and-ride lots in Spotsylvania and Stafford Counties, and various destinations in the Washington, D.C. metropolitan area. Most service is to the District and to Rosslyn. There are select trips that serve the Mark Center/Baily's Crossroads, Fort Belvoir. Fiscal year 2010 estimated ridership is more than 430,000 passenger trips.



Maryland subarea.

MARYLAND SUBAREA BUS TRANSIT SYSTEMS

Washington County

The County Commuter operates 10 local routes and paratransit service in the Hagerstown area. Service is provided Monday through Saturday. There are regional connections to the Maryland Transit Administration's Route 991. Fiscal year 2010 fixed route ridership was more than 370,000 passenger trips.

Frederick County

TransIT operates local route service in Frederick City and urbanized areas of Frederick County. There are nine connector routes, six commuter shuttles, and TransIT-Plus paratransit service. Service is operated Monday through Saturday. TransIT connects to MARC service at Brunswick, Point of Rocks, Monocacy, and Frederick. TransIT also connects to Maryland Transit Administration's (MTA) Route 991 commuter bus service and connects to Montgomery County's Ride-On Route 75. Fiscal year 2010 fixed route ridership was more than 700,000 passenger trips.

Montgomery County

Ride-On provides local and express bus service in Montgomery County. Paratransit service is provided by MetroAccess, and a Call 'N' Ride taxi program provided through the county. Service is provided 7 days a week. WMATA's Metrobus also provides service in the county. Ride-On and/or Metrobus provides service to several non-rail station park-and-ride lots within Montgomery County. Ride-On has connections to Metrorail, MARC commuter rail service, and Amtrak. Fiscal year 2010 fixed route ridership was 27.9 million passenger trips.

Prince George's County

TheBus provides local and express bus service in Prince George's County. The county also operates "Call-a-Bus" paratransit service. TheBus operates weekdays only with 26 bus routes, and serves numerous park-and-ride lots in Prince George's County. There are connections to MTA's commuter bus routes 903 and 904, and connections to Metrorail, MARC commuter rail service, and Amtrak service. Fiscal year 2010 fixed route ridership was 3.45 million passenger trips.

Charles County

VanGO provides local and paratransit service in Charles County. There are 13 fixed routes. Service is provided Monday through Saturday, and includes service to numerous County park-and-ride lots. There are connections to MTA Commuter Bus routes 901, 903, 905, and 907. There also is a connection to WMATA's Metrobus Route W19. There are no connections to regional rail services. Fiscal year 2010 fixed route ridership was more than 560,000 passenger trips.

Regional Bus Service

MTA operates commuter bus service throughout Maryland. There is MTA commuter bus service in all five Maryland counties in the Super NoVa region. Service is provided weekdays only.

REGIONAL PROGRAMS

Local Transit Service

The areas nearest to the Super Nova region's inner area are served by local bus routes and operated by multiple agencies as described above. The coverage area and variety of local service decreases significantly outside the region's inner area. In the more rural areas of the Super NoVa region, fixed route service is primarily configured to serve areas with the highest concentration of housing and employment, and is usually limited to a single operator. In addition to fixed route service, some counties offer demand responsive service. Paratransit service also is an important component of local transit service. **Figure 3.1** shows the types of existing local transit service in the study area as described in the aforementioned transit profiles. **Figure 3.2** shows the local route service coverage within the study area.

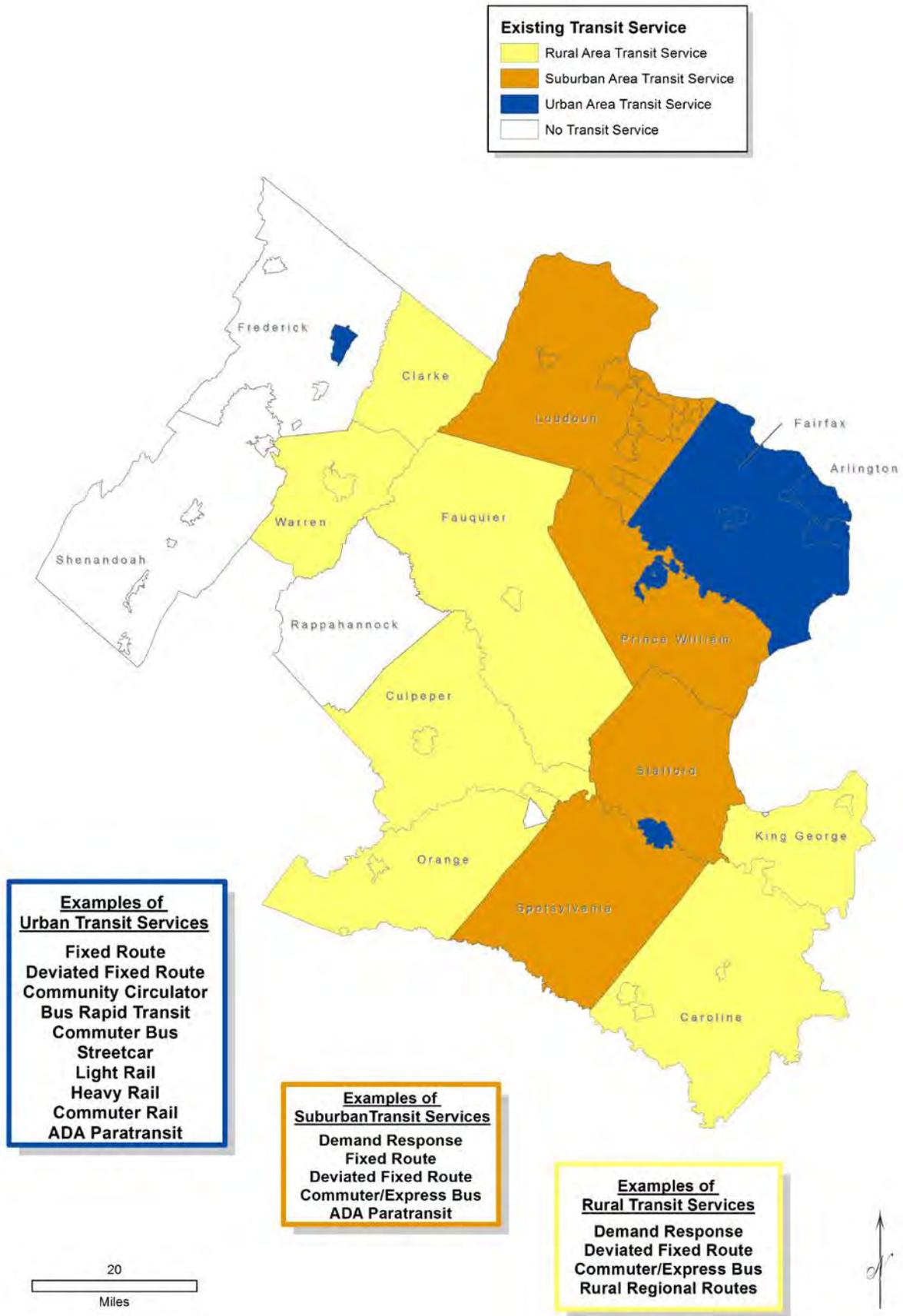


Figure 3.1: Existing Local Transit Service Types

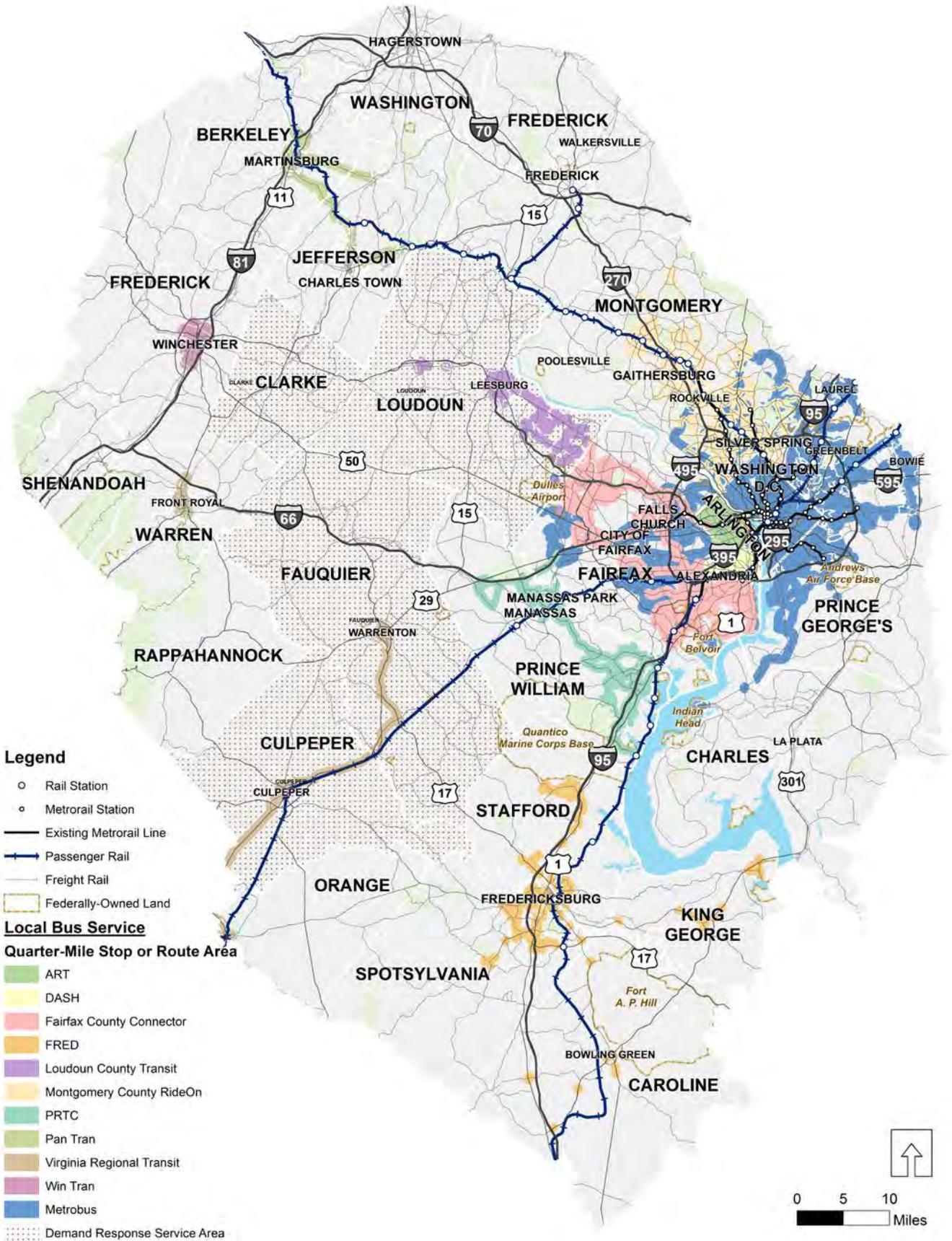


Figure 3.2: Local Transit Service Coverage

Commuter Rail and Amtrak Service

The Super NoVa region is served by a network of commuter and intercity rail lines. These are briefly summarized in the following:

Virginia Railway Express



Virginia Railway Express (VRE) train.
Source: VRE.

VRE commuter rail service is operated by the Northern Virginia Transportation Commission (NVTC) and the PRTC. There are two commuter rail lines, one that originates in Fredericksburg, and the other in Manassas. Service is provided on

weekdays during peak hours. Many of the stations include park-and-ride lots and bus bays for connecting local and regional bus services. Fiscal year 2010 ridership was more than 4 million passenger trips.

Maryland Area Regional Commuter

MARC train service in Maryland and in Berkeley and Jefferson Counties, WV. There are three lines that operate in the Super NoVa study area (Penn, Camden, and Brunswick). Fiscal year 2010 ridership was nearly 8.1 million passenger trips.

Amtrak

Amtrak operates seven long distance and two short distance intercity rail lines within the Super NoVa region (Cardinal, Carolinian, Crescent, Northeast Regional, Palmetto, Silver Meteor, Silver Star, and Capitol Limited). All lines converge at Union Station in Washington, D.C. Stations located within the Virginia portion of the Super NoVa region are Alexandria, Burke Center, Manassas, Culpeper, Franconia-Springfield, Woodbidge, Quantico, and Fredericksburg. The I-95 and I-270 commuting corridors are well-served by commuting and intercity rail, while the I-66 corridor is less served.

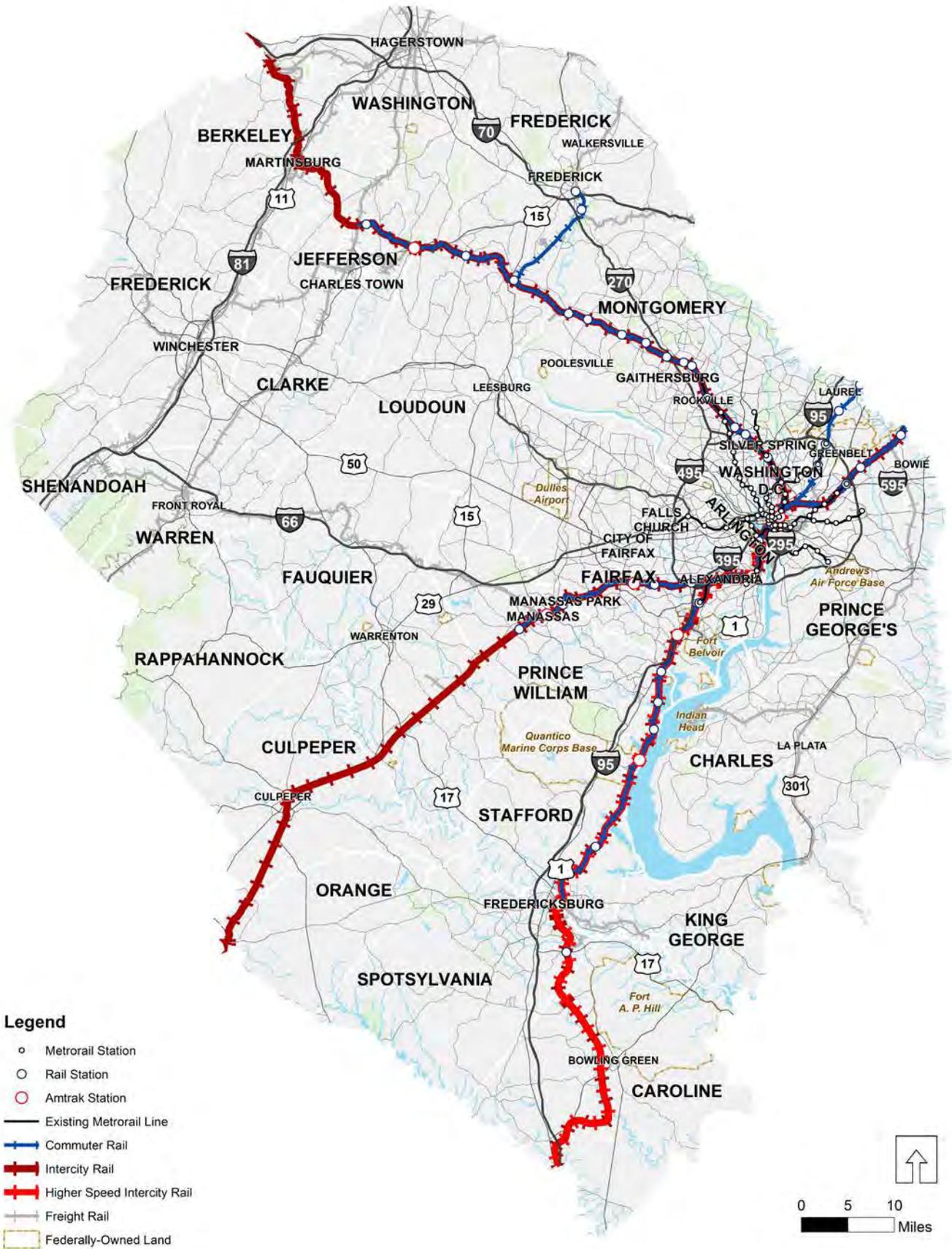


Figure 3.3: Commuter Rail and Amtrak Service Coverage

REGIONAL TRANSIT SERVICE SUMMARY

Table 3.1 presents a summary of existing available transit services by jurisdiction within the Super NoVa region. The table identifies service type as local route, rural demand response, commuter/express, reverse commute from the inner area, intercounty, and rail service. Some services are

shown as “limited”. This typically reflects limited service with regards to geographic coverage (e.g., local route service only available within the Town of Warrenton in Fauquier County), and/or service levels. **Figure 3.3** shows existing commuter rail and Amtrak service.

Table 3.1: Existing Available Transit Services by Jurisdiction

Subarea	Jurisdiction	Local Route Service	Rural Demand Response	Commuter Express Service	Reverse Commute from Inner	Intercounty Service	Rail Service
Inner	Arlington County, VA	●	NA	●	●	●	●
	Fairfax County, VA	●	NA	●	●	●	●
	City of Alexandria, VA	●	NA	●	●	●	●
	City of Fairfax, VA	●	NA	●	●	●	●
	City of Falls Church, VA	●	NA	●	●	●	●
	District of Columbia	●	NA	●	●	●	●
Northwest	Loudoun County, VA	●	●	●	◐	◐	○
	Clarke County, VA	○	◐	○	○	◐	○
	Frederick County, VA	◐	○	○	○	○	○
	Jefferson County, WV	◐	◐	○	○	●	●
	Berkeley County, WV	●	◐	○	○	●	●
West	Fauquier County, VA	◐	○	◐	○	◐	○
	Culpeper County, VA	◐	○	◐	○	◐	◐
	Orange County, VA	◐	○	○	○	◐	○
	Warren County, VA	◐	○	○	○	○	○
	Rappahann. County, VA	○	○	○	○	○	○
	Shenandoah County, VA	○	○	○	○	○	○
South	Prince William County, VA	●	○	●	◐	◐	●
	Stafford County, VA	●	○	●	○	●	●
	Spotsylvania County, VA	●	○	●	○	●	●
	Caroline County, VA	◐	○	○	○	◐	○
	King George County, VA	◐	○	○	○	◐	○
Maryland	Washington County, MD	●	○	●	○	○	○
	Frederick County, MD	●	○	●	○	◐	●
	Montgomery County, MD	●	○	●	●	●	●
	Prince George’s County, MD	●	○	●	●	●	●
	Charles County, MD	●	○	●	○	○	○

● Service Available ◐ Service Limited ○ No Service

Metrorail

WMATA operates five heavy rail transit lines in the Washington, D.C. metropolitan area (Red, Orange, Blue, Green, and Yellow). In addition to the existing five Metrorail lines, the Silver Line is scheduled to begin operation in late 2013 or early 2014. Service is provided 7 days a week, and many of the suburban stations include park-and-ride lots and bus bays for connecting local and regional bus services. Rail frequencies are generally 6 minutes in the peak periods and 12 minutes in the midday period. Fiscal Year 2010 Metrorail ridership was more than 287 million passenger trips. **Figure 3.4** shows existing Metrorail service. The existing Metrorail system has some capacity constraints which are discussed in Chapter 5.

Park-and-Ride Lots

Commuters in the Super NoVa region who do not have direct access to transit can drive to park-and-ride lots to access transit and TDM programs and services. Some park-and-ride lots are serviced by transit, while others allow opportunities for carpooling or vanpooling. Park-and-ride lots tend to be concentrated along major commuting corridors where connections to commuter bus and/or rail service are available. **Figure 3.5** shows park-and-ride lots in the study area, and which of those lots are served by transit.

Ridesharing

A significant part of the program for the majority of TDM agencies/transportation management associations (TMA), ridesharing services include managing a database of potential drivers and riders, education of support services, and follow-up. Some TDM agencies/TMAs support or provide vanpool subsidies to help start or maintain vanpools. TDM agencies also support slugging and casual carpooling, especially in the I-95 corridor. **Figure 3.6**, based on a technical memorandum study prepared for DRPT in July 2011, shows existing vanpools in the study area.

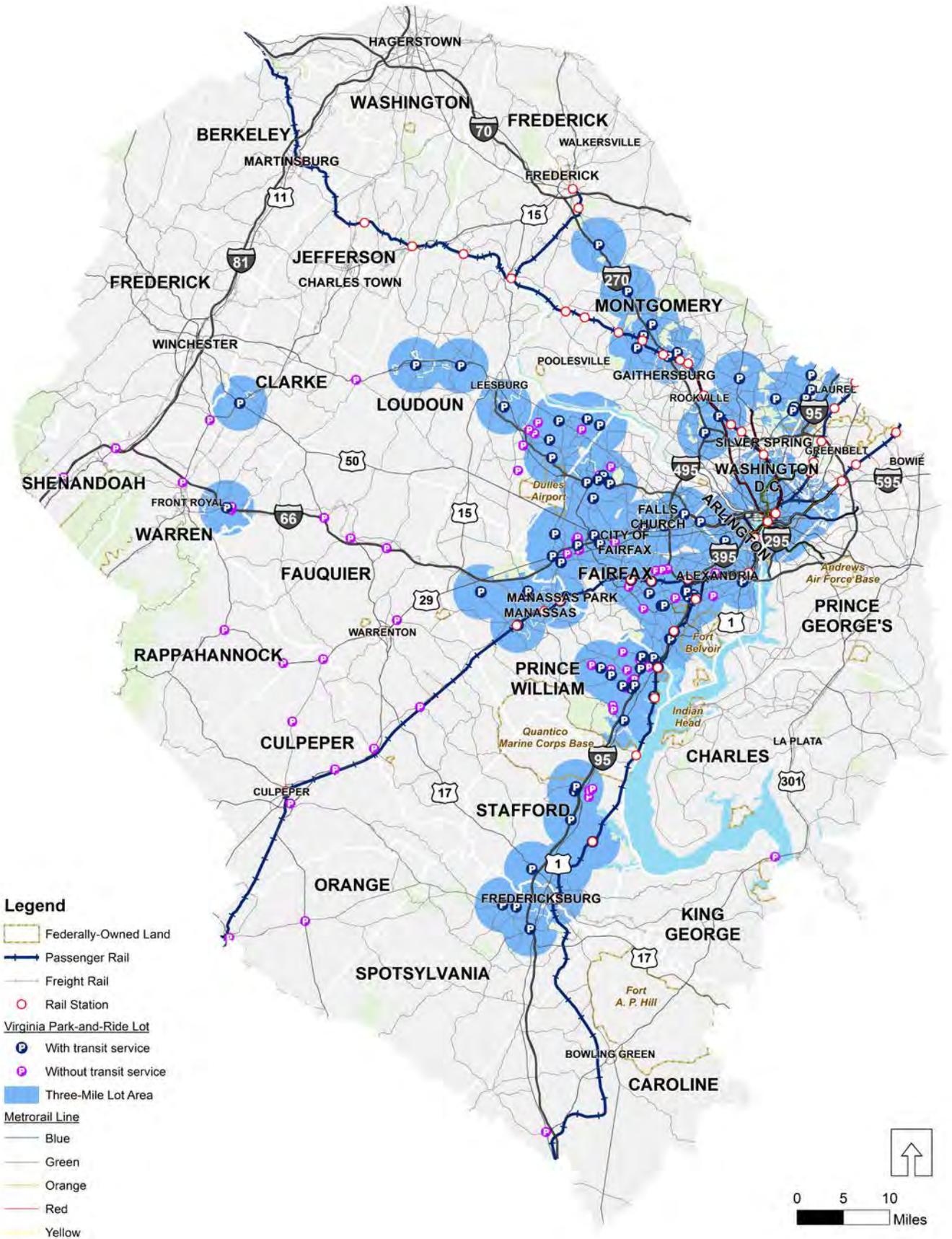


Figure 3.5: Park-and-Ride Lots

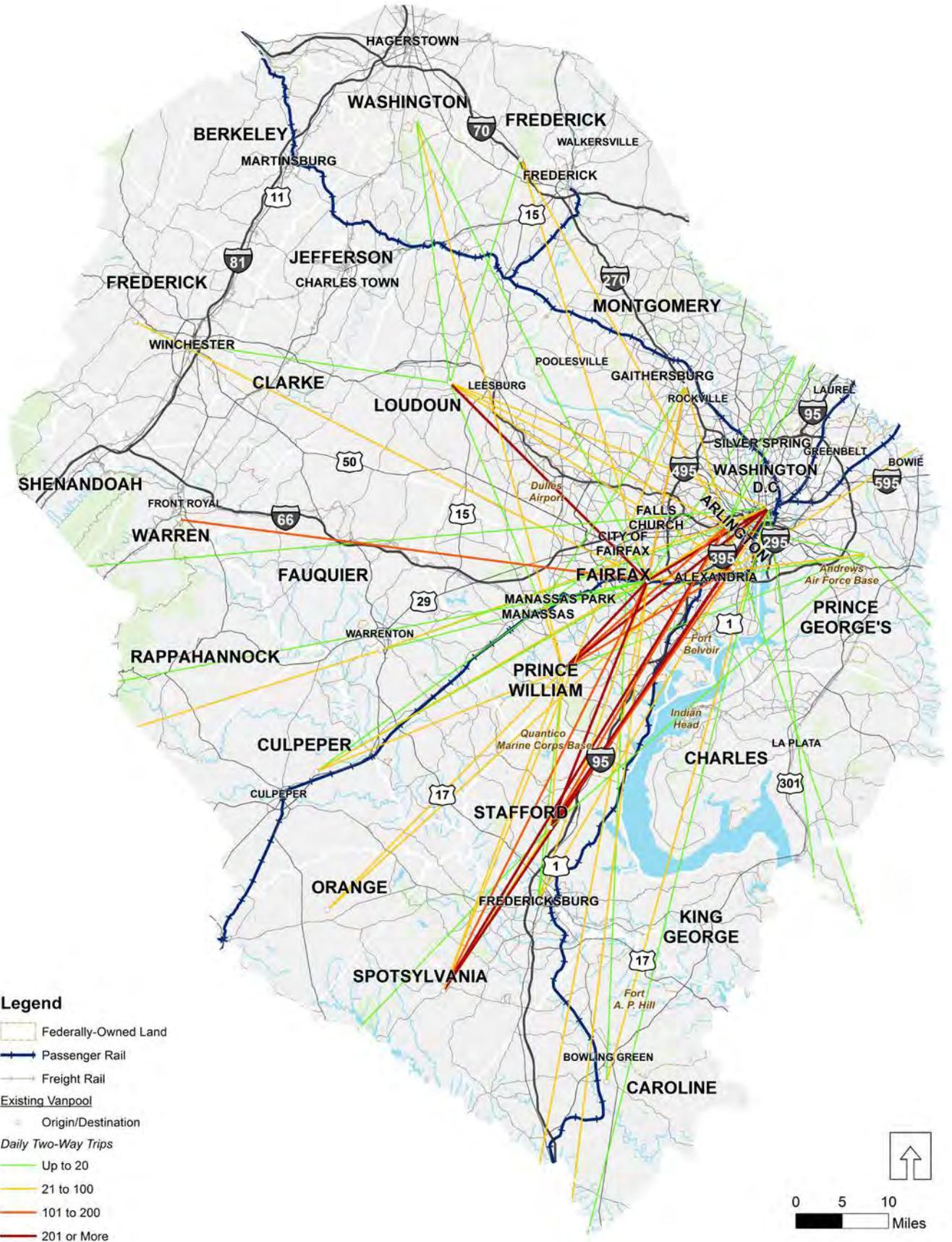


Figure 3.6: Vanpools

TDM PROGRAMS



vRide corporate vanpooling service. Source: Fairfax County.

TDM DEFINED

TDM programs go back to World War II when gasoline rationing spawned carpooling as a way to save fuel. After the war, programs encouraging carpooling went away until the oil and energy crisis of the 1970's. It was during the 1970's that ridesharing programs, as they were called, began to emerge in the Super NoVa study area. The number and magnitude of ridesharing programs grew throughout the 1980s and 1990s to manage increasing traffic congestion and address air quality issues. In the late 1990s, rideshare programs began to provide more than just carpool and vanpool matching for commuting to work. Today, TDM programs play a key roll in generating transit ridership and provide a variety of services to all types of travelers and employers.

By definition, TDM is the use of programs and services to make the entire transportation system [roads, high-occupancy vehicle (HOV)/high-occupancy toll (HOT) lanes, buses, trains, automobiles, etc.] more efficient. Greater efficiency of our transportation system is achieved by providing travelers with effective choices to improve travel reliability. It is through the application of TDM programs, projects, and policies that travel demand is reduced and/or redistributed through the change of one's mode of travel, time of travel, or travel route, or through the elimination of the trip altogether.

TDM PROGRAMS

TDM services are provided in the study area through a unique partnership between the DRPT, VDOT, MPO, planning district commissions, TMAs, and city and county governments. Federal and private agencies provide services

that complement these ongoing programs. Temporary or special services are often provided through transportation management programs.

As with the Transit System Operation section, the existing TDM programs have been organized into five geographic areas. A few programs cover the entire Super NoVa study area or all of Virginia. These programs are noted below in the following categories: 1) Inner subarea TDM programs, 2) Northwest subarea TDM programs, 3) West subarea TDM programs, 4) South subarea TDM programs, and 5) Maryland subarea TDM programs.

All of the TDM programs operating in the Super NoVA region are members of a regional network called Commuter Connections. MWGOG coordinates the regional activities of the Commuter Connections network. Regional activities include regional marketing, Bike to Work Day, Car Free Day, and a Pool Rewards program that provides financial incentives to new carpools and vanpools. MWCOG also operates and maintains a central online ridematching system/database for network members and the public, and operates a regional Guaranteed Ride Home (GRH) program. The GRH program provides commuters who carpool, vanpool, bike, or use transit to commute to work with a ride home when a personal emergency or illness occurs and the commuter must unexpectedly leave work early, or when a commuter unexpectedly has to stay late at work.

DRPT also provides regional and statewide services. Through the Telework!VA program, DRPT provides resources to employers and employees on how to establish and manage a telework program and how to take advantage of Virginia's telework tax credit administered by Department of Taxation. DRPT also provides Try Transit Week, Amtrak Virginia, and guidance to state agencies on Commuter Choice transit and vanpool benefits.

Federal programs have a significant impact in the Super NoVA region. Federal agencies have established employee transportation coordinators and telework coordinators to help employees with their commute and encourage the use of telework, transit, carpooling, vanpooling, and biking to work. These agency coordinators and federal policies, including the federal agency commuter benefit program and the Telework Enhancement Act of 2010, play a considerable role in managing traffic congestion and increasing transit, carpool, vanpool, and telework usage.

Inner Subarea TDM Programs

This subarea has the richest variety of TDM services. Employer services, telework support, Commuter Connections

GRH program, ridematching, vanpool support, and bike/walk programs are offered by TDM agencies in this subarea. Carsharing, bikesharing, and slugging are provided or supported by private agencies.

Arlington County

Arlington County Commuter Services (ACCS) provides assistance to employers, employees, residents, travelers, and developers in the county. ACCS operates two retail stores—the Commuter Store, which sells bus and rail passes and tickets for all transit services in the region and provides transit schedules, maps, ridematching and trip planning, and the Mobile Commuter Store, which is a store on wheels that serves several employer locations in the region. Capital Bikeshare operates 286 bicycles at 44 bike stations in Arlington where the public can rent a bike for a few minutes or hours. Bikesharing programs like this help bridge the “last mile” between transit station or bus stop and the office.

City of Alexandria

Local Motion is Alexandria's TDM program operated by the Department of Transportation & Environmental Services and serves residents, employers, workers, and visitors. Local Motion promotes transit and commute alternatives, conducts outreach to employers, and operates the Old Town Transit Shop that provides travel information and sells transit passes and tickets. As of October 2012, Capital Bikeshare operates at eight bike stations in the city where the public can rent a bike for a few minutes or hours.

Fairfax County

RideSources provides ridematching, commute options information, and park-and-ride lot information; promotes transit; and provides assistance to employers and employees. RideSources is a program of the county's DOT, which also operates four Connector Stores that provide transit schedules, brochures, fare media, and information about the many different traveling options in the Northern Virginia region. Staff at the Connector Stores can assist in planning efficient travel itineraries for the commuter, tourist, or resident.

The Dulles Area Transportation Association (DATA) promotes commute options to its member employers, workers, and residents in the Dulles airport area. DATA promotes telework and provides ridematching information in English and Spanish.

Washington, D.C.

goDCgo is an initiative of DDOT. goDCgo is an online resource that promotes alternatives to driving alone to employees, residents, and visitors. goDCgo's employer services consultants work with businesses in the District to encourage employees to use alternatives to driving alone. As of October 2012, Capital Bikeshare operates more than 1,000 bicycles at 137 bike stations for rental by the public.

Regional Programs

Through the Commuter Connections network program, MWCOG operates a regional GRH program available to commuters that work in this subarea. GRH provides up to four rides per year to a commuter's home or commuter parking lot if the commuter uses a carpool, vanpool, transit, or bikes to work. Commuters can use GRH when one of life's unexpected emergencies arises, such as a personal illness or sick child, or when they have to unexpected work overtime. MWCOG also operates a regional Pool Rewards program that offers \$200 per month for newly-formed vanpools and \$2 per day up to a maximum of \$130 to each new carpooler. Clean Air Partners operates Air Quality Action Days which promotes the use of transit during the summertime when ground level ozone and pollution create unhealthy air.

Northwest Subarea TDM Programs

Employer services, telework support, GRH, ridematching, and vanpool support are offered most commonly by TDM agencies in this subarea.

Loudoun County

The county's Office of Transportation Services promotes transit services, carpooling, and vanpooling and provides commute options and telework information to residents, employers, and employees.

Northern Shenandoah Valley

The RideSmart program provided by the NSVRC provides ridematching; promotes commuting options; and provides information on park-and-ride lots, telework, vanpool start-up assistance, GRH program, transit services, and MARC commuter train.

West Subarea TDM Programs

Ridematching, vanpool start-up assistance, telework support, GRH, and park-and-ride lot information are the most commonly offered TDM services in this subarea.

Culpeper, Fauquier, Orange, and Rappahanock Counties

Commuter Services, a commuting solutions program by the RRRC, promotes the use of high-occupancy travel modes and provides residents with carpool, vanpool matching, vanpool start-up assistance, park-and-ride lot, commuter bus, GRH program, and telework information.

Shenandoah and Warren Counties

RideSmart is a program provided by the NSVRC. RideSmart provides ridematching; promotes commuting options; and provides information on park-and-ride lots, telework, vanpool start-up assistance, GRH program, transit services, and MARC commuter train.

South Subarea TDM Programs

Employer services, telework support, ridematching, vanpool support, GRH, and park-and-ride lot information are the most commonly offered TDM services in this subarea. Slugging is provided as an independent service.

Prince William County

PRTC operates the county's OmniMatch TDM program which provides ridematching and vanpool assistance; promotes transit, carpooling, and vanpooling; and assists employers and their employees with commute options.

Spotsylvania, Stafford, King George, and Caroline Counties and City of Fredericksburg

GWRC operates GWRideConnect.

Maryland Subarea TDM Programs

Charles County

The Regional Ridesharing Program of Southern Maryland helps the residents of southern Maryland and those employed in the region to commute to work using carpool, vanpool, or commuter express bus services. The program is operated by the Tri-County Council for Southern Maryland.

Frederick County

TransIT Services provides trip planning, carpool/vanpool matching, information on transportation options and telework, and vanpool assistance.

Montgomery County

TDM services are delivered by Montgomery County Commuter Services and two TMAs. These agencies offer extensive employer outreach and commuter information programs, and the county operates a commuter store that sells transit passes and tickets.

Prince Georges County

The county's Department of Public Works and Transportation operates the RideSmart program. RideSmart staff works with county employers, their employees, and residents to provide carpool/vanpool matching and vanpool financial assistance and promote and provide information on transit options, biking, park-and-ride locations, telework, vanpooling, and the regional GRH program.

Detailed profiles of individual Virginia TDM agencies listing existing services and short- and long-range plans are included in the **Appendix**.

TRANSPORTATION MANAGEMENT PROGRAMS

Recent construction projects have provided significant improvements to services through transportation management programs (TMP) such as the I-495 Capital Beltway High Occupancy Toll Lanes TMP, Dulles Metrorail TMP, and the Base Realignment and Closure (BRAC) Act TMP.

The I-495 Capital Beltway HOT Lanes TMP had an aggressive business outreach program to inform employees of alternate commute solutions. As a result of this TMP, Tysons Express, a new bus service, was implemented between Woodbridge and Tysons to provide a new commute option. Employer assistance also was provided to develop and support telework programs, alternate work schedules, commute incentives, ridematching, GRH, and shuttle services.

The Dulles Metrorail TMP had a focused employer services technical assistance team, telework incentives and technical assistance, ridematching, GRH, and commute incentives. As a result of this TMP, the Tysons Express bus service was implemented between Leesburg and Tysons and the Loudoun County park-and-ride lot was expanded.

The BRAC Act TMPs supported telework programs, alternative work schedules, rideshare websites, shuttle service, local transit, and a pilot dynamic ridematching program.

POPULATION AND EMPLOYMENT



Capital bikeshare kiosk and bikes in Crystal City in Arlington County, VA.

Demographic considerations are important in understanding where transit services are needed and will be supported. The following section describes the characteristics of the people that live and work in the Super NoVa region.

POPULATION

Population data for all jurisdictions was obtained from the 2010 United States Census and confirmed by the following regional planning agencies¹:

- MWCOG
- GWRC
- WinFred MPO
- HEPMPO

The population of the jurisdictions that make up Super NoVa was approximately 6 million people in 2010. **Table 3.2** shows the population by jurisdiction.

Within the Super NoVa region, the population is most concentrated in the areas in and around the region's inner area and its major highway corridors. As distance from the inner area increases, population density decreases and is primarily confined to incorporated cities and towns or unincorporated places. **Figure 3.7** and **Figure 3.8** show the population density in people per square mile of the Super NoVa region and the inner area, respectively.

¹ TAZ data were obtained from the following metropolitan planning organizations (MPO): Metropolitan Washington Council of Governments (MWCOG), Fredericksburg Area MPO, Winchester-Frederick County MPO, and the Hagerstown/Eastern Panhandle MPO. Where models overlapped, the MWCOG model was used.

Table 3.2: 2010 Population by Jurisdiction

By Name		By Rank	
Jurisdiction Name	2010 Population	Jurisdiction Name	2010 Population
Arlington County, VA	208,000	Fairfax County, VA	1,082,000
Berkeley County, WV	104,000	Montgomery County, MD	972,000
Caroline County, VA	29,000	Prince George's County, MD	863,000
Charles County, MD	147,000	Washington, D.C.	602,000
City of Alexandria, VA	140,000	Prince William County, VA	402,000
City of Fairfax, VA	23,000	Loudoun County, VA	312,000
City of Falls Church, VA	12,000	Frederick County, MD	233,000*
City of Fredericksburg, VA	24,000	Arlington County, VA	208,000
City of Manassas Park, VA	14,000	Charles County, MD	147,000*
City of Manassas, VA	38,000	Washington County, MD	147,000
City of Winchester, VA	26,000	City of Alexandria, VA	140,000
Clarke County, VA	17,000	Stafford County, VA	129,000
Culpeper County, VA	47,000	Spotsylvania County, VA	122,000
Fairfax County, VA	1,082,000	Berkeley County, WV	104,000
Fauquier County, VA	65,000	Frederick County, VA	78,000
Frederick County, MD	233,000*	Fauquier County, VA	65,000
Frederick County, VA	78,000	Jefferson County, WV	53,000
Jefferson County, WV	53,000	Culpeper County, VA	47,000
King George County, VA	24,000	Shenandoah County, VA	42,000*
Loudoun County, VA	312,000	City of Manassas, VA	38,000
Montgomery County, MD	972,000	Warren County, VA	38,000
Orange County, VA	33,000*	Orange County, VA	33,000*
Prince George's County, MD	863,000	Caroline County, VA	29,000
Prince William County, VA	402,000	City of Winchester, VA	26,000
Rappahannock County, VA	7,000	City of Fredericksburg, VA	24,000
Shenandoah County, VA	42,000*	King George County, VA	24,000
Spotsylvania County, VA	122,000	City of Fairfax, VA	23,000
Stafford County, VA	129,000	Clarke County, VA	17,000
Warren County, VA	38,000	City of Manassas Park, VA	14,000
Washington County, MD	147,000*	City of Falls Church, VA	12,000
Washington, D.C.	602,000	Rappahannock County, VA	7,000
TOTAL	6,033,000	TOTAL	6,033,000

* Entire county is not located within the Super NoVa region. Population reflects entire county.

Source: US Census Bureau – 2010 Census

Transportation Disadvantaged Population

Transportation disadvantaged populations include groups of people that have potential demographic characteristics that suggest a predisposition toward transit usage. Based on national experience, the following population subgroup characteristics have the potential to contribute to need for transit services:

- High Minority Population Percentages
- High Proportions of Persons Aged 65 and Older
- High Proportions of Linguistic Isolation
- Large Household Sizes
- Low Automobile Availability
- Low Income

Data for transportation disadvantaged populations was obtained from the US Census Bureau's 2010 5-year American Community Survey (ACS) at the census tract level. To analyze the data for transportation disadvantaged populations, an index was created that compares each tract against the region's average. For each of the six factors, a positive or negative score was given to each tract based on its deviation from that factor's mean. The six scores were summed to create the final index.

Data for transportation disadvantaged populations was obtained from the US Census Bureau's 2010 5-year ACS at the census tract level. To analyze the data for transportation disadvantaged populations, an index was created that compares each tract against the region's average. For each of the six factors, a positive or negative score was given to each tract based on its deviation from that factor's mean. The six scores were summed to create the final index. The tracts with the largest index scores represent the areas with the highest potential need for transit. **Figure 3.9** and **Figure 3.10** show the locations of transportation disadvantaged populations within Virginia.²

Relative to the region, transportation disadvantaged populations appear to be the most prominent along the major commuting corridors and in some of the more rural areas in the southwest portion of the study area. It is worth noting that the size of the census-defined divisions in rural areas, where the divisions are large due to low population densities, can often accentuate the perception of transit need. Two examples of this over-emphasis include the predominantly rural areas of Caroline and Culpeper Counties shown in **Figure 3.9** and **Figure 3.10**.

2 To accurately represent transportation disadvantaged populations in Virginia, data from Maryland, Washington, D.C., and West Virginia was excluded from the index.

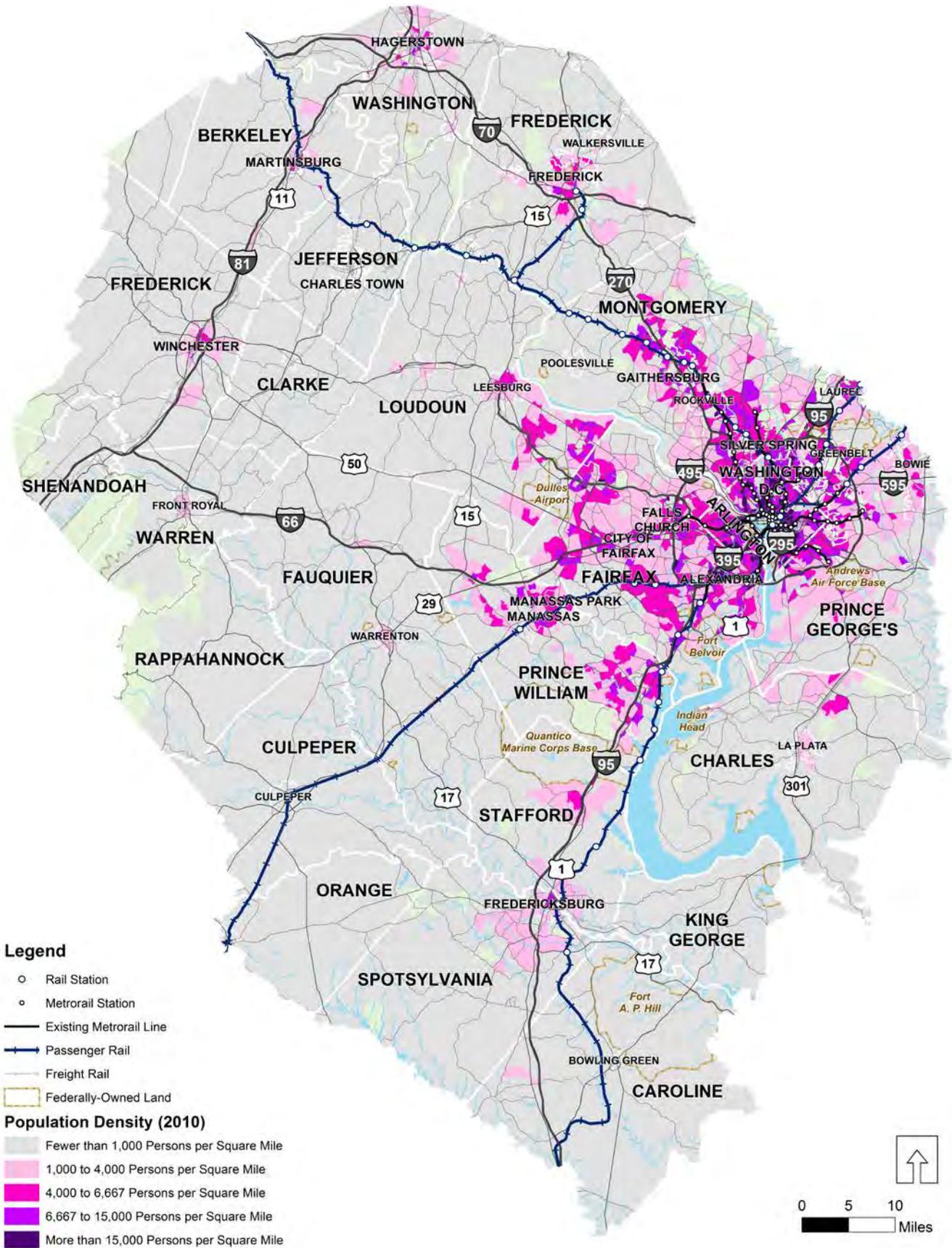


Figure 3.7: 2010 Population Density

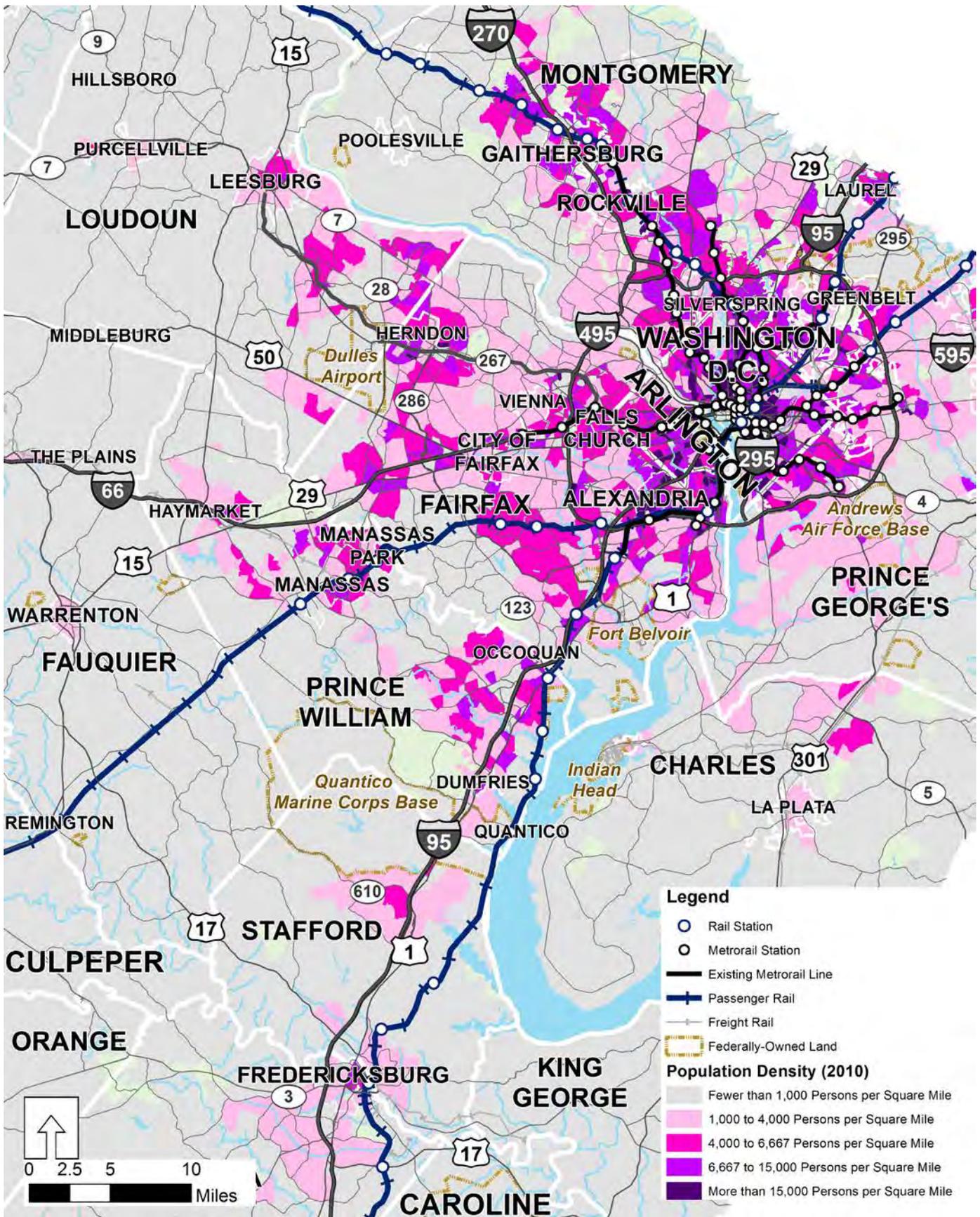


Figure 3.8: 2010 Population Density – Inner Area

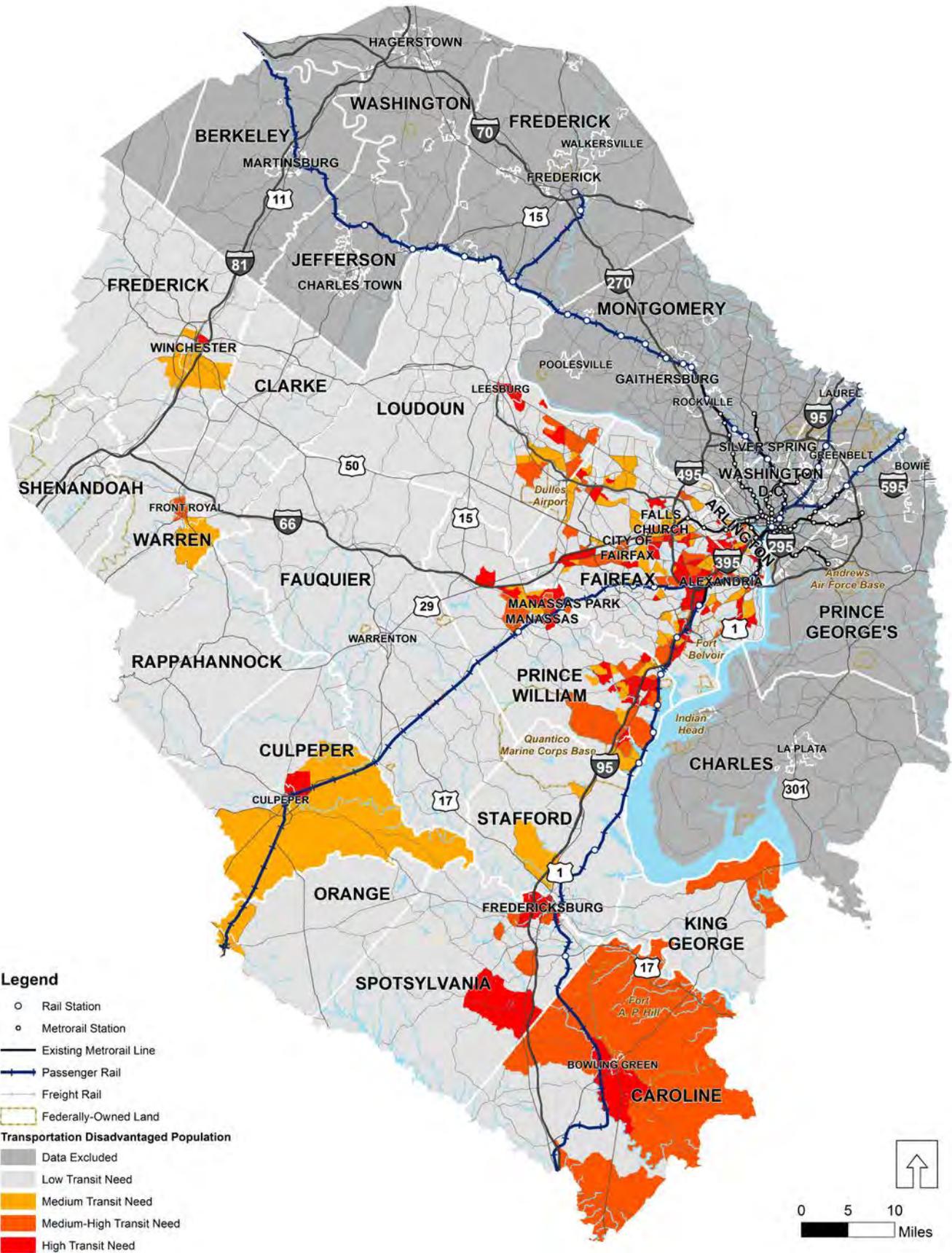


Figure 3.9: 2010 Transportation Disadvantaged Populations

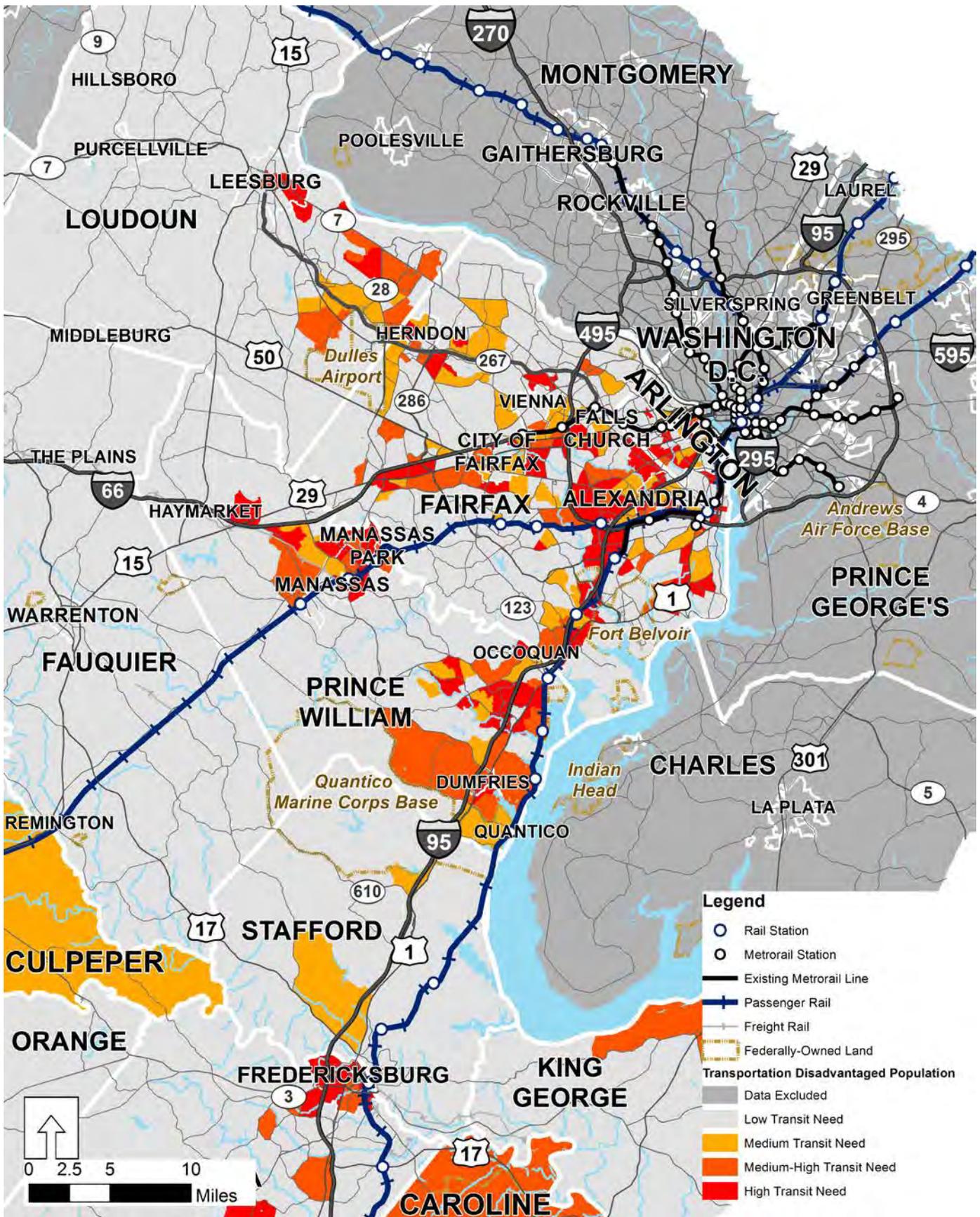


Figure 3.10: 2010 Transportation Disadvantaged Populations — Inner Area

EMPLOYMENT

For the purposes of the Super NoVa study, employment refers to the number of people whose jobs are located in the jurisdiction. Employment data for each jurisdiction was obtained from regional planning agencies where possible. For jurisdictions that are not part of an MPO, 2010 estimates were obtained from the Virginia Employment Commission. According to data obtained for this study, approximately 3.5 million people worked in the Super NoVa region in 2010. **Table 3.3** shows employment estimates by jurisdiction.

Employment density was calculated based on the planning agency data where available. Jurisdictions that are not part of an MPO were analyzed on the county level. Employment in the Super NoVa region is most dense in the inner area and in suburban activity centers such as Tysons Corner and areas along the Dulles Toll Road and I-270. In the western and southern portions of the region, employment densities are lower. **Figure 3.11** and **Figure 3.12** show employment density in people per square mile for the Super NoVa region and inner area, respectively.

Table 3.3: 2010 Employment by Jurisdiction

By Name		By Rank	
Jurisdiction Name	2010 Employment	Jurisdiction Name	2010 Employment
Arlington County, VA	205,000	Washington, D.C.	786,000
Berkeley County, WV	44,000	Fairfax County, VA	641,000
Caroline County, VA	7,000	Montgomery County, MD	506,000
Charles County, MD	62,000	Prince George's County, MD	358,000
City of Alexandria, VA	109,000	Arlington County, VA	205,000
City of Fairfax, VA	27,000	Loudoun County, VA	144,000
City of Falls Church, VA	11,000	Frederick County, MD	139,000
City of Fredericksburg, VA	28,000	Prince William County, VA	114,000
City of Manassas Park, VA	5,000	City of Alexandria, VA	109,000
City of Manassas, VA	25,000	Washington County, MD	79,000
City of Winchester, VA	30,000	Charles County, MD	62,000
Clarke County, VA	5,000	Berkeley County, WV	44,000
Culpeper County, VA	14,000	Stafford County, VA	42,000
Fairfax County, VA	641,000	Spotsylvania County, VA	38,000
Fauquier County, VA	22,000	City of Winchester, VA	30,000
Frederick County, MD	139,000	City of Fredericksburg, VA	28,000
Frederick County, VA	24,000	City of Fairfax, VA	27,000
Jefferson County, WV	17,000	City of Manassas, VA	25,000
King George County, VA	9,000	Frederick County, VA	24,000
Loudoun County, VA	144,000	Fauquier County, VA	22,000
Montgomery County, MD	506,000	Jefferson County, WV	17,000
Orange County, VA	8,000	Culpeper County, VA	14,000
Prince George's County, MD	358,000	Shenandoah County, VA	13,000
Prince William County, VA	114,000	Warren County, VA	11,000
Rappahannock County, VA	1,000	City of Falls Church, VA	11,000
Shenandoah County, VA	13,000	King George County, VA	9,000
Spotsylvania County, VA	38,000	Orange County, VA	8,000
Stafford County, VA	42,000	Caroline County, VA	7,000
Warren County, VA	11,000	Clarke County, VA	5,000
Washington County, MD	79,000	City of Manassas Park, VA	5,000
Washington, D.C.	786,000	Rappahannock County, VA	1,000
TOTAL	3,524,000	TOTAL	3,524,000

Sources: Regional Travel Demand Models (MWCOC, FAMPO, Win-Fred, and HEPMPO); Virginia Employment Commission.

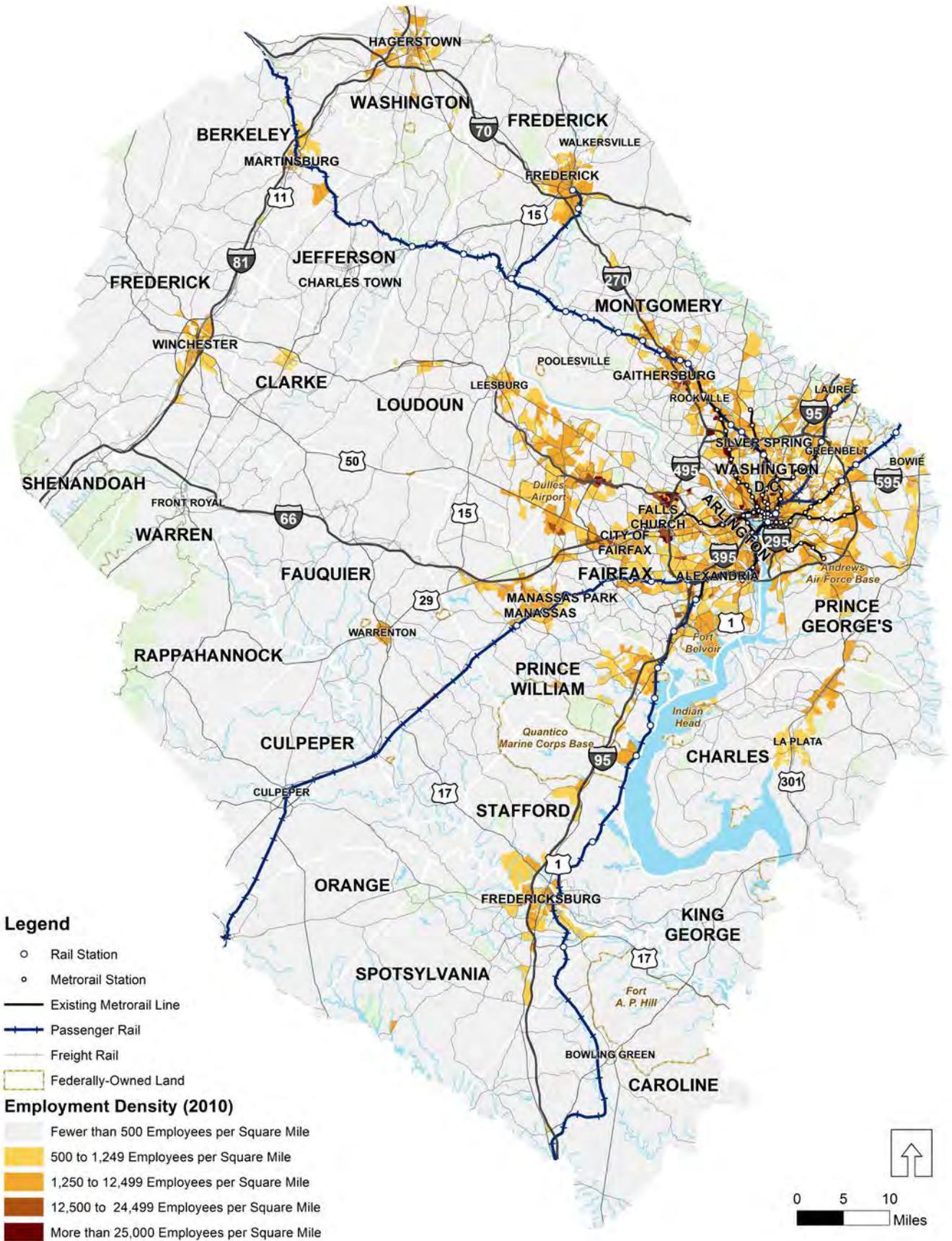


Figure 3.11: 2010 Employment Density

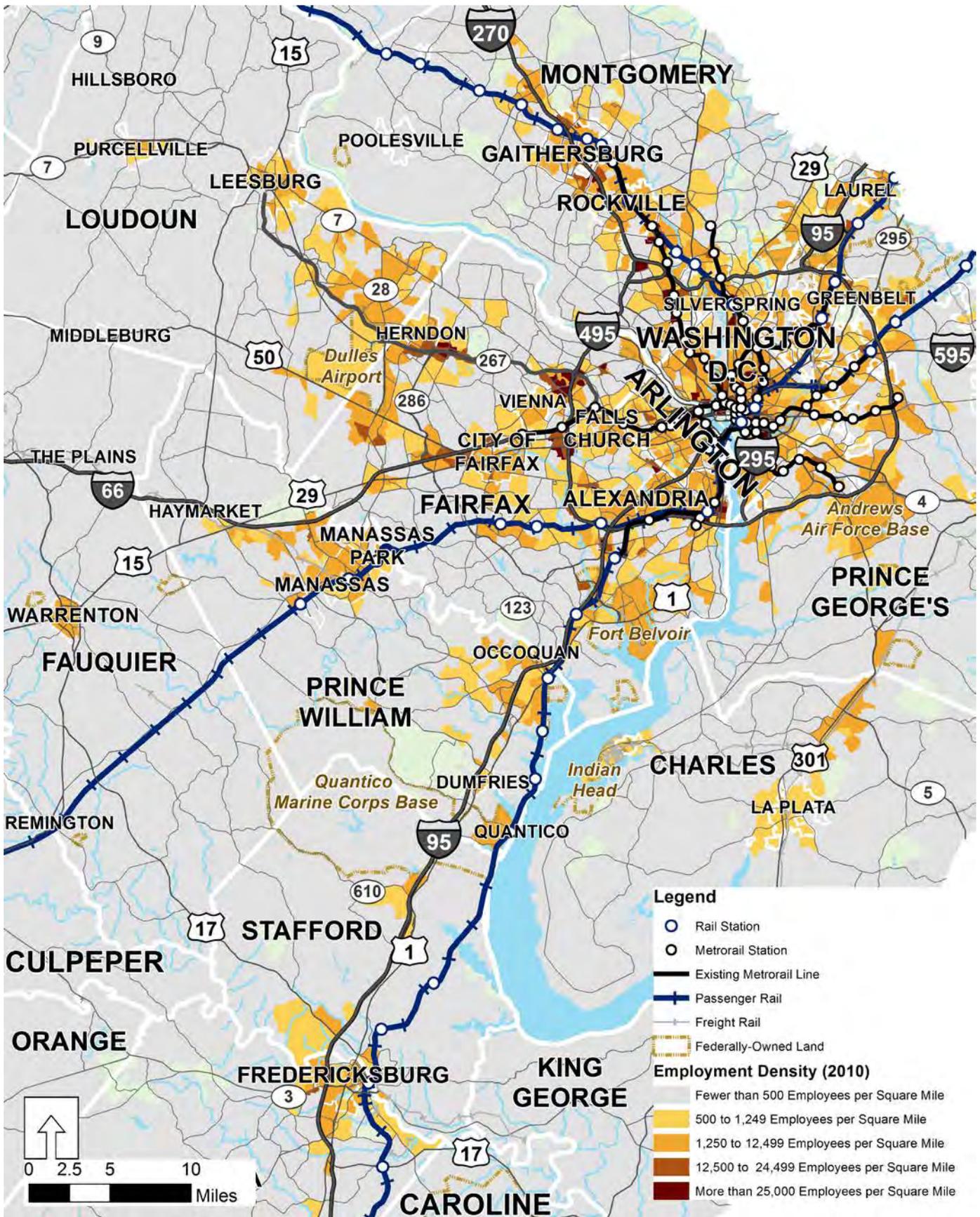


Figure 3.12: 2010 Employment Density – Inner Area

ACTIVITY

Activity in the context of the Super NoVa study was defined as the combination of population and employment. Activity analysis helps to reveal areas with a mixture of population and employment that could otherwise be missed by looking at population and employment separately. Activity density was calculated for each area by dividing the sum of the population and employment data by the acreage.

Table 3.4 shows a summary of activity by jurisdiction. The average activity density for the Super NoVa region in 2010 was approximately 1.8 jobs and people per acre. **Figure 3.13** and **Figure 3.14** show activity density in people per square acre for the Super NoVa region and inner area, respectively.

Table 3.4: 2010 Activity by Jurisdiction

By Name		By Rank	
Jurisdiction Name	2010 Activity	Jurisdiction Name	2010 Activity
Arlington County, VA	413,000	Fairfax County, VA	1,723,000
Berkeley County, WV	148,000	Montgomery County, MD	1,478,000
Caroline County, VA	36,000	Washington, D.C.	1,388,000
Charles County, MD	209,000	Prince George's County, MD	1,221,000
City of Alexandria, VA	249,000	Prince William County, VA	516,000
City of Fairfax, VA	50,000	Loudoun County, VA	456,000
City of Falls Church, VA	23,000	Arlington County, VA	413,000
City of Fredericksburg, VA	52,000	Frederick County, MD	372,000
City of Manassas Park, VA	19,000	City of Alexandria, VA	249,000
City of Manassas, VA	63,000	Washington County, MD	226,000
City of Winchester, VA	56,000	Charles County, MD	209,000
Clarke County, VA	22,000	Stafford County, VA	171,000
Culpeper County, VA	61,000	Spotsylvania County, VA	160,000
Fairfax County, VA	1,723,000	Berkeley County, WV	148,000
Fauquier County, VA	87,000	Frederick County, VA	102,000
Frederick County, MD	372,000	Fauquier County, VA	87,000
Frederick County, VA	102,000	Jefferson County, WV	70,000
Jefferson County, WV	70,000	City of Manassas, VA	63,000
King George County, VA	33,000	Culpeper County, VA	61,000
Loudoun County, VA	456,000	City of Winchester, VA	56,000
Montgomery County, MD	1,478,000	Shenandoah County, VA	55,000
Orange County, VA	41,000	City of Fredericksburg, VA	52,000
Prince George's County, MD	1,221,000	City of Fairfax, VA	50,000
Prince William County, VA	516,000	Warren County, VA	49,000
Rappahannock County, VA	8,000	Orange County, VA	41,000
Shenandoah County, VA	55,000	Caroline County, VA	36,000
Spotsylvania County, VA	160,000	King George County, VA	33,000
Stafford County, VA	171,000	City of Falls Church, VA	23,000
Warren County, VA	49,000	Clarke County, VA	22,000
Washington County, MD	226,000	City of Manassas Park, VA	19,000
Washington, D.C.	1,388,000	Rappahannock County, VA	8,000
TOTAL	9,557,000	TOTAL	9,557,000

Sources: Regional Travel Demand Models (MWCOCG, FAMPO, Win-Fred, and HEPMPO); US Census Bureau; Virginia Employment Commission.

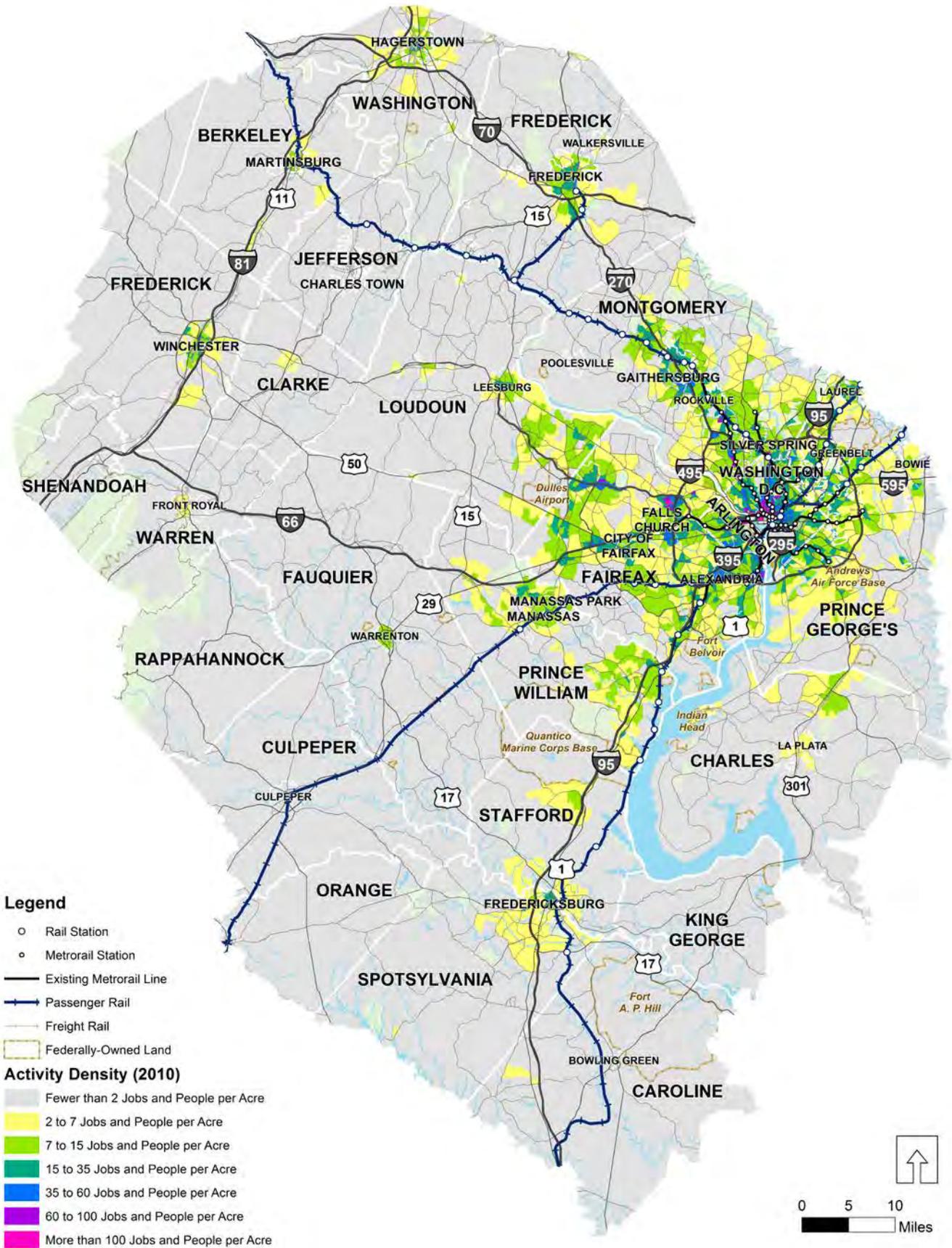


Figure 3.13: 2010 Activity Density

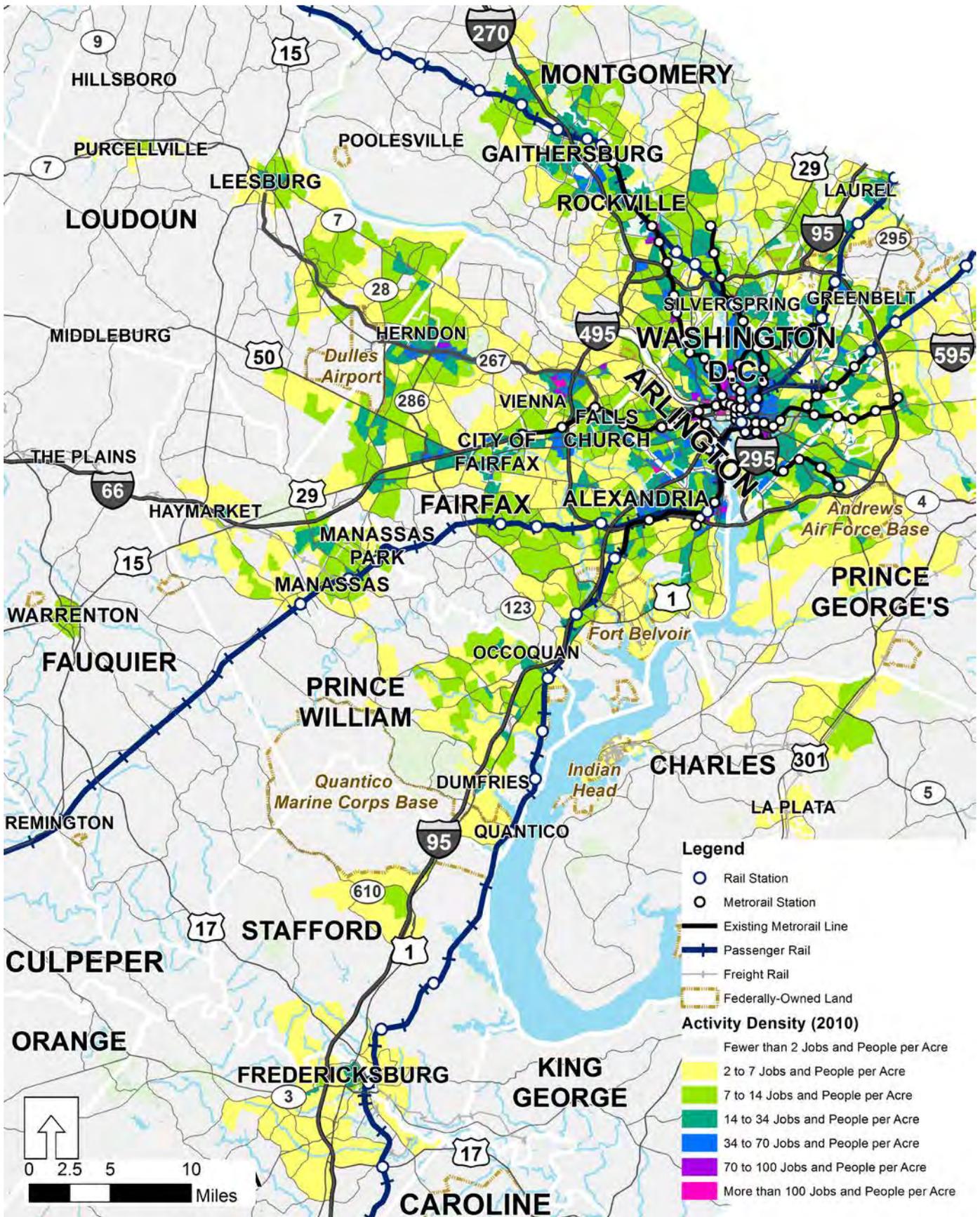


Figure 3.14: Activity Density - Inner Area

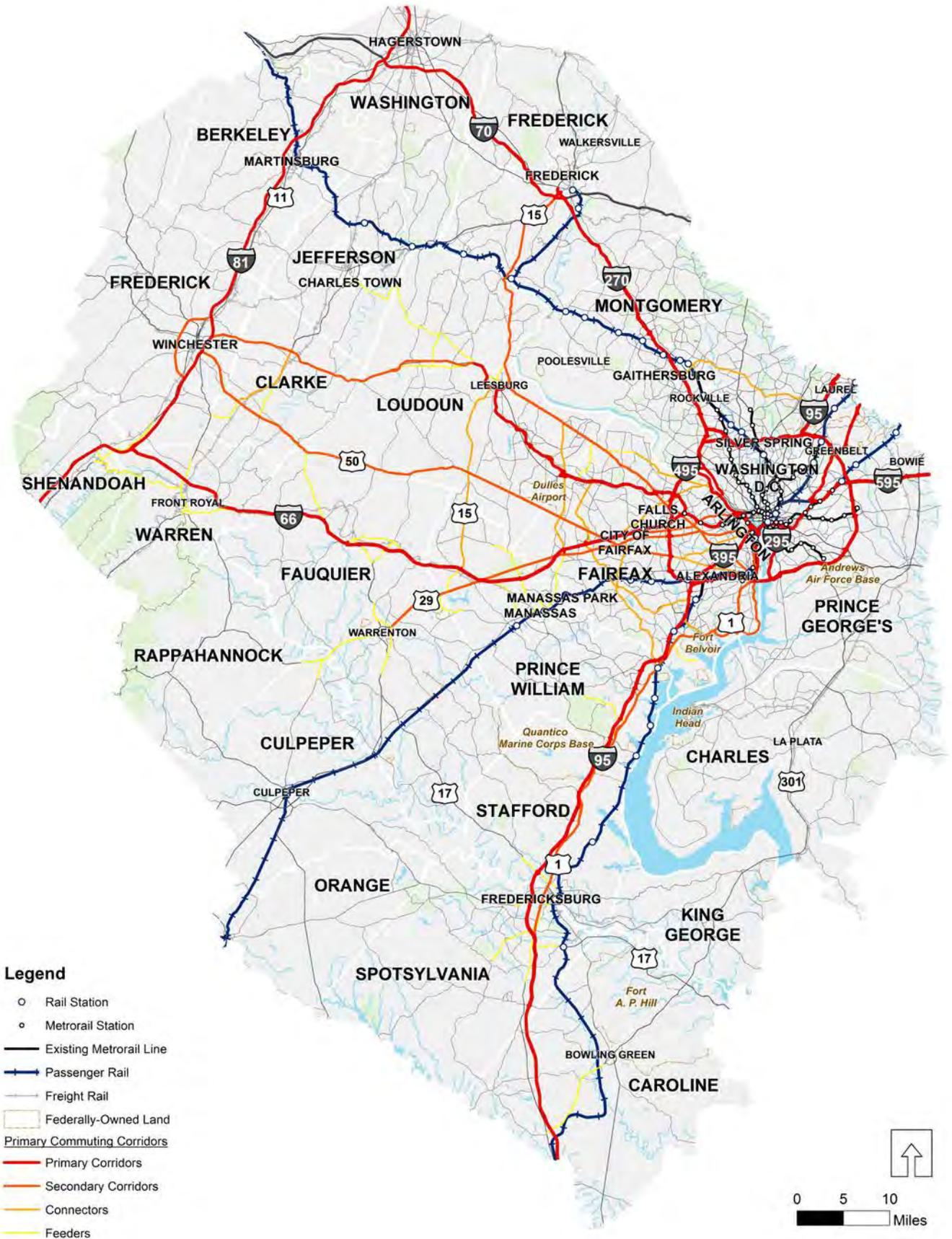


Figure 3.15: Major Commuting Corridors

TRAVEL TRENDS AND DESIRE LINES



Fairfax City-University Energysaver. Source: City of Fairfax.

The development of a Vision Plan for the Super NoVa region required a solid understanding of travel patterns. This understanding provided the basis for identifying transit and TDM service needs, and recommendations that address those needs.

MAJOR COMMUTING CORRIDORS AND TRAVEL PATTERNS

There are four major commuter sheds in the Super NoVa study area:

- The I-95/US 1 corridor
- The I-66/US 29/US 50 corridor
- The Route 7/Dulles Toll Road/Route 267
- The I-70/I-270 corridor in Maryland

Figure 3.15 on the preceding page shows the major commuting corridors.



Figure 3.16: Flow Diagram of Super NoVa Travel Pattern Analysis Process

TRAVEL PATTERN ANALYSIS METHODOLOGY

A methodology, described below, was established to analyze travel patterns in the Super NoVa region. **Figure 3.16** provides an illustration of the proposed process.

- First, the Super NoVa region was broken into “districts”. Outside of the D.C. metropolitan area, districts are generally defined as counties. Within the metropolitan area, US Census Public Use Microdata (PUMA) boundaries were used. Overall, 50 districts were defined, which are illustrated in **Figure 3.17**.
- Next, 50 by 50 cell matrices of work and non-work trip tables were developed. Most of this data was developed with MPO travel demand models. The MWCOG travel demand model covers a large portion of the Super NoVa study area, and includes almost 90 percent of the Super NoVa region’s 2010 population.
 - For the remaining 10 percent of the Super NoVa region’s population base, travel patterns were assessed by incorporating trip tables from the FAMPO model (model covers Fredericksburg, Spotsylvania, Stafford, Caroline, and King George Counties), the Win-Fred model (model covers City of Winchester and Frederick County) and the HEPMPO model (model covers Berkeley and Jefferson Counties, WV and Washington County, MD). These models use 2006 through 2008 as a base year, depending on the model.
 - There are five counties within the Super NoVa region are not within a defined MPO and thus are not included in any of the above-noted travel demand models (Shenandoah, Warren, Rappahannock, Culpeper, and Orange). For those five counties, trips have been estimated based on general trip generation estimates that are tied to each county’s population.

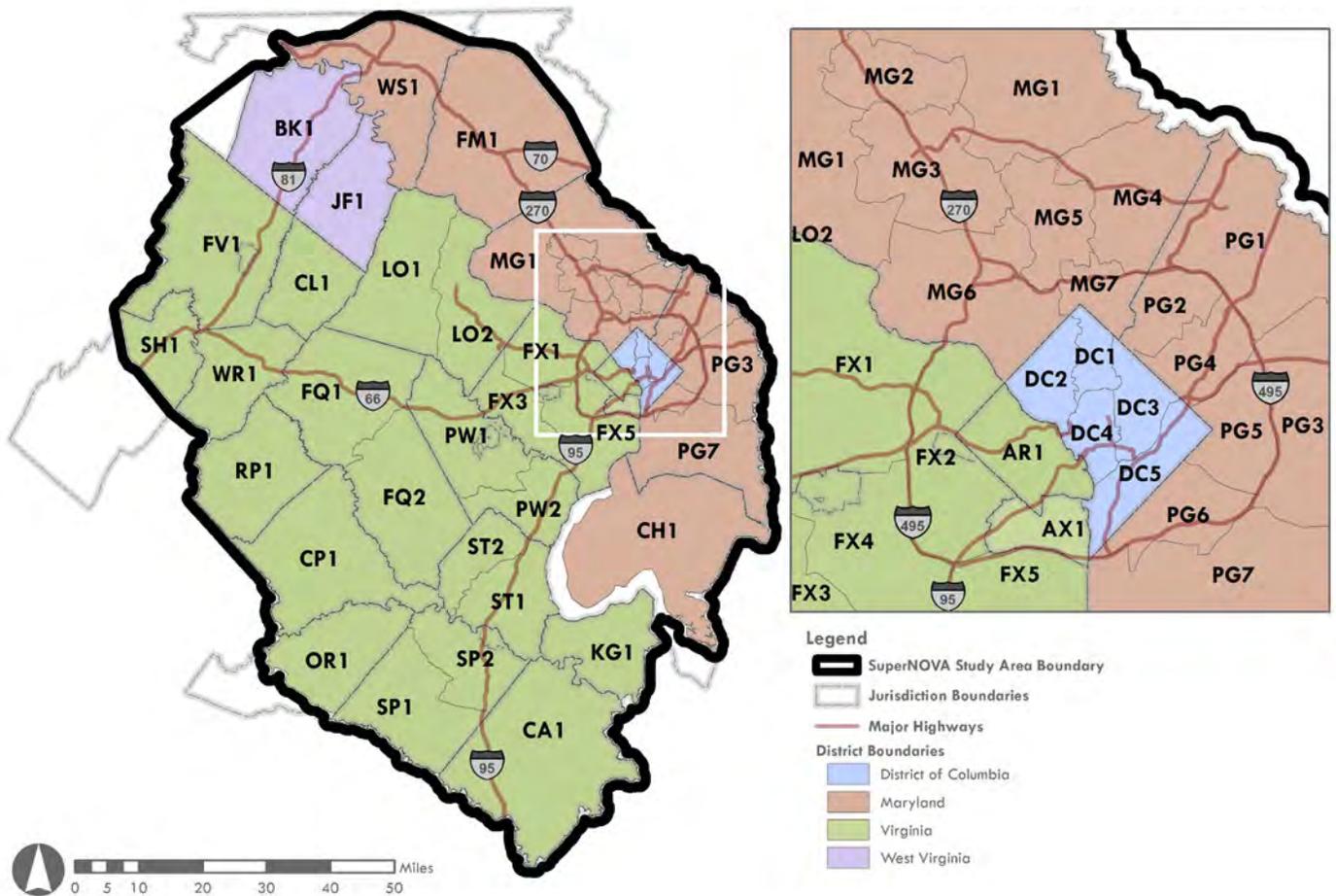


Figure 3.17: Super NoVa Defined Districts for Travel Pattern Analysis

- Trips were then distributed between the 50 districts. For trip distributions between different travel demand model areas, external trip volumes were first identified from each model area. Those trips were then distributed to other defined Super NoVa districts based on ACS journey to work data.

This process was used to develop work and non-work trip tables for 2007 (the base year for many of the travel demand models) and 2040. Transit and TDM service needs were then determined by comparing travel patterns to existing and planned transit/TDM services and identifies gaps and deficiencies. The **Appendix** presents a more thorough description of the methodology and results for both work and non-work trips. For purposes of this report, only existing work trips have been summarized.

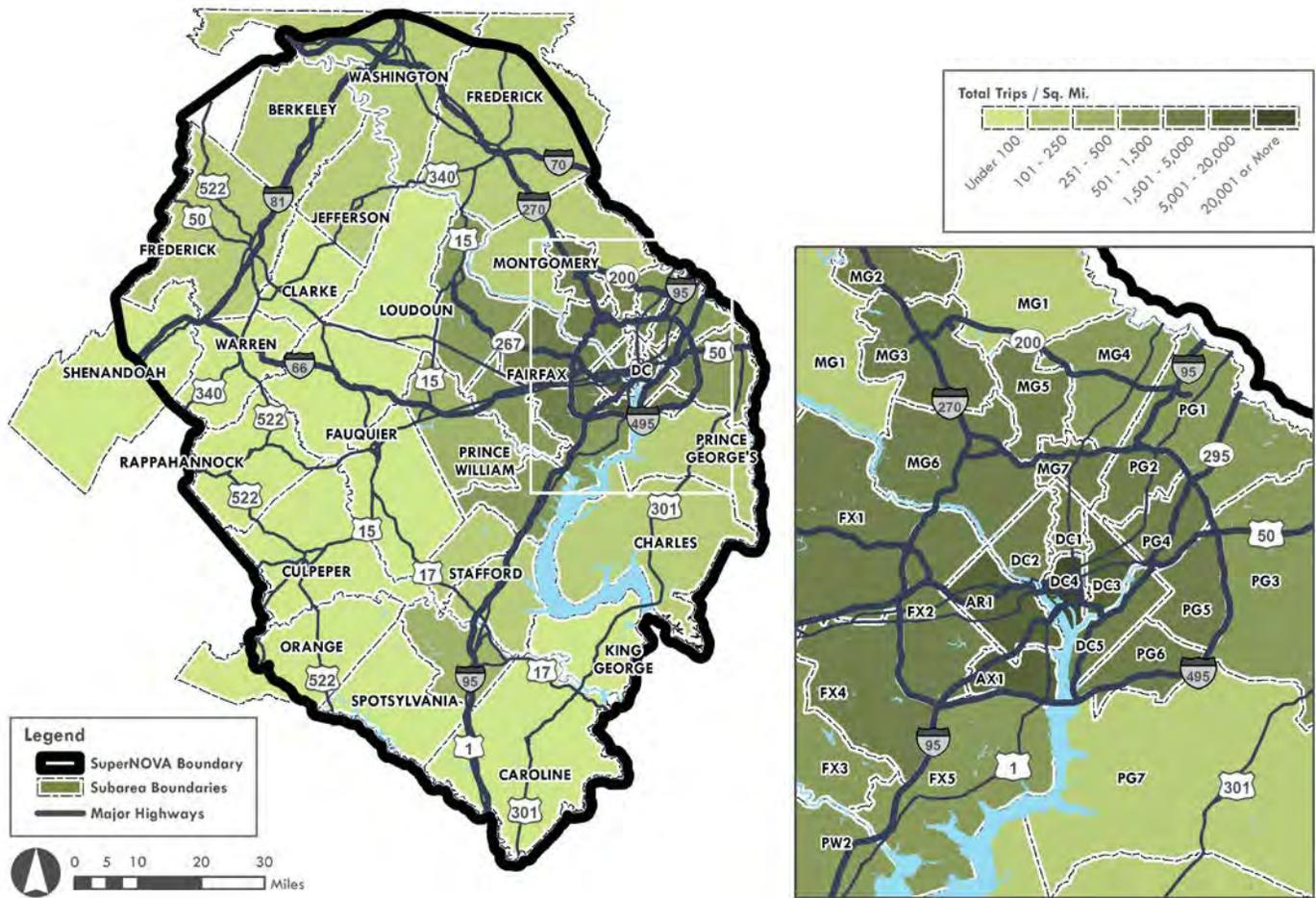


Figure 3.18: 2007 Daily Work Trips per Square Mile in Super NoVa Region

REGIONAL TRAVEL PATTERNS

Figure 3.18 illustrates base year (2007) daily home-to-work person trips per square mile for the Super NoVa region. As one would expect, the largest concentration of trips is in the metropolitan Washington, D.C. area. Figure 3.19 illustrates 2007 home-to-work person trip travel flows. The figure illustrates the importance of key corridors (e.g., I-95, I-66, Route 7, I-270) for long-distance, work-related travel.

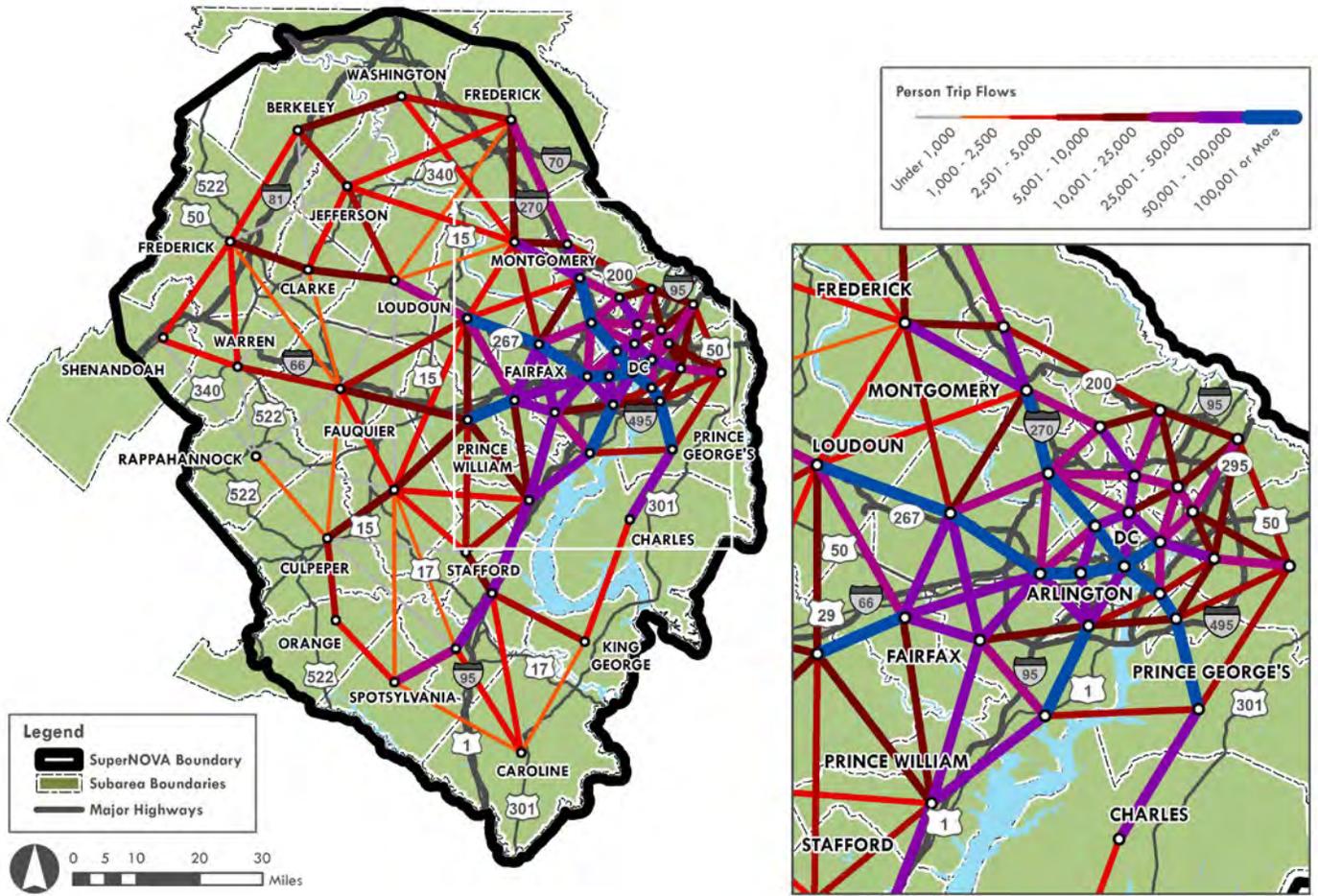


Figure 3.19: 2007 Daily Work Person Trip Travel Flows

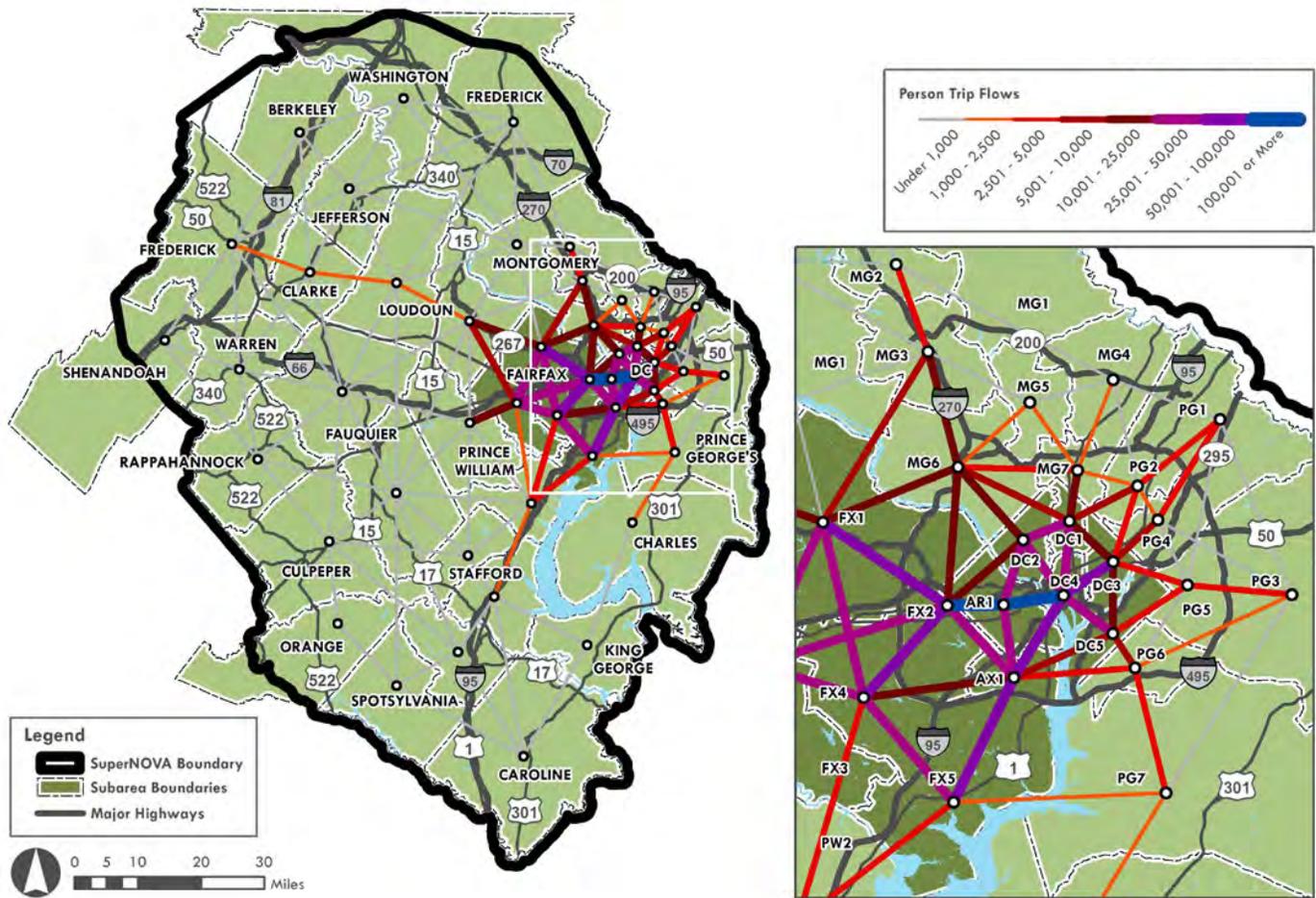


Figure 3.20: 2007 Daily Work Person Trips from Inner Subarea Travel Flows

INNER SUBAREA TRAVEL PATTERNS

Jurisdictions included in the definition of the Super NoVa's inner area are:

- District of Columbia
- Arlington County
- Fairfax County
- City of Alexandria

For purposes of this travel pattern analysis, all of the inner areas were subdivided into districts consistent with US Census PUMA boundaries. The District of Columbia and Fairfax County were each subdivided into seven districts, while Arlington County and the City of Alexandria are represented by two districts.

Table 3.5 presents total daily home-to-work trips for analysis districts in the inner areas of the Super NoVa region. The values are person trips and represent work travel to and from the inner areas. Overall, there are more than 1.2 million total daily work trips destined to work locations in the Northern Virginia/D.C. inner area (e.g., 2.4 million total daily work trips), with 60 percent of the trips coming into the inner area, and 40 percent leaving the inner area daily.

Table 3.5: Inner Area Home-to-Work Trips (Peak Direction Trips)

District	2007
D.C. (All Areas)	401,151
Arlington	155,692
Fairfax (All Areas)	553,071
Alexandria	76,469
TOTAL	1,248,390

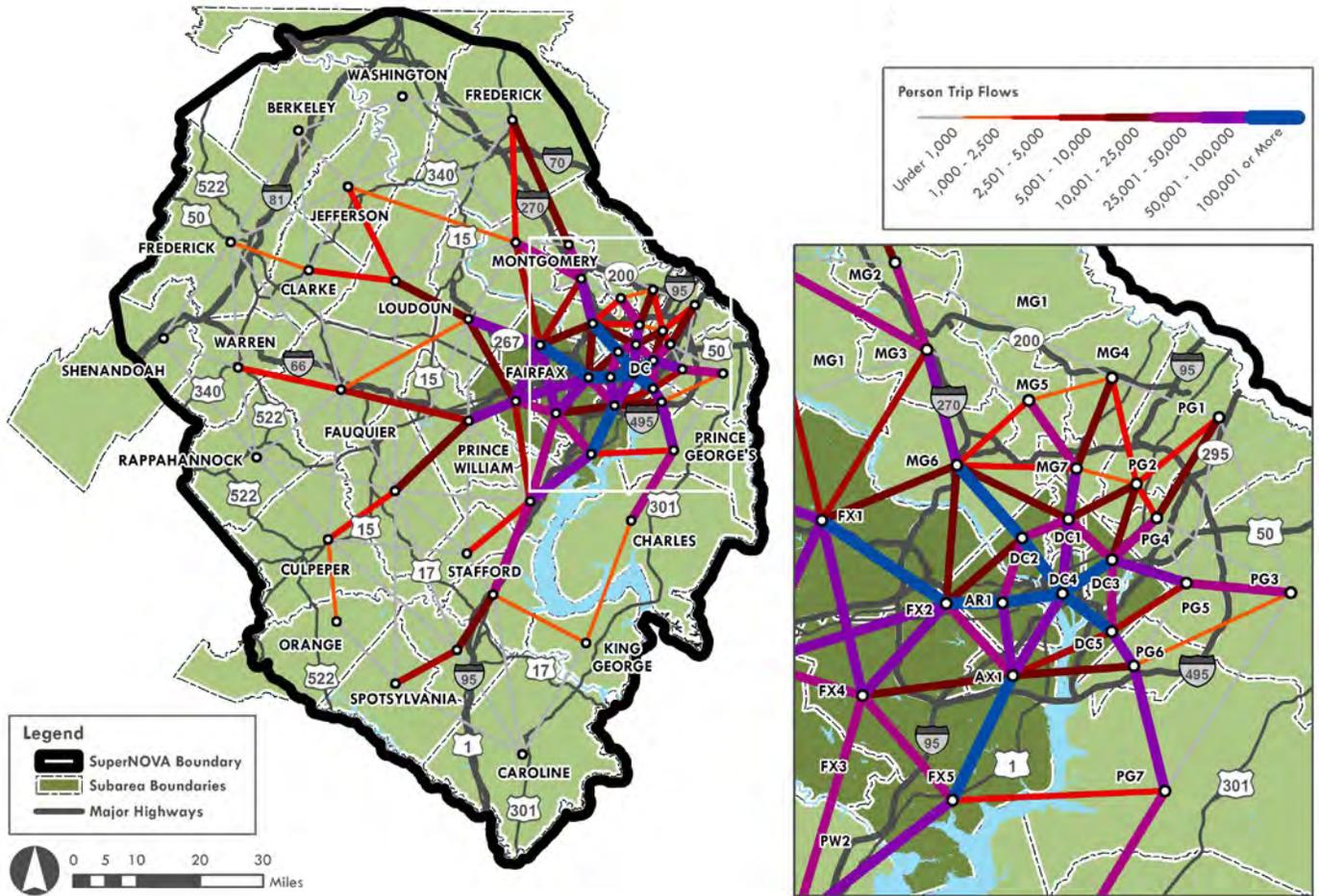


Figure 3.21: 2007 Daily Work Person Trips to Inner Subarea Travel Flows

Figure 3.20 and Figure 3.21 present spider line diagrams of 2007 work trips coming from and going to the inner area analysis districts and going to inner area analysis districts, respectively.

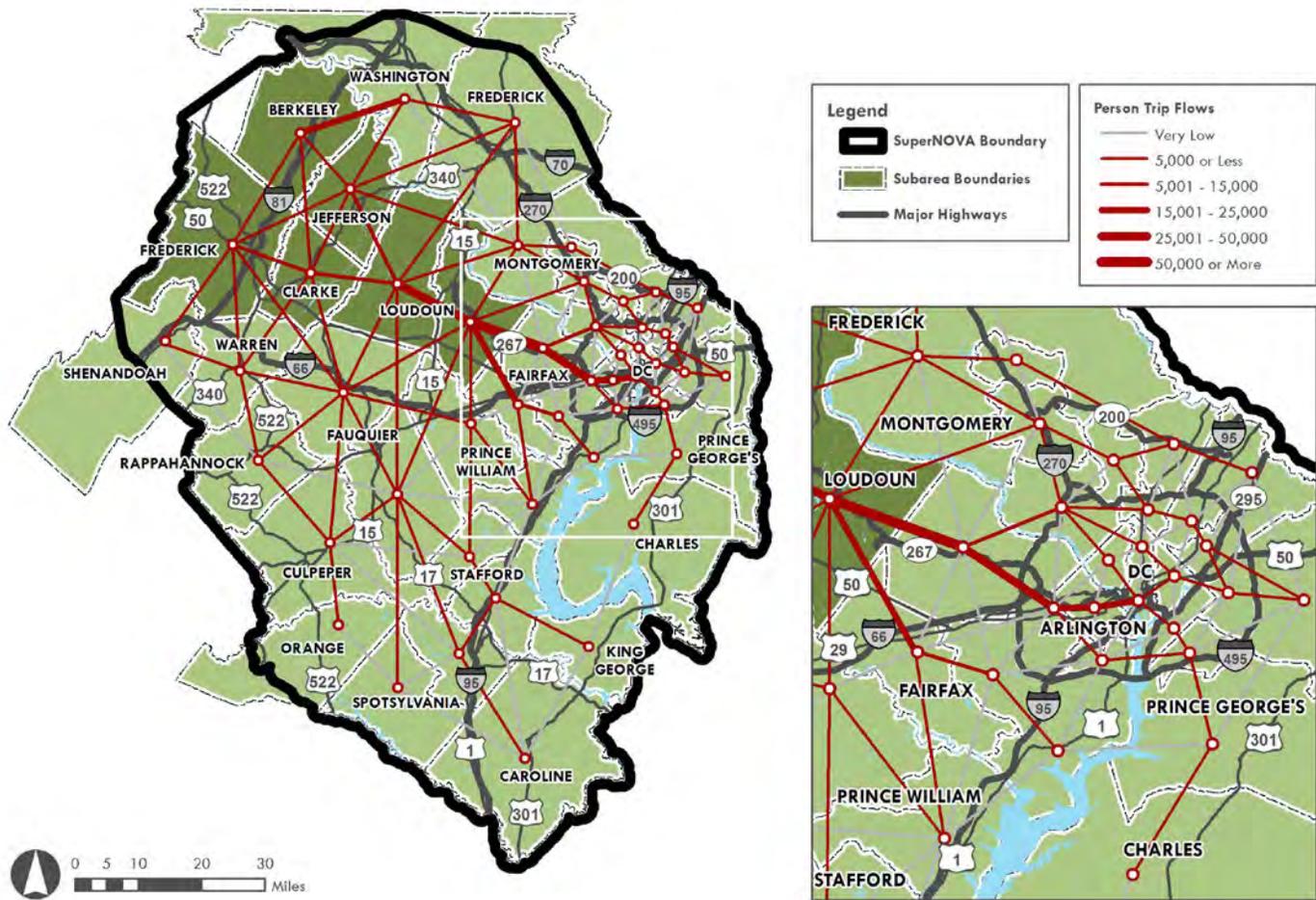


Figure 3.22: 2007 Daily Work Person Trips from Northwest Subarea Travel Flows

NORTHWEST SUBAREA TRAVEL PATTERNS

The Northwest subarea of the Super NoVa region includes the following locations:

- Loudoun County, VA
- Jefferson County, WV
- Clarke County, VA
- Berkeley County, WV
- Frederick County, VA

For the purpose of the analysis, Loudoun County has been divided into two districts—Loudoun County 1 and Loudoun County 2. The Loudoun County 2 district comprises the urbanized area of Loudoun County to the East, and the Loudoun County 1 district is the less developed western portion of the county.

Table 3.6 presents total daily home-to-work trips for the Northwest subarea counties that are within this defined Super NoVa region. There were approximately 206,000 home-to-work trips generated in the Northwest subarea in 2007 (e.g., 413,000 total daily work trips), with approximately one half of these trips generated in Loudoun County. Counties in the Northwest subarea are generally exporters of work trips, with more trips leaving the counties to other areas for work rather than traveling into the counties. Berkeley and Jefferson Counties, WV are the biggest exporters of work trips to other counties.

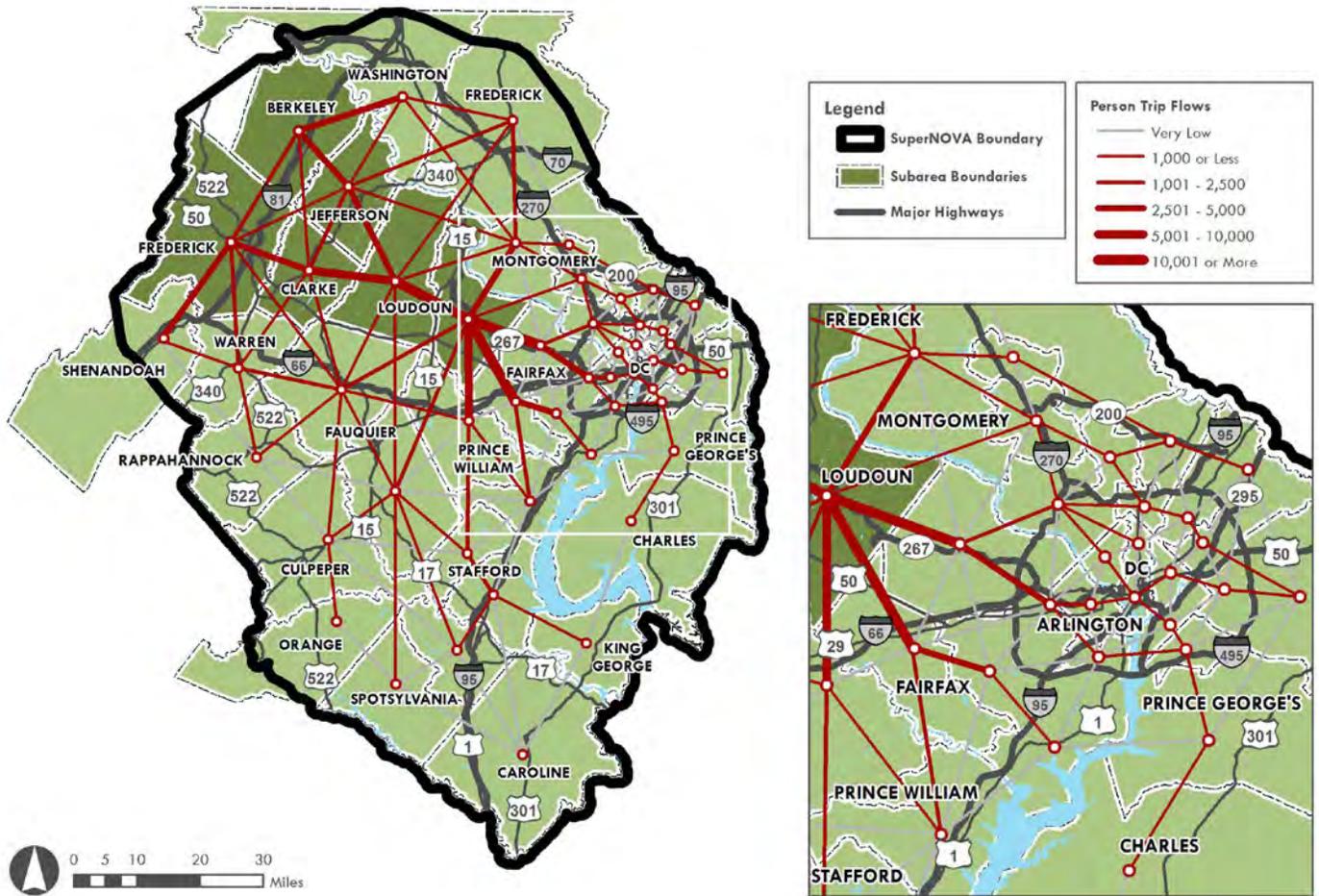


Figure 3.23: 2007 Daily Work Person Trips to Northwest Subarea Travel Flows

Table 3.6: Northwest Subarea Daily Home-to-Work Trips (Peak Direction Trips)

District	2007
Loudoun 1	11,457
Loudoun 2	95,560
Jefferson, WV	15,871
Clarke, VA	5,782
Berkeley, WV	34,260
Frederick, VA	43,509
TOTAL	206,440

Figure 3.22 and Figure 3.23 present spider line diagrams of 2007 daily home-to-work trips coming from and going to the Northwest subarea districts. In 2007, predominant travel flows can clearly be seen from Loudoun County to the inner area, with a slightly lower flow noted from Berkeley County, WV to Washington County, MD.

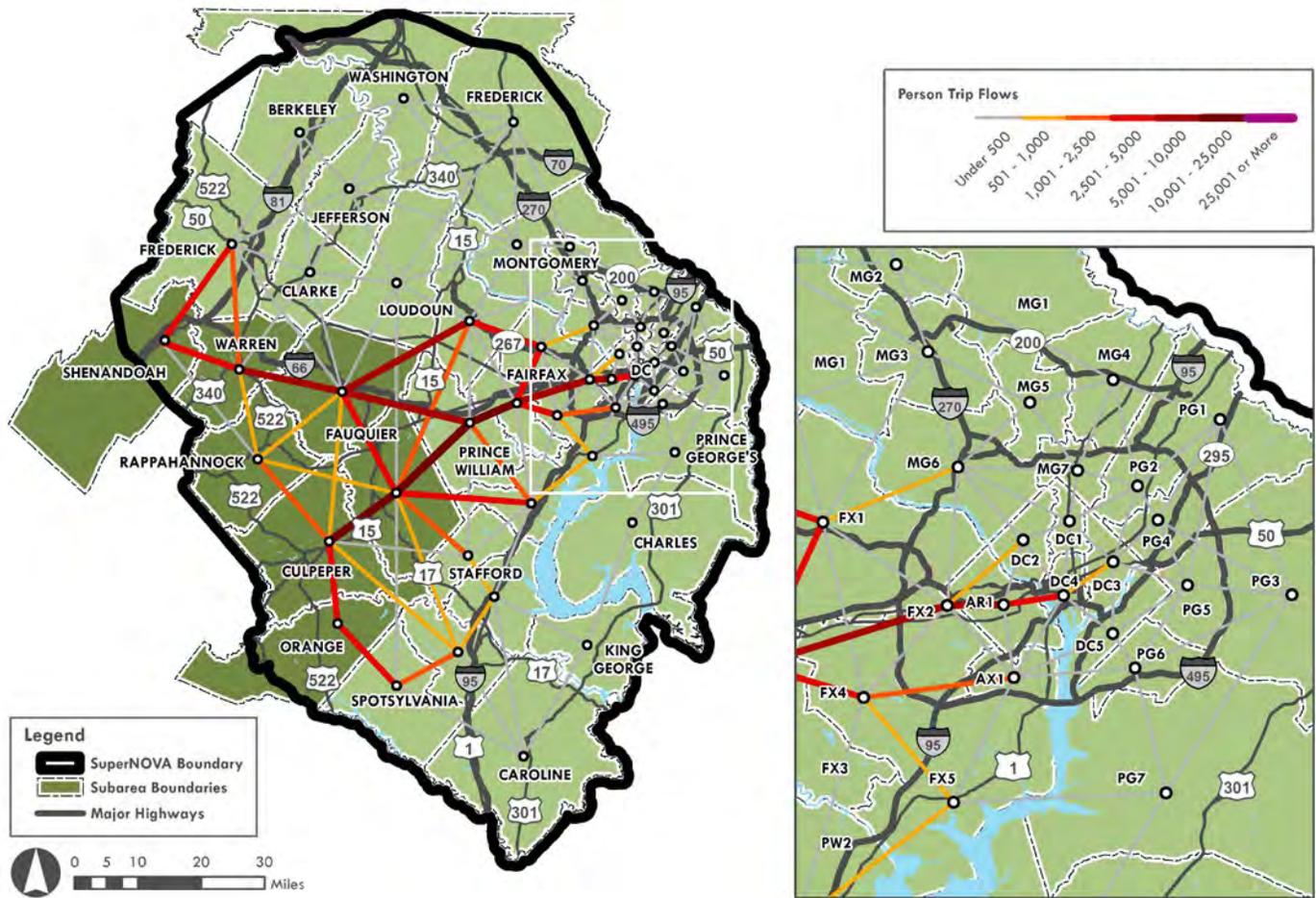


Figure 3.24: 2007 Daily Work Person Trips from West Subarea Travel Flows

WEST SUBAREA TRAVEL PATTERNS

The West subarea of the Super NoVa region encompasses the following locations:

- Culpeper County
- Fauquier County
- Orange County
- Rappahannock County
- Shenandoah County
- Warren County

For purposes of this travel pattern analysis, Fauquier County has been divided into two districts, with the Towns of Remington and Warrenton included in the southern Fauquier County district and points north of Warrenton in the northern district.

In 2007, there was an estimated 67,000 daily home-to-work-related person trips for the West subarea counties (e.g., 134,000 total daily work trips). **Table 3.7** presents total home-to-work trips for the six West subarea counties that are within this defined Super NoVa region.

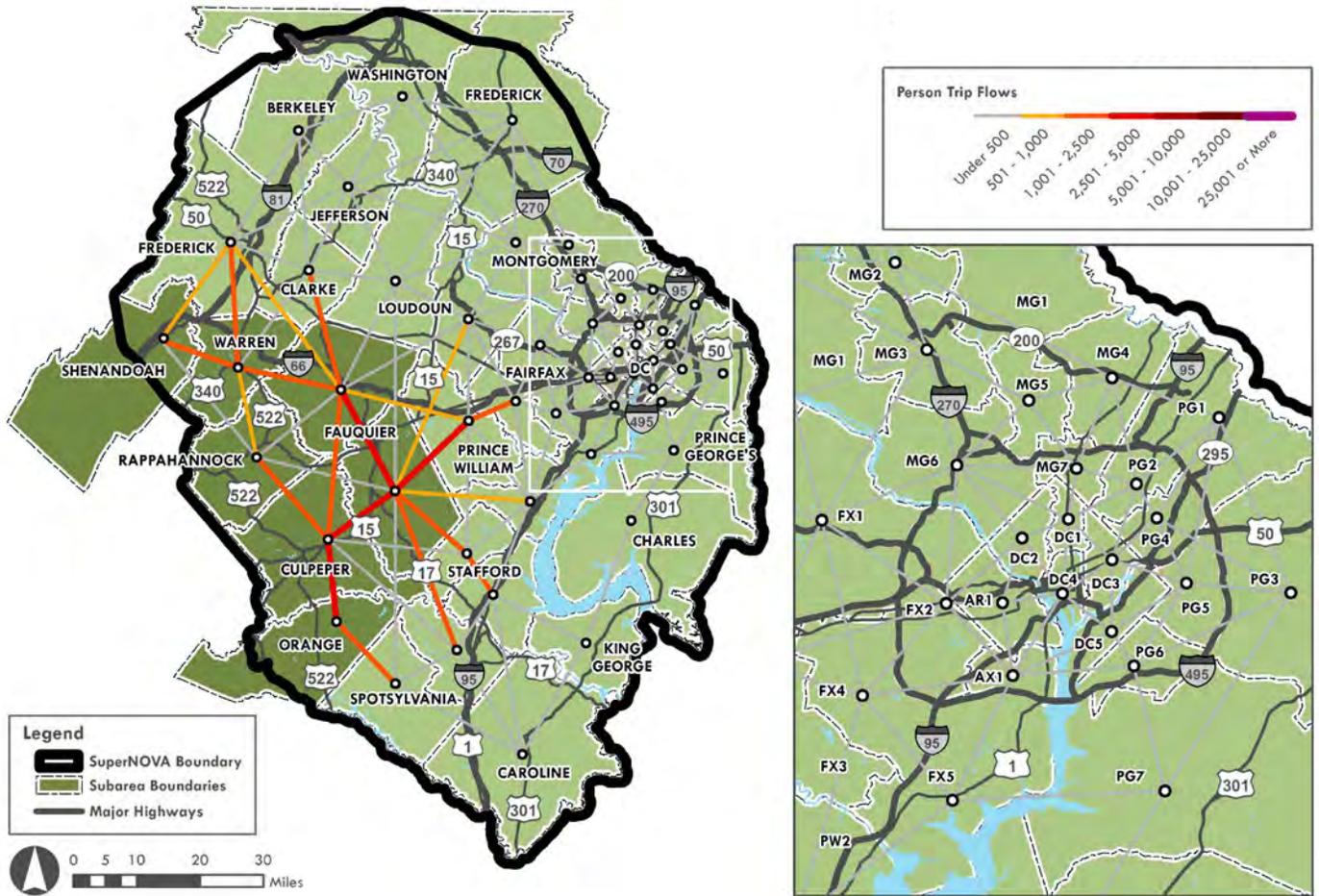


Figure 3.25: 2007 Daily Work Person Trips to West Subarea Travel Flows

Table 3.7: West Subarea Daily Home-to-Work Trips (Peak Direction Trips)

District	2007
Fauquier 1	5,241
Fauquier 2	19,732
Shenandoah	9,318
Warren	10,819
Culpeper	12,860
Orange	6,707
Rappahannock	1,888
TOTAL	66,564

All of the counties in the West subarea are “exporters” of work trips. In other words, there are more trips leaving each county than entering the county.

Figure 3.24 and Figure 3.25 present spider line diagrams of 2007 daily home-to-work trips coming from and going to the West subarea districts. Predominant work trip flows from the West subarea districts tend to parallel the I-66 and US 29 corridors, with a decreasing orientation to the D.C. inner area as the distance from the inner area increases, particularly on the western I-66 corridor. Predominant work trip flows to the West subarea districts tend to be more North-South oriented from nearby districts. Activity along the US 29 corridor continues to be prominent as a work destination as well.

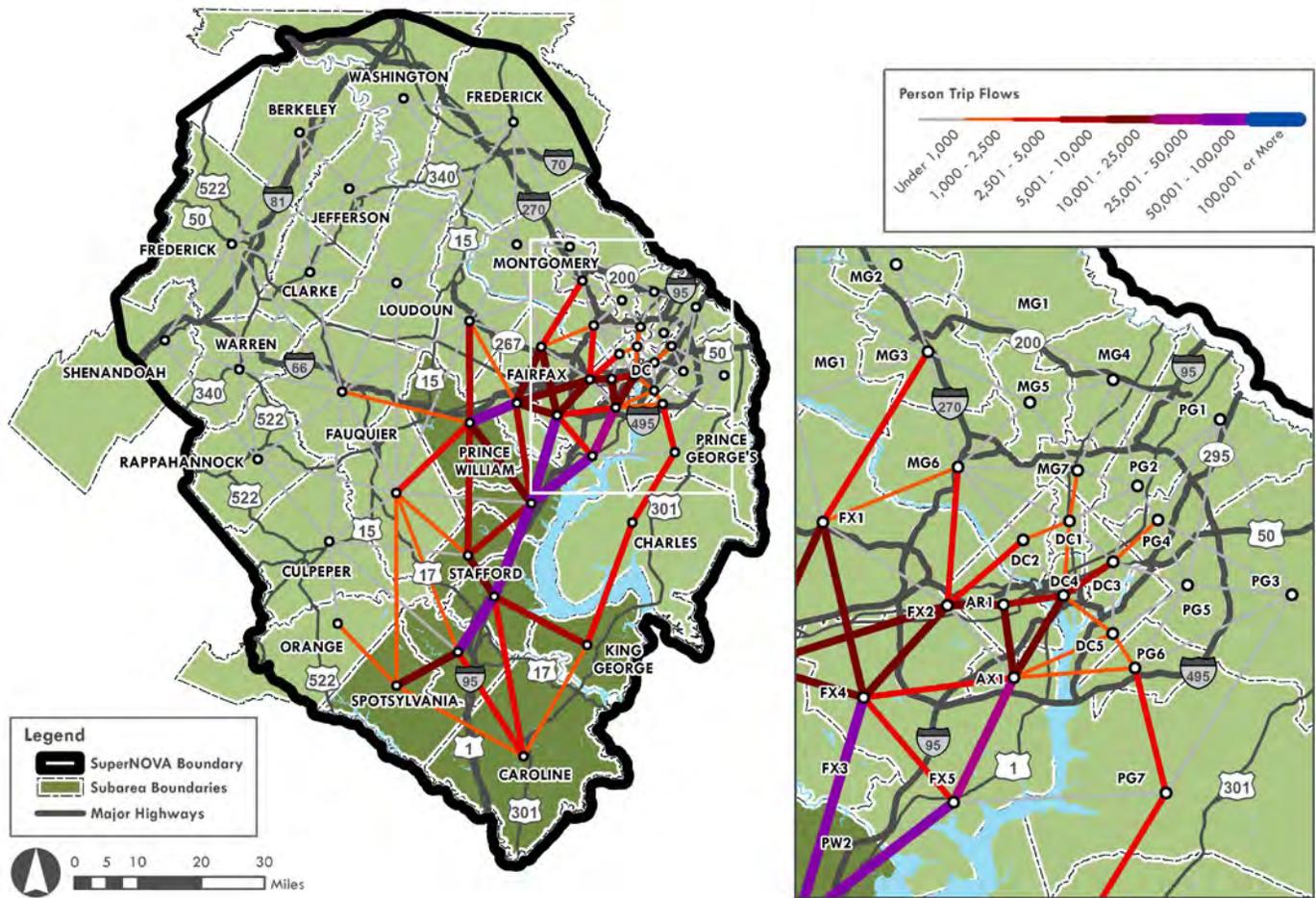


Figure 3.26: 2007 Daily Work Person Trips from South Subarea Travel Flows

SOUTH SUBAREA TRAVEL PATTERNS

The South subarea of the Super NoVa region encompasses the following locations:

- Prince William County
- Stafford County
- Spotsylvania County
- King George County
- Caroline County
- City of Fredericksburg
- Cities of Manassas and Manassas Park

For purposes of this travel pattern analysis, Prince William, Stafford, and Spotsylvania Counties have been divided into two districts each, with the City of Fredericksburg included in one of the Spotsylvania County districts and Manassas and Manassas Park included in one of the Prince William County districts.

Daily home-to-work-related person trips for the South subarea districts are estimated to be 271,000 trips in 2007 (e.g., 542,000 total daily work trips). Work trips in 2007 are highest in the two Prince William County districts (accounting for slightly more than half of the South subarea's work trips). **Table 3.8** presents total home-to-work trips for the South subarea counties that are within this defined Super NoVa region.

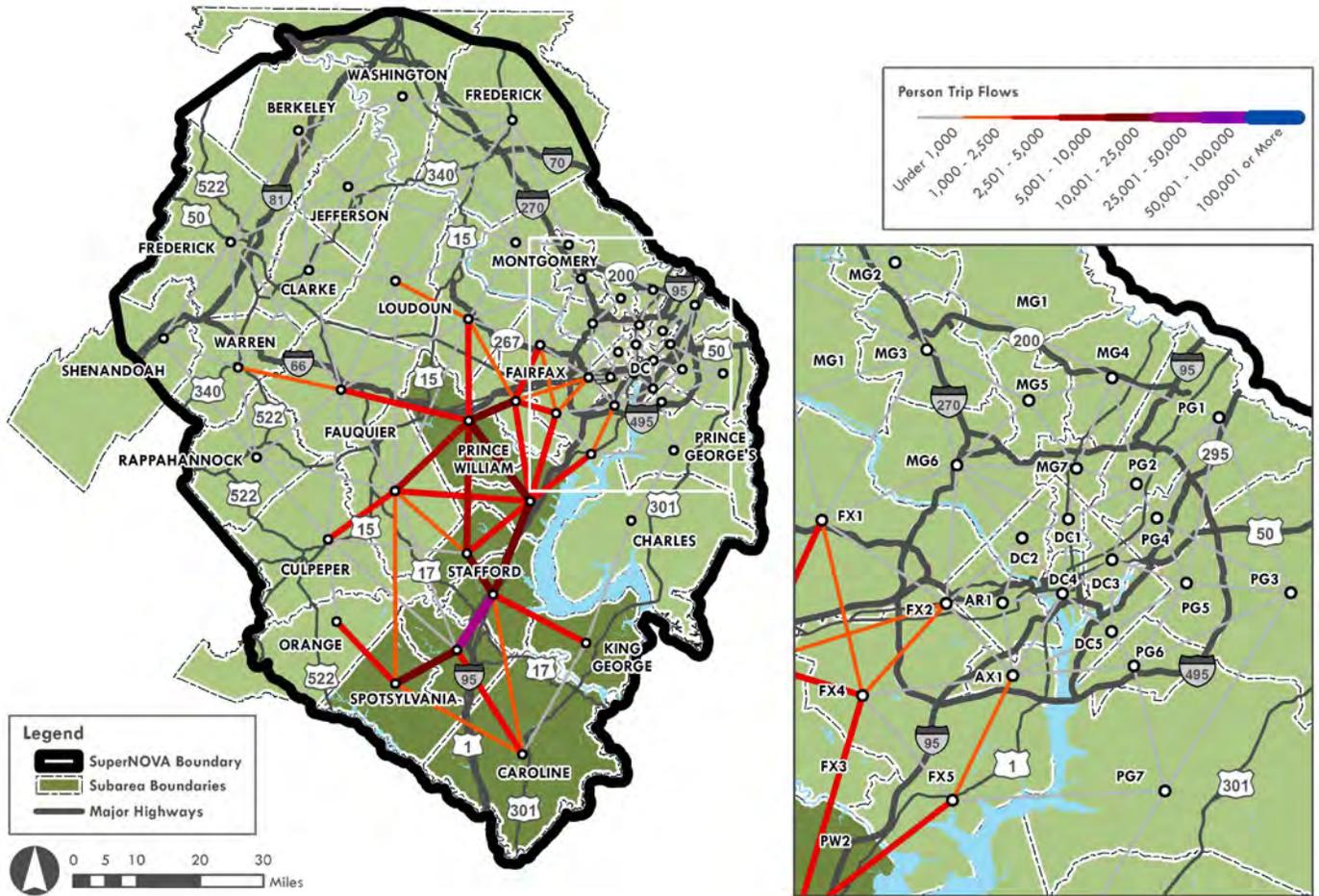


Figure 3.27: 2007 Daily Work Person Trips to South Subarea Travel Flows

Table 3.8: South Subarea Daily Home-to-Work Trips (Peak Direction Trips)

District	2007
Prince William 1	78,249
Prince William 2	76,563
Stafford 1	33,839
Stafford 2	10,782
Spotsylvania 1	11,894
Spotsylvania 2	46,749
Caroline	6,506
King George	6,873
TOTAL	271,454

All of the districts in the South subarea are net “exporters” of work trips. In other words, there are more trips originating from rather than drawn to each district.

Figure 3.26 and Figure 3.27 present spider line diagrams of 2007 daily home-to-work trips coming from and going to South subarea districts, respectively. Predominant work trip flows from the South subarea districts tend to parallel the I-66 and I-95 corridors, with a decreasing orientation to the inner area as the distance from the inner area increases. Predominant work trip flows to the South subarea districts tend to be from nearby districts to existing and emerging employment centers in Prince William County, Spotsylvania County, and Stafford County.

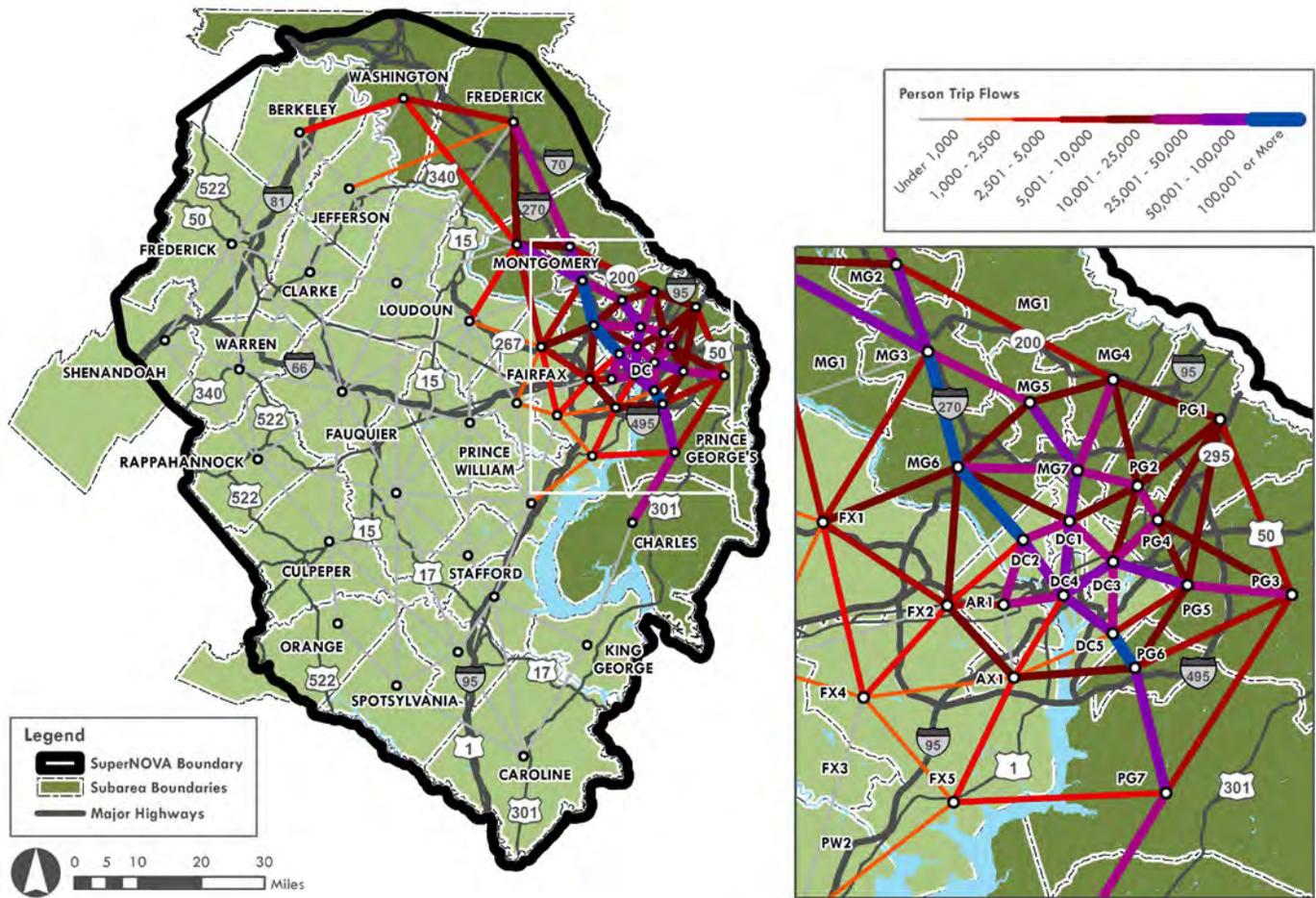


Figure 3.28: 2007 Daily Work Person Trips from Maryland Subarea Travel Flows

MARYLAND SUBAREA TRAVEL PATTERNS

The Super NoVa region includes the following Maryland counties:

- Charles County
- Prince George's County
- Montgomery County
- Frederick County
- Washington County

For purposes of this travel pattern analysis, Prince George's and Montgomery Counties were each subdivided into seven districts, consistent with US Census PUMA boundaries.

Daily home-to-work-related person trips for the Maryland counties within the Super NoVa region are approximately 888,000 (e.g., 1.7 million total daily work trips). **Table 3.9** presents total home-to-work trips for the five Maryland counties that are within the defined Super NoVa region.

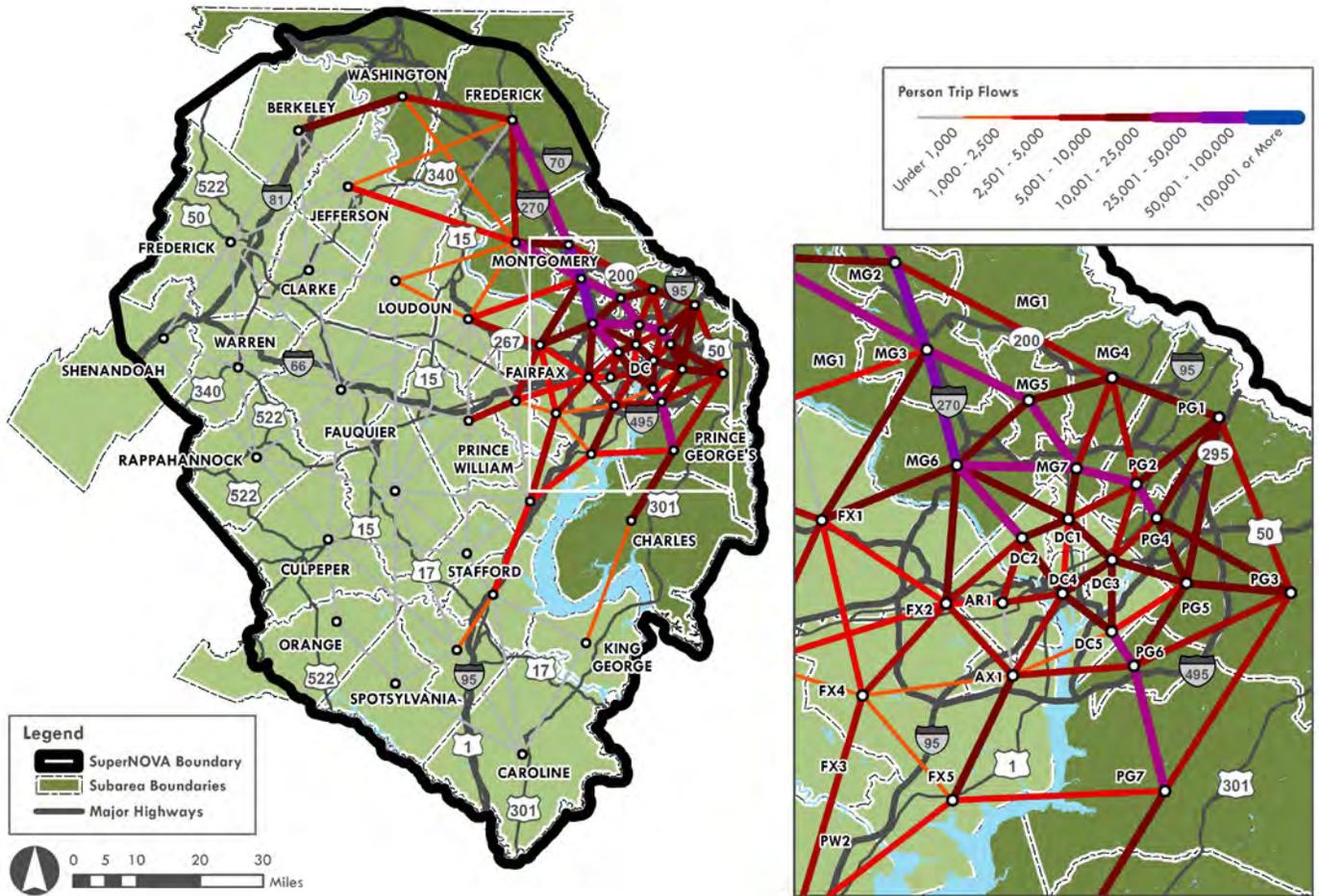


Figure 3.29: 2007 Daily Work Person Trips to Maryland Subarea Travel Flows

Table 3.9: Maryland Counties Daily Home-to-Work Trips (Peak Direction Trips)

District	2007
Montgomery	414,097
Prince George's	310,455
Frederick	71,163
Charles	40,435
Washington	52,424
TOTAL	888,574

All counties but one (Washington County) are “exporters” of work trips. In other words, there are more trips leaving the county than entering the county in the morning peak period.

Figure 3.28 and **Figure 3.29** present spider line diagrams of 2007 daily home-to-work trips coming from and going to Maryland Counties, respectively. As noted in these figures, predominant work trip flows tend to remain within Maryland or to/from the District of Columbia, with some flows reaching to the Arlington/Alexandria area.

