Chapter 2: Transportation Assessment

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Overview

This section provides an overview of the regional transportation network, focusing on roadways, bridges, freight, public transit, passenger rail, bicycle and pedestrian facilities, and travel demand management. The physical infrastructure and transportation programming in the MPO influence how the existing transportation system is used and informs opportunities for future improvements.

Roadways

The following section will identify primary roadways in the Metropolitan Planning Organization (MPO) region; provide an overview of roadway classification in Virginia; assess existing operating conditions of major roadways; look at historical traffic growth; describe significant bridges; and describe freight infrastructure within the MPO.

Roadways within the MPO

The region's road network consists of primary, secondary, and local roads. The MPO region contains only one interstate: Interstate 64. US primary roads within the MPO region include US Routes 29, 250, 22, 20, and 53. These are the most heavily used commuter and commercial routes (VDOT 2010).

A network of secondary roads provides residents with connections to local and regional centers. Charlottesville and urban areas of Albemarle County function as hubs for commercial and economic development within the Planning District. Residents from both the urban core and outlying rural areas commute to Charlottesville for work, shopping, and recreation. The following describes the primary and secondary roadways in the MPO region:

» *Interstate 64*

Interstate 64 is an east-west highway that connects the region to Interstate 95 (to the east) and Interstate 81 (to the west). The interstate carries through-traffic, but also serves local traffic in Albemarle County, especially during rush hour, making it a key roadway in the commuter network. Residents and visitors use Interstate 64 to access urban centers and other primary roads.

» *U.S. Route 29*

US 29 is a north-south route that links the region to Washington, D.C. (to the north) and North Carolina (to the south). Within the region, US 29 runs through Greene, Nelson, and Albemarle Counties, as well as the City of Charlottesville, and is the major commuter and truck freight route through central Virginia, connecting Danville, Lynchburg, and Charlottesville. Increased development along US 29, north of Charlottesville, has led to a high level of commuter traffic heading into Charlottesville from residential communities in northern Albemarle County. This six-mile section ranges from four to eight lanes and has eighteen signaled intersections between the US 250 Bypass and Airport Road. Congestion is expected to increase further due to development of residential, industrial, and commercial centers along the corridor. US 29 to the south of Charlottesville is a less-trafficked, four-lane highway that connects with more rural areas of Albemarle County.

» *U.S. Route 250*

US 250 is an east-west corridor that roughly parallels Interstate 64 and connects the Pantops area, Charlottesville, Ivy, and Crozet to the Shenandoah National Forest. The US 250 Bypass originally provided an alternative route to the downtown Charlottesville. However, it is presently one of Charlottesville's most congested corridors. The eastern leg of US 250 in Albemarle County is highly congested due to increasing traffic from Louisa County and the City of Richmond. Moreover, rapid development at Pantops, including Martha Jefferson Hospital, two shopping centers, a large retirement community, and increased residential development, is contributing to the severity of congestion.

» State Route 22

Route 22 intersects US 250 at Shadwell and runs east-west through Louisa County. The road runs through the Town of Louisa and handles a moderate amount of local traffic. Route 22 passes through Green Springs National Historic Landmark District and experiences tourist traffic moving through Louisa County to Shadwell: the birthplace of Thomas Jefferson.

» State Route 20

Another primary road in Albemarle County is Route 20, a rural highway that runs north-south and connects Charlottesville to the Town of Scottsville. Because it is designated by VDOT as a Virginia Byway for its scenic and historic qualities, and is part of the historic "Journey Through Hallowed Ground," Route 20 carries a moderate amount of tourist traffic.

» State Route 53

Route 53 extends from Albemarle County into Fluvanna County and intersects with US 15 in Palmyra. This road, along with secondary Route 616, is heavily used by commuters from the northwest section of the Fluvanna County, particularly those originating from the Lake Monticello community. In Albemarle County congestion on Route 53 is increasing both due to greater volumes of commuter traffic originating in Fluvanna County, and due to tourists travelling to Monticello and Ashlawn: the historic homes of Thomas Jefferson and James Monroe, respectively.

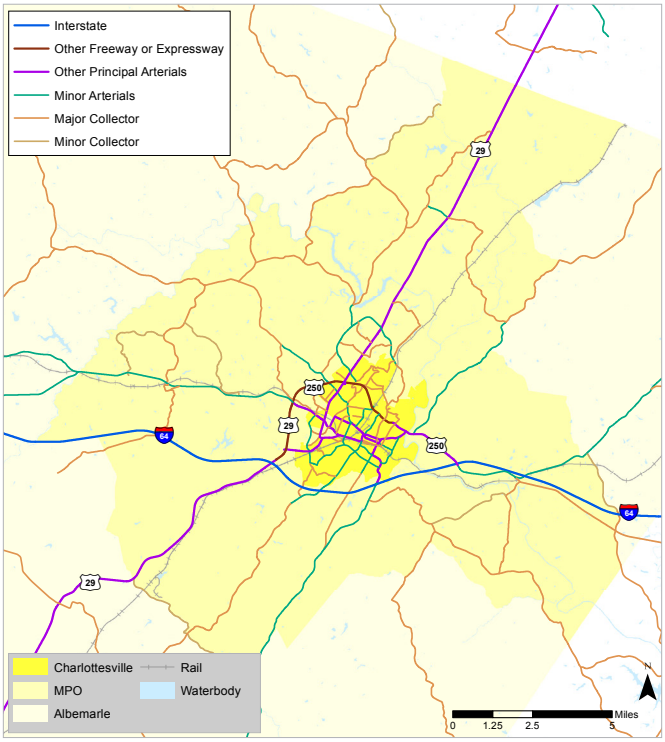
» Secondary Roads

The MPO also has a network of heavily used secondary roads which provide residents with connections to local and regional centers. The City of Charlottesville has a dense roadway network that includes 108.31 miles of secondary roads. Albemarle contains 858.94 miles of secondary roads, 220.20 miles of which are unpaved. Secondary roads provide connections from developed areas, residential, or commercial, to larger scale regional roads or primary roads. Secondary roads are typically more robust than local roads. Examples of secondary roads in the urban area are Rio Road and Hydraulic Road.

Roadway Classification

Per the Federal Highway Administration (FHWA) and American Association of State Highway Transportation Officials (AASHTO), functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide.

Roadway Classification in the MPO (Figure 2-1)



There are three functional classifications areas: arterial, collector, and local roads (FHWA 2012). Arterials provide the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control. These roads are typically classified as principal arterials (sub-grouped by Interstate, Freeway/Expressway, and other principal arterials) and minor arterials. Collectors provide a lower level of service at a slower speed, and provide service for shorter distances by collecting traffic from local roads and connecting them with arterials. Collectors are typically classified as major collectors and minor collectors. Finally, local roads consist of all roads not defined as arterials or collectors, and primarily provide access to land with little or no through traffic.

All streets and highways are grouped into one of these classes, depending on the character of the traffic (i.e., local or long distance) and the degree of land access that they allow, as illustrated in Figure 2-1. The MPO anticipates an official update of Virginia's functional classification in the near future.

VDOT further classifies roadways as interstate, primary, or secondary roads. (Refer to Table 2-1). Interstates are limited access highways that connect states and major cities. Primary roads connect cities and towns with each other and with interstates. Secondary roads are local connector and county roads, and are generally designated with Route numbers 600 and above.

Roadway Classification (Table 2-1)

Roadway	FHWA Classification	VDOT Classification
Interstate 64	Interstate	Interstate
US 29	Arterial, Principal	Primary
US 250	Arterial, Principal, Minor	Primary
22	Arterial, Minor; Collector, Major	Primary
20	Arterial, Minor; Collector, Major	Primary
53	Collector, Major	Primary

Bridges

One of the concerns in the MPO is bridge conditions. Safe and adequate bridges are a vital component for a fully functional transportation system. Per VDOT bridge condition reports, the entire region of Albemarle County and the City of Charlottesville was reviewed to identify the condition of each bridge and assess the need for improvements.

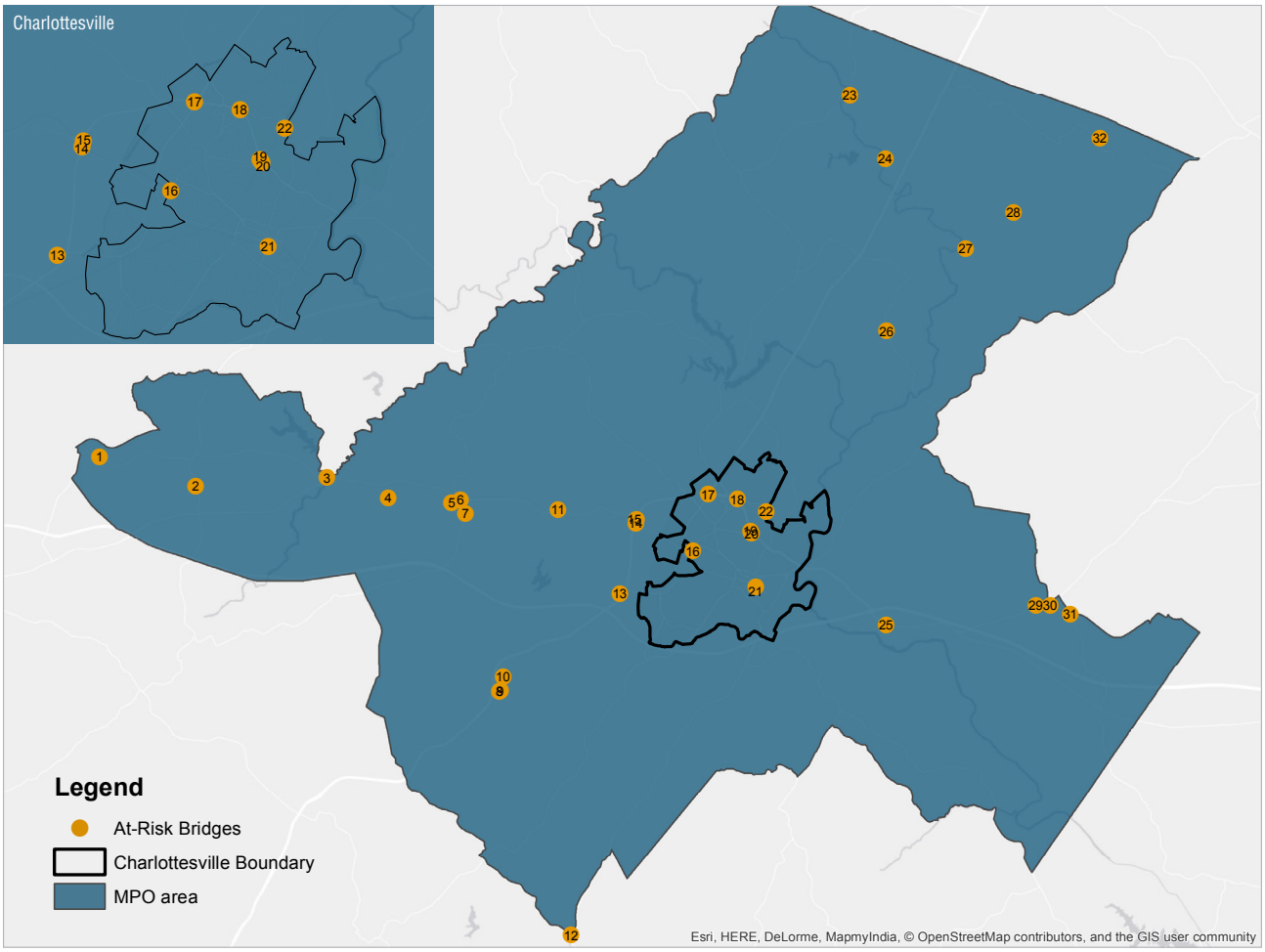
A general indicator of a bridge's condition is its sufficiency rating, which accounts for factors that determine a bridge's adequacy to remain in service. Ratings are placed on a scale of zero to 100, with 100 indicating an entirely sufficient bridge and zero indicating an entirely insufficient, or deficient, bridge. Bridge conditions refer to maintenance conditions, and are not safety related. The sufficiency rating does not necessarily indicate a bridge's ability to carry traffic loads, but indicates eligibility of a structure to receive federal funds for maintenance, rehabilitation, or replacement activities. For bridges to qualify for federal replacement funds, a bridge must have a rating of 50 or below. To qualify for federal rehabilitation funding, a bridge must have a sufficiency rating of 80 or below.

VDOT also categorizes bridge conditions by color: red, yellow and green, where red identifies structurally deficient bridges; yellow identifies functionally obsolete bridges; and green identifies non-deficient structures.

Of the 453 bridges in Albemarle County (the area outside the Charlottesville boundary in Figure 2-2), the State of the Structures and Bridges Report prepared by the Virginia Department of Transportation (VDOT) Structure & Bridge Division in July, 2012 shows that 44 bridges are structurally deficient (red), 117 bridges are functionally obsolete (yellow), and 292 bridges are non-deficient (green). 90.3% of bridges in the County are yellow or green; slightly less than the VDOT target of 92%. Of the nineteen bridges in the City of Charlottesville (the area within the Charlottesville boundary in Figure 2-2), seven are structurally deficient, one is functionally obsolete, and eleven are non-deficient. 63.2% of the City's bridges are currently structurally deficient or functionally obsolete: below the VDOT target of 92% (Figure 2-2).

Deficient Bridges in MPO (Figure 2-2)

Source: Virginia Department of Transportation Sufficiency Ratings



#	NAME	CROSSING
1	BLAIR PARK ROAD	LICKINGHOLE CREEK
2	CROZET AVENUE	LICKINGHOLE CREEK
3	OLD THREE NOTCH TRAIL	LICKINGHOLE CREEK
4	DRY BRIDGE ROAD	BUCKINGHAM BRANCH RR
5	IVY DEPOT ROAD	LITTLE IVY CREEK
6	IVY ROAD	LITTLE IVY CREEK
7	DICK WOODS ROAD	IVY CREEK
8	WHEELER ROAD	BRANCH MOORES CREEK
9	WHEELER ROAD	BRANCH MOORES CREEK
10	ARROWHEAD VALLEY	NORFOLK SOUTHERN RAILWAY
11	BROOMLEY ROAD	BUCKINGHAM BRANCH RR
12	RED HILL ROAD	NORTH FORK HARDWARE RVR
13	FONTAINE AVE. EXT	MOREY CREEK
14	IVY ROAD	RTE 29BY-PASS&250BY-PASS
15	OLD IVY ROAD	RTE 29 & 250 BYPASS
16	RUGBY ROAD	CSX RAILROAD

#	NAME	CROSSING
17	ROUTE 250	RTE 29 BUSINESS
18	DAIRY ROAD	RTE 250 BYPASS
19	ROUTE 250	RUGBY AVE
20	ROUTE 250	NS RAILWAY
21	9TH STREET	CSX RAILROAD & WATER ST
22	MELBOURNE ROAD	NORFOLK SOUTHERN RAILROAD
23	FRAYS MILL ROAD	MARSH RUN
24	DICKERSON ROAD	NORTH FORK RIVANNA RIVER
25	RICHMOND ROAD	SHADWELL CREEK
26	PROFFIT RD	NORFOLK SOUTHERN RAILWAY
27	WATTS PASSAGE	PREDDY CREEK
28	GILBERT STATION RD	NORFOLK SOUTHER RAILWAY
29	LOUISA ROAD	BRANCH CARROLL CREEK
30	KESWICK ROAD	CARROLL CREEK
31	BLACK CAT ROAD	BUCKINGHAM BRANCH RR
32	BURNLEY STATION RD	NORFOLK SOUTHERN RAILWAY

Freight

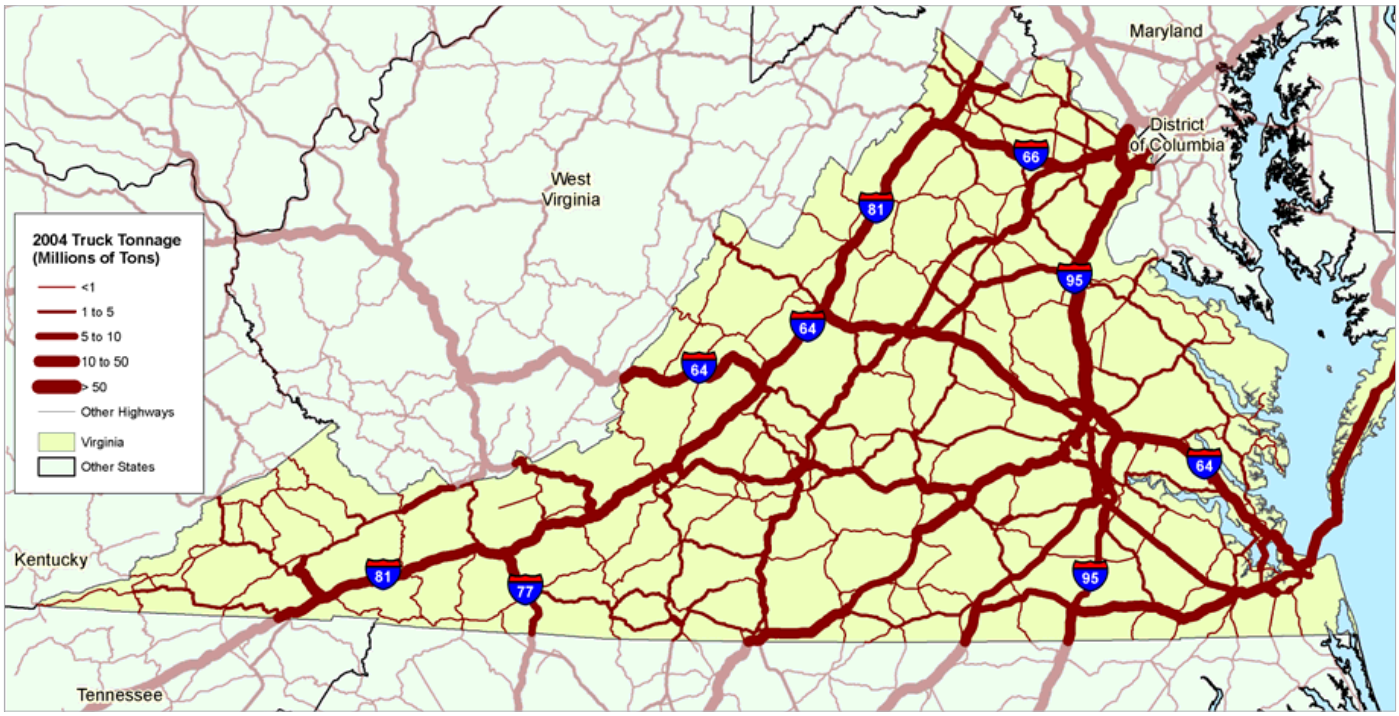
The identification of freight corridors and preservation of freight mobility is a component of the MPO's Long Range Transportation Plan. The MPO is primarily served by truck freight, and supplemented by rail service.

Truck

Albemarle County has one of the largest manufacturing concentrations in Virginia's Piedmont region and truck freight is the region's most utilized method of transporting goods. In the MPO region, Interstate 64 is the primary east-west truck route, transporting goods statewide and connecting neighboring industrial centers, such as Richmond. In 2009, the portion of Interstate 64 which runs through the County carried a daily truck traffic volume of 3,500-5,000: more than 10% of total daily traffic in the region. Truck freight also utilizes US 29. US 29 not only serves as the primary truck route in the north-south direction, but also facilitates freight routing changes. One of those routing changes, US 250, also carries significant freight traffic and has become a major shipping corridor in recent years. Maintaining and improving the roadways for such movement is critical to the region's economic development and sustainability.

Approximately thirty-five trucking firms serve the MPO region (TJPED). Three roadways provide primary access to the major commercial areas and business centers at the center of the MPO region: Interstate 64, US 29, and US 250. US 29 has become highly congested due to traffic volume, hilly terrain, reduced speed limit, and the number of signalized intersections, creating difficult driving conditions for freight trucks. Due to increased traffic and subsequent delay on deliveries, carriers have been forced to make adjustments to their operating schedules and routes by making pickups earlier in the day, hiring additional trucks to complete the same number of deliveries, and moving from primary roadways to smaller, secondary roads. Charlottesville may become a larger bottleneck for freight travelling north and south of the region. As evident in Figure 2-3, the highest densities of truck activity are at Virginia's major population hubs: Northern Virginia, Richmond, and Hampton Roads, with concentrations also visible at Roanoke, Lynchburg, and Charlottesville. The Charlottesville-Albemarle MPO, however, is not affected as drastically by truck freight as larger hubs in Virginia, as through traffic makes up only 10 – 20% of the total vehicular volume (Cambridge Systematics 2006).

Virginia's Inbound/Outbound/Internal Truck Tons (2004) (Figure 2-3)



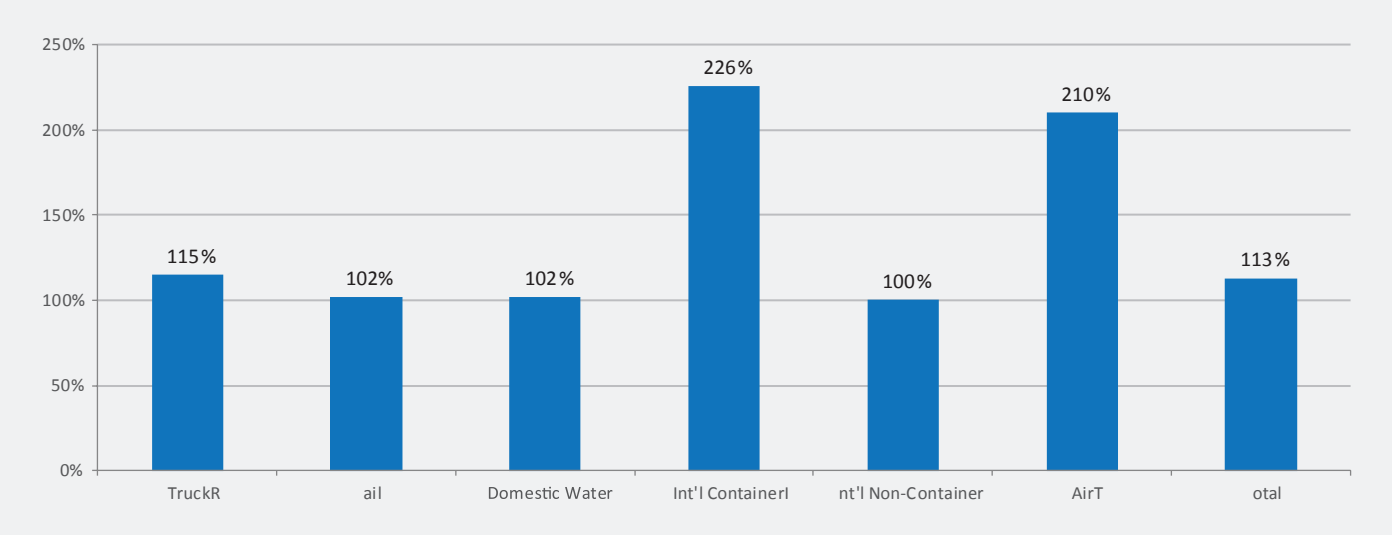
Credit: Virginia Statewide Multimodal Freight Study, Phase I

Rail

Freight rail is provided via two railroads which cross at grade in downtown Charlottesville: CSX Transportation and Norfolk Southern Corporation, two of the largest railroad conglomerates in the U.S. The Norfolk Southern line travels north-south through Albemarle County, the City of Charlottesville and Nelson County. The CSX line follows a roughly east-west route through Albemarle County, the City of Charlottesville, and Louisa County, carrying primarily empty coal cars.

CSX has recently leased its short line to the Buckingham Branch Railroad, the majority of which lies in Louisa County. A second CSX route roughly follows the James River in Albemarle, Nelson, and Fluvanna counties. Both Norfolk Southern and CSX have only a few freight sidings or off-loading sites in the region (CvilleRail). As evident in Figure 2-4, both truck and rail freight in Virginia are expected to more than double from their 2004 tonnage by 2035.

Projected Growth in VA Freight Tonnage (Figure 2-4)



Source: Virginia Statewide Multimodal Freight Study, Phase I

Public Transit

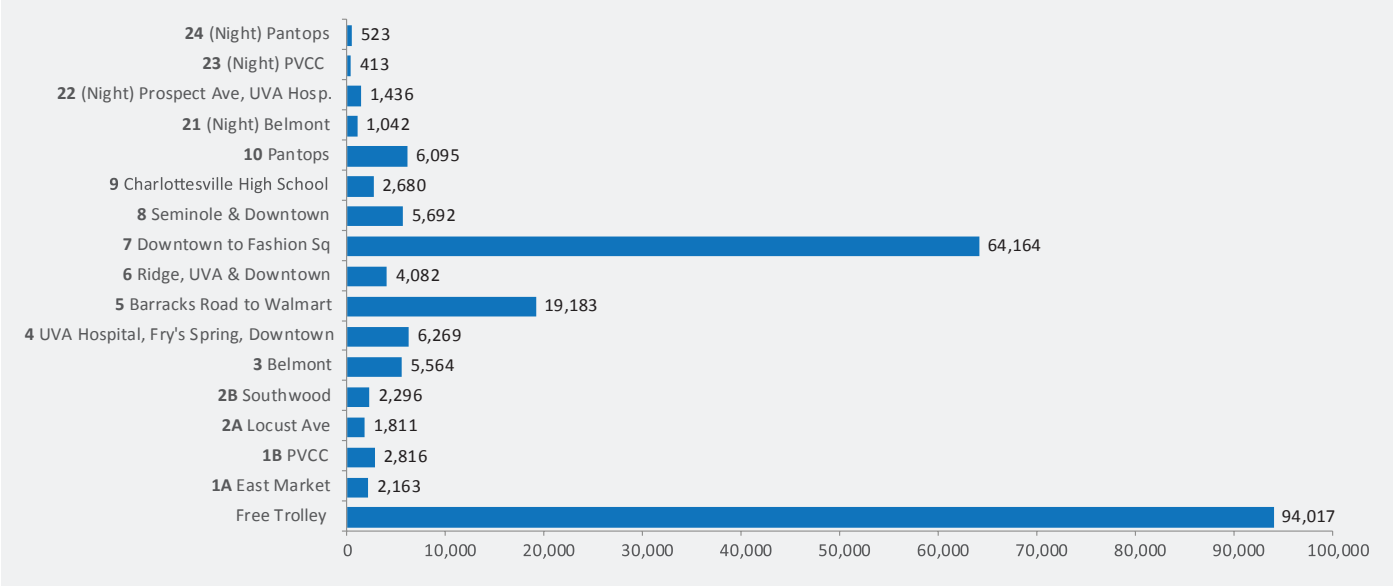
Several public transit options exist within the MPO region, including commuter, local, regional and intra-county bus service provided by Charlottesville Area Transit (CAT), JAUNT, and University Transit Service (UTS); inter-city and regional bus service provided by Greyhound; and inter-city and regional passenger rail service provided by Amtrak.

Charlottesville Area Transit (CAT)

CAT provides public bus service to the greater Charlottesville area. CAT offers fourteen daytime and four nighttime routes, serving an average of 7,500 riders daily during the workweek. Displayed in Figure 2-5, the routes with the highest ridership are the Free Trolley, running from Downtown to UVA (43% of trips); Route 7, running from Downtown to Fashion Square Mall (29% of trips); and Route 5, running from Barracks Road to Wal-Mart (9% of trips). The route with the lowest ridership, Route 23, has a negligible share of monthly CAT trips, at 413 per month or 0.2% of trips. Ridership is highest Monday through Saturday between 7 am and 5 pm, peaking at 3 pm (CAT 2011).

CAT serves a variety of groups within the Charlottesville-Albemarle area and offers several fare types to meet riders' needs. Free ridership is offered to children age five and under; youth ages six to eighteen (summer only); and UVA students, faculty, and staff. Reduced fares are offered to senior citizens and persons with disabilities.

CAT Monthly Ridership by Route (Oct 2010) (Figure 2-5)

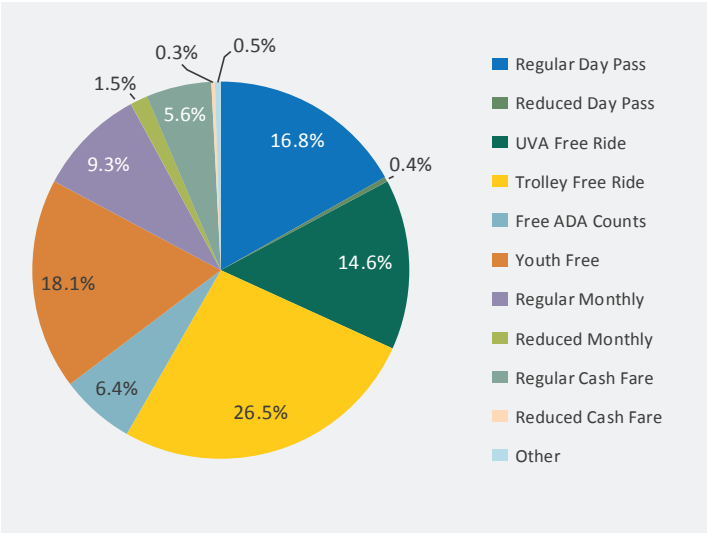


Source: 2010 CAT TRANSIT DEVELOPMENT PLAN. Routes have been changed as of January 2014. Insufficient data is available for the new configuration at this time

Figure 2-6 shows CAT ridership by fare type. This figure reveals the degree of local reliance on the CAT system. Only 5.6% of riders use cash fare while 17.2% use a regular or reduced-rate day pass, suggesting that many riders make multiple trips each day. Regular and reduced-rate monthly passes account for nearly 11% of trips, indicating a contingency of riders that use CAT regularly. The youth fare accounts for over 18% of trips, and 41.1% of trips are attributable to those affiliated with the University of Virginia, based on the UVA Free Ride trips and Trolley Free Ride trips (CAT 2011), underlining CAT's important transit role with the University community. [1]

[1] All data comes from CAT's 2010 Transit Development Plan. CAT underwent a significant restructuring at the beginning January 2014.

CAT System wide Fares by Class (Oct 2010) (Figure 2-6)



JAUNT

JAUNT is a regional transportation system for Central Virginia and serves as the Americans with Disabilities Act (ADA) paratransit service for CAT. JAUNT is funded by Charlottesville, Albemarle, and other local governments, and uses Federal, State, and local funding to supplement fares.

Service is available for all residents of Charlottesville and five surrounding counties in Central Virginia (Albemarle, Fluvanna, Louisa, Nelson, and most recently, Buckingham), and reduced fares are offered for persons with disabilities. JAUNT offers both fixed route and door-to-door service. Riders must schedule trips by phone or email for the latter.

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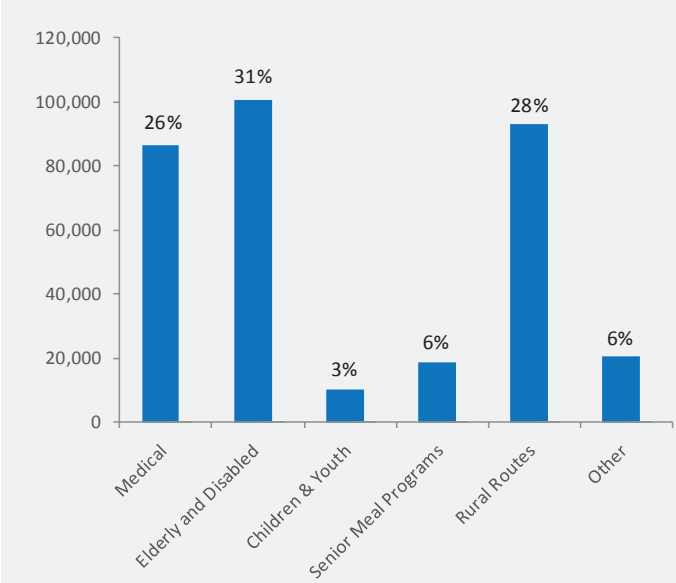
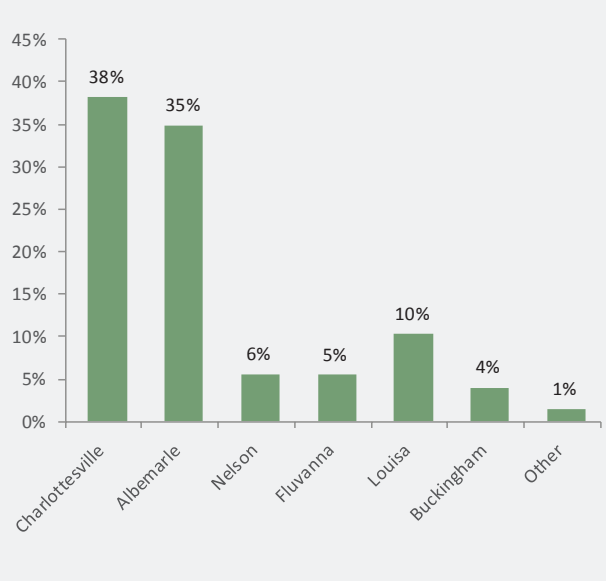
Figure 2-7 shows annual ridership by service type in Fiscal Year 2011-12, with a total ridership of 329,954. JAUNT's highest ridership was in Charlottesville and Albemarle, as shown in Figure 2-8, accounting for 73% of rides taken in FY 2011-12. In Albemarle County, there was an overall increase in ridership of 10% from 2010, driven by the 11.5% increase in urban area trips. (JAUNT 2012).

JAUNT Ridership by Service Type FY11-12 (Figure 2-7)



JAUNT Ridership by Place of Origin FY11-12 (Figure 2-8)



University Transit Service (UTS)

UTS is the transit service UVA provides to its students, faculty and staff, and the general public. UTS services Central Grounds of UVA and popular student housing areas, including Jefferson Park Avenue and Grady Avenue. UTS currently operates ten routes. Hours vary by route, with many routes running until 3:00 am on weekends during the academic school year. UTS is funded through student activity fees, so there is no fare collected on board the buses. The general public is also permitted to ride "fare free" through a reciprocal agreement with CAT (UTS 2012).

Regional Bus Service

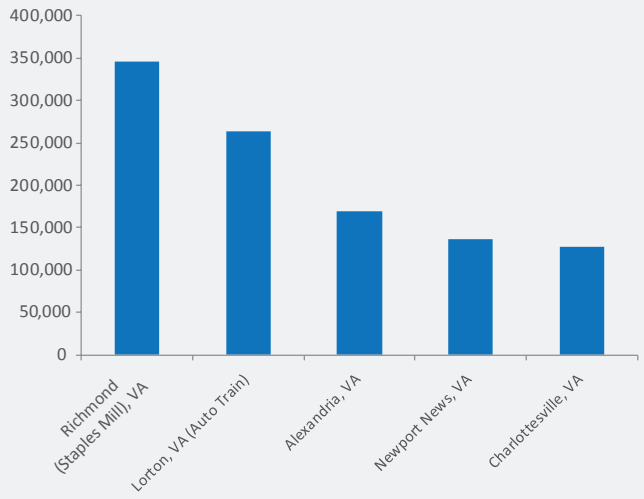
Greyhound Lines offers regional and inter-city bus service from Charlottesville. Bus service is available throughout the day to various regional destinations, and continuing service is offered through major metropolitan areas (Charlottesville, Transportation).

Passenger Rail

Amtrak currently operates three service routes from Charlottesville Union Station (CVS): the Crescent, running daily from New York City to New Orleans; the Cardinal, operating three days per week between New York City and Chicago; and the Northeast Regional, offering daily service from Lynchburg to New York City.

Amtrak's Northeast Regional line has become a reliable transportation alternative for commuters and travelers along the eastern seaboard. Although Virginia is not strictly part of the Northeast Corridor, some Northeast Regional trains continue into Virginia, serving the stations listed in Figures 2-9a and b. Northeast Regional service south to Alexandria, Richmond, Williamsburg, and Newport News formally began on June 14, 1976. In October 2009 Amtrak extended the Northeast Regional with daily service from Alexandria, VA, via Burke, Manassas, Culpeper, and Charlottesville, to Lynchburg. The Washington – Lynchburg service increased 14.1% in FY 2012 to a record of almost 185,000, and the Washington – Newport News service increased 11.9% in FY 2012 to a record of nearly 624,000 passengers. As evident in Figure 2-9a, the Charlottesville station is one of the top stations in the state in terms of total ridership (Amtrak 2012).

Total Amtrak Station Boardings/Disembarkings for Top Stations in Virginia FY11-12 (Figure 2-9a)



Amtrak Station Boardings/Disembarkings Per Capita for Top Stations in Virginia FY11-12 (Figure 2-9b)

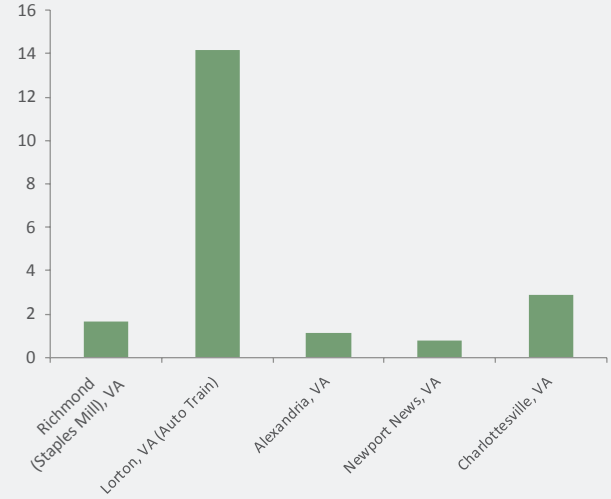


Figure 2-9b shows a large number of boardings and disembarkings per capita for the City of Charlottesville, at 2.9 exchanges per resident. This number is trumped only by the Lorton, VA station, which has a small population by comparison, but the ridership of surrounding cities in northern Virginia

Bicycle and Pedestrian

Bicycle

In Albemarle County, cycling facilities are mostly concentrated adjacent to the US 29 corridor. Albemarle's facilities include Shared Roadways, Bike Lanes, and Multi-Use Paths, most of which were implemented by VDOT. These facilities follow main roadways and lead in various directions towards Charlottesville.

Charlottesville is a bike-friendly city, having earned the League of American Bicyclists' silver designation as a "Bicycle Friendly Community" in 2012. Charlottesville's facilities include Shared Roadways, Bike Lanes, Multi-Use Paths, and Recreational Trails. The City maintains numerous bicycling facilities and works to build a safe network within the City, and connecting to facilities in Albemarle County (League of American Bicyclists).

Pedestrian

Albemarle maintains a significant number of sidewalk facilities along major roadways, though walking is not a prominent mode of transportation in the County. Walking is facilitated in certain areas; specifically within subdivi-

sions such as Woodbrook, Forest Lakes, and Hollymead. The County has also made efforts to improve pedestrian mobility with the development of infrastructure in the Hollymead commercial area and in new developments on Pantops Mountain.

Charlottesville was designated a "Silver-Level Pedestrian Community" by Walk Friendly Communities in 2012 due to its high rates of walking, innovative planning practices, and a centralized, successful Downtown Pedestrian Mall. Highlights of the Charlottesville profile include the City's Complete Streets policy; excellent transit services; engineering treatments such as pushbutton signals with countdown timers and in-ground LED crosswalks; infill development strategies; and highly successful Downtown Pedestrian Mall. (Walk Friendly Community 2012).

Airport

Charlottesville-Albemarle Airport (CHO)

Charlottesville-Albemarle Airport (CHO) is the only commercial service airport in the region. CHO is located eight miles north of Charlottesville and one mile west of US 29 on Airport Road. It is both a general aviation and commercial service airport, offering 50 daily non-stop flights to and from Charlotte, Philadelphia, New York/LaGuardia, Washington/Dulles, Atlanta and Chicago. The airport is served by Delta Connection, United Express (Atlantic Coast Airlines), American Eagle, and US Airways Express (Piedmont Airlines). General aviation facilities include an executive terminal offering a full-service fixed-base operation, a flight school, and aircraft charter firms.

Transportation to and from CHO is currently limited to automobile. While there are bike lane facilities along Airport Road leading to the airport, these facilities are currently isolated from a greater regional bicycle network. Daily and hourly parking are available at the airport. Car rentals are available in the terminal facility. Many area hotels provide shuttle service from the airport for guests. Taxi companies also provide service to CHO.

Travel Demand Management

Two programs currently implemented for regional Travel Demand Management (TDM) in the MPO region include RideShare and Park & Ride Lots.

RideShare

RideShare is a program run out of the Thomas Jefferson Planning District Commission (TJPDC) in cooperation with the Central Shenandoah Planning District Commission (CSPDC), working to reduce traffic congestion and increase mobility throughout Central Virginia and the Central Shenandoah Valley. Services include free carpool and SchoolPool matching, vanpool coordination, and a Guaranteed Ride Home program to provide free rides home in an emergency. RideShare also works with employers to develop and implement traffic reduction programs and advertises the region's Park and Ride lots. There were 458 members in the RideShare carpool matching and Guaranteed Ride Home program as of July 9, 2013 (RideShare).

Park & Ride Lots

There are thirty-three Park & Ride lots within the RideShare service area – twenty-one located within the TJPDC, twelve of which are located within the MPO area, as listed in Figure 2-10. Some of these lots are formal facilities managed by VDOT and others are informal lots made available to commuters by businesses or organizations that own the property.

Quarterly inventories of the lots are conducted by RideShare. The most active lot is in Waynesboro, with an average of 77 cars each weekday (AUG2). Based on interviews conducted at the lot, and data collected from RideShare, the majority of members parking at this lot are commuting to Charlottesville. The second most active lot is at Zion Crossroads (LOU1), with an average of 49 cars each weekday. Data on commuting destinations was not available for this lot, but Charlottesville and Richmond are likely the primary destinations.

Park and Ride Lots in Region (Figure 2-10)

Albemarle County

ALB1: Maple Grove Christian Church
ALB2: Forest Lakes North Health Services Center
ALB3: Peace Lutheran Church
ALB4: Wal-Mart South Lot
ALB5: Mountainside Senior Living
ALB6: Darden Towe Park
ALB7: Pantops Shopping Center
ALB8: US 29 South and I-64
ALB9: Avon Street Extended
ALB10: Keene
ALB11: Scottsville

Augusta County

AUG1: Verona
AUG2: Waynesboro Town Center

City of Charlottesville

CVL1: Azalea Park

Fluvanna County

FLU1: Beaver Dam Baptist Church
FLU2: Lake Monticello (Jefferson Centre)

Greene County

GRN1: Greene County School System
GRN2: Ruckersville Walmart

Louisa County

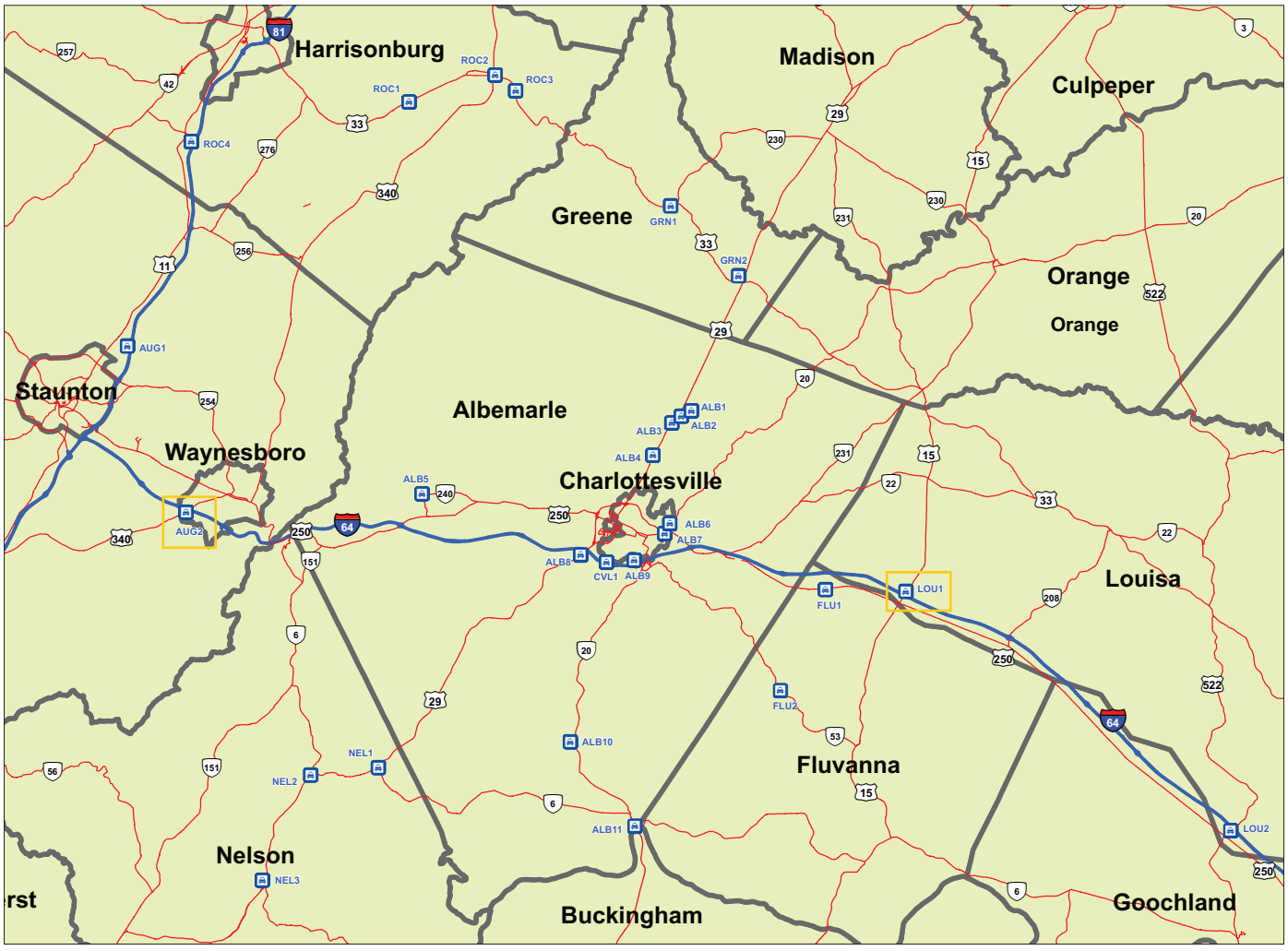
LOU1: Zion Crossroads
LOU2: Gum Springs

Nelson County

NEL1: Route 6 East
NEL2: Route 6 West
NEL3: Lovingston Volunteer Fire Department

Rockingham County

ROC1: Massanutten
ROC2: Elkton - Blue and Gold Dr
ROC3: Elkton - Tanyard Bridge Road
ROC4: Mt. Crawford



Most Active Lots