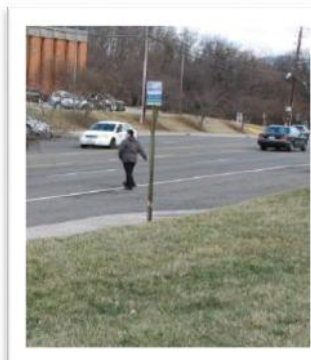




# Roanoke Valley Transportation PLANNING ORGANIZATION

Staffed by the  
REGIONAL **commission**



## REGIONAL PERFORMANCE MEASURES REPORT

*Roanoke Valley Transportation Planning Organization*  
DRAFT  
September 2015



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## **BACKGROUND**

This report is being generated as part of a statewide effort among Transportation Management Area Metropolitan Planning Organizations (TMA MPO) to track common performance measures, evaluate the region's transportation system against its transportation goals and standards, and contribute to the Statewide Transportation Plan. The Roanoke Valley Transportation Planning Organization (RVTPO), as a TMA MPO, is required by the state to track regional performance measures. The RVTPO will be eligible for funding through sources only available to TMA MPOs and receipt of those funds is contingent upon the TPO's development, and the Commonwealth Transportation Board's approval, of the regional performance measures.

Regional performance measures fall under the following categories:

- Congestion Reduction
- Safety
- Bicycle and Pedestrian Facility Usage
- Transit Usage
- HOV Usage
- Jobs-to-Housing Ratio
- Job and Housing Access to Pedestrian Facilities
- Air Quality
- Movement of Freight

Due to the lack of data for the southwest portion of the state, not all performance measures requested by the State are applicable to the Roanoke area particularly in the categories of congestion reduction and air quality. Such performance measures may be added in the future if data becomes available. A master list of all performance measures tracked by RVAMPO is included on the following page.

It should be noted that, in addition to data collection for all of the cities of Roanoke, Salem and the Town of Vinton, data is also collected for the localities which are only partially in the MPO area. Those localities are: Bedford, Botetourt, Montgomery and Roanoke Counties. For these localities, data was reported for the entire area and not just the portion falling in the MPO Study Area. The rationale is that because there is no clear way to isolate and capture data from these partial areas, it is more prudent to include the entire locality, then to completely omit it.

## REGIONAL PERFORMANCE MEASURES FOR THE ROANOKE VALLEY AREA MPO

	Performance Measure	Data Requirements	Data Source	Level of Data Collection	Desired Trend	Preferred Reporting Format
<b>1.0 Congestion Reduction</b>						
1.1	Total Miles of Bicycle Lanes	Location and miles of bike lanes striped in the past year.	Local governments and VDOT	MPO localities	Upwards	Table
1.2	Total Miles of Paved Shoulders	Location and miles of paved shoulders added in the past year.	Local governments and VDOT	MPO localities	Upwards	Table
1.3	Total Miles of Wide Travel Lanes	Location and miles of wide travel lanes created in the past year.	Local governments and VDOT	MPO localities	Upwards	Table
1.4	Total Miles of Signed Bicycle Routes	Location and miles of signed bike routes installed in the past year.	Local governments and VDOT	MPO localities	Upwards	Table
1.5	Total Number of Share the Road Signs	Location and number of share the road signs installed in the past year.	Local governments and VDOT	MPO localities	Upwards	Table
1.6	Total Number of Sharrows	Location and number of sharrows painted in the past year.	Local governments and VDOT	MPO localities	Upwards	Table
1.7	Total Number of Bicycle Racks	Location and number of newly added bike racks in the past year.	Local governments and VDOT	MPO localities	Upwards	Table
<b>2.0 Safety</b>						
2.1	Number of Highway Fatalities and Fatality Rate per 100 million VMT	Number of Fatalities on Highways and VMT	DMV & VDOT	MPO localities	Downwards	Table and Bar Chart
2.2	Number of Highway Crashes and Crash Rate per 100 million VMT	Number of crashes on Highways and VMT	DMV & VDOT	MPO localities	Downwards	Table and Bar Chart
2.3	Annual Transit Collisions	Number of Collisions per Passenger Miles Travelled (PMT)	FTA	System	Downwards	Table
2.4	Annual Transit Injuries	Number of injuries per 100 million PMT	FTA	System	Downwards	Table
2.5	Annual Transit Fatalities	Number of fatalities per 100 million PMT	FTA	System	Downward (If 0 fatalities then Steady)	Table
2.6	Annual Aviation Crashes	Number of aviation crashes	NTSB Aviation Database, DOAV	MPO localities	Downwards	Table

## REGIONAL PERFORMANCE MEASURES FOR THE ROANOKE VALLEY AREA MPO

	Performance Measure	Data Requirements	Data Source	Level of Data Collection	Desired Trend	Preferred Reporting Format
2.7	Annual Aviation Fatalities	Number of aviation fatalities	NTSB Aviation Database, DOAV	MPO localities	Downward	Table
2.8	Annual Bicycle Crashes	Number of bicycle crashes	DMV	MPO localities	Downwards	Table
2.9	Annual Bicycle Injuries	Number of bicycle injuries	DMV	MPO localities	Downwards	Table
2.10	Annual Bicycle Fatalities	Number of bicycle fatalities	DMV	MPO localities	Downward (If 0 fatalities then Steady)	Table
2.11	Annual Pedestrian Injuries	Number of pedestrian injuries	DMV	MPO localities	Downwards	Table
2.12	Annual Pedestrian Fatalities	Number of pedestrian fatalities	DMV	MPO localities	Downward (If 0 fatalities then Steady)	Table
<b>3.0 Bicycle and Pedestrian Facility Usage</b>						
3.1	Number of bicyclists by location	Number of bicyclists by location	Roanoke Valley Area MPO Annual National Bike and Pedestrian Documentation Project	By location	Upwards	Table
3.2	Number of pedestrians by location	Number of pedestrians by location	Roanoke Valley Area MPO Annual National Bike and Pedestrian Documentation Project	By location	Upwards	Table
3.3	Number of greenway users by location	Number of greenway users by location	Roanoke Valley Area MPO	By location	Upwards	Table
3.4	Number of Bicycle Friendly Businesses	Number of Bicycle Friendly Businesses	RideSolutions	MPO localities	Upwards	Table
<b>4.0 Transit Usage</b>						
4.1	Annual Unlinked Passenger Transit	# of transit trips	DRPT	System	Upwards	Table
4.2	Annual Unlinked Passenger Transit Trips Per Capita	# of transit trips and service area population	DRPT	System	Upwards	Table and Bar Graph
4.3	Annual Vehicle Revenue Miles	Transit Revenue Miles as reported by service provider	DRPT	System	Upwards	Table
4.4	Annual Vehicle Revenue Miles per Capita	Revenue miles and service area population	DRPT	System	Upwards	Table and Bar Graph
4.5	Annual Passenger Miles Traveled	Transit Passenger Miles	DRPT	System	Upwards	Table
4.6	Annual Passenger Miles Traveled per Capita	Transit Passenger Miles and service area population	DRPT	System	Upwards	Table and Bar Graph
4.7	Annual Smart Way Connector Bus Ridership	# of Smart Way Connector Bus Boardings	Greater Roanoke Transit Company	System	Upwards	Table

## REGIONAL PERFORMANCE MEASURES FOR THE ROANOKE VALLEY AREA MPO

	Performance Measure	Data Requirements	Data Source	Level of Data Collection	Desired Trend	Preferred Reporting Format
<b>5.0 HOV Usage</b>						
5.1	# of Park and Ride Lots and Spaces	Number of P-n-R lots and spaces	VDOT	MPO localities	Upwards	Table and Line Chart Graph
5.2	# of members in Ride Solutions program	# of members in Ride Solutions program	RideSolutions	System	Upwards	Table
<b>6.0 Jobs-to-Housing Ratio</b>						
6.1	Ratio of jobs to households at the regional & jurisdictional levels	Jobs and Housing census data	Bureau of Economic Analysis for # of jobs; ACS Table B11016 Household Type by Household Size	By locality for MPO	Steady	Table and Line Chart Graph
6.2	Regional Linear Jobs-Households Dissimilarity index (0.0 to 1.0) *	Number of Jobs/ Households	Employment - Bureau of Economic Analysis, CA25N Total full-time and part-time employment by NAICS industry, Total employment (number of jobs) in 2011. Households – ACS Survey 2007-2012, B11016 Household Type by Household Size	By locality for MPO	Below 0.5	Table
6.3	Ratio of jobs to work force	Number of Jobs/ Civilian Labor Force	Bureau of Economic Analysis for # of jobs; Virginia Workforce Connection for labor market data ( <a href="http://www.vawc.virginia.gov/analyzer/default.asp">http://www.vawc.virginia.gov/analyzer/default.asp</a> )	By locality for MPO	Upwards	Table
6.4	Inter and Intra regional commuting data	Commuting pattern data; % of workers working in the County in which they live	Census Journey to Work data from the Bureau of Economic Analysis	MPO	Upwards	Table or Map at MPO level
6.5	Mean Travel Time to Work	Commuting pattern data from Census	ACS; Table S0802. Means of Transportation to Work	MPO	Downwards	Table or GIS Map by locality for MPO
	* VRTC Study "Feasibility of Using Jobs/Housing Balance in Virginia Statewide Planning <a href="http://www.virginiadot.org/vtrc/main/online_reports/pdf/11-r1.pdf">www.virginiadot.org/vtrc/main/online_reports/pdf/11-r1.pdf</a> p. 26					

## REGIONAL PERFORMANCE MEASURES FOR THE ROANOKE VALLEY AREA MPO

	Performance Measure	Data Requirements	Data Source	Level of Data Collection	Desired Trend	Preferred Reporting Format
<b>7.0 Job and Housing Access to Transit</b>						
7.1	% of population and/or households in TAZs served by transit	Transit GIS layer and % of households in TAZ's served by transit	TAZ Model Data and Transit GIS shapefiles	MPO Urban Areas	Upwards	GIS Map by TAZ
7.2	% of employment in TAZs served by transit	Transit GIS layer and % of workers in TAZ's served by transit	TAZ Model Data and Transit GIS shapefiles	MPO Urban Areas	Upwards	GIS Map by TAZ
<b>8.0 Job and Housing Access to Pedestrian Facilities</b>						
8.1	# and % of residents who walk to work	Population and number who walk to work	Census (ACS) Journey to Work data	MPO Localities (Census Data)	Upwards	Table
<b>9.0 Air Quality</b>						
9.1	Annual # of Days when Ozone Levels were Above 8-Hour Standard	# of days Ozone levels are above 8-hour standard	DEQ	MPO	Downwards	Table and Bar Graph
<b>10.0 Movement of Freight</b>						
10.1	Truck and Rail Mode Share, by value	Value of freight by mode share	Census Commodity Flow Data or Transearch data via VDOT Statewide License	MPO or as available	Upwards	Table and Bar Graph
10.2	Truck and Rail Mode Share, by tons	Tonnage of freight by mode share	Census Commodity Flow Data or Transearch data via VDOT Statewide License	MPO or as available	Upwards	Table and Bar Graph
Performance Measures will be prepared annually by October 15th, placed on the MPOs website, and then be linked to the State's Annual Performance Report.						



## CHANGE OF TRENDS IN REGIONAL PERFORMANCE MEASURES

Beginning with this year's Report, data is being compared to the previous year, 2013, to analyze trends and to highlight performance.

CHANGE IN TRENDS OF REGIONAL PERFORMANCE MEASURES			
No.	Performance Measure	Desired Trend	Change from 2013 to 2014
<b>1.0 Congestion Reduction</b>			
1.1	Total Miles of Bicycle Lanes	Upwards	7.5 or 2% ↑
1.2	Total Miles of Paved Shoulders	Upwards	21.9 or 92% ↑
1.3	Total Miles of Wide Travel Lanes	Upwards	21.5 or 30% ↑
1.4	Total Miles of Signed Bicycle Routes	Upwards	7.5 or 10% ↑
1.5	Total Number of Share the Road Signs	Upwards	3 or 10% ↑
1.6	Total Number of Sharrows	Upwards	Unchanged
1.7	Total Number of Bicycle Racks	Upwards	37 or 36% ↑
<b>2.0 Safety</b>			
2.1	Number of Highway Fatalities	Downwards	8 or 22% ↓
2.1	Fatality Rate per 100 Million Vehicle Miles Traveled	Downwards	NO DATA
2.2	Number of Highway Crashes	Downwards	1,942 or 28% ↓
2.2	Crash Rate per 100 Million Vehicle Miles Traveled	Downwards	NO DATA
2.3	Annual Transit Collisions	Downwards	2 or 100% ↓
2.4	Annual Transit Injuries	Downwards	8 or 62% ↓
2.5	Annual Transit Fatalities	Downwards	Unchanged
2.6	Annual Aviation Crashes	Downwards	Unchanged
2.7	Annual Aviation Fatalities	Downwards	Unchanged
2.8	Annual Bicycle Crashes	Downwards	4 or 12% ↑
2.9	Annual Bicycle Injuries	Downwards	3 or 9% ↑
2.10	Annual Bicycle Fatalities	Downwards	2 or 200% ↑
2.11	Annual Pedestrian Injuries	Downwards	3 or 4% ↓
2.12	Annual Pedestrian Fatalities	Downwards	Unchanged
<b>3.0 Bicycle and Pedestrian Facility Usage</b>			
3.1	Number of bicyclists by location	Upwards	NO DATA
3.2	Number of pedestrians by location <sup>③</sup>	Upwards	NO DATA
3.3	Number of greenway users by location <sup>④</sup>	Upwards	34,484 or 10% ↓
3.4	Number of Bicycle Friendly Businesses	Upwards	Unchanged
<b>4.0 Transit Usage</b>			
4.1	Annual Unlinked Passenger Transit Trips	Upwards	3,200 or 0.1% ↓
4.2	Annual Unlinked Passenger Transit Trips Per Capita	Upwards	.02 or 0.1% ↓
4.3	Annual Vehicle Revenue Miles	Upwards	137,118 or 6% ↓
4.4	Annual Vehicle Revenue Miles per Capita	Upwards	1.05 or 6% ↓
4.5	Annual Passenger Miles Traveled	Upwards	67,008 or 6% ↓
4.6	Annual Passenger Miles Traveled per Capita	Upwards	0.52 or 0.6% ↓
4.7	Annual Smart Way Connector Bus Ridership	Upwards	NO DATA

5.0 HOV Usage			
5.1	# of Park and Ride Lots and Spaces	Upwards	Unchanged
5.2	# of members in Ride Solutions program	Upwards	271 or 35% ↑
6.0 Jobs-to-Housing Ratio			
6.1	Ratio of jobs to households at the regional & jurisdictional levels	Steady	Remains Steady
6.2	Regional Linear Jobs-Households Dissimilarity index (0.0 to 1.0)	Below 0.5	0.047 ↓
6.3	Ratio of jobs to work force	Upwards	0.04 or 3% ↓
6.4	Inter and Intra regional commuting data	Upwards	No comparison data
6.5	Mean Travel Time to Work	Downwards	0.12 or 0.6% ↓
7.0 Job and Housing Access to Transit			
7.1	% of population and/or households in TAZs served by transit	Upwards	11% ↑
7.2	% of employment in TAZs served by transit	Upwards	13% ↑
8.0 Job and Housing Access to Pedestrian Facilities			
8.1	# and % of residents who walk to work	Upwards	159 or 0.15% ↑
9.0 Air Quality			
9.1	Annual # of Days when Ozone Levels were Above 8-Hour Standard	Downwards	1 or 100% ↓
10.0 Movement of Freight			
10.1	Truck and Rail Mode Share, by value	Upwards	Unchanged
10.2	Truck and Rail Mode Share, by tons	Upwards	Unchanged

**Notes explaining specific downward trends and trend comparison irregularities:**

- ① 2.1: Fatality Rate per 100 Million Vehicle Miles Traveled – At the publication of this report, the Daily Vehicle Miles Traveled report had not been released by VDOT;
- ② 2.2: Crash Rate per 100 Million Vehicle Miles Traveled – At the publication of this report, the Daily Vehicle Miles Traveled report had not been released by VDOT
- ③ 3.1: Number of Bicyclists by Location and 3.2: Number of Pedestrians by Location – There was no data gathered in 2014 due to inclement weather;
- ④ 3.3: Number of Greenway Users by Location – For comparison purposes, only greenway counters with previous year's counts were used. Data was also excluded from counters which are no longer operational. The chart below represents new counters with data collection beginning in 2014. Those counters will be included in next year's report;
- ⑤ 4.7: Annual SmartWay Connector Bus Ridership – At the publication of this report, the ridership numbers were not available;
- ⑥ 10.1: Truck and Rail Mode Share, by value – It is expected that VDOT will purchase updated freight data sets in FY16. It is anticipated that this data will be available for inclusion in the 2016 Performance Measures Report.
- ⑦ 10.2: Truck and Rail Mode Share, by tons – It is expected that VDOT will purchase updated freight data sets in FY16. It is anticipated that this data will be available for inclusion in the 2016 Performance Measures Report.

**The trends in the following performance measures are of significant note:**

2.1: Number of Highway Fatalities and 2.2: Number of Highway Crashes – There was a 22% and 28% reduction, respectively, for highway fatalities and crashes from 2013 to 2014.

2.4: Annual Transit Injuries – There was a significant decrease of transit injuries (8 or 62%) from 2013 to 2014.

## 1.0 CONGESTION REDUCTION

### 1.1 Total Miles of Bike Lanes

Locality	2012	2013	2014
Botetourt County	98.0	99.7	99.7
City of Roanoke	159.4	172.8	181.3
City of Salem	40.1	40.1	40.1
Roanoke County	82.7	82.7	82.7
Town of Vinton	4.8	4.8	4.8
<b>Total Miles of Bicycle Lanes</b>	<b>385.0</b>	<b>400.1</b>	<b>408.6</b>

*Data Source:*

Bikeway Plan for the Roanoke Valley Area MPO - 2012 Update, Table 3.1 Bicycle Lane Locations and Mileage  
<http://www.rvarc.org/bike/RVAMPO-BikewayPlan-2012Update.pdf>

### 1.2 Total Miles of Paved Shoulders

Locality	Segment	2012 (Miles)	2013 (Miles)	2014 (Miles)
City of Roanoke	Franklin Road from Crossbow to Blue Ridge Parkway	0	2.13	2.13
Roanoke County	Brambleton (US 211) from Crystal Creek to Cotton Hill	0	0	1.36
Roanoke County	Catawba Valley Rd. from Electric Rd. to TPO Study Area Boundary	0.99	0.99	0.99
Roanoke County	Colonial Ave. from Electric Rd. to Penn Forest Blvd.	0	0.53	1.07
Roanoke County	Electric Rd. from Brambleton Ave. to Corporate Limits	6.41	6.41	6.41
Roanoke County	Electric Rd. from Catawba Valley Rd. to Interstate 81	0	0.96	0.96
Roanoke County	Electric Rd. from Corporate Limits to Starkey Rd.	0	1.48	1.48
Roanoke County	Electric Rd. from Starkey Rd. to Brambleton Ave.	0	2.84	2.84
Roanoke County	Hollins Rd. from Beaumont Rd. to Plantation Rd.	0	1.24	2.48
Roanoke County	Merriman from Corporate Limit to Starkey Rd	0	0	4.91
Botetourt County	Roanoke (US 60) from Interstate 81 to Valley (779)	0	0	1.51
Botetourt County	Roanoke (US 220) from Greenfield to Old Wagon	0	0	2.78
Botetourt County	Roanoke (US 220) from Catawba (779) to Valley (779)	0	0	0.10
Botetourt County	Roanoke (US 220) from Commons Parkway to Interstate 81	0	0	0.61
Botetourt County	Roanoke (US 220) from Antler to Muse	0	0	2.31
Botetourt County	Roanoke (US 220) from James to Catawba Creek	0	0	4.56
Botetourt County	Roanoke (US 60) from Old Fincastle to Catawba Creek	0	0	0.40
Roanoke County	Route 311 from Corporate Limits (I-81) to Kessler Mill Road	0	3.05	3.05
Botetourt County	Sanderson Dr. from Read Mountain Rd. to Corporate Limit	0	0	4.59
Roanoke County	Sanderson Dr. from Corporate Limits to Shadwell Dr.	0	0.43	0.43
Roanoke County	U.S. 11/460 from Corporate Limits to Technology	0	3.92	3.92
<b>Total Miles of Paved Shoulders</b>		<b>7.40</b>	<b>23.98</b>	<b>45.89</b>

*Data Source:*

RVTPO Interactive Bicycle Map  
<http://rvarc.maps.arcgis.com/apps/Viewer/index.html?appid=a5fb7d47b1384ff3b9bb4243e8357313>

### 1.3 Total Miles of Wide Travel Lanes

Locality	2013 (Miles)	2014 (Miles)
Botetourt County	0	1.65
City of Roanoke	46.23	59.75
Roanoke County	5.95	11.36
City of Salem	15.94	16.87
Town of Vinton	3.71	3.71
<b>Total Miles of Wide Travel Lanes (2014)</b>	<b>71.83</b>	<b>93.34</b>

*Data Source:*

RVTPO Interactive Bicycle Map

<http://rvarc.maps.arcgis.com/apps/Viewer/index.html?appid=a5fb7d47b1384ff3b9bb4243e8357313>

### 1.4 Total Miles of Signed Bike Routes

Locality	Length (Miles) 2012	Length (Miles) 2013	Length (Miles) 2014
City of Roanoke	27.4	31.2	38.7
City of Salem	19.9	19.9	19.9
Roanoke County	27.4	27.4	27.4
Town of Vinton	0	0	0
<b>Total Miles of Signed Bike Routes</b>	<b>74.7</b>	<b>78.5</b>	<b>86.0</b>

*Data Source:*

RVARC/RVAMPO Regional Interactive Bicycle Map

<http://www.arcgis.com/home/webmap/viewer.html?webmap=8d5594931b724f8493acdd2c7ec8820b&extent=-80.228,37.1613,-79.6901,37.3962>

### 1.5 Total Number of Share the Road Signs

Locality	Street	Number (2012)	Number (2013)	Number (2014)
City of Roanoke	Brandon Ave.	4	4	4
City of Roanoke	Plantation Rd.	6	6	6
City of Roanoke	Shenandoah Ave.	3	3	3
City of Roanoke	US 220/Franklin Rd.	2	2	2
City of Roanoke	Williamson Rd.	6	6	6
Roanoke County	Catawba Valley Rd./311	1	1	3
Roanoke County	U.S. 460/West Main St.	7	7	7
Roanoke County	Wildwood Rd.	1	1	2
<b>Total Number of Share the Road Signs</b>		<b>30</b>	<b>30</b>	<b>33</b>

*Data Source:*

RVARC/RVTPO Regional Interactive Bicycle Map

<http://www.arcgis.com/home/webmap/viewer.html?webmap=8d5594931b724f8493acdd2c7ec8820b&extent=-80.228,37.1613,-79.6901,37.3962>

## 1.6 Total Number of Sharrows

Locality	Street	Location	2012	2013	2014
City of Roanoke	2 <sup>nd</sup>	Church – signed bike route	X	X	X
City of Roanoke	Brandon	Brandon – Signed bike route		X	X
City of Roanoke	Campbell	Market – Signed bike route		X	X
City of Roanoke	Church	Market – signed bike route	X	X	X
City of Roanoke	Church	1 <sup>st</sup> – signed bike route	X	X	X
City of Roanoke	Colonial	26 <sup>th</sup> – terminus of Colonial bike lane	X	X	X
City of Roanoke	Colonial	Winding Way – terminus of Colonial bike lane	X	X	X
City of Roanoke	Gus Nicks	Corporate Limit to Orange Ave.		X	X
City of Roanoke	Market	Campbell Ave. to Church Ave.		X	X
City of Roanoke	Memorial	Cambridge – terminus of Memorial bike lane	X	X	X
City of Roanoke	Memorial/13 <sup>th</sup>	Cleveland – terminus of Memorial bike lane	X	X	X
City of Roanoke	Peters Creek Ext.	Peters Creek – Signed bike route		X	X
City of Roanoke	Salem	Williamson Rd. to Market St.		X	X
City of Roanoke	Walnut	Mill Mountain Greenway/Belleview	X	X	X
City of Roanoke	Wells	2 <sup>nd</sup> St. to Commonwealth		X	X
City of Roanoke	Williamson	Shenandoah to Salem – signed bike route	X	X	X
<b>Total Number of Sharrows</b>			<b>9</b>	<b>16</b>	<b>16</b>

**Data Source:**

RVARC/RVAMPO Regional Interactive Bicycle Map

<http://www.arcgis.com/home/webmap/viewer.html?webmap=8d5594931b724f8493acdd2c7ec8820b&extent=-80.228,37.1613,-79.6901,37.3962>

## 1.7 Total Number of Bicycle Racks

Locality	Number of Racks 2012	Number of Racks 2013	Number of Racks 2014
Botetourt County	0	0	1
City of Roanoke	51	80	105
City of Salem	6	7	9
Roanoke County	13	14	20
Town of Clifton Forge	0	0	3
Town of Vinton	1	2	2
<b>Total Number of Bicycle Racks in TPO</b>	<b>71*</b>	<b>103*</b>	<b>140*</b>

\*This number denotes all public and private bicycle racks.

**Data Source:**

RVARC/RVAMPO Regional Interactive Bicycle Map

<http://www.arcgis.com/home/webmap/viewer.html?webmap=8d5594931b724f8493acdd2c7ec8820b&extent=-80.228,37.1613,-79.6901,37.3962>

## 2.0 SAFETY

### 2.1 Number of Highway Fatalities

Locality	Highway Fatalities in 2011	Highway Fatalities in 2012	Highway Fatalities in 2013	Highway Fatalities in 2014
Bedford County	10	21	9	7
Botetourt County	6	9	4	5
Montgomery County	6	11	7	4
City of Roanoke	5	4	5	7
Roanoke County	13	11	10	3
City of Salem	0	0	1	1
Town of Vinton	0	0	0	1
<b>Total TPO</b>	<b>40</b>	<b>56</b>	<b>36</b>	<b>28</b>

### Fatality Rate per 100 Million VMT

Locality	Fatalities per 100 million VMT 2011	Fatalities per 100 million VMT 2012	Fatalities per 100 million VMT 2013	Fatalities per 100 million VMT 2014
Bedford County	605	1,282	530	No Data
Botetourt County	321	484	213	No Data
Montgomery County	344	590	377	No Data
City of Roanoke	235	194	246	No Data
Roanoke County	570	481	435	No Data
City of Salem	-	-	225	No Data
Town of Vinton	-	-	-	No Data
<b>Total TPO</b>	<b>390</b>	<b>545</b>	<b>348</b>	<b>No Data</b>

#### Data Sources:

*Fatalities:* [http://www.dmv.state.va.us/safety/crash\\_data/crash\\_facts/crash\\_facts\\_14.pdf](http://www.dmv.state.va.us/safety/crash_data/crash_facts/crash_facts_14.pdf) *Vehicle Miles Traveled (VMT):* [http://www.virginiadot.org/info/resources/Traffic\\_2013/VMTRreport\\_1200\\_2013.pdf](http://www.virginiadot.org/info/resources/Traffic_2013/VMTRreport_1200_2013.pdf)

Note: At the publication of this report, the Daily Vehicle Miles Traveled report had not been released by VDOT.

### 2.2 Number of Highway Crashes

Locality	Highway Crashes in 2011	Highway Crashes in 2012	Highway Crashes in 2013	Highway Crashes in 2014
Bedford County	882	834	938	892
Botetourt County	648	652	631	586
Montgomery County	1,573	1,784	1,529	1,498
City of Roanoke	1,849	2,197	2,090	1,965
Roanoke County	1,191	1,273	1,128	1,011
City of Salem	493	522	546	491
Town of Vinton	147	137	125	80
<b>Total TPO</b>	<b>6,783</b>	<b>7,399</b>	<b>6,987</b>	<b>5,045</b>

## Crash Rate per 100 Million VMT

Locality	Crashes per 100 million VMT (2011)	Crashes per 100 million VMT (2012)	Crashes per 100 million VMT (2013)	Crashes per 100 million VMT (2014)
Bedford County	53,324	50,917	55,255	No Data
Botetourt County	34,622	35,089	33,659	No Data
Montgomery County	90,262	95,762	82,330	No Data
City of Roanoke	86,878	106,688	102,924	No Data
Roanoke County	52,226	55,672	49,046	No Data
City of Salem	111,740	117,139	122,956	No Data
Town of Vinton	109,710	108,067	98,601	No Data
<b>Total MPO</b>	<b>66,161</b>	<b>71,993</b>	<b>67,633</b>	<b>No Data</b>

**Data Sources:**

Crashes: [http://www.dmv.state.va.us/safety/crash\\_data/crash\\_facts/crash\\_facts\\_13.pdf](http://www.dmv.state.va.us/safety/crash_data/crash_facts/crash_facts_13.pdf) Vehicle Miles Traveled (VMT): [http://www.virginiadot.org/info/resources/Traffic\\_2013/VMTRReport\\_1200\\_2013.pdf](http://www.virginiadot.org/info/resources/Traffic_2013/VMTRReport_1200_2013.pdf)

### 2.3 Annual Transit Collisions

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
# of Collisions	0	0	0	6	1	0	0	0	2	2	2	0

#### Collision Rate per 100 Million Passenger Miles Traveled

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
# of Collisions per 100 million PMT	0	0	0	0	10	0	0	0	17	19	18	0

**Data Source:**

<http://www.ntdprogram.gov/ntdprogram/data.htm>

NTD Database website – Access NTD Data - Safety & Security Data – Safety & Security Time Series; Transit Data for Demand Response and Motor Bus (Fixed-Route) Combined

### 2.4 Annual Transit Injuries

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Injuries	7	2	1	18	10	10	13	13	12	6	13	5

#### Injury Rate per 100 Million Passenger Miles Traveled

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Injuries per 100 million PMT	77	22	11	186	97	86	107	107	103	56	116	

**Data Source:**

<http://www.ntdprogram.gov/ntdprogram/data.htm>

NTD Database website – Access NTD Data - Safety & Security Data – Safety & Security Time Series; Transit Data for Demand Response and Motor Bus (Fixed-Route) Combined

## 2.5 Annual Transit Fatalities

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Total Fatalities</b>	0	0	0	0	0	0	0	0	0	0	0	0

### Fatality Rate per 100 Million Passenger Miles Traveled

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Total Fatalities per 100 million PMT</b>	0	0	0	0	0	0	0	0	0	0	0	0

*Data Source:*

<http://www.ntdprogram.gov/ntdprogram/data.htm>

NTD Database website – Access NTD Data - Safety & Security Data – Safety & Security Time Series; Transit Data for Demand Response and Motor Bus (Fixed-Route) Combined

## 2.6 Annual Aviation Crashes

	2010	2011	2012	2013	2014
<b>Annual Aviation Crashes</b>	1	0	2	0	0

## 2.7 Annual Aviation Fatalities

	2010	2011	2012	2013	2014
<b>Annual Aviation Fatalities</b>	1	0	0	0	0

*Data Source:*

FAA Accident Database & Synopses, <http://www.nts.gov/layouts/ntsb.aviation/index.aspx>

## 2.8 Annual Bicycle Crashes

Locality	2009	2010	2011	2012	2013	2014
Bedford County	0	3	2	0	4	1
Botetourt County	0	2	2	3	1	2
Montgomery County	17	17	14	21	14	20
City of Roanoke	14	14	12	18	7	9
Roanoke County	1	0	0	1	4	2
City of Salem	2	3	4	8	3	3
<b>Total Bicycle Crashes</b>	<b>34</b>	<b>39</b>	<b>34</b>	<b>51</b>	<b>33</b>	<b>37</b>

*Data Source:*

Virginia DMV website – Virginia Bicycle Crashes by Jurisdiction Calendar Years 2009-2013, [http://www.dmvnow.com/safety/crash\\_data/bicycle/pdf/crash\\_juris.pdf](http://www.dmvnow.com/safety/crash_data/bicycle/pdf/crash_juris.pdf)



## 2.9 Annual Bicycle Injuries

Locality	2009	2010	2011	2012	2013	2014
Bedford County	0	5	2	0	4	0
Botetourt County	0	1	2	3	1	2
Montgomery County	15	17	12	21	14	21
City of Roanoke	13	14	12	17	7	8
Roanoke County	1	0	0	1	4	2
City of Salem	2	2	4	8	3	3
<b>Total Bicycle Injuries</b>	<b>31</b>	<b>39</b>	<b>32</b>	<b>50</b>	<b>33</b>	<b>36</b>

**Data Source:**

Virginia DMV website – Virginia Bicycle Injuries in Crashes by jurisdiction Calendar Years 2009-2013,  
[http://www.dmvnow.com/safety/crash\\_data/bicycle/pdf/injury\\_juris.pdf](http://www.dmvnow.com/safety/crash_data/bicycle/pdf/injury_juris.pdf).

## 2.10 Annual Bicycle Fatalities

Locality	2010	2011	2012	2013	2014
Bedford County	0	0	0	0	1
Botetourt County	1	0	0	0	0
Montgomery County	0	0	0	0	0
City of Roanoke	0	0	0	0	1
Roanoke County	0	0	0	0	0
City of Salem	0	0	0	0	0
<b>Total Bicycle Fatalities</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>

**Data Source:**

Virginia DMV website – Virginia Bicycle Fatalities in Crashes by Jurisdiction Calendar Years 2010-2014,  
[http://www.dmvnow.com/safety/crash\\_data/bicycle/pdf/fatality\\_juris.pdf](http://www.dmvnow.com/safety/crash_data/bicycle/pdf/fatality_juris.pdf).

## 2.11 Annual Pedestrian Injuries

Locality	2010	2011	2012	2013	2014
Bedford County	4	3	3	5	8
Botetourt County	2	2	1	0	4
Montgomery County	24	23	20	28	15
City of Roanoke	30	29	48	44	41
Roanoke County	3	3	5	3	6
City of Salem	7	10	9	2	5
<b>Total Pedestrian Injuries</b>	<b>70</b>	<b>70</b>	<b>86</b>	<b>82</b>	<b>79</b>

**Data Source:**

Virginia DMV website – Pedestrian Injuries in Crashes by Jurisdiction Calendar Years 2010-2014,  
[http://www.dmvnow.com/safety/crash\\_data/pedestrian/pdf/injury\\_juris.pdf](http://www.dmvnow.com/safety/crash_data/pedestrian/pdf/injury_juris.pdf).

## 2.12 Annual Pedestrian Fatalities

Locality	2010	2011	2012	2013	2014
Bedford County	0	1	0	1	1
Botetourt County	0	0	0	0	0
Montgomery County	0	0	1	2	1
City of Roanoke	1	1	0	2	2
Roanoke County	1	1	2	0	1
City of Salem	1	0	0	0	0
<b>Total Pedestrian Fatalities</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>5</b>

Data Source:

Virginia DMV website – Pedestrian Fatalities in Crashes by Jurisdiction Calendar Years 2010-2014,  
[http://www.dmvnow.com/safety/crash\\_data/pedestrian/pdf/fatality\\_juris.pdf](http://www.dmvnow.com/safety/crash_data/pedestrian/pdf/fatality_juris.pdf).

### **3.0 BICYCLE AND PEDESTRIAN FACILITY USAGE**

#### **3.1 Number of Bicyclists by Location**

<b>Location</b>	<b>2012*</b>	<b>2013*</b>	<b>2014***</b>
10 <sup>th</sup> Street and Shenandoah Avenue	11	13**	No Data
10 <sup>th</sup> Street, Syracuse Avenue, Lick Run Greenway	13	No Data	No Data
13 <sup>th</sup> Street, Tayloe Street	21	8**	No Data
5 <sup>th</sup> Street, Luck Avenue	14	No Data	No Data
Brambleton Avenue, Spring Street	21	12**	No Data
Brandon Avenue, Edgewood Street, Mud Lick Road	30	23	No Data
Brandon Avenue, Franklin Road, McClanahan Street	9	18**	No Data
Colonial Avenue and Overland Drive	2	3	No Data
Ferdinand Avenue, 10 <sup>th</sup> Street	14	No Data	No Data
Franklin Road, Elm Avenue	5	No Data	No Data
Grandin Road, Brandon Avenue	33	16**	No Data
Grandin Road, Garst Mill Road	11	3**	No Data
Gus Nicks Boulevard, King Street, Vale/Dell	3	3**	No Data
Jefferson Street, Walnut Avenue	16	25	No Data
Memorial Avenue, Wasena Road., Roanoke Avenue, Roanoke River Greenway	160	101	No Data
Patterson Avenue, 13 <sup>th</sup> Street	20	19	No Data
Peters Creek Extension, Shenandoah Avenue	1	10**	No Data
Plantation Road, Preston Avenue, Columbia Avenue	5	No Data	No Data
Williamson Road, Campbell Avenue	15	13**	No Data
<b>Total Bicyclists by Location</b>	<b>404</b>	<b>267</b>	<b>No Data</b>

\* The average of two count days, two hours each day.

\*\* One of the two count days has no data

\*\*\*There was no data gathered in 2014, due to inclement weather.

**Data Source:** National Bicycle and Pedestrian Documentation Project – 2014 City of Roanoke, VA, Bicycle and Pedestrian Counts

### 3.2 Number of Pedestrians by Location

Location	2012*	2013*	2014***
10 <sup>th</sup> Street and Shenandoah Avenue	18	15**	No Data
10 <sup>th</sup> Street, Syracuse Avenue, Lick Run Greenway	123	No Data	No Data
13 <sup>th</sup> Street, Tayloe Street	16	19**	No Data
5 <sup>th</sup> Street, Luck Avenue	42	No Data	No Data
Brambleton Avenue, Spring Road	6	9**	No Data
Brandon Avenue, Edgewood Street, Mud Lick Road	9	28	No Data
Brandon Avenue, Franklin Road, McClanahan Street	18	30**	No Data
Colonial Avenue and Overland Drive	2	5	No Data
Ferdinand Avenue, 10 <sup>th</sup> Street	28	No Data	No Data
Franklin Road, Elm Avenue	15	1**	No Data
Grandin Road, Brandon Avenue	52	23**	No Data
Grandin Road, Garst Mill Road	2	No Data	No Data
Gus Nicks Boulevard, King Street, Vale/Dell	5	6**	No Data
Jefferson Street, Walnut Avenue	38	45	No Data
Memorial Avenue, Wasena Road., Roanoke Avenue, Roanoke River Greenway	43	78	No Data
Patterson Avenue, 13 <sup>th</sup> Street	185	177	No Data
Peters Creek Extension, Shenandoah Avenue	2	4**	No Data
Plantation Road, Preston Avenue, Columbia Avenue	14	No Data	No Data
Williamson Road, Campbell Avenue	167	112**	No Data
<b>Total Pedestrians by Location</b>	<b>785</b>	<b>542</b>	No Data

\* The average of two count days, two hours each day.

\*\* One of the two count days has no data

\*\*\*There was no data gathered in 2014, due to inclement weather.

#### Data Source:

National Bicycle and Pedestrian Documentation Project – 2014 City of Roanoke, VA, Bicycle and Pedestrian Counts

### 3.3 Number of Greenway Users by Location

Greenway	2012	2013	2014
Lick Run Greenway at 10 <sup>th</sup> Street	19,906	20,978	16,654
Murray Run Greenway Trail	16,177	17,791	15,452
Roanoke River Greenway 17th Street	37,603	29,556	36,057
Roanoke River Greenway Moyers Complex	40,162	76,488	59,611
Roanoke River Greenway Rivers Edge	227,900	166,860	167,841
Roanoke River Greenway at Underhill	28,535	16,152	15,991
<b>Total Greenway Users*</b>	<b>406,210</b>	<b>346,090</b>	<b>311,606*</b>

\*For comparison purposes, only greenway counters with previous year's counts were used. Data was also excluded from counters which are no longer operational. The chart below represents new counters with data collection beginning in 2014. Those counters will be included in next year's report.

Greenway	2014
Hanging Rock Battlefield Trail	16,115
Pedestrian Bridge	201,274
Roanoke River Greenway – Green Hill Park	22,612
<b>Total Greenway Users</b>	<b>240,001</b>

<b>Greenway</b>	<b>2014</b>
Lick Run Greenway at 10 <sup>th</sup> Street	16,654
Murray Run Greenway Trail	15,452
Roanoke River Greenway 17th Street	36,057
Roanoke River Greenway Moyers Complex	59,611
Roanoke River Greenway Rivers Edge	167,841
Roanoke River Greenway at Underhill	15,991
Hanging Rock Battlefield Trail	16,115
Pedestrian Bridge	201,274
Roanoke River Greenway – Green Hill Park	22,612
<b>Total Greenway Users*</b>	<b>541,607*</b>

*\*This table represents the total users from all counters collecting data in calendar year 2014. This number is not used for comparison purposes, but new counters collecting data in 2014 will be used for comparison in next year's report.*

Data Source:

Roanoke Valley-Alleghany Regional Commission - Regional Greenway and Trail User Count Program - Monthly Counts 2010-2014

### 3.4 Number of Bicycle Friendly Businesses

<b>Business</b>	<b>Locality</b>	<b>Year Applied</b>	<b>Employees</b>
Roanoke Valley-Alleghany Regional Commission	City of Roanoke	2008	12
Sharebike.org	City of Roanoke	2010	5
East Coasters Cycling & Fitness	City of Roanoke	2011	15
Carilion Clinic - Riverside	City of Roanoke	2012	500
Roanoke Regional Partnership	City of Roanoke	2012	6

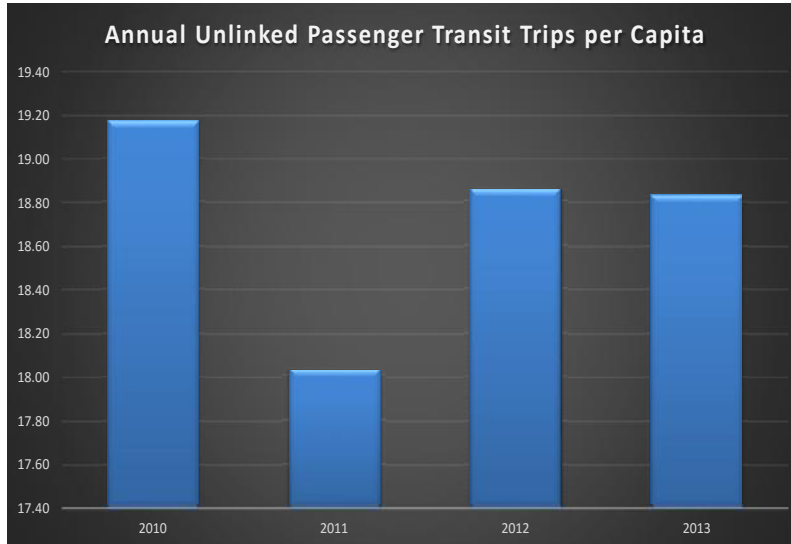
Data Source: The League of American Bicyclists – Bicycle Friendly Businesses, Current Bicycle Friendly Businesses Summer 2015. <http://bikeleague.org/bfa/awards>

## 4.0 TRANSIT USAGE

### 4.1 Annual Unlinked Passenger Transit Trips

	2010	2011	2012	2013
<b>Annual Unlinked Passenger Transit Trips per Capita</b>	<b>19.18</b>	<b>18.03</b>	<b>18.86</b>	<b>18.84</b>
Unlinked Passenger Transit Trips – Valley Metro	2,440,846	2,291,101	2,391,001	2,382,029
Unlinked Passenger Transit Trips - RADAR	50,896	52,135	60,122	65,894
<b>Annual Unlinked Passenger Transit Trips</b>	<b>2,491,742</b>	<b>2,343,236</b>	<b>2,451,123</b>	<b>2,447,923</b>

### 4.2 Annual Unlinked Passenger Transit Trips Per Capita



	2010	2011	2012	2013
2010 Service Area population (City of Salem, City of Roanoke, Town of Vinton)	129,932	129,932	129,932	129,932
<b>Annual Unlinked Passenger Transit Trips per Capita</b>	<b>19.18</b>	<b>18.03</b>	<b>18.86</b>	<b>18.84</b>

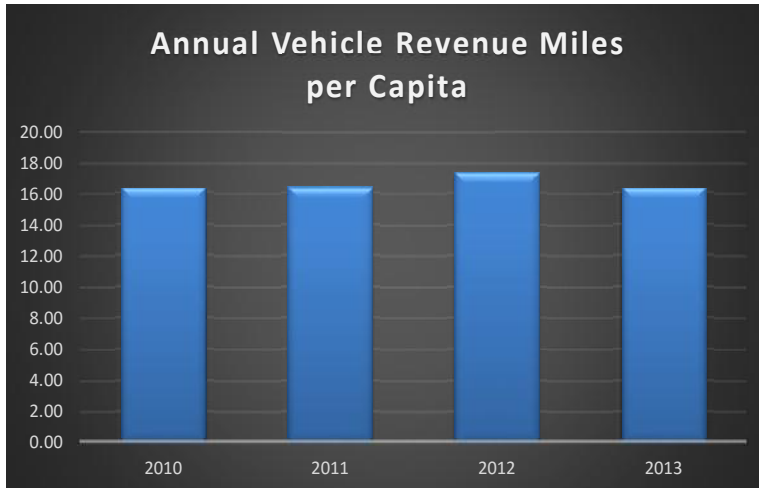
**Data Sources:**

NTD Database website – Annual Databases – RY 2013 Data Tables – Table 19: Transit Operating Statistics: Service Supply and Consumed <http://www.ntdprogram.gov/ntdprogram/pubs/dt/2013/excel/DataTables.htm>.  
 Population data from 2010 Census <http://www.census.gov/2010census/data/>.

### 4.3 Annual Vehicle Revenue Miles

	2010	2011	2012	2013
<b>Annual Vehicle Revenue Miles per Capita</b>	<b>16.37</b>	<b>16.46</b>	<b>17.42</b>	<b>16.37</b>
Vehicle Revenue Miles – Valley Metro	1,559,061	1,551,608	1,649,475	1,552,657
Vehicle Revenue Miles - RADAR	568,269	586,668	614,102	573,802
<b>Annual Vehicle Revenue Miles</b>	<b>2,127,330</b>	<b>2,138,276</b>	<b>2,263,577</b>	<b>2,126,459</b>

#### 4.4 Annual Vehicle Revenue Miles Per Capita



	2010	2011	2012	2013
2010 Service Area population (City of Salem, City of Roanoke, Town of Vinton)	129,932	129,932	129,932	129,932
<b>Annual Vehicle Revenue Miles per Capita</b>	<b>16.37</b>	<b>16.46</b>	<b>17.42</b>	<b>16.37</b>

**Data Sources:**

NTD Database website – Access NTD Data - Safety & Security Data – Safety & Security Time Series

<http://www.ntdprogram.gov/ntdprogram/data.htm>

Population data from 2010 Census <http://2010.census.gov/2010census/data/>

#### 4.5 Annual Passenger Miles Traveled

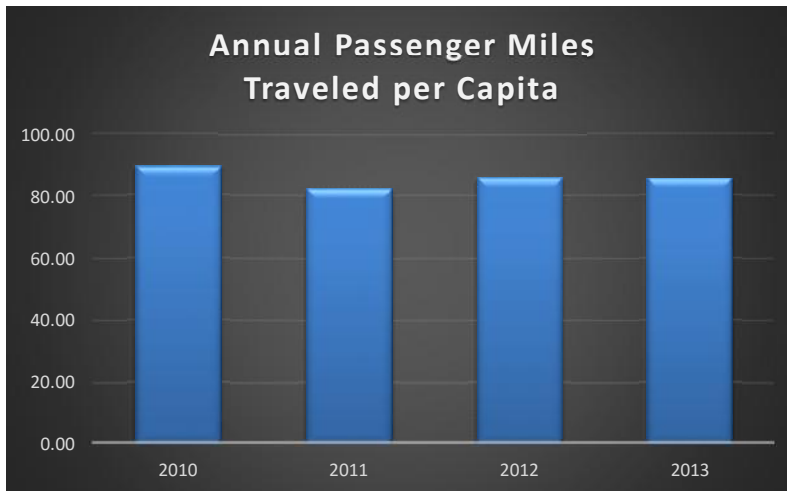
	2010	2011	2012	2013
<b>Annual Passenger Miles Traveled per Capita</b>	<b>90.04</b>	<b>82.62</b>	<b>86.41</b>	<b>85.89</b>
Passenger Miles Traveled – Valley Metro	11,130,258	10,195,399	10,639,954	10,600,029
Passenger Miles Traveled - RADAR	568,269	539,674	587,338	560,255
<b>Annual Passenger Miles Traveled</b>	<b>11,698,527</b>	<b>10,735,073</b>	<b>11,227,292</b>	<b>11,160,284</b>

**Data Sources:**

NTD Database website – Access NTD Data - Safety & Security Data – Safety & Security Time Series

<http://www.ntdprogram.gov/ntdprogram/data.htm>

#### 4.6 Annual Passenger Miles Traveled Per Capita



	2010	2011	2012	2013
2010 Service Area population (City of Salem, City of Roanoke, Town of Vinton)	129,932	129,932	129,932	129,932
<b>Annual Passenger Miles Traveled per Capita</b>	<b>90.04</b>	<b>82.62</b>	<b>86.41</b>	<b>85.89</b>

**Data Sources:**

NTD Database website – Access NTD Data - Safety & Security Data – Safety & Security Time Series

<http://www.ntdprogram.gov/ntdprogram/data.htm>

Population data from 2010 Census <http://2010.census.gov/2010census/data/>

#### 4.7 Annual Smart Way Connector Bus Ridership

	2011	2012	2013	2014
<b>Annual Smart Way Connector Bus Ridership</b>	<b>4,855*</b>	<b>14,235</b>	<b>17,724</b>	<b>No data</b>

\*Smart Way Connector service began on July 19, 2011.

**Data Source:**

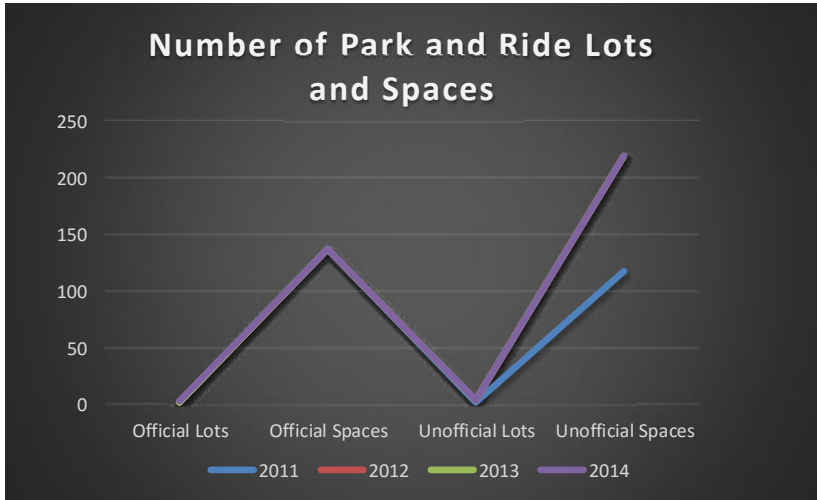
Smart Way Connector Data received from Valley Metro.



## 5.0 HOV USAGE

### 5.1 Number of Park and Ride Lots and Spaces

	2011	2012	2013	2014
<b>Total official lots</b>	3	3	3	3
<b>Total official spaces</b>	137	137	137	137
<b>Total unofficial lots</b>	2	4	4	4
<b>Total unofficial spaces</b>	118	220	220	220



Category	Park and Ride Lot Name	Spaces
Official	I-81 Exit 128	30
Official	I-81 Exit 140	92
Official	I-81 Exit 150	15
Unofficial	Food Lion (Orange Avenue)	20
Unofficial	K-Mart Parking Lot (460 BUS, N. Franklin & Laurel Sts.)	82
Unofficial	Orange Market	44
Unofficial	Waldron Park	74

**Data Source:**

RideSolutions website: <http://ridesolutions.org/commuters/carpool/regional-park-rides/#prmap>.

### 5.2 Number of Members in Ride Solutions Program

	2011	2012	2013	2014
<b>Members in RIDE Solutions</b>	2,260	1,685*	779*	1,050

**Data Source:**

RIDE Solutions member database.

## 6.0 JOBS-TO-HOUSING RATIO

### 6.1 Ratio of Jobs to Households at the Regional and Jurisdictional Levels

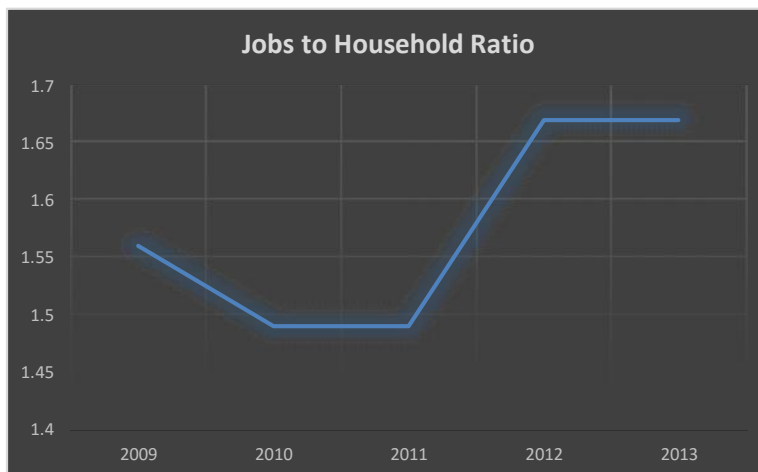
Locality	Jobs 2009	Households 2009	Ratio 2009	Jobs 2010	Households 2010	Ratio 2010
Botetourt County	15,980	12,672	1.26	15,300	12,918	1.18
City of Roanoke	75,762	42,187	1.80	74,772	42,833	1.75
Roanoke County and City of Salem*	80,539	47,141	1.71	79,343	47,723	1.68
<b>Total MPO**</b>	<b>172,281</b>	<b>102,000</b>	<b>1.69</b>	<b>169,415</b>	<b>103,474</b>	<b>1.64</b>

Locality	Jobs 2011	Households 2011	Ratio 2011	Jobs 2012	Households 2012	Ratio 2012
Botetourt County	15,563	12,789	1.22	16,322	12,822	1.27
City of Roanoke	74,851	42,892	1.75	75,709	42,644	1.78
Roanoke County and City of Salem*	79,664	47,919	1.66	80,565	47,829	1.68
<b>Total TPO**</b>	<b>170,078</b>	<b>103,600</b>	<b>1.64</b>	<b>172,596</b>	<b>103,295</b>	<b>1.67</b>

Locality	Jobs 2013	Households 2013	Ratio 2013
Botetourt County	16,739	12,825	1.31
City of Roanoke	76,079	42,494	1.79
Roanoke County and City of Salem*	78,962	47,836	1.65
<b>Total TPO**</b>	<b>171,780</b>	<b>103,155</b>	<b>1.67</b>

\*The Bureau of Economic Analysis combined jobs data for Roanoke County, the Town of Vinton and the City of Salem, therefore to be consistent, the household data is combined.

\*\*The data for Montgomery and Bedford Counties was excluded from this table because it included the City of Radford and Town of Bedford respectively.



**Data Sources:**

Employment - Bureau of Economic Analysis, CA25N Total full-time and part-time employment by NAICS industry, Total employment (number of jobs) in 2013.

Households – ACS Survey 2009-2013, B11016 Household Type by Household Size

## 6.2 Regional Linear Jobs-Households Dissimilarity Index (0.0 to 1.0)

Locality	Jobs 2011 (W)	Households 2011 (B)	Dissimilarity Index 2011	Jobs 2012 (W)	Households 2012 (B)	Dissimilarity Index 2012
Botetourt County	15,563	12,789	0.0097	16,322	12,822	0.0080
City of Roanoke	74,851	42,892	0.0222	75,709	42,644	0.0252
Roanoke County and City of Salem	79,664	47,919	0.0152	80,565	47,829	0.0177
<b>Total TPO</b>	<b>170,078</b>	<b>103,600</b>	<b>0.0471</b>	<b>172,596</b>	<b>103,295</b>	<b>0.0509</b>

Locality	Jobs 2013 (W)	Households 2013 (B)	Dissimilarity Index 2013
Botetourt County	16,739	12,825	0.0070
City of Roanoke	76,079	42,494	0.0266
Roanoke County and City of Salem	78,962	47,836	0.0138
<b>Total TPO</b>	<b>171,780</b>	<b>103,155</b>	<b>0.0474</b>

\*The data for Montgomery and Bedford Counties was excluded from this table because it 'included the City of Radford and Town of Bedford respectively.

\*The Bureau of Economic Analysis combined jobs data for Roanoke County and the City of Salem, therefore to be consistent, the household data is combined.

### Data Sources:

Employment - Bureau of Economic Analysis, CA25N Total full-time and part-time employment by NAICS industry, Total employment (number of jobs) in 2011.

Households – ACS Survey 2007-2012, B11016 Household Type by Household Size

Dissimilarity Index equation: 
$$\frac{1}{2} \sum_{i=1}^N \left| \frac{b_i}{B} - \frac{w_i}{W} \right|$$

## 6.3 Ratio of Jobs to Work Force

Locality	2011 Jobs	2011 Civilian Labor Force	2011 Ratio of Jobs to Labor Force	2012 Jobs	2012 Civilian Labor Force	2012 Ratio of Jobs to Labor Force
Botetourt County	15,697	17,509	0.90	16,322	17,570	0.93
City of Roanoke	74,869	47,704	1.57	75,709	47,654	1.59
Roanoke County and City of Salem	80,074	61,922	1.29	80,565	61,773	1.30
<b>Total TPO</b>	<b>170,640</b>	<b>127,135</b>	<b>1.34</b>	<b>172,596</b>	<b>126,997</b>	<b>1.36</b>

Locality	2013 Jobs	2013 Civilian Labor Force	2013 Ratio of Jobs to Labor Force
Botetourt County	16,739	17,667	0.95
City of Roanoke	76,079	49,885	1.53
Roanoke County and City of Salem	78,962	63,003	1.25
<b>Total TPO</b>	<b>171,780</b>	<b>130,555</b>	<b>1.32</b>

\*The data for Montgomery and Bedford Counties was excluded from this table because it included the Cities of Radford and Bedford respectively.

\*The Bureau of Economic Analysis combined jobs data for Roanoke County and the City of Salem, therefore to be consistent, the household data is combined.

**Data Sources:**

Employment - Bureau of Economic Analysis, CA25N Total full-time and part-time employment by NAICS industry, Total employment (number of jobs) in 2013.

Civilian Labor Force – Virginia Workforce Connection, Labor Force Employment and Unemployment (LAUS) data.

## 6.4 Inter and Intra Regional Commuting Data

The table below indicates the percentage of residents working in the locality in which they live.

Locality	1970	1980	1990	2000	2010
Bedford County	-	-	-	-	31%
Botetourt County	38%	36%	31%	35%	31%
City of Roanoke	74%	72%	69%	63%	62%
Montgomery County	-	-	-	-	82%
Roanoke County	-	-	-	-	33%
City of Salem	-	-	-	-	47%

**Data Source:**

U.S. Census – 2009-2013 5-Year ACS County to County Commuting Flows for the United States and Puerto Rico: 2009-2013

<http://www.census.gov/hhes/commuting/files/2013/Table%201%20County%20to%20County%20Commuting%20Flows-%20ACS%202009-2013.xlsx>

## 6.5 Mean Travel Time to Work

Locality	2005-2009 ACS Estimate (minutes)	2006-2010 ACS Estimate (minutes)	2007-2011 ACS Estimate (minutes)	2008-2012 ACS Estimate (minutes)	2009-2013 ACS Estimate (minutes)
Bedford County	26.2	30.6	Unavailable	27.2	27.6
Botetourt County	Unavailable	Unavailable	Unavailable	26.3	25.6
Montgomery County	17.8	Unavailable	Unavailable	17.9	17.8
City of Roanoke	18.2	18.8	17.7	18.6	18.4
Roanoke County	20.4	21.3	Unavailable	20.3	20.3
City of Salem	17.7	Unavailable	Unavailable	17.3	17.2

**Data Source:**

American Community Survey Estimates, Table S0801: Commuting Characteristics by Sex.

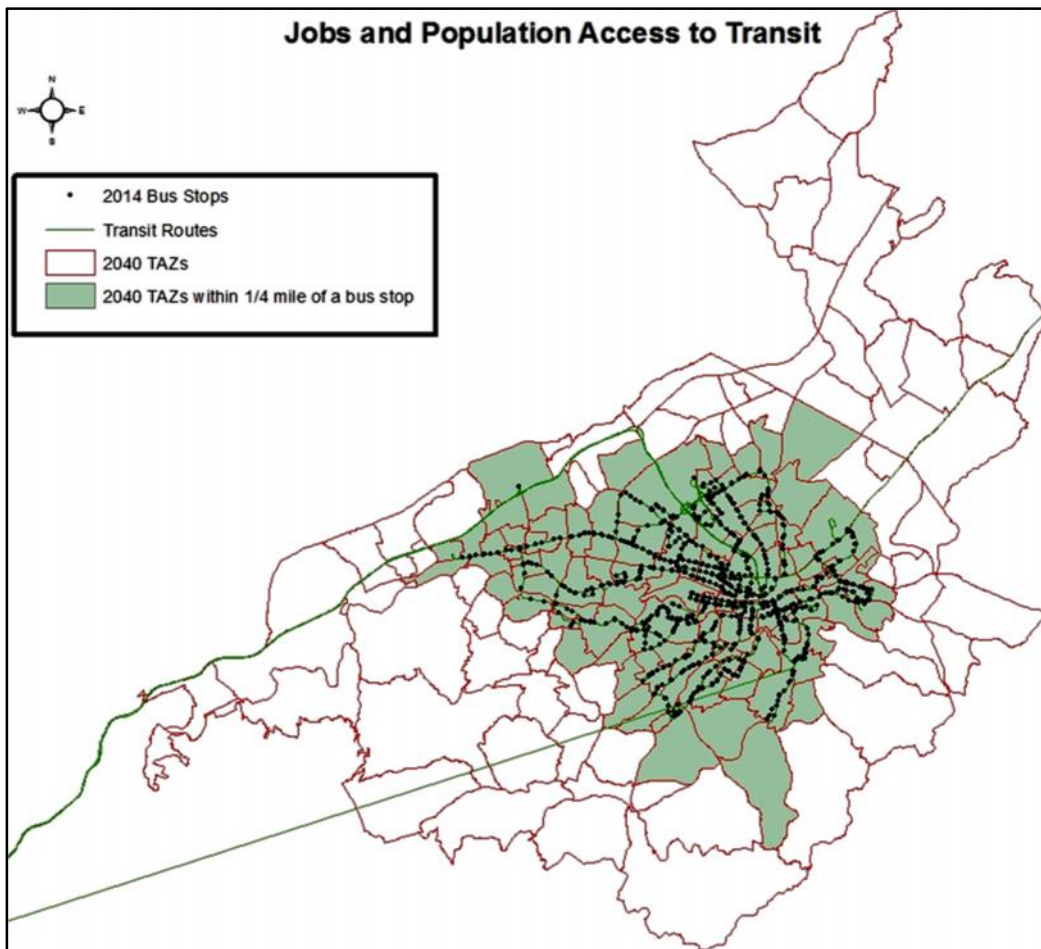
## 7.0 JOB AND HOUSING ACCESS TO TRANSIT

### 7.1 Percent of population and/or households in TAZs served by transit

Data Year	% of Population in TAZs served by Transit
2005	66%
2010	53%
2012	64%

### 7.2 Percent of employment in TAZs served by transit

Data Year	% of Employment in TAZs served by Transit
2005	82%
2010	67%
2012	80%



Note: 2012 estimates of population and employment were updated in August 2015.

**Data Sources:**

2040 TAZs and associated 2012 estimates of population and employment.

2015 Valley Metro fixed-route and Smart Way Bus Stops

## 8.0 JOB AND HOUSING ACCESS TO PEDESTRIAN FACILITIES

### 8.1 Number and Percent of Residents Who Walk to Work

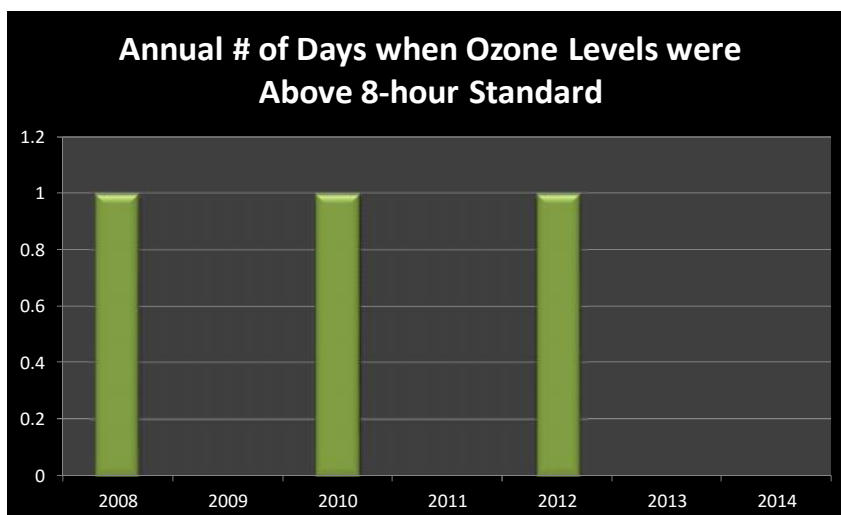
Locality	# of Residents who Walk to Work			Total # of Workers 16 and Over			% of Workers who Walk to Work		
	2011	2012	2013	2011	2012	2013	2011	2012	2013
Bedford County	235	209	203	32,485	32,525	32,631	0.72%	0.64%	0.62%
Botetourt County	67	56	67	16,364	16,335	15,834	0.40%	0.34%	0.42%
Montgomery County	1,898	1,981	1,886	43,513	44,063	39,246	4.36%	4.50%	4.81%
City of Roanoke	874	920	1,129	44,094	44,396	44,401	1.98%	2.07%	2.54%
Roanoke County	585	600	458	45,826	46,024	44,927	1.35%	1.30%	1.02%
City of Salem	494	435	617	11,595	11,210	11,707	4.30%	3.88%	5.27%
<b>Total TPO</b>	<b>4,153</b>	<b>4,201</b>	<b>4,360</b>	<b>193,877</b>	<b>194,553</b>	<b>188,746</b>	<b>2.14%</b>	<b>2.16%</b>	<b>2.31%</b>

*Data Source:* 2009-2013 American Community Survey 5-Year Estimates, Table B08301.

## 9.0 AIR QUALITY

### 9.1 Annual Number of Days when Ozone Levels Were Above the 8-Hour Standard

Year	# days above 8-hour standard
2008	1
2009	0
2010	1
2011	0
2012	1
2013	0
2014	0



*Data Source:*  
 Department of Environmental Quality -  
<http://www.deq.virginia.gov/Programs/Air/AirQualityForecasting/Eighthourozoneexceedances.aspx>.

## 10.0 MOVEMENT OF FREIGHT

### 10.1 Truck and Rail Mode Share, by Value

Origin Location	Truck	Rail
Bedford County	\$7,135,051,088	\$183,704
Botetourt County	\$915,736,229	\$13,061,615
Montgomery County	\$2,911,552,479	\$144,610
Roanoke County	\$7,402,847,256	\$69,863
City of Roanoke	\$15,625,412,933	\$1,645,909
City of Salem	\$15,920,228,318	\$3,025,520
<b>Total Value in 2004</b>	<b>\$49,910,828,303</b>	<b>\$18,131,221</b>

Destination Location	Truck	Rail
Bedford County	\$3,261,476,793	\$12,505,796
Botetourt County	\$4,983,794,770	\$9,278,637
Montgomery County	\$5,725,409,793	\$20,832,612
Roanoke County	\$2,127,568,295	\$18,134,007
City of Roanoke	\$7,894,637,680	\$19,015,654
City of Salem	\$4,129,808,893	\$10,683,020
<b>Total Value in 2004</b>	<b>\$28,122,696,224</b>	<b>\$90,449,726</b>

*Data Sources:*

2007 Global Insight Inc. Transearch 2004 Virginia Freight Flows.

### 10.2 Truck and Rail Mode Share, by Tons

Origin Location	Truck	Rail
Bedford County	1,885,091	209
Botetourt County	1,696,893	12,115
Roanoke County	3,261,429	288
Montgomery County	4,104,445	316
City of Roanoke	6,134,111	1,871
City of Salem	2,252,915	1,169
<b>Total Value in 2004</b>	<b>19,334,884</b>	<b>15,968</b>

Destination Location	Truck	Rail
Bedford County	2,801,871	7,263
Botetourt County	2,402,830	9,985
Montgomery County	5,359,526	42,770
Roanoke County	2,038,500	18,633
City of Roanoke	4,959,179	11,370
City of Salem	1,386,790	7,816
<b>Total Value in 2004</b>	<b>18,948,696</b>	<b>97,837</b>

*Data Sources:*

2007 Global Insight Inc. Transearch 2004 Virginia Freight Flows.

*Note: It is expected that VDOT will purchase updated freight data sets in FY16. It is anticipated that this data will be available for inclusion in the 2016 Performance Measures Report.*