

REGIONAL PERFORMANCE MEASURES FOR RICHMOND AREA MPO

Rows that are shaded are categories of regional performance measures that are mandated by General Assembly legislation. Other rows are performance measures to fulfill the legislative requirements.

Performance Measure	Data Requirements	Data Source	Level of Data Collection	Desired Trend
Congestion Reduction				
Annual Hours of Delay per Peak Period Traveler	Annual hours of delay and number of peak period travelers	Texas Transportation Institute Urban Mobility Report	Richmond Urbanized Area (Census)	Downwards
Annual Gallons of Fuel Lost Due to Congestion per Peak Period Traveler	Annual gallons of fuel lost to congestion and number of peak period travelers	Texas Transportation Institute Urban Mobility Report	Richmond Urbanized Area (Census)	Downwards
Safety				
Number of Highway Crashes	Number of Crashes on Highways	VDOT	PDC*	Downwards
Number of Highway Crashes per 100 million VMT	Number of Crashes on Highways and VMT	VDOT	PDC*	Downwards
Number of Highway Fatalities	Number of Fatalities on Highways	VDOT	PDC*	Downward (If 0 fatalities then Steady)
Number of Highway Fatalities per 100 million VMT	Number of Fatalities on Highways and VMT	VDOT	PDC*	Downward (If 0 fatalities then Steady)
Number of Transit Crashes	Number of transit crashes	DRPT	GRTC System	Downwards
Number of Transit Fatalities	Number of Transit Fatalities	DRPT	GRTC System	Downward (If 0 fatalities then Steady)
Annual Transit Crashes per 100 million PMT	Number of Collisions per 100 million Passenger Miles Travelled (PMT)	FTA	GRTC System	Downwards
Annual Transit Fatalities per 100 million PMT	Number of fatalities per 100 million PMT	FTA	GRTC System	Downward (If 0 fatalities then Steady)
Number of Bicycle and Pedestrian Crashes	Number of Bicycle and Pedestrian Crashes	DMV	PDC*	Downwards
Number of Bicycle and Pedestrian Fatalities	Number of Bicycle and Pedestrian Fatalities	DMV	PDC*	Downward (If 0 fatalities then Steady)
Transit Usage				
# of Transit Trips Per Capita	# of transit trips and service area population**	DRPT	GRTC System	Upwards
Annual Transit Passenger Miles Travelled per Capita	Transit Passenger Miles and service area population**	DRPT	GRTC System	Upwards
Annual Transit Revenue Miles per Capita	Revenue miles and service area population**	DRPT	GRTC System	Upwards
# of Annual Transit Revenue Miles	Transit Revenue Miles as reported by GRTC	DRPT	GRTC System	Upwards
Annual Passenger Rail Ridership	# of Amtrak boardings and alightings at rail stations	Amtrak	Ashland, Staples Mill Rd., Main St. stations	Upwards
HOV Usage				
# of Park and Ride Lots and Spaces	Number of P-n-R lots and spaces	VDOT	PDC*	Upwards
# of Registered Vanpools	TDM data	RideFinders	RideFinders Service Area	Upwards
Jobs-to-Housing Ratio				
Ratio of jobs to households at the regional and jurisdictional level	Jobs and Housing data	Richmond MPO Socioeconomic Data Report	By locality for PDC	Steady
Regional Linear Jobs-Households Dissimilarity index (0.0 to 1.0) ***	Number of Jobs/ Households	Bureau of Economic Analysis for # of jobs; ACS Table 2501 Occupancy Characteristics of Households	By locality for PDC	Below 0.5
Inter and Intra regional commuting data	Commuting pattern data; % of workers working in the County in which they live	Census (ACS) Journey to Work data	By locality for PDC	Upwards
<p>* Data for the Richmond PDC includes the portion of Chesterfield County within the Tri-Cities MPO ** Service area population is a portion of the Richmond Urbanized Area (Census)</p> <p>***VRTC Study "Feasibility of Using Jobs/Housing Balance in Virginia Statewide Planning www.virginiadot.org/vtrc/main/online_reports/pdf/11-r1.pdf p. 26</p>				

REGIONAL PERFORMANCE MEASURES FOR RICHMOND AREA MPO (con't)

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Performance Measure Matrix				
Performance Measure	Data Requirements	Data Source	Level of Data Collection	Desired Trend
Job and Housing Access to Transit				
% of regional households in TAZs served by local transit	Transit GIS layer and % of households in TAZ's served by transit	Socioeconomic Data and Transit GIS shapefiles	Richmond MPO Urbanized Area	Upwards
% of regional employment in TAZs served by local transit	Transit GIS layer and % of workers in TAZ's served by transit	Socioeconomic Data and Transit GIS shapefiles	Richmond MPO Urbanized Area	Upwards
Job and Housing Access to Pedestrian Facilities				
# and % of residents who walk to work	Population and number who walk to work	Census (ACS) Journey to Work data	PDC (Census Data)	Upwards
Air Quality				
Annual # of Days when Ozone Levels were Above 8-Hour Standard	Air Quality monitoring station data	DEQ	AQ Non-Attainment Area	Downwards
Movement of Freight				
Truck & Rail Mode Share, by tons	Tonnage of freight by mode share	Census Commodity Flow Data or Transearch data; FAF3 data	MSA	Upwards
Truck & Rail Mode Share, by value	Value of freight by mode share	Census Commodity Flow Data or Transearch data; FAF3 data	MSA	Upwards
Daily Vehicle Miles Traveled per Capita				
Vehicle Miles Traveled Per Capita (freeways and arterials)	Same year data for population and VMT	Texas Transportation Institute Urban Mobility Report	Richmond Urbanized Area (Census)	***
*** This cell has been left blank because the desired trend may either be upwards or downwards depending on a variety of factors and variables that affect travel demand and mobility.				

Regional Performance Measures for Richmond Area MPO

Congestion Reduction

Annual Hours of Delay per Peak Period Traveler 2010 Richmond Urbanized Area

Year	Hours
2010	20

Source: 2011 Urban Mobility Report, Texas Transportation Institute

Annual Gallons of Fuel Lost Due to Congestion per Peak Period Traveler 2010 Richmond Urbanized Area

Year	Gallons
2010	5

Source: 2011 Urban Mobility Report, Texas Transportation Institute

Safety

Number of Highway Crashes Richmond Region PDC

Year	Number
2009	17,505

Source: Traffic Engineering Division, Central Office, Virginia Department of Transportation

Number of Highway Crashes per 100 Million VMT Richmond Region PDC 2009

Jurisdiction	DVMT	Crashes/100M VMT
Charles City	169,216	90.61
Chesterfield	8,321,819	207.57
Goochland	1,624,448	73.87
Hanover	4,014,887	125.78
Henrico	7,979,719	224.15
New Kent	1,609,813	66.05
Powhatan	809,131	124.83
Richmond	4,903,009	300.09
Total	29,432,042	1,212.95

Source: Traffic Engineering Division, Central Office, Virginia Department of Transportation

**Number of Highway Fatalities
Richmond Region PDC**

Year	Number
2009	94

Source: Traffic Engineering Division, Central Office, Virginia Department of Transportation

**Number of Highway Fatalities per 100 Million VMT
Richmond Region PDC 2009**

Jurisdiction	DVMT	Fatalities/100M VMT
Charles City	169,216	393.97
Chesterfield	8,321,819	104.14
Goochland	1,624,448	164.16
Hanover	4,014,887	58.12
Henrico	7,979,719	125.32
New Kent	1,609,813	82.83
Powhatan	809,131	82.39
Richmond	4,903,009	101.98
Total	29,432,042	1,112.91

Source: Traffic Engineering Division, Central Office, Virginia Department of Transportation

Number of Transit Crashes (incidents)

Year	Number
2009	15

Source: National Transit Database 2009

Number of Transit Fatalities

Year	Number
2009	2

Source: National Transit Database 2009

Annual Transit Crashes per 100 million PMT

Year	Number
2009	21.67

Source: National Transit Database 2009

Annual Transit Fatalities per 100 million PMT

Year	Number
2009	2.89

Source: National Transit Database 2009

Number of Bicycle and Pedestrian Crashes Richmond Region PDC

Year	Number
2009	290

Source: Traffic Records Management Reporting and Analysis Division of Virginia Highway Safety Office, VA DMV

Number of Bicycle and Pedestrian Fatalities Richmond Region PDC

Year	Number
2009	21

Source: Traffic Records Management Reporting and Analysis Division of Virginia Highway Safety Office, VA DMV

Transit Usage

of Transit Trips per Capita

Year	Number of Trips/Capita
2009	30.7

Source: National Transit Database 2009

Annual Transit Passenger Miles Traveled per Capita

Year	Miles/Capita
2009	96.8

Source: National Transit Database 2009

Annual Transit Revenue Miles per Capita

Year	Hours/Capita
2009	11.9

Source: National Transit Database 2009

of Annual Transit Revenue Miles

Year	Number of Revenue Miles
2009	5,360,851

Source: National Transit Database 2009

Annual Passenger Rail Ridership

Station	# of Passengers
Ashland	20,787
Staples Mill	292,140
Main Street	29,712
Total	342,639

Source: Amtrak Virginia Performance Report from Oct 2010 to Aug 2011

HOV Usage

of Park and Ride Lots and Spaces: (information to be supplied by VDOT)

of Registered Vanpools

Year	Number
2011	117

Source: RideFinders Oct 2011

Jobs-to-Housing Ratio

Ratio of Jobs to Households at the Regional and Jurisdictional Level

Jurisdiction	Jobs	Households	Jobs to Household Ratio
Charles City	1,550	2,897	0.54
Chesterfield	113,428	115,632	0.98
Goochland	14,633	9,264	1.58
Hanover	50,290	36,244	1.39
Henrico	181,906	122,990	1.48
New Kent	3,911	6,965	0.56
Powhatan	5,562	9,858	0.56
Richmond	148,380	86,977	1.71
Total PDC	519,660	390,827	1.33

Source: Richmond MPO 2008-2035 Socioeconomic Data. Data year 2008

Regional Linear Jobs Households Dissimilarity Index

Jurisdiction	Jobs (h)	Households (w)	Dissimilarity Index
Charles City	2,450	2,712	0.001762783
Chesterfield	163,101	109,706	0.020956695
Goochland	18,736	6,052	0.006506332
Hanover	57,902	35,854	0.003231625
Henrico	207,064	117,318	0.003275966
New Kent	5,660	6,434	0.004301991
Powhatan	10,050	8,124	0.003147597
Richmond	170,504	81,230	0.023618393
Total	635,467	367,430	0.066801382

$$D = 0.5 \sum_{i=1}^n \left| \frac{w_i}{W_{\text{total}}} - \frac{h_i}{h_{\text{total}}} \right|$$

Source: ACS 2005-2009 5 Year Estimates Table B25002

Source: Bureau of Economic Analysis Last updated: April 21, 2011 CA30 Regional economic profiles

Inter and Intra Regional Commuting Data

Jurisdiction	Percentage of Workers Working in the County Of Residence
Charles City	26%
Chesterfield	46%
Goochland	31%
Hanover	38%
Henrico	53%
New Kent	21%
Powhatan	30%
Richmond	57%
RRPDC Total	48%

Source: ACS 2005-2009 5 year Data Estimates Table B08007

Jobs and Housing Access to Transit

% of Regional Households in TAZs Served by Local Transit

Item	Richmond MPO Urbanized Area	TAZ Served by Local Transit*	% of Total Served by Local Transit
TAZs	511	251	49.12%
Households	332,250	146,759	44.17%

Source: Richmond MPO 2008-2035 Socioeconomic Data. Data year 2008

Note : * - TAZ with 1 or more transit stops are considered as TAZs served by local transit

% of Regional Employment in TAZs Served by Local Transit

Item	Richmond MPO Urbanized Area	TAZ Served by Local Transit*	% of Total Served by Local Transit
TAZs	511	251	49.12%
Employment	472,999	269,154	56.90%

Source: Richmond MPO 2008-2035 Socioeconomic Data. Data year 2008

Note : * - TAZ with 1 or more transit stops are considered as TAZs served by local transit

Jobs and Housing Access to Pedestrian Facilities

Jurisdiction	Workers 16 Years and Over	Workers 16 Years and Over Who Walked to Work	Percentage
Charles City	3,407	40	1.17%
Chesterfield	154,179	1,138	0.74%
Goochland	6,385	122	1.91%
Hanover	50,519	486	0.96%
Henrico	147,243	1,538	1.04%
New Kent	8,789	60	0.68%
Powhatan	9,618	254	2.64%
Richmond	91,166	3,507	3.85%
Total PDC	471,306	7,145	1.52%

Source: ACS 2005-2009 5 year Data Estimates Table B08301

Air Quality

Annual # of Days when Ozone Levels were Above 8-Hour Standard

Year	Days
2011	11

Source: Virginia Department of Environmental Quality as of August 2011

Movement of Freight

Truck and Rail Mode Share by Tons

MSA Outbound Freight by Tonnage

Commodity	Truck	Rail	Total Tons	% of Total
Nonmetallic Minerals	12,192,177	1,743,200	13,935,377	37.77%
Secondary Traffic	6,122,077		6,122,077	16.59%
Chemicals Or Allied Products	2,732,194	667,132	3,399,325	9.21%
Pulp, paper Or Allied Products	2,479,423	343,463	2,822,886	7.65%
Clay, concrete, glass Or Stone	1,667,800	179,720	1,847,520	5.01%
Lumber Or Wood Products	1,684,901	53,400	1,738,301	4.71%
Hazardous Materials	984,321	125,888	1,110,209	3.01%
Food Or Kindred Products	1,075,432	12,970	1,088,402	2.95%
Primary Metal Products	579,504	226,128	805,632	2.18%
Transportation Equipment	749,172	10,500	759,672	2.06%
Total of top 10			33,629,401	91.14%
Total Tonnage			36,897,412	100.00%

MSA Inbound Freight by Tonnage

Commodity	Truck	Rail	Total Tons	% of Total
Secondary Traffic	7,026,408		7,026,408	17.04%
Nonmetallic Minerals	3,616,397	440,598	4,056,994	9.84%
Chemicals Or Allied Products	3,237,868	707,474	3,945,342	9.57%
Clay, concrete, glass Or Stone	2,605,848	385,383	2,991,231	7.26%
Lumber Or Wood Products	2,374,557	226,046	2,600,603	6.31%
Petroleum Or Coal Products	2,270,840	51,508	2,322,348	5.63%
Food Or Kindred Products	1,985,832	236,530	2,222,363	5.39%
Hazardous Materials	1,890,252	466,173	2,356,425	5.72%
Coal	1,717,380	4,246,798	5,964,177	14.47%
Farm Products	1,641,846		1,641,846	3.98%
Total of top 10			35,127,737	85.21%
Total Tonnage			41,226,120	100.00%

Truck and Rail Mode Share by Value

MSA Outbound Freight by Dollar Value

Commodity	Truck	Rail	Total Value	% of Total
Secondary Traffic	40,052,987,435		40,052,987,435	40.30%
Transportation Equipment	18,855,286,618	55,592,210	18,910,878,828	19.03%
Tobacco Products	8,802,158,419		8,802,158,419	8.86%
Chemicals Or Allied Products	7,391,255,149	486,930,820	7,878,185,969	7.93%
Machinery	3,453,292,659		3,453,292,659	3.47%
Pulp, paper Or Allied Products	3,123,256,847	215,362,512	3,338,619,359	3.36%
Electrical Equipment	2,574,958,086		2,574,958,086	2.59%
Fabricated Metal Products	1,995,165,826		1,995,165,826	2.01%
Misc Manufacturing Products	1,361,138,946		1,361,138,946	1.37%
Furniture Or Fixtures	1,288,754,953		1,288,754,953	1.30%
Total of top 10			89,656,140,480	90.22%
Total Dollar Value			99,379,811,599	100.00%

MSA Inbound Freight by Dollar Value

Commodity	Truck	Rail	Total Value	% of Total
Secondary Traffic	45,871,590,123		45,871,590,123	55.55%
Chemicals Or Allied Products	4,693,447,434	555,495,720	5,248,943,154	6.36%
Transportation Equipment	2,866,790,570	2,186,390,860	5,053,181,430	6.12%
Electrical Equipment	3,282,796,187		3,282,796,187	3.98%
Primary Metal Products	2,543,964,456	135,134,105	2,679,098,560	3.24%
Hazardous Materials	1,903,846,402	194,038,178	2,097,884,580	2.54%
Food Or Kindred Products	1,708,261,924	168,356,036	1,876,617,960	2.27%
Pulp, paper Or Allied Products	1,420,356,506	403,538,404	1,823,894,910	2.21%
Apparel Or Related Products	1,726,360,917		1,726,360,917	2.09%
Machinery	1,491,582,403		1,491,582,403	1.81%
Total of top 10			71,151,950,224	86.16%
Total dollar Value			82,581,146,243	100.00%

Source: 2007 Global Insight Inc. Transearch 2004 Virginia Freight Flows

Daily Vehicle Miles Traveled per Capita

Vehicle Miles Traveled Per Capita (Freeways and Arterials) – 2008-2010 Richmond Urbanized Area

Year	Miles
2010	21,550

Source: 2011 Urban Mobility Report, Texas Transportation Institute