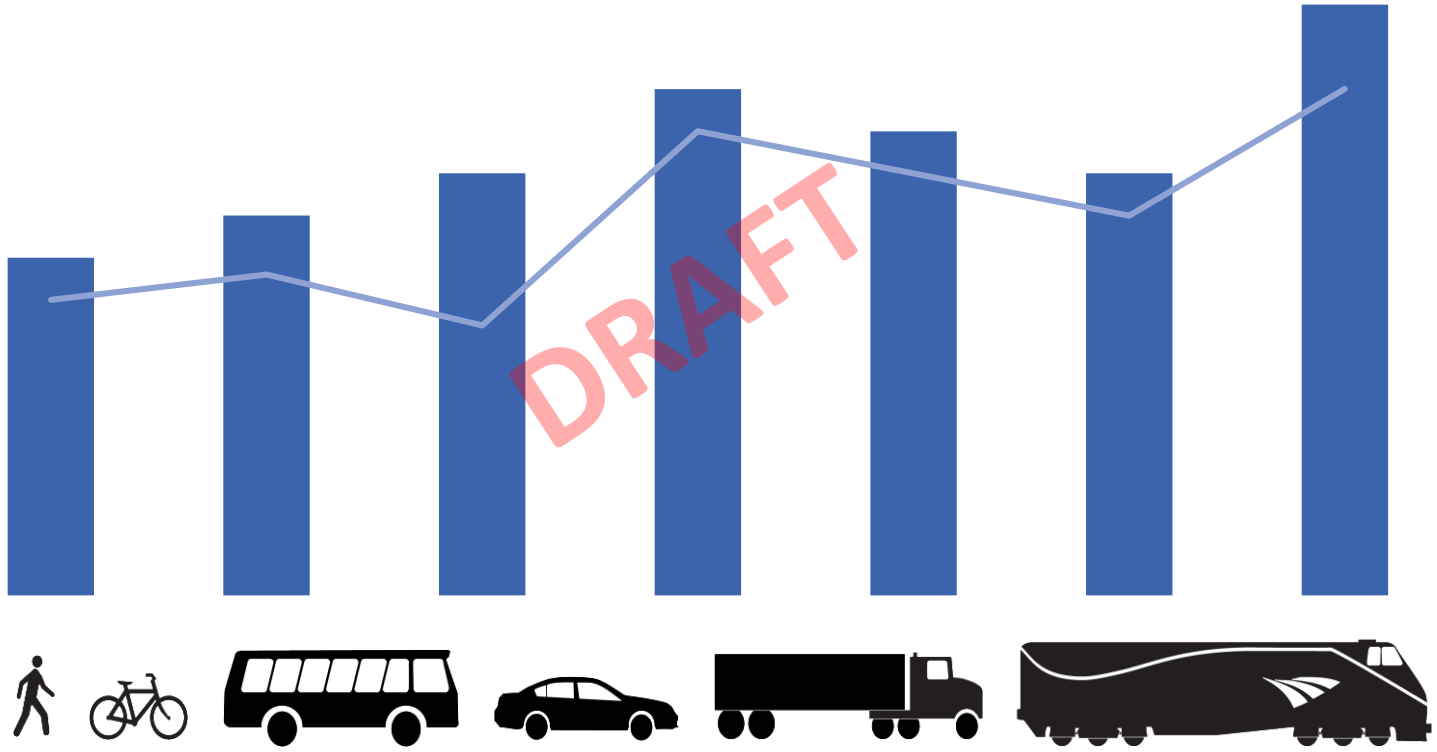
Transportation Performance Measures

Progress Report ● 2018



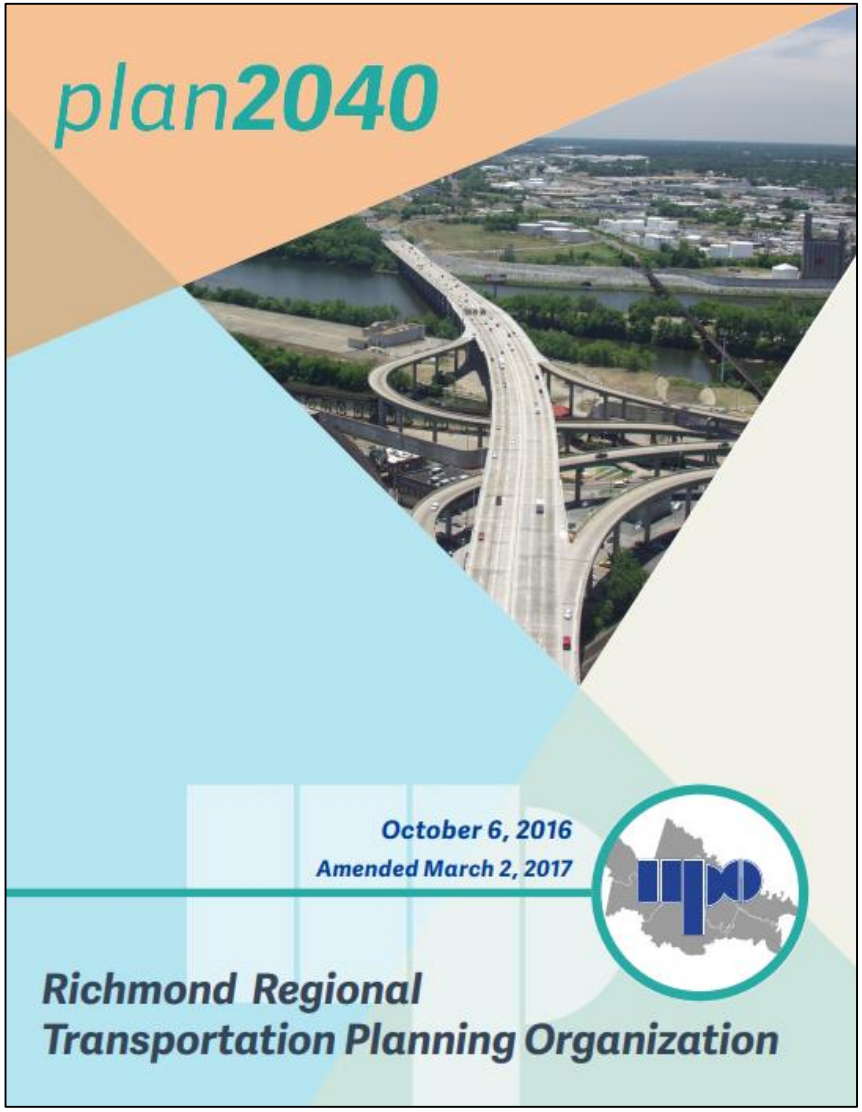
RRTPO Board – 10/9/2018

Presentation by:
Phil Riggan, Transportation Planner

plan2040 REGIONAL TRANSPORTATION GOALS

2040 Metropolitan Transportation Plan (*plan2040*)

A regional, multimodal transportation planning document that typically has a 20-year horizon and is updated on a 5-year cycle.

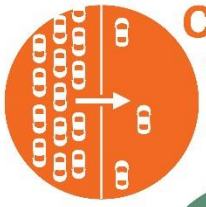


plan2040 REGIONAL TRANSPORTATION GOALS

goals & objectives

Access to Employment

Provide for transportation system connections to areas of employment density and key activity centers, with an emphasis on connecting to areas of high poverty rates.



Congestion Mitigation

Support transportation system improvements that address existing and expected future traffic congestion.

Freight Mobility

Enhance freight corridors and intermodal connections to facilitate goods movement into, within and out of the region.

Environment & Air Quality

Provide for project alternatives that protect and enhance the region's natural resources.

Safety & Security

Provide for transportation improvements that increase safety and security for system users.

Multimodal Connectivity

Improve accessibility and interconnectivity of various transportation modes for all system users.

Preservation & Maintenance

Ensure that existing transportation infrastructure and facilities achieve a constant state of good repair.

System Reliability

Implement technologies and programs to improve travel times and support the ease of travel throughout the region.

Transportation & Land Use Integration

Support transportation investments that meet the needs of existing and future land use and development patterns.

plan2040

plan2040 REGIONAL TRANSPORTATION GOALS

Freight Mobility

Enhance freight corridors and intermodal connections to facilitate goods movement into, within and out of the region.

Goals	Measure	2010	2011	2012	2013	2014	2015	2016	2017	Desired Trend	1-year Trend	5-year Trend
Congestion Mitigation & System Reliability	*Delay per peak period commuter[1], annual hours	33	33	33	34	34	n.a.	n.a.	n.a.		—	
	Fuel Loss per peak period commuter[2], gallons	13	13	14	14	14	n.a.	n.a.	n.a.		—	
	*Peak period travel time index[3]	1.12	1.12	1.12	1.13	1.13	n.a.	n.a.	n.a.		—	
	Congestion costs[4], annual per peak period commuter	$754	$733	$727	$736	$729	n.a.	n.a.	n.a.		—	
Transportation and Land Use Integration	*Daily VMT[5], per capita	32.5	32.3	32.1	31.9	33.6	34.0	29.6	n.a.#	n.a.	—	
	*Jobs/Housing Ratio[6]	n.a.	n.a.	1.28	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	—
	*Jobs/Housing Dissimilarity Index[7]	0.060	0.061	0.056	0.049	0.047	0.067	n.a.	n.a.	<.5		
	% Workers working in jurisdiction in which they live[8]	48.8%	49.1%	48.9%	48.6%	48.2%	48.3%	48.0%	n.a.#		—	
	Travel Time to Work[9]	23.6	23.6	23.9	24.0	24.1	24.2	24.5	n.a.#		—	
	Population Density[10], persons per square mile	n.a.	n.a	475	n.a.	n.a.	n.a.	n.a.	n.a.		—	—
Environmental and Air Quality	*Ozone Exceedances,[11]											
	with 2008 EPA Ozone Standard (.075ppm)	10	11	11	1	1	1	2	1			
	with 2015 EPA Ozone Standard (.070ppm)	25	22	15	1	2	3	4	1			
	Multi-Pollutant Air Quality Index Exceedances[12]											
	with 2008 EPA Ozone Standard (.075ppm)	10	11	11	1	1	1	2	1			
	with 2015 EPA Ozone Standard (.070ppm)	25	22	15	1	2	3	4	1			
Freight Mobility	Commodity Flow, Freight Mode Share[13], by tons											
	Truck	n.a.	n.a.	67%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	—
	Rail	n.a.	n.a.	30%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	—
	Commodity Flow, Freight Mode Share[13], by dollar value											
	Truck	n.a.	n.a.	82%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	—
	Rail	n.a.	n.a.	5%	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	—
	*Richmond Marine Terminal Containers, Outbound[14]	n.a.	n.a.	3,241	4,775	7,415	8,309	11,423	13,024			
	*Richmond Marine Terminal Containers, Inbound[14]	n.a.	n.a.	3,205	4,821	6,699	8,038	11,077	14,602			
	RIC Total Cargo, Outbound/Enplaned, tons[15]	n.a.	18,545	21,857	27,108	29,915	30,167	30,380	29,577			
	RIC Total Cargo, Inbound/Deplaned, tons[15]	n.a.	28,062	30,863	31,756	28,369	29,281	36,863	38,081			
Multimodal Connectivity & Access to Employment	Park and Ride Lots / Spaces[16], number	11 / 1,760	11 / 1,760	11 / 1,760	12 / 1,987	12 / 1,987	12 / 1,987	12 / 1,987	16 / 2,175			
	RideFinders Vanpools[17], number	n.a.	117	120	137	138	145	143	143			
	Transit Trips[18], per capita	31.6	28.5	22.3	19.5	20.6	20.3	20.9	n.a.#			
	Transit Operating Expense per passenger trip[19]	$3.45	$3.62	$4.82	$5.42	$5.06	$4.97	$4.90	n.a.#			
	Transit Passenger Miles[20], per capita	158.7	139.1	152.0	140.7	145.2	143.2	142.9	n.a.#			
	Transit Operating Expense per passenger mile[21]	$0.69	$0.74	$0.71	$0.75	$0.72	$0.70	$0.72	n.a.#			
	Transit Revenue Miles[22], number	11,310,381	11,319,872	11,486,456	11,418,456	11,712,133	11,877,541	11,908,963	n.a.#			
	Transit Revenue Miles[23], per capita	25.2	25.2	25.5	25.4	26.1	26.4	26.5	n.a.#			
	Transit Operating Expense, per revenue mile[24]	$4.32	$4.10	$4.20	$4.17	$4.01	$3.82	$3.87	n.a.#			
	*Regional Households served by Transit[25], percent	n.a.	n.a.	42.83%	n.a.	n.a.	n.a.	n.a.	n.a.		—	—
	*Regional Employment served by Transit[25], percent	n.a.	n.a.	53.47%	n.a.	n.a.	n.a.	n.a.	n.a.		—	—
	*Bicycle to Work[26], percent	0.46%	0.47%	0.51%	0.50%	0.52%	0.48%	0.49%	n.a.#			
	*Drove Alone to Work[27], percent	81.49%	81.51%	81.24%	81.66%	81.59%	81.38%	81.46%	n.a.#			

Goals	Measure	2010	2011	2012	2013	2014	2015	2016	2017	Desired Trend	1-year Trend	5-year Trend
Congestion Mitigation & System Reliability	*Delay per peak period commuter[1], annual hours	33	33	33	34	34	n.a.	n.a.	n.a.		—	
	Fuel Loss per peak period commuter[2], gallons	13	13	14	14	14	n.a.	n.a.	n.a.		—	
	*Peak period travel time index[3]	1.12	1.12	1.12	1.13	1.13	n.a.	n.a.	n.a.		—	
	Congestion costs[4], annual per peak period commuter	$754	$733	$727	$736	$729	n.a.	n.a.	n.a.		—	
Transportation and Land Use Integration	*Daily VMT[5], per capita	32.5	32.3	32.1	31.9	33.6	34.0	29.6	n.a.*	n.a.	—	
	*Jobs/Housing Ratio[6]	n.a.	n.a.	1.28	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	—
	*Jobs/Housing Dissimilarity Index[7]	0.060	0.061	0.056	0.049	0.047	0.067	n.a.	n.a.	<.5		
	% Workers working in jurisdiction in which they live[8]	48.8%	49.1%	48.9%	48.6%	48.2%	48.3%	48.0%	n.a.*		—	
	Travel Time to Work[9]	23.6	23.6	23.9	24.0	24.1	24.2	24.5	n.a.*		—	
Freight Mobility	Commodity Flow, Freight Mode Share[13], by tons											
	Truck						n.a.	n.a.			—	—
	Rail						n.a.	n.a.			—	—
	Commodity Flow, Freight Mode Share[13], by dollar value											
	Truck						n.a.	n.a.			—	—
	Rail						n.a.	n.a.			—	—
	*Richmond Marine Terminal Containers, Outbound[14]						13,024					
	*Richmond Marine Terminal Containers, Inbound[14]						14,602					
	RIC Total Cargo, Outbound/Enplaned, tons[15]						29,577					
	RIC Total Cargo, Inbound/Deplaned, tons[15]						38,081					
Multimodal Connectivity & Access to Employment	Transit Passenger Miles[20], per capita											
	Transit Operating Expense per passenger mile[21]	$0.69	$0.74	$0.71	$0.75	$0.72	$0.70	$0.72	n.a.*			
	Transit Revenue Miles[22], number	11,310,381	11,319,872	11,486,456	11,418,456	11,712,133	11,877,541	11,908,963	n.a.*			
	Transit Revenue Miles[23], per capita	25.2	25.2	25.5	25.4	26.1	26.4	26.5	n.a.*			
	Transit Operating Expense, per revenue mile[24]	$4.32	$4.10	$4.20	$4.17	$4.01	$3.82	$3.87	n.a.*			
	*Regional Households served by Transit[25], percent	n.a.	n.a.	42.83%	n.a.	n.a.	n.a.	n.a.	n.a.		—	—
	*Regional Employment served by Transit[25], percent	n.a.	n.a.	53.47%	n.a.	n.a.	n.a.	n.a.	n.a.		—	—
	*Bicycle to Work[26], percent	0.46%	0.47%	0.51%	0.50%	0.52%	0.48%	0.49%	n.a.*			
	*Drove Alone to Work[27], percent	81.49%	81.51%	81.24%	81.66%	81.59%	81.38%	81.46%	n.a.*			

plan2040 REGIONAL TRANSPORTATION GOALS

Multimodal Connectivity

Improve accessibility and interconnectivity of various transportation modes for all system users.

Multimodal Connectivity & Access to Employment	*Pedestrian to Work[28], percent	1.57%	1.65%	1.47%	1.56%	1.65%	1.65%	1.77%	n.a.#			
	*Passenger Rail Ridership[29]	313,026	375,226	404,700	439,525	427,426	435,199	426,966	451,078			
	Commercial Air Boardings[30]	1,651,131	1,571,155	1,582,565	1,597,913	1,671,096	1,740,380	1,775,573	1,822,483			
	Commercial Air Available Seat-Miles[31] Inbound, thousands	1,072,879	1,066,139	1,014,951	1,035,901	1,038,566	1,062,431	1,086,048	1,152,279			
	Commercial Air Available Seat-Miles[31] Outbound, thousands	1,043,167	1,045,854	1,007,221	1,026,515	1,025,401	1,042,401	1,065,520	1,127,483			
	*Commercial Air Non-Stop Destinations[32]	n.a.	n.a.	n.a.	n.a.	16	17	17	17			—
Safety and Security	*Highway Crashes, number[33]	17,423	18,460	18,359	18,453	18,234	19,752	20,550	20,329			
	Highway Crash Rate, per 100 million VMT[34]	157	167	167	169	163	168	173	n.a.#			
	*Highway Fatalities, number[33]	85	90	70	83	76	92	78	102			
	Highway Fatality Rate, per 100 million VMT[34]	0.77	0.83	0.69	0.83	0.73	0.78	0.66	n.a.#			
	Transit Crashes, number[35]	35	35	41	32	27	20	18	14			
	Transit Crash Rate, per 100 million PMT[36]	80.8	101.8	108.8	101.8	88.12	67.2	53.65	41.58			
	Transit Fatalities, number[35]	0	0	0	0	0	0	0	0			
	Transit Fatality Rate, per 100 million PMT[36]	-	-	-	-	-	-	-	-			
	Bicycle and Pedestrian Crashes, number[37]	344	441	425	386	382	338	367	386			
	Bicycle and Pedestrian Fatalities, number[37]	9	15	14	12	13	11	14	29			
Preservation and Maintenance	*Interstate Pavement Condition, % rated fair or better[38]	n.a.	n.a.	71.7%	75.1%	75.7%	76.7%	79.4%	83.3%			
	*Primary Pavement Condition, % rated fair or better[38]	n.a.	n.a.	74.6%	79.4%	74.4%	72.5%	78.5%	83.1%			
	Interstate Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	345	341			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11	9			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3.19%	2.64%			—
	Primary Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	474	469			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	24	20			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.06%	4.26%			—
	Secondary Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	492	484			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	27	27			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.49%	5.58%			—
	Urban Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	132	126			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17	15			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.88%	11.90%			—
	Unclassified Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4	2			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0%	0%			—
	Entire Road System[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,447	1,422			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	79	71			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.46%	4.99%			—
	Average Age of GRTC Bus Fleet, years[40]	7.3	7.8	8.8	8.1	6.2	7.2	7.6	n.a.			

Multimodal Connectivity & Access to Employment	*Pedestrian to Work[28], percent	1.57%	1.65%	1.47%	1.56%	1.65%	1.65%	1.77%	n.a.#			
	*Passenger Rail Ridership[29]	313,026	375,226	404,700	439,525	427,426	435,199	426,966	451,078			
	Commercial Air Boardings[30]	1,651,131	1,571,155	1,582,565	1,597,913	1,671,096	1,740,380	1,775,573	1,822,483			
	Commercial Air Available Seat-Miles[31] Inbound, thousands	1,072,879	1,066,139	1,014,951	1,035,901	1,038,566	1,062,431	1,086,048	1,152,279			
	Commercial Air Available Seat-Miles[31] Outbound, thousands	1,043,167	1,045,854	1,007,221	1,026,515	1,025,401	1,042,401	1,065,520	1,127,483			
	*Commercial Air Non-Stop Destinations[32]	n.a.	n.a.	n.a.	n.a.	16	17	17	17			
	*Highway Crashes, number[33]	17,423	18,460	18,359	18,453	18,234	19,752	20,550	20,329			
	Highway Crash Rate, per 100 million VMT[34]	157	167	167	169	163	168	173	n.a.#			
	*Highway Fatalities, number[33]	85	90	70	83	76	92	78	102			
	Highway Fatality Rate, per 100 million VMT[34]	0.77	0.83	0.69	0.83	0.73	0.78	0.66	n.a.#			
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	24	20			
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.06%	4.26%			
	Secondary Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	492	484			
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	27	27			
Preservation and Maintenance	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.49%	5.58%			
	Urban Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	132	126			
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17	15			
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.88%	11.90%			
	Unclassified Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4	2			
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0			
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0%	0%			
	Entire Road System[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,447	1,422			
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	79	71			
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.46%	4.99%			
	Average Age of GRTC Bus Fleet, years[40]	7.3	7.8	8.8	8.1	6.2	7.2	7.6	n.a.			

Multimodal Connectivity & Access to Employment	*Pedestrian to Work[28], percent	n.a.#			
	*Passenger Rail Ridership[29]	451,078			
	Commercial Air Boardings[30]	1,822,483			
	Commercial Air Available Seat-Miles[31] Inbound, thousands	1,152,279			
	Commercial Air Available Seat-Miles[31] Outbound, thousands	1,127,483			
	*Commercial Air Non-Stop Destinations[32]	17			

plan2040 REGIONAL TRANSPORTATION GOALS

Multimodal Connectivity & Access to Employment	*Pedestrian to Work[28], percent	1.57%	1.65%	1.47%	1.56%	1.65%	1.65%	1.77%	n.a.#			
	*Passenger Rail Ridership[29]	313,026	375,226	404,700	439,525	427,426	435,199	426,966	451,078			
	Commercial Air Boardings[30]	1,651,131	1,571,155	1,582,565	1,597,913	1,671,096	1,740,380	1,775,573	1,822,483			
	Commercial Air Available Seat-Miles[31] Inbound, thousands	1,072,879	1,066,139	1,014,951	1,035,901	1,038,566	1,062,431	1,086,048	1,152,279			
	Commercial Air Available Seat-Miles[31] Outbound, thousands	1,043,167	1,045,854	1,007,221	1,026,515	1,025,401	1,042,401	1,065,520	1,127,483			
	*Commercial Air Non-Stop Destinations[32]	n.a.	n.a.	n.a.	n.a.	16	17	17	17			—
Safety and Security	*Highway Crashes, number[33]	17,423	18,460	18,359	18,453	18,234	19,752	20,550	20,329			
	Highway Crash Rate, per 100 million VMT[34]	157	167	167	169	163	168	173	n.a.#			
	*Highway Fatalities, number[33]	85	90	70	83	76	92	78	102			
	Highway Fatality Rate, per 100 million VMT[34]	0.77	0.83	0.69	0.83	0.73	0.78	0.66	n.a.#			
	Transit Crashes, number[35]	35	35	41	32	27	20	18	14			
	Transit Crash Rate, per 100 million PMT[36]	80.8	101.8	108.8	101.8	88.12	67.2	53.65	41.58			
	Transit Fatalities, number[35]	0	0	0	0	0	0	0	0			
	Transit Fatality Rate, per 100 million PMT[36]	-	-	-	-	-	-	-	-			
	Bicycle and Pedestrian Crashes, number[37]	344	441	425	386	382	338	367	386			
	Bicycle and Pedestrian Fatalities, number[37]	9	15	14	12	13	11	14	29			
Preservation and Maintenance	*Interstate Pavement Condition, % rated fair or better[38]	n.a.	n.a.	71.7%	75.1%	75.7%	76.7%	79.4%	83.3%			
	*Primary Pavement Condition, % rated fair or better[38]	n.a.	n.a.	74.6%	79.4%	74.4%	72.5%	78.5%	83.1%			
	Interstate Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	345	341			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11	9			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3.19%	2.64%			—
	Primary Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	474	469			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	24	20			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.06%	4.26%			—
	Secondary Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	492	484			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	27	27			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.49%	5.58%			—
	Urban Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	132	126			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17	15			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.88%	11.90%			—
	Unclassified Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4	2			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0%	0%			—
	Entire Road System[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,447	1,422			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	79	71			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.46%	4.99%			—
	Average Age of GRTC Bus Fleet, years[40]	7.3	7.8	8.8	8.1	6.2	7.2	7.6	n.a.			

Multimodal Connectivity & Access to Employment	*Pedestrian to Work[28], percent	1.57%	1.65%	1.47%	1.56%	1.65%	1.65%	1.77%	n.a.*			
	*Passenger Rail Ridership[29]	313,026	375,226	404,700	439,525	427,426	435,199	426,966	451,078			
	Commercial Air Boardings[30]	1,651,131	1,571,155	1,582,565	1,597,913	1,671,096	1,740,380	1,775,573	1,822,483			
	Commercial Air Available Seat-Miles[31] Inbound, thousands	1,072,879	1,066,139	1,014,951	1,035,901	1,038,566	1,062,431	1,086,048	1,152,279			
	Commercial Air Available Seat-Miles[31] Outbound, thousands	1,043,167	1,045,854	1,007,221	1,026,515	1,025,401	1,042,401	1,065,520	1,127,483			
	*Commercial Air Non-Stop Destinations[32]	n.a.	n.a.	n.a.	n.a.	16	17	17	17			—
	*Highway Crashes, number[33]	17,423	18,460	18,359	18,453	18,234	19,752	20,550	20,329			
Safety and Security	*Highway Crashes, number[33]	20,329										
	Highway Crash Rate, per 100 million VMT[34]	n.a.*										
	*Highway Fatalities, number[33]	102										
	Highway Fatality Rate, per 100 million VMT[34]	n.a.*										
	Transit Crashes, number[35]	14										
	Transit Crash Rate, per 100 million PMT[36]	41.58										
	Transit Fatalities, number[35]	0										
	Transit Fatality Rate, per 100 million PMT[36]	-										
	Bicycle and Pedestrian Crashes, number[37]	386										
	Bicycle and Pedestrian Fatalities, number[37]	29										
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.88%	11.90%			—
	Unclassified Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4	2			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0%	0%			—
	Entire Road System[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,447	1,422			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	79	71			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.46%	4.99%			—
	Average Age of GRTC Bus Fleet, years[40]	7.3	7.8	8.8	8.1	6.2	7.2	7.6	n.a.			

plan2040 REGIONAL TRANSPORTATION GOALS

Multimodal Connectivity & Access to Employment	*Pedestrian to Work[28], percent	1.57%	1.65%	1.47%	1.56%	1.65%	1.65%	1.77%	n.a.#			
	*Passenger Rail Ridership[29]	313,026	375,226	404,700	439,525	427,426	435,199	426,966	451,078			
	Commercial Air Boardings[30]	1,651,131	1,571,155	1,582,565	1,597,913	1,671,096	1,740,380	1,775,573	1,822,483			
	Commercial Air Available Seat-Miles[31] Inbound, thousands	1,072,879	1,066,139	1,014,951	1,035,901	1,038,566	1,062,431	1,086,048	1,152,279			
	Commercial Air Available Seat-Miles[31] Outbound, thousands	1,043,167	1,045,854	1,007,221	1,026,515	1,025,401	1,042,401	1,065,520	1,127,483			
	*Commercial Air Non-Stop Destinations[32]	n.a.	n.a.	n.a.	n.a.	16	17	17	17			—
Safety and Security	*Highway Crashes, number[33]	17,423	18,460	18,359	18,453	18,234	19,752	20,550	20,329			
	Highway Crash Rate, per 100 million VMT[34]	157	167	167	169	163	168	173	n.a.#			
	*Highway Fatalities, number[33]	85	90	70	83	76	92	78	102			
	Highway Fatality Rate, per 100 million VMT[34]	0.77	0.83	0.69	0.83	0.73	0.78	0.66	n.a.#			
	Transit Crashes, number[35]	35	35	41	32	27	20	18	14			
	Transit Crash Rate, per 100 million PMT[36]	80.8	101.8	108.8	101.8	88.12	67.2	53.65	41.58			
	Transit Fatalities, number[35]	0	0	0	0	0	0	0	0			
	Transit Fatality Rate, per 100 million PMT[36]	-	-	-	-	-	-	-	-			
	Bicycle and Pedestrian Crashes, number[37]	344	441	425	386	382	338	367	386			
	Bicycle and Pedestrian Fatalities, number[37]	9	15	14	12	13	11	14	29			
Preservation and Maintenance	*Interstate Pavement Condition, % rated fair or better[38]	n.a.	n.a.	71.7%	75.1%	75.7%	76.7%	79.4%	83.3%			
	Interstate Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	345	341			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11	9			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3.19%	2.64%			—
	Primary Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	474	469			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	24	20			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.06%	4.26%			—
	Secondary Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	492	484			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	27	27			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.49%	5.58%			—
	Urban Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	132	126			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17	15			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.88%	11.90%			—
	Unclassified Roads Bridge Sufficiency Rating[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4	2			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	0			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0%	0%			—
	Entire Road System[39]											
	Total Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,447	1,422			—
	Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	79	71			—
	Percentage of Structurally Deficient Bridges	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.46%	4.99%			—
	Average Age of GRTC Bus Fleet, years	7.3	7.8	8.8	8.1	6.2	7.2	7.6	n.a.			

	*Interstate Pavement Condition, % rated fair or better[38]	79.4%	83.3%			
	*Primary Pavement Condition, % rated fair or better[38]	78.5%	83.1%			
	Interstate Bridge Sufficiency Rating[39]					
	Total Bridges	345	341			—
	Structurally Deficient Bridges	11	9			—
	Percentage of Structurally Deficient Bridges	3.19%	2.64%			—
	Primary Roads Bridge Sufficiency Rating[39]					
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	Structurally Deficient Bridges	24	20			—
	Percentage of Structurally Deficient Bridges	5.06%	4.26%			—
	Secondary Roads Bridge Sufficiency Rating[39]					
	Total Bridges	492	484			—
Preservation and Maintenance	Structurally Deficient Bridges	27	27			—
	Percentage of Structurally Deficient Bridges	5.49%	5.58%			—
	Urban Roads Bridge Sufficiency Rating[39]					
	Total Bridges	132	126			—
	Structurally Deficient Bridges	17	15			—
	Percentage of Structurally Deficient Bridges	12.88%	11.90%			—
	Unclassified Roads Bridge Sufficiency Rating[39]					
	Total Bridges	4	2			—
	Structurally Deficient Bridges	0	0			—
	Percentage of Structurally Deficient Bridges	0%	0%			—
	Entire Road System[39]					
	Total Bridges	1,447	1,422			—
	Structurally Deficient Bridges	79	71			—
	Percentage of Structurally Deficient Bridges	5.46%	4.99%			—
	Average Age of GRTC Bus Fleet, years[40]	7.6	n.a.			

Program Highlights
&
Inside the Numbers

Transportation Performance Measures 2018

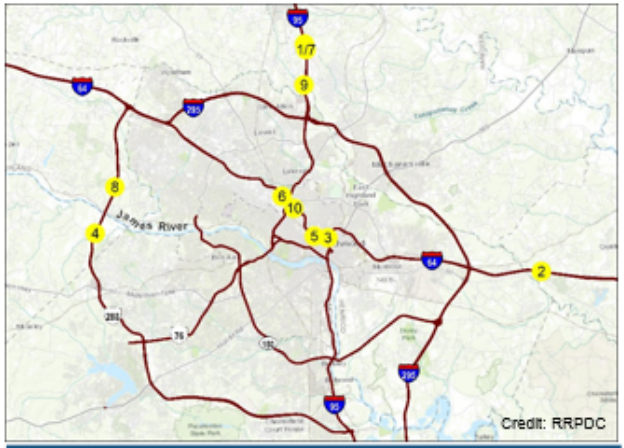
CONGESTION MITIGATION & SYSTEM RELIABILITY

Program Highlight

Congestion Mitigation Process - Bottleneck Analysis

In December 2016, the Congestion Mitigation Process (CMP) Technical Report was approved by the RRTPO board. The CMP is defined by the Federal Highway Administration (FHWA) as a systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assess alternative strategies for congestion management that meet state and local needs. The CMP is intended to apply these strategies to capacity increasing projects and improvements and transition them into the funding and implementation stages for major corridors identified in the CMP roadway network.

Congestion is analyzed using tools from the I-95 Corridor Coalition Vehicle Probe Project (VPP) which allows for the analysis over time of most of the areas with congestion. Data on bottlenecks were compiled in order to monitor the trends on the CMP network and monitored the time of day for congestion and non-recurring backups due to construction. Analysis shows two construction projects are creating congestion for the top two bottlenecks on the list; one on I-95 at Lewistown Road in Hanover County and I-64 near Exit 205 in New Kent County. Two sections of VA-288 also made the list.



Top 10 Bottlenecks in the Richmond Region
1. I-95 S at Lewistown Road Exit 89
2. I-64 W at VA-33-VA-249 Exit 205
3. I-64 W at I-95 Exit 190
4. VA-288 N at Huguenot Trail-RT711
5. I-95 N at US-301 Belvidere St Exit 76
6. I-64 E at Laburnum Ave Exit 186
7. I-95 N at Lewistown Road Exit 89
8. VA-288 S at VA-6 Patterson Ave
9. I-95 N at VA-656 Exit 86
10. I-95 S at VA-161 Hermitage Rd Exit 80

Transportation Performance Measures 2018

TRANSPORTATION AND LAND USE INTEGRATION

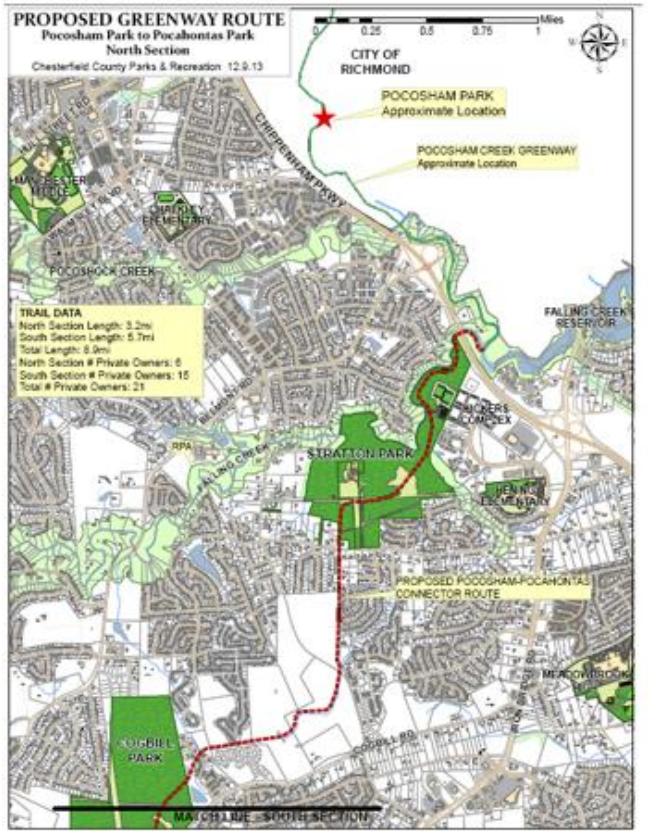
Program Highlight

Stratton Park in Chesterfield County

Chesterfield County is planning to improve the safety and connectivity in Stratton Park and along Ridgedale Parkway with a $1.1 million project to add sidewalk and a paved multiuse path. The RRTPO approved the allocation of FY 2017 Transportation Alternatives Set-Aside funds and a portion of FY 2018 funds for a total of $880,000 with a match of $220,000 from Chesterfield to fund this project. The corridor includes the park, a swimming facility, commercial and residential developments, and an elementary school.

This path is supported by the Bikeways & Trails Chapter of Chesterfield County's comprehensive plan. The trail is also expected to be considered for designation as a part of the East Coast Greenway, a national 3,000-mile multiuse path connecting Florida to Maine.

New multiuse path in the Jessup Farms development. Credit: Heather Barrar



Red line represents the multiuse path according to the Chesterfield County plan. Credit: Chesterfield County

Transportation Performance Measures 2018

PRESERVATION & MAINTENANCE

Inside the Numbers

Pavement Condition information for the Richmond area is reported in the annual *State of Pavement* released by the Virginia Department of Transportation (VDOT). Important to note that Pavement Condition information is released at the geographic scale of the Richmond VDOT district, which extends beyond the RRTPO planning area and includes the Tri-Cities and Southside areas of the state.

VDOT reports pavement condition as an index scale from 1 to 100, grouping the results into five categories: 90 and above – Excellent; 70 to 89 – Good; 60 to 69 – Fair; 50 to 59 – Poor; and 49 and below – Very Poor. In general, pavements rating less than 60 are considered to be deficient and are identified as priorities for maintenance and/or rehabilitation work. As indicated in Figure 10, the Interstate and Primary network pavement conditions have varied considerably year to year from 2012 to 2017. The percentage of very poor condition increased slightly in 2017 reporting on VDOT maintained primary roads in the Richmond District, but approximately 75 percent of the roads were reported to be good and excellent. Interstate pavement conditions continue to be improving overall, with the percentage of very poor pavement condition decreasing since the 2014-2015 reporting periods. At this scale, pavement condition data provides a snapshot of how the overall regional highway network is maintained for safe roadway conditions.

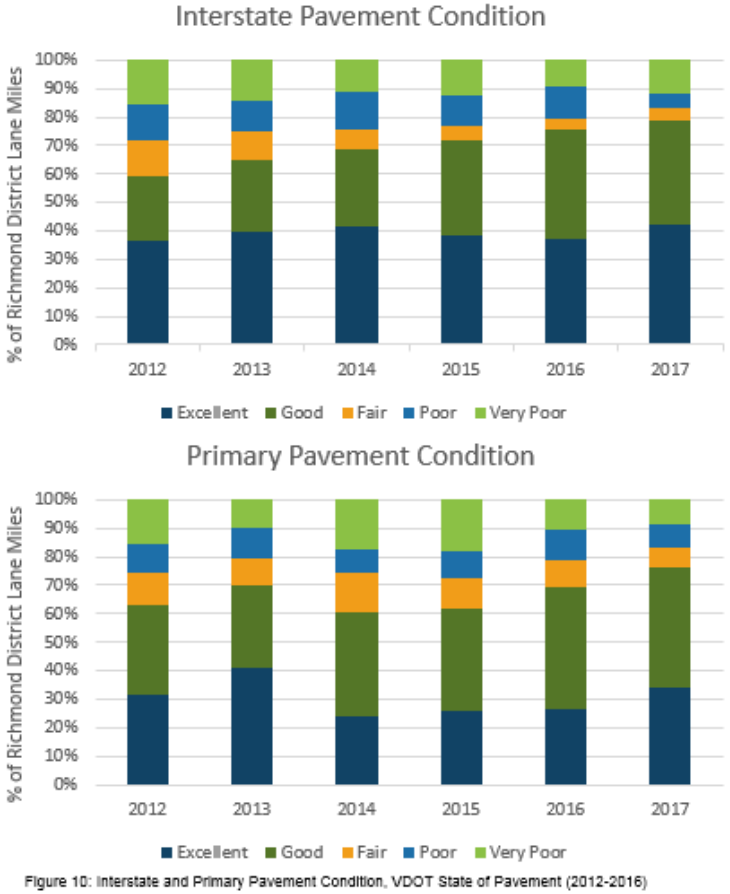


Figure 10: Interstate and Primary Pavement Condition, VDOT State of Pavement (2012-2016)

Next Steps

Sept 2018

- Draft report sent to TAC

Oct 2018

- Oct 4 draft presented to RRTPO
- Oct 9 TAC action requested (rec to RRTPO)
- Oct 31 posted to RRTPO website

Dec 2018

- Dec 6 RRTPO consent agenda

Transportation Performance Measures

Progress Report • 2018

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