



**VIRGINIA  
SURFACE  
TRANSPORTATION  
PLAN 2035**

[www.vtrans.org](http://www.vtrans.org)



November 2010



# Table of Contents

Executive Summary

See Summary Map

● Chapter 1: The 2035 Virginia Surface Transportation Plan	1
Challenges & Opportunities	2
VTrans2035: The Precursor	2
The VSTP and VTrans2035	2
The 2035 Virginia Surface Transportation Plan	7
How Was The Public Involved	8
The VSTP Regions	8
The VSTP Modal Elements	10
Rail Element	12
Freight Element	12
Bicycle and Pedestrian Element	13
Highway Element	14
VSTP Document Layout	14
● Chapter 2: Changes in Population, Employment and Travel in Virginia	17
Population	18
Employment	19
Jobs to Housing Ratio	21
Daily Vehicle Miles Traveled and Transit Trips	22
What Does This Tell Us?	23
● Chapter 3: Existing Transportation Facilities in Virginia	25
Public Transportation	26
Rail	32
Bicycle and Pedestrian	36
Highways	39
Maritime Highways	50

●	Chapter 4: Developing the Recommendations	53
	Public Transportation	54
	Rail	56
	Freight	57
	Bicycle and Pedestrian	57
	Highway	58
●	Chapter 5: Transportation Funding in Virginia	63
	How is Transportation Funded?	64
	Funding Rail in Virginia	67
	Funding Public Transportation	68
●	Chapter 6: VSTP Recommendations	75
	Region 1: Valley and Ridge	76
	Public Transportation Recommendations	82
	Rail Recommendations	85
	Highway Recommendations	86
	Region 2: Northern	103
	Public Transportation Recommendations	109
	Rail Recommendations	112
	Highway Recommendations	114
	Region 3: Blue Ridge	123
	Public Transportation Recommendations	129
	Rail Recommendations	132
	Highway Recommendations	133
	Region 4: Piedmont	144
	Public Transportation Recommendations	150
	Rail Recommendations	153
	Highway Recommendations	154
	Region 5: Eastern	168
	Public Transportation Recommendations	174
	Highway Recommendations	177

# List of Figures

Figure 1: What's on the Horizon?	2
Figure 2: VTrans2035	3
Figure 3: PDC and VSTP Region Boundaries	9
Figure 4: Plan Element Flow Chart	11
Figure 5: Virginia Population Forecast	18
Figure 6: Population Density in 2035	18
Figure 7: 2035 Projected Population by PDC	19
Figure 8: Projected Population Change by PDC (2010 – 2035)	19
Figure 9: 2035 Employment	20
Figure 10: Projected 2035 Employment by PDC	20
Figure 11: Employment Change by PDC (2010 – 2035)	20
Figure 12: Jobs to Housing Ratio (2010 and 2035)	21
Figure 13: Projected 2035 Jobs to Housing Ratio by PDC	22
Figure 14: 2035 DVMT	22
Figure 15: Projected 2035 Daily Vehicle Miles Traveled by PDC	22
Figure 16: Growth Areas	23
Figure 17: Virginia's Public Transportation Assets Map	33
Figure 18: Virginia Freight Tonnage by Mode and Direction	34
Figure 19: Virginia Freight Projections by Mode (2035)	35
Figure 20: Existing State Rail Assets Map	35
Figure 21: Virginia's Bicycle and Pedestrian Assets Map	38
Figure 22: Percent Increase in Population, Licensed Drivers, Registered Vehicles, VMT, and Lane-Miles (1987 - 2008)	40
Figure 23: Statewide Mobility System 2007 Level of Service	41
Figure 24: Statewide Mobility System 2035 Level of Service	42
Figure 25: Percent Deficient Pavement	43

Figure 26: Percent Structures by Age (2009)	43
Figure 27: Virginia Crash Fatalities and Injuries (2001 - 2009)	44
Figure 28: Public-Private Transportation Act Projects Map	47
Figure 29: Statewide Freight Plan Stakeholder Input	48
Figure 30: Virginia's Highway Assets Map	49
Figure 31: Change in Population and Road Capacity since 1987	64
Figure 32: Transportation Funding in Virginia	64
Figure 33: Major Taxes for Transportation Funding	65
Figure 34: Virginia Drivers Pay 9th Lowest Fuel Tax	66
Figure 35: Valley and Ridge Regional Characteristics Percent Change (2010 - 2035)	78
Figure 36: Valley and Ridge Region Recommendations Map	81
Figure 37: Highway Recommendation Table Reference Guide	87
Figure 38: Northern Regional Characteristics Percent Change (2010 - 2035)	105
Figure 39: Northern Region Recommendations Map	108
Figure 40: Highway Recommendation Table Reference Guide	115
Figure 41: Blue Ridge Regional Characteristics Percent Change (2010 - 2035)	125
Figure 42: Blue Ridge Region Recommendations Map	128
Figure 43: Highway Recommendation Table Reference Guide	134
Figure 44: Piedmont Regional Characteristics Percent Change (2010 - 2035)	145
Figure 45: Piedmont Region Recommendations Map	149
Figure 46: Highway Recommendation Table Reference Guide	155
Figure 47: Eastern Regional Characteristics Percent Change (2010 - 2035)	170
Figure 48: Eastern Region Recommendations Map	173
Figure 49: Highway Recommendation Table Reference Guide	178

# List of Tables

Table 1: VTrans2035 Investment Priorities	4
Table 2: VTrans2035 Actions and Strategies for the Future	5
Table 3: Virginia Transportation at a Glance	27
Table 4: Motor Vehicle Statistics	39
Table 5: Percent Decrease in Average Peak Hour Speed on Select Facilities (2008-2035)	40
Table 6: Public Transit Investments Compared to VTrans2035 Goals	55
Table 7: FY2010 Statewide Transit Operating Funds	69
Table 8: Projected Growth in Transit Operating Expenses (\$ millions)	69
Table 9: Vehicle Assets of Transit Providers	69
Table 10: State of Good Repair Needs 2010-2035 (\$ billions)	70
Table 11: Projected Capital Funding 2010-2035 (\$ billions)	70
Table 12: Valley and Ridge Regional Characteristics by PDC	80
Table 13: TDM Strategies for the Valley and Ridge Region	83
Table 14: ITS Investments for the Valley and Ridge Region	84
Table 15: Rail Recommendations for the Valley and Ridge Region	85
Table 16: Valley and Ridge Region Recommendations to Existing Facilities	88-95
Table 17: Valley and Ridge Region Recommendations to Existing Facilities Identified for Further Study	96
Table 18: Valley and Ridge Region Recommendations to New Locations	97
Table 19: Valley and Ridge Region Other Recommendations	98-101
Table 20: Valley and Ridge Region Highway ITS Recommendations	102
Table 21: Northern Regional Characteristics by PDC	107
Table 22: TDM Strategies for the Northern Region	110
Table 23: ITS Investments for the Northern Region	111
Table 24: Rail Recommendations for the Northern Region	112-113
Table 25: Northern Region Recommendations to Existing Facilities	116-120
Table 26: Northern Region Recommendations to Existing Facilities Identified for Further Study	121
Table 27: Northern Region Recommendations to New Locations	121

Table 28: Northern Region Other Recommendations	121
Table 29: Northern Region ITS Recommendations	122
Table 30: Blue Ridge Regional Characteristics by PDC	127
Table 31: TDM Strategies for the Blue Ridge Region	130
Table 32: ITS Investments for the Blue Ridge Region	131
Table 33: Rail Recommendations for the Blue Ridge Region	132
Table 34: Blue Ridge Region Recommendations to Existing Facilities	135-138
Table 35: Blue Ridge Region Recommendations to New Locations	139
Table 36: Blue Ridge Region Recommendations to New Locations Identified for Further Study	139
Table 37: Blue Ridge Region Other Recommendations	140-142
Table 38: Blue Ridge Region ITS Recommendations	143
Table 39: Piedmont Regional Characteristics by PDC	148
Table 40: TDM Strategies for the Piedmont Region	151
Table 41: ITS Investments for the Piedmont Region	152
Table 42: Rail Recommendations for the Piedmont Region	153
Table 43: Piedmont Region Recommendations to Existing Facilities	156-161
Table 44: Piedmont Region Recommendations to New Locations	162
Table 45: Piedmont Region Recommendations to New Locations Identified for Further Study	162
Table 46: Piedmont Region Other Recommendations	163-166
Table 47: Piedmont Region ITS Recommendations	167
Table 48: Eastern Regional Characteristics by PDC	172
Table 49: TDM Strategies for the Eastern Region	176
Table 50: ITS Investments for the Eastern Region	177
Table 51: Eastern Region Recommendations to Existing Facilities	179-182
Table 52: Eastern Region Recommendations to New Locations	183
Table 53: Eastern Region Other Recommendations	184-185
Table 54: Eastern Region Highway ITS Recommendations	185

# Acronyms and Abbreviations

APTA: American Public Transportation Association  
ART: Arlington County Bus System  
ATM: Active Traffic Management  
BRAC: Base Relocation and Closure Program  
CCL: Critical Condition Index  
CLRP: Constrained Long Range Plan  
CoSS: Corridors of Statewide Significance  
CTB: Commonwealth Transportation Board  
CTF: Commonwealth Transportation Fund  
CVO: Commercial Vehicle Operations  
DMV: Department of Motor Vehicles  
DOAV: Department of Aviation  
DRTP: Virginia Department of Rail and Public Transportation  
DVMT: Daily Vehicle Miles Traveled  
EPG: Engineer Proving Ground  
FRA: Federal Railroad Administration  
FRED: Fredericksburg Regional Transit  
FTA: Federal Transit Administration  
GPS: Global Positioning System  
HERS: Highway Economic Requirements System  
HOV: High Occupancy Vehicle  
HRT: Hampton Roads Transit  
ICM: Integrated Corridor Management  
ITS: Intelligent Transportation Systems  
LOS: Level of Service  
MPO: Metropolitan Planning Organization  
MWAA: Metropolitan Washington Airports Authority



NEC: Northeast Corridor Regional  
NEPA: National Environmental Policy Act  
NPA: NPA Data Services, Inc.  
NS: Norfolk Suffolk  
OIP: Office of Intermodal Planning and Investment  
PAT: Petersburg Area Transit  
PDC: Planning District Commission  
PPTA: Public-Private Transportation Act  
PRTC: Potomac and Rappahannock Transportation Commission  
REX: Richmond Highway Express  
SAFETEA-LU: Safe, Affordable, Flexible, Efficient Transportation Equity Act - Legacy for Users  
SGR: State of Good Repair  
SLCS: Shoulder as a Travel Lane  
SMS: Statewide Mobility System  
SOV: Single Occupancy Vehicle  
STARS: Strategically Targeted Affordable Roadway Solutions  
STRAHNET: Strategic Highway Network  
TDM: Transportation Demand Management  
TSP: Transit Signal Priority  
VDOT: Virginia Department of Transportation  
VPA: Virginia Port Authority  
VRE: Virginia Rail Express  
VSM: Virginia State Model  
VSTP: Virginia Surface Transportation Plan  
VTRC: Virginia Transportation Research Council  
WATA: Williamsburg Area Transit Authority  
WHS: Washington Headquarters Service  
WMATA: Washington Metropolitan Area Transit Authority

