Virginia's Transportation Performance Management System

Office of Intermodal Planning and Investment

Commonwealth Transportation Board
Presented by: David Tyeryar, Deputy Secretary of Transportation
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Agenda

Purpose and Objectives

Annual Scorecard

KPIs and Data Points
- **What is behind getting these scores?**

Swan Report
- **KPIs, Measures, and Data Points agencies should be proactively addressing.**

VA's Transportation Performance Management System

Virginia's Transportation Performance Management System Purpose

Overall Objective: To create a strategic performance measurement and management system that automatically collects, reports, and displays statewide multimodal transportation performance data.

- Construct dashboards at different levels within the organization
- Align VTrans Strategic Goals to departments, functions and integrated high-level projects
- Construct dashboards at the strategic goal level
- Provide on-line data collection and analysis capabilities
- Capture and store historical data
- Provide a geographical interface
- Provide easy data entry and collection
- Integrate reporting to link with Virginia's Transportation Performance Management System

..."

What did it replace?

- Data collection efforts that included phone calls to each transportation agency for data

- Data instruments and storage
– Excel Spreadsheets, MS Word and PDF documents

- Internal data reviews and reconciliation

- Manual Annual Report production

- Annual Staff Compilation

- Two year delay in reporting agencies performance

VA's Transportation Performance Management System

How & Why Replace

- **Need to improve and streamline data collection**

- **Created web accessible dashboard system to correlate numerous data elements form diverse systems of record**

- **Strong ability to pull from multiple sources; from mature data bases, to spreadsheets, to PDF report documents**

- **Dashboards clearly show line of sight on how various data elements affect overall VTrans goals and Investment priorities**

- **Drastically reduce the time and effort to create annual scorecard through automate reporting**

Annual Scorecard*

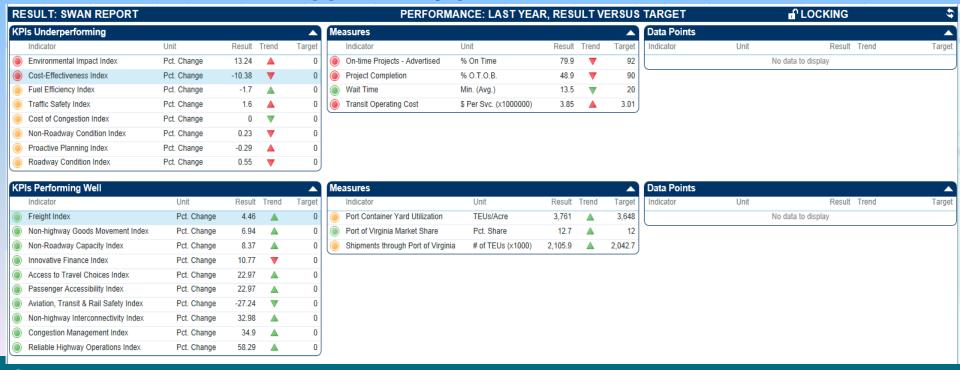**VA's Transportation Performance Management System**

KPIs and Data Points

What is behind getting these scores?

- **Each score is a percent of change representation from the previous year**

  - Green – Over 5% Improvement
  - Light Green – 2% - 5% Improvement
  - Yellow/Orange – Within 2% of past performance
  - Pink – 2% - 5% Decline
  - Red – Over 5% Decline

- **Each KPI is comprised of one or more Measures**

- **Each Measure is comprised of one or more data points**
  - Multiple data points are used for calculations, such as Crash Rate
    - Number of Crashes divided by 100 million vehicle miles traveled

Swan Report

KPIs, Measures, and Data Points agencies should be proactively addressing.

•Swan Report shows both Underperforming and those Performing Well

•User can easily and quickly assess where there are problems by:

Selecting a KPI will list all associated Measures and data points

• Decisions can be supported by performance based data

RESULT: SWAN REPORT					PERFORMANCE: LAST YEAR, RESULT VERSUS TARGET					🔓 LOCKING					⇕

KPIs Underperforming				▲
Indicator	Unit	Result	Trend	Target
🔴 Environmental Impact Index	Pct. Change	13.24	▲	0
🔴 Cost-Effectiveness Index	Pct. Change	-10.38	▼	0
🟡 Fuel Efficiency Index	Pct. Change	-1.7	▲	0
🟡 Traffic Safety Index	Pct. Change	1.6	▲	0
🟠 Cost of Congestion Index	Pct. Change	0	▼	0
🟠 Non-Roadway Condition Index	Pct. Change	0.23	▼	0
🟠 Proactive Planning Index	Pct. Change	-0.29	▲	0
🟠 Roadway Condition Index	Pct. Change	0.55	▼	0

Measures				▲
Indicator	Unit	Result	Trend	Target
🔴 On-time Projects - Advertised	% On Time	79.9	▼	92
🔴 Project Completion	% O.T.O.B.	48.9	▼	90
🟢 Wait Time	Min. (Avg.)	13.5	▼	20
🔴 Transit Operating Cost	$ Per Svc. (x1000000)	3.85	▲	3.01

Data Points				▲
Indicator	Unit	Result	Trend	Target
		No data to display		

KPIs Performing Well				▲
Indicator	Unit	Result	Trend	Target
🟢 Freight Index	Pct. Change	4.46	▲	0
🟢 Non-highway Goods Movement Index	Pct. Change	6.94	▲	0
🟢 Non-Roadway Capacity Index	Pct. Change	8.37	▲	0
🟢 Innovative Finance Index	Pct. Change	10.77	▼	0
🟢 Access to Travel Choices Index	Pct. Change	22.97	▲	0
🟢 Passenger Accessibility Index	Pct. Change	22.97	▲	0
🟢 Aviation, Transit & Rail Safety Index	Pct. Change	-27.24	▼	0
🟢 Non-highway Interconnectivity Index	Pct. Change	32.98	▲	0
🟢 Congestion Management Index	Pct. Change	34.9	▲	0
🟢 Reliable Highway Operations Index	Pct. Change	58.29	▲	0

Measures				▲
Indicator	Unit	Result	Trend	Target
🟡 Port Container Yard Utilization	TEUs/Acre	3,761	▲	3,648
🟢 Port of Virginia Market Share	Pct. Share	12.7	▲	12
🟡 Shipments through Port of Virginia	# of TEUs (x1000)	2,105.9	▲	2,042.7

Data Points				▲
Indicator	Unit	Result	Trend	Target
		No data to display		

Next Steps for Project

- **Present to CTB sub committee for internal review of how the Virginia's Transportation Performance Management System works and how it can be fully utilized**

- **Extending the capabilities to collect expand and improve performance data collection, analysis and correlation reporting for such programs as:**
  - **Safety Plan**
  - **VTrans 2040**
  - **Secretarial performance initiatives**

- **Improve internal office automation by documenting key work processes to events and strategic goals and outcomes**

- **Increase budget and financial performance analysis and reporting to goals, projects and other initiatives**

Goal, Investment Priority, & KPI Table

Safety & Security	Increase Coordinated Safety & Security Planning	Planning Index		
	Improve Safe Operations and Services	Traffic Safety Index	Crash Rate Injuries Injuries per Vehicle Miles Traveled Fatalities Fatalities per Vehicle Miles Traveled Fatality Rate per Crash	# of Vehicle Crashes (DMV) — # of Virginia VMT (VDOT) # of Crash Injuries (DMV) # of Crash Injuries (DMV) — # of Virginia VMT (VDOT) # of Traffic Crash Fatalities (DMV) # of Traffic Crash Fatalities (DMV) — # of Virginia VMT (VDOT) # of Traffic Crash Fatalities (DMV) — # of Vehicle Crashes (DMV)
		Aviation, Transit, & Rail Safety Index	Aviation Crashes Vehicle Crashes at Rail Crossing Transit Crash Rate	# of Aviation Crashes (DOAV) # of vehicle crashes at rail crossings (VDOT) # of Transit Crashes - Busses (DMV) — # of Transit Revenue Miles (DRPT)
System Maintenance & Preservation	Achieve State of Good Repair	Roadway Condition	Interstate Pavement Condition Primary Road Pavement Condition Secondary Road Pavement Condition Bridge Condition	Interstate Pavement Condition (VDOT) Primary Road Pavement Condition (VDOT) Secondary Road Pavement Condition (VDOT) Structurally Sound Bridges (VDOT)
		Transit Fleet Condition	% of Transit Fleets Within Acceptable Replacement Age	# and Age of Transit Vehicles by Class (DRPT) — Acceptable Age by Vehicle Class (FTA)
Program Delivery	Expand Opportunities to Develop and Leverage Funds	Innovative Finance Index	State Match Rate for Transit Grants Local Funding Leveraged Through Revenue Sharing Program Ratio of Private Sector $ in PPTA Projects	State match rate (%) for transit capital projects $ of state funding matched by local partners $ amount of private money contributed to relevant projects (VDOT) — total $ cost of relevant projects (VDOT)
	Improve Cost-Effectiveness of Providing Programs and Services	Cost-Effectiveness Index	% of Projects Advertised On Time % of On-Time On-Budget VDOT Project Completion Transit Operating Costs DMV Customer Service Wait Times MVDB Website Response Time	# of Projects advertised on-time (VDOT) — Total # of projects advertised (VDOT) # of Projects delivered on-time & on-budget (VDOT) — Total # of projects delivered (VDOT) Operating costs (DRPT) — # of Transit Revenue Miles (DRPT) Avg. minutes of wait time per customer served (DMV) MVDB Website Response Time

Goal, Investment Priority, & KPI Table cont.

Goal	Investment Priority	Index	Metric	Measure	
Mobility, Connectivity, & Accessibility	Increase System Performance by Making Operational Improvements	Reliable Highway Operations Index	Incident Response Time	% of incidents cleared under 30 minutes (VDOT)	
			Managed Lanes Performance	% of time managed lanes above 45mph (VDOT)	
	Preserve and Enhance Statewide Mobility	Congestion Management Index	Interstate Congestion*	Interstate Congestion during AM Peak Hours (VDOT)	Interstate Congestion during PM Peak Hours (VDOT)
			HOV Use - Hampton Roads*	% of Travelers using HOV lanes - HR (VDOT)	
			HOV Use - Northern VA*	% of Travelers using HOV lanes - NOVA (VDOT)	
			Public Transportation Trips per capita*	Transit Trips (DRPT)	Virginia Population (Wheldon Cooper)
			Passenger Miles Saved By Customers of Commuter Assistance Agencies	PMT saved by commuter assistance customers (DRPT)	
		Non-Roadway Capacity	Port Container Yard Utilization	Port Container Yard Utilization (VPA)	
			Mileage of Rail Enhancements	Linear feet of rail track improvements from Rail Enhancement Fund (VPA)	
		Non-highway Goods Movement Index	Amount of Freight Moved by Rail/Barge from Port of VA	% of TEUs through VPA on rail/barge (VPA)	
	Improve the Interconnectivity of Regions and Activity Centers	Non-highway Interconnectivity Index	State Supported Intercity Rail Service - On-time performance	% of trains on-time - Regionals (DRPT)	% of trains on-time - Carolinian (DRPT)
			State Supported Intercity Rail Service - Ridership	# of passengers boarding intercity rail service (DRPT)	
	(no particular Investment Priority)	Passenger Accessibility Index	Transit Revenue Miles	Transit Revenue Miles (DRPT)	
			Construction / Maintenance Projects with Bike/Ped Components	# of completed projects w/ Bike/Ped components (VDOT)	# of completed projects w/o Bike/Ped components (VDOT)
			Incremental Increase in Subdivision Sidewalks	Incremental Subdivision sidewalk added (VDOT)	
Economic Vitality	Advance Key Economic Drivers by Making Strategic Infrastructure Investments	Freight Index	Shipments through the Port of VA	Shipments through the Port of VA (VPA)	
			Port of VA East Coast Market Share	% of east-coast TEUs through POV (VPA)	
	Reduce the Costs of Congestion to Virginia's Residents and Businesses	Cost of Congestion in Metro Areas	Cost of Congestion - Northern Virginia	Total $ lost to congestion in NoVA (TTI Report)	
			Cost of Congestion - Hampton Roads	Total $ lost to congestion in Hampton Roads region (TTI ReportX)	
			Cost of Congestion - Richmond	Total $ lost to congestion in Richmond region (TTI Report)	
Environmental Stewardship	Promote Sustainable Methods of Planning, Design, Operation, and Construction that are Sensitive to Environmental, Cultural, and Community Resources	Fuel Efficiency Index	Gasoline Fuel Usage	Total Gasoline Usage (TAX)	Virginia VMT - cars/light trucks only (VDOT)
			Diesel Fuel Usage	Total Diesel Usage (TAX)	Virginia VMT - heavy trucks only (VDOT)
		Environmental Impact Index	Ozone Exceedence Days	# of days Ozone AQI >99 by metro area / nonmetro county (DEQ)	
			Mobile Source Emissions	VOCs from transportation sources (VDOT)	NOx from transportation sources (VDOT)
Coordination of Land Use & Transportation	Preserve and Optimize System Efficiency Through Proactive Planning	Proactive Planning Index	Jobs/Labor Force Dissimilarity Index by City/County	# of jobs per city/county (VEC)	# of people in labor force by city/county (VEC)
			Per capita vehicle miles traveled	# of Virginia VMT (VDOT)	Virginia Population (Wheldon Cooper)
	Increase Travel Choices to Improve Quality of Life for Virginians	Access to travel choices index	Transit Revenue Miles	Transit Revenue Miles (DRPT)	
			Construction / Maintenance Projects with Bike/Ped Components	# of completed projects w/ Bike/Ped components (VDOT)	# of completed projects w/o Bike/Ped components (VDOT)
			Incremental Increase in Subdivision Sidewalks	Incremental Subdivision sidewalk added (VDOT)	