Virginia's Long-Range Multimodal Transportation Plan 2007-2035

Final Report

VISION, GOALS AND PERFORMANCE MEASURES

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ABBREVIATIONS AND ACRONYMS

CSS	Context Sensitive Solutions
DMV	Department of Motor Vehicles
DOAV	Department of Aviation
DOT	Department of Transportation
DRPT	Department of Rail and Public Transportation
HERS	Highway Economic Requirement System
LRTP	Long Range Transportation Plan
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NoVA	Northern Virginia
OIPI	Office of Intermodal Planning and Investment
SAFTEA-LU	Safe, Accountable, Flexible Transportation Equity Act – Legacy for Users
TDM	Transportation Demand Management
VDOT	Virginia Department of Transportation
VMT	Vehicle Miles of Travel
VPA	Virginia Port Authority

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REPORT CONTEXT

There must be a clear picture of what Virginia wants from its transportation system and how well the Commonwealth is progressing towards developing the desired transportation system. As demand for transportation grows and as budgets shrink, communicating this vision and Virginia's performance will become critical for public support of transportation programs.

This report presents a high-level assessment of the Commonwealth of Virginia's transportation goals and objectives, vision statement and performance measures. It is based on a review of pertinent documents (*VTrans2025*, the *Final Report of the Transportation Accountability Commission*, and the 2006 and 2007 *Transportation Performance Reports*) within the context of an ever-changing transportation environment.

This report is part of the development of VTrans2035, Virginia's long-range transportation plan. VTrans2035 succeeds VTrans2025, completed in 2004, as Virginia's 25-year multimodal blueprint for transportation investments and policies.

VTrans2025, with extensive public outreach and discussion, established a vision statement, identified statewide goals, and developed performance measures. This report reviews these VTrans strategic components in light of economic, social, environmental, and technological factors that are likely to affect transportation over the lifetime of the VTrans2035 plan. Such factors include budget limitations, carbon emissions and the aging of the driving population.

In 2006, Governor Timothy M. Kaine issued Executive Order 37, creating Virginia's Transportation Accountability Commission. The Commission's primary responsibilities were to:

- Review existing methods used to measure transportation system performance and agency performance and accountability;
- Recommend improvements to ensure that the transportation system delivers the maximum value to taxpayers; and that transportation agencies are held accountable for their performance, and
- Investigate quantifiable measures of the impact on communities of transportation projects.

The Transportation Accountability Commission developed its recommendations while the first edition of Virginia's Transportation Performance report was being developed. The Office of Intermodal Planning and Investment (OIPI) recently released the second edition – *Transportation Performance Report – 2007*.

This report addresses goals before the vision. This has been done to ensure that the critical goals are communicated through the vision statement.

VTRANS2035 POLICY GOALS

Specific Goals

VTrans2025 had six goals; there are seven VTrans2035 goals. Based on the recommendation of the Transportation Accountability Commission, the previous Quality of Life and Environmental Stewardship goal was expanded to have separate goals for Environmental Stewardship and Coordination of Transportation and Land Use. Therefore, the current VTrans2035 goals are:

- **Safety and Security** – provide a safe and secure transportation system.
- **System Maintenance and Preservation** – preserve and maintain the condition of the existing transportation system.
- **Mobility, Connectivity, and Accessibility** – facilitate the easy movement of people and goods, improve interconnectivity of regions and activity centers, and provide access to different modes of transportation.
- **Environmental Stewardship** – protect the environment and improve the quality of life for Virginians.
- **Economic Vitality** – provide a transportation system that supports economic prosperity.
- **Coordination of Transportation and Land Use** – facilitate the effective coordination of transportation and land use to promote livable communities.
- **Program Delivery** (previously, fiscal responsibility) – achieve excellence in the execution of programs and delivery of services.

Assessment

These goal areas:

1. **Relate to the concerns of Virginians**. The VTrans2025 team conducted dozens of listening and focus group sessions as well as telephone surveys to confirm that the goal areas capture the transportation needs and concerns of Virginians. Although all the goal areas were important, safety consistently ranked highest or nearly the highest in importance among all groups interviewed around the state.

2. **Are relevant to Virginia's transportation mission**. Mobility, Connectivity, and Accessibility and Economic Vitality describe positive outcomes that multimodal transportation investments should seek to maximize. Virginia maximizes these outcomes by considering the quantifiable benefits of its investments, how much they cost and how they are distributed around the state.

   System Maintenance and Preservation and Program Delivery describe internal processes to ensure that transportation decision-making is effective and transparent, its operations make efficient use of scarce resources and that it is responsive and flexible in responding to needs.

Environmental Stewardship and Safety and Security primarily relate to the potential negative consequences of providing and/or of using the transportation system and the need to avoid, mitigate and reduce these impacts as well as to protect system users.

Coordination of Transportation and Land Use encompasses several ideas, including the ability to shape development patterns to influence the efficiency of the transportation system and to balance supply and demand through a well managed and negotiated relationship between local, state and regional decision-makers.

3. **Are within the agencies' ability to influence**, although the degree of influence varies by goal area**.** The transportation agencies influence internal operations (Program Delivery) to the greatest degree followed by stewardship (System Maintenance and Preservation), avoiding negative consequences (Environmental Stewardship and Safety and Security), promoting positive outcomes (Economic Vitality and Mobility, Accessibility and Connectivity) and shaping development patterns (Coordination of Transportation and Land Use).

4. **Conform to requirements and guidelines**. Each goal area, with the exception of Program Delivery, correspond to one or more of the state transportation long-range "planning factors" that comprise the scope of the planning process in the federal transportation authorization legislation, the Safe, Accountable, Flexible Transportation Equity Act – Legacy for Users [1]. The planning factor language from the act is included in Appendix A.

The Commonwealth may wish to consider an additional goal area for Intergovernmental Cooperation. There is implied cooperation with the Coordination of Transportation and Land Use goal. However, more change in how federal money flows to regional and local agencies is foreseen for the future, suggesting the need for increased coordination and collaboration.

The current VTrans2035 goals relate to the concerns of Virginians, are relevant to Virginia's transportation mission, are within the agencies' ability to influence, and conform to requirements and guidelines.

A potential addition might be Intergovernmental Cooperation that reflects the increased focus on regional networks as well as transportation and land use coordination. Partnering at all levels across varying agencies will become increasingly important for successful implementation.

Transportation decision-making and service provision at all levels of government have an impact on Virginia's ability to accomplish its transportation goals. This interdependence is to some degree codified through current regulations and guidelines. For example, SAFETEA-LU specifies a high level of coordination between Metropolitan Planning Organizations (MPOs) and State Departments of Transportation (DOTs) in the development of Long Range Transportation Plans (LRTPs), and transportation improvement programs. Yet there is far more interaction among all

[1] 23 USC Sec. 135, (2006)

these agencies on transportation issues than can be regulated by law. Moreover, there is a growing trend towards larger, multi-jurisdictional (sometimes multi-regional) transportation groups that study, promote or help implement transportation improvements to achieve objectives like those described in the VTrans2035 goal areas. Other governmental or quasi-governmental bodies with some responsibilities in the transportation realm may appear in the future, creating a need for close cooperation with state DOTs. Lastly, the need for coordination will only accelerate as the unit of analysis for long-range transportation planning evolves fully to Virginia's multiregional Corridors of Statewide Significance. Bringing the visions for these corridors to implementation will require a high-level of coordination, with clear lines of responsibility, effective resource distribution and shared decision-making.

VISION STATEMENT

VTrans2025 Vision Statement

The VTrans2025 was articulated through the following vision statement:

> *Virginians envision a multimodal transportation system that is safe, strategic and seamless where:*
>
> 1. *Travel for people and goods is safe and uninterrupted*
> 2. *Transportation improvements protect the environment and the quality of life in Virginia's communities while enhancing economic opportunity*
> 3. *Transportation improvements respect and reflect the varied needs of Virginia's diverse communities and regions*
> 4. *Investments in transportation are adequate to meet current and future needs*
> 5. *Transportation decisions are guided by sustained, informed involvement of Virginia's community leaders and citizens*
> 6. *Full accountability and enduring trust is the hallmark of transportation planning and investment decisions throughout the Commonwealth*

Vision statements 1, 2, and 4 echo the goal areas, while statements 3, 5, and 6 describe positive working relationships between Virginia's transportation agencies and its stakeholders and partners. Each of these vision statements, including the overarching statement "safe, strategic and seamless" that is echoed in the VTrans2035 logo, is, without question, reasonable and each describes a desirable future. However, the statements could also be interpreted as mission statements that address internal agency operations more than bold aspirations that describe transportation's contribution to a better life from the perspective of Virginia's citizens. It is also believed that the vision statements can and should acknowledge issues and tradeoffs that Virginians face in the future.

Potential Enhancements

While no change to the basic vision statement is suggested, a few alternative explanatory statements are offered that could be used in reports, presentations or general discussions with the general public to better capture what transportation means in the daily lives and businesses of Virginians. One option is to articulate an all-encompassing long-range vision that speaks to a better future: These statements are tied to the goals in order to reinforce their use in discussions with the public.

The vision statement is a clear, concise statement and is graphically depicted in the VTrans2035 logo. As VTrans2035 is articulated to statewide, regional and local planners, elected officials, and other stakeholders, it would be beneficial to have statements that relate the goals more specifically to the daily lives and businesses of Virginians.

Safety and Security

Virginians do not believe that even a single traffic-related death is acceptable. Virginia will be the safest state for travel in the nation. Virginians will behave more responsibly when they drive, having benefited from a thorough education about traffic safety that is reinforced by aggressive enforcement of the Commonwealth's traffic laws. Drivers will also be more aware of the traffic space they share with more vulnerable travelers – pedestrians, bicyclists, and motorcyclists. Virginians will also travel smarter and safer because we will fully embrace and support safer technologies.

With coastal communities subject to hurricanes, Virginia will have safe multimodal evacuation routes.

Virginians understand that threats to this nation's security have brought heightened attention to transportation security at our ports, waterways, roads, airports, bridges and tunnels. Despite this, Virginians will continue to enjoy freedom of movement and be protected from any potential threats to our transportation system.

System Maintenance and Preservation

One of Virginia's most valuable assets is its transportation system. Virginians understand that, to realize our other transportation goals - quality of life, economic vitality, safety and security, mobility, connectivity and accessibility – we must maintain the integrity of this system. Virginia will not undermine its own fiscal and economic health and permit threats to public safety by allowing its transportation infrastructure to deteriorate. Virginia will continue its "maintenance first" philosophy and strive to have the best maintained transportation system in the nation.

Mobility, Connectivity, and Accessibility

Virginia's neighborhoods, communities, small towns and larger urban areas will be linked together and with the rest of the world by a well-maintained, efficient, cost-effective and safe transportation system.

The corridors that link our urban centers and trade centers with others around the country will become truly multimodal, for commerce and recreation.

Older Virginians will use convenient, affordable transportation for trips to the doctor, to the store and for other everyday needs.

Environmental Stewardship
As Virginia builds its next-generation transportation system, it will protect and conserve the rural spaces and natural resources that are the source of its beauty and attractiveness.

We will move people and goods safely and efficiently in a way that promotes a balanced and sustainable growth pattern, while positioning Virginia for economic sustainability.

We will continue to grow in such a way as to reduce greenhouse emissions and promote energy independency.

Virginia's transportation system will connect communities, people and commerce in a way that enhances our quality of life and ensures that future generations can enjoy an even better Virginia than one we know today.

In all large and small communities, bicycling will be a safe and easy way to travel short distances. Bicyclists will share road space with autos and buses.

Our children and grandchildren will be able to live in compact communities that have shops, parks and meeting places within a safe walking distance.

Economic Vitality
Virginia's transportation corridors will move people and commerce efficiently and cost effectively between its trade centers and the rest of the world.

Virginia's ports and airports will grow in their role as a trade crossroads to the entire east coast as a primary linkage to Midwest markets, and as a gateway to and from overseas markets.

Transportation and Land Use
Virginia's coordinated land use and transportation policies will focus new development in core areas, seize opportunities to rebuild communities in higher densities to make better use of existing public infrastructure and discourage significant development that is not planned for by the Commonwealth and that requires large public subsidies to serve.

Virginia will develop a transportation system that supports and nourishes livable, well-connected communities, and that helps business thrive.

Virginians will have a choice of living and working transportation arrangements suited to their lifestyle and working needs.

Program Delivery
Virginians value great customer service and on-time delivery. Virginia's transportation agencies will manage costs and deliver projects and services that Virginians will support and be willing to pay for.

PERFORMANCE MEASURES

In May, 2009, the Commonwealth of Virginia released the second assessment of its transportation system, the *Virginia Transportation Performance Report - 2007*. The performance report tracks key indicators related to the transportation goals. The Office of Intermodal Planning and Investment assembles and packages the report, which it derives from data provided by the various modal agencies.

This report provides an overview of the evolution and development of Virginia's transportation performance measurement system, and offers a review of the existing framework. The review focuses on measures that can be incorporated using both existing and additional resources.

Goal of Performance-Based Planning

Transportation agencies use performance measurement to assess the status of their achievement towards goals and objectives that they have set. These assessments guide future policy and investment decision-making and gauge the impacts of past decisions. Performance measures can help a transportation agency detect and correct problems, improve processes and justify budget proposals. They also provide information to the public about an agency's activities and accomplishments and in so doing, demonstrate transparency, accountability and confirm the efficient use of resources.

By adopting and applying performance measures, a transportation agency can provide a direction for the organization and keep agency staff focused on priorities. Managers can be confident of their choices by linking their decisions to desired effects as defined through performance measures.

State of Performance-Based Planning

Performance measures are used by state and regional transportation agencies to benchmark, assess, and guide improvements on many issues and goals including: investment choices and results, internal business operations, system conditions (e.g. mobility, safety, maintenance, etc), project delivery, and employee and customer satisfaction. Virginia's transportation agencies are among the top tier in using performance measures to track, report and improve the delivery of transportation infrastructure and policies.

Ideally, annual performance reporting is part of a vertically-integrated process that links long-range planning with short-range programming[2]. In Virginia, each performance measure

[2] Best Practices in Using Programmatic Strategies in Statewide Transportation Plans, National Cooperative Highway Research Program, Project 8-36 (67), Washington, D.C., August, 2007

belongs to a long-range goal area. As for programming, Virginia uses performance as one of several factors that influence the selection of projects in the transportation program. However, there is no direct relationship between project selections and performance linked to the goal areas.

One consideration that DOTs face in developing and using performance measures is setting criteria for success through targets or benchmarks. Measurements can be set to measure or compare the system to other systems or as an absolute numeric target. In either case, the target must be meaningful to spur positive actions and be set in consideration of the many mitigating factors that influence performance beyond an agency's control. With a few exceptions, Virginia currently uses trends (upward, downward, maintain current) to assess performance.

Many observers anticipate the inclusion of some form of performance measurement requirement in the next federal transportation authorization bill. The potential requirements range from working towards a consistent, basic level of performance among all states across performance categories, to linking performance measurement to funding allocations.

Typical measures are summarized below. Virginia uses or has considered using all of these measures in its transportation measurement reporting system.

- Customer satisfaction
- Pavement condition
- Ride or roughness index
- Bridge condition
- Crash rates and trends (fatal and injury)
- Level of service
- Travel time (re: congestion – length of delay)
- Bus fleet condition
- Runway conditions
- National Highway System intermodal connectors
- Change orders and increases to construction cost
- Routine maintenance
- Commitment of federal funds
- Highway capacity improvements
- Management of administrative costs
- Incident management (speed in removing crashed vehicles)
- Change in vehicle miles of travel (as a measure of more people using public transit)
- Consistency with transportation plans
- Change in Gross State Product
- Miles of bicycle trails
- Miles of walking trails

Virginia's Performance Management

Virginia has several efforts to provide citizens and taxpayers with a clear, straightforward accounting of the Commonwealth's stewardship of public resources and the quality and efficiency of the services it provides.

Virginia Performs

Each agency has developed goals, objectives and performance measures that are tracked and reported on annually, in an initiative known as *Virginia Performs*. The annual web-based report has two components:

1. An at-a-glance scorecard of 2-3 indicators measures, across each of Virginia's principal functions. The scorecard's transportation indicators address three areas: 1) infrastructure, 2) land use and 3) traffic congestion. The scorecard site also provides Virginia's national ranking in several of these areas (e.g., 29 out of 50 for bridge conditions). The organizing theme around the transportation scorecard is a single goal, "*Ensure Virginia has a transportation system that is safe, allows the easy movement of people and goods, enhances the economy, and improves our quality of life."*

2. An agency-specific performance assessment. Through the *Virginia Performs* web site, each agency provides measures in four categories of performance:

    - Key measures, a handful of critical indicators for an at-a-glance assessment of overall performance;
    - Productivity measures, which describe the level of efficiency in service provision;
    - Administrative measures, which relate to internal management functions and activities, and
    - "Other measures", specific to the agency's performance. These measures can number in the dozens and are aligned with an agency's service area and strategic plans. Virginia DOT (VDOT), for example, lists 51 measures under this category, covering condition, service delivery and financial performance.

Within *Virginia Performs*, each transportation modal agency (including Departments of Transportation, Aviation, Motor Vehicles, and Rail and Public Transportation as well as the Virginia Port Authority) has developed, and reports on, measures unique to their specific operations.

Virginia Department of Transportation Dashboard

Another transportation performance reporting mechanism developed by the Department of Transportation is the VDOT Dashboard. The Dashboard is a web-based reporting system with the ability to "drill down" to details such as locations and time periods. The Dashboard provides an at-a-glance view of operational performance in the areas of safety, congestion, incident

management and system condition. In the Dashboard, high-level performance measures are depicted as "fuel" gauges.

Transportation Performance Report

Virginia's *Transportation Performance Report* fills a need for a comprehensive, but not overly detailed, assessment between the executive-level components of the *Virginia Performs* report and the detailed measures used by the individual modes in their long-range plans. The Commonwealth published its first performance report in 2006, at roughly the same time as a recommendation of Virginia's first multimodal statewide plan, VTrans2025. Since that time, Virginia has expanded the number of measures it publishes, from 12 to 27. The Office of Intermodal Planning and Investment has established partnerships with its modal counterparts to establish data reporting and transfer protocols to ensure data consistency and reliability.

Transit Performance Report

The Department of Rail and Public Transportation publishes statewide performance reports on a two-year cycle, with the latest report having been published in December, 2007. The report covers rail and bus operations, transit demand and management performance, with the following measures:

- Ridership, compared to national average
- Transit miles operated, compared to the national average
- Operating cost per trip, compared to national average and neighboring states
- Trips per hour, compared to neighboring states
- Farebox recovery, compared to neighboring states
- Average age of vehicles, compared to national average

The report provides summary, statewide performance statistics as well as agency-specific reports.

Accountability Commission Report

In 2006, Governor Kaine empanelled a commission to review the Commonwealth's *2006 Transportation Performance Report* to improve public accountability and value to taxpayers. The Commonwealth of Virginia's Transportation Accountability Commission published the findings of its review in October, 2007. The Commission developed 16 findings and 15 recommendations on transportation performance measurement.

Other than relatively minor changes in wording emphasis and the separation of a combined economic vitality/land use coordination goal into two separate goals, the VTrans2035 and Commission goals and goal statements are almost identical. Some of the Commission's key recommendations included:

- Develop stretch targets for agency heads and set interim performance targets;
- Use an objective methodology based on a set of overarching goals as a tool to assist in project selection; and
- Develop regional goals and performance measures that are comparable to those developed for the state.

Many of the Commission's recommendations on performance measures have been implemented in the 2007 report, as have several of the process and management recommendations. For example, there is now complete alignment between state goals and the annual performance report goals.

Review of *Transportation Performance Report - 2007*

Linkage with Virginia Performs

The *Virginia Performs* website provides useful transportation performance information, in the context of the entire gamut of services that the state provides to all of its citizens. However, the relationship of the transportation measures in Virginia Performs and those in the *Transportation Performance Report – 2007* is somewhat unclear. Moreover, the measures between the two measurement systems are similar, but not identical, as illustrated in Table 1. Visitors to the *Virginia Performs* and to the *Transportation Performance Report – 2007 web* site may not understand the relationship between the two performance reports, or the reason for the two reports. This can be addressed by:

1. Providing an explanation of the relationship between *Virginia Performs* and the performance report, and their respective purposes.

2. Providing a "hot link" between the two web sites so that interested parties can navigate between the two sources of information.

3. Making modest adjustments to align the specific indicators and measures between *Virginia Performs* and the *Transportation Performance Report - 2007*, including the national ranking information, to minimize potential confusion.

Table 1. Virginia Performs Transportation Scorecard and Transportation Performance Report

	Virginia Performs **Indicator**	***Transportation Performance Report – 2007*** **Measure**
Infrastructure	% Bridges structurally deficient or functionally obsolete, and national ranking % of transit vehicles in need of replacement Reason foundation highway infrastructure cost-effectiveness rankings	% Bridges in fair or better condition % of transit vehicles in need of replacement

Table 1. Virginia Performs Transportation Scorecard and Transportation Performance Report (cont.)

	Virginia Performs **Indicator**	***Transportation Performance Report* – 2007 Measure**
Land Use	Population and household density by region % of population in urban areas, national raking	Population density by region
Traffic Congestion	Average commute time to work, national ranking Hours of traffic delay	 Hours of traffic delay

Organizational Factors

The National Cooperative Highway Research Report, 8-36(47), *Effective Organization of Performance Measurement*[3] cites five organizational factors that encourage an effective linkage between measurement and decision-making:

- **Top-Level Leadership –** Virginia's Transportation Secretariat, its legislature and its governor have worked with departmental heads throughout state government to set goals and monitor progress towards their achievement, through the *Virginia Performs* initiative.

- **Career/Senior Management Leaders –** The Secretary of Transportation has institutionalized its performance measurement program, and the leadership of the agencies which serve the Secretary will sustain the program and provide continuity through future changes in administrations. The Accountability Commission has also recommended that legislative or administrative units develop plans to foster longevity in performance measurement processes and to foster continual improvements through understanding and acting upon lessons learned. Subsequently, the Commonwealth's modal agencies have developed their own strategic plans that link specific actions to desired outcomes though goals, objectives and performance measures.

- **Performance Measurement Culture and Employee Accountability –** The performance measurement program is relatively new and the creation of an internal culture of employee buy-in is on-going. The production of reports on a regular cycle and the participation of the modal agencies foster the expectation that measurement results will influence agency actions and decision making and thus promote buy-in. The Accountability Commission recommended that financial incentives be tied to attainment of performance results.

- **Linking Measures and Actions –** The current reporting process can demonstrate the linkage between results and decisions to the public by describing specific actions that

[3] Cambridge Systematics, Effective Organization of Performance Measurement, National Cooperative Highway Research Program 8-36 Task 47, Transportation Research Board, Washington, D.C., 2006.

the Commonwealth has taken or will take to influence an outcome towards a desired trend or benchmark. In the 2007 performance report, the Secretary of Transportation prepares the public for a potential downturn in performance, due to funding challenges. The linkage does not extend directly to programming, however.

- **Decentralization of Responsibility –** While the Office of Intermodal Planning and Investment aggregates, interprets and publishes performance measurement information, many sources contribute to the effort. The statewide transportation performance measurement process involves all of the Commonwealth's transportation agencies as well as several divisions within each agency. The Department of Transportation, for example, contributes pavement, bridge and mobility information while the Department of Aviation contributes information on the number of enplanements.

- **Cyclical Reporting on Performance** – The Commonwealth's regular reporting cycle promotes credibility with external audiences and promotes a healthy dialogue on needs and resources.

Measure Review

The performance measures used in the *Transportation Performance Report – 2007* were reviewed considering factors such as the following:

- Data availability;
- Outcome vs. output focus;
- Understandability;
- Timeliness (Ability of the indicator to reflect performance changes within a reasonable and meaningful timeframe);
- Consistency with state of the practice; and
- Ability of organization to influence outcome.

The measures are consistent with the goals, are generally supported by reliable data and the Commonwealth in most cases has some control over the outcome of the measures. However, there are a few measures that could be modified or removed because they fail one or more of the evaluation factors (e.g., are not outcome oriented, have little relation to the Commonwealth's transportation mission or cannot be measured).

- There is a need for a clear explanation of how the alphabetic scores (like report card scores A to F) that summarize the measures under each goal area are derived.
- Consideration should be given to expanding the set of measures with specific, numeric targets rather than general upward or downward trend targets.
- There are issues and concerns, such as safety and infrastructure preservation, that are critical to Virginia's transportation mission and that should be reported on a permanent basis. There may also be issues or needs which arise that, while important, could be addressed by a relatively short term effort. For example, Virginia motorists could voice concerns over the conditions of signs on the state highway system. Transportation agencies could document how they addressed these concerns

for a limited period of time through transportation performance reports that tracked sign condition. Thus, consideration should be given to maintaining multiple sets of performance measures: one core set which is reported on annually and one variable set which address tactical responses to current issues.

A summary of the recommendations to existing measures are presented in Table 2. These recommendations are intended to strengthen or refine the measures in use currently, using data that for the most part, exists now or that can be collected with a minimum of effort. Additionally, we highlight three proposed additions:

Table 2. Summary of Performance Measure Suggested Changes

Goal Area	Recommendations	Comments
Safety and Security	Consider adding: Percent of traffic above posted speed (or 20% above) at select locations on Interstate system	Speed data are available at permanent count station locations
	Consider adding: Large truck at-fault crashes	Data should be available
	Consider adding: Rail crossing incidents	Data should be available
	Consider normalizing transit safety measure to vehicle miles/hours	Data are available
System Maintenance and Preservation	Consider adding: Airport pavement condition	Data should be available
	Consider adding: Roads and bridges in poor condition or exceeding "poor" thresholds	Data are available
	Transit vehicle fleet condition: Consider changing target to average age of fleets in states with similar populations/transit needs	Data should be available. *Virginia Performs* provides comparative data
Mobility, Connectivity and Accessibility	Consider adding: Percentage of non-interstate roadway sidewalk coverage	Consider for longer-term implementation, requires work with partner agencies
	Consider adding: Percentage of roadway system with bike lanes	Consider for longer-term implementation. May limit to larger jurisdictions, may need additional data collection
	Consider adding: Total mileage of bike trails	Consider for longer-term implementation. May limit to larger jurisdictions, may need additional data collection
	Consider adding: Employer participation in Transportation Demand Management (TDM) programs	Consider for longer-term implementation. May limit to larger jurisdictions, may need additional data collection
	Consider adding: Percentage of peak hour traffic operating at 50% of speed limit or below	Data are available from analysis of permanent count station location data

Table 2. Summary of Performance Measure Suggested Changes (cont.)

Goal Area	Recommendations	Comments
Mobility, Connectivity and Accessibility (cont.)	Consider adding: Number/percentage of intermodal facilities with direct access to National Highway System	Data should be available
	Consider using: Hours of delay per household	Currently using total hours of delay
	Consider adding: Number/rate of accidents involving seniors	Addresses senior safety issues
	Consider adding: Number of county and municipal comprehensive plans with explicit provisions for senior housing and/or transportation	Addresses senior mobility
	Consider adding: Number of transit riders aged 65 and older	DRPT reports senior transit ridership in *Virginia Performs*
Environmental Stewardship	Consider adding: Percentage of DOT fuel consumption defined as cleaner fuels	Consider for longer-term implementation. Data should be available
	Consider adding: Backlog of roadway mile noise barriers	Consider for longer-term implementation. Data should be available
	Consider adding: NAAQS exceedences	Data should be available
Economic Vitality	Consider adding: Total annual (per capita) congestion costs for large urban areas	HERS data may be used for this
	Consider adding: Transportation user benefits of roadway expansion elements of 6-year program versus costs	Would need to use spreadsheet or adapt statewide model
	Freight shipped measure: Consider reporting percentage of Port of Virginia's share of the total on east coast or competitive geography	Data should be available
Transportation and Land Use	Consider measuring density in corridors where higher densities are important to the success of a transit investment. Or, characterize corridor types and report average population densities within certain distance of corridor.	There is a strong correlation between density and transit use
	Consider adding: Percentage of corridor centerline miles of Corridors of Statewide Significance that conform to access management standards	Addresses efforts to link transportation and land use
	Consider adding: Number of comprehensive plans that require use of Context Sensitive Solutions (CSS) to coordinate land use and transportation	CSS is a planning and design process to match a transportation facility with the needs of the local community and the physical environment

Table 2. Summary of Performance Measure Suggested Changes (cont.)

Goal Area	Recommendations	Comments
Program Delivery	Consider adding: Average incident clearing/response time	Consider for longer-term implementation. Would require improved data quality
	Consider adding: Customer satisfaction with traveler information services	Consider for longer-term implementation. Would require survey
Consider Adding: Inter-governmental Cooperation	Consider adding: Dollar value of transportation funds that are "flexed	Flex funds require coordination between highway and transit agencies
	Consider adding: Dollar value of shared resources (staff, property)	An operational-level indicator of "silo-breaking" and resource sharing to accomplish agency-wide objectives
	Consider adding: Percentage of local long-range transportation plans reviewed/approved through the 527 process	An example of local/state agency cooperation in transportation-land use planning

1. **Senior Mobility**. The number of Virginians age 65 and over will roughly double from one million in 2010 to two million in 2035.[4] This statistic points to a need for new transportation policies and investments to serve a growing senior population, both in urban and non-urban areas. Seniors' transportation needs include creating more legible signs and signals, developing well protected walking areas, providing "one-stop" shopping for door to door transit service and increasing the supply of senior housing in transit-rich areas[5]. Several potential measures to consider include:

    - Number/rate of accidents involving seniors
    - Number of county and municipal comprehensive plans with explicit provisions for senior housing and/or transportation
    - Number of transit riders aged 65 and older (DRPT reports senior transit ridership in *Virginia Performs*).

2. **Intergovernmental Cooperation.** The success of VTrans2035 depends critically on a very high level of cooperation and coordination among public agencies at all levels of government. The land use/transportation linkage is one of the most important dimensions of this need. State agencies manage and operate the Commonwealth's transportation system, while counties and municipalities develop and implement land use policies. Other dimensions include a continuing evolution of the integration of statewide and MPO planning processes and continued and improved multi-regional cooperation in planning for investments in Corridors of National Significance.

[4] VTrans2035 Forecasts of Socioeconomic Activity and Travel Demand
[5] Northern Virginia Transportation Commission, *Meeting the Needs of Northern Virginia's Seniors*, 2006

We have suggested that intergovernmental cooperation be added as a goal area. The immediate impact of achieving this goal is first an improved process, and subsequently, better transportation and more efficient program delivery. Intergovernmental cooperation can be measured indirectly by:

- Dollar value of transportation funds that are "flexed"
- Dollar value of shared resources (staff, property)
- Percentage of local long-range transportation plans reviewed/approved through the 527 process

Appendix A
SAFETEA-LU TRANSPORTATION PLANNING FACTORS

Scope of Planning Process. –

In general. - Each State shall carry out a statewide transportation planning process that provides for consideration and implementation of projects, strategies, and services that will -

(A) support the economic vitality of the United States, the States, nonmetropolitan areas, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
(B) increase the safety of the transportation system for motorized and nonmotorized users;
(C) increase the security of the transportation system for motorized and nonmotorized users;
(D) increase the accessibility and mobility of people and freight;
(E) protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
(F) enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight;
(G) promote efficient system management and operation; and
(H) emphasize the preservation of the existing transportation system.

Appendix B
Transportation Performance Report - 2007 Measures

Safety and Security

Goal: Provide a safe and secure transportation system

Measure	Target
Number of Highway Fatalities, statewide and by urbanized region	100 fewer fatalities less than the 2005 level
Highway Fatality Rate, statewide, and by urbanized region, comparison with peer states	Downward trend
Highway Crashes and Crash Rate, statewide and by urbanized region	Downward trend
Aviation Fatal Crashes and Crashes, statewide	Downward trend
Transit Fatal Crashes and Crashes	Downward trend
Compliance with Maritime Transportation Security Act	Yes/No
Airports Participating in Voluntary Security Certification Program	Yes/No
Updated Safety and Security Plans	Yes/No

System Maintenance and Preservation

Goal: Preserve and maintain the condition of the existing transportation system

Measure	Target
Percentage of Interstate and Primary Roads in Fair or Better Condition	82%/upward trend
Percentage of Bridges in Fair or Better Condition	Upward trend
Percentage of Transit Vehicles in Need of Replacement (average age of fleet)	Downward trend

Mobility, Connectivity, and Accessibility

Goal: Facilitate the easy movement of people and goods, improve interconnectivity of regions and activity centers, and provide access to different modes of transportation

Measure		Target
Public Transportation Trips per Capita		Upward trend
Transit Revenue Miles		Upward trend
HOV Use	Hampton Roads	Upward trend
	NoVA	
Hours of Delay	Virginia Beach	Downward trend
	NoVA	
	Richmond Area	
Park and Ride Spaces		No target

Measure	Target
Percentage of Virginia population over 16 that biked to work, comparison to peer states	No target indicated, but results compared to national average and neighboring states.
Percentage of Virginia population over 16 that walked to work, comparison to peer states	Upward trend
Amtrak on-time performance	Upward trend

Environmental Stewardship

Goal: Protect the environment and improve the quality of life for Virginians

Measure	Target
Tons per year of Mobile Source Emissions	Downward trend
Tons per Year of Mobile Source Greenhouse Gas Emissions	Downward trend and below 48.27 million tons
Fuel Usage pre Capita	Downward trend
Acres of Wetlands Replaced	Maintain current trend, ratio of wetlands replaced to impacted >1.1

Economic Vitality

Goal: Provide a transportation system that supports economic prosperity

Measure	Target
Transportation Sector's Employment	Upward trend
Freight Shipped Through the Port of Virginia	Upward trend
Commercial Airport Enplanements	Upward trend
Percentage of Transportation Expenditures on Small, Women and Minority Owned Businesses	Upward trend, 40% target

Coordination of Transportation and Land Use

Goal: Facilitate the effective coordination of transportation and land use plans and decisions to promote livable communities

Measure		Target
Jobs Housing Balance	Northern Virginia	Downward trend
	Richmond Region	
	Hampton Roads	
Population Density	Northern Virginia	Upward trend
	Richmond Region	
	Hampton Roads	

Measure		Target
VMT per Capita	Northern Virginia	Downward trend
	Richmond Region	
	Hampton Roads	

Program Delivery

Goal: Achieve excellence in the execution of programs and delivery of services

Measure	Target
Administrative Expenditures Relative to Total Expenditures	Downward trend
Operating Cost per Transit Trip	Downward trend
Maintenance and Construction Projects Completed on-Time/Budget	77% target and upward trend
DMV Customer Service Center Wait Times	20 minute target and downward trend
VDOT Customer Satisfaction	Upward trend