Transportation Performance Management (TPM)

Performance management is a strategic approach to connect investment and policy decisions to help achieve performance goals. Performance measures are indicators of progress toward attaining a goal, objective or target (a desired level of future performance). Current federal legislation requires state departments of transportation (state DOTs), metropolitan planning organizations (MPOs), and transit agencies to conduct performance-based planning by setting data-driven performance targets for several transportation performance measures, and program transportation investments that are expected to result in achievement of the targets.

The transportation performance measures, which were prescribed through rule-making, address the national goal areas of:

- Improving Safety;
- Maintaining Infrastructure Condition;
- Reducing Traffic Congestion;
- Improving the Efficiency of the System and Freight Movement;
- Protecting the Environment; and
- Reducing Delays in Project Delivery.

State DOTs are required to establish statewide targets within one year of the performance measures rule release date. The MPOs then have 180 additional days after the state DOT establishes targets to either support the statewide targets or adopt their own quantifiable targets for the MPO’s planning area.

Development of the STIP

The Florida Transportation Plan (FTP) is the single overarching statewide plan that guides Florida’s transportation future. The core component of the FTP is the Policy Element, which serves as Florida’s long-range transportation plan under both state and federal law. It defines the goals, objectives, and strategies for Florida’s transportation future over the next 25 years and provides guidance in making transportation decisions. The Policy Element also establishes the framework for expenditure of state and federal transportation funds flowing through the Department’s Work Program.

The Program and Resource Plan (PRP) provides the link between the FTP, the Department’s numerous programs (as reflected in the project-specific Work Program), and the Department’s Legislative Budget Request (LBR). It contains the specific long-range goals and objectives from the FTP, as well as selected operating policies and performance measures, which guide the development of each program in the Department.

The PRP consists of a complete 10-year projected budget for all major agency functions and programs. The PRP is a summary document that contains the approved program alternatives and funding levels by fiscal year to accomplish program goals and objectives within expected revenue. The document reports the Department’s planned budget in several different ways including by product area, product support, operations and maintenance, administration, etc. It also provides summary information by funding source. The PRP serves as a link between the FTP, a planning document, and the Adopted and Tentative Work Programs, documents listing all Department projects and expected spending out to a five-year horizon. The PRP establishes the programming framework by which the Work Program is developed.

The process of developing the Work Program involves a series of Program Planning Workshops which are held in May and June of each year. These annual workshops provide an opportunity for the Executive
Team (i.e., FDOT Secretary, Assistant Secretaries, and District Secretaries) to set priorities, provide direction, and make funding decisions. The primary objective of these workshops is to determine the level of funding to be allocated over the next 5 to 10 years, which is documented in the 10-year PRP.

During the workshops, presentations are made which provide an assessment of prior years’ performance, projections for future performance, and recommended funding levels that ensure all preservation related performance objectives will be met annually as outlined in the Five-Year Work Program and beyond. Executive direction on funding level and priority is also provided during the workshops. The FTP goals and associated performance indicators are used to “set the stage” for these discussions.

After funding levels and allocations have been established, discussions on project selection and prioritization commences. Local projects are included in those discussions. The state’s 27 MPOs develop their list of priority projects in coordination with the Department’s District Offices. Outside of MPO planning areas, the Department programs projects in cooperation with affected local elected and appointed officials.

The Department programs transportation projects into the Work Program based upon local priority, funding availability, and project schedules. The Department’s assessment of needs includes an identification of highly congested roadways, safety and security considerations, access to business and industry, links to military facilities and improvements to major economic assets such as seaports, airports and rail facilities. Project needs are identified by the Departments District Offices in conjunction with local officials with responsibility for transportation.

These project priorities serve as the basis for the district-wide prioritization process. The Department’s Central Office reviews the District’s programming of projects to ensure adherence to the Department’s policies and procedures, established performance measures, and federal requirements. The final list of projects that result from the project selection and prioritization process becomes the Department’s Five-Year Work Program. The new STIP becomes effective in October of each year, upon FHWA and FTA approval, based on programming in the Department’s Adopted Work Program from the preceding July 1st of the same calendar year.

**STIP Relationship to Performance-based Plans**

The mission of the Department is to provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities. As previously explained, the PRP contains the specific long-range goals and objectives from the FTP, as well as selected operating policies and performance measures, which guide the development of each program in the Department.

The Department worked in collaboration with the MPOs and providers of public transportation, to the extent practicable, to establish statewide targets. The program of projects in the STIP are established to help ensure significant progress is made towards achieving the statewide targets of the Department’s performance-based plans.

**A. Safety Performance Measures**

The Safety performance measures established by the Federal Highway Administration (FHWA) support the data-driven performance focus of the Highway Safety Improvement Program (HSIP). The measures and statewide targets that have been established are listed below.
Federal regulations require states to link the investment priorities contained in the STIP and TIP to achievement of performance targets. States and MPOs must describe the anticipated effect of the investment priorities toward achieving the performance targets. States must consider performance targets in the development of the STIP. FHWA and FTA provides maximum flexibility in both target setting and in practices to achieve targets.

FDOT adopted Vision Zero in 2012. This, in effect, became FDOT’s target for zero traffic fatalities and quantified the policy set by Florida’s Legislature 35 years ago (Section 334.046(2), Florida Statutes, emphasis added):

“The mission of the Department of Transportation shall be to provide a safe statewide transportation system...”

Safety is the first goal of the Florida Transportation Plan, the state’s long-range transportation plan, and the emphasis of the Strategic Highway Safety Plan. The FTP, published in 2015, includes the number of transportation-related fatalities as an indicator to watch. The SHSP, published in 2012 and, most recently, in 2016, specifically embraces Vision Zero (Driving Down Fatalities) and identifies potential strategies to achieve zero traffic deaths.

Project Selection and Development
Transportation projects are identified and prioritized with Florida’s 27 MPOs and non-metropolitan local governments. Data is analyzed for each potential project, using traffic safety data and traffic demand modeling, among other data. The Florida PD&E Manual requires the consideration of safety when preparing a proposed project’s purpose and need, and defines several factors related to safety, including crash modification factor and safety performance factor, as part of the analysis of alternatives. MPOs and local governments consider safety data analysis when determining project priorities.

Between 2015 and 2018, FDOT worked with the MPOs to establish both the state and MPO safety targets. For the first time, FDOT had a conversation specifically with the MPOs about safety goals. The projects in the STIP reflect the collaboration between the MPOs and FDOT in recognizing those targets and jointly implementing strategies to achieve them.

FDOT Work Program Offices hold Program Planning Workshops annually, to determine the level of funding to be allocated over the next 5 to 10 years to preserve and provide for a safe transportation system. After projects are prioritized collaboratively by the MPOs, local governments and FDOT districts, certain funding types are then further analyzed and prioritized by FDOT Central Offices; for example, the Safety Office is responsible for the Highway Safety Improvement Program (HSIP) and Highway Safety Program (HSP) and

<table>
<thead>
<tr>
<th>FHWA Safety Performance Measures</th>
<th>Annual Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of fatalities</td>
<td>0</td>
</tr>
<tr>
<td>Rate of fatalities per 100 million vehicle miles traveled (VMT)</td>
<td>0</td>
</tr>
<tr>
<td>Number of serious injuries</td>
<td>0</td>
</tr>
<tr>
<td>Rate of serious injuries per 100 million vehicle miles traveled (VMT)</td>
<td>0</td>
</tr>
<tr>
<td>Number of non-motorized fatalities and serious injuries combined</td>
<td>0</td>
</tr>
</tbody>
</table>
the Systems Implementation Office is responsible for the Strategic Intermodal System (SIS). Both the Safety and SIS programs consider the reduction of traffic fatalities and serious injuries in their criteria for ranking projects.

Florida design and construction standards include safety criteria and countermeasures, which are incorporated in every construction project. These safety measures are implemented as part of the total project, and are funded using a combination of state and/or federal funds in addition to allocated federal safety dollars. All projects in this STIP inherently support progress towards achieving the performance targets, through their adherence to the Department’s policies, programs, and standards related to safety.

Policies, Programs, and Standards
Over the last few years, FDOT has initiated new policies and programs to further support the achievement of zero traffic fatalities. These new initiatives are reflected in the projects in this STIP and include:

Complete Streets: FDOT adopted its Complete Streets policy in 2014, and provided implementation guidance in its Context Classification Handbook in 2017. The publication of the Florida Design Manual in 2018 kicked off implementation of Complete Streets for all state road projects. This STIP includes the first projects designed using the updated FDM.

Manual on Intersection Control Evaluation: This manual was first published in November 2017. Intersections play an essential role in the roadway network, and account for a high percentage of all crashes, especially severe crashes producing fatalities and serious injuries. This manual update incorporates changes to reflect the FDOT Complete Streets policy, building in flexibility and innovation to ensure roads are developed based on context. The manual includes guidance for alternative intersections, using roundabouts, cross-over-based designs, and U-turn-based designs, for example. ICE was used to design some projects in this STIP.

Connected and Automated Vehicles: In 2018, FDOT ramped up its efforts to research and deliver connected vehicle technology to reduce traffic crashes, and published its first Connected and Automated Vehicles (CAV) Business Plan in January 2019. This STIP includes funding specifically to support this effort.

Highway Safety Manual: FDOT recognizes the importance of the American Association of State Highway Transportation Official (AASHTO) Highway Safety Manual. Through dedicated and consistent training and messaging over the last several years, the HSM is now an integral part of project development and design. The HSM was used for both safety and capacity projects in this STIP.

Therefore, the program of projects in the STIP demonstrates support towards achieving the zero safety targets established by the Department.

B. Asset Management Plan (Pavement and Bridge Conditions)
Asset Management is a strategic process for managing physical assets in a state of good repair over their lifecycle at minimum practicable cost. The Asset Management Plan regulation requires State DOTs to develop a Transportation Asset Management Plan (TAMP) for the National Highway System (NHS) to improve or preserve the condition of the Interstate and non-Interstate NHS pavements and the NHS bridges.

The FHWA Pavement and Bridge condition performance measures and statewide targets that have been established are listed below.
Transportation Performance Management (TPM)

<table>
<thead>
<tr>
<th>FHWA Pavement Performance Measures</th>
<th>2-Year Target</th>
<th>4-Year Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Interstate pavements in Good condition</td>
<td>-</td>
<td>≥ 60.0%</td>
</tr>
<tr>
<td>% of Interstate pavements in Poor condition</td>
<td>-</td>
<td>≤ 5.0%</td>
</tr>
<tr>
<td>% of non-Interstate NHS pavements in Good condition</td>
<td>≥ 40.0%</td>
<td>≥ 40.0%</td>
</tr>
<tr>
<td>% of non-Interstate NHS pavements in Poor condition</td>
<td>≤ 5.0%</td>
<td>≤ 5.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FHWA Bridge Performance Measures</th>
<th>2-Year Target</th>
<th>4-Year Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of NHS bridges classified as in Good condition by deck area</td>
<td>≥ 50.0%</td>
<td>≥ 50.0%</td>
</tr>
<tr>
<td>% of NHS bridges classified as in Poor condition by deck area</td>
<td>≤ 10.0%</td>
<td>≤ 10.0%</td>
</tr>
</tbody>
</table>

Note: Per the federal regulations, no more than 5 percent of the Interstate pavement can be in Poor condition and no more than 10 percent of total deck area of NHS bridges can be classified as structurally deficient (Poor).

The Department has a long history of leadership in the field of transportation asset management. The Department’s asset management practices for pavements and bridges (PM2) are mission-driven and are incorporated in the agency’s goals, operating polices, plans and procedures. This business practice allows the Department to bring together a variety of disciplines and stakeholders (internal and external) to achieve a common understanding and commitment to maintain or improve performance. It also demonstrates the Department’s commitment to sustainable asset stewardship, effective use of resources and justifications for funding.

Policies and Standards
Florida has a long-established and highly effective approach to preservation and maintenance of its pavement and bridge assets. The current practices for asset management are rooted in the Department’s strong adherence to performance targets and an organizational philosophy, supported by legislative mandate, to maintain the existing infrastructure before pursuing capacity projects.

The Department is mandated by statute, s. 334.046, to preserve the state’s transportation infrastructure to specific standards:

- Ensuring that 80 percent of the pavement on the State Highway System (SHS) meets Department standards;
- Ensuring that 90 percent of Department-maintained bridges meet Department standards; and
- Ensuring that the Department achieves 100 percent of the acceptable maintenance standard on the SHS.

The Department defines the State of Good Repair (SOGR) as the above standards for pavements and bridges which were derived over time from the use of output measures and engineering input, to evaluate the performance of the transportation system, long before outcome-based measures were required. These standards encompass the targets that have been established for the federal pavement and bridge performance measures.
Project Selection and Development

Pavement and bridge maintenance or improvement projects listed in this STIP were identified in accordance with the Department’s Transportation Asset Management Plan (TAMP).

The TAMP describes the Department’s risk-based, data-driven approach to identifying projects that support the achievement of the state’s pavement and bridge performance standards as well as the targets established for the Interstate pavements, non-Interstate NHS pavements and NHS bridges. The TAMP policies, procedures and processes support the Department’s continued efforts to provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of Florida’s environment and communities. That is the mission of the Department, which reflects the national goals for the federal-aid highway system.

As described in the TAMP, the Department collects data, performance and condition information for state and locally owned pavement and bridge assets. For pavements, information is stored in the Department’s Pavement Management System (PMS). An integral part of that system is the Florida Analysis System for Targets (FAST) which relies on customized regression equations to forecast performance. This allows for a more detailed forecast analysis, allowing pavement management staff to run a variety of funding scenarios with a Benefit-to-Cost algorithm, to help optimize project selection for decision-makers to ensure there is no gap between existing conditions and SOGR conditions. Similarly, for bridges the Department’s bridge management system, AASHTOWare™ Bridge Management Software (BrM), ensures there is no gap between the existing conditions and SOGR conditions. The Department uses the Project Level Analysis Tool (PLAT) and data from BrM to customize and evaluate the impact of the timing of projects. Projects are placed in any year of a ten-year period and the tool will project the element level of deterioration until the project is executed. A Network Analysis Tool (NAT) can also be used that combines the results of the PLAT to provide a network level perspective on the tradeoffs between fund and performance of the entire bridge inventory or specified portion of the inventory.

The projects in this STIP were selected based on FAST and BrM analyses, availability of funding, and review by FDOT engineers. This process ensures that the projects prioritized in this STIP provide the most feasible gains toward the achievement of the PM2 targets.

C. System Performance

To improve the efficiency of the surface transportation system, FHWA established measures to assess the reliability of the Interstate, non-Interstate NHS and truck travel time on the Interstate. The FHWA performance measures and statewide targets that have been established are listed below.

<table>
<thead>
<tr>
<th>FHWA System Performance Measures</th>
<th>2-Year Target</th>
<th>4-Year Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of person-miles traveled on the Interstate that are reliable</td>
<td>75.0%</td>
<td>70.0%</td>
</tr>
<tr>
<td>% of person-miles traveled on the non-Interstate NHS that are reliable</td>
<td>-</td>
<td>50.0%</td>
</tr>
<tr>
<td>Truck travel time reliability ratio (TTTR) on the Interstate</td>
<td>1.75</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Note: Florida is currently in attainment, therefore the congestion mitigation and air quality improvement program (CMAQ) measures do not apply at this time.
The Strategic Intermodal System (SIS) includes all Interstates and 39 percent of the total non-Interstate NHS mileage statewide. The SIS is a primary focus of the Department’s capacity investments and is Florida’s primary network for ensuring a strong link between transportation and economic competitiveness. Therefore, the focus on improving performance of the SIS goes hand-in-hand with improving the NHS, which is the focus of the FHWA’s TPM program.

**Project Selection and Development**

The identification of needs on the SIS is the result of cooperative planning efforts involving coordination between Central and District offices, Metropolitan Planning Organizations (MPOs), Florida Turnpike Enterprise (FTE), Expressway Authorities, local governments and modal partners from around the state. The assessment of needs includes identification of highly congested roadways, safety and security considerations, access to business and industry, links to military facilities and improvements to major economic assets such as seaports, airports and rail facilities. Project priorities identified by the Department district offices and modal plans take into account the MPO, local government and modal plan priorities.

These priorities serve as the basis for the statewide prioritization process. The Department’s Strategic Investment Tool (SIT) tool prioritizes and scores SIS highway projects based on SIS Strategic Plan goals using quantitative measures for each goal. The SIT is also updated when the FTP goals are updated. By default, the SIT weights each goal equally but the weightings can be adjusted to place additional emphasis where needed. After prioritization is completed, projects are reviewed to determine if existing funding commitments, phasing or timing issues, availability of SIS funding and geographic distribution affect them.

Periodically, the Department conducts reviews and studies sources of congestion. Recently, a methodology has been developed and refined to annually identify freight bottlenecks on the SIS using vehicle probe data and travel time reliability measures. Identification of bottlenecks and estimation of their delay impact aids the Department in focusing on relief efforts and ranking them by priority. In turn, this information is incorporated into the SIT to help identify the most important SIS capacity projects to relieve congestion.

Needs on non-SIS capacity facilities are based on local and regional considerations such as support of local comprehensive plans to include economic objectives and land use activities. Project needs are identified by district offices in conjunction with local and regional transportation partners. Non-SIS capacity projects may add capacity, improve highway geometry, provide grade separations, improve turning movements through signalization improvements and storage capacity within turn lanes, and include other enhancement phases which support a main capacity improvement.

The Freight Mobility and Trade Plan (FMTP) is a multimodal freight needs plan that focuses on the movement of freight through the supply chain across all freight related modes. Florida’s Interim Multimodal Freight Network was established based on the statutory requirements identified in the FAST Act and includes all portions of the SIS geared toward freight movement. The Department, in consensus with its agency partners and freight stakeholders, developed a definition for a freight project to help identify eligible freight project needs.

**Freight Project:** a project will be considered a freight project in Florida if it is on the Florida Freight Network and satisfies one of the three components below.
Transportation Performance Management (TPM)

- **Freight Focused**: the primary purpose of the project is to address a specific freight transportation need
- **Freight Related**: the primary purpose of the project is to address multiple transportation concerns, of which freight is one element
- **Freight Impacted**: the primary purpose of the project is to address general transportation needs, however freight mobility may be positively affected

This definition not only allows for multimodal projects, but also parallels the definition of a freight project in current federal legislation.

Projects are prioritized based on 26 criteria that satisfy specific objectives and strategies of the freight plan. In general, freight projects are weighted using a 5-point importance scale. Once projects are scored, results are analyzed and the project is placed into one of four priority groupings, regardless of mode or whether the project is located within an urban or rural area. The groupings are Very High, High, Medium and Low/Insufficient Info. Projects assigned to Very High and High priority groups implement many of the state and national freight goal areas and get funded. Medium priority group projects likely implement some of the state and national goals and are worth state investment in the long term. Low/Insufficient Info priority group projects either don’t meet the state and national freight goals or simply are not fleshed out enough to allow adequate prioritization.

Therefore, projects have been selected and funding has been allocated in this STIP, that once implemented, will demonstrate support toward achievement of the Department’s system performance targets.

**Transit Asset Management**

Every transit agency that receives FTA funds must develop a Transit Asset Management (TAM) plan. The new federal performance measures look specifically at the percentage of revenue vehicles that have exceeded their Useful Life Benchmark (ULB), the percentage of non-revenue and service vehicles that have exceeded their ULB and percentage of facilities with a condition below 3.0 on the Federal Transit Administrator’s Transit Economic Requirements Model (TERM) Scale. Based on size constraints, the FTA has established two tiers of agencies:

- **Tier I Agency**: operates rail OR has 101 vehicles or more all fixed route modes, OR has 101 vehicles or more in one non-fixed route mode
- **Tier II Agency**: a sub-recipient of FTA 5311 funds, OR is an American Indian Tribe, OR has 100 or less vehicles across all fixed route modes, OR has 100 vehicles or less in one non-fixed route mode

Because the Department is the direct recipient of FTA funds for its subrecipients, the Department’s Transit Office sponsored a group TAM plan for those providers. The participants in the FDOT Group TAM Plan are comprised of the Section 5311 rural Program and open-door Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities FDOT subrecipients. Tier I agencies are not eligible for group plans and Tier II agencies who are direct recipients of Section 5307 Urbanized Area Formula Grants are responsible for their own TAM plans.

For all Tier I and Tier II agencies, including those providers under the FDOT Group TAM Plan, any Transportation Improvement Program (TIP) document or Metropolitan Transportation Plan (MTP) adopted after October 1, 2018 will incorporate the performance targets from the TAM Plans of providers.
within the MPO as well as the regional performance measures adopted by the MPO as a whole. The planning processes for each MPO will integrate (directly or by reference) the performance measures and targets described in the applicable Tier I and Tier II TAM plans.

The State of Good Repair (SOGR) performance targets for the FDOT Group TAM Plan are as follows:

<table>
<thead>
<tr>
<th>FTA SOGR Performance Measure</th>
<th>Asset Class</th>
<th>FY2019 Asset Condition</th>
<th>FY2020 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of revenue vehicles met or exceeded ULB*</td>
<td>Automobile</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>15%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Cutaway Bus</td>
<td>28%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Mini-Bus</td>
<td>31%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Van</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>SUV</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Van</td>
<td>47%</td>
<td>34%</td>
</tr>
<tr>
<td>% of equipment or non-revenue vehicles met or exceeded ULB*</td>
<td>Non-revenue/service automobile</td>
<td>67%</td>
<td>67%</td>
</tr>
<tr>
<td></td>
<td>Trucks and other rubber tire vehicles</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Maintenance equipment</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Route and scheduling software</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>% of assets with condition rating below 3.0 of FTA TERM scale</td>
<td>Administration</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>6%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Investment decisions for asset replacement in the FDOT Group TAM Plan inventory will be made with the goal to maintain or improve the percentage of vehicles, equipment, and facilities in an adequate or better condition as indicated in Appendix 2 of the FDOT Group TAM Plan. FDOT and its subrecipient transit providers shall monitor all assets for unsafe conditions. Identifying an opportunity to improve the safety of an asset, however, does not necessarily indicate an unsafe condition. When an unacceptable safety risk associated with an asset is identified, that asset will be ranked with higher investment priority to the extent practicable.

In the STIP, transit funds are used for operating assistance and capital improvements, including vehicle acquisitions. Funds are also provided to public agencies for commuter assistance activities such as ridesharing.
Consistency
The STIP is consistent with the Department’s performance-based plans. As previously stated, the Program and Resource Plan (PRP) guides the development of each program in the Department. Based on those plans, which are designed to achieve the specific goals and objectives from the FTP, the program of projects in the STIP are derived. Performance measures are then used to help monitor progress toward attainment of the Department’s mission.