Transportation Performance Management

This section outlines the anticipated effect of the Statewide Transportation Improvement Program (STIP) toward achieving the performance targets in identified performance areas.

The Federal Highway Administration (FHWA) defines Transportation Performance Management (TPM) as a strategic approach that uses system performance information to make investment and policy decisions to achieve national performance goals. In short, TPM:

- is systematically applied;
- provides key information to help decision makers understand the consequences of investment decisions across transportation assets or modes;
- improves communication between decision makers, stakeholders, and the traveling public; and
- ensures targets and measures are developed in cooperative partnerships and based on data and objective information.

Congress developed, through the Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Fixing America's Surface Transportation (FAST) Act, new rules for states and metropolitan planning organizations (MPOs) to collect data and establish performance targets, to be utilized in transportation planning and programming processes. The FAST Act requires that the statewide planning process provide for the establishment and of a performance-based approach to transportation decision making to support national goals. The new federal performance measurement requirements focus on safety, pavement condition, bridge condition, system travel time reliability and freight movement reliability, congestions mitigation and air quality, and public transportation.

Performance Measures

The Michigan Department of Transportation (MDOT) coordinates with MPOs, regional planning agencies, county road associations, transit agencies and other agencies, in developing methodology, assumptions, and target setting for the performance measures. These stakeholder groups are involved when determining the performance measures, data sets, methodology, and targets. Statewide performance targets will be set first, in accordance with federally established compliance dates, followed by MPO establishment of performance targets. The following chart shows the performance measures and their targets.

This 2020-2023 STIP describes the anticipated effect of the STIP toward achieving the performance targets in identified program areas.

Progress towards the goals identified through the Transportation Performance Measures will be measured and the financial plan and investment strategies will guide project selection. Ultimately, the investment strategies identified with the Michigan Transportation Asset Management Plan will support the MDOT Call for Projects process, the Five-Year Transportation Program and the STIP/Transportation Improvement Plan (TIP) project selection. The progress toward performance targets will guide investment strategies and will influence funding allocations and decisions on project selection to be included in the STIP and TIPs.

Performance Measures	Performance Targets
Safety	• Fatalities • Fatality Rate (per 100 Million vehicle miles) • Serious Injuries • Serious Injury Rate • Non-motorized Fatalities and Serious Injuries
Pavement Condition and Bridge Condition	• Percent of Interstate Pavement in Good and Poor Condition • Percent of Non-Interstate National Highway System (NHS) in Good and Poor Condition • Percent of National Highway System (NHS) Bridges in Good Condition • Percent of National Highway System (NHS) Bridges in Poor Condition
System Performance: Travel-Time Reliability Freight Reliability	• Interstate Travel-Time Reliability • Non-Interstate NHS Travel-Time Reliability • Truck Travel-Time Reliability Index
Congestion Mitigation and Air Quality (CMAQ)	• Peak-Hour Excessive Delay per Capita • Percent of Non-single Occupancy Vehicle Travel • Total Emissions Reduction
Public Transportation	• State of Good Repair • Fatalities • Injuries • Safety Events • System Reliability

MDOT Investment Strategy Process
Department goals for state trunkline pavement and bridge condition are established by the State Transportation Commission (STC) and influence the manner in which MDOT invests in and maintains state-owned transportation infrastructure. To do this, MDOT conducts investment planning. Investment strategies guide the allocation of capital resources to achieve the goals established. Investments are focused where they will most benefit the public, consistent with the direction established.

Investment strategies are developed utilizing anticipated available funding, life cycle planning, and performance gap analysis, and the results of risk analysis. Annually, MDOT uses updated information on available funding, and the estimated cost of future work by work type, to perform life cycle analysis for pavement and bridge assets. This analysis is produced for strategies that would:

- Achieve and sustain a desired State of Good Repair (SOGR);
- Improve or preserve the condition of the pavement and bridge assets;
- Achieve the constrained Michigan targets for asset condition; and
- Achieve the national goals.

For each strategy, gaps in funding are identified. The risks associated with each strategy are also analyzed. The various strategies are also analyzed and compared to determine how they would impact the overall goals and objectives set by the State Transportation Commission (STC). The desired mix of fixes, investment levels, and funding targets are developed for the selected investment strategy and provided in the Highway Call for Projects memo. They form the basis for project selection and prioritization. The selected investment strategy is communicated to the public by way of the annual Five-Year Transportation Program.

Linking MDOT Investment to Performance Measures

MDOT's investment in order to achieve the constrained Michigan targets for asset condition are reflected in the 2017-2020 STIP program of projects. The following table identifies which performance areas are addressed by fiscal year (FY) 2018-2020 MDOT investment categories. Each investment category may fully support (● in the chart), partially support (◑ in the chart), or not support a performance area. The investment categories are made up smaller investment types. A key to the MDOT investment categories can be seen below the table:

MDOT INVESTMENT CATEGORIES		LINKED TO FEDERAL PERFORMANCE MEASURES					
		PERFORMANCE AREA					
	FY 2018-2020 Annual Average (in millions)	Safety	Pavement Condition	Bridge Condition	Reliability & Freight	Congestion Mitigation & Air Quality	Public Transportation
Road Rehabilitation & Reconstruction	$469.7	◐	●		◐		
Capital Preventive Maintenance	$175.4	◐	●				
Trunkline Modernization	$337.8	●	●	●	●	●	
Bridge Program	$198.1	◐		●	◐		
Traffic & Safety	$80.3	●	◐	◐	◐	◐	◐
Routine Maintenance	$332.5	●			●		◐
System Operations	$43.8	●			●	●	◐
Transit - Rural Capital	$4.8	◐	◐			◐	●
Other Programs	$79.5	●			●	◐	

Key of MDOT Investment Categories	
Investment Category	**Sub-Investment Category**
Road Rehabilitation and Reconstruction (R&R)	Rehabilitation and Reconstruction, Freeway Resurfacing Program, Non-Freeway Resurfacing Program
Road Capital Preventive Maintenance (CPM)	Road Capital Preventive Maintenance
Trunkline Modernization	Reconstruction on Trunkl ines to Improve Safety, Traffic Flow, Pavement and Cridge Condition, Freight Mobility, Accessibility
Bridge Program	Bridge Replacement, Bridge Preservation, Bridge Special Needs, Big Bridge Program, Blue Water Bridge, Culverts-Capital
Traffic and Safety	Pavement Markings, Safety Programs, Signs, Traffic Signals, Delineators
Routine Maintenance	Routine Maintenance
System Operations	Intelligent Transportation Systems (ITS), Congestion Mitigation and Air Quality (CMAQ), Commercial Vehicle Enforcement (CVE)
Transit - Rural Capital	Bus and Bus Facilities, Enhanced Mobility of Seniors and Individuals with Disabilities
Other Programs	State Funded Required Programs, Program Development/Scoping, Training, Pump Stations, Transportation Alternatives, Railroad Crossings Program, Freeway Lighting, Wetland Pre-Mitigation, Noise Abatement, Discretionary, Recreation Trails, Carpool Parking Lot Program, Rest Areas, Economic Development, Capacity Improvement, New Roads

Additional information on performance management and performance measures may be found on FHWA's Transportation Performance Management site located here: https://www.fhwa.dot.gov/tpm/.