



**State Long-Range Transportation Plan  
2005-2030**

**Goals, Objectives and  
Performance Measures  
Report**

*Prepared for  
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of Transportation  
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*Prepared by*



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**MI**Transportation

MICHIGAN LONG RANGE TRANSPORTATION PLAN



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## Chapter 1. Purpose and Background

### 1.1 Introduction

As part of *MI Transportation Plan*, 17 Technical Reports were prepared to provide an overview, evaluation, and recommendations for specific issues or individual modes, as well as discussion on how each is integrated with the entire transportation system. The *Goals, Objectives, and Performance Measures Report* presents the MDOT Performance Measurement (PM) Sub Team's recommended goals, objectives, and performance measures to support implementation of the *MI Transportation Plan* vision. The report also documents the process, research, and analysis used to develop these elements and (where possible) applies them to quantify current baseline performance of Michigan's transportation system.

### 1.2 Purpose

Goals, objectives, and performance measures establish the strategic framework for a statewide multi-modal transportation plan. Goals and objectives provide strategic direction by defining what a state hopes to achieve over the life of its plan, and establish a framework for tracking and reporting system performance. Performance measures provide a means for determining current performance (i.e., benchmarks) with respect to stated goals and objectives, and support both the development of different plan investment scenarios and future decision-making. The performance measures also establish a basis for measuring progress in plan implementation, facilitate communications on priorities and accomplishments to stakeholders, customers, and internal Michigan Department of Transportation (MDOT) staff, and provide a means for greater accountability.

The goals, objectives, and performance measures recommended in this report reflect a critical step in the development of *MI Transportation Plan*. The goals and objectives will provide a structure for both evaluating alternative investment scenarios and organizing the final plan recommendations. The recommended performance measures are also critical to the development of the plan with respect to three purposes:

1. They are being used throughout several of the technical reports;
2. They will be used to support corridor-level analysis; and
3. They will be applied at the statewide system level to support development of the gap analysis.

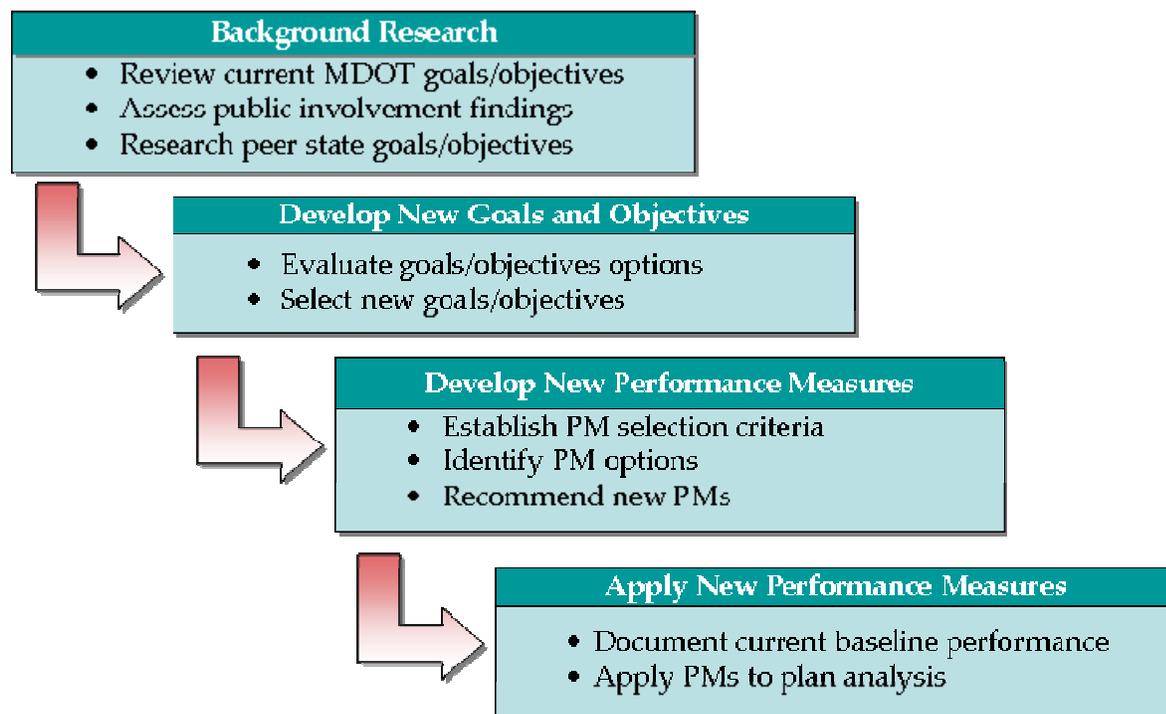
## Chapter 2. Goals, Objectives, and Performance Measures Development Process

### 2.1 Process Overview

The process for developing goals, objectives, and performance measures for *MI Transportation Plan* followed four basic steps, as shown in **Figure 1**.

**Figure 1: Goals, Objectives and Performance Measure (PM) Development Process**

## PM Development Process



Work on the development of new goals, objectives, and performance measures started in earnest in spring 2006 when the consultant team began conducting background research on MDOT's performance measurement history and worked with MDOT staff to determine needs and expectations for *MI Transportation Plan* performance measures. This research included a review of current MDOT measures and analysis of findings from the public meetings, stakeholder meetings, and Economic Advisory Group discussions to identify the performance measurement interests of stakeholders and citizens.

Throughout the summer and early fall 2006, the consultant team developed technical memoranda and decision support materials, and conducted a series of workshops with the *MI*

*Transportation Plan* Team and/or the MDOT Performance Measures (PM) Sub Team (the sub team was established following the first workshop) to work through the first three steps highlighted above. The fourth step presents the ways that the recommendations in this report will be used through the remainder of *MI Transportation Plan* development effort. The following is an overview of this process.

## 2.2 Workshop Activities

### 2.2.1 First Performance Measurement Workshop (June 1, 2006)

- **Workshop Overview** – The first workshop served as a starting point for the performance measurement task and was attended by members of the *MI Transportation Plan* Team. The objectives of the workshop were to:
  - Establish an MDOT PM Sub Team;
  - Review and assess MDOT’s current performance measurement approach;
  - Discuss input from the project’s public involvement activities;
  - Determine measurement selection criteria; and
  - Make progress toward development of a strategic framework for *MI Transportation Plan* performance measures.
- **Workshop Background Materials** – The consultant team submitted a technical memorandum to MDOT prior to the workshop to provide MDOT staff with background information and a recommended starting point for the June 1 workshop. Key elements of the memo included the following:
  - Identification of workshop objectives;
  - A proposed performance measurement development process;
  - A summary of the performance measures that MDOT is using in association with the current state long-range plan;
  - An evaluation of current MDOT performance measurement activities;
  - A summary of relevant findings from *MI Transportation Plan* stakeholder outreach and public involvement activities;
  - Suggested measurement evaluation/selection criteria; and
  - A consultant developed “straw man” strategic framework (goals, objectives, and illustrative performance measures).
- **Workshop Results** – The June 1 workshop included a consultant presentation of the materials covered in the background memorandum and a lengthy discussion about a potential strategic framework to support development of performance measures for *MI Transportation Plan*. Key results/findings from the workshop included the following:

- Attendees with a range of experience and background with performance measures were brought up to a common understanding with respect to the purpose of performance measures, MDOT’s current use of performance measures, and the process that will be used for developing measures for *MI Transportation Plan*.
- There was general agreement that criteria for selecting performance measures for *MI Transportation Plan* should build upon the criteria used for the current plan (i.e., relationship between a measurement and goals, data availability, and measurement understandability). In addition, attendees discussed considering additional factors that included:
  - Consistency with priorities and interests expressed through the public outreach process;
  - The level of causality between a given performance area and MDOT’s actions;
  - The degree to which a measure can be used to predict likely outcomes or outputs for different policy and budget options; and
  - The effectiveness of a measure as an early warning signal for problems or issues.
- While the workshop included a discussion of a potential goal and objective framework that could be used to support development of performance measures, attendees determined that they required additional information and analysis to support the development of a final set of recommended goals and objectives. Specifically, the MDOT PM Sub Team requested research on what other state DOTs are using for goals, objectives, and performance measures in their long-range plans, and asked the consultant to develop a few potential approaches for *MI Transportation Plan* goals and objectives.

### 2.2.2 Second Performance Measurement Workshop (June 19 and 20, 2006)

- **Workshop Overview** – The second workshop was conducted with the MDOT PM Sub Team at the Wilbur Smith Associates Lansing Office on the afternoon of June 19 and the morning of June 20. The objectives of the two-day workshop were to:
  - Review strategic frameworks used by other state DOTs;
  - Identify considerations that should drive the development of goals and objectives for *MI Transportation Plan*; and
  - Develop a new draft strategic framework.
- **Workshop Background Materials** – The consultant team submitted a technical memorandum to MDOT prior to the second workshop to provide the MDOT PM Sub Team with in-depth background and options on approaches to strategic frameworks for long-range transportation plans. Key elements of the memo included the following:
  - Discussion of the relationship between goals/objectives and performance measures;

- Factors and inputs that should drive selection of *MI Transportation Plan's* goal structure (e.g., Planning Factors required by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFTEA-LU));
  - Review of long-range plan goal structures used by selected peer state DOTs;
  - Identification and evaluation of three potential goal structures (an incremental version, a business model, and a theme-based approach); and
  - A recommended *MI Transportation Plan* goal structure.
- **Workshop Results** – The first day of the workshop included a consultant team presentation on the information provided in the background memo and a discussion about different options for a goals and objective structure. Based on the MDOT PM Sub Team's comments from Day 1, the consultant team developed a new proposed strategic framework overnight, which the MDOT PM Sub Team reviewed and refined the second day. The workshop concluded with MDOT PM Sub Team consensus on a recommended set of goals, objectives, and performance measurement areas. The MDOT PM Sub Team then agreed to provide the consultant with review and comments on the draft framework to facilitate development of a final recommended strategic framework that was shared with the *MI Transportation Plan* Team, project sponsors, and the Leadership Team.

### 2.2.3 Third Performance Measurement Workshop (August 3, 2006)

- **Workshop Overview** – The third performance measurement workshop was conducted with the MDOT PM Sub Team at the Wilbur Smith Lansing office. The workshop focused on reviewing the proposed objectives and discussing potential performance measures under the Stewardship and Safety & Security goal areas.
- **Workshop Background Materials** – The consultant team submitted a technical memorandum prior to the workshop that provided a description of the process that had been used to date to develop the proposed strategic framework for *MI Transportation Plan* and documented the four recommended goal areas and associated objectives that were developed during the first two workshops. The memorandum also identified over 70 potential performance measures, and included four matrices (one for each goal area) that evaluated the potential measures based on the selected evaluation criteria.
- **Workshop Results** – The workshop resulted in refinement of the objectives and associated performance measures under the Stewardship and Safety & Security goal areas. The MDOT PM Sub Team provided the consultant team with input on revising the draft performance measures and requested a glossary to better describe the measurement evaluation criteria. The MDOT PM Sub Team also agreed to review the remaining two goal areas (System Improvement and System Operations) and to provide the consultant team with input prior to workshop number four.

### 2.2.4 Fourth and Fifth Performance Measurement Workshops (August 24 and September 7, 2006)

- **Workshop Overview** – The fourth and fifth performance measurement workshops were conducted at MDOT with the consultant team task leader leading the discussion via conference call. Both workshops focused on revising proposed measurement language and selecting the core set of measures that will be recommended for inclusion in *MI Transportation Plan*.
- **Workshop Background Materials** – Prior to each workshop, the consultant team task leader worked with the MDOT PM Sub Team leader to process sub team comments and develop updated proposed measurement evaluation matrices. The consultant team also developed a glossary to better describe the measurement evaluation criteria and the rating scheme associated with each individual criteria.
- **Workshop Results** – The workshops resulted in the development of a final set of 36 proposed performance measures. Recognizing that this was still a larger number of measures than was desired, the Sub Team members agreed that the Sub Team leader and the consultant team task leader should work informally to further refine and reduce the list of potential measures.

### 2.2.5 Sixth Performance Measurement Workshops (September 21, 2006)

- **Workshop Overview** – The sixth performance measurement workshop was held at the MDOT Horatio S. Earle Learning Center with the *MI Transportation Plan* Team. The purpose of the workshop was to present the MDOT PM Sub Team's proposed set of measures and develop consensus on the final list of measures that should be submitted to senior MDOT management for approval.
- **Workshop Background Materials** – The consultant team provided a final revised version of the four goal area matrices, along with a fifth table that cross-walked the recommended objectives with each of the proposed measures.
- **Workshop Results** – The *MI Transportation Plan* team held a lengthy discussion about the proposed goals, objectives, and measures and, with some minor changes, endorsed the measures recommended by the MDOT PM Sub Team. The *MI Transportation Plan* Team also determined that the *Goals, Objectives and Performance Measures Technical Report* should be organized by program area to provide a closer linkage to how MDOT does business and makes decisions.

## Chapter 3. Current MDOT Goals and Performance Measures

### 3.1 Current MI Transportation Plan Goals

The goals in MDOT's current long-range plan were developed with the help of a Customers and Providers Committee, working with MDOT staff to review and reassess the goals of the current state long-range plan. Changes were developed in a cooperative manner and represented the consensus of the group around eight core goal areas:

- **Preservation** – Within the constraints of state and federal law, direct investment in existing transportation systems to effectively provide safety, mobility, access, and intermodal connectivity or support economic activity and the viability of older communities and ensure that the facilities and services continue to fulfill their intended functions.
- **Safety** – Promote the safety and security of the transportation system for users and passengers, pedestrians, and motorized and non-motorized vehicles.
- **Basic Mobility** – Work with the general public, public agencies and private sector organizations to ensure basic mobility for all Michigan citizens by (at a minimum) providing safe, effective, efficient and economical access to employment, educational opportunities, and essential services.
- **Strengthening the State's Economy** – Provide transportation infrastructure and services that strengthen the economy and competitive position of Michigan and its regions for the 21st Century.
- **Transportation Services Coordination** – Create incentives for coordination between public officials, private interests, and transportation agencies to improve safety, enhance or consolidate services, strengthen intermodal connectivity, and maximize the effectiveness of investment for all modes by encouraging regional solutions to regional transportation problems.
- **Intermodalism** – Improve intermodal connections to provide seamless transportation for both people and products to and throughout Michigan.
- **Environment and Aesthetics** – Provide transportation systems that are environmentally responsible and aesthetically pleasing.
- **Land Use Coordination** – Coordinate local land use planning, transportation planning, and development to maximize the use of the existing infrastructure, increase the effectiveness of investment, and retain or enhance the vitality of the local community.

MDOT is committed to achieving the aims represented by these goals. While some are readily achieved by MDOT acting in its own areas of responsibility, others require the action and cooperation of other agencies.

### 3.2 Current MI Transportation Plan Performance Measures

The MDOT currently has over 100 performance measures (some are still in development) that are maintained in the Transportation Management System and used for a variety of strategic and tactical functions. As part of the development of *MI Transportation Plan*, the department selected a core set of 14 measures. These measures are used in a crosscutting or matrix fashion, meaning that rather than being tied to one specific goal area like Safety or Mobility, individual measures are viewed as indicators of progress toward all goal areas. The following is a brief description of each of these 14 measures:

1. **Customer Satisfaction** – measures how MDOT is meeting the public’s demand for a safe and accessible system and providing mobility based on survey result and/or input from stakeholders and citizens. The measurement includes feedback on system condition, service, congestion, safety, coordination, and priorities.
2. **Roadway Pavement Condition** – evaluates pavement conditions based on ride quality, crack severity, and rutting. Performance is reported as the percent of the system rated good and poor, based on thresholds for different types of facilities.
3. **Bridge Condition** – evaluates bridge conditions using indices that are translated into good and poor thresholds. Performance is reported as the percent of the system rated good and poor for different classifications of highways.
4. **Crash Rates and Trends** – tracks accidents per 100 million vehicle miles traveled (VMT), accident rates, rail grade crossing property damage, and facility crashes to provide a systemwide assessment of safety performance.
5. **Level of Service** – provides a measure of highway congestion and the capacity for specific highway segments to handle additional traffic growth. Performance also can be shown as the percentage of highways meeting a designated volume-to-capacity threshold.
6. **Seasonal Load Restrictions** – measures the percent of the state trunkline system that is inadequately designed and/or built to accommodate heavy trucks at all times of the year.
7. **Bus Fleet Condition** – assesses the percent of public buses that are eligible for replacement based on established mileage and/or age standards.
8. **Percent of Population Served by Transit** – assesses transit use on a per capita basis as a measure of the degree to which transit is both accessible and providing access to key destinations.
9. **Number of Buses Eligible for Replacement and the Percent Unfunded** – provides an assessment of both the health of the transit vehicle fleet and the degree to which transit agencies are following prudent asset management practices.
10. **Runway Pavement Conditions** – rates pavement conditions using indices that are translated into “good” and “poor” thresholds for different classifications of airports and different system components.

11. **Adequate Primary Runway System** – assesses primary runway system length, width, surface type, lighting system, taxi system, safety areas, and runway visual approach aid including a Precision Approach Path Indicator (PAPI), Visual Approach Slope Indicator (VAS I) or equivalent.
12. **Airports with All-weather Access** – measure the number or percentage of tier 1 and tier 2 airports meeting air carrier or general utility licensing requirements.
13. **Intermodal Facilities with National Highway System (NHS) Connections** – measures the number of key intermodal facilities with direct connection to the NHS.
14. **Passenger Terminals Served by Two or More Modes** – documents the number of transportation terminals that are sufficiently linked to different modes (based on threshold established in modal plans).

### 3.3 Evaluation of Current MDOT Performance Measurement Activities

The consultant team conducted an assessment of MDOT's current measures based on experience with statewide long-range planning and performance measurement across the country. Overall, MDOT's long history with performance measurement has enabled the department to develop robust measurement capabilities with respect to the number of existing measures, data collection, and analysis, particularly in the asset management area for highways. On the other hand, the development of tangible performance targets (i.e., objectives) and the relationship between performance measures and agency decision-making outside the asset management areas appears inconsistent. Other pros and cons of MDOT's current measurement approach and measures include the following:

*Pros:*

- **Good Coverage of Strategic Areas** – In combination, the 14 current measures provide a good overall assessment of transportation system performance in terms of agency goals and the most critical transportation modes.
- **Measures are Meaningful and Understandable** – The measures generally provide meaningful information about system performance, yet are understandable to stakeholders and the public.
- **Balance Between Traditional and Innovative Measurement Approaches** – The set of measures includes both commonly used measures, such as bridge and pavement indices and safety rates, as well as less conventional measures, such as those in the intermodal and transit areas. This balance enables MDOT to maintain a stable and rational approach while pushing the envelope in some measurement areas.

**Cons:**

- **Too Many Goal Areas** – There is no right number of goal areas for a long-range plan, but the eight goal areas create an awkward, and in places overlapping strategic framework that could be improved by consolidation.
- **Lack of Clarity** – While the matrix approach to performance measurement offers benefits, it also limits MDOT’s ability to talk about their progress on goals through discrete measures that are linked to individual goal areas. This can hinder the influence of performance measures on budgeting and programming processes. It also can harm the department’s legitimacy if stakeholders and citizens find the matrix approach cloudy and confusing.
- **Use and Discussion of Measures is Inconsistent** – In reviewing a range of strategic-level agency documents, such as the Annual Report and the Five-Year Transportation Program, it appears that MDOT is inconsistent in how it presents measurement results. In some areas, such as pavement and bridge, MDOT identifies clear targets and provides clear, quantified information on results. In other areas, either targets are not set or MDOT is vague about its accomplishments. Both MDOT and the public would benefit from a more uniform application of performance measures during the implementation of *MI Transportation Plan*.
- **Binary Measures Limit Versatility** – Several of the measurements use thresholds to translate quantitative performance data into good or bad results. While this approach provides a simple and understandable measurement for the public, it may not provide decision-makers with a sufficient range of potential performance targets.
- **Missing/Weak Links** – The current set of measures misses a few key areas, such as non-motorized transportation, intercity passenger rail/bus, environment and land use/local coordination. In addition, the relationship between the current measures and areas such as freight and the economy are indirect and weak (this is a problem common to the transportation industry).

## Chapter 4. Peer State Review

The purpose of the peer state review was to provide a basis of comparison for MDOT’s current goal structure and to identify approaches and goal categories that could be considered for inclusion in *MI Transportation Plan*. The consultant team conducted a review of the goals and objectives used by 10 other state DOTs well regarded for their statewide planning activities (California, Colorado, Florida, Maryland, Minnesota, New Hampshire, Ohio, Oregon, Pennsylvania, and Washington). The following is a brief description of each state’s long-range plan goal structure and its unique attributes. In addition, **Figure 2** provides a matrix that compares the goal areas used by each state.

- **California** – Plan was completed in 2004 and has six goal categories. The term “policies” is used rather than “objectives,” and there are two to four policies and several strategies per goal. Strategies show an emphasis on modal choice, technology/innovation, and local collaboration/land use coordination.
- **Colorado** – The plan was completed in 2005 and has five investment categories, with one to seven goals per category (most are in the program delivery category). One of the investment categories is focused on a specific program of priority projects. Objectives and associated performance measures are identified for each goal category. The plan has a strong focus on agency business practices.
- **Florida** – The plan was completed in 2005 and has five goal categories, with several objectives per goal. Objectives generally include quantifiable targets that are tied to performance measures. The plan’s goals and objectives reflect a strong focus on connectivity, system integration, and freight/economic issues. Environmental/local coordination issues are addressed in both a stand-alone goal (quality of life) and throughout the other goal areas at the objectives and strategies levels.
- **Maryland** – The plan was completed in 2004 and has four goal categories, with a few objectives per goal. The mobility and safety/security goals are fairly standard, while preservation and system operations are addressed by an efficiency goal, and a productivity and quality goal focuses on program delivery. The plan has significant detail at the strategy level, to include identification of specific (major) projects, and emphasizes the agency’s business focus.
- **Minnesota** – The plan was completed in 2003 and includes three strategic directions that focus on 1) maintaining what exists; 2) improvements to what exists; and 3) how the agency operates. Each strategic direction is aligned with three to four policies that can be considered goals. The policies are then linked to objectives and performance measures. The plan places a strong focus on operating the system and the department efficiently.
- **New Hampshire** – The plan is still being developed, but eight goal areas have been selected. This plan is unique because of its strong focus on department processes and relationships vs. a traditional system emphasis.
- **Ohio** – The plan was completed in 2004 and has five goal categories that balance system and process/administration considerations. The Economic Development and the Quality of Life goal area is unique in that it combines a mixture of system preservation, expansion, environmental, and local coordination activities under one goal area.
- **Oregon** – The plan is in the final stages of completion and has seven goal categories. Each goal is aligned with two to four policies that can be considered objectives, each of which has multiple strategies. In addition, the plan includes six initiatives that cut across the plan’s goal areas.

- **Pennsylvania** – The plan, entitled The Pennsylvania Mobility Plan, is nearing completion and currently has five proposed goal categories. Objectives will be developed under each goal area based on the results of public outreach activities. Despite the focus on mobility in the plan’s title, there is little in the identified goal structure to suggest a particularly unique strategic framework.
- **Washington** – The plan was completed in 2002 and has 17 goals that fit into six areas: 1) Taking care of basics; 2) Moving a growing population; 3) Improving safety; 4) Building communities; 5) Supporting the state’s economy; and 6) Stewardship of the environment. Each goal has at least one objective (there are a total of 25 objectives). The plan represents a planning approach where the number of goals is not constrained and there is limited prioritization among goal areas.

The review of statewide long-range plans from the 10 selected states led to a few key conclusions about strategic frameworks:

- **Strategic Frameworks have a Theme** – In combination, the goals, objectives, strategies and/or performance measures that make up strategic frameworks tend to project overall plan themes. Examples of these themes include efficiency, integration, supporting the economy, process (land use, local coordination, and the environment), and balanced investment priorities.
- **Structures Vary Widely** – While the same general transportation issues tend to be addressed in every plan (e.g., safety, preservation, mobility, local coordination, etc.), styles and structures vary widely in terms of lexicon, the title and number of goal areas, and the way that objectives, strategies, and performance measures are organized beneath them. No approach seemed to stand out above the rest.
- **Keep it Simple** – As a general rule, plans with four to six goal areas and standard goal/objective/strategy/performance measures structures were easier to understand and follow than plans with numerous or obtusely-named strategic elements (e.g., policies, values, guiding strategies, etc.).

Figure 2: Statewide Long-Range Plan Goal Comparison

Goal Areas and Associated Goal Categories	Michigan	California	Colorado	Florida	Maryland	Minnesota	New Hampshire	Ohio	Oregon	Pennsylvania	Washington
<b>Safety and Security Goals</b>											
Safety and Security											
Safety											
Security											
<b>Existing System Goals</b>											
System Preservation & Maintenance											
Management & Efficiency (Preservation, Operations, Etc.)											
System Operations & Management											
<b>System Improvement</b>											
Mobility					2						3
<b>Sub Themes</b>											
Accessibility	X							X			
Efficient Movement	X						X		X		
Reliability					X	X	X				
System Integration					X				X	X	
Modal Choice/Intermodalism	X				X	X			X	X	
Address Congestion, Add/Maintain Capacity		X		X	X	X					X
System Operations						X					
<b>Sustainability (environment, local coord, land use, health)</b>											
Respect/Enhance the Environment											
Local Coordination/Collaboration/Communication											
Quality of Life/Environmental Stewardship											
Land Use-Transportation Integration											
Environment & Public Health											
Balance Needs, Land Use & Environment											
Building Communities/Community-based Design											
Maintain Air/Water Quality & Habitats/Watersheds											3
Recycling											
<b>Organization/Administration</b>											
Program Delivery, Institutional Capacity & Management											
Financial Resources & Stewardship											
Investment Efficiency & Effectiveness											
<b>Economics &amp; Freight</b>											
Economic Development & Quality of Life											
Support/Promote the Economy											
Tourism											
Competitive Freight Movement											
<b>Other</b>											
Special Transportation Needs											
Strategic Projects/Program Goal											

Note: Numbers in cells reflect multiple goals in that category

- **The Usual Suspects** – Nearly every state has goals related to safety/security, system preservation, mobility, and local coordination. There is more variance in how DOTs incorporate sustainability concepts and program administration into their plans – some create stand alone goals to address issues like land use coordination and program delivery while others either deal with these issues at the objective-level or entirely leave them out of a plan’s strategic framework.
- **The Devil is in the Details** – Goals tend to be generic; the true flavor and emphasis of a statewide long-range plan is typically defined by the objectives, strategies, and measures.
- **The Mobility Goal is Difficult** – Unlike other areas such as safety and system preservation where the implications of the goals tend to be clear, mobility goals can focus on a wide range of activities, including accessibility, modal choice, integration, reliability, congestion relief, system operations, etc. There is no right answer to what a mobility goal should focus on, other than it should reflect a state’s culture and environment.

## Chapter 5. Public Involvement/Stakeholder Outreach Findings

One of the objectives of *MI Transportation Plan* outreach efforts with the Economic Advisory Group (EAG), stakeholders, and citizens has been to gain insight into how stakeholders and citizens view system performance, and thus to provide input into what performance measures should be used during the development and implementation of *MI Transportation Plan*. Although external interests were not directly asked to identify desired measures, a synthesis of their comments implies that the following considerations are public priorities and should influence development of the strategic framework and performance measures for *MI Transportation Plan*:

- **Systemwide and General Concerns** – The public expressed considerable interest in improved transportation system connectivity and seamlessness, and in greater modal choice. The public also would like to see better coordination between MDOT and local governments, particularly when it relates to land use issues. Finally, there is widespread recognition of the need for the state to develop new and expanded funding options for all modes.
- **System Preservation** – The public is generally supportive of a strong, continued focus on system preservation and asset management. Select members of the public view the preservation of rail corridors as an important system preservation function.
- **Mobility** – The public views congestion and the associated need for added capacity as the most critical mobility issues.

- **Freight** – The public (more so EAG members and stakeholders than general citizens) expressed the need for MDOT to improve its understanding of freight movements and to adapt the system to better accommodate freight.
- **Aviation** – The public has a strong interest in improved landside access to airports and modernization of airport facilities. Stakeholders also stressed the importance of MDOT coordination with local airport agencies.
- **Non-motorized Transport** – The public would like better integration of bike/pedestrian considerations into roadway planning activities, expanded bike/pedestrian facilities, and improved safety on these facilities.

## Chapter 6. Recommended Goals and Objectives

### 6.1 Goal and Objective Development Considerations

The development and selection of goals and objectives should reflect a wide range of considerations and influences. Within the MDOT planning context, the logical sources for this input include the following:

- **Current State Long-Range Plan (SLRP) Goals** – MDOT has maintained a similar set of long-range plan goals over the last three planning cycles. The current goals include:
  - Preservation;
  - Safety;
  - Basic mobility;
  - Strengthening the state’s economy;
  - Transportation services coordination;
  - Intermodalism;
  - Environment and aesthetics; and
  - Land use coordination.
- **Current and Emerging Agency Priorities** – Strategic issues and themes that MDOT staff, project sponsors, and Leadership Team have identified as critical topics include system operations, system integration, asset management, and support for the state’s economy.
- **Department Mission** – MDOT’s current mission statement stresses the themes of system integration, economic benefits, and quality of life.
- **Federal Planning Factors** – FHWA/FTA mandate that transportation planning activities incorporate the following planning factors (list incorporates changes from Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)):

- Economic vitality;
  - Safety;
  - Quality of life;
  - Accessibility for freight & mobility;
  - Security;
  - Environment; and
  - Growth/land use coordination.
- **Preferred Public Vision** – Based on results from the first phase of public consultation for *MI Transportation Plan*, a draft citizen and stakeholder vision for transportation includes the following key attributes:
    - Improved traffic flow;
    - Safety;
    - Security;
    - Land use coordination;
    - Environment;
    - Modal choice;
    - Integration;
    - Freight;
    - Maintenance;
    - Asset management;
    - Economic performance;
    - Accessibility; and
    - Finance.

Taking a degree of license, the goals, priorities, and issues identified in these five sources can be translated into potential goal areas for comparison purposes. As illustrated in **Figure 3**, supporting the economy and system integration are the most commonly identified areas. Beyond goals areas contained in the current state long-range plan, system operations emerge as an area of increased importance.

**Figure 3: Potential Goal Areas vs. Key Considerations**

Key Considerations	Preservation	Safety	Mobility & Accessibility	Economy	Local Coordination	Intermodal	Environment	Land Use Coordination	Integration	System Operations	Access Management	Quality of Life	Security	Freight	Financial
Current SLRP Goals															
Leadership Priorities															
MDOT Mission															
Federal Planning Factors															
Draft Public Vision															

In developing the recommended goals and objectives for *MI Transportation Plan*, the MDOT PM Sub Team established three priorities:

1. Build from the goals and strategies in the current state long-range plan;
2. Keep the strategic framework simple and strive to reduce the number of goals areas and objectives; and
3. Establish a strong linkage between the goals and objectives and key elements of the MDOT Mission – Providing the highest quality integrated transportation services for economic benefit and improved quality of life.

With these priorities in mind, the MDOT PM Sub Team developed a concise recommended strategic framework with the following attributes:

- **Goal Areas** – the MDOT PM Sub Team decided on four, theme-based goal areas: Stewardship, Safety and Security, System Improvement, and Efficient and Effective Operations. It was felt that a small number of goals would provide a concise structure for organizing *MI Transportation Plan* and support a manageable number of high-level performance measures. The four selected areas reflect the department’s highest priorities, incorporate all of the topics covered in MDOT’s eight existing long-range plan goals, and are consistent with both the SAFETEA-LU Planning Factors and approaches used by other leading state DOTs across the country.
- **Objectives** – The MDOT PM Sub Team determined that objectives under each goal area should be organized into three categories: 1) Integration; 2) Economic Benefit; and 3) Quality of Life – to provide a tight link between *MI Transportation Plan* and the current MDOT mission.

## 6.2 Recommended Goals and Associated Objectives

The remainder of this chapter presents the four recommended goals and associated objectives.

**Goal Area 1: Stewardship.** *Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.* The Stewardship Goal focuses on MDOT’s roles and responsibilities associated with being good stewards of Michigan’s resources. The goal is based on a holistic view of resources, to include funding, physical transportation assets (e.g., highways, transit systems, and airports), the physical and human environment, and the Michigan economy. The objectives under the Stewardship Goal incorporate issues and topics that were addressed in the following current MDOT SLRP goal areas: Preservation, Strengthening the State’s Economy, Transportation Services Coordination, Environment and Aesthetics, and Land Use Coordination.

Objective Category	Objectives
Integration	1.1 Preserve the quality and condition of all transportation system elements.
Economic Benefit	1.2 Conduct sound asset management practices to optimize the benefits of preservation investments.
	1.3 Leverage transportation funding to maximize transportation investment.
	1.4 Maximize the benefits of transportation investment to the Michigan economy.
Quality of Life	1.5 Minimize negative externalities and maximize the positive impacts that transportation has on the physical and human environment.
	1.6 Improve coordination between transportation decision-making and land use planning.

**Goal Area 2: Safety and Security.** *Continue to improve transportation safety and ensure the security of the transportation system.* The Safety and Security Goal continues MDOT's long-standing commitment to build, maintain, and operate the safest transportation system possible. The objectives under the Safety and Security Goal emphasize both traditional safety initiatives aimed at reducing fatalities, injuries, and crashes/incidents, as well as efforts to address new transportation system security needs in the wake of 9/11 and increased threat from terrorism.

Objective Category	Objectives
Integration	2.1 Reduce fatality, injury, and crash/incident rates on all modes.
	2.2 Reduce the vulnerability of transportation facilities and its users to terrorist attacks, natural disasters and other risks.
Economic Benefit	2.3 Reduce economic losses due to transportation crashes and incidents.
	2.4 Manage risks and responsiveness to ensure transportation system and border crossing continuity for passengers and freight.
Quality of Life	2.5 Provide a safe environment for transportation users through engineering, enforcement, and education activities.

**Goal Area 3: System Improvement.** *Modernize and enhance the transportation system to improve mobility and accessibility.* The System Improvement Goal emphasizes the various areas where MDOT can either make direct investments or support and encourage investments by other entities to improve the efficiency and effectiveness of Michigan's transportation system. The recommended objectives under the System Improvement Goal focus on improvements to modernize, expand, and connect the system to support economic growth and better facilitate the movement of goods, people, and services. The goal area also identifies the importance of considering local values during the planning, design and implementation of system improvements.

Objective Category	Objectives
Integration	3.1 Expand intermodal connectivity and the number of modal options for freight and passengers.
	3.2 Address system bottlenecks and weaknesses to reduce congestion, enhance continuity, and improve modal connections.
Economic Benefit	3.3 Improve travel time reliability and predictability for passengers and freight.
	3.4 Modernize facilities to accommodate the efficient movement of people, goods, and services.
	3.5 Address congestion to reduce its cost to businesses and the state’s economy.
	3.6 Respond to the unique transportation needs of economic development opportunities.
Quality of Life	3.7 Expand transportation system access.
	3.8 Reduce delay.
	3.9 Employ context sensitive solutions to respond to the values that the public places on aesthetics, cultural resources, and natural landscapes.

**Goal Area 4: Efficient and Effective Operations.** *Improve the efficiency and effectiveness of the transportation system and transportation services, and expand MDOT’s coordination and collaboration with partners.* The Efficient and Effective Operations Goal reflects MDOT’s desire to get the greatest possible performance from Michigan’s existing transportation assets and future system improvements. The goal area also addresses the importance of operating a transportation system and providing services to ensure citizens and stakeholders have modal choices. The recommended objectives under this area focus on the application of technology, stronger coordination and cooperation with public and private sector partners, and improved intermodal transfers.

Objective Category	Objectives
Integration	4.1 Improve existing system capacity through the application of new technologies and strategies.
	4.2 Coordinate transportation services supplied by both public and private sector providers.
	4.3 Address institutional barriers to inter-jurisdictional cooperation.
Economic Benefit	4.4 Collaborate with providers to deliver programs and services better, cheaper, and faster.
	4.5 Manage highway access to balance capacity and development considerations.
	4.6 Collaborate with private sector to improve the efficiency of intermodal freight and passenger transfers.
Quality of Life	4.7 Enhance the transportation experience through better, timelier traveler information.
	4.8 Operate systems to ensure the public has an adequate set of transportation choices.

## Chapter 7. Recommended Performance Measures and Current Performance

### 7.1 Performance Measures Selection Considerations

The recommended performance measures presented in **Figure 4**, represent a significant effort on the part of the MDOT PM Sub Team to develop a set of measures that are multi-modal and provide a comprehensive assessment of MDOT's and the Michigan transportation system's performance. They address all of the objectives associated with the four goals. There is at least one performance measure for each of the objectives with some performance measures applying to more than one objective. At the same time, the MDOT PM Sub Team strived to keep the list of recommended measures concise and meaningful. To do so, the following criteria were established to support evaluation of potential measures:

- **Current Measure** – Identified whether a potential measure was currently being used by MDOT in any form or fashion.
- **Data Availability** – Evaluated MDOT's current capacity to collect and provide data to support a specific measure. Potential measures were rated as good (data currently collected), fair (some data currently collected or could be easily collected), or poor (no data collected and/or difficult to collect).

- **Analytical Capability** – Evaluated MDOT’s current capacity to analyze data to support a specific measure. Potential measures were rated as good (current analytical capabilities exist and data is in sufficient detail to permit analysis), fair (analytical needs could be met with limited effort), or poor (analytical capabilities do not exist and would be a burden to develop).
- **Clarity** – Evaluated the degree to which a measure provides meaningful and easily understandable outputs. Potential measures were rated as good (easy to understand), fair (requires some technical knowledge), or poor (measure is hard to comprehend).
- **Public Interest** – The degree to which a measure addresses performance areas that the public and/or stakeholders have inferred are important (i.e., through project outreach activities). Potential measures were rated as “high” (public/stakeholders cited the area often), “medium” (public/stakeholders occasionally mentioned the area), or “low” (public/stakeholders rarely or never brought up the area).
- **Control/Causality** – The ability of MDOT to control and effect changes in performance results through decisions and actions. Potential measures were rated as good (strong control/causality), fair (some control/causality), or poor (little or no correlation between MDOT actions and outcomes).
- **Reporting Value** – The value of the measure as a means of communicating what is important and a priority to the public, stakeholders, and/or internal staff. Potential measures were rated as good (high value), fair (some value), or poor (measurement is weak in supporting communications).
- **Decision Value** – The capacity to use a measure in a predictive fashion to inform decision-making processes, such as serving as an early warning system. Potential measures were rated as good (highly predictive), fair (somewhat predictive), or poor (little or no predictive capabilities).
- **Management Value** – The degree to which a measure can support accountability. Potential measures were rated as good (strong accountability tool), fair (some accountability applications), or poor (little or no use as an accountability tool).
- **System Measure** – The applicability of a measure to statewide or overall system performance considerations. Potential measures were rated as “yes” (good statewide measure), “no” (little or no statewide applicability) or “maybe” (requires further consideration to determine its statewide applicability).
- **Corridor Measure** – The applicability of a measure to corridor-level system performance considerations, such as characterizing the differences among corridors. Potential measures were rated as yes (good corridor measure), no (little or no corridor-level applicability) or maybe (requires further consideration to determine its corridor-level applicability).

Following the six performance workshops where the goals, objectives, and a shortlist of measures (36) were developed, the MDOT PM Sub Team leader and the consultant team further

refined the list of recommended measures to the 19 core measures and seven subordinate measures identified in **Figure 4** based on the following considerations:

1. Is the measure currently used by MDOT?
2. Is the measure in the current state long-range plan?
3. Does the measure indicate the level of achievement toward *MI Transportation Plan* goals?
4. Does the measure focus on one or more of the plan's emphasis areas – integration, economic benefit, and quality of life?
5. Do the measures adequately address a cross section of modes?
6. Is high quality data readily available to support the measure?
7. Is the measure easily understood?

The original intent of the MDOT PM Sub Team and the consultant team had been to organize the measures by goal area and then by the three emphasis areas in MDOT's mission (integration, economic benefits, and quality of life). In discussing different organizational approaches with the *MI Transportation Plan* Team, it was determined that the recommended measures would be more useful if they were presented and applied in a way that both reflects the plan's focus on integration and aligns with MDOT's program structure. As such, the recommended measures are presented as either overarching, meaning they cut across program areas, or organized by specific mode. Where possible, current baseline performance for each measure is provided, (figures are for 2005 unless otherwise noted). It is also important to note that additional performance measures may be applied at the corridor, program, and project level.

Figure 4: Final Recommended Performance Measures and Relationship to Goals/Objectives

Goal Areas and Objectives	Performance Management Measures																											
	1	2	3	4	5	6	7	8	9	A	B	C	D	E	10	F	11	12	13	14	15	16	G	17	18	19		
<b>Stewardship Goal</b>																												
1.1 Preserve the quality and condition of all transportation system elements																												
1.2 Conduct sound asset management practices to optimize the benefits of preservation																												
1.3 Leverage transportation funding to maximize transportation investment																												
1.4 Maximize the benefits of transportation investment to the Michigan economy																												
1.5 Minimize negative/maximize the positive impacts on the physical and human environment																												
1.6 Improve coordination between transportation decision-making and land use planning																												
<b>Safety &amp; Security</b>																												
2.1 Reduce fatality, injury, and crash/incident rates on all modes																												
2.2 Reduce vulnerability of transportation facilities/users to terrorists, natural disasters and risks																												
2.3 Reduce economic losses due to transportation crashes and incidents																												
2.4 Manage risks to ensure system and border crossing continuity for passengers/freight																												
2.5 Provide a safe environment for transportation users through the "3 Es"																												
<b>System Improvement Goal</b>																												
3.1 Expand intermodal connectivity and the number of modal options for freight and passengers																												
3.2 Address bottlenecks to reduce congestion, enhance continuity, improve connections																												
3.3 Improve travel time reliability and predictability for passengers and freight																												
3.4 Modernize facilities to accommodate efficient movement of people, goods, and services																												
3.5 Address congestion to reduce its cost to businesses and the State's economy																												
3.6 Respond to the unique transportation needs of economic development opportunities																												
3.7 Expand transportation system access																												
3.8 Reduce delay																												
3.9 Employ Context Sensitive Solutions to respond to public values																												
<b>Operations Goal</b>																												
4.1 Improve existing system capacity through the application of new technologies and strategies																												
4.2 Coordinate transportation services supplied by both public and private sector providers																												
4.3 Address institutional barriers to inter-jurisdictional cooperation																												
4.4 Collaborate with providers to deliver programs and services better, cheaper, and faster																												
4.5 Manage highway access to balance capacity and development considerations																												
4.6 Collaborate with private sector to improve efficiency of intermodal freight/passenger transfers																												
4.7 Enhance the transportation experience through better, more timely traveler information																												
4.8 Operate systems to ensure the public has an adequate set of transportation choices																												
	Denotes PMs recommended																											
	Denotes PMs recommended as subordinate measures																											

## 7.2 Overarching Measures

The following measures strive to quantify MDOT's or the Michigan transportation system's performance at either a multi-modal or total program level. In some cases, the measures are a roll-up of program-level measures or also apply to specific programs.

- **Economic Impacts** – Expenditures and transfers by MDOT to build/purchase and maintain road, bridges, transit vehicles, etc. have a significant impact on the economy. The most important measurement of MDOT's impact on the economy is this number of jobs that are sustained due to MDOT spending. The associated metric uses outputs from econometric models to quantify the number of direct, indirect, and induced jobs within Michigan that are attributable to MDOT expenditures. The measure applies to MDOT's 5-Year Program.

Current Performance:

- (#6) Estimated number of jobs supported by MDOT's 5-Year Program: 49,350
- **Safety** – Improving safety is a critical goal that applies to every element of the transportation system. The two measures in this area roll-up the results from more targeted measures at the modal level into two overarching metrics for the state of Michigan: number of transportation-related fatalities and the number of transportation related crashes/incidents. The two metrics are reported as raw numbers.

Current Performance:

- (#8A, 8B) Total number of transportation-related fatalities: 1,159
- (#9A, 9B) Total number of transportation-related crashes/incidents: 373,028
- **Customer/Stakeholder Satisfaction Rating** – In addition to measuring the performance of the state's Transportation System, it is also important to monitor the opinions and perceptions of citizens, stakeholders and partners regarding how well MDOT is performing its responsibilities and meeting its commitments. While there are several subcomponents to this measure that can apply at the modal level, this metric provides an overall assessment of MDOT's customer/stakeholder satisfaction. These measures apply to all MDOT transportation program areas. Data to support this measure will likely be developed on bi-annual or tri-annual cycle.

Current Performance:

- (#7) Percent of surveyed citizens/stakeholders giving the state's Transportation System a good or better satisfaction rating: 74 percent
- **System Integration** – The effectiveness of both individual modes and the overall transportation system is enhanced by good modal connectivity for both passengers and freight. The recommended metrics for integration address the connectivity of passenger terminals and modal transfer points to the National Highway System (NHS) and other

transportation systems. These measures apply to several MDOT transportation programs, including highways, transit, aviation, intercity bus and rail, and freight.

Current Performance:

- (#12) Number of passenger terminals served by two or more modes: 18
- (#13) Number of intermodal facilities with NHS connections: 23
- **Congestion and Delay** – Good mobility requires a system where congestion and delay are minimized and system capacity is sufficient to accommodate demand. This can be measured by assessing travel delay and evaluating the level of service (LOS) provided on different modes against established standards or targets. The three metrics recommended in this area roll-up associated modal measures to provide an overall barometer of system mobility, its impact on the Michigan economy, and how well MDOT is addressing travel needs. These measures apply to several MDOT transportation programs, including highways, transit, aviation, intercity bus and rail, and freight.

Current Performance:

- (#14) Hours of delay: 8,842,398 (annual vehicle)
- (#14G) Cost of delay: \$125M annually
- (#15) Percent of transportation system meeting target LOS: 95 percent

### 7.3 Highway and Bridge Measures

- **Roadway Condition** – Pavement conditions can be evaluated in different ways. To stakeholders and the public, ride quality or smoothness is what matters. Thus, measuring ride quality through a metric such as the Internal Roughness Index (IRI) reflects the public's concerns that MDOT maintain smooth roads. The smoothness of roads, however, has little to do with the overall health and associated remaining service life of highway pavements. To address pavement health, an index that measures the level of cracking and rutting is required. Both of these indices can then be converted into the percent of the state trunk line system in good or fair condition.

Current Performance:

- (#5) Percent of state trunkline system miles rated fair or good for ride smoothness: 76 percent (Source: 2004/2005 IRI measurement cycle)
- (#2) Percent of state trunkline system miles rated good for pavement health: 86 percent (Source: 2005 Pavement Condition File)
- **Bridge Condition** – Each highway bridge in the state is evaluated every two years through the bridge inspection process, which identifies the need for routine or periodic maintenance, rehabilitation, or replacement. These ratings can be translated into good,

fair, or poor ratings for each bridge; aggregating these ratings provides a good snapshot of the overall health of the state's highway bridges.

Current Performance:

- (#1) Percent of bridges in good or fair condition: 85 percent
- **Safety** – Due to the importance of improving highway safety, it is appropriate to track overall safety performance with respect to annual fatalities and crashes as well as measure performance in specific areas such as railroad crossing crashes, deer-related incidents, and seat belt use.

Current Performance:

- (#9A) RR crossing crashes: 67 (out of 373,028 traffic related crashes/incidents)
- (#9C) Highway fatalities per 100 million VMT: 1.159 (2004 figure)
- (#9E) Deer-related incidents: 58,741
- (#9F) Cost of crashes per state resident: \$930 (2004 figure)
- (#11) Seat belt usage rate: 93 percent
- **Congestion and Delay** – The highway component of delay focuses on the hours of recurring delay that occur each year on the state trunkline system, which also can be translated into an annual cost to the Michigan economy. Similarly, congestions and the ease of travel can be measured by the ratio of average daily traffic on system elements to the designed capacity of the elements. This ratio can then be translated into a letter grade, level of service (LOS), for each mile of the Trunkline System.

Current Performance:

- (#14) Hours of delay: 8,842,398 (annual vehicle)
- (#14G) Cost of delay: \$125M annually
- (#15) Percent of transportation system meeting target LOS: 95 percent
- **Access Management** – One of the most critical performance areas that influences the capacity and safety of the system, as well as the accessibility of customers to the system, centers on the issue of controlling direct access (e.g., curb cuts) to the state trunkline system. In short, the higher the percentage of system miles that comply with MODT access standards, the better the system will perform.

Current Performance:

- (#18) Number of state trunkline system miles with adopted access management plans: 400 miles

## 7.4 Public Transportation Measures

- **Transit Fleet Condition** -- A key indicator of transit system stewardship is to maintain a healthy fleet of buses and/or other transit rolling stock by replacing worn out vehicles on a timely and regular basis. Since the design life of vehicles varies by type and usage, the best way to assess transit fleet condition is to monitor the statewide percentage of total transit vehicles that should be replaced.

Current Performance:

- (#4) Percent of local transit vehicles eligible for replacement: 6.2 percent (Small Urban and Rural transit operators, 2006 figure)
- **Transit Safety** – Although the number of fatalities, injuries, and crashes that occur on public transit pale in comparison to highway statistics, improving the safety performance of transit systems is still an important statewide goal. Progress in improving transit safety can be monitored by tracking annual crash/incident rates.

Current Performance:

- (#9B) Number of local transit vehicle-related crashes per 100,000 transit miles: 2.28
- **Transit System Coverage** – The state's transportation system should provide universal accessibility to employment, recreation, shopping, intermodal transfer points, and other land uses. Thus, to maximize citizen mobility, transit should serve as many people in the state as possible. Progress toward this objective can be measured by identifying the percentage of the state's population that has reasonable access to transit services.

Current Performance:

- (#17) Percent of the state's population served by transit: 82.6 percent

## 7.5 Aviation Measures

- **Runway Pavement Condition** – MDOT conducts field inspections of pavement condition at airports periodically. The ratings are good, fair, and poor. These ratings can be aggregated to provide a statewide snapshot of runway pavement health.

Current Performance:

- (#3) Percent of runways in good or fair condition: 95.6 percent
- **Aviation Security** – Since 9/11, a significantly higher level of importance is placed on airport security. A major step airports can make to improve their security is to develop and adopt emergency service plans. Tracking the number of airports that have done so provide a good assessment of statewide progress toward meeting aviation security needs.

Current Performance:

- (#10) Number of airports with adopted emergency service plans: 91

- **Aviation System and Operations Improvements** – A key area where the convenience and reliability of the aviation system can be improved is through the expanding number of Tier 1 and Tier 2 airports with all weather accessibility based on Air Carrier or General Utility airport licensing requirements. It is also critical to improved aviation operations for airports to maintain provide adequate primary runway systems based on considerations such as primary runway length, width, surface, lighting system, taxi system, safety area, and runway Precision Approach Path Indicator (PAPI), Visual Approach Slope Indicator (VASI). By establishing thresholds for airports having or not having complete runway systems and aggregating data, statewide performance of aviation operations can be monitored.

Current Performance:

- (#16) Number of airports with all-weather access: 59

## 7.6 Bike/Pedestrian Measures

- **Bike/Pedestrian Safety** – Transportation safety includes minimizing the number of fatalities, injuries, or incidents that occur to people using the state’s transportation infrastructure for riding bikes or walking. Progress in this area can be measured by tracking the total annual numbers of bike/pedestrian fatalities, injuries and incidents that occur each year.

Current Performance:

- (#9D) Number of bike/pedestrian crashes: 5,417 (2004 figure)

- **Bike/Pedestrian Accessibility** – The primary requirement for improving the accessibility of people using non-motorized modes is to ensure highway facilities include adequate areas for bike and pedestrian use.

Current Performance:

- (#19) Percent of the non-interstate State Trunkline System with adequate shoulders for non-motorized use: 26.4 percent

## Chapter 8. Conclusion

Michigan’s future growth depends on the development, preservation, maintenance, and efficient operation of the transportation system. To achieve the goals of *MI Transportation Plan*, it is fundamental that the transportation agencies at all levels monitor the performance of their transportation systems. Performance measures can be used to benchmark the functioning of the transportation system and its components and, over time, to indicate trends. Based on those trends, transportation decision makers can adjust their work strategies, project selection or level of investment to achieve the goals and objectives of *MI Transportation Plan*.



*Providing the highest quality integrated transportation services  
for economic benefit and improved quality of life.*



Wilbur Smith Associates