

Transportation Management System Performance Monitoring, Evaluation, and Reporting

Performance monitoring, evaluation, and reporting are tasks essential to the successful implementation of a transportation management system (TMS). They help determine the efficiency of a TMS by examining its existing conditions, analyzing data, comparing the analysis results to benchmark performance measures, and disseminating these results to various stakeholders (e.g., agency officials, the public, etc.). Because of the important roles that these processes play throughout the life cycle of a TMS, TMS officials must implement effective measures and methods for performance monitoring, evaluation, and reporting.

Benefits

TMS performance monitoring, evaluation, and reporting can provide many benefits to agencies adequately deploying these processes. These include:

- ◆ Determining if agency goals and stakeholder needs are being met
- ◆ Evaluating agency investment decisions
- ◆ Communicating TMS evaluation results clearly and effectively to stakeholders
- ◆ Determining the TMS efficiency overall and in agency-defined areas of importance

Challenges

Agencies face several challenges during the implementation of performance monitoring, evaluation, and reporting processes. One of these issues is selecting the metrics to use as part of the performance measurement program. The most common approach is to link performance measures to agency goals, which are linked to stakeholder needs. However, agencies often choose unnecessary metrics. To alleviate this problem, Daniela Bremmer of the Washington State Department of Transportation recommends using only the performance measures that communicate the efficiency of the system effectively.

Another common challenge that agencies face is the lack of relevant, timely, and cost-effective system data. According to the *Freeway Management and Operations Handbook*, other challenges with data include:

- ◆ Data to be collected (focus of the data collection may be a subgroup of the travelers, such as tourists)
- ◆ Frequency and schedule (time aspects of data collection)
- ◆ Data collection locations (spatial aspects of data collection)
- ◆ Data collection responsibilities (staffing issues and responsibility of stakeholders)
- ◆ Data management requirements

Many of these challenges can be addressed with mutual agreement with stakeholders. It is recommended, however, that agencies start their performance measurement programs with the available resources and improve upon the data collection and archiving processes in an evolutionary manner.

There are also other additional challenges related to the performance monitoring, evaluation, and reporting processes. These include:

- ◆ Monitoring methods and locations
- ◆ System analysis methods
- ◆ Frequency and content of reports
- ◆ Effective communication of results to chosen audience through reporting

Testimonials

The following are observations by transportation professionals about the importance of performance monitoring, evaluation, and reporting.

“Increasing the focus on performance measures will help efforts to highlight the importance of traffic operations. (In addition) ... It is important to continue development of standardized sets of measures that can be used for benchmarking and consistency in communication with the public and elected officials. Performance measurement must become an integral component of all operations-related activities to permit evaluation of progress and identification of successes.”

— Philip Tarnoff, *ITE Journal*, May 2005

“As transportation policy and planning continues to be viewed as an enabler of important functions and outcomes in society, we in the profession must give more thought to how we can show the level of accomplishment associated with transportation investment decisions.”

— Prof. Michael Meyer, TRB, 2000

Best Practices

Arizona

TMS operators are often forced to work in a multi-tasking environment where the incidents and situations encountered are usually singular in nature. In such new situations, there is as much scope for error as there is for effective tackling. Therefore, it is very important, but very difficult, to track operator performance. The Arizona Department of Transportation's (ADOT) operator certification program is unique and cleverly addresses the challenge of measuring operator performance. ADOT uses this program to gauge internal performance at its Phoenix-area

transportation management center (TMC). The program consists of an operator certification test, composed of twenty-five different categories in which the operator must demonstrate various skills. For instance, in the “Variable Message Sign” (VMS) category, the operator must show that he/she can edit the text and display of a given VMS. For each skill, the operator and a supervisor must initial the test with the date to acknowledge proper completion of that skill.

Milwaukee, Wisconsin

The performance measurement of the participating agencies is an integral part of the bigger Gary-Chicago-Milwaukee (GCM) region goal. This is an exemplary situation serving as a role model for other regions. The GCM corridor does an excellent job at communicating and coordinating among the various agencies involved within, and also with other outside agencies and the public. The Milwaukee TMC has established active liaison with the local county sheriff’s office, and shares part-time staff members. The outreach programs have helped communication with the public.

Washington

The Washington Department of Transportation (WSDOT) is one of the leading agencies in terms of public communication. Their quarterly performance report is called *Measures, Markers and Mileposts*, also known as the “Gray Notebook.” It explains the agency’s planning process and the rationale behind their actions. The Gray Notebook also assesses the effectiveness of the statewide system and tracks a variety of performance and accountability measures for routine review by the Washington State Transportation Commission. The Gray Notebook also is continually evolving and has become an important source of information about department performance for the CEO, state legislators, and other agency stakeholders. The report engages readers and makes data more readily accessible to the audience. WSDOT has also made the Gray Notebook accessible to the public by making it available for download from the department website.

Additional Resources

The *Transportation Management System Performance Monitoring, Evaluation & Reporting Handbook* is intended to provide transportation officials who are responsible for their agencies’ performance measurement with basic knowledge and best practices of implementing performance monitoring, evaluation and reporting programs. A primer, frequently asked questions document, and tri-fold brochure are also available. These materials and more can be accessed from the TMC Pooled-Fund Study website at <http://tmc pfs.ops.fhwa.dot.gov/>.

For More Information

Visit the TMC Pooled-Fund Study website at <http://tmc pfs.ops.fhwa.dot.gov/>.

Call the FHWA Operations Help Line toll-free at (866) 367-7487.

