



# INFORMATION



## Performance Measures in Snow and Ice Control: Conclusions NCHRP Report 889

Winter maintenance is a complex business and is influenced by trends and crosscutting issues that occur in the wider transportation field. These trends can provide new ways to define and measure performance for snow and ice control. Setting an effective performance measurement program should be tailored to the particular needs an agency, taking into account an array of circumstances and capabilities.

The NCHRP report is very clear that no two performance measurement programs are identical, nor should they be. The value of performance measures stems from their ability to support effective and timely decision making at multiple levels within an agency. Using performance measures to guide snow and ice planning, investment decisions, strategies, and tactics can provide a clear basis for action. Once decisions are made, performance measures can provide assessments of the decisions and enable adjustments.

There needs to be consistency in the measures if they are going to be used to assess decision making. The best time to review the role of performance measures in decision making include during snow and ice strategic planning and budgeting, annual maintenance reviews and meetings, and after-action reviews.

As agencies seek to create performance measures it is important to note:

- No Individual performance measure is a perfect representation of the complexity of snow and ice response.
- Not All performance measures that are important to an agency can be fully controllable by the agency's response activity.
- Starting the process of performance measurement is the first step.
- Know what data are available and viable for performance management use.
- For snow and ice control, some level of subjectivity in performance measurement is unavoidable.
- Clearly understand how performance measures can be used in the decision-making process.
- Performance measures identified by agencies need to be simple and easily understood, not only by stakeholders but also by their own staff.

The report highlights five opportunities as approaches to meet some of the challenges of winter maintenance:

### Greater ability to collect real-time maintenance field data:

- ❖ Use of real-time road condition reporting systems, maintenance management systems, and MDSS, and use of real-time environmental data from equipped fleets allow for better and objective reporting of field conditions during and after events.

### Growth in probe data availability:

- ❖ Growth in third party provided probe data on travel speeds enables greater situational awareness and increased roadway coverage or analysis of performance measures.

### Greater linkages between the transportation and weather community:

- ❖ New partnership models between the public and private sector engage weather, traffic, and maintenance stakeholders to provide a common, shared message of severity, timing, and recommendation.

### New ways of engaging with the traveling public:

- ❖ From social media to crowdsourcing to apps, agencies have new ways to provide data to travelers and to collect feedback on agency performance.

### New tools for data visualization and performance reporting:

- ❖ Increased availability of online/cloud-based services allows manipulation of large data sets, including spatial data.

Finally, some considerations for the development and deployment of a snow and ice performance measurement program.

### Define and Use a Weather event as the Starting Point for Performance Measurement

The implication here is that a seasonal approach to performance does not allow enough opportunity for managing change if needed.

### Develop both a Storm Severity Index and a Seasonal Severity Index

The value of performance measurement is greatly enhanced by pairing it with severity at both a event level and a seasonal level.

### Pick Consistent LOS and Recovery Criteria

Make sure you define your level of service carefully, and make sure everyone is on the same page when it comes to measuring whether or not you have met the LOS requirements.

### Report performance Information

Telling a story through performance measures is essential for snow and ice control programs. It allows agencies to assess their performance and use of resources.

A tool was developed to help decision makers Identify appropriate adjustments that can be made to manage resources effectively through the use of performance measures. It can be found at:

<http://www.trb.org/Main/Blurbs/178901.aspx>

