

TRB 2016 International Winter Maintenance Conference

Expanded Summary

The Impact of Economic, Technological and Environmental Changes on Winter Maintenance Operations Plans and Policies: Adapting to the “New Normal”

State Transportation and local Public Works agencies responsible for snow and ice control are challenged by major changes in climate, the economy, technology, environmental regulations and the workforce. Winter storms have become more severe, more frequent and more prevalent in areas such as the Southeast U.S. that rarely experienced this type of weather. At the same time, many Maintenance Operations positions, the “snow fighters,” were permanently eliminated during the recent recession. As veteran employees retire in increasing numbers, it has become more difficult to find qualified replacements. Funding for equipment replacement and repair was sharply curtailed resulting in obsolete and unreliable fleets. Add to this the growing concerns about the environmental effects of snow and ice control materials and it is critical that agencies adapt their winter operations. Failure to recognize and respond to these significant, long-term trends is detrimental to an agency’s capability to provide reasonable and timely safety and mobility on the roadways. Technological advancements in equipment, materials, weather forecasting, pavement condition monitoring and activity tracking can substantially improve winter weather operations. However, many agencies either lack funding to incorporate them or encounter “institutional inertia” due to employee resistance and indifference by department executives and elected officials.

Levels of Service (LOS), the foundation of winter weather operations plans, may need to be revised for parts or all of a jurisdiction’s roadway system depending upon current and anticipated availability of key resources and trends in storm frequency, intensity and duration. Most agencies have not reviewed snow routes on a regular basis; some may not have been changed for decades. Route Optimization increases the efficiency and effectiveness of limited resources by adjusting for changes in a jurisdiction’s population, density, lane-miles, traffic volumes and patterns, roadway classification, fleet capabilities and plowing and spreading methods.

Improvements in weather forecasts and surface condition reporting provide agencies with better data for planning and executing operations. AVL and work management systems provide more accurate and timely information of progress that is used by program managers to adjust operations during a storm. Through and regular training of employees and contractors on safety, material applications, plowing techniques and communications help to achieve and sustain program objectives.

Lastly, agencies need comprehensive, current plans and manuals that define the mission, goals and objectives; describe the policies, protocols, priorities and level of service and summarize the operational strategies and tactics. A sound plan provides continuity and consistency, especially important as agencies experience rapid staff turnover, reorganization, expanding mandates and regulations, budgetary constraints and increased scrutiny by the public and the media.

State DOTs and local Public Works must anticipate significant changes, assess their impacts, adjust the policies and programs to meet those challenges, adapt their procedures and practices to evolving conditions, and act in an expedient manner to implement those revisions and improvements.

