

WSDOT, North Central Region Smart Snowplow Project

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The North Central Region of the Washington State Department of Transportation expends significant funding and effort controlling snow and ice. Each biennium we budget between 12 and 15 million dollars for snowfighting activities. Because of the high cost of the task and its critical importance, much effort goes into improving its efficiency and effectiveness. - Storm management efforts were stepped up in the late '90s, to including closer monitoring of road conditions and tighter management of resources. When the storm management program began we had no automated method to collect data. Snowplow drivers were required to call in twice per hour to report their location and road conditions so that resources could be moved as needed for maximum effectiveness. At the end of shift, drivers needed to account for their time, describe which highways they plowed and treated, and report on the materials used. It was obvious that we needed a better method to collect snow and ice operations data. In late 2002 the region began work to implement automated data collection. Although it's been a long process, this winter we mapped a significant part of our regional snowplow fleet. Most outfitted trucks reported roadway and air temperatures. All outfitted trucks report the quantity of liquid and solid material used and where it was applied. -- Some challenges encountered included:

- Communications: The North Central Region is very rural. As a result we have large areas without cellular phone service.
- Equipment: We had difficulty finding a vendor that could translate information from our existing Raven, Dickey John, Parker IQAN and Schmidt precision application controllers to a central database.
- Employee acceptance of the new systems: There has been some concern about "Big Brother" watching.
- Internal purchasing, contracting, & software development: Unfamiliarity with systems contracting, and purchasing rules that differ depending on type of equipment purchased have proved challenging.
- Installation and Troubleshooting issues: Working on ITS equipment was outside the comfort area of many of our mechanics and maintenance staff. -- Each of these issues have provided interesting challenges and we'd be happy to share our experience with others that may be looking toward a similar AVL system. Overall we're excited about progress made and look forward to next steps which will include further verification of incoming data and outfitting the remainder of our fleet with the necessary equipment.