



GPS for State Contractors Massachusetts Highway Department

Introduction

The Massachusetts Highway Department, or MassHighway, solved a longstanding management problem by using technology in an innovative way. Contractors who work for MassHighway, such as snowplow operators, are now assigned GPS-enabled cell phones so that managers can track where and when work is being done. This capability ensures that workers, equipment and budget dollars are used efficiently.

The Problem

MassHighway is responsible for keeping more than 13,000 lane-miles of road and 3,000 bridges safe for driving. Wintertime is no exception. MassHighway, however, does not employ enough staff or own enough equipment for this task; it owns a mere 350 pieces of snow and ice removal equipment. Instead, MassHighway spends more than \$40 million annually on snow removal contractors. These private operators deploy more than 3,500 pieces of equipment to clear the Commonwealth's roads.

There has traditionally been little oversight of how these subcontractors use their time. MassHighway managers couldn't possibly monitor the work done by 3,500 trucks and snowplows on 13,000 miles of road, especially not during a blizzard. While there was a MassHighway auditing process, these audits failed to answer crucial questions, such as whether the salt and sand were dispersed properly, whether the roads were cleared in an adequate and timely manner, and, most importantly, whether the vendors' invoices accurately billed for their work. The Commonwealth and the taxpayers simply had no way of knowing whether they were getting what they paid for.

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The Solution, and Lessons for Other States

MassHighway, however, has since found a solution: GPS-enabled cellular phones. While the program has been successful, initial implementation was rocky. Purchasing a \$300,000 phone system was only the first step in the process. In the fall of 2003, MassHighway distributed cell phones to all vendors in Districts Four and Five, which comprises eastern Massachusetts. The vendors balked, sent back phones, protested on the State House steps and threatened a state-paralyzing strike. By December, the two sides had yet to reach an agreement. Yet, when flurries began on December 5, 2003, the vendors relented, on a “trial basis,” in exchange for other concessions from the Commonwealth. The phones are now standard equipment.

Now, MassHighway can ensure that salt and sand are dropped at the optimum speeds. Thanks to maps that track snowfall, storm path and plow location, it can dispatch equipment to the worst-hit roads more rapidly and efficiently. The most important improvement, however, involves billing. Thanks to GPS’s omnipresent nature, the Department can ensure there is no graft—no unauthorized plowing, no excessive coffee breaks, no private driveway clearings, and so on. In an age of aggressive litigation, the Department can definitively prove where a plow was and whether a road was cleared, preempting nasty negligence disputes. GPS allows monitoring where previously there was practically none.

Contractors are certainly not overjoyed with the tracking of their whereabouts. The President of the Massachusetts Snow and Ice Contractors Association, Matthew Frazier, has called the phones “an absolute failure” and circulated tales of the devices preposterously showing plows speeding at 110 miles an hour.

The Commonwealth, nonetheless, has moved forward. For the 2004-05 winter, MassHighway added District Three to the GPS program, allowing all plowing from Gardner to Sturbridge to Gloucester to Chatham to be monitored. The biggest remaining obstacle is of a geographic nature, as the Berkshires’ nooks and crannies leave too many dead spots in for MassHighway to implement the GPS program in Districts One and Two, in western Massachusetts.

Conclusion

While such geographic problems have proved stubborn, the GPS program has made an essential state operation more responsive and more accountable. By measuring actual performance, MassHighway is able to make our roads safer and reward the most effective vendors for the quality of their work. Such an approach holds promise for any state agency that makes use of private contractors.



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