

## RESULTS SUMMARY

Researchers identified factors that contribute to success in winter maintenance contracting, including open communication, clear contracts, and a true partnership with shared goals between agencies and contractors.

## PROJECT DETAILS

**Project Title:** North American Study on Contracting Snow and Ice Response

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# CURRENT PRACTICES AND LESSONS LEARNED IN WINTER MAINTENANCE CONTRACTING

Winter road maintenance is a critical function of transportation agencies in winter-weather states. Optimizing winter maintenance operations is key to ensuring the safety and mobility of the traveling public. Increasingly, however, winter maintenance agencies are facing service demands that exceed their resources. To help meet these demands, many agencies are choosing to contract winter maintenance services, either to supplement in-house services on an as-needed basis or, in some areas, as a long-term replacement for in-house services.

## Need for Research

While contracting services is a widespread practice, little information is available about the extent that these services are used in snow and ice control operations or the factors that can contribute to a successful contracting arrangement.

## Objectives and Methodology

The goal of this project was to identify best practices in winter maintenance contracting. Researchers sought to determine the information that agencies should evaluate as well as the benefits and costs to determine whether contracting is an effective solution to help meet their service goals.

Researchers conducted a literature review to document the state of the practice of contracted winter maintenance services. This effort focused on identifying costs, benefits, practices and complexities related to contracting.

They also conducted an online survey of transportation agencies to document their experiences with contracting. The survey was distributed to Clear Roads member states, the American Public Works Association, the American Association of State Highway and Transportation Officials (AASHTO) Snow and Ice Listserv, and the Winter Maintenance and Effects LinkedIn page. Researchers received 51 responses from 31 states and three Canadian provinces.



Urban areas generally have a higher density of contracting firms and therefore provide a more favorable environment for using contractors. However, contractors may be willing to work in rural areas if the size of the contract warrants it.

## Results

About 60 percent of survey respondents use contracted winter maintenance services. Half of those respondents said they were primarily motivated by a lack of agency resources, particularly labor and equipment. Almost all of the agencies that use contractors said that contractors provide the equipment they use, but more than half said the agency provides winter maintenance materials.

One critical factor in successful winter maintenance contracting is developing a working partnership between the agency and the contractor. Both parties need to establish clear, open and honest communication to ensure that they share overall goals and address any issues effectively. Writing contracts that clearly and concisely specify terms and conditions is another important component of successful contracting. Additionally, while many contracts specify material application rates, most do not address equipment calibration. Agencies could see large improvements in material application accuracy if contracts specify how often equipment should be calibrated and who is responsible for doing so.

About 60 percent of survey respondents reported having criteria for pre-qualifying contractors. One effective example was a three-tier system, where any contractor that wants to bid on a contract must first demonstrate sufficient insurance and bonding. The second and third tiers, which are both considered in the final bid award decision, are a service proposal demonstrating the approach to the work and a cost proposal, respectively.

The evidence of whether contracted winter maintenance operations improve the level of service is inconclusive. However, researchers did find strong evidence of a learning curve. New contractor performance is typically lower than that of in-house services during the first two years of a contract, but generally improves after that time. For that reason, survey respondents reported that three- to five-year contracts with extensions based on contractor success were more effective than shorter contracts.

## Benefits and Further Research

The information learned in this project can help agencies evaluate whether contracting is an effective way to meet winter service demands and, if so, develop successful partnerships with contractors. But in terms of comparing contracted and in-house services, gaps in knowledge remain. For example, while researchers found that most agencies have data about winter maintenance expenditures in some form, they do not have an easy way to directly compare the costs of contracted to in-house winter maintenance services. A tool to help agencies directly compare costs, levels of service and other parameters, and perform a cost-benefit analysis of contracted services would be beneficial.

One argument commonly used against contracting is that contractors may be less safe than agencies. This research found limited data about the relative safety of contracted versus in-house winter maintenance services to either support or repudiate this argument. A safety analysis would be necessary to make that determination.

Agencies that have experience with contracting can serve as a good resource for agencies that are considering contracting. Given how important contract language is to success, Clear Roads may also want to facilitate sharing of contract examples or develop a contract framework that agencies can adapt to their specific needs.

**"Agencies can use this research to better determine whether contracting winter maintenance services makes sense for their situation."**

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