



Ontario

Ministry of Municipal Affairs & Housing



Association of Municipalities of Ontario

ONTARIO CENTRE FOR MUNICIPAL BEST PRACTICES

393 University Ave., Suite 1701, Toronto, Ontario M5G 1E6

BEST PRACTICES SUMMARY REPORT

RO – WC – 04 – 08

Roads – Winter Control – Proactive Anti-icing to Avoid Weekend Call-outs

Practice Identification: Roads – Winter Control – Proactive Anti-icing to Avoid Weekend Call-outs

Case Study Municipality: City of Guelph

Key Word: Operational Procedures

Benefits that resulted from adoption of the Practice;

- **Improved system safety and reduced legal liability**
 - **Overtime cost avoidance associated with reduced frequency of weekend call-outs**
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1. Description of the Practice in the Case-study Municipality

The City of Guelph delivers winter control services across a mixed road system consisting of more than 1,150 paved lane kilometres in 2002. The system is maintained at a bare pavement standard for primary roads, a centre-bare standard for secondary roads and snow-packed for local roads. Guelph provides an urban winter event response capacity featuring 10 owned and operated combination units, 21 contracted units and 4 wing plows (a higher-than-average 31 lane-kilometres per unit). Full system clean-up is accomplished in 18 hours or less after the end of a winter event. System pass coverage rates were not

tracked in 2002. Guelph's 2002 MPMP winter control costs per kilometre (adjusted for winter precipitation intensity) were among the lowest among similar mixed road systems.

As noted in the OCMBP case study RO – WC – 04 – 03 on Guelph's shift deployment practices, weekends were historically staffed by Guelph – generating significant overtime driven costs per event response. Guelph no longer staffs weekends, relying instead on 24/7 patrol and weekend call-outs when required. Week-end callout staff (seven staff) are paid \$1.06/hour for stand-by and then compensated at normal overtime wage rates when called (1.5 times (Saturday) or 2 times (Sunday)).

Guelph carefully monitors weather conditions heading into winter season weekends and, when events appear imminent, the City engages in aggressive anti-icing on Thursdays and Fridays. Anti-icing is focused on routes containing mapped black ice "hazard spots". A specialized dump truck unit featuring computerized spreading technology delivers pro-active anti-icing. Salt brine is applied at higher than normal application rates – ranging from 80 to 120 litres per system lane-km depending on anticipated conditions. Pavement temperatures are regularly monitored to avoid refreeze problems. Staff delivering proactive anti-icing activity are compensated at straight-time week-day wage rates. The incidence of weekend event response call-outs is lower than it otherwise would be. If a call-out response is required, the system benefits from the advance anti-icing already delivered, providing an event response "cushion" in terms of system safety. City staff do not have a count of how many "avoided callouts" were achieved during 2002, but the cost avoidance impact is deemed measurable and significant during normal to severe winters. Safety impacts are associated with improved system navigability and reduced condition-related collisions. Liability is reduced through documented anti-icing efforts conducted prior to an anticipated winter event. Guelph's anti-icing practice is also consistent with its commitment to good salt management and environmental practices.

The City of Guelph participates in the Ontario Municipal CAOs Benchmarking Initiative (OMBI). The Ontario Municipal CAO's Benchmarking Initiative is a CAO's partnership effort to continuously strive for service excellence in municipal government. Participating municipalities are working together to identify and share performance statistics and operational best practices, and to network in a spirit of innovation and entrepreneurship for even greater successes.

2. Evaluation of Practice

Guelph's proactive anti-icing would deliver similar safety, cost avoidance and liability reduction across most municipal road jurisdictions willing to invest in computerized anti-icing technologies and procedures. The financial benefits of the practice are both material and measurable, but a significant level of effort may be required to measure precise financial benefits. For instance, the number

of avoided weekend call-outs could be tracked, and the associated avoidance of overtime-driven costs could be estimated. While measurement of the financial benefits may be effort-intensive, the existence of the benefits is beyond doubt. Proactive de-icing may also ease the service level transition associated with removal of regularly scheduled weekend staffing, as was the case in Guelph.

3. Replication of Practice

Replicating Guelph's proactive anti-icing process requires the following:

- 1) Mapping black ice and other hazard locations to ensure a single deployed anti-icing unit maximizes risk reduction and safety improvement by hitting those routes first
- 2) Investment in computerized spreading technologies to ensure Thursday or Friday salt brine application rates are high enough to achieve the desired effect on the weekend

Contact

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