Ministry of Municipal Affairs & Housing

Association of Municipalities of Ontario

ONTARIO CENTRE FOR MUNICIPAL BEST PRACTICES

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BEST PRACTICE SUMMARY REPORT
May 2003

Roads – Winter Control – Low Volume Gravel Road Deferred Service

Practice Identification: **Roads Winter Control – Low Volume Gravel Road Deferred Service**

Case Study Municipality: Chatham-Kent

Key Word: Operational Procedures

Benefits which resulted from adoption of the Practice;

- **Low relative cost of winter maintenance**
- **Reduced impact on roads by municipal equipment**
- **Reduction in loss of road gravel due to ploughing operations**

Description of the Practice in the Case-study Municipality

The Municipality of Chatham-Kent has adopted a practice of careful attention to weather reporting, including locally-predictable periods of winter thawing. As a result, municipal staff may opt on a case-by-case basis to delay ploughing operations on low-volume gravel roads, and allow natural melting to create mid-winter, bare or center-bare road conditions within a few days after a marginal (< 5cm) storm. Traffic generally reduces the levels of loose snow to acceptable limits, even if a snowfall is slightly greater in total depth, unless the rate of snow accumulation is unusually high.

The practice is historic within the lower-tier municipalities of the previous Kent County. It has become institutionalized by the amalgamated municipality of Chatham-Kent. The pre-amalgamation lower-tier road systems were predominately gravel roads with traffic volumes in the range of 200 vehicles per day. This low

traffic volume is the primary reason why this practice is acceptable to the local population.

Chatham-Kent (pop. 109,945 in 2000) is a recently amalgamated single-tier municipality with 86 % of its roads classified as rural. It is one of the most southern municipalities in Canada and is renowned for its mild winters.

The municipality reported similar numbers of winter storm events as other respondents, with a winter storm season of similar length; yet its per-kilometre costs were relatively very low.

Evaluation of Practice

Efficiency

The do-nothing case is supportable in Chatham-Kent climatic conditions due to the impact of periodic thaw cycles that naturally result in bare or center bare roadways. Snow-packed roads with thin snow cover and low traffic volume (i.e. <400 Average Annual Daily Traffic) generally do not become slippery at warmer temperatures. The application of de-icing chemicals is not appropriate, due to its deleterious effect on gravel roads. The free water created by de-icers results in gravel road pot-holes which are difficult to grade out, even in mild winters, due to the presence of frost.

Effectiveness

Decisions with regard to ploughing during the storm or post-storm can be made on a case-by-case basis subject to the actual road condition. Provided that the storm does not create unusually adverse road conditions, subsequent decisions can create acceptable conditions in a reasonably timely fashion.

Statutory requirement

Although the Minimum Maintenance Standards were not in effect in 2002, early drafts then available suggested a time within which to bring roads to an acceptable standard after storms. This practice on Chatham-Kent's low-volume roads will, subject to the accuracy of weather reporting, reach the outcome-based standard of snow accumulation on these roads within the time allowance.

Replication of the Practice

The practice is relatively widely known, but is limited to the most temperate zones of Ontario or to periods at the start and end of the winter season if the thaw is predictable.

It is most applicable to roads with low traffic volume.

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Comments

Public Debate over the practice as part of the municipal budget process would assist in establishing the public expectation and reinforce the position that the practice is reasonable in the circumstances, taking into account the character and location of the road(s) or bridge(s).