Winter Maintenance on Provincial Highways

Thunder Bay District Municipal League

Ian Smith, Regional Director, Northwestern Region
Ministry of Transportation

November 1, 2013

Ontario has among the Safest Roads in North America
Area Maintenance Contract (AMC)

- **Thunder Bay East** – Area Maintenance Contract by Carillion Canada Inc. started June 2013

- **Thunder Bay West** – Area Maintenance Contract by IMOS (Integrated Maintenance & Operations Services) started June 2011

- **Kenora** – Area Maintenance Contract awarded to Transfield Services (Ontario) Ltd., started June 2012
Outline

1. Winter Maintenance Standard
2. Winter Maintenance Contract Requirements
3. MTO Oversight
4. Technology
5. Highway Closures
6. How Can You Help?
7. Contact Information
8. Northwestern Region Construction Highlights
Ontario’s snow and ice control standard is consistent with the best practices used across North America.

Our maintenance standard has not changed.
Winter Maintenance Standard

- There are 5 highway classes for winter maintenance
- The class is based on the winter traffic volumes (vehicles per day)
- Traffic counts are conducted every two years and the class is updated as appropriate

<table>
<thead>
<tr>
<th>Highway Class</th>
<th>Winter Volumes (vpd)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Northern Ontario</td>
</tr>
<tr>
<td>Class 1</td>
<td>&gt;10,000</td>
</tr>
<tr>
<td>Class 2</td>
<td>1,500 – 10,000</td>
</tr>
<tr>
<td>Class 3</td>
<td>800 – 1,500</td>
</tr>
<tr>
<td>Class 4</td>
<td>400 - 800</td>
</tr>
<tr>
<td>Class 5</td>
<td>&lt;400</td>
</tr>
</tbody>
</table>
## Winter Maintenance Standard

<table>
<thead>
<tr>
<th>Class</th>
<th>Highway Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bare pavement within 8 hrs following end of winter event</td>
</tr>
<tr>
<td>2</td>
<td>Bare pavement within 16 hrs following end of winter event</td>
</tr>
<tr>
<td>3</td>
<td>Bare pavement within 24 hrs following end of winter event</td>
</tr>
<tr>
<td>4</td>
<td>Centre Bare within 24 hrs following end of winter event and full bare pavement when conditions permit</td>
</tr>
<tr>
<td>5</td>
<td>Snow packed within 24 hrs following end of winter event</td>
</tr>
</tbody>
</table>
Winter Maintenance Standard

- The ministry’s goal and service commitment is to achieve bare pavement standard after winter storms 90% of the time on average across the province.
- The ministry has consistently achieved or exceeded this goal since we started reporting in 2003;

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>95%</td>
</tr>
<tr>
<td>2004-05</td>
<td>93%</td>
</tr>
<tr>
<td>2005-06</td>
<td>96%</td>
</tr>
<tr>
<td>2006-07</td>
<td>96%</td>
</tr>
<tr>
<td>2007-08</td>
<td>95%</td>
</tr>
<tr>
<td>2008-09</td>
<td>91%</td>
</tr>
<tr>
<td>2009-10</td>
<td>96%</td>
</tr>
<tr>
<td>2010-11</td>
<td>94%</td>
</tr>
<tr>
<td>2011-12</td>
<td>96%</td>
</tr>
</tbody>
</table>

Goal 90%
Winter Maintenance Contract Requirements

• Contract requirements are based on our standard and long standing best practices and include;
  • Readiness of staff, equipment and materials to respond quickly
  • Deployment of plows (upon accumulation of 2cm of snow)
  • Spreading sand/salt (within 30 minutes of arrival of storm)
  • Circuit times for plowing, sanding & salting
  • Application rates for sanding & salting
  • Continuous operations until bare pavement achieved
  • Achieving bare pavement standard within the specified time
  • Address isolated slippery sections
  • Post storm clean-up (shoulders, banks, commuter parking lots)
  • Salt management
  • Documentation
## Winter Maintenance Contract Requirements

<table>
<thead>
<tr>
<th>Class</th>
<th>Maximum Circuit Time (Hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>1.6</td>
</tr>
<tr>
<td>Class 2</td>
<td>2.2</td>
</tr>
<tr>
<td>Class 3</td>
<td>3.3</td>
</tr>
<tr>
<td>Class 4</td>
<td>5.5</td>
</tr>
<tr>
<td>Class 5</td>
<td>10.0</td>
</tr>
</tbody>
</table>
Winter Maintenance Contract Requirements

• Contractors have demonstrated their ability to deliver winter maintenance services to our strict requirements

• Contractors are responsible for;
  • Patrol, callout and direct their own operations in accordance with the contract requirements.
  • Meet our winter maintenance bare pavement standard and contract requirements

• Consequences for non-compliance
  • Financial  – financial consequences for initial non-compliance & ongoing until brought into compliance
  • Infraction  – can reduce ability to bid on future contracts
  • Termination – in the most severe cases
Winter Maintenance Contract Requirements

Transition Period (Start of Winter, End of Winter)

• Contractors are required to have a minimum of 50% of the full winter equipment in use during the Transition Period
• The transition periods in this area are September 22 to October 21 in the fall and April 23 to May 22 in the spring

Spare Equipment

• Contractors are required to have spare equipment ready for use in the event of equipment breakdown

Passing Lanes

• Cleared as the same time as through lanes
MTO Oversight

• Ministry staff have extensive experience in winter road maintenance, contract administration and specification requirements.

• Oversight is performed using various tools and techniques;
  • Monitor all equipment and activities using GPS-based system
  • Monitor weather and road conditions using road and weather information system
  • Field inspections by selective audits
  • Document review (contractor diaries, equipment reports, material usage, MTO communication reports, OPP reports)
MTO Oversight

- MTO assess contractor operations against over 30 contract requirements including:
  - response time
  - equipment utilization
  - plowing and spreading operations
  - material type (sand or salt) and distribution rates
  - plow and spreading circuit times
  - continuous operations
- Assess if circumstances are beyond contractor’s control (i.e. circuit times cannot be met due to traffic congestion or highway closed due to collision)
- Issue consequences (financial, infraction, termination) for failure to meet contract requirements that are within the contractor’s control.
Technology
Automated Vehicle Location System (AVL)

• All winter equipment have AVL
• Uses GPS technology to track plow trucks, salt/sand trucks, patrol trucks, etc.
• Capable of tracking, storing and reporting movement and actions while in use, 24 hrs/day 7 days/week.
• Can monitor winter equipment in real time (within cell coverage)
• Information is also stored in a database for later retrieval.
• Provides detailed information;
  • location, speed, operation (plowing, spreading), type of material (salt, sand), application rates
Technology
Road Weather Information System

- Integrated system of weather and road surface information
- MTO network of 141 stations
- Used to predict winter weather, road conditions & maintenance services
- Includes
  - Detailed 24 hour weather forecast for rain, snow, temperature, dew point, wind
  - Detailed 24 hour road surface forecast for snow or ice, frost, wet, damp, dry
  - 7 day long range weather forecast
Technology Equipment – Combination Trucks and Tow Plows

- Advances in equipment technology means that our highways can be maintained to our standard and contract requirements with different types and numbers of equipment.
- For example, separate plows and spreaders have now been replaced with combination trucks that can plow and spread simultaneously.
- Tow plows are now being used in areas of multiple lanes
Tow Plow
Highway Closures

• Despite our best efforts, there will be times when extreme weather may prevent the highway from being cleared quickly.

• Sometimes the safest and best option is to close a highway until weather conditions improve enough to allow snow and ice control.

• Only the police have the authority to close the highway.
How Can You Help?

Let us know if you or others have a concern about our winter maintenance services.

• If you have a question about winter maintenance;
  • Please contact our Regional Communications Coordinator, Annemarie Piscopo

• If you wish to refer an individual to the ministry;
  • To obtain information about current road conditions, they can refer to our website or 511 automated telephone system
  • To ask a question or express a concern, they can send an e-mail to mtoinfo@ontario.ca or call our 1-800 Information Line
  • To express an urgent concern, they can contact our contractor directly on their toll free number; contractors are required to return all calls within 24 hours and keep a log of calls for ministry review
How Can You Help?

Help us to get the word out about safe driving in winter conditions

• We have a lot of great winter driving tips on our website

• Stay alert, slow down, stay in control
  • Slow down and drive according to weather and road conditions
  • Keep a safe distance between you and the vehicle in front
  • Give yourself extra time to get to your destination
  • Consider delaying your trip
  • Prepare your vehicle
  • Keep a winter survival kit
# Public Contact & Resource Information

## Northwestern Ontario

<table>
<thead>
<tr>
<th>Contact</th>
<th>Ministry Contact &amp; Resource Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Communications Coordinator</td>
<td>Annemarie Piscopo, (807) 474-2954,</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:annemarie.piscopo@ontario.ca">annemarie.piscopo@ontario.ca</a></td>
</tr>
<tr>
<td>Winter Road Conditions (Website)</td>
<td><a href="http://www.ontario.ca/trip">www.ontario.ca/trip</a></td>
</tr>
<tr>
<td></td>
<td><a href="http://www.mto.gov.on.ca/french/traveller/trip">http://www.mto.gov.on.ca/french/traveller/trip</a></td>
</tr>
<tr>
<td>Winter Road Conditions (Telephone 511)</td>
<td>Call 511</td>
</tr>
<tr>
<td>Service Ontario Transportation Info. Line</td>
<td>Call: 1-800-268-4686</td>
</tr>
<tr>
<td></td>
<td>E-mail: <a href="mailto:winterhighways@ontario.ca">winterhighways@ontario.ca</a> or</td>
</tr>
<tr>
<td></td>
<td>E-mail: <a href="mailto:mtoinfo@ontario.ca">mtoinfo@ontario.ca</a></td>
</tr>
<tr>
<td></td>
<td><a href="http://www.mto.gov.on.ca/french/safety/winterdrive/winterdrive.shtml">http://www.mto.gov.on.ca/french/safety/winterdrive/winterdrive.shtml</a></td>
</tr>
</tbody>
</table>
# Public Contact Information Northwestern Ontario

<table>
<thead>
<tr>
<th>Contract Location</th>
<th>Name and Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenora</td>
<td>Transfield Services (Ontario) Ltd. 1-888-933-3326</td>
</tr>
<tr>
<td>Thunder Bay East</td>
<td>Carillion Canada Inc. 1-888-636-8704</td>
</tr>
<tr>
<td>Thunder Bay West</td>
<td>Integrated Maintenance &amp; Operations Services 1-855-680-0861</td>
</tr>
</tbody>
</table>
Northwestern Region Highlights

35 Construction Contracts underway in 2013

• Fall tenders ongoing for 2014
Northwestern Region Construction Expenditures in 2013/14

$214 million total investment

Rehabilitation of highways & bridges - $146 million
Expansion - $68 million
Capital Budgets ($M) 2001 – 2013

- **Construction**
- **Engineering & Property**
- **Other Capital**

<table>
<thead>
<tr>
<th>Year</th>
<th>Construction</th>
<th>Engineering &amp; Property</th>
<th>Other Capital</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/02</td>
<td>721</td>
<td>325</td>
<td>184</td>
<td>1230</td>
</tr>
<tr>
<td>03/04</td>
<td>732</td>
<td>325</td>
<td>184</td>
<td>1241</td>
</tr>
<tr>
<td>05/06</td>
<td>688</td>
<td>451</td>
<td>263</td>
<td>1302</td>
</tr>
<tr>
<td>07/08</td>
<td>760</td>
<td>529</td>
<td>211</td>
<td>1500</td>
</tr>
<tr>
<td>09/10</td>
<td>951</td>
<td>679</td>
<td>170</td>
<td>1800</td>
</tr>
<tr>
<td>11/12</td>
<td>1124</td>
<td>812</td>
<td>164</td>
<td>2100</td>
</tr>
<tr>
<td>13/14</td>
<td>1332</td>
<td>969</td>
<td>161</td>
<td>2462</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$2.8B</td>
</tr>
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Expansion – Thunder Bay to Nipigon

Northwestern Region
Four Laning of the Thunder Bay to Nipigon Corridor - 103 km
Hodder Interchange Structure – PCI Award
2013 Expansion

• Highway 11/17 – From Mackenzie to Birch Beach – Complete – Bot Construction. Construction started in 2010. $61.8 M.

• Highway 11/17 – From Highway 527 easterly to Mackenzie – Tender opening October 2012. Aecon Construction & Materials Ltd. $46.3 M.

• Highway 11/17 – Nipigon River Bridge – June 2013 tender opening – Bot Ferrovial Joint Venture - $106.4 M.

• Highway 11/17 – South Trout Creek west of Nipigon – tender closed
Mackenzie River Bridges - Mackenzie to Birch Beach – Completed

Teranorth Construction
East Connection near Birch Beach
GAP Project - Transition
New Nipigon River Bridge

- New 4 lane cable stayed bridge.
- First cable stayed bridge on the Ontario highway network.
- Uses high strength cables as primary support system—lower carbon footprint.
2013 Rehabilitation

• Continued focus on existing infrastructure

• Increase proportion of capital budget allocation on bridge work
Rehabilitation of the Noden Causeway
Hwy 527 – 3 projects
Hwy 527 – 3 projects
Highway 614 and 627
Little Pic River Bridge – Spring 2013

Belanger Construction
Highway 61, Cloud River Culvert Replacement
Hwy 11, Blackwater River Bridge near Beardmore
Highway 17 – CPR Overhead Structure – Design Build
Highway 17 – Former CPR Overhead Structure – Design Build
Highway 527 – Emergency work