## Active Transportation

+ **What is Active Transportation?**
  + Any form of human-powered transportation, such as walking, cycling, wheelchair, in-line skating and skateboarding.
  + Urban transportation planning context – “cycling and walking”.
  + Increasing demand in recent years
  + Increase in infrastructure to enable, support and promote active transportation.

+ **Types of Active Transportation facilities include among others:**
  + Sidewalks
  + On road Bicycle facilities
  + Rail trails
  + Multiuse improved paths
  + In-Boulevard and Raised Bicycle facilities

## Why Maintain in Winter?

+ **Why Maintain Active Transportation Facilities in Winter?**

  + User Expectations
    - Healthier life style
    - To use year-round
    - Consistent surface condition (relative) – year-round

  + Maintenance standards & practices evolving
    - Ontario municipalities to continue to expand facilities for year-round use
Purpose of Presentation

+ Pending changes to MS include Winter Maintenance standards related to Active Transportation
+ Specifically discuss:
  + MS (2016 Review) and proposed changes
  + Industry Guidance
  + Evolving municipal practices

Active Transportation Winter Maintenance and Maintenance Standards (MS)
MMS 2016 Update (Proposed - MS)

+ **MS Purpose**
  + Sets forth various roadway maintenance standards for Ontario municipalities
  + Will include winter maintenance standards on sidewalks and bicycle facilities

+ **2016 Review of Reg. 239/02 (MS) has focus on Active Transportation, including:**
  + Winter maintenance on bicycle facilities (separated and conventional bike lanes)
  + Winter maintenance on sidewalks

Proposed MS – Snow Accumulation on Bicycle Facilities

+ **Proposed MS Section 4.1 Snow Accumulation – Separated and Conventional Bicycle Lanes:**
  + After becoming aware that snow accumulation is ... deploy resources as soon as practicable
  + Depths and time frame differs depending on facility type (separated or conventional bike lane)
Proposed MS – Ice Formation on Bicycle Facilities

+ Proposed MS Section 5(4.1) Ice Formation– Separated and Conventional Bicycle Lanes:
  + Also includes provision for the prevention of ice, if practicable, when there is a substantial probability of ice forming
  + Ice Formation, Ice Prevention and time frame differs depending on facility type (separated or conventional bike lane)

<table>
<thead>
<tr>
<th>Class of Difficulty</th>
<th>Time: Separated Bicycle Lanes</th>
<th>Time: Conventional Bicycle Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4 hours</td>
<td>6 hours</td>
</tr>
<tr>
<td>2</td>
<td>6 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td>3</td>
<td>12 hours</td>
<td>16 hours</td>
</tr>
<tr>
<td>4</td>
<td>24 hours</td>
<td>32 hours</td>
</tr>
</tbody>
</table>

Proposed MS – Snow Accumulation on Sidewalks

+ Proposed MS Section 16.2 Snow Accumulation – Sidewalks:
  + After the snow accumulation has ended, reduce the accumulation to a 8 cm, or less, within 48 hours
  + Not dictated by classification of road
  + Depth of snow can be determined in same manner/persons as for roadway, as indicated in sections 4(3) and 4(4)
Proposed MS – Ice Formation on Sidewalks

**Proposed MS Section 16.3 Ice Formation and Prevention – Sidewalks:**

+ Monitor the weather
+ If substantial probability of ice forming, treat the sidewalk, if practicable, to prevent ice or to improve traction within 48 hours of determination to deploy resources
+ The standard to treat ice on a sidewalk is 48 hrs.

Proposed MS – Winter Sidewalk Patrols

**Proposed MMS Section 16.4 Winter Patrols – Sidewalks:**

+ Weather monitoring
+ If substantial probability of snow accumulation of 8 cm or of ice formation, then standard is to patrol (representative) sidewalks.
+ Patrol: walk, driving or electronic monitoring
+ Performed by patroller or by persons preforming maintenance
Ontario Industry Guidance

+ **Ontario Traffic Manual (OTM) - Book 18 – Cycling Facilities**

+ OTM Purpose – To provide guidance to road authorities, and to promote a uniformity in the design, application and operations of traffic control devises and systems

+ Book 18 identifies various bicycle facility types, including conventional bike lanes and separated bike lanes
Ontario Industry Guidance

+ Selected guidance specific to winter maintenance of bike facilities include
+ Acknowledgment that cycling tends to decrease in winter
+ For some cycling is their primary mode
+ Snow and ice can be difficult to ride on and can obscure roadway defects, pavement markings and debris
+ For bike lane and cycle tracks it is not acceptable to simply install “No Winter Maintenance” signs
+ Practitioners should consider liability issues

Ontario Industry Guidance

+ Snow clearing operations should include all designated bicycle facilities on or adjacent to the roadway
+ Specific task listed include:
  – Clear on-road bicycle facilities of snow at the same time as vehicle travel lanes
  – Ice conditions - treat at the local road authority quality standards, or at the earliest opportunity
  – Reduce or remove snow banks where they restrict widths or sight lines
  – Where abrasives are used, sweep especially after a major storm event
  – Snow storage melt drain away from bike facility to prevent freeze-thaw cycles and ice formation
Examples of Municipal Practices

**Evolving Practices**

**Selected examples include:**

**City of Toronto**
- 23% of cyclists continue to cycle in winter
- Seasonal cycle tracks not recommended
- Winter maintenance is funded
- North American trend is to provide year-round cycling
- Review major cities with similar weather - all maintain year-round cycling facilities
Examples of Municipal Practices

+ City of Montreal
  - High amount of snow
  - Cyclist mode share is 3.2%, higher in CBD areas
  - 260 km of bicycle network
  - Year-round operation
  - Seasonal cycle tracks create disconnect in the network during winter
  - Year round cycle tracks are given high priority for winter maintenance
  - Recommend heating certain segments, high traffic, icing issues

Accommodating Active Transportation in Winter

ARE YOU READY?
Are You Ready?

**Proposed MS changes**

**Active Transportation maintenance requirements**

Systems needed include:

- **Internal Guidance and Policy**
  - Define systems in place to meet industry practices and standards (MS)
- **Monitoring of weather conditions and forecasts**
- **Adequate patrolling (representative)**
- **Maintenance that can meet MS**
- **Demonstrate compliance**?
  - Document to validate your efforts
  - Including decisions to not maintain

**Active Transportation Winter Maintenance Questions?**