

Understanding Customer Service Level Expectations

Winter Maintenance Operations Levels of Service

A Toronto Example

2010 North American Snow Conference

Dominic Guthrie



Presentation Outline

Toronto Levels of Service - Highlights

- D. Guthrie

Panel Discussion

- D. Hanneman
- W. Nixon
- D. Guthrie

Questions

- Audience

STAFF REPORT ACTION REQUIRED	
Confirmation of Levels of Service for Roadway and Roadside Winter Maintenance Services	
Date:	October 29, 2008
To:	Public Works and Infrastructure Committee
From:	General Manager, Transportation Services
Wards:	All
Reference Number:	P-2008/Comm/TRA/Scenarios/pw&i/0079 (AGF0021)
SUMMARY The purpose of this report is to respond to standing committee motions received in recent months for reports from the General Manager, Transportation Services on various matters related to winter maintenance. This report describes existing levels of service for the City's winter operations and seeks to confirm, or adjust as directed, those levels of service for roadway clearing, roadway ploughing, delivery window opening, interlock snow clearing, and more material.	



Toronto Facts

- 5th largest City in North America; Mexico City, New York, Los Angeles, Chicago
- 2.6 million pop within city limits
- 5.6 million pop in greater Toronto area
- > 50% of residents from outside Canada
- \$8.7 billion operating budget



Toronto Winter Facts



- 3600 center line miles of road
- 9000 lane miles
- 4500 miles of sidewalk
- Approx 52" snow/yr (80" in 07/08)
- 130,000 tons salt used per year
- \$80M Budget
- \$10 - \$20M reserve fund for over expenditures



Winter Equipment Overview

- 600 Road Ploughs
- 300 Sidewalk Ploughs
- 200 Salt Trucks
- 1600 Staff
- 18 maintenance yards
- **Logistics is our single biggest challenge**



What Are Levels of Service?

- A commitment that you make to residents
- Clearly defined in reports to elected officials
- Goals for Staff to work towards
- Defensible



Your Levels of Service Will Be...

- Based on Budget
- Shaped by Public Pressure
- Historical & Timely
- Unique to Your Organization
- Evolving
- Reflective of Best Practices
- Guided by Federal or State/Provincial Regulations



Tools to Assist in Determining LOS

- Formal Surveys
- Studies
- Public Meetings
- Consultations
- Complaint Driven
- Political Feedback
- Internal Review
- Salt Management Plan
- Resources



How Toronto's LOS Were Developed

- Amalgamation of 7 local governments in 1998 presented a unique political situation
- Service levels were harmonized to highest level post amalgamation – among the highest LOS anywhere
- Opportunity to opt out through the budget process has been declined by Council - this reaffirms the increasing public expectations
- Ongoing internal review to improve service delivery methods – primarily through equipment specifications, pilot projects, etc.



Toronto - Highlights

- 5 Minute Response for Salting
- Salt used on all classifications of road
- Approx 200 vehicles equipped with liquid
- Residential Sidewalk Clearing
- Driveway Windrow Opening



Level of Service Tables Explained

- Road Classification
 - Arterials, Locals, etc. Higher traffic volume = higher los
- Examples
 - Indicators – sample streets that residents can relate to
- Pavement Condition
 - Bare Pavement, Safe and Passable (snow covered is ok)
- Time Frame
 - How long to complete the activity
- Accumulation
 - How much snow required to initiate the activity
- Storm Types
 - Based on accumulation and event frequency



Level of Service Tables Explained

- Type of De-icing Material
 - Salt, Fusion, MgCl, etc (might be based on temperature)
- Application Rates
 - More/less salt/sand for heavily travelled routes
- Exceptions & Anomalies
 - Steep hills, bridges, hospitals, schools, EMS stations
- What You Will Not Do
 - Requirements for program, areas that do not receive
- What Residents Have To Do
 - Expectations of residents (clear sidewalk in front of property, don't park on street in advance of storm, etc)



Road Classification – Deicing Chart

- sample LOS table

Road Classification	Typical	Winter Service Level	Deicer	Application Rate (lb/lane mile)	Time frame to complete operations
Expressways 150,000 vehicles/day	DVP / FGGE	Bare Pavement	100 % Rock Salt	245 / 490 / 635 lb per lane mile	Up to 1 in of snow 1 – 2 hrs
Arterials Up to 50,000 vehicles/day	Yonge St / Finch Ave	Bare Pavement	100 % Rock Salt	245 / 490 / 635 lb per lane mile	Up to 2 in of snow and continuing 2 – 4 hrs
Collectors	Main streets through subdivision	Centre Bare Pavement	100 % Rock Salt	245 / 490 / 635 lb per lane mile	Up to 3 in of snow and stopped 8hrs
Locals	Residential	Safe and Passable Pavement	100 % Rock Salt	245 / 490 lb per lane mile	Up to 3 in of snow and stopped 8 - 12 hrs
Laneways		Safe and Passable Pavement	100 % Rock Salt	635 lb per lane mile	24 hrs



Toronto Core Services

- De-icing
- Ploughing
- Pedestrian



De-Icing - LOS

- | | |
|---|--|
| <p>Base</p> <ul style="list-style-type: none"> • Bare pavement on expressways & arterials • Centre bare on collectors • Safe & passable on locals | <p>Enhanced</p> <ul style="list-style-type: none"> • 200 trucks equipped with liquid • Direct liquid application on hills & bridges |
|---|--|



Roadway Ploughing - LOS

- | | |
|--|---|
| <p>Base</p> <ul style="list-style-type: none"> • Plough all road classifications; <ul style="list-style-type: none"> • Arterials – 2" & 6 to 8 hrs to complete • Collectors – 2" & 8 to 10hrs to complete • Locals – 3" & 14 to 16 hrs to complete | <p>Enhanced</p> <ul style="list-style-type: none"> • Driveway windrow opening – 262,000 driveways • Bicycle Lanes • Snow Removal - \$20M in 14 days |
|--|---|



Driveway Windrow Opening



Pedestrian - LOS

Base

- Clear all arterial & transit route sidewalks
- 3" accumulation in Dec & Mar
- 15 hrs to complete
- Salt on sidewalks

Enhanced

- Clear all residential sidewalk on local roads
- 2" accumulation in Jan & Feb
- Senior's program
- Recreational Trails (pilot project)



Sidewalk & Bus Stop Clearing



Use of Innovative Technology to Improve/Maintain LOS

- Salt Management Plan
- Liquids – 77% of fleet equipped with liquids (0% in 2002)
- Approx 500,000 gallons liquid / year
- Pilot Projects – seeking an alternative deicing material to maintain LOS at low temperatures
- GPS – Approx 1000 vehicles equipped w GPS



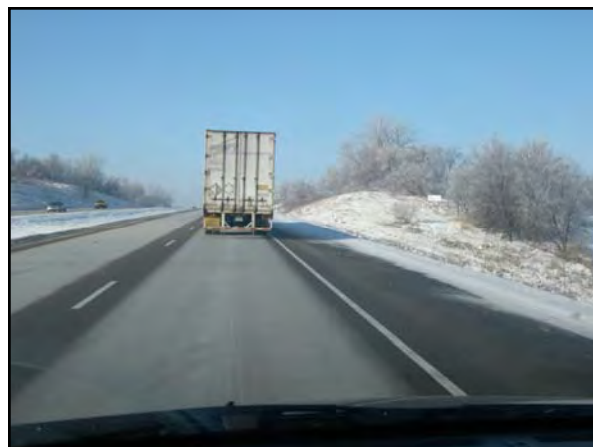
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Performance Measurement and Levels of Service

APWA North American Snow Conference
 Omaha, NE, 2010
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 University of Iowa and Asset Insight Technologies, LLC

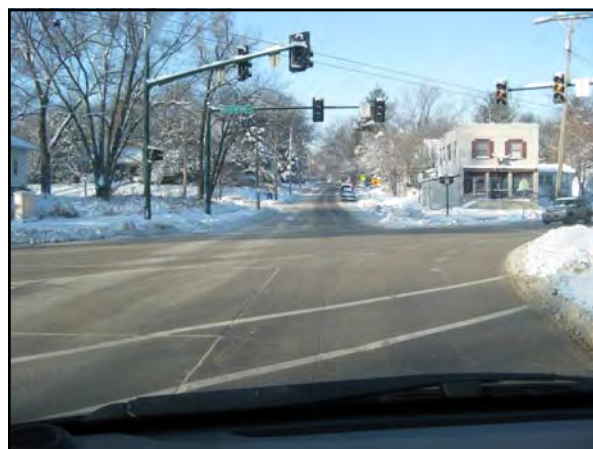
Levels of Service

- Different importance of road means different effort of treating that road
- Does not make sense to have all roads at the same level
- Most agencies include different levels of service in their maintenance plans
- Examples



But What About Storm Severity?

- Clearly, not all storms are the same
- Methods exist to measure severity of any given storm
- Road conditions will be different after different storms
- Not a problem, if suitably handled
 - Explain to the public
 - Measure your progress





Wow, was that good enough?

- In the circumstances, it was awesome
- Less than 24 hours after the December 2009 blizzard in Iowa City
- Represents a truly wonderful level of service
- Nobody (well, almost nobody) expects roads to be bare and dry under those sorts of circumstances...