

Presentation to the Audit Committee
on July 7, 2021 Agenda Item **AU9.11**

**AUDITOR
GENERAL**

TORONTO

Winter Road Maintenance Program – Phase 2 Analysis: Deploying Resources

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Presentation Overview

- **Background and Objectives**
- **Audit Findings**
 - A. **Cost Benefit Analysis – [Confidential Presentation]**
 - B. **[Confidential Presentation]**
 - C. **Using and Collecting Data [This presentation]**

Background and Objectives

Phase 2 Objectives were to:

- determine whether the best value for money is provided through the contracted services model, or if it would be more cost-effective to perform winter services in-house using City equipment and staff, and to
- identify opportunities for improved efficiency and cost-effectiveness in managing the contracted services model (e.g. cost drivers).

Scope & Methodology:

- Examined all winter program activities across all districts using historical data over the past five winter seasons

Background (continued)

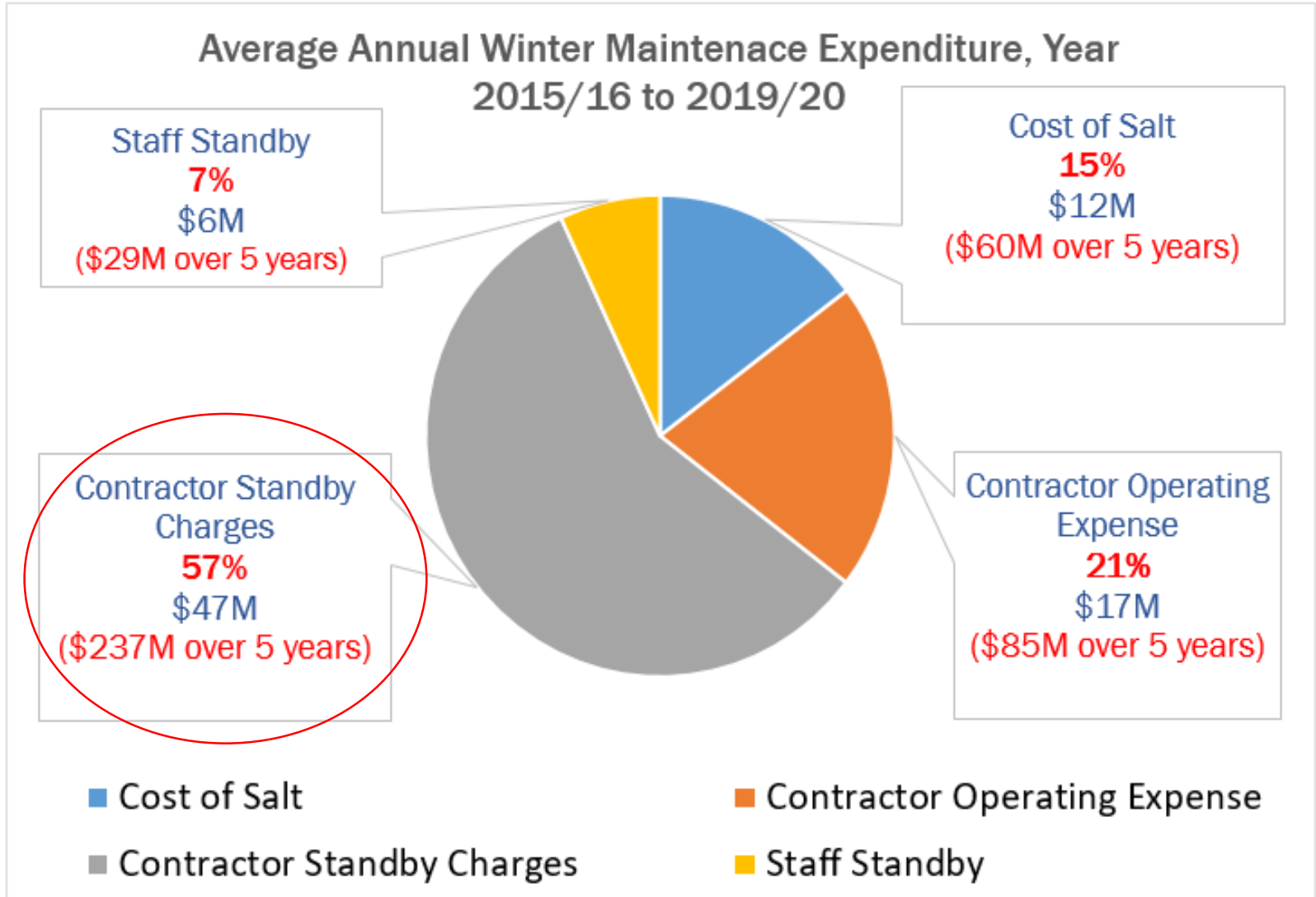
1. Majority of winter maintenance services delivered by contractors, **1 year** left in current **7 year** contract cycle
2. **\$90M** budgeted annually and **\$411M** spent in last 5 years on winter maintenance
3. **7 days**: average days with snowfall > 5 cm in Toronto

Levels of Snow Clearing Service, Toronto

Road Type	When does the City start salting?	When does the City start plowing?*	How many hours after the snow stops falling does it take to clear an average storm?
Expressways (Don Valley Parkway & Gardiner Expressway)	When snow first accumulates	2.5 cm	2-3 hours
Major roads, streetcar routes, bus routes, streets with hills and bike lanes		5 cm	6-8 hours
Neighbourhood roads		8 cm	14-16 hours

*Council-approved service levels, 2015-2022

Winter Road Maintenance Expenditures



C. Using and Collecting Data

When you have good reliable winter maintenance data it can be used to perform analyses, including:

- calculating average trip hours and length, hourly operating rates,
- reviewing deployment patterns,
- reviewing vehicle utilization information (e.g. if certain vehicles or contractors are underutilized or have redundant capacity),
- analyzing type of activity being performed, and
- holding contractors accountable for performance and service levels.

C. Using and Collecting Data

1. Transportation Services collects operational information that could be leveraged by the Division for monitoring contractor performance and improving overall efficiency of winter services.
2. We found that data quality (consistency) was poor and the Division was not using the data to the degree that it could to help with operational decisions.
3. We invested substantial time to 'clean up' the data to be able to perform our analysis.

Examples of Data Issues

	Issues noted	Example	Implication
1	Inconsistent Vehicle IDs from year to year	<p>i.e. for the same vehicle, the following vehicle IDs were used:</p> <ul style="list-style-type: none"> • 34EY1A01 • 28EY1A01 • EY1A01 • EY-1A01 	Difficult to compare vehicle utilization across multiple-years to assess optimum fleet levels
2	Inconsistent contract naming conventions – TMMS contract numbers change from year to year	<p>i.e. for different contracts, different naming conventions are used:</p> <ul style="list-style-type: none"> • 15EY193-Y1 • 19TEY093Y5 	Difficult to perform multi-year analysis on operational and standby data for contractors
3	Several days of operational activity lumped together and entered on a single day	i.e. 167.5 hours of operating activity entered for a single vehicle in a 24-hour period	Difficult to analyze service levels
4	Very low usage recorded for salting and plowing operations	<ul style="list-style-type: none"> • For plowing - 0.02 hrs, 0.05 hours, 0.08 hours • For salting - 5 km 	These are potentially data entry errors

Other examples of the types of issues found in the TMMS data can be found in Appendix 1.

Data quality needs to be improved
and operational data used to
manage the contracts better, so
that they are more cost effective.

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