

## **Background**

This report seeks to fulfill Operations Committee resolution # OP2019-6 which requests an information report to the Operations Committee regarding the status of winter control equipment including age, hours and kilometers of service for the purpose of right sizing the City's fleet.

Specifications for City fleet are developed by both Fleet Services as well as the various operating departments. Fleet services are responsible for the planned and emergency maintenance of this equipment. Maintenance is mainly performed from the Fleet and Transit Garage located at 1160 Lorne Street. Additionally, a fleet technician is located at each of the Frobisher, Suez and Rayside depots in order to further assist operations with technical issues.

In addition to the City owned fleet, roads operations has established service contracts whereby the vendor supplies the labour and equipment and is wholly responsible for maintenance and ensuring the equipment is available for use. These contracts are administered by roads operational staff and this contracted equipment is not included in this report.

Operationally, each of the five City depots is responsible for winter maintenance of their particular jurisdiction. As such, Appendix A lists the vehicles and equipment according to their use in winter control activities and provides for the depot, unit number, model year, manufacturer, type of equipment and hours or kilometers of the vehicle/equipment.

## **Operational Use - Vehicles and Equipment**

Appendix A lists vehicles/equipment primarily by their operational use. Vehicles and equipment have been categorized into 8 separate operational uses. Operationally, these units are largely administered at the depot level according to the number of assets (roads, sidewalk) in the jurisdiction of each depot.

Table 1 below summarizes Appendix A data in terms of number of units, average age and average kilometers/hours as well as provides some context to the purpose and choice of vehicles/equipment that are used to perform winter control tasks.

**TABLE 1 - Winter Control Vehicle/Equipment Summary**

Operational Use	Description	Number of Vehicles / Pieces of Machinery	Average Age	Average KM's or Hours
Load Plow Trucks & Snow Removal	The City's fleet of 10 loaders is used in winter control to load multi-function trucks with sand and/or salt for spreading on City streets. They are also utilized to load dump trucks with snow that is removed from the downtown areas and road right of ways. Similarly, the 5 backhoes are also used for snow removal from medians and right of ways as well as ditches in order to ensure water flow through culverts.	15	11	11,747
Plow/Ice Blading - Roads	This category is comprised of 5 graders. Graders are utilized for plowing some roads due to their relative mobility. Additionally, graders are utilized late in the winter season in order to remove ice build-up in residential areas as a result of snow accumulating and becoming packed over the winter months. In the summer, these units are used for grading gravel roads and shouldering of paved roads.	5	7.5	5,223
Plow / Sand / Salt - Roads	In order to service the 23 plow routes in the City, multi-function units were introduced in the mid 2000's in order to minimize the number of pieces of equipment in the City fleet. The advantages of multi-function plows are that they can be utilized as a dump truck for summer road activities by inserting a cover over the sand/salt dispensing system as well as only requiring one piece of equipment to simultaneously plow and sand/salt the 3,600 km's of roadway in the winter. The size of a multi-function truck does present some drawbacks as it relates to maneuverability particularly in small areas such as cul de sacs and in residential neighbourhoods with narrow roadways. The underbody plow is more maneuverable than a multi-function and can provide more efficient plowing in tighter spaces while dispensing sand/salt. It is a single purpose vehicle and has limited use in the summer maintenance program.	40	4	89,729
Plow / Sand / Salt of Parking Lots, Cul de Sacs and Laneways	Medium duty vehicles are utilized in winter control to plow and spread material in smaller, tighter areas that require extra maneuverability. Areas such as parking lots, cul de sacs and laneways that cannot be serviced with the City's conventional plow fleet are where these trucks would be used. The plows are removed from these units in the summer to allow for these vehicles to be used as standard work trucks.	7	7	48,337

Plow / Sand / Sweep - Sidewalks	In order to maintain 350 km's of safe sidewalks during the winter, the City uses Municipal Tractors with various attachments to plow and blow snow as well as sand the sidewalk. In the spring these units are equipped with sweepers that clear the sand onto the roadway for pickup by the road sweeping and collection equipment. These units are utilized in the summer for roadside grass and shrub cutting as well as some asphalt and concrete grinding.	29	6.75	3,147
Snow Removal	These two large snow blowers are primarily used to remove snow in the downtown core. They can quickly handle large volumes of snow and efficiently move the snow from the roadway to a dump trunk for transport.	2	13	809
Street Sweeping	The City has 4 vacuum style street sweepers that are used to clean streets of winter sand and other debris. City forces are heavily augmented in the spring with contracted street sweeping services for spring clean up. Additionally, 2 tanker/flushers are also used to wet and clean city streets from winter sand and debris	6	6.8	38,475
Winter Control Supervision	These vehicles are used by non-union staff to patrol roads and inspect any deficiencies.	19	4.4	130,953

## Winter Control Replacement

A number of factors are considered in making the decision to replace vehicles/equipment.

Consideration is given to age, use (km/hours), service provided, and condition of the vehicle/equipment.

Given the City's experience with these types of vehicles/equipment, the following expected useful life timelines and usage (KM's/Hours) are a guide.

Table 2 -Expected Useful Life		
Vehicle/Equipment	Age (Years)	KM's/ Hours
Loaders, Graders, Backhoes	12-15	15,000-20,000
Multi-Function Plows	10	300,000
Medium Duty	10	150,000
Municipal Tractors	12	10,000
Sweepers	10	N/A
Light Duty Trucks	7	200,000

The expected useful lives of the equipment listed above are similar to many municipalities. Municipal Benchmarking Network Canada (MBNCan), publishes age based data from the 17 participating municipalities in regards to light (light duty trucks), medium (medium duty) and heavy duty (multi-function plows) vehicles. Table 3 below displays the average age data from MBNCan for these periods.

<b>Table 3 -MBNCan Average Age of Vehicles (All Municipalities)*</b>		
	<b>2017</b>	<b>2018</b>
Light Duty	6.0	6.2
Medium Duty	7.3	7.3
Heavy Duty	7.1	7.4

\*The results in Table 3 are all-inclusive of municipal vehicles that include winter control units.

## **Conclusion**

There are some units in the winter control fleet that are beyond their expected useful life. However, the average age of the winter control fleet is similar in age to other municipalities that are involved in MBNCan.