

8.3.5 Fleet

8.3.5.1 What do we own and what is it worth?

Please refer to section 5.1.1 for general context and appropriate asset management interpretation of this section's specifics.

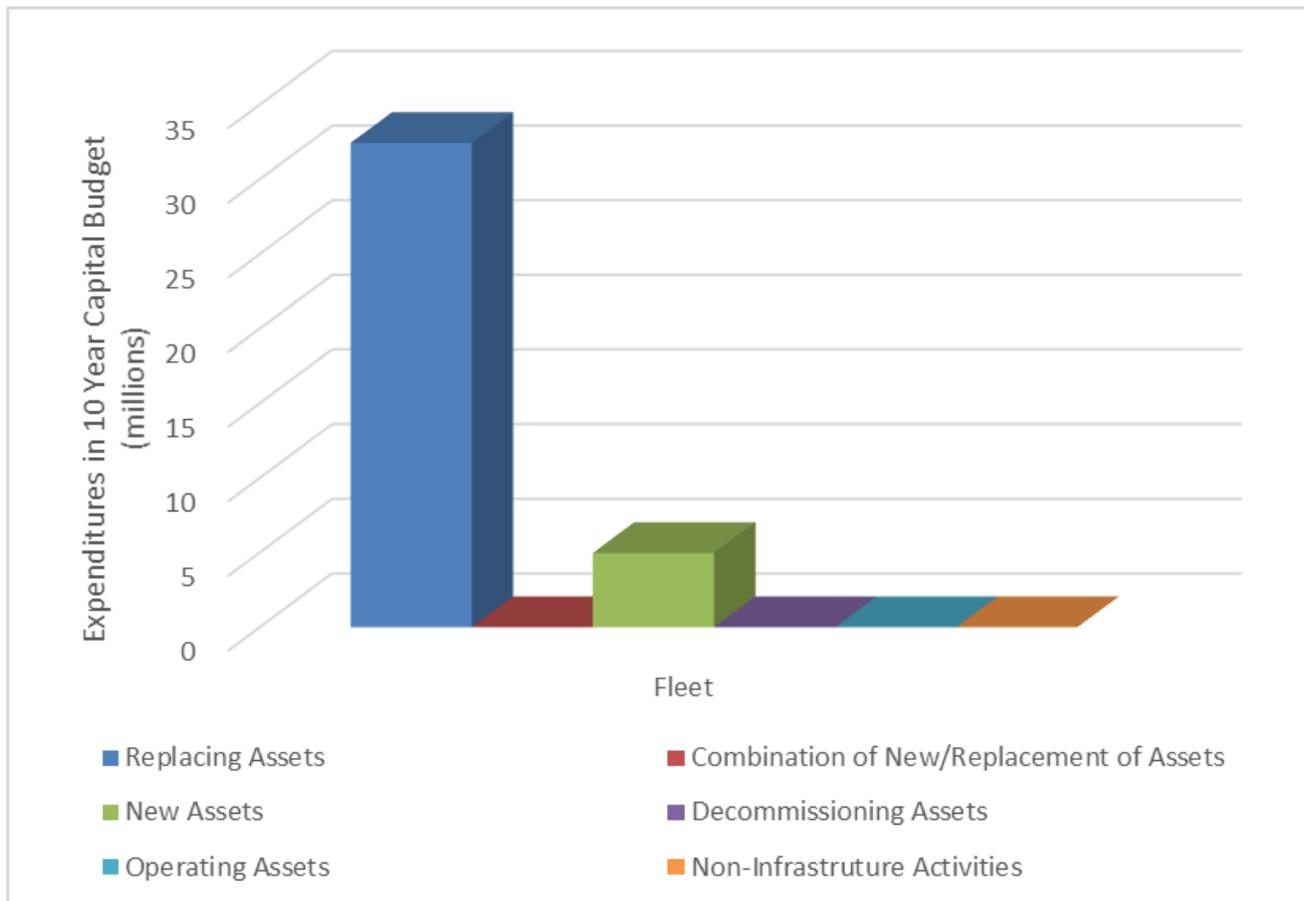
The City of Waterloo owns approximately 350 fleet assets, ranging from small vehicles to large winter maintenance vehicles. The total replacement value of fleet assets is approximately \$20 million which represents 0.8% of the total replacement value of the City's assets. It is important to note that the fire vehicles are captured under the Fire asset class.

8.3.5.2 Allocation of Infrastructure Funding

Please refer to section 5.1.2 for general context and appropriate asset management interpretation of this section's specifics.

As indicated in Section 4.3, the capital budget has the most significant portion of funding allocated for the City's infrastructure assets. Fleet assets have an estimated \$37 million in funding allocated in the Approved 2020-2022 Capital Budget and 2023-2029 Capital Forecast. The distribution of the funding is shown in **Figure 54**.

Figure 54: 2020-2029 Capital Funding Distribution for Fleet Assets



The City also spends money on infrastructure through its annual operating budget.

Table 7 in Section 4.3 provides a summary of the planned expenditures in the 2020-2022 operating budget. Less than \$100,000 or 0% of the operating budget is considered to be directly related to treating the Fleet shop. Vehicle and equipment maintenance costs are attributed directly to the individual item.

8.3.5.3 Rehabilitation or Replacement Strategies

Please refer to section 5.1.3 for general context and appropriate asset management interpretation of this section's specifics.

Fleet assets are replaced when they reach the end of their useful life (i.e. reach a performance score of 0%). The estimated service life ranges between 4 years and 15 years depending on the type of equipment.

8.3.5.4 Lifecycle Management Activities

Please refer to section 5.1.4 for general context and appropriate asset management interpretation of this section's specifics.

For Fleet maintenance the following lifecycle management activity options exist, but are not limited to:

- Preventative maintenance activities and inspections are undertaken at predetermined intervals or according to prescribed criteria, aimed at reducing the failure, risk or performance degradation of the equipment.

For Fleet rehabilitation the following lifecycle management activity options exist, but are not limited to:

- Unscheduled maintenance (repairs) to correct deficiencies that occur between scheduled services to maintain fleet in a safe, operable condition.

For Fleet reconstruction the following lifecycle management activity options exist, but are not limited to:

- Replacement

The Waterloo DSS is used to forecast Fleet asset class performance and corresponding expenditure over a 25-year span. Fleet is a unique asset class as maintenance and rehabilitation activities are ongoing throughout the year to ensure that the equipment can provide an acceptable level of service. Once the forecast activities are within the one to three year span, SMEs determine the appropriate replacement needs. In doing so, all available information relating to items listed in **Table 10 and Table 11** is considered by SMEs in order to determine the treatment of highest /benefit to the community. It is not atypical to adjust treatments and costs from the original forecast. This is because more information (e.g. functional and conditional needs are identified each year). However, the total projected performance and expenditure for the year are not impacted. This is because the limits of scientific forecasting occur at the aggregate level of asset class performance and spending.

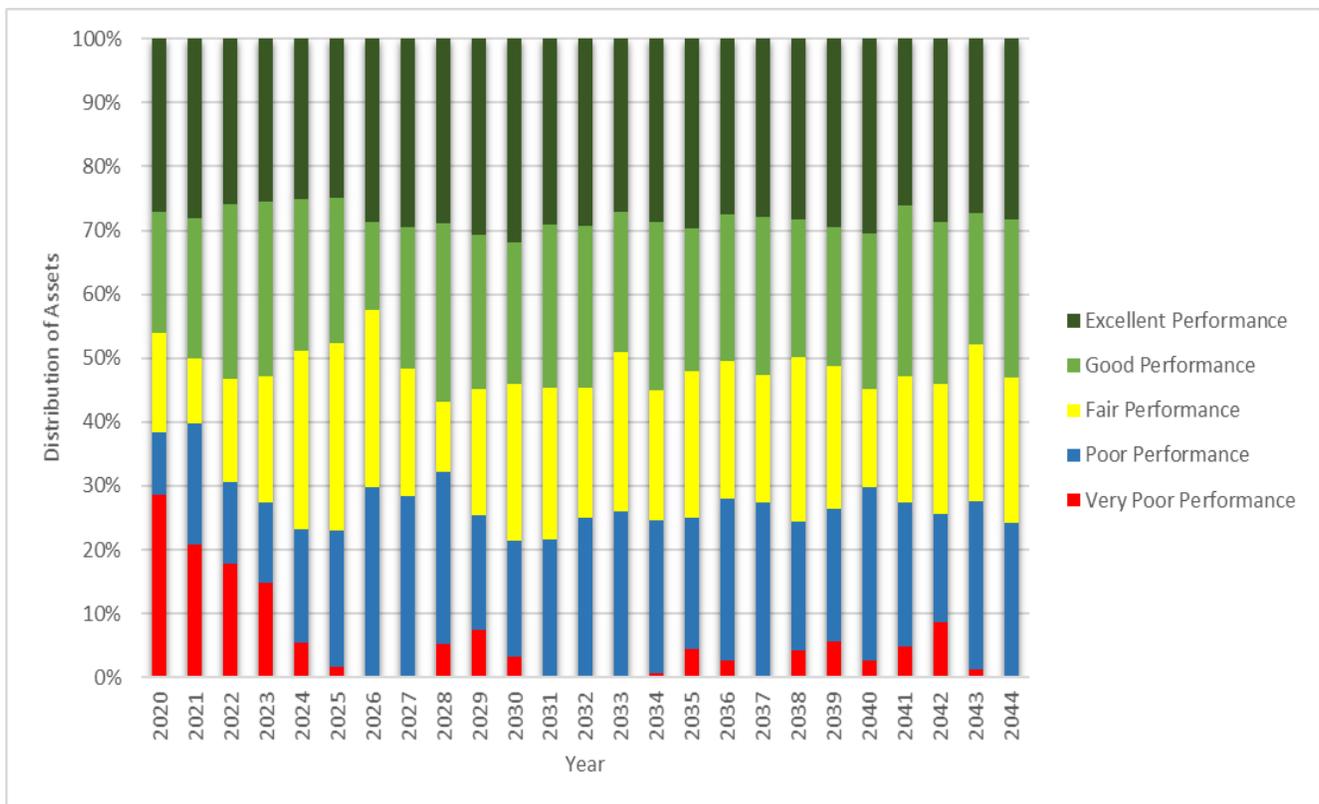
8.3.5.5 Level of Services

Please refer to section 5.1.5 for general context and appropriate asset management interpretation of this section's specifics.

8.3.5.5.1 Current Performance and Projected impact of Budgeted Capital Expenditures

There are currently around 38% of fleet assets that reflect poor or very poor performance. The average annual budgeted capital expenditures of approximately \$2.8 million will result in a performance profile that is anticipated to be acceptable to most stakeholders. The portion of asset class in fair, good, and excellent performance fluctuates around 70% over the 25-year span as illustrated in **Figure 55**. The remaining portions of the asset class are in poor and very poor performance categories for the same time span. Fleet is encountering a direct challenge as a result of COVID-19 and that is the need to retain vehicles that have exceeded their optimum life in order to meet physical distancing requirements. This has the potential to impact Fleet's performance.

Figure 55: Annual Performance of Fleet Assets in the Budget Scenario



8.3.5.5.2 Target Performance and Required Expenditures

As described above, the current budgeted expenditures are expected to be in the general range that is required to achieve the target performance for fleet assets.

8.3.5.5.3 Ontario Regulation 588/17

A requirement For O. Reg. 588/17 is the reporting of the average age of assets. The average age for Fleet equipment is 8 years.

Service levels are defined in two terms, community levels of service and technical levels of service. O. Reg. 588/17 identifies specific metrics for core assets that municipalities must report on however metrics for non-core assets are to be developed by each municipality. As a non-core asset, Fleet metrics will be developed and included in the 2023 AMP. These will be as necessary, sub-sets of the comprehensive Level of Service already developed by the City, as shown in the previous two sections.



8.3.5.6 Demand Management Plan

Please refer to section 5.1.6 for general context and appropriate asset management interpretation of this section's specifics.

Demand for new services impact fleet assets. These demands can include the impacts of climate change, population change, regulatory requirements, changes in demographics, seasonal factors, consumer preferences and expectations, technological changes, economic factors, and environmental awareness.

Demand will be managed through a combination of managing existing assets, upgrading existing assets, providing new assets, and demand forecasting. Demand management practices can include non-asset solutions, insuring against risks and managing performance.

The Waterloo DSS will be used to assist SMEs in other asset classes (e.g. Transportation, Water Distribution) in demand management planning. The demand management planning in those areas have the potential to impact Fleet and the equipment the City purchases and maintains.

8.3.5.7 Risk

Please refer to section 5.1.7 for general context and appropriate asset management interpretation of this section's specifics.

Risk related to the Fleet asset class is managed through:

- SME knowledge and expertise
- Data-driven decision making
- Performance and expenditure forecasting

This three-pronged approach ensures that Fleet's Level of Service (i.e. performance) supports the community's socioeconomic growth over the short and long term. The Waterloo DSS allows staff to ensure that the future probability of underperforming infrastructure and its consequences is minimized.

In addition to their inherit SME expertise, in order to minimize risk, SMEs always consider a wide range of factors during infrastructure decision making processes, the core of which are included in **Table 11**. The available asset inventory data, deterioration rates and funding related to Fleet is centralized within the Waterloo DSS. This along with fleet equipment assessments and professional management allow staff to make comprehensive and informed decisions. The ability to forecast effects of contemplated decisions, increase the reliability of infrastructure's future performance.

8.3.5.8 Conclusion and Next Steps

Based on available information, a difference between Budget (existing) and Target Levels of Service (i.e. infrastructure performance) over the next 25-years is not expected at this time.

In order to ensure management of Fleet assets continues to be optimal, future asset management steps will aim to find the most efficient means of maintaining the performance forecast.

Strategic steps will include:

- Continuous effort in increasing performance data collection capabilities
- Continuous improvement of the Waterloo DSS analysis capabilities
- Continuous improvement of forecasting logic
- Corporate awareness and training

Tactical steps will include:

- Minimizing impact on staff time with respect to sharing information required for the Waterloo DSS
- Increasing awareness of the difference between project level (most granular asset inventory) and network (asset class) level application of asset management principles
- Increasing awareness of general forecasting principles

Operational steps will include:

- Where applicable, developing data collection templates and means
- Continuous engagement with SMEs on progress
- Improving consumer-based modelling parameters