8.3.4 Parking

8.3.4.1 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.

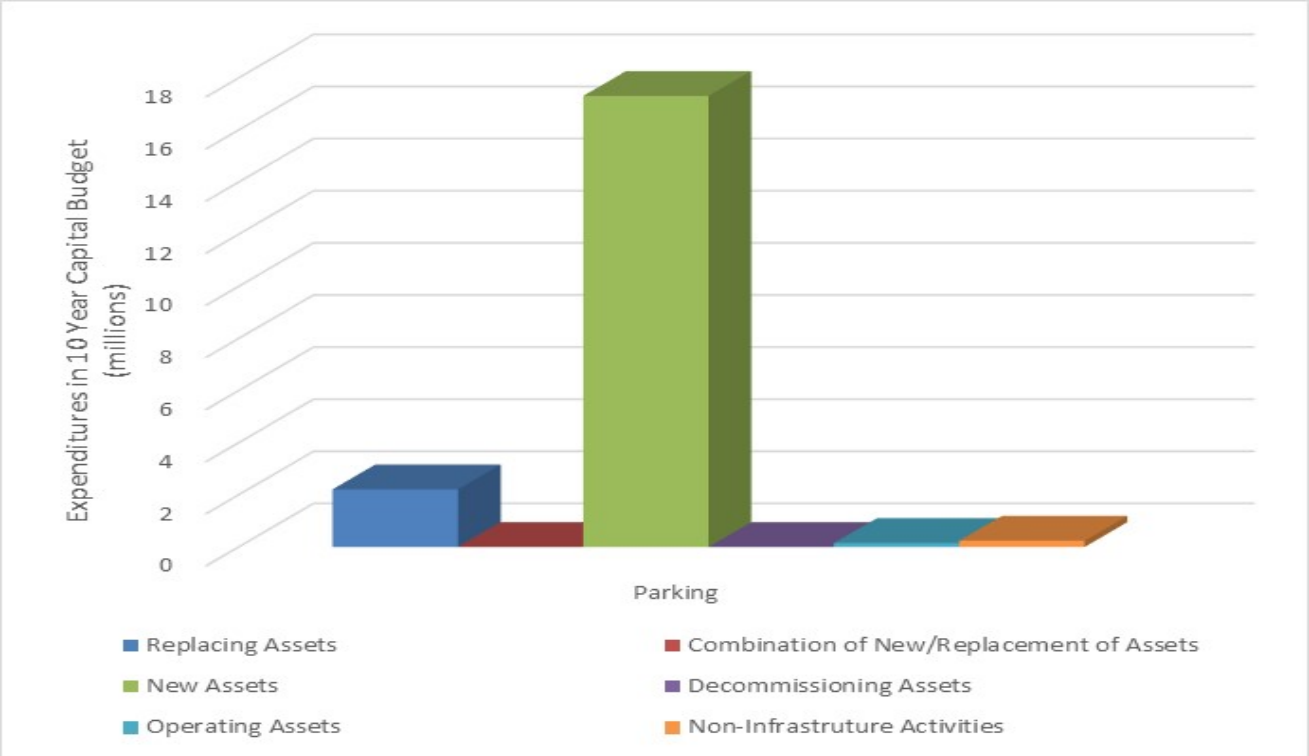
The City's Parking Enterprise is responsible for operating and maintaining 17 parking lots and one parkade in Uptown Waterloo. Of the 17 parking lots, the Parking Enterprise owns 13 of them while four of them are owned by other areas within the City. The Bauer Lot is owned by Parks, the Caroline North and South lot lands are owned by the Industrial Land Account (ILA) while Temporary Lot A is a land lease. The total replacement value of assets owned by Parking is approximately $34 million, which represents 1.3% of the total replacement value of the City's assets.

8.3.4.2 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. Parking assets have an estimated $20 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 51**.

Figure 51: 2020-2029 Capital Funding Distribution for Parking 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 Parking assets. For example, the Parking operating budget includes $16,000 for Parkade building treatments each year.

8.3.4.3 Rehabilitation or Replacement Strategies

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

- Parking lots are resurfaced when they reach the end of their useful life, or reach a performance of 0%, with confirmed deterioration.
- The parkade is managed like a facility, where individual components are refurbished or replaced as they reach the end of their respective useful life (i.e. reach a performance score of 0%).

8.3.4.4 Lifecycle Management Activities

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

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

- Localized repair (e.g. patching, floor tile replacement, painting etc.)
- Crack sealing

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

- Pavement removal and replacement (i.e. resurfacing)
- Programmed/grouped repairs (e.g. roof replacement program, expansion joint rehabilitation)
- Component replacements (e.g. windows, doors)
- Interior and exterior renovation

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

- Removal of asphalt and granular base, replacement with new (i.e. reconstruction)
- Complete facility replacement (very rare)

The Waterloo DSS is used to forecast the Parking asset class performance and corresponding expenditure over a 25-year span. Once the forecast activities are within the one to three year span, SMEs determine the appropriate treatment within the forecasted general categories above. In doing so, all available information relating to the items listed in **Table 10 and Table 11** is considered by the SMEs in order to determine the treatment of optimal cost/benefit to the community. It is not atypical to adjust treatments and costs from the original forecast. This is because more information becomes available closer to the start of the project (i.e. through surveying, detailed design, etc.). 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.

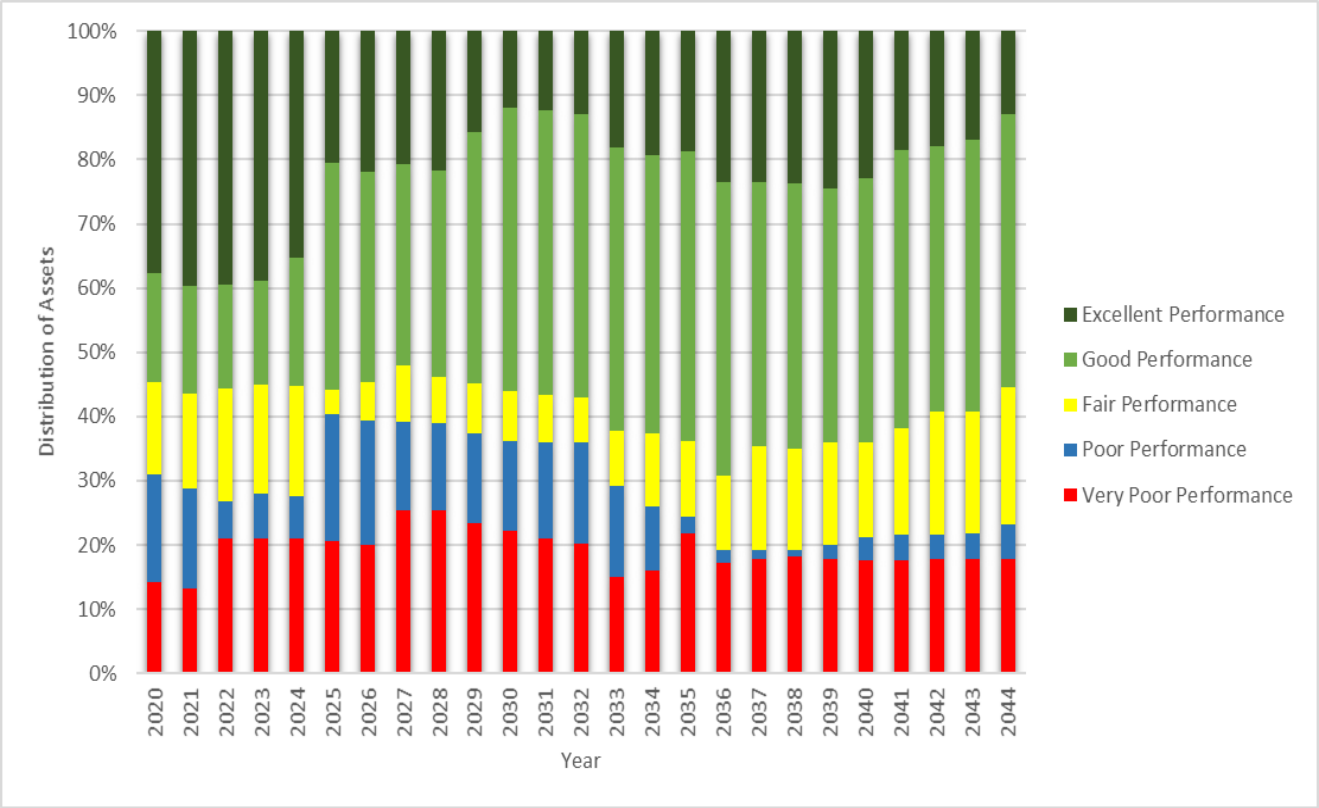
8.3.4.5 Level of Service

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

8.3.4.5.1 Current Performance and Projected impact of Budgeted Capital Expenditures

Approximately 30% of Parking assets currently reflect poor or very poor performance profiles. The average annual budgeted capital expenditures of approximately $200,000 is projected to maintain the performance profile throughout the 25 years. Changes to the deterioration trends and funding will result in changes to the projected performance. It is anticipated that the forecasted performance will not be acceptable for most stakeholders. The proportion of the asset class in fair, good, and excellent performance profile fluctuates roughly around 70% over the 25-year span as illustrated in **Figure 52**. The remaining portions of the asset class have poor or very poor performance profiles for the same time span.

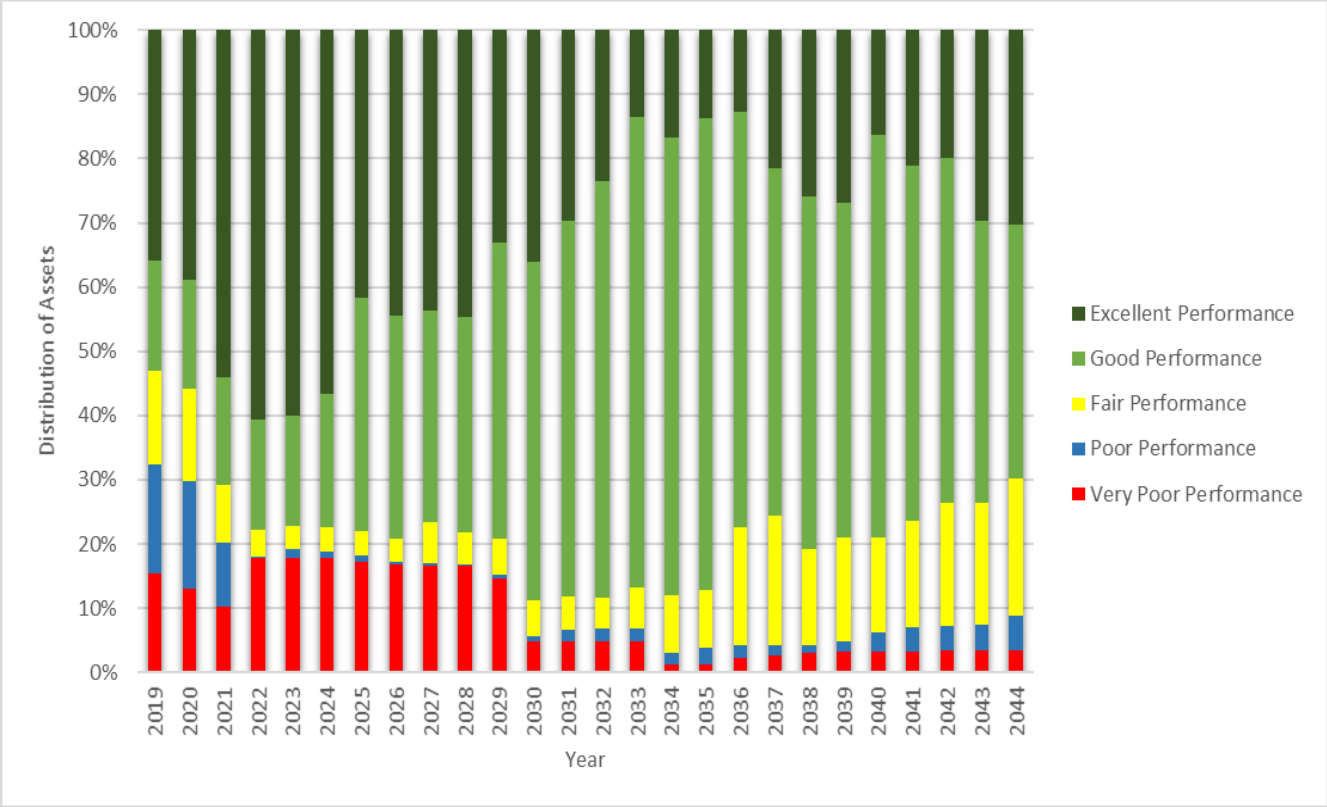
Figure 52: Annual Performance of Parking Assets in the Budget Scenario



8.3.4.5.2 Target Performance and Required Expenditures

An average annual expenditure of approximately $500,000 over the next 25 years is required to achieve the target performance profile of the Parking asset class. The proportion of the Parking asset class with fair, good, and excellent performance profiles fluctuates roughly around 90% over the 25-year span as illustrated in **Figure 53**. The remaining portions of the asset class have poor or very poor performance profiles for the same time span.

Figure 53: Annual Performance of Parking Assets in the Target Scenario



8.3.4.5.3 Ontario Regulation 588/17

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, Parking 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.

8.3.4.6 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 is driven by various factors such as 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 Parking SMEs in demand management planning.

8.3.4.7 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 Parking asset class is managed through:

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

This three-pronged approach ensures that Parking'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 inherent 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**. All corporate information related to Parking's asset management is centralized within the Waterloo DSS, allowing staff to make comprehensive and informed decisions. The ability to forecast the effects of contemplated decisions increase the reliability of the infrastructure's future performance.

8.3.4.8 Conclusion and Next Steps

The difference between Budget (existing) and Target Levels of Service (i.e. infrastructure performance) over the next 25-years is medium when compared to other asset classes. In order to remedy the performance gap it is estimated that an additional $300,000 per annum is required.

In order to ensure management of Parking assets continues to be optimal, future asset management steps will aim to find the most efficient means of working towards remedying the performance gap.

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