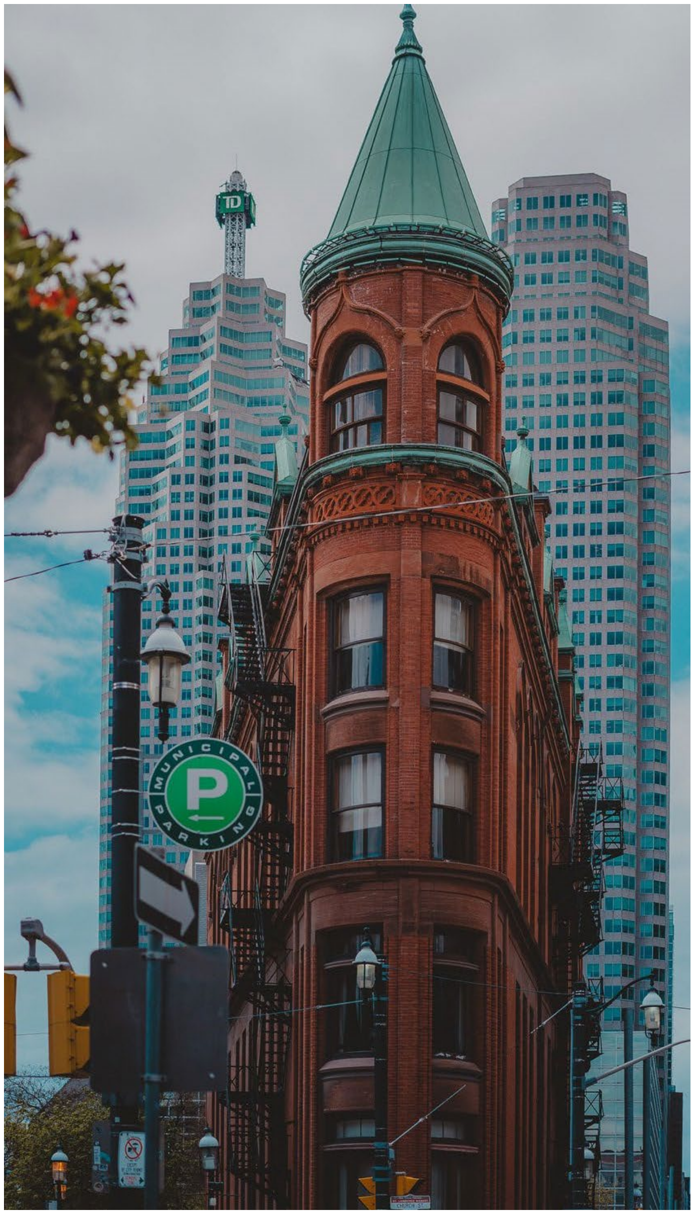

TORONTO PARKING AUTHORITY
REPORT NUMBER: 2024-CS-VAR-2030.30

ASSET MANAGEMENT PLAN

2025

REVISION HISTORY

FIRST ISSUE

February 2025	Issue for Review		
Prepared by	Edited by	Reviewed by	Approved By
WSP Asset Management Team	Bernadette O'Connor, Technical Director Asset Management	Simon Bush, Director, Asset Management	Simon Bush, Director, Asset Management
FINAL			
March 2025	Final		
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WSP Asset Management Team	Bernadette O'Connor, Technical Director Asset Management	Simon Bush, Director, Asset Management	Simon Bush, Director, Asset Management

ACKNOWLEDGEMENTS

The development of this asset management plan was a corporate effort. A special thank you to the teams from each department including the Parking Operations (On-Street & Off-Street), Parking Development and Electric Vehicle Charging, MicroMobility (Bike Share Toronto), Parking Infrastructure and Asset Management (PIAM), Information Technology, and Growth and Strategy Team, for providing valuable information and feedback throughout the development.

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EXECUTIVE SUMMARY

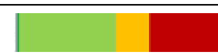
This document is our first comprehensive Asset Management Plan aligned with Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure (O.Reg).

Asset Management is about managing infrastructure to deliver sustainable services. It uses an integrated approach through the entire lifecycle of the infrastructure (from design to disposal) to find an optimum balance between the level of service provided, the acceptable amount of risk, and the available budgets.

The key drivers for TPA's commitment to asset management are:

- Legislative requirements in O.Reg 588/17
- Support TPA vision "to become the world's best provider of sustainable parking, bike share, and last mile mobility experiences"
- Obtain the benefits asset management can provide
- Align with TPA policy for implementing asset management (refer Appendix A).

TPA's assets are valued (in 2024 dollars) at approx. $907M.

Department	Service	Asset Types	Value $2024M	Condition
Parking Operations	Off-street Parking	Parking Garages	**~ $801.6M**	
		Surface Lots		
		Equipment		
	On-Street Parking	On-street pay machines	~ $22.8M	
	Miscellaneous Properties	Commercial Real Estate, Residential Real Estate, Mixed Use Real Estate, Vacant Land	~ $28.3M	
MicroMobility	Bike Share	Bikes, Stations, Docking Stations, Parts	~ $49.5M	
Parking Development	Electric Vehicle (EV)	Level 2 Charger, Level 3 Charger	~ $3.5M	
Information Technology	IT	Hardware, Software	~ $1.8M	
Total			**~ $907.5M**	

Condition Colour-Code: Very Good Good Fair Poor Very Poor

The poor condition rating for parking garages relates primarily to the current estimated condition of two large parking garages (CP#36 – 110 Queen W and CP#68 – 20 St Andrew). This will be confirmed over coming months from on-site condition inspections and outcomes will be updated in the next iteration of the AMP.

An initial definition of the level of service for each department has been completed and recommendations have been made for performance measures. Over the next 12 months, departments will track performance for levels of service to facilitate reporting annual achievements for service delivery.

A start has also been made to identify, define, and manage service risks, lifecycle strategies, and demand forecasts. More work on this will be completed after planned asset condition inspections are completed in the next 6 months.

Based on a desktop analysis of the current state of infrastructure, and the value and age of the existing assets, the following graph provides an initial forecast of the estimated renewal investment required for the TPA infrastructure portfolio. Note that these figures exclude forecasting for about 20% of TPA assets that currently have insufficient inventory and condition information to include in the analysis. Improvement in these forecast figures will be achieved as TPA asset inventory data is improved.

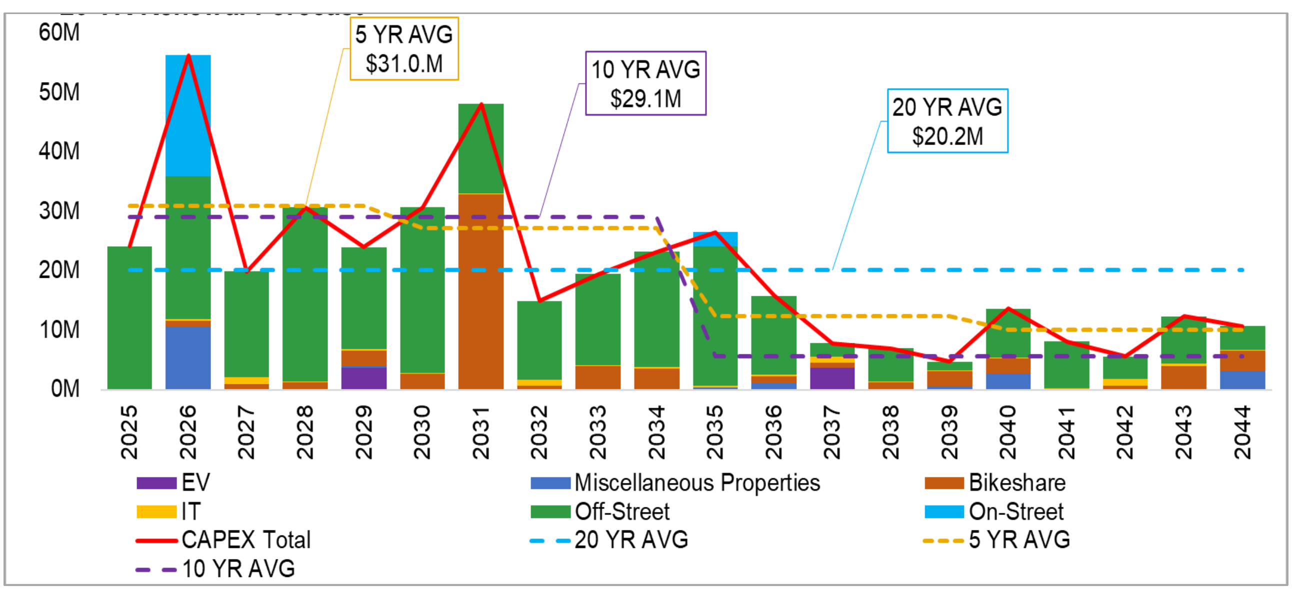
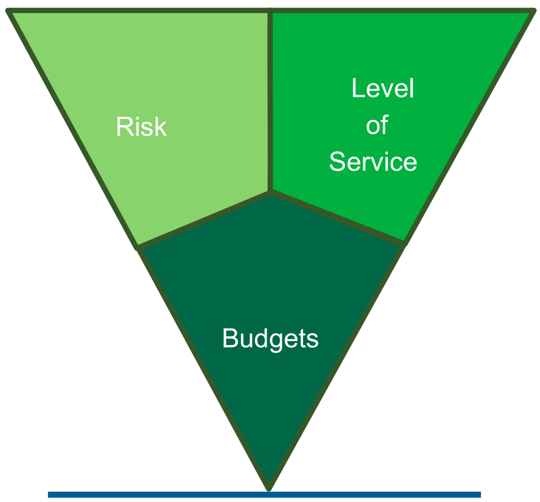


Figure 1-1: Financial Forecast for TPA's infrastructure portfolio (excluding assets)

1 ASSET MANAGEMENT

1.1 WHAT IS ASSET MANAGEMENT?

Asset Management is about managing infrastructure to sustainably deliver services. It is an integrated approach used through the entire lifecycle of the asset (from design to disposal) which is used to balance the level of service, risk, and the available budget.



To achieve this balance, the Toronto Parking Authority (TPA) will:

— Define the services we provide
— Identify the assets we use to deliver the services
— Identify and manage risks that could affect our services
— Prepare for future demand
— Identify what funding we need
— Implement management strategies for assets
— Implement a sustainable financial plan
— Monitor outcomes to identify what can be improved

1.2 WHY IS TPA IMPLEMENTING ASSET MANAGEMENT?

The key drivers for TPA's commitment to asset management are:

1. The legislative requirements set out in O.Reg 588/17.
2. Supporting the realization of our vision and mission.
3. Aligning with global best practice, acknowledging the benefit this brings.

1.2.1 REGULATORY COMMITMENT

The TPA is required to meet all the regulatory requirements outlined in O.Reg 588/17 - Asset Management Planning for Municipal Infrastructure Regulation, as is the City of Toronto (CoT) and all its agencies.

The commitment to this was documented in CoT's council resolution report dated September 1, 2021. As part of this resolution, the TPA is required to meet the final regulatory compliance timeline of July 1, 2024 (Revised to July 1, 2025 - extension due to COVID). The key milestones for CoT's progress towards this regulatory requirement include but are not limited to the following:

— July 2024, all other City Programs, Agencies **(except Toronto Parking Authority)** and the Toronto Community Housing Corporation (TCHC) will be required to submit their respective asset management plans to City Council for approval.

— **July 2025** (revised from July 2024), it will be expected that **all City Programs, Agencies and the TCHC** will be able to also identify the proposed service levels and asset performance that will result in asset investments as well as the financial strategies required to fund those asset investments.

As a component of compliance, the TPA is required to have a policy for implementing asset management (see Appendix A).

1.2.2 SUPPORTING TPA VISION

TPA is committed to achieving its vision. This vision drives TPA to adopt forward-thinking strategies that balance operational efficiency, customer satisfaction, and environmental stewardship.

Vision: To become the world's best provider of sustainable parking, bike share and last mile mobility experiences.

By implementing asset management, TPA expects to create an integrated business approach to deliver services effectively, maximize benefits, reduce risks, and support both the TPA vision and Toronto's broader sustainability goals.

1.2.3 BENEFITS

Through the adoption of a formalized asset management approach by the TPA, several key benefits are realised including:

— **Alignment of Decision-Making with Business Strategies:** A line-of-sight is created between TPA's mission and vision, strategic and asset management objectives, ensuring asset related activities are focused on achieving these outcomes.

— **Integration of Services Across the Organization:** Delivery of effective lifecycle strategies, covering asset inception, though ongoing management to demolition, requires collaboration between all of the TPA's departments including Growth and Strategy Team, Information Technology, MicroMobility (Bike Share Toronto), Parking Development and Electric Vehicle Charging, Parking Infrastructure and Asset

Management (PIAM), and Parking Operations (On-Street & Off-Street). And the integration of enablers such as Information Technology, Finance and Human Resources.

- **Fostering Organizational Alignment and Accountability:** Integration of services promotes a shared responsibility towards asset management and the continuous improvement of TPAs asset management practices.
- **Enhanced Long-Term Planning:** Asset management leads to the creation of performance measures to track objective realization, enhancing TPAs understanding of service performance and what is required to sustainably manage the service over the long-term.
- **Clear Identification of Funding Needs and Consequences:** Asset management and the long-term plans that are created, lead to a comprehensive understanding of the funding required to deliver services, and the impact of altered funding on service delivery.
- **Optimization of Resource Utilization:** Management of operational activities is central to service delivery. Using an asset management approach ensures the relationship between these two areas is quantified and effectively managed.
- **Alignment of Decision-Making with Business Strategies:** Asset management ties operational decisions to TPA's broader strategic goals, so that all actions and decisions are oriented to support the TPA mission and vision.

1.3 TPA ASSET MANAGEMENT PROGRAM

The Toronto Parking Authority (TPA) has set clear expectations for advancing its Asset Management (AM) capabilities. These expectations are outlined in four milestones designed to transform TPA's current AM practices to enhance organizational alignment and achieve operational excellence:

- **Advancing AM Maturity from Awareness to Excellence:** TPA aims to elevate its AM maturity from the current "Awareness" level to a target level of "Excellence". This transformation will position TPA as a leader in asset management, capable of optimizing asset performance and maximizing value from its assets. See section 1.4 for further information on asset management maturity.
- **Implementing the AM Roadmap and Improvement Initiatives:** To achieve its maturity goals, TPA will execute a comprehensive AM Roadmap (refer to AM Roadmap developed by CIMA+ in early 2024). This roadmap includes a series of improvement initiatives designed to:
  - Achieve regulatory compliance.
  - Align operations with global ISO 55000 standards (these are recognized as the benchmark for AM excellence).
- **Establishing a Formal AM Governance Model:** A robust governance framework is critical to sustain the AM program. TPA will formalize its governance model to:
  - Support collaboration across departments.
  - Standardize AM practices organization-wide.
  - Ensure continuous improvement and long-term program sustainability.

— **Achieving its Vision:** To become the world's best provider of sustainable parking, bike share and last mile mobility experiences.

1.4 CURRENT ASSET MANAGEMENT MATURITY

In 2022, TPA began the process of implementing asset management, as a new business process. This process began with developing a business case for asset management and assessing the current state of asset management processes.

To identify improvement areas, the TPA quantified its asset management maturity assessment in 2023. The results confirmed that the TPA was in the early stages of its AM journey, categorized as "Aware" in the IAM maturity model, with a move towards "Developing" in progress. This level of maturity is typical for organizations beginning to formalize their AM practices. The assessment and the rating provide a starting point for implementing a strong, comprehensive, integrated AM program.

The following actions are being taken by the TPA, based on the maturity assessment:

— **Year 1: Immediate Actions (Short-Term Focus)**

- Assigning a Dedicated Asset Management Coordination Lead: To drive progress and ensure alignment across departments, an identified key priority is the appointment of an Asset Management Coordination Lead. The role will drive internal coordination and oversee improvement initiatives.
- Focus on Maintenance Management: Maintaining robust maintenance practices while TPA addresses the gaps in AM capabilities, particularly in resource allocation and personnel development.

— **Years 2-3: Medium-Term Improvements**

- Corporate and Department-Specific Initiatives: Implement improvement opportunities, focusing on enhancing asset class management and service delivery and other areas supporting transition to the next maturity level.
- Leverage Technology and Process Optimization: Invest in tools and process enhancements to drive productivity and efficiency, including optimized lifecycle management and cost-saving measures.

— **Year 3 and Beyond: Long-Term Strategic Outcomes**

- Realize Tangible Benefits: Through active performance management initiatives launched in earlier phases are expected to yield:
    - Capital and Lifecycle Cost Savings: More efficient resource allocation and extended asset lifespan.
    - Service Level Improvements: Enhanced customer experience and reliability of services.
    - Productivity Gains: Increased operational efficiency through application of technology and standardized processes.

Regular maturity assessments will be carried out to monitor development and to adjust the actions being taken, supporting the delivery of a continual improvement program.

2 INTRODUCTION TPA SERVICES

In 2022, TPA began the process of implementing asset management as a new business process. This process began with developing a business case for asset management and assessing the current state of asset management processes. The aim of an asset management plan is to provide a line-of-sight between the asset related activities TPA undertakes and the delivery of TPA's mission, vision, and associated objectives.

This is TPA's first asset management plan. Acknowledging the results of the maturity assessment, TPA recognizes this plan includes several gaps and assumptions (refer Appendix B for a list of gaps and assumptions). These gaps and assumptions will be addressed in future asset management plans, as we implement changes and as our asset management maturity improves.

2.1 TPA GOALS AND OBJECTIVES

Through this plan and growing asset management maturity, TPA seeks to:

— Work collaboratively as a team to achieve our mission
— Provide customers with choice, ease and speed through our service delivery
— Set and measure targets
— Act with urgency to achieve targets
— Be accountable to our stakeholders.

Mission: To re-imagine how Toronto moves by creating a seamless mobility experience that delivers on choice ease and speed.

We commit to implementing asset management best practices. This includes implementation of an asset management policy and strategy to move from reactive based service delivery to proactive service deliver. We will work collaboratively to provide seamless service delivery. We will integrate our data and implement software to provide confidence that we are making the right decisions at the right times with respect to the management of our assets.

2.2 TPA SERVICES

TPA provides last mile mobility services, including providing parking and bike share services with connections to transit, cycling and pedestrian networks and destinations. Additionally, TPA provides charging services for the Region's ever-growing fleet of electric vehicles (EV), providing drivers with confidence that they can safely reach their final destinations.

Table 2-1: TPA Services, Assets and Departmental Responsibility

Service	Capital Responsibility	Operations and Maintenance (O&M) Responsibility	Asset Category	Asset Types
On-street Parking	PIAM / Parking Development	Parking Operations	Pay Machines	On-street pay machines
	PIAM / Parking Development	Parking Development	Occupancy System[1]	Hardware
Off-Street Parking	PIAM / Parking Operations	Parking Operations & Safety and Parking Services	Off-street	Parking Garages, Surface Lots, Equipment
Electric Vehicle Charging	PIAM / Parking Development	Parking Development & Safety and Parking Services	Electric Vehicle (EV)	Level 2 Charger, Level 3 Charger
Bike Sharing	PIAM / Micromobility	Micromobility	Bike Share	Bikes, Stations, Docking Stations, Parts
Miscellaneous Services	PIAM / Parking Operations		Miscellaneous Properties	Commercial Real Estate, Residential Real Estate, Mixed Use Real Estate, Vacant Land
Information Technology	CIO	CIO	IT	Hardware, Software

[1] Data was not available for occupancy system assets.

2.3 MANAGEMENT STRUCTURE FOR DELIVERY OF TPA SERVICES

The TPA departments comprise:

- Parking Operations (On-Street and Off-Street)
- Parking Development and Electric Vehicle Charging
- Micromobility (Bike Share Toronto)
- Parking Infrastructure and Asset Management
- Information Technology
- Growth and Strategy.

The responsibilities of each department and how they contribute to TPA's objectives are outlined in the following sections.

2.3.1 PARKING OPERATIONS (ON-STREET AND OFF-STREET)

The Parking Operations department is responsible for both on-street and off-street parking facilities across Toronto. This includes maintaining TPA parking lots, garages, and on-street pay-and-display areas. The team is responsible for the upkeep of existing assets to support Toronto's parking needs. By managing parking resources, this department enhances accessibility to parking for residents and visitors, while generating revenue to support city services.

Under the Parking Operations team lies the Safety and parking services team which is responsible for the efficient operation of TPA's physical assets, including buildings, fleets, and various infrastructure within parking facilities. This team ensures that all facilities are safe, functional, and maintained to a high standard. They manage routine repairs, handle trade shop tasks, and conduct preventative maintenance, which helps extend asset lifespans and minimizes downtime. By overseeing these crucial functions, the Facilities and Maintenance Team plays a key role in ensuring reliable, high-quality service across all TPA locations.

2.3.2 PARKING DEVELOPMENT AND ELECTRIC VEHICLE CHARGING

The Parking Development department focuses on developing new parking solutions, including electric vehicle (EV) charging infrastructure, across Toronto. The team assesses parking demand and optimizes existing assets to support Toronto's parking needs and identifies solutions including parking capacity systems and payment options, enhancing the experience of parking in Toronto. They also incorporate sustainable practices including implementing new technologies and data-driven solutions to improve parking management such as solar-powered pay stations. They assess market trends, propose strategic expansions, and enhance services through innovation.

This department is dedicated to developing and managing charging stations in TPA parking facilities and other strategic locations. By supporting EV adoption, this team plays a key role in advancing the city's sustainability goals and making Toronto a more EV-friendly city. Their work involves coordinating with city agencies, suppliers, and the public to plan, install, and maintain a reliable network of EV chargers, contributing to Toronto's climate action initiatives.

2.3.3 MICROMOBILITY (BIKE SHARE TORONTO)

Micromobility manages and operates the Bike Share Toronto program, offering short-term bicycle rentals throughout the city. Bike Share Toronto provides an eco-friendly transportation alternative and supports Toronto's goals for reducing traffic congestion and emissions. This department oversees a network of docking stations and bicycles, ensuring regular maintenance, rebalancing of bike locations, and system expansions to meet demand. They coordinate closely with city planning to improve coverage in underserved areas and promote active transportation as part of the city's sustainable mobility strategy.

2.3.4 PARKING INFRASTRUCTURE AND ASSET MANAGEMENT (PIAM)

The Parking Infrastructure & Asset Management (PIAM) team focuses on capital planning, state of good of repair, and asset management, driving the TPA's long-term vision. This team is responsible for identifying and delivering capital projects. By delivering strategic growth projects, this team ensures that TPA remains adaptable and efficient, aligning with Toronto's evolving urban development goals and enhancing service delivery across TPA's departments.

2.3.5 INFORMATION TECHNOLOGY

The Information Technology (IT) team is responsible for providing TPA with hardware and software services, such as business applications, laptops, and mobile devices. The IT team manages parking and bike share data to support decision making.

2.3.6 GROWTH AND STRATEGY TEAM

The Growth and Strategy team focuses on revenue management, capital delivery support, stakeholder engagement and assessing financial viability related to promoting growth opportunities. They also set up partnership opportunities with organizations such as other city agencies, commissions and departments, and private entities like condominium boards.

2.4 RELATIONSHIP OF AMP TO OTHER TPA DOCUMENTS

The relationship between this Asset Management Plan and other significant documents is shown in Figure 2-1.

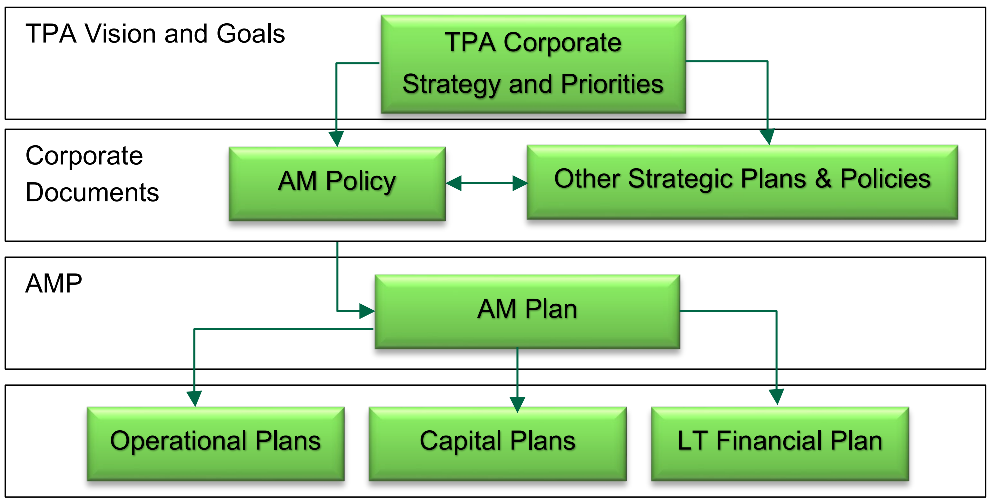


Figure 2-1: How AMP relates to other Corporate Documents

The asset management plan has key functional relationships with the following documents:

- **Asset Management Policy** is the document that shows leadership commitment to Asset Management, setting out key principles that guide the development and implementation of Asset Management across the organization.
- **Operational Plans** include the budget and decision strategies related to operational and maintenance activities, supporting sustainable service delivery and the provision of an agreed level of service to communities.
- **Capital Plans** include the projects, investment strategies, and decisions supporting capital works, leading to sustainable service delivery and provision of agreed level of service to communities.
- **Long Term Financial Plan** is the forecasted amount required to deliver operations, maintenance, asset renewals, and service improvement through the development of new assets.

2.5 KEY LIMITATIONS AND ASSUMPTIONS

As highlighted TPA has just started its asset management journey, and this is the first asset management plan we have developed.

To create this first plan, it was necessary to make some assumptions when information was unavailable. As a result, there are areas in this plan that will be improved upon in future versions, as we improve our asset management maturity.

Gaps in Data Availability and Quality – This plan relies on existing asset data, which contains known gaps and some inconsistencies. Efforts are ongoing to improve data collection and validation. During this time, some assumptions were made where data is incomplete, to facilitate analysis to support decision-making. Details of data assumptions are provided in Appendix B.

Uncertainty in Long-Term Forecasts – Asset lifecycle projections and risk assessments are based on current information and models. Known external factors such as climate change, technological advancements, regulatory changes, and economic shifts always impact services and asset performance and the resultant future investment needs, necessitating periodic reassessment. Inclusion of these items will be addressed in future asset management plans.

3 PARKING OPERATIONS (ON-STREET & OFF-STREET)

3.1 WHAT SERVICE DO WE PROVIDE?

The Parking Operations team is responsible for managing on-street pay machines equipment and off-street parking facilities and equipment across Toronto. This department enhances accessibility to parking for residents and visitors, while generating revenue to support city services.

The Facilities and Maintenance team is included under Parking Operations and is responsible for providing maintenance and repair services for Parking Operations' assets. They are responsible for ensuring facilities are safe, functional, and maintained to a high standard. They oversee repairs, trade shop tasks, and preventive maintenance for off-street sites supporting reliable, high-quality services across TPA locations.

3.1.1 WHO HAS AN INTEREST IN THIS SERVICE?

A key component of asset management is understanding stakeholders and how they influence the services being provided. Table 3-1 summarizes the stakeholders interested in services provided by the TPA.

Table 3-1: Parking operations stakeholders

Stakeholder Group	Stakeholder
Users	Commuters, Residents, Monthly pass holders, Tourists
Service providers	Toronto Police Parking Enforcement Unit, Business partner, TPA property tenants, Insurance agencies, City of Toronto Prosecutions Dept, City agencies, Local businesses
Regulators	Ontario Building Code, TPA Board, WSIB, Ministry of labour, Province of Ontario, Federal Government, City of Toronto
Wider community	Other businesses, Film Industry, Private property owners, Public/private events, Farmers markets, Business Improvement Area, Councillors, Contracted employees, TPA employees, Union
Other	Equipment vendor, Equipment operator, Sponsors

3.1.2 HOW IS SERVICE PERFORMANCE ASSESSED?

The level of service the department seeks to provide is defined in the following three statements:

- Provide clean, well-maintained, and secure spaces and equipment that provide choice ease and speed for customers across all Green P products and services.
- Provide a safe and secure environment for staff and parking customers using TPA facilities.
- Provide clear and functional wayfinding to reduce confusion and congestion in the user experience.
- Provide responsive customer support to address user needs efficiently.

Table 3-2 presents the service criteria and performance measures used to monitor the service level being achieved. Measured results for service performance influence parking operations decision-making. These measures were developed to assess and improve program delivery, and to ensure alignment with departmental objectives and the needs of users and stakeholders.

Table 3-2: Service criteria and candidate performance measures for parking operations

Service Criteria	Candidate Performance Measures
Service amenities	Customer satisfaction surveys
Customer support	Time to resolve request
Equipment reliability	Incidents of unplanned failure
Cleanliness	Customer Satisfaction Surveys
Intuitive wayfinding	Customer Satisfaction Surveys
Safe	Number of safety incidents (TPA Facilities)
Secure	Number of security incidents (TPA Facilities)

3.2 WHAT ASSETS DO WE OWN?

TPA assets are organized into key service areas and groups, including parking garages, surface lots, equipment, on-street pay machines, commercial, residential, mixed use and vacant lands which are listed in Table 3-3. TPA's large asset portfolio supports the growing demand for off-street and on-street parking.

Table 3-3: Parking operations assets Asset Service

Area	Replacement Cost (Millions)	Asset Group
Off-Street	~ $801.5	Parking Garages
		Surface Lots
		Parking and Revenue Control Equipment (PARCS)
On-Street	~ $22.8	On-Street Pay Meters and Equipment
Miscellaneous properties	~ $28.2	Commercial
		Residential
		Mixed use
		Vacant land
Maintenance	~ $1.4[2]	Maintenance Equipment, Vehicles
Total	**~ $854.1**	

3.2.1 SUMMARY OF PARKING OPERATIONS ASSETS

The TPA's Parking Operations assets are valued at approximately $852.7 Million (Based on 2024 values), excluding the assets that support maintenance activities including maintenance equipment and vehicles.

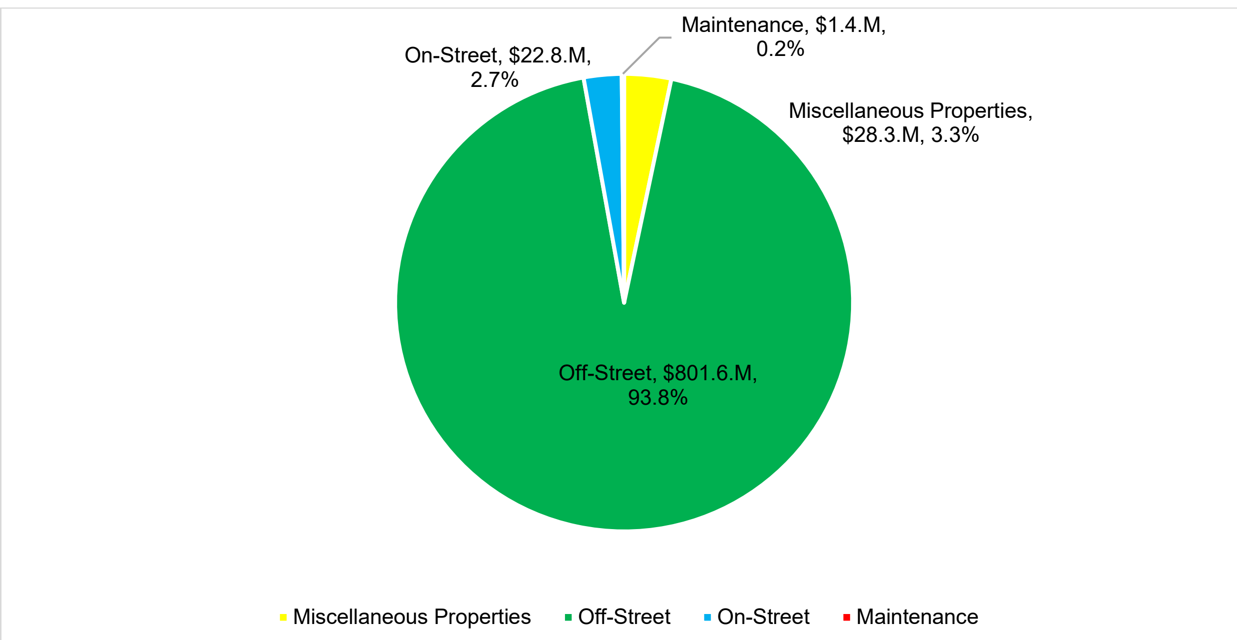


Figure 3-1: Asset summary of parking operation [3]

[2] Value only. Provided by TPA through insurance data. Asset level data not available for analysis
[3] The percentages in the graph represent asset distribution within parking operations and not across all TPA assets.

Table 3-4: Parking operation asset summary

Asset Type	Quantity (Count)	Current Average Asset Age	Average Expected Asset Life	Average Asset Condition	Current Asset Replace Cost	20 YR Average Per Annum Total Capital Cost
Parking Garages	21[4]	32	-	Fair	~ $700.4	$10,500,000
Surface Lots	132	31	41	Fair	~ $96.3	$3,317,000
Parking Equipment[5]	264	10	20	Good	~ $4.9	$245,000
Pay by Plate Payment Meters	271	2	20	Good	~ $2.5	$124,000
Pay and Display Payment Meters	2226	27	20	Poor	~ $20.4	$1,018,000
Commercial	16	34	49	Fair	~ $24.4	$816,100
Residential	3	30	49	Fair	~ $1.6	$37,500
Mixed Use	2	40	49	Poor	~ $2.3	$76,200
Vacant Land	4	-	-	-	-	-
Total[6]	2770				**~ $852.7M**	**~ $16.1M**

3.3 WHAT CONDITION ARE ASSETS IN?

The condition of parking garages is based on an estimated Facility Condition Index (FCI). FCI is the value of work required on the building in the next 5-years (as reported in the available Building Condition Assessment reports) as a proportion of the total replacement value. The total replacement values for this plan were determined using insurance cost data. TPA has 76 parking garage sites comprising of 32 parking garage buildings owned by TPA and 44 owned by various third parties.

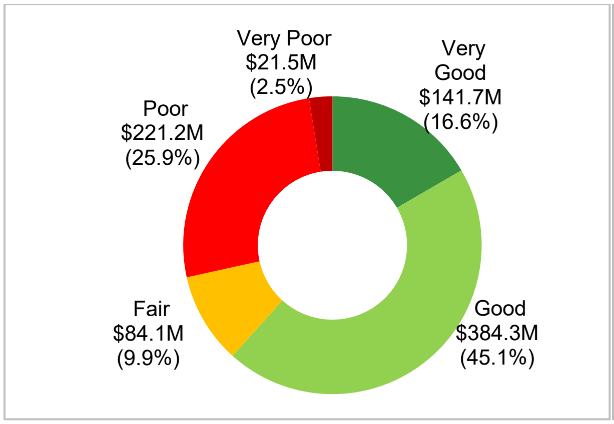
Only 21 of the 33 parking garages owned by TPA listed in the current inventory had sufficient information to calculate an FCI. The remaining TPA owned parking garages have an estimated replacement value of less than $200M[7]. These facilities were excluded from the analysis, at this time, due to insufficient current data to determine FCI value (See section 9.2.1 for further information).

The overall total value will be updated once the remaining building condition assessments on the TPA owned parking garages have been completed.

[4] Data for analysis was only available for 21 of 33 parking garages owned by TPA.
[5] Parking Equipment (Pay by Plate meters) taken from insurance values for Surface Lots only.
[6] Analysis excludes maintenance assets (maintenance equipment and vehicles)
[7] $200M includes insurance value for 12 TPA garages (without FCI data) and equipment in third party sites.

Using the available data, 28.5% of parking operations related assets are classified as being in poor or very poor condition. Among these:

- 24.8% are off-street assets, with 22% attributed to parking garages, primarily due to two large car parks (CP#36 – 110 Queen W and CP#68 – 20 St Andrew), while the remainder consists of surface lots.
- 2.4% are on-street assets, which are at the end of their useful life and are scheduled for conversion to a Pay-by-Plate system.
- The remaining 1.2% are miscellaneous properties assets.



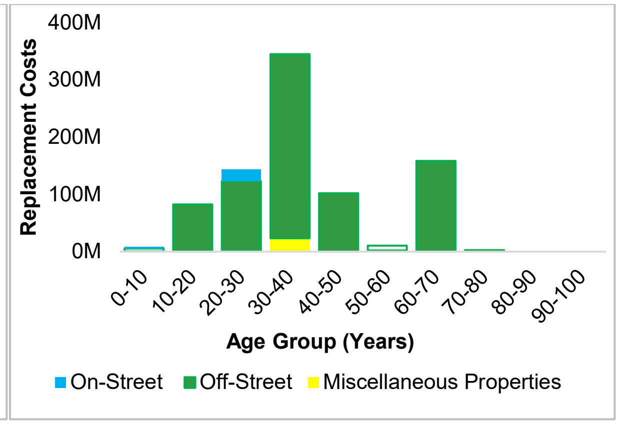


Figure 3-2: Condition and age profile of parking operation

Note that most of the value of assets in this group are parking garages $700.4M (82% of the $852.7M total value for Parking Operations assets). The condition for parking garages is based on an estimate of FCI (facility condition index) where there is sufficient detail available to calculate FCI from comparing the value of work required on the building in the next 5-years to the total value of the building. Estimated condition based on age of the asset is used where FCI can not be calculated.

3.4 WHAT CAN AFFECT OUR SERVICE?

This section looks at key risks related to parking operations, lifecycle strategies used to manage the assets, and future demand forecasts and their impact on services.

3.4.1 RISK PROFILE

Table 3-5 summarizes the risk related actions which are most relevant to this service area.

Table 3-5: Key risks identified that directly impact parking operations

Action Plan Task	Status	Impact on AMP
Key Risk: Aging Parking Infrastructure		
Development of a Preventative Maintenance Plan.	In-progress	This action directly relates to potential performance measures that may be incorporated into the asset management plan. **AMP Action:** Pilot actions have been undertaken in this area, improving TPA's proactive maintenance stance. Performance measures (average condition, equipment reliability and maintenance effectiveness) will be directly influenced by the activities detailed in this plan. Further improvement includes the development of performance targets.
Development of a Formal Asset Management System: • *Q3 2024: Develop and publish an Asset Management Policy.* • *Q1 2025: Phase 1 - TPA Asset Management Plan, Level of Service Framework, Asset Management Governance & Training, Asset Condition/Risk Framework, Risk Review/Risk Based Decision Making, Investment Strategy, Life Cycle Action Plan*	In-progress	This action directly relates to the development of this asset management plan. Parking Operations play a large role in serving customers and are accountable for many of the stakeholder focused performance measures, and those that are important to TPA leadership. Accordingly, operations and maintenance activities managed by this group strongly influence key aspects of the TPA asset management program that focusses on preventative maintenance, maintenance planning, customer satisfaction and effective use staff and resources. **AMP Action:** Develop an endorsed asset management policy and strategy and fully resource the advancement of asset management improvement actions to achieve TPA objectives and mitigation intentions associated with this risk.
Key Risk: Security / Vandalism / Theft		
Build an In-house Security Capability	In-progress	These actions will directly contribute to safety metrics and improve TPA's ability to provide safe and secure parking facilities. **AMP Action:** Monitoring and evaluate performance management for Safety and Parking Services metrics and set appropriate targets after facility equipment are operational.
CCTV and Emergency Call Box Installation at Parking Garages (Phase 1 - First 8 Carparks)	In-progress	
Implementation of Pedestrian Access Control Program – 5 Garages Completed	In-progress	
Key Risk: Parking Equipment / Technology Management		
Systems Operations Centre (SOC) Modernization	In-progress	This centre will add new infrastructure to the portfolio and allow for potentially new performance monitoring capabilities and supporting data. **AMP Action:** Once operational, consider how the SOC and its systems and data should be incorporated into asset management planning and performance management, relating to Parking Operations

Action Plan Task	Status	Impact on AMP
Modernize On-Street Parking: Advanced Hardware, Efficient Equipment, Seamless System Integration with Unified PARCS Software. PbP Meters, Sensors, Payment Integration	In-progress	New equipment will add new infrastructure to the portfolio. **AMP Action:** For each new asset, consider the appropriate lifecycle interventions that the TPA should undertake, and incorporate these interventions into the maintenance and capital planning and forecasting.
Updating and modernization of the hardware and equipment at each parking garage, along with overhauling the Parking Access Revenue Control Systems (PARCS)software.		New equipment will add new infrastructure to the portfolio. **AMP Action:** For each new asset, consider the appropriate lifecycle interventions that TPA should undertake, and incorporate these into maintenance and capital planning and forecasting.

While a Parking Operations service risk assessment was not completed for this AMP, the following risks were noted by staff as being relevant to the service:

- **Customer satisfaction:** Service amenities, responsiveness and effectiveness of customer support, site aesthetics, cleanliness and intuitive wayfinding are all recognised as contributing to overall customer satisfaction. Measuring some of these aspects more systematically/objectively would help management of this key metric.
- **Maintenance efficiency and effectiveness:** Past unexpected failures, assets in very poor condition and missed opportunities for lower cost, earlier interventions on some assets, have raised the need to improve maintenance planning, to support reduction in service risk and lifecycle costs.

These risks will be assessed more formally in future versions of the AMP.

3.4.2 LIFECYCLE STRATEGIES

The Parking Operations department manages the lifecycle of on-street and off-street parking assets, as well as miscellaneous services across Toronto. The service includes managing parking meters, parking garages, surface lots, and buildings. To maintain the functionality and safety of these assets, the department undertakes a range of operational activities, including inspecting structural and mechanical systems, ensuring the proper operation of safety-critical features, and addressing environmental maintenance needs. These activities follow a regular schedule, ranging from weekly to annually. A summary of key activities is outlined below.

Table 3-6: Summary of Lifecycle Strategies for Parking Operations

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Inspections & Operations of - **Parking Garages**	**Monthly** - Interiors - ensure handrails are secure, test for creaking or instability	TPA

	- Furnishings - Check functionality of movable parts, drawers, and hinges **Quarterly** - Shell - inspect operability of windows, doors **Annually** - Interiors - Test doors, cabinetry for functionality.	
Inspections & Operations of - **Surface Lots**	**Monthly** - Site mechanical and electrical utilities - Test water flow, sewer backups, gas pressure, power supply reliability and functionality - Exterior parking equipment, fences and gates - Test gates, sensors, and barrier movement - Plant irrigation -Test for even spray coverage and proper pressure - Turf, grasses, plants -Inspect for growth, water coverage, and plant health, assess pruning needs - Exterior lighting - Test lighting at night to ensure proper illumination **Quarterly** - Exterior steps and ramps - Test for stability, smoothness, and handrail support - Turf and grasses - Lawn aeration, overseeding, mowing - Electrical panel and conduit - Test system load, continuity and insulation resistance in critical areas - Liquid and gas site utilities - Test valves, meters, and flow rates **Semi-Annually** - Exterior signage - Verify visibility and readability during different lighting conditions - Plants - Prune branches, apply mulch, and fertilize - Parking appurtenances - Repair and repaint damaged bollards, traffic barriers **Annually** - Guardrails - Test for proper anchoring and rigidity	TPA

	- Exterior Parking Control Equipment - repair ticket dispensers, upgrade software, cleaning, lubricate moving parts and recalibrate sensors - Parking lot pavement, walkways, curbs and gutter - asphalt overlay, minor repairs (e.g., filling cracks, patching small potholes), clean surface debris, restripe markings, concrete patching, repaint curbs, replace worn joints, level walkways - Light poles, bollards, barriers - Check stability and alignment - Pedestrian walkways -Test for trip hazards - Retaining and planter walls - Inspect alignment and structural stability **As needed** - Stormwater drains - Check that water is draining efficiently without pooling - Fences and gates - Gate lubrication, fence panel repair - Exterior steps and ramps - Handrail maintenance, Repaint or resurface worn steps and ramps	
Inspections & Operations of - **Parking meters**	**Monthly** - Check card, and digital payment systems for proper functionality, inspect the displays (time, rates, etc.)	TPA
Inspections of - **Vacant land**	**As needed:** - Vegetation control, soil maintenance. Grass cutting, cleaning	TPA
Inspection of - **Other buildings**	**Weekly** - Conveying systems - test normal operation, ensure smooth starts/stops, and verify emergency features - Equipment - test alarms, and emergency systems **Monthly** - HVAC, Fire Protection, Electrical - Test thermostat, airflow, temperature control, lighting, outlets, and equipment **Quarterly** - Foundations and Basement - Inspect sump pumps, ensure proper drainage and operation of dewatering systems	TPA

	- Plumbing - Test faucets, toilets, and drainage systems - Site improvements - Test sprinkler systems and drainage during operation, outdoor lighting and fixtures	
Maintenance and Repair of - **Parking Garages** - **Other buildings**	**Monthly** - Conveying - elevator servicing, control panel updates, repair faulty motors or brakes, elevator cab cleaning, lubricate moving parts - Electrical - clean electrical panels, tighten connections, repair or replace worn-out switches; inspect generator, CO_2 System, FLS System **Quarterly** - HVAC - air handler maintenance, cleaning, lubricate moving parts, repair motors, fix leaks, check fans and fan belts - Fire protection - check battery backups, inspect fire hoses, and clear obstructions from sprinklers, fire extinguisher checks, fix non-functional alarms - Equipment - lubricate moving parts, test safety systems, repairs (fix control systems, and address malfunctions) **Semi-Annually** - Roofing - apply protective roof coatings, cleaning, repair roof leaks - Stairs - handrail repair, step resurfacing, cleaning, repaint railings - Plumbing - clean drains, repair pipes (e.g. tightening connections, repairing small leaks), water outlets, sinks, backflow preventors - Site improvement - seal cracks in paved areas, repaint or treat wooden fences and benches, repair fence panels, or fix broken benches, address grading or drainage problems in landscaping - Site electrical utilities - utility connection maintenance, clean fixtures, and test lighting systems **Annually** - Interior construction and finishes - Refinish walls or ceilings, repair loose fixtures, painting, wall patch repairs, floor resealing, refinishing hardwood floors	TPA

	- Site mechanical utilities - Drainage system servicing (Flush water lines, inspect and clean catch basins, and test valves) **As needed** - Foundations and basement construction - Foundation waterproofing, crack sealing, sump pump servicing, slab repairs, resurfacing - Furnishing - Clean, fix loose hardware, or reupholster	
Maintenance and Repair of - **Surface Lots**	**Quarterly** - Electrical panel - clean panel interior, tighten connections, and replace worn labels, repair damaged wiring or breakers **Semi-Annually** - Parking appurtenances - Repair and repaint damaged bollards, traffic barriers - Site stormwater drains - clean catch basins and remove debris from drains **Annually** - Exterior lighting - clean lenses, bulbs, and repair or replace wiring - Parking lot pavement, walkways, curbs and gutter - asphalt overlay, minor repairs (e.g., filling cracks, patching small potholes), clean surface debris, restripe markings, concrete patching, repaint curbs, replace worn joints, level walkways - Exterior signage - sign cleaning, repainting faded signs, repairing damaged panels **As needed** - Exterior steps and ramps - Handrail maintenance, Repaint or resurface worn steps and ramps - Fences and gates - Gate lubrication, fence panel repair - Guardrails - Straightening, repainting, and tightening guardrails and bolts - Timber planter walls - Wood treatment, painting, reapply protective sealants and repair damaged sections - Site furnishing - Bench repair/repaint	TPA

3.4.3 DEMAND FORECAST

The following section details the actions to be taken to manage forecast demand impacts on Parking Operations asset related services.

The impacts on assets and their lifecycle activities were assessed using the rating framework in Table 3-7 to quantify the level of improvement required to address the identified demand trends.

Table 3-7: Impact rating framework

Impact on existing assets	Impact Score
Existing assets do not need modification	Very Low
Existing assets may need minor modification	Low
Existing assets may need amount of modification	Medium
Existing assets need major modification or upsizing	High
Need entirely different asset(s)	Very High

Table 3-8 describes the impacts that future demand will have on asset lifecycle activities being delivered by the Parking Operations Department.

Table 3-8: Future demand impacts on TPA's assets and Parking Operations activities

Impact on TPA services	TPA's Current Plans	Impact on assets and lifecycle management activities
Increasing demand for new parking spaces due to population and employment growth	• Increase the volume and inventory of services • Introduce new monthly and variable passes, and increase rates	MEDIUM • A moderate increase in the portfolio of assets is anticipated to meet demand from organic growth. • Parking Operations will be required to operate and maintain more buildings and surface parking lots
Increasing demand for new technology to improve the efficiency and convenience of parking	• Upgrading existing payment machines to pay-by-plate meters featuring user-friendly touchscreens and supporting multiple payment options. This upgrade will align with the transition to 4G and 5G networks and enhance the overall parking experience for users. Fewer pay-by-plate meters will be required compared to the pay-and-display meters. • Upgrade wayfinding signage in garages over the next 3 to 5 years.	VERY HIGH • TPA will acquire new assets such as pay-by-plate meters, digital signage and digital occupancy sensors. • Pay and display meters will be replaced by a lower number of pay-by-plate meters. • Parking Operations will be required to maintain a broader range of equipment types. However, the overall quantity of pay equipment is expected to decrease over time.

Increasing demand for improved security of parking lots and garages	• Future developments will be focused on pedestrian access control, vehicle safety, and lighting.	VERY HIGH • TPA will acquire new assets to control pedestrian access. • Parking Operations will be required to maintain new security related assets.

3.5 WHAT FUNDING DO WE NEED

Figure 3-3 shows the 20-year renewal forecast of assets based on Insurance values and the BCA's capital plan (Off-street assets), asset age and estimated repair and/or replacement cost. The current 5- and 20-year average replacement costs are $28.7 million and $16million per annum, respectively. This forecast suggests a significant short-term investment, which is expected to decrease once the necessary requirements are met.

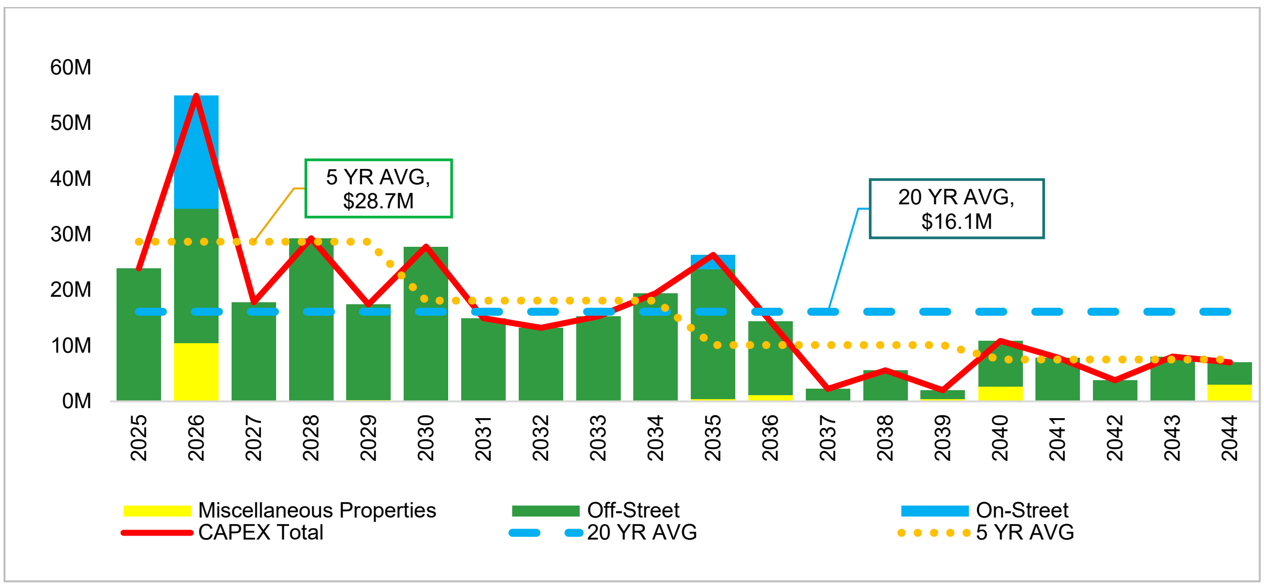


Figure 3-3: Parking operation 20-year renewal forecast

3.6 KEY IMPROVEMENT AREAS

The key improvement areas for Parking Operations include:

1 Asset inventory – currently only the number and cost of assets are recorded. Further information is required to better support planning for asset replacements and support for decision makers.

2 Coordination across departments – the overall TPA service delivery, planning, and financial performance would benefit from improved interaction, coordination, and

information sharing between departments and greater consistency of some asset management practices.

3 Improve documentation of lifecycle activities – this includes planning of activities, documentation, and performance monitoring, which will provide support to decision makers and facilitate better coordination across departments.

4 Improve definition of levels of service and performance measures – this includes to determine appropriate performance targets when measured performance information is available to verify targets are achievable within current budget.

4 PARKING DEVELOPMENT & ELECTRIC VEHICLE CHARGING

4.1 WHAT SERVICE DO WE PROVIDE?

The Parking Development department is responsible for enhancing parking solutions, expanding EV charging infrastructure, and operating EV chargers within TPA facilities and strategic locations, to support EV adoption and advance the TPA's and city's sustainability goals.

4.1.1 WHO HAS AN INTEREST IN THIS SERVICE?

Table 4-1 summarizes identified stakeholders.

Table 4-1: Parking development stakeholders

Stakeholder Group	Stakeholder
Users	Commuters, Residents, Monthly pass holders, Tourists
Service providers	Toronto parking enforcement unit, Business partner, TPA property tenants, Insurance agencies, Toronto prosecutions Dept, City agencies
Regulators	Ontario building code, TPA board, WSIB, Ministry of Labour, Province of Ontario, Federal government, City of Toronto, Measurements Canada, PCI compliance
Wider community	Other businesses, Film industry, Private property owners, Public/private events, Farmers market, Business improvement area, contracted employees, TPA employees, Councilors, Equipment vendor, Equipment operator, Sponsors

4.1.2 HOW IS SERVICE PERFORMANCE ASSESSED?

The level of service the department seeks to provide is defined in the following statements:

- Available and reliable EV charging and parking services for drivers.
- A high-quality experience through user-friendly applications and accessible parking spaces and charging speeds that meet expectations.
- Convenient payment options, to accommodate user preferences and ensure secure and seamless transactions

Table 4-2 outlines the identified service criteria and corresponding performance measures that align with the department's objectives. These criteria and measures were developed to evaluate service delivery, to support continuous improvement and to ensure alignment with organizational goals and stakeholder expectations.

Table 4-2: Service criteria and performance measures for parking development

Service Criteria	Candidate Performance Measure
Charging branding/reputation	Customer satisfaction survey
Charging network financial viability	Number of transactions, revenues and expenses
Parking technology solution suitability	Customer satisfaction

4.2 WHAT ASSETS DO WE OWN?

The parking development and electric vehicle charging department relies on various assets to deliver reliable services across Toronto. These assets are organized into key service area and group, including electric chargers' level 2 and level 3 which are listed in Table 4-3.

Table 4-3: Parking development and electric vehicle charging assets

Asset Service Area	Asset Group	Asset Type
EV	Electric Chargers	Level 2 charger
		Level 3 charger

4.2.1 *SUMMARY OF PARKING DEVELOPMENT & EV ASSETS*

The TPA's Parking development assets are valued at approximately $3.5 Million (based on 2024 costs). This is 0.4% of the TPA's total asset portfolio by value.

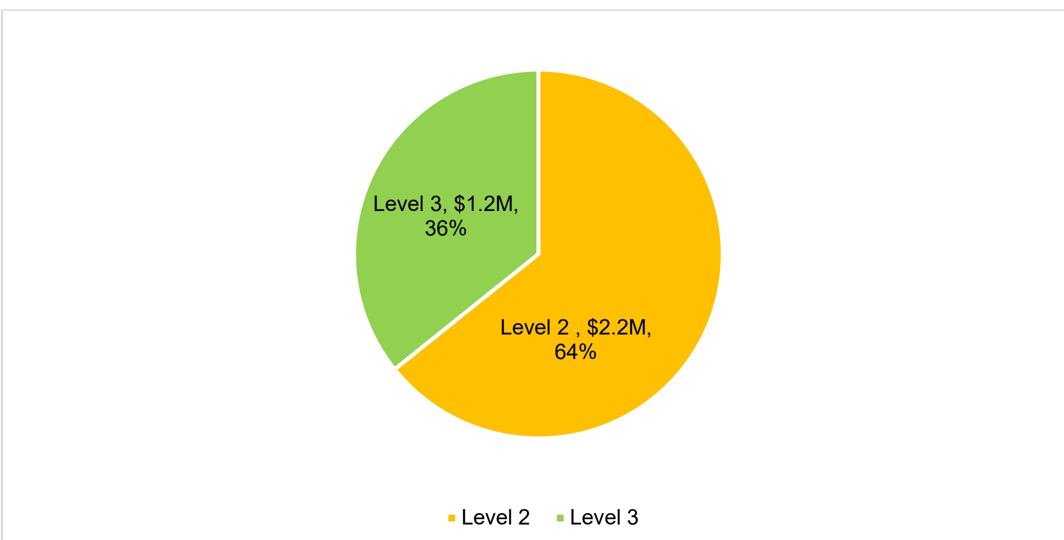


Figure 4-1: Asset summary of parking development & EV

Table 4-4: Parking development & EV asset summary

Asset Sub Type	Quantity (Count)	Current Average Asset Age	Average Expected Asset Life	Average Asset Condition	Current Asset Replacement Cost	20 YR Average Per Annum Total Capital Cost
Level 2 Charger	323	2	8	Good	~ $2.2M	$232,000
Level 3 Charger	24	2	8	Good	~ $1.2M	$135,000
Total	347[8]				**~ $3.5M**	**$367,000**

4.3 WHAT CONDITION ARE THE ASSETS IN?

All EV chargers are classified as being in good condition (100%). The age of these assets ranges from 0 to 10 years.

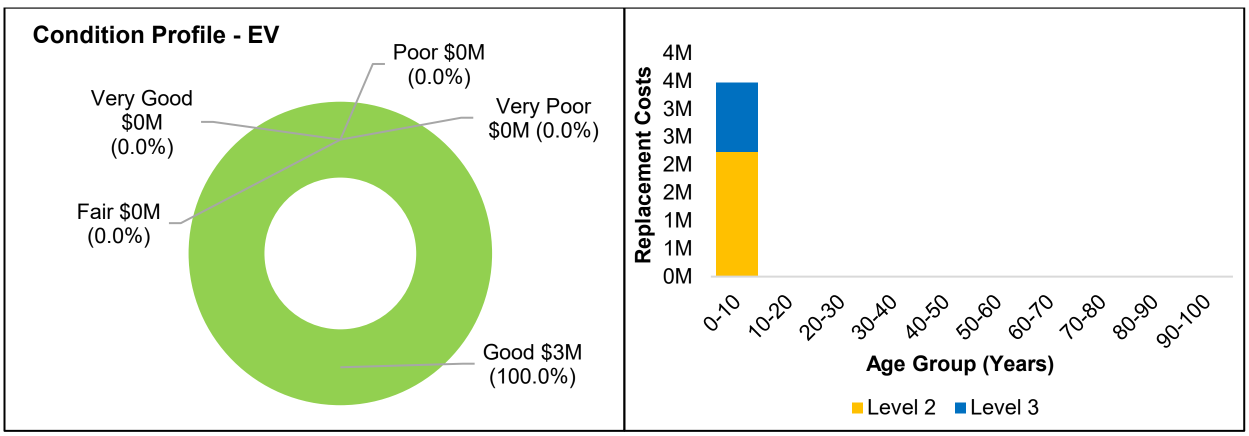


Figure 4-2: Condition and age profile of parking development & EV

4.4 WHAT CAN AFFECT OUR SERVICE

This section looks at key risks related to parking operations, lifecycle strategies used to management condition, and future demand forecasts and their impact on services.

4.4.1 RISK PROFILE

Table 4-5 summarizes the risk actions which are most relevant to this service area.

[8] TPA continues to expand its electric vehicle (EV) charging network. As of the latest update, a total of 459 EV chargers have been installed, including 54 new additions, 47 Level 2 chargers and 7 DC fast chargers. New assets to be included in next iteration of AMP.

Table 4-5: Key risks identified that directly impact parking development and EV charging

Action Plan Task	Status	Impact on AMP
Key Risk: Change in the City's Direction		
Define and confirm the TPA's role, responsibilities and authority within the city-wide EV charging strategy.	In Progress	Improved clarity on these issues would inform portfolio expansion/changes and TPA's asset management strategies **AMP Action:** The demand for EV charging services, along with associated technology requirements remains uncertain. Even so, TPA is continuing to grow its charging network, acknowledging that, our investment strategies and inventory management will potentially require adjustments.
Key Risk: Aging Parking Infrastructure		
Development of a Formal Asset Management System: •*Q3 2024: Develop and publish an Asset Management Policy.* •*Q1 2025: Phase 1 - TPA Asset Management Plan, Level of Service Framework, Asset Management Governance & Training, Asset Condition/Risk Framework, Risk Review/Risk Based Decision Making, Investment Strategy, Life Cycle Action Plan*	In-progress	This action directly relates to the development of this asset management plan. EV charging assets are a relatively new and are not of concern in terms of being an aging component of TPA's infrastructure portfolio. There remains, however, a high level of uncertainty around demand, fleet technologies, scale and distribution of need, and type of EV chargers that TPA will be required to manage. For this reason, planning for this asset class will require frequent revision, as service intentions and other details become better understood. **AMP Action:** Fully develop an endorsed asset management policy and strategy and fully resource the advancement of asset management improvement actions to achieve TPA objectives, in alignment with TPA and City EV strategies.
Key Risk: Parking Equipment / Technology Management		
Modernize On-Street Parking: Advanced Hardware, Efficient Equipment, Seamless System Integration with Unified PARCS Software. PbP Meters, Sensors, Payment Integration	In-progress	New equipment will add new infrastructure to the portfolio. **AMP Action:** For each new asset, consider the appropriate lifecycle interventions that TPA will need undertake for these assets, and incorporate these actions into maintenance and capital planning forecasting.
Updating and modernization the hardware and equipment at each parking garage, along with overhauling the Parking Access Revenue Control Systems (PARCS)software.		New equipment will add new infrastructure to the portfolio. **AMP Action:** For each new asset, consider the appropriate lifecycle interventions that TPA will need to undertake for these assets, and incorporate these into maintenance and capital planning forecasting.

A Parking Operations service risk assessment was not completed for this AMP, but the following risks were noted by staff as being relevant to the service.

- **Uncertain electric vehicle fleet requirements:** There is much uncertainty associated with EV charging demand within the City of Toronto, and generally in this sector. As things evolve with respect to the EV fleet range characteristics, grid capacity, parking requirements, trip characteristics and those of orphan vehicles requiring on-street parking, TPA must remain thoughtful and responsive to market changes, and decisions of other EV charging providers in the Greater Toronto Area. This risk requires careful monitoring.
- **Technology Suitability:** TPA continues to evaluate the most appropriate mix of charging technologies to meet customer demand and achieve the TPA's and City's objectives. Parking development also has a responsibility for new technologies employed across TPA. This risk poses a challenge with respect to selecting appropriate new technologies, to achieving the TPA's objectives of improving the customer experience, increase transactions/profit associated with this service, and improving the ease of transactions and ensuring technology is fit for the services it provides.
- **Charging Branding / Reputation:** Given the very customer facing nature of EV charging, staff expressed a high-level of importance associated with the TPA's ability to provide experiences that have a positive impact on the brand overall.

These risks will be addressed more formally in future versions of the AMP.

4.4.2 LIFECYCLE STRATEGIES

The Parking Development department manages the lifecycle of EV charging infrastructure across Toronto, including planning, installation, maintenance, and replacement of charging stations. The department also works closely with third party service providers who supply the equipment and support operation on it after installation by TPA. Strategies used for each stage of the lifecycle are outlined below.

Table 4-6: Summary of lifecycle strategies for parking development

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Planning and acquisition - **EV chargers**	**As needed** - Acquisition of EV charging equipment, hardware accessories (e.g. cable management systems and pedestals), and product warranties.	TPA

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Inspections, Maintenance and Repair of - **EV chargers**	**Daily** - Remote detection of issues 90% of time. Remaining identified by TPA staff or customers - Proactive maintenance such as software updates and remote firmware upgrades to ensure chargers stay secure, efficient, and up to date with the latest advancements. **Weekly** - Inspection of all chargers and signage to maintain operational integrity and spot issues to escalate for repair **As needed** - Remote detection of issues 90% of time. Remaining identified by TPA staff or customers - Repairs	TPA
Operations - **EV chargers**	**Continuous** - Continuous 24/7 cloud monitoring for early detection and resolution of potential problems, minimizing downtime and enhancing user experience	FLO/ ChargePoint
Disposal and replacement at end of useful life - **EV chargers**	**Over asset lifecycles** Planning and decision-making for rehabilitation, disposal and replacement	TPA

4.4.3 DEMAND FORECAST

The Parking Development Department focuses on advancing Toronto's parking infrastructure through innovative solutions and new technology integration. This includes expanding EV charging infrastructure in TPA parking facilities and strategic locations, enhancing payment systems, and introducing advanced technologies. By supporting EV adoption and collaborating with stakeholders, this department advances Toronto’s sustainability goals while modernizing equipment, to meet growing demands. These efforts ensure the city’s parking network remains efficient, secure, and customer focused.

The impacts on assets and their lifecycle activities were assessed using the rating framework in Table 4-7 to quantify the level of improvement required to address the identified demand trends.

Table 4-7: Impact rating framework

Impact on existing assets	Impact Score
Existing assets do not need modification	Very Low
Existing assets may need minor modification	Low
Existing assets may need amount of modification	Medium
Existing assets need major modification or upsizing	High
Need entirely different asset(s)	Very High

Table 4-8 describes the impacts of future demand on the asset lifecycle activities delivered by the Parking Development Department.

Table 4-8: Impacts of future demand on TPA's assets and Parking Development's activities

Impact on TPA services	TPA's Current Plans	Impact on assets and lifecycle management activities

Demand for EV charging at parking spaces is expected to increase due to forecasted growth in electric vehicles. The expected increase by 2040 is a factor of 10 for light-duty vehicles and a factor of 6 for medium and heavy-duty vehicles.	• Provide a total of 445 chargers by the end of 2024.
	• Implement City of Toronto's plan for providing EV chargers at on-street locations (68 new EV chargers at on-street locations).
	• Site selection of over 100 potential on-street EV charging locations is in progress[9]
		HIGH
		• A major upsizing of the inventory of EV chargers
		• Parking Development will continue
		  ○ working with the City of Toronto to install and operate EV chargers at City buildings with public access, on-street parking locations, and at Green P off-street lots.
		  ○ exploring partnerships to mitigate risks, enhance marketing, and share asset ownership responsibilities.

Increasing demand for planning and paying for transportation services in Toronto, including parking fees and EV charging, on a single app.	• Integrating Green P App and EV Charging to single payment	MEDIUM • Moderate modification to existing Green P App

[9] Public EV Charging, City of Toronto Activities, Presentation to Toronto Parking Authority Board, 19 July 2024

Impact on TPA services	TPA's Current Plans	Impact on assets and lifecycle management activities
Increasing demand for new technologies and improved customer applications	• Integrating digitization across all platforms including. • Upgrading existing payment machines to pay-by-plate meters featuring user-friendly touchscreens and supporting multiple payment options. This upgrade will align with the transition to 4G and 5G networks and enhance the overall parking experience for users	VERY HIGH • TPA will acquire new assets such as pay-by-plate meters, and digital occupancy sensors. • Parking Development will be required to identify and assess new technology-based assets to meet growing customer expectations and improve the efficiency of services.

4.5 WHAT FUNDING DO WE NEED

Figure 4-3 presents the 20-year renewal forecast for existing assets, based on their age and estimated replacement costs. The current SOI analysis forecasts an average replacement cost of $730K, and $370K per year over 5 and 20 years, respectively. This forecast offers valuable context for decision-makers, as it includes for every asset to be replaced at least once within this timeframe. Assets nearing the end of their useful life (specifically those due for replacement within 1-5 years) should be inspected to verify their condition and remaining lifespan. This will improve the accuracy of remaining life and replacement cost estimates for site-specific considerations and budget planning.

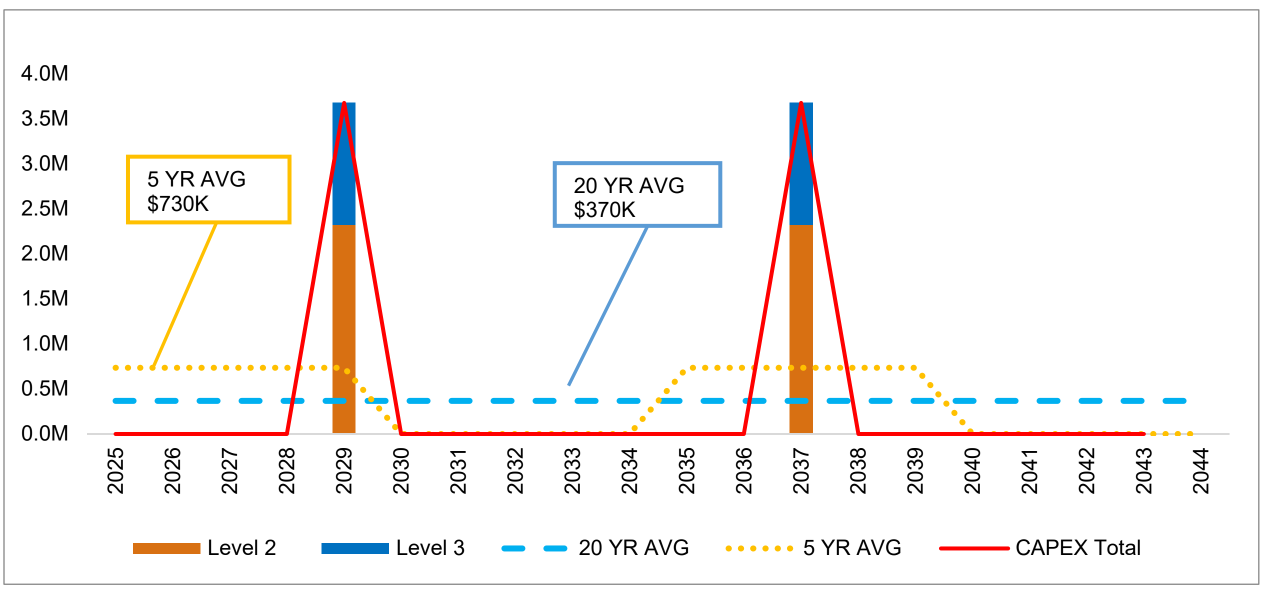


Figure 4-3: EV 20-year renewal forecast

4.6 KEY IMPROVEMENT AREAS

The key improvement areas for Parking Development & EV Charging include:

1. Improve asset inventory – currently install dates or age of charging equipment is not recorded. Further information will improve planning of interventions and management of asset replacements and support for decision makers.
2. Improvement strategy – An improvement strategy and roadmap with clear path and goals for EV and parking technology will support better lifecycle management.
3. Improve coordination across departments – the overall TPA service delivery, planning, and financial performance would benefit from improved interaction, coordination, and information sharing between departments and greater consistency of some asset management practices.
4. Improve documentation of lifecycle activities – this includes planning of activities, documentation, and performance monitoring, which will provide support to decision makers and facilitate better coordination across departments.
5. Improve definition of levels of service and performance measures – this includes to determine appropriate performance targets when measured performance information is available to verify targets are achievable within current budget.

5 MICROMOBILITY (BIKESHARE)

5.1 WHAT SERVICE DO WE PROVIDE?

This team is responsible for overseeing the Bike Share Toronto program, focusing on providing an eco-friendly transportation alternative through a reliable network of bicycles. They support Toronto's sustainable mobility goals by expanding coverage, improving accessibility in underserved areas, and enhancing first/last mile transit integration to connect users seamlessly to public transportation hubs. The program also prioritizes equitable access across the city, promoting active transportation to reduce traffic congestion and emissions.

5.1.1 WHO HAS AN INTEREST IN THIS SERVICE?

Table 5-1 summarizes identified stakeholders.

Table 5-1: Bikeshare stakeholders

Stakeholder Group	Stakeholder
Users	Commuters, Residents, Tourists, Membership holders, Leisure bikers, People requiring affordable transportation in Toronto
Service providers	Transportation Services, Parks, Forestry & Recreation, TTC, Metrolinx, Other transit agencies
Regulators	City of Toronto, TPA board, MTO
Wider community	Business Improvement Area, Insurance agencies, Private property owners, Operator, Sponsor, Equipment vendor, Political action groups – pro, Political action groups - anti

5.1.2 HOW IS SERVICE PERFORMANCE ASSESSED?

The level of service the department seeks to provide is defined in the following three statements:

- Provide high quality, reliable and accessible micromobility solutions to meet user needs.
- Provide financially sustainable and affordable services.
- Provide sufficient capacity and availability to meet user needs.

Table 5-2 outlines the service criteria and candidate performance measures for the Bikeshare program. These measures were identified to evaluate and enhance program delivery, ensuring alignment with departmental goals and the needs of Bikeshare users and stakeholders.

Table 5-2: Service criteria and performance measures for bikeshare

Service Criteria	Candidate Performance Measures
Coordination	# of complaints
Coordination	Partner satisfaction
Accessibility	Customer satisfaction survey
Availability	% time stations have at least 1 free dock and 1 free dock
Availability	% of network in operation
Quality of bike	% compliance with maintenance schedule
Condition of docking station	docking monitoring system alerts
Condition of docking station	% compliance with maintenance schedule
App reliability	Uptime

5.2 WHAT ASSETS DO WE OWN?

The Micromobility program relies on various assets to deliver reliable bike share services across Toronto. These assets are organized into key service areas and groups, including bikes, docking stations, and supporting infrastructure which are listed in Table 5-3. The fleet comprises both regular bikes and e-bikes, ensuring accessibility for a wide range of users. Docking stations, categorized as smart and non-smart, provide critical points for bike rentals and returns, while an inventory of spare parts ensures the ongoing maintenance and functionality of the system. This large asset portfolio enables the Toronto Parking Authority to maintain seamless operations and support the growing demand for sustainable transportation.

Table 5-3: Micromobility Assets

Asset Service Area	Asset Group	Asset Type
Micromobility (Bikeshare)	Bikes	E-Bikes
		Regular Bikes
	Docking Stations	Smart
		Non-Smart
	Parts	
	Station	

5.2.1 SUMMARY OF MICROMOBILITY ASSETS

The TPA's Micromobility assets are valued at approximately $49.5 Million (in 2024 dollars). This is 5.4% of the TPA's total asset portfolio by value.

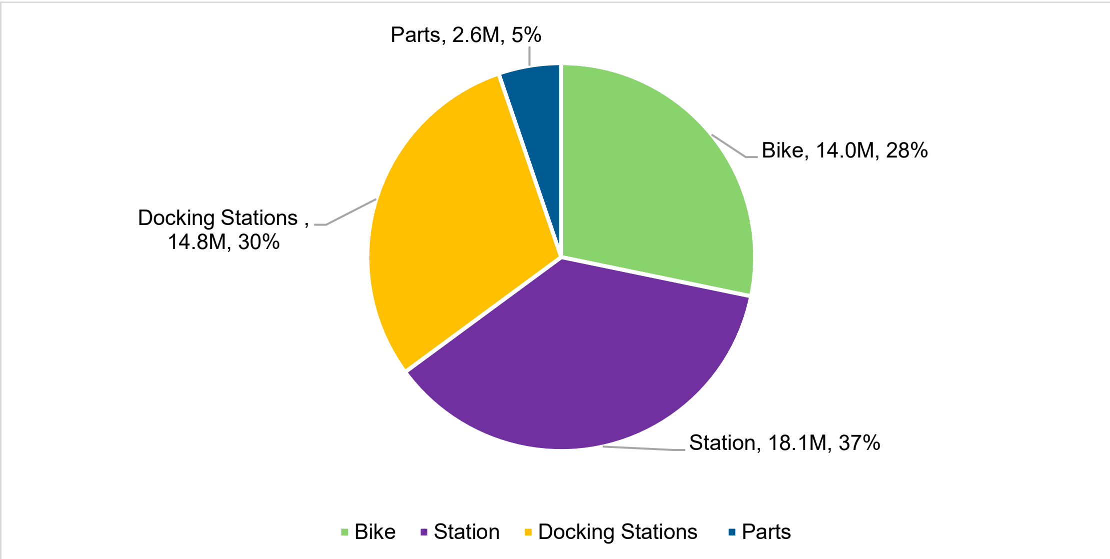


Figure 5-1: Bikeshare assets

Table 5-4: Bikeshare Asset Summary

Asset Type	Quantity (Count)	Current Average Asset Age	Average Expected Asset Life	Average Asset Condition	Current Asset Replacement Cost	20 YR Average Per Annum Total Capital Cost
Bike	9,339	5	10	Good	~ $14.0M	$1,397,000
Station	844	14	20	Fair	~ $18.2M	$907,000
Docking station	16,304	14	20	Fair	~ $14.8M	$739,000
Parts	242	1	10	Very Good	~ $2.6M	$259,000
Total	**26,729**				**~ $49.5M**	**~ $3.3M**

5.3 WHAT CONDITION ARE ASSETS IN?

The Micromobility assets are primarily in Fair condition, with ~ $35M (70.7%) of the asset value, falling into this category. A smaller portion of assets, $6M (11.9%), are in Good condition, while $8M (15.2%) are classified as Very Good, indicating a strong performance for a significant portion of the portfolio.

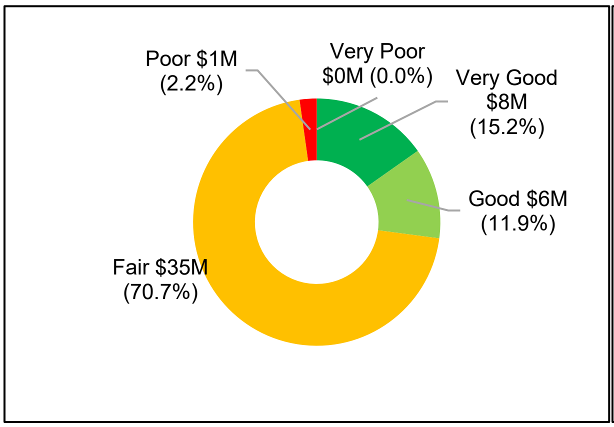
A small percentage of assets, $1M (2.2%), are in Poor condition, which highlights areas requiring attention to prevent further deterioration. Notably, no assets are currently in Very Poor condition, reflecting the overall effectiveness of ongoing maintenance efforts.

This distribution indicates that the system is functional and reliable, but there is a need for ongoing investment to address assets in poorer condition to maintain this overall good quality of service.

The age profile of Bike Share assets indicates that the majority fall within two key age groups:

0-10 years: This group primarily consists of Bikes and Parts, representing a significant portion of the asset base, with replacement costs nearing $16.5M. These assets are still functional but may require ongoing maintenance and targeted renewal to maintain service reliability.

10-20 years: A large share of Docking Stations and Stations fall within this age range, accounting for replacement costs exceeding $32M. Assets in this category may be approaching the latter stages of their service life, signaling the need for planned replacements or upgrades to sustain system performance.



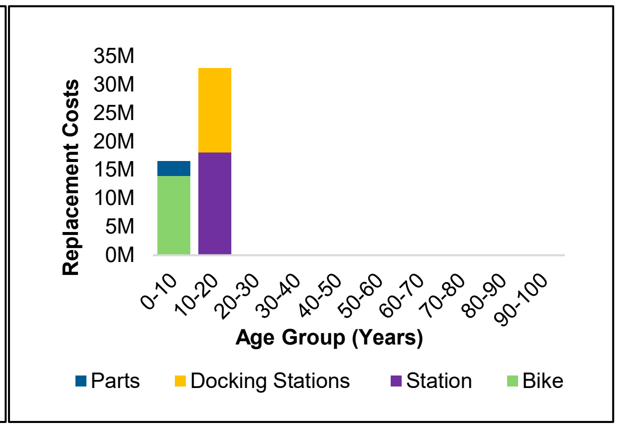


Figure 5-2: Condition and age profile of Bikeshare

5.4 WHAT CAN AFFECT OUR SERVICE?

Several factors can impact the quality and sustainability of bike share services. Financial challenges, such as securing long-term funding and maintaining affordability, along with aging assets and the need for scalable operations, can affect service reliability and efficiency. Rising demand, fueled by population growth and the increasing preference for low-cost, convenient travel options, adds pressure to expand and integrate services with other transportation modes. Climate change introduces risks like extreme weather and infrastructure vulnerability, while also underscoring the importance of bikeshare as an eco-friendly solution. Addressing these challenges requires proactive lifecycle strategies, including regular maintenance programs, system upgrades, and strategic planning to ensure bikeshare remains a reliable and integral part of urban transportation.

The following sub-sections look at key risks for bikeshare assets, lifecycle strategies for managing assets, and future demand forecasts.

5.4.1 RISK PROFILE

Table 5-5 summarizes risk actions which are most relevant to this service area.

Table 5-5: Key Risks identified that directly impact Micro-Mobility Services (Bike Share)

Action Plan Task	Status	Impact on AMP
Key Risk: Financial Sustainability		
Brief annual review for City Leadership on the income sharing agreement relative to the TPA's annual operating plan.	Complete	This action has been completed and represents an increase in retained earnings for TPA to employ for both growth and renewal investment for its portfolio. This will incrementally increase the overall pool of available funding for managing bikeshare infrastructure. **AMP Action:** At the time of writing, the impact of increased capital funding is unclear for this service area. Review the long-term capital plan and update as required once available investment is clarified.
Implement a Budgeting and Reporting tool	In Progress	The TPA is in the final stages of selecting a vendor to implement a financial budgeting tool that is expected to go-live in early 2025. This action may create an opportunity to integrate AM performances measures associated with service level targets into the new reporting framework / system. **AMP Action:** As the financial reporting process is defined within this initiative, consideration should be given to integrating asset management measures into reporting e.g. valuation trends, average condition, and sustainable investment target levels by asset class.
Key Risk: Aging Parking Infrastructure		
Development of a Formal Asset Management System: •*Q3 2024: Develop and publish an Asset Management Policy.* •*Q1 2025: Phase 1 - TPA Asset Management Plan, Level of Service Framework, Asset Management Governance & Training, Asset Condition/Risk Framework, Risk Review/Risk Based Decision Making, Investment Strategy, Life Cycle Action Plan*	In-progress	This action directly relates to the development of this asset management plan. **AMP Action:** Fully develop an endorsed asset management policy and strategy and fully resource the advancement of asset management improvement actions to achieve TPA objectives and mitigation intentions associated with this risk.

Action Plan Task	Status	Impact on AMP
Key Risk: Internal Scalability		
Develop a Flexible Workforce: Build a flexible workforce by implementing practices such as cross-training employees, hiring contractors or temporary staff during peak periods, and leveraging remote work capabilities:	In-progress	This action includes training employees to expand their skills. This may present an opportunity to integrate asset management awareness and skills training that incorporates concepts into their existing and future roles. **AMP Action**: Develop AM training materials that are associated with the TPA AM Improvement Plan and ensure they are aligned with planned cross-training initiatives to allow employees access to AM training.
Data Driven Decision Making: Utilize data analytics to monitor key performance indicators (KPIs) and identify potential scalability issues before they become critical.	In-progress	This is an ongoing initiative for the TPA and will continuously align key performance indicators (KPIs) and metrics with TPA's evolving strategy and business objectives. **AMP Action**: Opportunity to integrate with AM Performance Measure Reporting and improvement items such as data governance, asset deterioration modelling and financial planning. Currently many KPIs are revenue focussed. Review and propose several performance measures associated with infrastructure to reflect asset health and sustainability of renewal investment.
Streamline Processes: Continuously review and optimize internal processes to ensure they are scalable and efficient. This may involve automation of repetitive tasks, standardization of workflows, and elimination of unnecessary bureaucracy:	In-progress	There are multiple projects that are currently in-flight to either refine existing operating platforms, adopt new platforms and/or change work practices. Work for process change on these items will continue through 2025. **AMP Action**: Some AM processes may be targeted for improved efficiency / effectiveness e.g. (i) improved coordination with stakeholders to increase effectiveness / utilization of the network. (ii) Capital planning process that incorporates renewal, investment in new assets / service enhancements, and balances these investments with the capital needs of other service areas in TPA.

While a Parking Operations service risk assessment was not completed for this AMP, the following risks were noted by staff as being relevant to the service:

- **Service reliability and durability of bike share assets:** TPA continues to try to complete timely maintenance on bikes and other e-bike charging assets. Some anecdotal evidence suggested there is variability in the expected service lives for some assets. Reliability centred maintenance and other assessments may improve the risk associated with asset longevity, reliability and service lives.

- **Matching demand with supply:** growth in demand continues to expand and TPA continues to optimize accessibility and redistribution of assets to achieve availability targets.
- **Financial metrics:** The costs associated with providing this service area are currently not fully covered by revenues. It is unclear if there is a target horizon for full cost recovery. Efficiency and supply / demand optimization may present opportunities to improve the financial recovery of the service.

5.4.2 LIFECYCLE STRATEGIES

The Lifecycle Strategy outlines the planned actions performed on assets to deliver sustainable levels of service, while managing risks and minimizing lifecycle costs. Lifecycle activities outline the specific measures carried out as part of this strategy, including inspections, operations, maintenance, repairs, and replacements to ensure the safety, reliability, and functionality of Bikeshare assets. While service providers handle routine tasks such as inspections, cleaning, and maintenance, the Bikeshare Department manages system scalability through station deployments, stock reviews, and component replacements.

A summary of key lifecycle activities is provided below.

Table 5-6: Summary of lifecycle strategies for micromobility

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Disposal and replacement at end of useful life - **regular bikes, e-bikes, smart docking stations, non-smart docking stations, pay stations**	**Over asset lifecycles** - Planning and decision-making for rehabilitation, disposal and replacement	TPA
Repair of - **regular bikes, e-bikes, smart docking stations, non-smart docking stations, pay stations**	**As needed** - Bikes - brake pad repair - Docking Stations- repair faulty electronic hardware, repair docking mechanisms - Stations – Repair broken components	Shift Transit
Operation, Maintenance and Inspections of - **regular bikes, e-bikes, smart docking stations, non-smart docking stations, pay stations**	**Monthly** - Stations and Docks - inspect and remove graffiti, stickers, signs and unauthorized propaganda, Clean and wash each element as appropriate, ensure bike stations are visible, organized and appealing	Shift Transit

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Operation, Maintenance and Inspections of - **regular bikes, e-bikes**	**Semi-Annually** - Bike components inspected, adjusted and lubricated if needed. **Annually** - Replace and lubricate chain **Every 2 to 4 Years** - Replacement of components	Shift Transit

5.4.3 DEMAND FORECAST

In collaboration with city planning, Bike Share Toronto focuses on improving coverage in underserved areas and strategically placing stations near high-order transit hubs to enable short trips. With most stations now equipped with smart technology for a seamless user experience, the program supports Toronto's climate strategy and integrates active transportation into the city’s sustainable mobility framework.

The impacts on assets and their lifecycle activities were assessed using the rating framework in Table 5-7 to quantify the level of improvement required to address the identified demand trends.

Table 5-7: Impact rating framework

Impact on existing assets	Impact Score
Existing assets do not need modification	Very Low
Existing assets may need minor modification	Low
Existing assets may need amount of modification	Medium
Existing assets need major modification or upsizing	High
Need entirely different asset(s)	Very High

Table 5-8 describes the impacts of future demand on the asset lifecycle activities delivered by the Micro-Mobility Department.

Table 5-8: Future demand impacts on TPA's assets and Micro-Mobility's services

Impact on TPA services	TPA's Current Plans	Impact on assets and lifecycle management activities

Demand for bikeshare services and e-bikes is expected to increase due to:
• A growing demand for e-bikes
• GHG reduction goals
• A growing demand for low-cost travel options
	• To increase the percentage of electric vehicles in its fleet by acquiring new e-bikes, e-stations and docks. TPA is purchasing new e-stations every year and working with municipal partners to establish power connections
	    ○ 12 new e-stations will be added in 2024 with 300 to 350 docks (total)
	    ○ 160 new e-bikes have been purchased in 2024
		HIGH
		• A major upsizing of the inventory of e-bikes and e-stations will be required to meet demand
		• The Micro-Mobility Department will continue working to expand its current e-bike fleet and charging infrastructure network

	• Goal of the 4-yr growth plan (2022-25) is to enhance connectivity with public transit including expanding bikeshare stations at or near TTC stations. • TPA has started the process for a new 4-yr plan for the period until 2030. One goal will be to have bikeshare stations at all "high order" rail / transit stations in Toronto by 2030.	HIGH • Bikeshare stations will be expanded or created near transit stations. MODERATE • A moderate upsizing of the inventory of standard bikes as the bikeshare system is expanded. • The Micro-Mobility Department will continue working to expand the Bike Share Toronto system based on its current and upcoming 4-year growth plans.

5.5 WHAT FUNDING DO WE NEED?

Figure 5-3 illustrates the capital renewal forecast between 2025 and 2044. This forecast is the like-for-like replacement cost of the existing assets and does not include any new assets or asset upgrades and their renewal that may occur in the future. This forecast is based on lifecycle timing of current assets only. The average costs of the capital renewals per annum over the next 5-year and 20-year period is $1.2 million and $3.3 million, respectively. Most of the renewals forecast to occur in 2031 are for stations and docking stations.

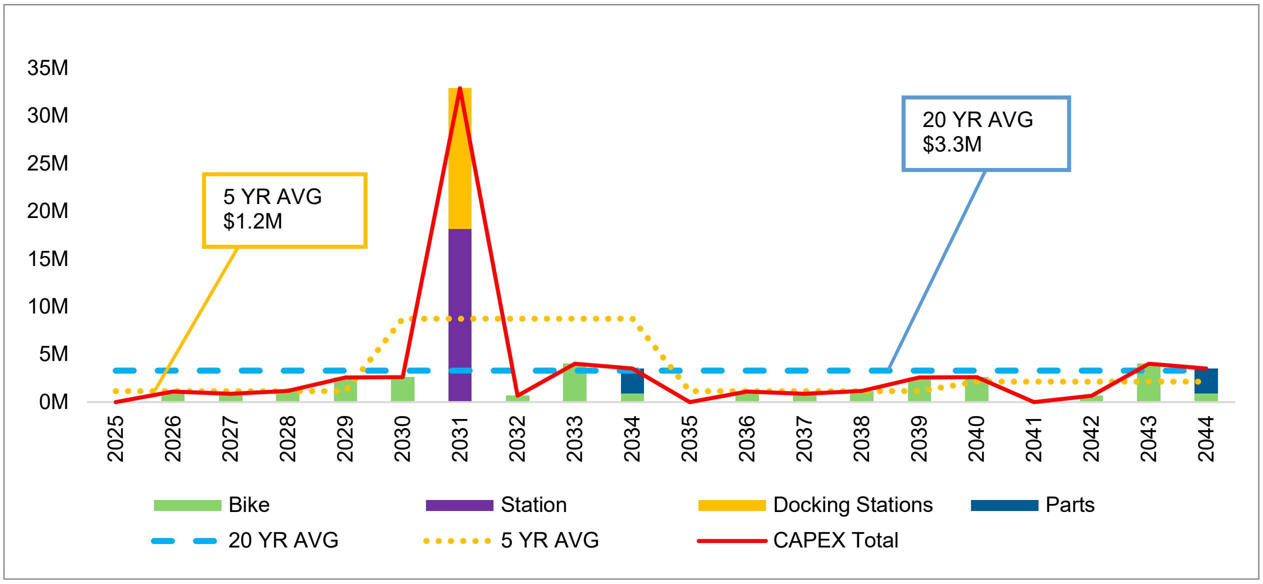


Figure 5-3: Bike share 20-year renewal forecast

5.6 KEY IMPROVEMENT AREAS

The key improvement areas for Bikeshare include:

1. Improve asset inventory – currently there is no inventory of auxiliary assets related to Bikeshare (including trucks, vans, buildings). Further asset information will improve financial forecasts, management of assets, planning of replacements, and support for decision makers.
2. Improve definition of levels of service and performance measures – this includes to determine appropriate performance targets when measured performance information is available to verify targets are achievable within current budget.
3. Align levels of service with vendor agreements – making sure that performance requirements in vendor agreements better support TPA's commitment to levels of service and measurement and reporting of service performance.
4. Improve coordination across departments – the overall TPA service delivery, planning, and financial performance would benefit from improved interaction, coordination, and information sharing between departments and greater consistency of some asset management practices.
5. Improve documentation of lifecycle activities – this includes planning of activities, documentation, and performance monitoring, which will provide support to decision makers and facilitate better coordination across departments.

6 Improve understanding of future demand needs – this will support decision makers for management of existing assets as well as strategies and investment for future needs.

6 PARKING INFRASTRUCTURE AND ASSET MANAGEMENT TEAM

6.1 WHAT SERVICE DO WE PROVIDE?

PIAM team is responsible for capital planning, innovation, and asset management to drive TPA's long-term vision.

This department has responsibility for maintaining the State of Good Repair (SOGR) for parking garage structures and the PIAM program manages capital construction projects for other departments. They also have a role for overview of asset management initiatives and strategic planning.

6.1.1 WHO HAS AN INTEREST IN THIS SERVICE?

Table 6-1 summarizes identified stakeholders relevant to the role of the PIAM team.

Table 6-1: Parking Infrastructure and Asset Management stakeholders

Stakeholder Group	Stakeholder
Users	Residents
Service Providers	Business partners, TPA property tenants, City agencies
Regulators	City of Toronto, TPA board, Province of Ontario
Wider Community	Other businesses, Business improvement areas, Councillors, Sponsors

6.1.2 HOW IS SERVICE PERFORMANCE ASSESSED?

The level of service the department seeks to provide is defined in the following statement:

- Manage infrastructure responsibly, to ensure available and accessible services.

Table 6-2 outlines the service criteria and performance measures for PIAM, designed to evaluate and enhance program delivery while aligning with departmental objective and meeting the needs of users and stakeholders.

Table 6-2: Service criteria and performance measures for PIAM

Service Criteria	Candidate Performance Measures
User accessibility	Number of AODA non-conformance
Stewardship	State of Infrastructure/ endorsed AMP
Condition	Portfolio average condition

Service Criteria	Candidate Performance Measures
Vehicle accessibility	Maximum dimensions which can fit
Stewardship	Financial Audit
Temporarily unavailable	Planned works minimize impacts on availability

6.2 WHAT ASSETS DO WE OWN?

This department is responsible State of Good Repair (SOGR), capital planning, innovation, and asset management. Refer to the sections for each department to see details for assets own by TPA.

6.3 WHAT CAN AFFECT OUR SERVICE?

This section looks at key risks, asset lifecycle strategies, and future demand forecasts relating to PIAM services.

6.3.1 RISK PROFILE

Table 6-3 summarizes risk actions which are most relevant to this service area.

Table 6-3: Key Risks identified that directly impact Parking Infrastructure and Asset Management

Action Plan Task	Status	Impact on AMP
	Key Risk: Aging Parking Infrastructure	
Development of a Formal Asset Management System: *•Q3 2024: Develop and publish an Asset Management Policy.* *•Q1 2025: Phase 1 - TPA Asset Management Plan, Level of Service Framework, Asset Management Governance & Training, Asset Condition/Risk Framework, Risk Review/Risk Based Decision Making, Investment Strategy, Life Cycle Action Plan*	In-progress	This action directly relates to the development of this asset management plan. Parking infrastructure and asset management owns this risk and are striving to implement a holistic AM program across all departments within TPA. **AMP Action:** Fully develop an endorsed asset management policy and strategy and fully resource the advancement of asset management improvement actions to achieve TPA objectives and mitigation intentions associated with this risk.

Key Risk: Parking Equipment / Technology Management		
Systems Operations Centre Modernization	In-progress	This centre will add new infrastructure to the portfolio and allow for potentially new performance monitoring capabilities and supporting data. **AMP Action:** Once operational, consider how the SOC and its systems and data should be incorporated into asset management planning and performance management for Parking Infrastructure and asset management.
Modernize On-Street Parking: Advanced Hardware, Efficient Equipment, Seamless System Integration with Unified PARCS Software. PbP Meters, Sensors, Payment Integration	In-progress	New equipment will add new infrastructure to the portfolio. **AMP Action:** For each new asset, consider the appropriate lifecycle interventions that TPA should undertake for these assets, and incorporate these into maintenance and capital planning and forecasting.
Updating and modernization the hardware and equipment at each parking garage, along with overhauling the Parking Access Revenue Control Systems (PARCS)software.		New equipment will add new infrastructure to the portfolio. **AMP Action:** For each new asset, consider the appropriate lifecycle interventions that TPA should undertake for these assets, and incorporate these into maintenance and capital planning and forecasting.

This initial asset management plan does not include a formalized risk management While a comprehensive approach to assess service risk associated with Parking Infrastructure and Asset Management was not completed for this AMP, the following risks were noted anecdotally by staff as being relevant to the service.

- **State of Good Repair Investment:** Overall the existing infrastructure portfolio is growing quickly, and TPA has an in complete inventory, understanding of condition and inconsistent balance between reactive and proactive lifecycle interventions. Investment in the existing portfolio will need to rise, or a higher residual risk will need to be accepted by TPA leadership.
- **Change Management:** The team is responsible for the implementation of AM best practice within TPA. Past resistance and limitations in capacity and understanding has made implementing this change challenging.
- **Capacity to deliver capital programming:** Historically, delivery of the capital program has fallen well below planned budget. This trend has improved greatly in recent years, but if increased renewal investment is required, capacity may be a challenge.

These risks will be assessed (and more formally addressed) in future versions of the AMP.

6.3.2 LIFECYCLE STRATEGIES

The Parking Infrastructure and Asset Management (PIAM) team is responsible for inspections and replacements of off-street, on-street, and miscellaneous service assets. Condition assessments are conducted every 3–5 years to evaluate asset performance and plan for replacements at the end of useful life of assets. These activities ensure assets remain reliable, safe, and functional over their lifecycle.

A summary of lifecycle activities is outlined in the table below.

Table 6-4: Summary of lifecycle strategies for PIAM

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Disposal and replacement at end of useful life - **Parking Garages** - **Other buildings** - **Surface lots**	**Every 3 to 5 years over asset lifecycles** - Planning and decision-making for rehabilitation, disposal and replacement including preparing asset management plans.	TPA
Inspections of - **Parking Garages** - **Other buildings**	**Every 3 to 5 years** Building condition inspections focussing on ensuring asset reliability, identifying wear and tear, and planning for timely replacements to sustain functionality. Inspections include assessing foundations, slabs, and structural components for cracks, leaks, or damage, while checking roofs, windows, and doors for waterproofing and proper sealing. Key systems such as HVAC units, elevators, fire safety equipment, electrical panels, and drainage infrastructure are routinely inspected for performance and compliance.	3rd party service provider
Disposal and replacement at end of useful life - **Parking Garages** - **Other buildings**	**As needed** - Rehabilitation or refurbishment of component parts that have a shorter lifespan than the overall asset **At end of useful life** - Disposal and replacement - Replacement activities involve swapping worn or outdated components, including damaged slabs, roofing elements, wall finishes, handrails, and fixtures, as well as replacing key system components like motors, filters, sprinkler heads, and valves. - Renewal including design and construction.	3rd party service providers for design and construction

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Inspections of - **Surface lots**	**Every 3 to 5 years** - Condition inspections of electrical systems; site works including pavement, curbs, gutters, appurtenances, parking control equipment, pedestrian pavement and walkways, steps, ramps, fences, gates, guardrails, walls, site furnishings, signage, irrigation systems, turf and grasses, plants, liquid and gas utilities, storm water drains. The inspections focus on ensuring asset reliability, identifying wear and tear, and planning for timely replacements to sustain functionality.	3rd party service provider
Disposal and replacement at end of useful life - **Surface lots**	**As needed** - Rehabilitation or refurbishment of component parts that have a shorter lifespan than the overall asset **At end of useful life** - Disposal and replacement - Replacement activities involve swapping worn or outdated components and assets such as faded signs, degraded fences, benches, and landscaping features. - Renewal including design and construction.	3rd party service providers for design and construction
Disposal and replacement at end of useful life - **Parking meters**	**At end of useful life** - Disposal and replacement	TPA

6.3.3 DEMAND FORECAST

The Parking Infrastructure and Asset Management (PIAM) Department focuses on strategic planning, innovation, and asset management to drive TPA's long-term vision. This Department works on initiatives to optimize operations, including implementing new technologies and data-driven solutions to improve parking management.

With demand for TPA services expected to increase over the next 10 years, the portfolio of assets such as parking garages, surface lots, payment equipment, bikes and EV chargers is projected to grow. Growth will drive the expansion of the PIAM Department's responsibilities, ensuring the department evolves alongside TPA's needs. Meanwhile, pay and display machines are expected to be phased out, as new pay-by-plate machines and payment solutions are integrated into mobile apps. By advancing strategic growth projects, the PIAM Department ensures TPA remains adaptable and efficient, aligning with Toronto's urban development goals and delivering enhanced services across all departments.

Refer to the sections for each department to see details for the demand forecasts relating to each TPA asset group.

6.4 WHAT FUNDING DO WE NEED?

Refer to section 10.2 for details of the financial forecasts for all TPA assets.

6.5 KEY IMPROVEMENT AREAS

The key improvement areas for Planning, Innovation, and Asset Management services (PIAM) include:

1. Improve asset inventory – support other asset departments to improve inventory data for assets. Further asset information will improve financial forecasts, management of assets, planning of replacements, and support for decision makers. Also, currently there is little asset-level information for parking facilities.
2. Improve coordination across departments – the overall TPA service delivery, planning, and financial performance would benefit from improved interaction, coordination, and information sharing between departments and greater consistency of some asset management practices.
3. Improve consistency of asset management practices – this includes data recording, inspections, asset and service hierarchy, levels of service and performance monitoring framework and documentation of maintenance, standard operating procedures, and lifecycle strategies.
4. Improve definition of levels of service and performance measures – this includes to determine appropriate performance targets when measured performance information is available to verify targets are achievable within current budget.
5. Provide training programs – this should be focussed on the day-to-day implementation of asset management practices consistent with the corporate asset management policy and TPA strategic goals and vision.

7 INFORMATION TECHNOLOGY

7.1 WHAT SERVICE DO WE PROVIDE?

The IT team in TPA is responsible for delivering hardware and software services to TPA, including business applications, laptops, and mobile devices. They focus on managing parking and bike share data to support informed decision-making.

7.1.1 WHO HAS AN INTEREST IN THIS SERVICE?

Table 7-1 summarizes stakeholders identified for IT department.

Table 7-1: Information technology stakeholders

Stakeholder Group	Stakeholder
Users	TPA employees, Customer
Service providers	Toronto Police Parking Enforcement Unit, City of Toronto Prosecutions Dept, Exhibition Place
Regulators	City of Toronto
Wider community	TPA board, Equipment vendor, City agencies, Insurance agencies, Software vendors

7.1.2 HOW IS SERVICE PERFORMANCE ASSESSED?

The level of service the department seeks to provide is defined in the following two statements:

- Provide reliable IT systems, secure services, free from threats
- Respond to requests promptly.

Performance measures are used to monitor the level of service being achieved.

Table 7-2 details the service criteria and performance measures for information technology services. These measures were developed to assess and improve program delivery while ensuring alignment with departmental goals and addressing the needs of users and stakeholders.

Table 7-2: Service criteria and performance measures for information technology

Service Criteria	Performance Measures
Request efficiency	Mean time to resolution
IT efficiency	Infrastructure cost ratio
IT efficiency	Cost per employee

Service Criteria	Performance Measures
Consistency	Customer satisfaction
Enterprise risk	Risk score
Risk	Cyber security risk

7.2 WHAT ASSETS DO WE OWN?

The information technology assets are generally categorized as being either hardware or software assets.

Table 7-3: IT assets

Asset Service Area	Asset Group
Information Technology	Software
	Hardware

7.2.1 *SUMMARY OF INFORMATION TECHNOLOGY ASSETS*

The TPA's IT assets are valued at approximately $1.8 Million (in 2024 dollars). This is 0.2% of the TPA's total asset portfolio by value.

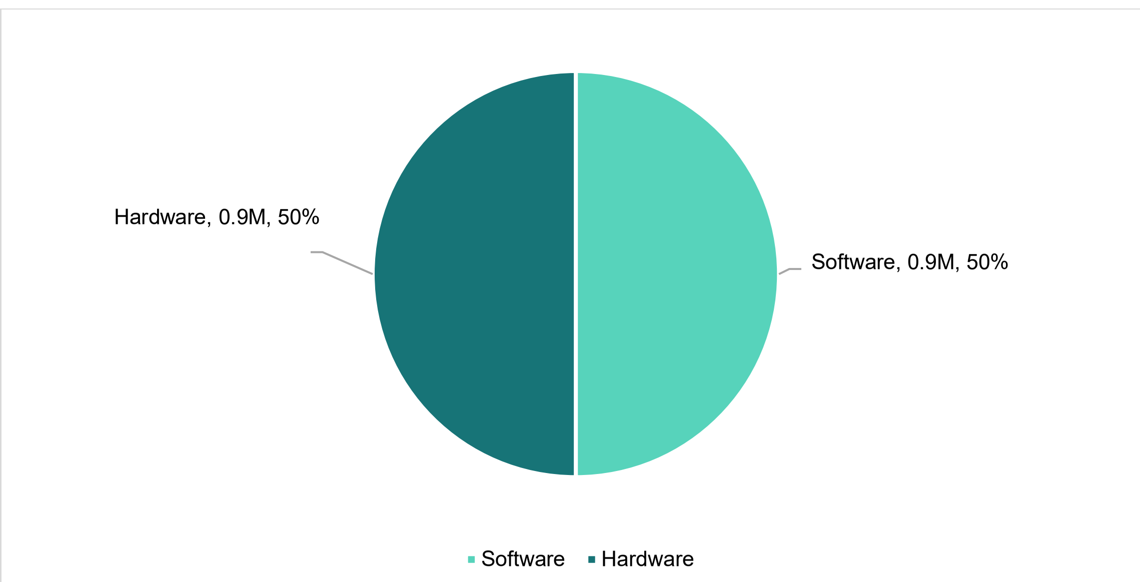


Figure 7-1: IT assets

Table 7-4: IT asset summary

Asset Group	Quantity	Unit	Current Average Asset Age	Average Expected Asset Life	Average Asset Condition	Current Asset Replacement Cost	20 YR Average Per Annum Total Capital Cost
Software	101	Count	3	5	Good	~ $0.9M	$183,000
Hardware	1,249	Count	3	5	Fair	~ $0.9M	$193,000
Total	1350					**~ $1.8M**	**$376,000**

7.3 WHAT CONDITION ARE ASSETS IN?

The TPA's IT assets are valued at approximately $1.8 Million (in 2024 dollars). IT assets are predominantly in good condition (77.5% by value) with 11.4% in very poor condition. The age of the assets ranges from 0 to 10 years.

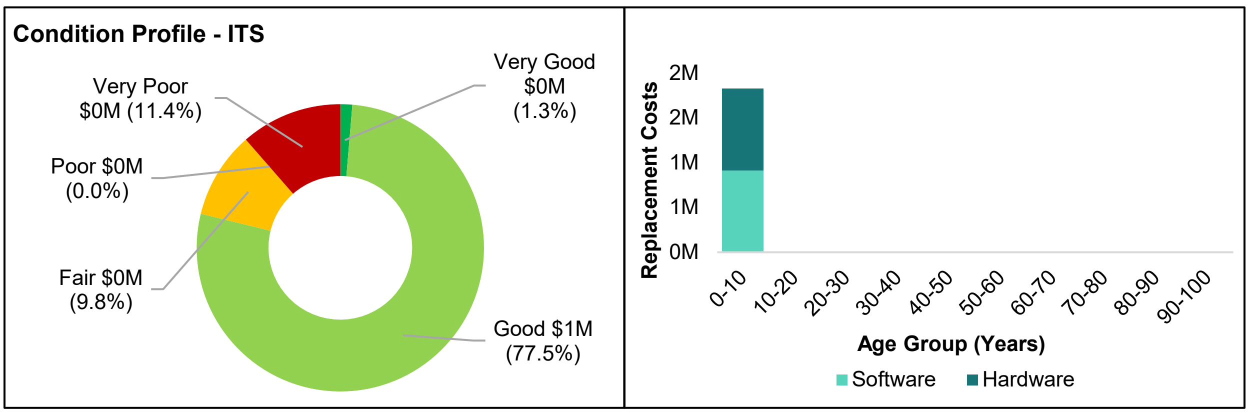


Figure 7-2: Condition and age profile of IT

7.4 WHAT CAN AFFECT OUR SERVICE?

The following sub-sections look at key risks for IT assets, lifecycle strategies for managing these assets, and future demand forecasts.

7.4.1 RISK PROFILE

Table 7-5 summarizes risk actions which are most relevant to this service area.

Table 7-5: Key Risks identified that directly impact Parking Infrastructure and Asset Management

Action Plan Task	Status	Impact on AMP
Key Risk: Aging Parking Infrastructure		
Development of a Formal Asset Management System: *Q1 2025: Phase 1 - TPA Asset Management Plan, Level of Service Framework, Asset Management Governance & Training, Asset Condition/Risk Framework, Risk Review/Risk Based Decision Making, Investment Strategy, Life Cycle Action Plan*	In-progress	This action directly relates to the development of this asset management plan. Information Technology is seeking to manage an asset portfolio that have a high rate of redundancy, while there remains a large cybersecurity and data privacy threat. **AMP Action:** Fully develop an endorsed asset management policy and strategy and fully resource the advancement of asset management improvement actions to achieve TPA objectives and mitigation intentions associated with this risk.
Key Risk: Parking Equipment / Technology Management		
Mobile CX and Payment Platforms (App 3.0 and Web) CX (2 risks)	In-progress	This risk seeks to address parking technologies that support parking operations and customer experience. **AMP Action:** These systems will introduce new applications, software and hardware into the IT portfolio and should be appropriately integrated into the AMP.
Key Risk: Outdated IT Infrastructure and Systems		
• Migrating the legacy applications: Replace with new tool or upgrade to the latest version: • Build long-term IT roadmap: Introduce innovation and speedup go-to-market strategy. • Build redundant and high availability network • Execute the migration from being on-premises to a cloud environment. • Install a distributed antenna system for 4 Car Parks in order to bring cellular services to underground garages and to continue to improve data backup and resilience	In-progress	This risk seeks to address outdated and obsolete technologies that support TPA operations. **AMP Action:** These systems will introduce new applications, software and hardware into the IT portfolio and should be appropriately integrated into the AMP.

Action Plan Task	Status	Impact on AMP
Key Risk: Outdated IT Infrastructure and Systems		
• Data Governance Framework: Award contract to vendor to support the establishment of an enterprise data governance framework. • Data Governance Framework: Establish a robust enterprise data governance framework that defines roles, responsibilities, and processes for data ownership and management within the organization. • Data Ownership Policies: Develop and communicate clear data ownership policies and guidelines that specify the rights and responsibilities of 3PV. • Data Classification: Implement a data classification system to categorize data based on its sensitivity and importance. • Conflict Resolution Procedures: Establish procedures for resolving disputes related to data ownership.	In-progress / Not Started	TPA has improving AM data governance as an improvement plan item and many of these initiatives will align with achieve improvements in this area. In addition, there are future AM analytics capabilities that the AM team will be defining business and functional requirements for future software that may affect or influence these actions (e.g. asset deterioration modelling and financial forecasting) **AMP Action:** The AM team within TPA should be closing engaged with IT and the project managers of these risk actions to ensure AM data governance and analytics are fit-for-purpose for the desire AM system being developed over the next three years.

While a comprehensive approach to assess service risk associated with IT was not completed for this AMP, the following risk was noted by staff as being relevant to the service:

- **Cyber-security:** While strongly covered in the risks discussed in Table 7-5, the team expressed the hyper-vigilance necessary to ensure threats are managed properly on behalf of TPA and their clients.

This and other risks will be assessed and more formally addressed in future versions of the AMP.

7.4.2 LIFECYCLE STRATEGIES

The Information Technology (IT) department is responsible for managing the lifecycle of TPA's IT systems, including hardware and software services such as business applications, laptops, and mobile devices.

Lifecycle activities focus on maintaining system performance, ensuring security, and upgrading infrastructure to meet organizational needs.

These activities, performed at varying frequencies, include system monitoring, maintenance, repairs, and replacements. By managing these processes effectively, the IT department ensures that IT systems remain reliable, secure, and aligned with TPA's operational goals. A summary of lifecycle activities is outlined in the table below.

Table 7-6: Summary of lifecycle strategies for IT

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Maintenance and repair of - **Software**	**At least monthly** - Virtual machines - Regularly monitor performance logs and security updates, conduct routine backups and ensure proper utilization of resources, apply software updates and patches, troubleshoot connectivity issues or software malfunctions **Quarterly** - Networking devices, server, firewall, VPN – Firmware updates **Semi-annually** - Moneris terminal - Update firmware and payment compliance certifications	TPA
Replacement of Software	**As needed** - Virtual machines – Upgrades as required **Every 4 to 6 years** - Moneris terminal – Replace	TPA
Maintenance and repair of Hardware	**Semi-annually** - Clean and update computers; maintain output devices such as printers; maintain and calibrate control devices such as electronic key programming and validation units; maintain communication devices. **As needed** Repair and component replacement; updates to payment processing device firmware	TPA

Lifecycle Stage and Assets	Lifecycle Activities Description	Service Provider
Replacement of Hardware	**Annually** - Replace batteries and conduct load tests of PDU and UPS **Every 2 to 3 years** - Replace mobile phones **Every 3 to 5 years** - Replace computers, docking stations, printers, camera, projector, IP intercom, hand scanner, payment processing devices **Every 5 to 7 years** - Replace networking devices, PDU, server, firewall, VPN, and control devices such as electronic key programming and validation units **Every 10 years** Replace UPS	TPA

7.4.3 DEMAND FORECAST

The increasing demand for technological solutions and department growth trends indicate that the IT team will likely expand to meet evolving requirements. Table 7-8 lists the key drivers of demand expected to impact these services.

The impacts on assets and their lifecycle activities were assessed using the rating framework in Table 7-7 to quantify the level of improvement required to address the identified demand trends.

Table 7-7: Impact rating framework

Impact on existing assets	Impact Score
Existing assets do not need modification	Very Low
Existing assets may need minor modification	Low
Existing assets may need amount of modification	Medium
Existing assets need major modification or upsizing	High
Need entirely different asset(s)	Very High

Table 7-8: Future demand impacts on TPA's assets and IT Service's activities

Impact on TPA services	TPA's Current Plans	Impact on assets and lifecycle management activities
As new parking technology vendors are onboarded, we'll require new tools to analyze the data that is provided	• CX Strategy[10]	MEDIUM
New hardware will be required to fulfill the needs of the systems operation's centre revision	• Build digitized customer experience (OMNI channel)[11]	HIGH
New users onboarding will require additional IT assets to be ordered while devices still in their lifecycle can be re-purposed for onboardings.	• See Tables for other departments	MEDIUM
Current asset management system does not give us full visibility into the data	• Asset Management Implementation Project	VERY HIGH
Push for higher PCI DSS standards to be implemented, additional hardware and software required.	• Cyber Security Plan[12]	MEDIUM
New hardware and software-based cybersecurity appliances to be procured to mitigate risk of new indicators of compromise and cyber attacks.	• Cyber Security Plan[13]	MEDIUM

7.5 WHAT FUNDING DO WE NEED?

Figure 7-3 illustrates the capital renewal forecast between 2025 and 2044. It is important to note that this forecast is for replacement like-for-like of existing assets (with modern equivalent) only and does not include any new assets or asset upgrades and their renewal that may occur in the future. This forecast is based on lifecycle timing of current assets only. The average costs of the capital renewals per annum over the next 5-year and 20-year period is $0.4 million.

A peak in renewals (between $1.03M and $1.15M) occurs every 5 years to allow for software renewals with modern equivalent.

[10] 2024 Annual Operating Plan
[11] 2023 Annual Operating Plan
[12] Cyber Security Update, 2023
[13] Cyber Security Update, 2024

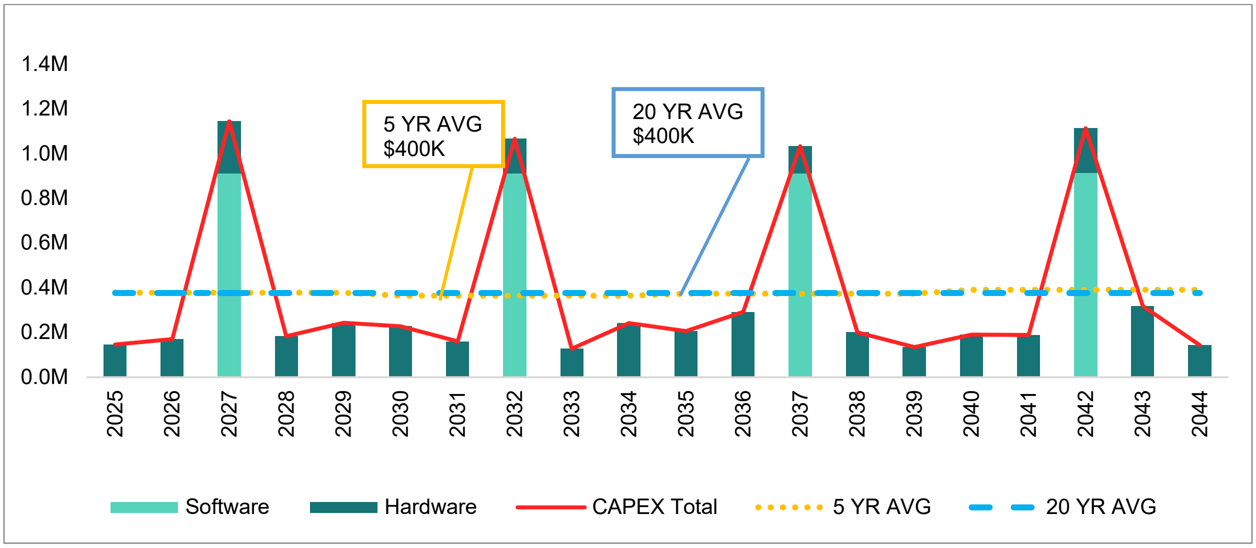


Figure 7-3: Information technology 20-year renewal forecast

7.6 KEY IMPROVEMENT AREAS

The key improvement areas for Information Technology services include:

1. Improve asset inventory – current IT inventory is limited.
2. Establish Data Governance – data is critical for informed decision making. Appropriate data governance will provide confidence to decision makers and clarity of roles and responsibilities for data collection, validation, accuracy, security, analysis, reporting, and management.
3. Improve documentation of lifecycle activities – this includes planning of activities, documentation, and performance monitoring, which will provide support to decision makers and facilitate better coordination across departments.
4. Improve coordination across departments – the overall TPA service delivery, planning, and financial performance would benefit from improved interaction, coordination, and information sharing between departments and greater consistency of some asset management practices.

8 GROWTH AND STRATEGY TEAM

8.1 WHAT SERVICE DO WE PROVIDE?

The Growth and Strategy team focuses on revenue management, capital delivery support, stakeholder engagement and assessing financial viability related to promoting growth opportunities. They also set up partnership opportunities with organizations such as other city agencies, commissions and departments, and private entities like condominium boards.

The focus of the Growth and Strategy team is on assessing financial viability for growth opportunities. They also help to set up partnership opportunities with organizations such as other city agencies, commissions and departments and private entities like condominium boards

8.1.1 WHO HAS AN INTEREST IN THIS SERVICE?

The stakeholders identified as significant to other TPA groups are assumed to be relevant and considered in Growth and Strategy's decision-making processes.

Table 8-1: Growth and Strategy stakeholders

Stakeholder Group	Stakeholder
Users	Commuters, Residents, Tourists, Businesses, Fleets
Service Providers	Business partners
Regulators	TPA board, City of Toronto
Wider Community	Other businesses, Councillors, Business improvement areas, Sponsors

8.1.2 HOW IS SERVICE PERFORMANCE ASSESSED?

The level of service the department seeks to provide is defined in the following two statements:

- Deliver customer satisfaction through reliable and accessible services.
- Strengthen partnerships and maximize sponsorship value to drive growth.

Performance measures are used to monitor the level of service being achieved.

Table 8-2 outlines the service criteria and performance measures for the Growth and Strategy team, developed to evaluate and enhance program delivery while aligning with departmental objectives and addressing the needs of users and stakeholders.

Table 8-2: Service criteria and performance measures for Growth and Strategy

Service Criteria	Performance Measures
Capacity	Parking utilization
Branding / reputation	Customer satisfaction
Business partnerships	Partnership targets
Cobranding	Value of sponsorships
Value	Average hourly cost

8.2 WHAT CAN AFFECT OUR SERVICE?

The following sub-sections look at key risks for services provided by the Growth and Strategy team, and relevant lifecycle strategies, and future demand forecasts.

8.2.1 RISK PROFILE

Table 8-3 summarizes risk actions which are most relevant to this service area.

Table 8-3: Key Risks identified that directly impact Parking Development & EV

Action Plan Task	Status	Impact on AMP
Key Risk: Change in the City's Direction		
- Influence City-wide Strategic Parking Framework, including centralization of parking assets under TPA. - Provide the TPA Board with an update on the City-wide Strategic Parking Framework's	In Progress	Improved landscape on governance of parking - including City off-street parking assets that TPA may assume full responsibility for, from a capital lens - will be key inputs for future iterations of the AMP and the Strategic Asset Management Plan for TPA. **AMP Action:** Closely monitor the progress on this initiative and incorporate results into future iterations of AM planning and documentation.
Define and confirm the TPA's role, responsibilities and authority within City-Wide EV charging strategy.	In Progress	Improved clarity on these issues may inform portfolio expansion / changes in TPA's management strategies for these assets. **AMP Action:** The EV charging service area has undergone a review by the City. TPA continues to grow their charging network, however, investment strategies and charger inventory management within the AMP may require revisions as TPA's role continues to be refined.

Action Plan Task	Status	Impact on AMP
Key Risk: Aging Parking Infrastructure		
Development of a Formal Asset Management System: •*Q3 2024: Develop and publish an Asset Management Policy.* •*Q1 2025: Phase 1 - TPA Asset Management Plan, Level of Service Framework, Asset Management Governance & Training, Asset Condition/Risk Framework, Risk Review/Risk Based Decision Making, Investment Strategy, Life Cycle Action Plan*	In-progress	This action directly relates to the development of this asset management plan. Balancing growth and service enhancement focussed capital investment with SOGR investments will be increasingly important as the TPA portfolio continues to change and assets approach the end of their service lives. **AMP Action:** Fully develop an endorsed asset management policy and strategy and fully resource the advancement of asset management improvement actions to achieve TPA objectives, in alignment with TPA and better balance investment in new and existing assets.

This initial asset management plan does not include a formalized risk management approach directly but does benefit from the ERM work completed to date. Future revisions to the TPA's asset management planning documentation will include a risk framework that aligns with TPA's Enterprise Risk Management processes but is focussed more directly to risks associated with each service area.

A comprehensive approach to assess service risk associated with Growth and Strategy was not completed for this AMP. Asset Management risks will be assessed and more formally addressed in future versions of the AMP.

8.2.2 LIFECYCLE STRATEGIES

The work of the Growth and Strategy Team can have an influence on lifecycle management needs although they are not directly responsible for management of operations, maintenance, or other lifecycle activities. Good communication, collaboration, and consultation between the Growth and Strategy team and other departments will therefore provide benefit to the overall TPA management of assets and services to meet service levels for least cost and within acceptable risk tolerances.

Refer to sections for each department for lifecycle activities.

8.2.3 DEMAND FORECAST

The Growth and Strategy Team plays a key role in TPA by identifying opportunities to expand services to meet growing and shifting mobility demands. Their role in establishing and growing partnerships for shared asset ownership and responsibilities will also grow as TPA acquires new assets to meet future demands. These services will help to reduce risks while supporting strategic growth.

Refer to sections for each department for the demand forecast for each service.

8.3 WHAT FUNDING DO WE NEED?

A financial forecast relating to growth is not available for this first AMP but will be included in AMP updates.

Refer to section 10.2 for details of the financial forecasts for existing TPA assets.

8.4 KEY IMPROVEMENT AREAS

The key improvement areas for Growth and Strategy services include:

1. Improve understanding and communication of contracts with 3rd parties related to operations and lifecycle activities and shared ownership – current awareness is limited.
2. Establish Whole-of-life costing procedures – decisions to work towards optimizing service delivery and achieving and maintaining sustainable services requires knowledge of true and complete cost of service and a robust understanding of influences, risks, and options.
3. Improve coordination across departments – the overall TPA service delivery, planning, and financial performance would benefit from improved interaction, coordination, and information sharing between departments and greater consistency of some asset management practices.

9 FINANCIAL PLANNING SUMMARY

This section provides an organisation-wide view of the financial investment requirements for TPA's infrastructure portfolio.

9.1 CONTEXT FOR INFORMATION IN THIS SECTION

9.1.1 KEY ASSUMPTIONS AND ISSUES

The following assumptions are relevant for this section and should be kept in mind when reviewing the results of the financial summary.

Table 9-1: Key Assumptions for Financial Summary Analysis

Assumption	Impact on this AMP	Planned Mitigation Measures
The financial forecast is based on available data about TPA's assets within the portfolio	There are several asset classes about which there remains limited asset inventory and condition information. These include: — Parking garages. — Maintenance equipment used by internal staff including fleet vehicles and other equipment.	TPA's planned AM improvement actions include future additional parking garage facility inspections and inventory data collection for any asset classes that have limited information. It is anticipated the next iteration of this asset management plan will include these assets as more information becomes available. Section 9.2.1 summarizes our estimate of the sensitivity of these missing assets on the overall financial forecast estimates.

Assumption	Impact on this AMP	Planned Mitigation Measures
Financial estimates were based on available rates and parameters that were globally applied where asset specific information was limited	Several sources of financial parameters were considered for the financial forecast for the infrastructure portfolio, including: — Unit rates as reported in past building condition assessments, where available. — Industry standard rates such as those published by RS Means Construction Cost Data. — Unit rates used by TPA's insurance assessments for the infrastructure portfolio. Several key assumptions were employed accordingly: — Where available, building condition assessment investment requirements were accepted as the best available information for a parking facility. — Insurance rates were employed where no other information was available.	The development of this asset management plan relied upon existing information and documents. The relative sensitivity of the financial forecast to the assumptions made with respect to unit rates has been assessed and summarized in Section 9.1.3. The TPA's AM improvement plan includes establishing a standardized framework for estimating lifecycle interventions and replacement costs across the portfolio. Future versions of the AMP will have a consistent approach for investment estimations.
Growth investment forecasting was based on existing TPA budgeting	An assessment of growth drivers has been developed for each service area within TPA. The qualitative impact on growth in the asset portfolio has been noted. At present, it has been assumed that the growth and service enhancement budget forecast (developed by TPA's leadership team) is sufficient to accommodate these growth drivers.	TPA continues to seek opportunities to grow its services in micro-mobility and parking capacity and allocates a significant portion of retained earnings re-investment on growth initiatives. Future iterations of the asset management plan will seek to directly link growth drivers to changes in the asset inventory and explicitly quantify the financial impact of those changes.
While level of service measures are defined in this plan, financial forecasting is not currently linked to defined service targets.	This version of the AMP identifies key performance indicators and other performance measures but does not set targets. This will be implemented in future versions of the AMP	Linking budgeting to service targets is one important mechanism to manage investment to sustainable service delivery and alignment to organisational goals and objectives. This will be an AM improvement action for TPA, and service metrics / targets will form a larger input to future financial forecasts.

9.1.2 FINANCIAL POLICY, VISION, AND APPROACH

Currently, the TPA conducts financial budgeting over a 10-year horizon. Key financial drivers for TPA are partially reflected in their six "Big Bets" covered in their 2024 / 25 financial plan:

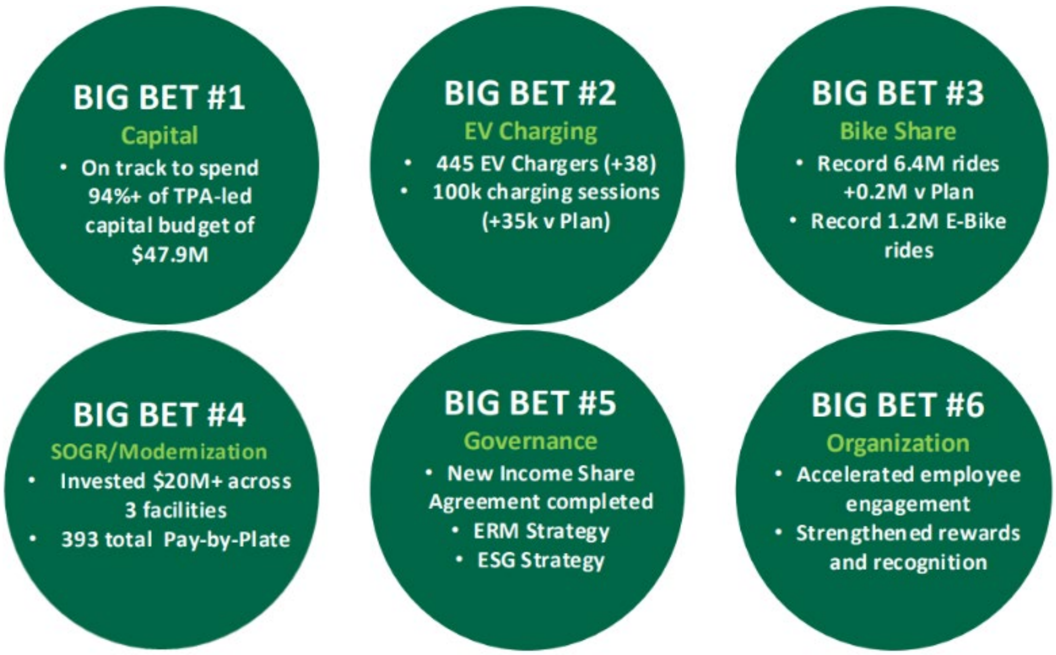


Figure 9-1: TPA Big bets influencing financial planning

While the TPA is making progress in many areas, the following three items of the six, are most relevant to infrastructure investment planning:

1. Growth in EV charging and Bikeshare is increasing the asset inventory in these areas
2. Capital expenditure has trended closer to plan with increased capacity to deliver on the capital program. Historically this has been challenging for TPA to achieve (See section 9.2.2)
3. A recent delayed focus on State of Good Repair (SOGR) investment for asset renewal after past underinvestment created a large backlog of required renewal.

Several other observations are notable from a review of TPA financial reporting:

— TPA continues to have a major focus on expanding its services and this is reflected in capital investment budgeting. Near term investment in its recent 10-year capital plan has "Service Improvement and Growth" amounts that exceed investments in SOGR and "Health and Safety and Legislated" investments, particularly over the next five years.

— TPA is self-funded with revenues covering both operating and capital program budgets. Recent negotiations with the City of Toronto have successfully increased the portion of net income that can be secured as retained earning to support growth and infrastructure investment. (from 15% to 25% of net income)

- TPA does not employ debt funding for its infrastructure investments. All investments are funded through revenues.
- Reserve funds have not been established for infrastructure investments.

In the 2023 Capital Review and 2024 Plan it was noted that historically, TPA's benchmark target for State of Good Repair (SOGR) investments was 10 percent of the total value of property and equipment assets. As of December 31, 2023, TPA has assets valued at $225 million Net Book Value. The 10 percent rule of leads to a recommended annual SOGR investment of $23 million. The TPA has consistently fallen short the $23 million with an average spend of $7.4 million per year. This financial gap has resulted in a large SOGR backlog of $250 million (10-year).

The following improvements will increase the efficacy and accuracy the SOGR estimate:

- Net book value is based on the cost of fixed assets at the time of acquisition. Due to inflationary effects and other changes current replacement costs are a better basis for deriving renewal investments estimates.
- Asset age, condition and service targets influence the actual required level of investment. Asset management forecasting based on inspections, direct observation, deterioration modelling and lifecycle strategies will better inform future SOGR renewal budgeting.
- Deferring investment significantly reduces the available intervention alternatives that the TPA can employ to address deficiencies. Most often deferral leads to more expensive late interventions, reducing the effectiveness of the TPA's infrastructure spending. In conjunction with point 2, investing at the right time, in the right location with the right intervention will allow the TPA to extract more value from its capital program budget.

The financial forecasts developed for the plan are summarized in Section 9.2.

9.1.3 ESTIMATE SENSITIVITY

Three sources were considered to determine unit rate estimates for some components, used in the financial forecast. With limited existing information for some assets, the forecast relied on these average unit rates where necessary. Without an on-site professional assessment of these facilities, these estimating assumptions and a replacement cost based on facility size increases the level of uncertainty associated with the financial forecast. Table 9-2 illustrates an example of this uncertainty.

Table 9-2: Unit rate variability

Source	Rate per square foot
Unit rates noted in one building condition report	$335.55
Unit rates used in insurance actuarial estimates to establish premiums	$189.78
RS Means estimate for similar facilities	$114.32

These three rates reflect a large range of over $200/square foot. For the purposes of the plan, the $189.78 median rate was used for financial planning. This rate is between 40-77% above/below the other two figures, and depending on site characteristics, may under-estimate, or overestimate investment requirements. Accordingly, future investigations will be necessary to refine the unit rate estimates, to improve the accuracy and precision of renewal investment requirements. Current estimates should be considered to have a level of precision associated with a conceptual or indicative (Class D) estimate.

9.2 FINANCIAL FORECASTS

Figure 9-2 summarises the estimated renewal investment required for the TPA infrastructure portfolio. As noted above, these figures exclude forecasting for those assets which TPA has limited inventory and condition information.

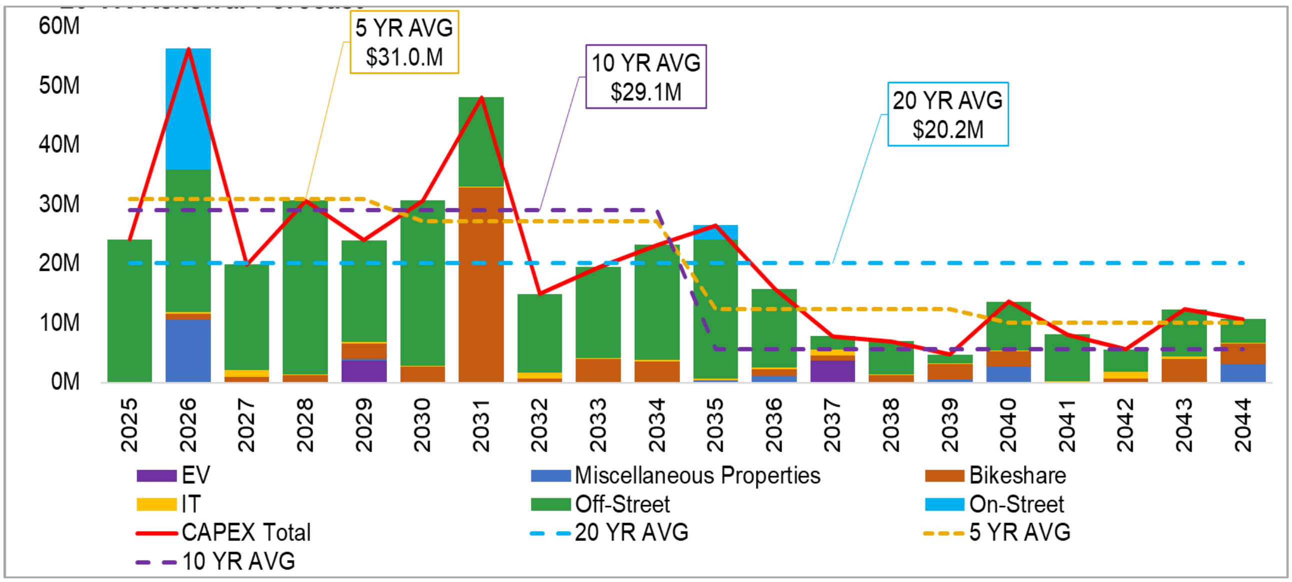


Figure 9-2: Financial Forecast for TPA's infrastructure portfolio (excluding assets)

Several observations are notable about the forecast:

- Off-street parking facilities dominate the investment requirements in most years over the analysis period. By asset value, these facilities account for around 88% of the portfolio valuation.
- Forecasted investment requirements drop markedly after the initial 10 years. There may be several explanations for this:
  - A substantial backlog of identified remedial investment requires early investment to catch up with past under-investment.
  - Off-street investment estimates (the largest class) were based on building condition assessments. These types of reports tend to focus predominantly on the first 10 years of forecasting. The timing of longer-term maintenance and renewal interventions is less certain, and depending on the assessment team, may be excluded. This tends to under-report required investment beyond 10 years.
  - Often assets with service lives of less than 10 years, or those with a high pace of obsolescence may not be acknowledged by some assessment teams for future, repeated investments. Only the next renewal / replacement is noted.

— A significant level of variability was observed in the assessment methodologies employed within building conditions assessment reporting as part of the review completed to develop this initial asset management plan. This underlines the need for improved standardization in asset condition assessment, lifecycle planning and financial forecasting.

9.2.1 UNCERTAINTY OF THE FORECAST

Given available data about TPA's portfolio, there is a significant portion of assets that have been excluded from this forecast out of necessity. To gauge the impact of this on the forecast, their relative replacement cost to the remainder of the included portfolio is summarized in Table 9-3.

Table 9-3: Impact of excluded assets

Estimated Total Replacement Value	Replacement Value	Relative Value
Assets excluded from forecast	$199.3M	18%
Assets included in forecast	$908.9M	82%

It is acknowledged that given limited information, there is some uncertainty associated with the replacement value estimate of the excluded assets. However, it can reliably be assumed (based on insurance values for excluded TPA owned parking garages), that the forecast underestimates the required level of investment by between 10-20%.

With improved inventory information, current condition, and documented lifecycle interventions that reflect current management practices, the next iteration of the AMP will provide an improved level of certainty related to the financial forecast.

9.2.2 COMPARISON OF FORECAST TO CURRENT CAPITAL BUDGETS

In late 2024, the TPA established their 2025 capital budget, that included a 10-year forecast of planned spending. This capital program has three components:

— Health and Safety and Legislated driven investments (H&S&L)

— State of Good Repair (SOGR) investments which are focussed on maintaining and renewing the existing portfolio.

— Growth and Service Improvement Investments, that are focussed on expanding services, increasing the footprint and inventory of the portfolio in support of increasing revenues.

Budget figures were reviewed in preparation for this AMP, to compare the planned investment budget to the forecasted budget presented in this plan. A summary of the H&S&L and SOGR capital budgets are included in Table 9-4. These two components of TPA's capital budget were considered most relevant, when comparing to the renewal forecast presented in this AMP.

Table 9-4: 2025 Capital Budget excluding Service Improvements and Growth (millions)

Projects	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
H&S&L	$1.1	$3.0	$2.5	$1.0	$0.7	$0.3	<0.1	<0.1	<0.1	-	$8.8
SOGR	$13.7	$14.0	$14.0	$15.0	$15.0	$15.0	$15.0	$15.0	$15.0	$15.0	$146.7
Total	**$14.8**	**$17.0**	**$16.5**	**$16.0**	**$15.7**	**$15.3**	**$15.0**	**$15.0**	**$15.0**	**$15.0**	**$155.5**

Figure 9-3 illustrates both the current level of planned capital investment (2025 budget) and compares this with the 20-year forecast of capital renewal for the infrastructure portfolio.

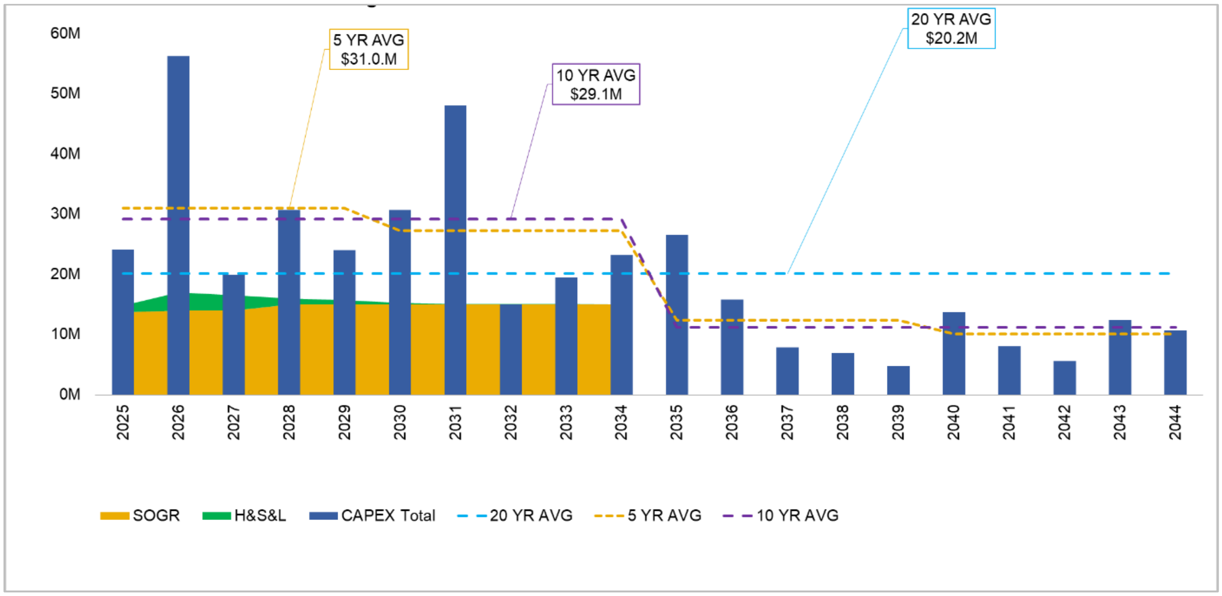


Figure 9-3: TPA SOGR and H&S&L capital budget as compared to forecasted investment requirement

Several key observations are noteworthy:

— Over the next 10 years, the planned budget falls well below the estimated capital investment requirement for the infrastructure portfolio. The 2025-2034 average investment requirement ($29.1M) is almost double the average budget over the same period ($15.6M).

— As noted above in Table 9-4, there remains a significant portion of the portfolio (18% by value) that was excluded from the renewal investment forecast. As a result, the estimate may be 10-20% higher, widening the gap with the current budget. As more information become available about inventory, condition, service lives and lifecycle interventions for the excluded assets, a more refined estimate can be determined for the next iteration of the AMP.

— These estimates are focused only on the existing infrastructure portfolio and does not account for new assets that are added to the portfolio as part of TPA plans for growth. For example, TPA expects to spend approximately $175M in new capital over the next 5 years, exceeding the total planned budget for renewal in the next 10 years. New assets, depending on their lifecycle characteristics, will also add to the renewal forecast figures. New assets will require maintenance and renewal over time, adding to SOGR investment requirements as TPA's portfolio grows.

Finally, delivery of the capital program has recently improved relative to plan. Figure 9-4 illustrates this trend, a strong improvement compared to previous periods where TPA struggled to fully deliver its planned capital program. Recent success is encouraging but will capacity considerations will be important if a larger investment in renewal is adopted (to close the renewal gap) in addition to delivering capital projects to satisfy planned growth.

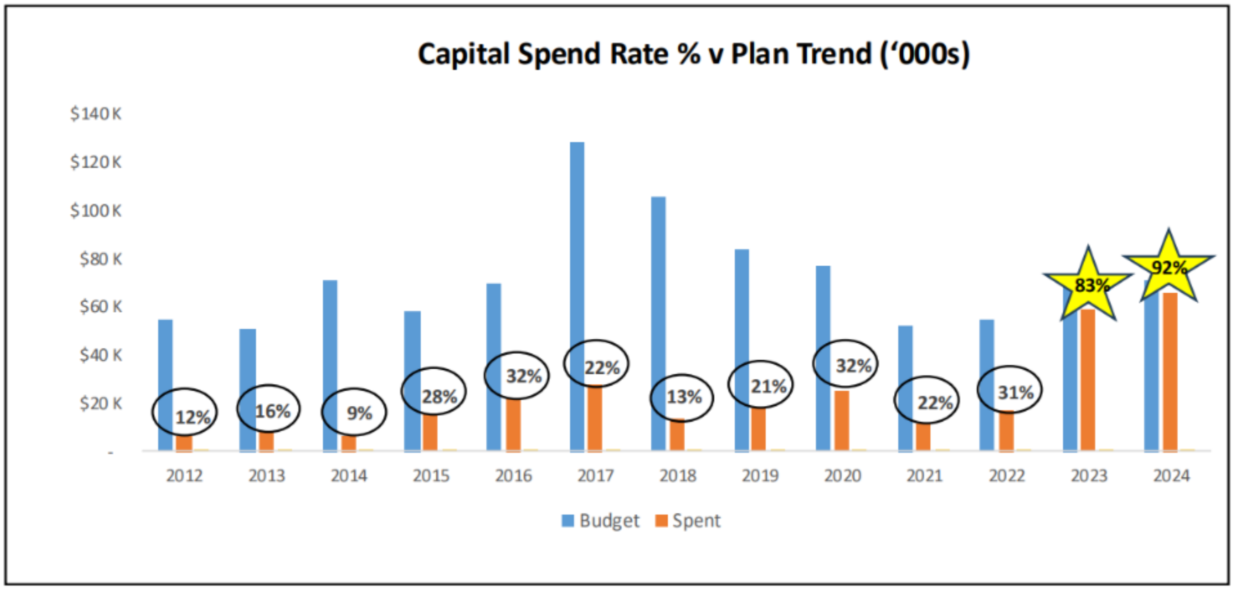


Figure 9-4: Capital spend rate percentage relative to TPA's business plan budget

9.2.3 MAKING ADJUSTMENTS FOR CITY HALL FACILITIES

As noted in previous chapters, parking facilities vary greatly in size and current condition. The facility associated with City Hall, CP#36, is notable as it is the largest of all facilities managed by TPA, and it also happens to be one in the poorest state of repair. As illustrated in Figure 9-5, CP#36 has a very high FCI rating (indicating a large requirement of renewal investment in the next five years) and represents a large portion of the parking stall portfolio. In discussions with TPA representatives, it was noted that TPA is considering a unique management strategy for this facility, separate from that adopted for other sites. In summary:

— A management strategy of minimizing repairs, and conducting only reactive, safety related repairs is being considered by TPA's team, reducing long term renewal commitments.

— If adopted, the renewal forecast for the AMP, which assumes that all required renewal investment will be completed, would be reduced by $30M, reflecting a much lower level of investment associated with this large facility over the next 10 years.

Obviously, this management strategy accepts a higher level of residual risk of asset failures than the default management investment strategy for the rest of the portfolio. Doing the minimum level of repairs increases the risk of unexpected (and often-times expensive) asset failures.

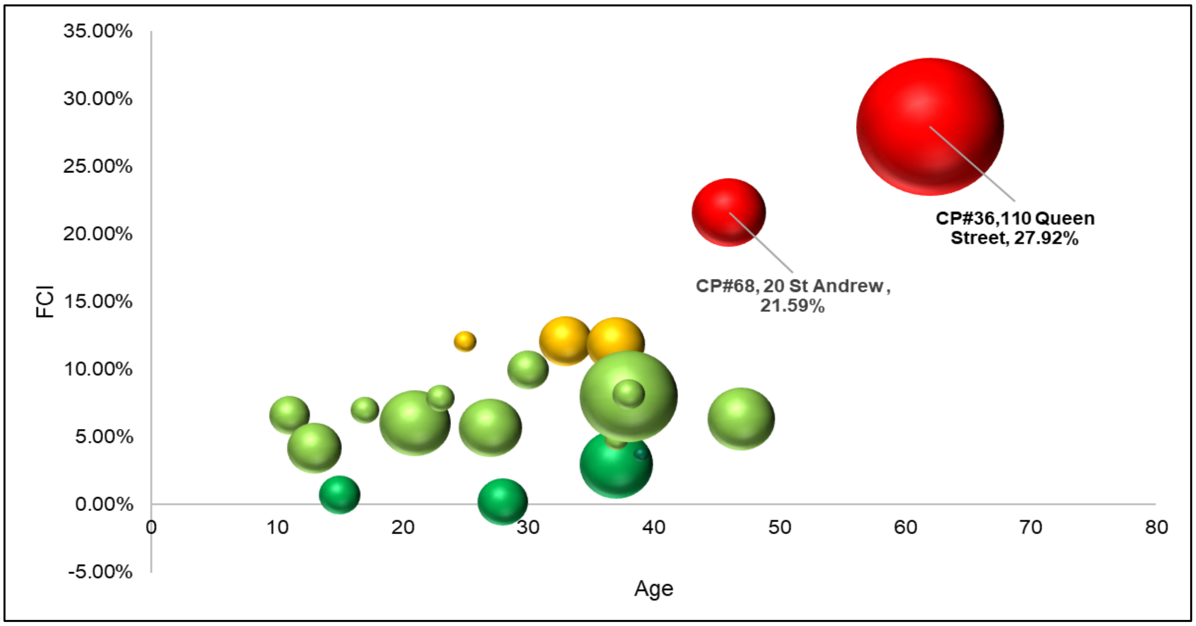


Figure 9-5: Parking facilities Facility Condition Index (FCI) Rating versus age. Bubble Size relates to number of stalls

To illustrate the potential impact of excluding investments in CP#36 from the renewal portfolio, the analysis was repeated to determine the average investment required for all other aspects of the portfolio included in this AMP.

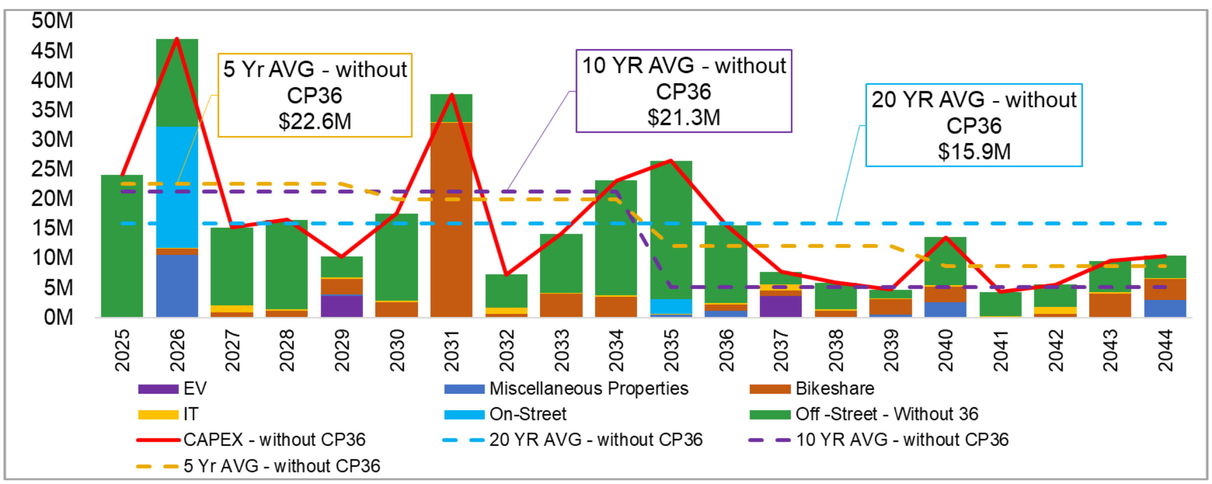


Figure 9-6: Forecasted renewal investment requirements of the next 20 years, excluding CP#36

Excluding CP#36 from the analysis, reduces the average investment requirement over the next 10 years from $29.1M (See Figure 9-6) to $21.3M. While this still remains substantially higher than the current budget ($15.6M annually) for SOGR and H&S&L investments), the under-investment gap has been reduced by more than half. As noted previously, other excluded assets not accounted for in this plan may still increase the scale of the gap, however, managing CP#36 reactively reduces the required investment in the near term (with admittedly, a higher level of accepted residual risk of asset failures).

It is important to note that the scale of the risk of asset failure at CP#36, and associated remediation work to address such a failure, is unknown at present. Managed risk can be an appropriate management strategy for a facility; however, the scale of the risk should be investigated where possible. Inspection and assessment of CP#36 is scheduled to be completed in 2025 for better inform this risk.

9.2.4 REVENUE TRENDS

A summary of revenue trends was recently completed to support internal financial reporting and budgeting for 2025. As illustrated in Figure 9-7, revenues have recovered well from a low in 2021 during the COVID-19 pandemic. This trend, while healthy, is the result of several variables that are not entirely consistent with service growth:

— Transactions have stabilized at 87-90% of 2019 levels.

— Hybrid work has fundamentally impacted service, and in particular off-street parking transactions remain over 1 million below 2019 levels

— 55% of declines in transactions are attributed to commuters, 35% to shorter term trips (<6 hours)

— Weekend traffic has been more resilient and is only down 6% as compared to 2019.

— Pricing increases have contributed to a large degree to support rising revenues despite reduced transactions.

— TPA also continues to diversify revenues (e.g. EV charging stations) and other strategic business-to-business partnerships to bolster financial results.

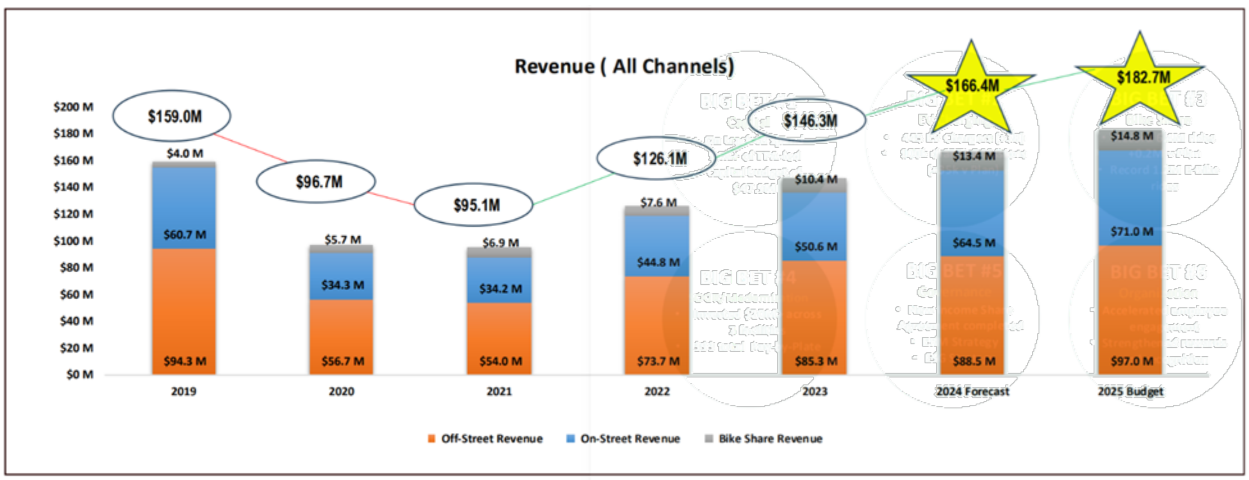


Figure 9-7: Revenue trends at TPA (2019-2024)

Certainly, revenues earned by TPA consistently exceed operational expenses and can support a robust capital program. Recent priorities have been focussed on capital investments that support revenue growth and service enhancement. Increased investment in SOGR renewals may require adjustment and be considered in balance with current growth objectives. This is discussed in more detail in the next section.

9.3 FINANCIAL STRATEGY

Table 9-5 summarizes TPA's total capital budget over the next 10 years. Growth and Service improvement focused investment makes up approximately 60% of the capital program over that period and an even larger portion in the near-term program.

Table 9-5: 2025 TPA Capital Budget (millions)

Projects	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
H&S&L	$1.1	$3.0	$2.5	$1.0	$0.7	$0.3	<0.1	<0.1	<0.1	-	$8.8
SOGR	$13.7	$14.0	$14.0	$15.0	$15.0	$15.0	$15.0	$15.0	$15.0	$15.0	$146.7
Growth	$40.8	$38.1	$31.2	$43.2	$20.6	$13.8	$13.8	$13.8	$13.8	$13.8	$243.0
Total	**$55.6**	**$55.1**	**$47.7**	**$59.2**	**$36.3**	**$29.2**	**$28.9**	**$28.9**	**$28.9**	**$28.9**	**$398.6**

As discussed in the previous section, even when excluding CP#36 within the program, the average investment required (for the existing portfolio) over the next 10 years ($21.3M) exceeds the current average annual budget for SOGR and H&S&L ($15.6M) by $5.7M.

The additional funds are required to maintain reliable function and condition of the assets, manage safety, and reduce the risk of loss of operation and revenue.

Considerations associated with closing this funding gap include:

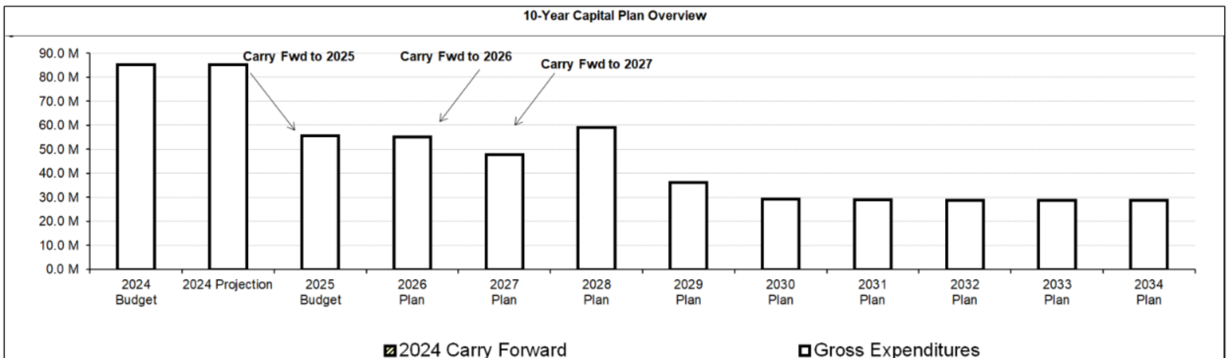
- Deferred or reduced investment in Growth/Service Improvement projects could be reallocated to fund capital investments in renewal of the existing portfolio.
- Increased retained earnings allocation or City of Toronto supporting financing could increase the capital program, expanding it by $5.7M. This represents approximately a 10% increase in the capital program and may present challenges in program delivery. Despite recent progress (See Figure 9-7), TPA has often had challenges historically delivering its entire capital program, and capacity may not be able to accommodate an addition of 10% capacity.
- A summary of cashflow was presented to the board in November 2024. This is summarized in Figure 9-8. As illustrated, ending cash balance is shown to reach a low in 2028. Additional capital investment of $5.7M could not be accommodated without additional revenue (and associated retained earnings) as well as the required capacity to deliver the capital program.
- Agreements signed in 2024 with the City of Toronto has allowed TPA to increase their retained earnings portion of net revenue from 15% to 25%. This increase in funding has been reflected in Figure 9-8. Additional financing from the Toronto through temporarily retaining a larger portion of retained earnings as a loan may help support a larger renewal program.
- Finally, the funding gap of $5.7M in 2024 dollars will escalate over time, with inflation. Budget figures presented in the materials for the November 2024 board meet are assumed to be in current dollars, i.e. dollars that have embedded inflation assumptions. The magnitude of the gap, then, will escalate in relative terms over the analysis period.

10-Year Financial Outlook – Current City Agreement

INCOME SHARING		2024	2025	2026	2027	2028	2029	2030	2031	2032	2032	2032	Total 10 Year
City Share	75%	30,839	31,441	32,265	34,582	37,307	45,840	46,627	47,418	48,213	49,012	49,814	**453,359**
TPA Retained Earnings	25%	10,280	10,480	10,755	11,527	12,436	15,280	15,542	15,806	16,071	16,337	16,605	**151,120**
Total Net Income		**41,119**	**41,921**	**43,020**	**46,109**	**49,743**	**61,120**	**62,170**	**63,224**	**64,285**	**65,350**	**66,419**	**604,479**
		-	-	-	-	-	-	-	-	-	-	-	
Beginning Cash Balance		**64,486**	**28,389**	**21,097**	**10,232**	**6,847**	**2,696**	**5,834**	**22,067**	**41,495**	**61,510**	**81,827**	**64,486**
TPA Retained Earnings		10,280	10,480	10,755	11,527	12,436	15,280	15,542	15,806	16,071	16,337	16,605	**151,120**
Add: City Capital Investment (EV + Bike Share)		9,110	20,222	12,450	10,450	10,450	10,450	10,450	10,450	10,450	10,450	10,450	125,381
Add: Depreciation		17,724	22,325	22,325	22,325	22,325	22,325	22,325	22,325	22,325	22,325	22,325	240,974
Minus: Intercompany settlements		(16,389)											(16,389)
Minus Capital Spending		(56,821)	(60,319)	(56,395)	(47,688)	(49,361)	(44,918)	(32,084)	(29,153)	(28,831)	(28,796)	(28,778)	(463,145)
Ending Cash Balance		28,389	21,097	10,232	6,847	2,696	5,834	22,067	41,495	61,510	81,827	102,428	102,428

Figure 9-8: Forecast of retained earnings, capital spend and cashflow (2024-2032)

In summary, the financial investment strategy adopted by TPA within the 2025 budget has sufficient financial resources to accommodate the increase in infrastructure renewal funding to close the gap of $5.7M (or $13.5M if CP#36 is considered). However, trade-off decisions between growth and service improvement investment, or increased program delivery capacity (and associated funding) will be required, and funded by net income and retained earnings.



	2024		2024 Capital Budget and 2025 - 2033 Capital Plan										
(In $000s)	Budget*	Projected Actual	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total 10 Year Plan
Gross Expenditures by Project Category:													
Health & Safety & Legislated	2,611	1,830	1,098	3,000	2,530	1,031	689	340	50	25	25		8,788
SOGR	24,652	21,240	13,740	14,000	14,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	146,740
Service Improvement & Growth	58,149	45,537	40,793	38,089	31,229	43,189	20,589	13,839	13,839	13,839	13,839	13,839	243,084
Total by Project Category	**85,412**	**68,607**	**55,631**	**55,089**	**47,759**	**59,220**	**36,278**	**29,179**	**28,889**	**28,864**	**28,864**	**28,839**	**398,612**
Financing:													
City of Toronto Debt for EV and Bike Share (Advance to TPA)			20,472	13,839	11,839	11,839	11,839	11,839	11,839	11,839	11,839	11,839	129,023
Reserves held for TPA			4,300										4,300
TPA Retained Earnings			30,859	41,250	35,920	47,381	24,439	17,340	17,050	17,025	17,025	17,000	265,289
Development Charges													
Provincial													
Federal													
Other Revenue													
Total Financing			**55,631**	**55,089**	**47,759**	**59,220**	**36,278**	**29,179**	**28,889**	**28,864**	**28,864**	**28,839**	**398,612**

* City Q2 variance process TPA adjusted 2024 capital budget at $85.3M where TPA spend envelope is per board approval process at $71.3M

9.4 KEY IMPROVEMENT AREAS

The key improvement areas for Growth and Strategy services include:

1. Improve lifecycle costing and recording appropriate replacement cost data – This will help improve financial forecasting and reduce the level of uncertainty associated with estimates.
2. Document clear management tactics for key facilities – Investment requirements are dependence on the management strategy for a facility. The facility at CP#36 has a large impact on TPA financial planning. Documenting and embedding management intent for large facilities will help reduce uncertainty in the forecast.
3. Clarify and document ownership (particularly for high-value assets) - For most facilities, it has been assumed TPA is responsible for all capital renewal. Agreements with other city departments (and third parties) should be reviewed to confirm renewal liabilities. Clarity and transparency on this issue is important to be able to plan for future investment.
4. Improve documented inventory - Currently 10-20% of the infrastructure portfolio has limited information available and has been excluded from financial analysis. Closing this data gap will improve forecasting and remove uncertainty.
5. Understand cost implications of risks related to different management strategies - Choosing a reactive management strategy for CP#36 adds residual risk to TPA operations. An exercise to estimate the level of financial risk associated with this management approach would help inform appropriate contingency funding that should be allocated if it is excluded from the capital plan.

10 CONTINUOUS IMPROVEMENT

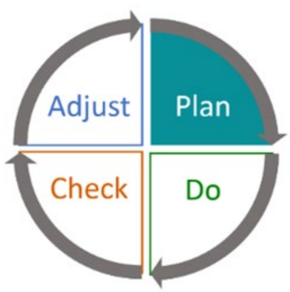
Section 1.4 provides an overview of key outcomes from the Asset Management Maturity Assessment completed in 2023, and Appendix B provides a summary of current gaps and assumptions. It is recommended that the TPA completes a re-assessment of Asset Management Maturity in 2026.

Section 10.1 below sets out the recommended continuous improvement process for TPA to work towards consistent asset management practices that will support the vision of achieving and maintaining sustainable service delivery at a standard consistent with the TPA vision and goals.

10.1 CONTINUOUS IMPROVEMENT PROCESS

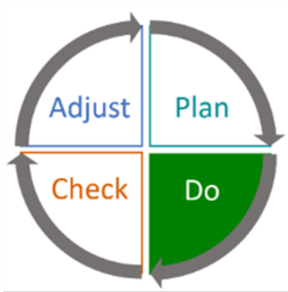
This AMP documents current state and business practices used by the TPA in the management of its assets.

To keep the Asset Management Plan up-to-date with the latest information, understanding, and forecasts, it will be reviewed on a regular basis. The process can also be described as a 'Plan, Do, Check, Adjust,' process (based on the Deming Cycle).



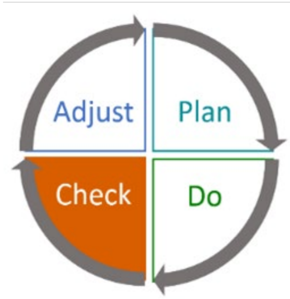
PLAN

- Collate available data and analysis results
- Consider data and analysis results in relation to objectives
- Document outcomes and recommendations
- Update assessment of limitations and assumptions
- Update AMP, consult and confirm for implementation



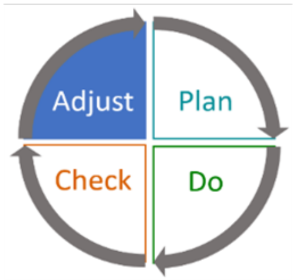
DO

- Schedule, fund, and complete improvement tasks
- Improve asset and cost data
- Monitor, manage, and mitigate risk
- Manage assets and deliver required service
- Measure and record performance



CHECK

- Review performance results
- Analyze asset and cost data
- Re-assess state of infrastructure and risk ratings
- Re-assess state of asset management practice
- Report achievements



ADJUST

- Update improvement tasks and plan
- Adjust lifecycle strategies
- Adjust priorities and targets
- Update forecasts

Figure 10-1: Continuous Improvement Cycle

This four-step process will be used to identify and implement on-going improvements to the Asset Management Plan, and all business processes related to the delivery of TPAs asset related services.

The review cycle for implementing and updating the Asset Management Plan is scheduled to be annually, but this schedule may be extended to two years when little change has occurred. The timing for the Asset Management Plan update will be aligned with the annual budget process, ensuring the latest forecast is included.

10.2 IMPROVEMENT ACTIONS

Key improvement actions are listed in Appendix C. These improvement tasks will:

- Increase the level of understanding of the assets and services provided
- Improve the accuracy of financial forecasts and risk assessments; and
- Provide decision-makers with accurate and complete information in an easy-to-understand format to assist them with making evidence-based decisions for the best use of available funding and the best interests of the region and its communities.

The initial list of tasks will require coordinated input from departments to prioritize actions and set realistic timelines for completion. When this is determined a **coordinated improvement roadmap** can be provided in the next AMP update to report priorities, set target dates, and indicative level of effort and budget.

The recommended highest priority tasks from the list in Appendix C are tasks to improve core information about the assets, to provide greater confidence in both the current state of the assets and current financial forecast of investment needs to support sustainable service delivery. These tasks include:

1. Assessing (by inspection) the condition and remaining life of high value assets
2. Determining data-based useful lives for asset types (from a comparison of age and current inspected condition)
3. Updating replacement values for key asset types

APPENDIX

A ASSET MANAGEMENT POLICY

APPENDIX

APPENDIX

A-1 ASSET MANAGEMENT POLICY

APPENDIX

B ASSUMPTIONS AND ASSOCIATED LMITATIONS

APPENDIX

B-1 PARKING OPERATIONS (ON-STREET & OFF STREET)

Assumptions	Limitations
Parking garages included in the Building Condition Assessments (BCA) are assumed to be owned and operated by TPA.	This could lead to an overestimate of the infrastructure value that TPA owns.
TPA owns and manages assets for which there is limited or no available information, including parking garages, surface lots, fleet vehicles, occupancy sensors, and payment machines	This leads to an underestimate of infrastructure value and limits the asset responsibilities for some TPA teams.
Replacement costs were provided by TPA in the form of insurance valuations, which were used to represent the overall value of the parking garage.	Costs may vary due to varying costing methodologies once Building Assessment task is carried out.
The Facility Condition Index (FCI) was used to assess the condition of the parking garages, with the first five years of repair and replacement needs considered in accordance with industry standards.	The resulting condition profile only reflects costs in the first 5 years. Large repair/replacement costs may be sitting outside that window.
Surface lot light standards were assumed to have a replacement cost of $5,000 based on BCA reporting.	This assumption does not consider differences in light standards between lots. This could lead to and over or underestimate.
Quantities of plants (planter boxes etc.) and lights were assumed to be 1.	This is likely an underestimate, but quantities could not be validated and verified from the BCA reports.
Parking equipment was on average assumed to be 10 years old.	This may not accurately represent equipment age or condition, potentially causing inaccuracies in lifecycle planning and replacement scheduling, as some assets may be newer or older than the assumed average.
Pay-and-display machines, originally installed in 1998, will be replaced by pay-by-plate machines, with an assumed installation year of 2023 for replaced new units.	Assuming a 2023 installation will create a spike in forecasting, as it is highly unlikely that all replacements would be completed within a single year.

APPENDIX

Assumptions	Limitations
The replacement cost for pay-by-plate machines is assumed to be $9,150 per unit, based on a past purchase report.	This could result in an over or underestimate of the infrastructure value that TPA owns.
Replacement costs of non-core miscellaneous properties were identified based on the Altus Cost Guide 2024, using $/SF estimates. **Buildings were broken down into Uniformat II level 2 classification and costs were applied on a percentage basis to the building components.**	This could result in an over or underestimate of the infrastructure value that TPA owns.
Miscellaneous properties sizing estimates were made using GIS measurement tools and areal photography.	GIS images are projected images which have inherent limitations. The projection of the areal images used are Mercator projection. The Mercator projection distorts the size of landmasses and the overall geometry of the planet, especially away from the equator. However, the distortion at this scale will be limited and for the purposes of this plan the measurements error margin will be low.

APPENDIX

B-2 PARKING DEVELOPMENT & ELECTRIC VEHICLE CHARGING

Assumptions	Limitations
EV Chargers level 2 and level 3 are **assumed to have replacement cost of $7,231 and $56,524 based on average provided costs in inventory.**	This could result in an over or underestimate of the infrastructure value that TPA owns.
For EV chargers, condition grade 2 is assumed based on the information provided by the TPA, which indicates that all chargers undergo regular inspections to ensure they always remain in good standing**.**	This could result in an over or underestimate of the infrastructure condition that TPA owns.

APPENDIX

B-3 MICROMOBILITY (BIKESHARE)

Assumptions	Limitations
For bikes, an average installation year of 2019 was used for any missing data which was taken from available data provided.	This could result in an over or underestimate of the infrastructure condition that TPA owns.
An Expected Useful Life (EUL) of 20 years is assumed for stations and docking stations based on the continued operation of equipment installed in 2011.	This could result in an over or underestimate of the infrastructure condition that TPA owns.
Stations are not explicitly categorized as smart or non-smart, an average cost was applied to all stations. The cost was determined by averaging the kiosk costs of solar ($12,000) and e-station ($15,000) kiosks and adding the map/ad frame cost ($8,000), resulting in a total average station cost of $21,500.	Assuming all stations have similar components may misrepresent actual cost variations. Differences in design, infrastructure, and components like map/ad frames are overlooked, potentially leading to cost overestimation for simpler stations and underestimation for more complex ones.
The install year for stations and docks is assumed to be 2011, and all related asset components are assumed to have been in-service since that initial install date.	This could result in an over or underestimate of the infrastructure condition that TPA owns.
All bikeshare parts are assumed to be in good condition due to the fact they have not been used.	This could result in an over or underestimate of the infrastructure condition that TPA owns.

APPENDIX

B-4 INFORMATION TECHNOLOGY

Assumptions	Limitations
For IT software, standardized replacement costs have been used in some instances.	This could result in an over or underestimate of the infrastructure replacement value that TPA owns.
For IT software, an average installation year of 2022 was used for any missing data which was taken from available data provided.	This could result in an over or underestimate of the infrastructure condition that TPA owns.
For IT hardware, standardized replacement costs have been used in some instances. *Hardware - Replacement Cost - An average cost of $400 per mobile device is used where no specific cost is provided, $300 for tablets, and $1,400 for laptops. For servers, a broad estimate of $5,000 to $10,000 is given, depending on configuration. Hardware – Replacement Cost - Cost estimates based on internet research for industry averages are as follows: wireless reader $600, UX pin pad readers $400, IP intercom $400, cameras $300, docking stations and USB docking stations $300, monitors and desktops $500, switch $100, POS pad $500, printer $400, cellular gateway $200, hand scanner $600, load balancer $7,000, PDU $1,000, projector $1,500, and router $800.*	This could result in an over or underestimate of the infrastructure replacement value that TPA owns.
For IT hardware, an estimated useful life (EUL) was used based on the information provided by TPA. *Hardware - Estimated Useful Life- An estimated useful life (EUL) for mobiles, tablets, and laptops is 3 to 5 years, with an average assumption of 4 years. For servers, the EUL is 4 to 10 years, with an assumption of 7 years. This is based on the information provided by TPA.*	This could result in an over or underestimate of the infrastructure replacement year.
For IT hardware, an average installation year of 2022 is used for any missing data, taken from available data provided.	This could result in an over or underestimate of the infrastructure condition that TPA owns.

APPENDIX

C IMPROVEMENT ACTIONS

APPENDIX

C-1 IMPROVEMENT ACTIONS

The following table lists recommended improvement tasks to support TPA's vision of being the world's best provider of sustainable parking, bike share, and last mile mobility services. These tasks relate specifically to improving TPA's asset management analysis, planning, and financial forecasting for future updates of the AMP. A priority ranking is proposed for each task relevant to each asset management topic area. A review of all tasks and confirmation of priorities will be required before developing an improvement roadmap. Consideration must also be given to resources required for these improvement tasks to set realistic timelines for completion of each task.

Topic Area	Improvement Initiative	Priority
Inventory	• Currently 10-20% of the infrastructure portfolio has limited information available and has been excluded from financial analysis. Closing this data gap will improve forecasting and remove uncertainty. • Ensuring all assets are recorded and core information such as asset type, age, size, material type, expected lifespan, current condition, and replacement cost is populated in an electronic inventory will greatly improve analysis, planning, and forecasts for sustainably managing the assets and the services they provide.	High
Condition	• Current condition based on inspection of the assets is only recorded for some assets. Improved confidence in current condition and remaining life values will improve forecasts for the timing of asset replacements. As a minimum, all high value assets should be assessed based on inspection before the next update of the AMP.	High
Lifecycle management	• Clear management tactics should be documented for key facilities (and all high-value assets) • Investment requirements are determined from the management strategy for a facility. The facility at CP#36 has a large impact on TPA financial planning. Documenting and embedding management intent for large facilities will help reduce uncertainty in the forecast	High
Valuation	• Improved lifecycle costing and appropriate replacement cost data will help improve financial forecasting and reduce the level of uncertainty associated with estimates	High
Staff Training	• Provide training programs focussed on the day-to-day implementation of asset management practices consistent with the corporate asset management policy and TPA strategic goals and vision.	High

APPENDIX

Topic Area	Improvement Initiative	Priority
Lifecycle management	• Developing a line-of-sight connection between level of service expectations, lifecycle management tactics, and costs will assist the TPA teams to customize and optimize management tactics to provide the required level of service for least whole-of-life cost. • Align levels of service with vendor agreements – making sure that performance requirements in vendor agreements better support TPA's commitment to levels of service and measurement and reporting of service performance	Medium
Lifecycle Costs	• Work towards establishing Whole-of-life costing procedures –optimizing service delivery and achieving and maintaining sustainable services requires knowledge of true and complete cost of service and a robust understanding of influences, risks, and options.	Medium
Ownership	• For most facilities, it has been assumed TPA is responsible for all capital renewal. Agreements with other city departments (and third parties) should be reviewed to confirm renewal liabilities. Clarity and transparency on this issue is important to be able to plan for future investment	Medium
Coordinated management	• The overall TPA service delivery, planning, and financial performance would benefit from improved interaction, coordination, and information sharing between departments and greater consistency of some asset management practices • Improved consistency of asset management practices provides benefits for optimal service delivery, staff training, succession planning, and maintaining corporate knowledge about the assets and services – this includes data recording, inspections, asset and service hierarchy, levels of service and performance monitoring framework and documentation of maintenance, standard operating procedures, and lifecycle strategies. • Improved understanding and communication of contracts with 3rd parties related to operations and lifecycle activities and shared ownership is needed – current awareness is limited	Medium
Risk	• Developing greater understanding of risks and consequences will assist the TPA teams to determine best-fit lifecycle strategies and/or mitigation measures. • Choosing a reactive management strategy for CP#36 adds residual risk to TPA operations. An exercise to estimate the level of financial risk associated with this management approach would help inform appropriate contingency funding that should be allocated if it is excluded from the capital plan.	Medium
Demand	• Ongoing monitoring of demand indicators and trends will assist the TPA teams to make informed predictions of future demands and the impacts these could have on TPA services, risks, and costs. This will support the TPA to have greater preparedness for the future.	Medium

APPENDIX

C-2 IMPROVEMENT ACTIONS BY DEPARTMENT

The following tables summarize the key improvement actions by department and provide an initial high-level assessment of level of effort, level of benefit, and level of risk mitigation applicable to each task. This assessment will be reviewed as part of the development of an improvement roadmap to be included in the next update of the AMP.

C.2.1. ALL DEPARTMENTS

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	**All**			
Planning	Current process creates silos and doesn't show how different departments come together to provide One Team One Vision. When viewing other AM plans generally 3 or more departments contribute to each area like water or transportation. This creates unity and shared goals and success.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task

C.2.2. PARKING OPERATIONS

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	**Parking Operations**			
Support	Parking meter and gate asset inventory doesn't have sufficient detail. With the purchase of new parking meters, a standardized data process needs to be in place containing all base data for AM	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task is vital and important decisions cannot be made unless task is done	Task output will mitigate a moderate risk or provide input to an important task

APPENDIX

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Improvement	Prepare for CMMS software by standardizing work activities for maintaining assets.	Task may require some additional (external) resources and cost will be moderate	Task will provide necessary supporting information to guide decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Planning	Establish a systematic process for data collection by leveraging existing tools such as automated monitoring systems, customer surveys, and performance dashboards. Analyze historical data to identify trends and gaps in performance. Conduct periodic reviews of collected data to ensure its relevance and accuracy.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Task will provide important information to lead/guide decisions and/or set important direction or context	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Planning	Organize stakeholder workshops, focus groups, and one-on-one interviews to gather input on existing and proposed performance measures. Use feedback to refine measures so they align with organizational goals and stakeholder expectations. Incorporate diverse perspectives from users, management, and field staff to ensure measures are practical, measurable, and aligned with organizational priorities.	Some additional (external) resources will be required, and costs will be in the moderate to high range	Task will provide necessary supporting information to guide decisions	Task has negligible impact on risks or timing is not urgent and it can't be completed until another task is completed
Planning	Facilitate regular meetings and joint workshops involving multiple departments to identify shared goals and metrics. Use collaborative tools like shared dashboards or project management software to track progress and ensure alignment. Encourage departments to exchange data and insights, breaking down silos to develop performance measures that reflect the organization's broader strategic objectives.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task will have a moderate impact on guiding or improving the quality of decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk

APPENDIX

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Support	Design comprehensive training sessions that introduce the concept of Levels of Service (LOS), its relevance, and practical application. Include case studies and real-life scenarios to demonstrate how LOS can influence decision-making for operational improvements and capital investments. Provide ongoing support through workshops, e-learning modules, and job aids to ensure staff can effectively apply LOS in their daily work.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task
Operations	Tracking and reporting the activities to manage assets and collecting data on their costs, frequency, and service provider. This approach ensures informed budgeting, efficient resource allocation, and effective decision-making.	Task will be a significant budget item and require a high level of effort to complete (either or both internal and external resources)	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task
Operations	Review and revise lifecycle strategies if maintenance approaches change to reflect new practices or technologies. Include cost analyses, decision criteria, and implementation plans to ensure strategies remain relevant and effective.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task
Operations	Establish specific lifecycle strategies for new assets, including initial setup requirements, routine maintenance plans, and repair schedules. These strategies need to be flexible, allowing for adjustments based on asset performance, usage patterns, and emerging technologies to ensure long-term effectiveness and efficiency.	Task may require some additional (external) resources and cost will be moderate	Task will provide necessary supporting information to guide decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk

C.2.3. PARKING DEVELOPMENT

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	**Parking Development**			
Department	During the needs assessment and piloting stage perform whole life costing for all options, consider the NPV for each option prior to selecting technology. Document the lifecycle activities required for each option, expected useful life / obsolescence life, consider how obsolete assets will be removed and replaced.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task may have some dependencies (on or to) other tasks or provide minor to moderate risk mitigation
Support	Current improvements for EV and parking technology appear disconnected and without a clear path and goals. Create a road map for improvements which documents the steps needed to achieve and desired outcomes. Create KPI to track improvements	Some additional (external) resources will be required, and costs will be in the moderate to high range	Task will provide necessary supporting information to guide decisions	Task may have some dependencies (on or to) other tasks or provide minor to moderate risk mitigation
Department	Review charger installations and document to manage interventions and replacements	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task is vital and important decisions cannot be made unless task is done	Task output will mitigate a moderate risk or provide input to an important task
Support	Establish a systematic process for data collection by leveraging existing tools such as automated monitoring systems, customer surveys, and performance dashboards. Analyze historical data to identify trends and gaps in performance. Conduct periodic reviews of collected data to ensure its relevance and accuracy.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Task will provide important information to lead/guide decisions and/or set important direction or context	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk

APPENDIX

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	Organize stakeholder workshops, focus groups, and one-on-one interviews to gather input on existing and proposed performance measures. Use feedback to refine measures so they align with organizational goals and stakeholder expectations. Incorporate diverse perspectives from users, management, and field staff to ensure measures are practical, measurable, and aligned with organizational priorities.	Some additional (external) resources will be required, and costs will be in the moderate to high range	Task will provide necessary supporting information to guide decisions	Task has negligible impact on risks or timing is not urgent and it can't be completed until another task is completed
Support	Facilitate regular meetings and joint workshops involving multiple departments to identify shared goals and metrics. Use collaborative tools like shared dashboards or project management software to track progress and ensure alignment. Encourage departments to exchange data and insights, breaking down silos to develop performance measures that reflect the organization's broader strategic objectives.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task will have a moderate impact on guiding or improving the quality of decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Department	Design comprehensive training sessions that introduce the concept of Levels of Service (LOS), its relevance, and practical application. Include case studies and real-life scenarios to demonstrate how LOS can influence decision-making for operational improvements and capital investments. Provide ongoing support through workshops, e-learning modules, and job aids to ensure staff can effectively apply LOS in their daily work.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task
Support	Tracking and reporting the activities to manage assets and collecting data on their costs, frequency, and service provider. This approach ensures informed budgeting, efficient resource allocation, and effective decision-making.	Task will be a significant budget item and require a high level of effort to complete (either or both internal and external resources)	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	Review and revise lifecycle strategies if maintenance approaches change to reflect new practices or technologies. Include cost analyses, decision criteria, and implementation plans to ensure strategies remain relevant and effective.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task
Support	Establish specific lifecycle strategies for new assets, including initial setup requirements, routine maintenance plans, and repair schedules. These strategies need to be flexible, allowing for adjustments based on asset performance, usage patterns, and emerging technologies to ensure long-term effectiveness and efficiency.	Task may require some additional (external) resources and cost will be moderate	Task will provide necessary supporting information to guide decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk

C.2.4. *MICROMOBILITY (BIKE SHARE)*

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	**MicroMobility (Bike Share)**			
Planning	Condition assessments are required to be carried out for all bikeshare assets.	Some additional (external) resources will be required, and costs will be in the moderate to high range	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task

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Topic Area	Improvement Initiative	Effort	Benefit	Risk
Support	Inventory of all bikeshare assets.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task is vital and important decisions cannot be made unless task is done	Task output will mitigate a moderate risk or provide input to an important task
Planning	In the future iterations of the AMP. Update and align the levels of service with the service level agreements metrics	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Task will have a small impact on improving decisions or task is required for procedural rather than directive purposes	Task has negligible impact on risks or timing is not urgent and it can't be completed until another task is completed
Planning	Establish a systematic process for data collection by leveraging existing tools such as automated monitoring systems, customer surveys, and performance dashboards. Analyze historical data to identify trends and gaps in performance. Conduct periodic reviews of collected data to ensure its relevance and accuracy.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Task will provide important information to lead/guide decisions and/or set important direction or context	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Planning	Organize stakeholder workshops, focus groups, and one-on-one interviews to gather input on existing and proposed performance measures. Use feedback to refine measures so they align with organizational goals and stakeholder expectations. Incorporate diverse perspectives from users, management, and field staff to ensure measures are practical, measurable, and aligned with organizational priorities.	Some additional (external) resources will be required, and costs will be in the moderate to high range	Task will provide necessary supporting information to guide decisions	Task has negligible impact on risks or timing is not urgent and it can't be completed until another task is completed

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Topic Area	Improvement Initiative	Effort	Benefit	Risk
Planning	Facilitate regular meetings and joint workshops involving multiple departments to identify shared goals and metrics. Use collaborative tools like shared dashboards or project management software to track progress and ensure alignment. Encourage departments to exchange data and insights, breaking down silos to develop performance measures that reflect the organization's broader strategic objectives.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task will have a moderate impact on guiding or improving the quality of decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Support	Design comprehensive training sessions that introduce the concept of Levels of Service (LOS), its relevance, and practical application. Include case studies and real-life scenarios to demonstrate how LOS can influence decision-making for operational improvements and capital investments. Provide ongoing support through workshops, e-learning modules, and job aids to ensure staff can effectively apply LOS in their daily work.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task
Operations	Tracking and reporting the activities to manage assets and collecting data on their costs, frequency, and service provider. This approach ensures informed budgeting, efficient resource allocation, and effective decision-making.	Task will be a significant budget item and require a high level of effort to complete (either or both internal and external resources)	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task
Operations	Review and revise lifecycle strategies if maintenance approaches change to reflect new practices or technologies. Include cost analyses, decision criteria, and implementation plans to ensure strategies remain relevant and effective.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Operations	Establish specific lifecycle strategies for new assets, including initial setup requirements, routine maintenance plans, and repair schedules. These strategies need to be flexible, allowing for adjustments based on asset performance, usage patterns, and emerging technologies to ensure long-term effectiveness and efficiency.	Task may require some additional (external) resources and cost will be moderate	Task will provide necessary supporting information to guide decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk

C.2.5. PARKING INFRASTRUCTURE & ASSET MANAGEMENT

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	**PIAM (Parking Infrastructure & Asset Management**			
Improvement	Building condition assessments are required to be carried out for all parking garages and surface which follow a consistent approach and capture all relevant information that is required to populate the state of infrastructure (SOI) reporting tool.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task
Support	Assets are currently unknown for parking facilities, there is no definition of what is an asset and who owns it. An asset registry needs to be created and maintained.	Some additional (external) resources will be required, and costs will be in the moderate to high range	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task
Operations	There is no current definition for what is an asset. A policy needs to be in place, possibly inline with the CoT's PSAB 3150 policy to ensure that capital assets are defined correctly and ownership is defined. This will also have content around handling of shared assets	Task may require some additional (external) resources and cost will be moderate	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task

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Topic Area	Improvement Initiative	Effort	Benefit	Risk
Performance Evaluation	Improvements in Asset Management are not being tracked or reported. Tracking AM improvements and documenting success can help the program gain respect and support. Also part of O.Reg	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task
Leadership	Current operations have departments contributing to the provision of parking services but they operate as if they offer separate service. Create a service hierarchy that documents how departments contribute to providing Last Mile Service. Include process maps that document how activities and data impact each department and when	Some additional (external) resources will be required, and costs will be in the moderate to high range	Task will provide necessary supporting information to guide decisions	Task may have some dependencies (on or to) other tasks or provide minor to moderate risk mitigation
Planning	Facilitate regular meetings and joint workshops involving multiple departments to identify shared goals and metrics. Use collaborative tools like shared dashboards or project management software to track progress and ensure alignment. Encourage departments to exchange data and insights, breaking down silos to develop performance measures that reflect the organization's broader strategic objectives.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task will have a moderate impact on guiding or improving the quality of decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Support	Design comprehensive training sessions that introduce the concept of Levels of Service (LOS), its relevance, and practical application. Include case studies and real-life scenarios to demonstrate how LOS can influence decision-making for operational improvements and capital investments. Provide ongoing support through workshops, e-learning modules, and job aids to ensure staff can effectively apply LOS in their daily work.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task

C.2.6. INFORMATION TECHNOLOGY

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	**IT (Information Technology)**			
Support	Create inventory for IT assets. Include software and document obsolescence period for software over useful life.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task is vital and important decisions cannot be made unless task is done	Task output will mitigate a moderate risk or provide input to an important task
Leadership	Develop a data governance policy, strategy and processes. This will define data ownership, processes to maintain data, and storage requirements. This will improve data capture, IT software maintenance and procurements and improve data quality and analysis.	Task will be a significant budget item and require a high level of effort to complete (either or both internal and external resources)	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task
Planning	Establish a systematic process for data collection by leveraging existing tools such as automated monitoring systems, customer surveys, and performance dashboards. Analyze historical data to identify trends and gaps in performance. Conduct periodic reviews of collected data to ensure its relevance and accuracy.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Task will provide important information to lead/guide decisions and/or set important direction or context	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Planning	Organize stakeholder workshops, focus groups, and one-on-one interviews to gather input on existing and proposed performance measures. Use feedback to refine measures so they align with organizational goals and stakeholder expectations. Incorporate diverse perspectives from users, management, and field staff to ensure measures are practical, measurable, and aligned with organizational priorities.	Some additional (external) resources will be required, and costs will be in the moderate to high range	Task will provide necessary supporting information to guide decisions	Task has negligible impact on risks or timing is not urgent and it can't be completed until another task is completed

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Topic Area	Improvement Initiative	Effort	Benefit	Risk
Planning	Facilitate regular meetings and joint workshops involving multiple departments to identify shared goals and metrics. Use collaborative tools like shared dashboards or project management software to track progress and ensure alignment. Encourage departments to exchange data and insights, breaking down silos to develop performance measures that reflect the organization's broader strategic objectives.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task will have a moderate impact on guiding or improving the quality of decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Support	Design comprehensive training sessions that introduce the concept of Levels of Service (LOS), its relevance, and practical application. Include case studies and real-life scenarios to demonstrate how LOS can influence decision-making for operational improvements and capital investments. Provide ongoing support through workshops, e-learning modules, and job aids to ensure staff can effectively apply LOS in their daily work.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task
Operations	Tracking and reporting the activities to manage assets and collecting data on their costs, frequency, and service provider. This approach ensures informed budgeting, efficient resource allocation, and effective decision-making.	Task will be a significant budget item and require a high level of effort to complete (either or both internal and external resources)	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task
Operations	Review and revise lifecycle strategies if maintenance approaches change to reflect new practices or technologies. Include cost analyses, decision criteria, and implementation plans to ensure strategies remain relevant and effective.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Operations	Establish specific lifecycle strategies for new assets, including initial setup requirements, routine maintenance plans, and repair schedules. These strategies need to be flexible, allowing for adjustments based on asset performance, usage patterns, and emerging technologies to ensure long-term effectiveness and efficiency.	Task may require some additional (external) resources and cost will be moderate	Task will provide necessary supporting information to guide decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk

C.2.7. GROWTH & STRATEGY

Topic Area	Improvement Initiative	Effort	Benefit	Risk
Department	**Growth & Strategy**			
Leadership	Review contracts for operation, shared ownership and ownership to fully document what is TPA's responsibilities for capital, maintenance and operation including asset ownership for these purposes. Document for each, consider feasibility of renegotiation where appropriate	Task will be a significant budget item and require a high level of effort to complete (either or both internal and external resources)	Information from task is vital and important decisions cannot be made unless task is done	Task output is urgently required to mitigate a high risk or provide input to a high priority or high benefit task
Operations	Develop a whole life costing process such as NPV scoring prior to acquiring new assets to ensure that the cost of long-term ownership (maintenance, operations, renewals and decommissioning) considered in the site evaluation process.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task may have some dependencies (on or to) other tasks or provide minor to moderate risk mitigation

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Topic Area	Improvement Initiative	Effort	Benefit	Risk
Planning	Facilitate regular meetings and joint workshops involving multiple departments to identify shared goals and metrics. Use collaborative tools like shared dashboards or project management software to track progress and ensure alignment. Encourage departments to exchange data and insights, breaking down silos to develop performance measures that reflect the organization's broader strategic objectives.	Task will be easily done by staff within current budgets and/or it will cost little to complete by internal or external resources	Information from task will have a moderate impact on guiding or improving the quality of decisions	Task may require input or provide input (dependant on or to) for another task of moderate importance and/or mitigate a moderate risk
Support	Design comprehensive training sessions that introduce the concept of Levels of Service (LOS), its relevance, and practical application. Include case studies and real-life scenarios to demonstrate how LOS can influence decision-making for operational improvements and capital investments. Provide ongoing support through workshops, e-learning modules, and job aids to ensure staff can effectively apply LOS in their daily work.	Task may require some additional (external) resources and cost will be moderate	Task will provide important information to lead/guide decisions and/or set important direction or context	Task output will mitigate a moderate risk or provide input to an important task