2023
Hamilton Municipal Parking System Asset Management Plan

Hamilton

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SUMMARY AND QUICK FACTS

SERVICE PROFILE

The Hamilton Municipal Parking System (HMPS) consists of parking operations and parking enforcement sections, a parking property portfolio, and associated infrastructure. HMPS collectively provides management of on-street and municipal off-street parking in the City of Hamilton. HMPS is responsible for operations across the municipality.

ASSET SUMMARY

Replacement Value
$131 Million
FAIR CONDITION
Average age of 39 Years
or 15% of the average
remaining service life.

Level of Service Summary

- Survey respondents feel HMPS has performed AVERAGE overall in the last 24 months across all service areas.
- Survey respondents feel HMPS is providing GOOD value for money when providing infrastructure and services.
- Survey respondents feel that HMPS is Meeting Some of their service needs overall.
- Survey respondents are neither satisfied nor dissatisfied considering access to parking across various communities and on-street parking across the City.

Critical Asset Summary

CRITICAL ASSETS	QUANTITY	REPLACEMENT COST	AVERAGE CONDITION	STEWARDSHIP MEASURES
PARKING GARAGES	2	102.6 Million	Fair	Parking garages are inspected by an Engineer every 10-12 years
PARKING LOTS	57	14.6 Million	Poor	Staff inspects Surface Lots

DATA CONFIDENCE

VERY GOOD — FAIR — VERY LOW

DEMAND

Population Growth: Employment Growth, new development, changes to parking supply and changing travel patterns are noted impacts. Future parking operations are projected to approach and likely exceed capacity under these demands and result in parking shortages and an inefficient parking system, specifically in the downtown area but other areas such as Stoney Creek and Waterdown are also experiencing parking shortages. There are areas of the city where the available supply of parking regularly exceeds demand such as Dundas and Ottawa Street.

RISK

- Critical Assets are identified as the Parking Garage Structures and the surface parking lots.

CLIMATE CHANGE

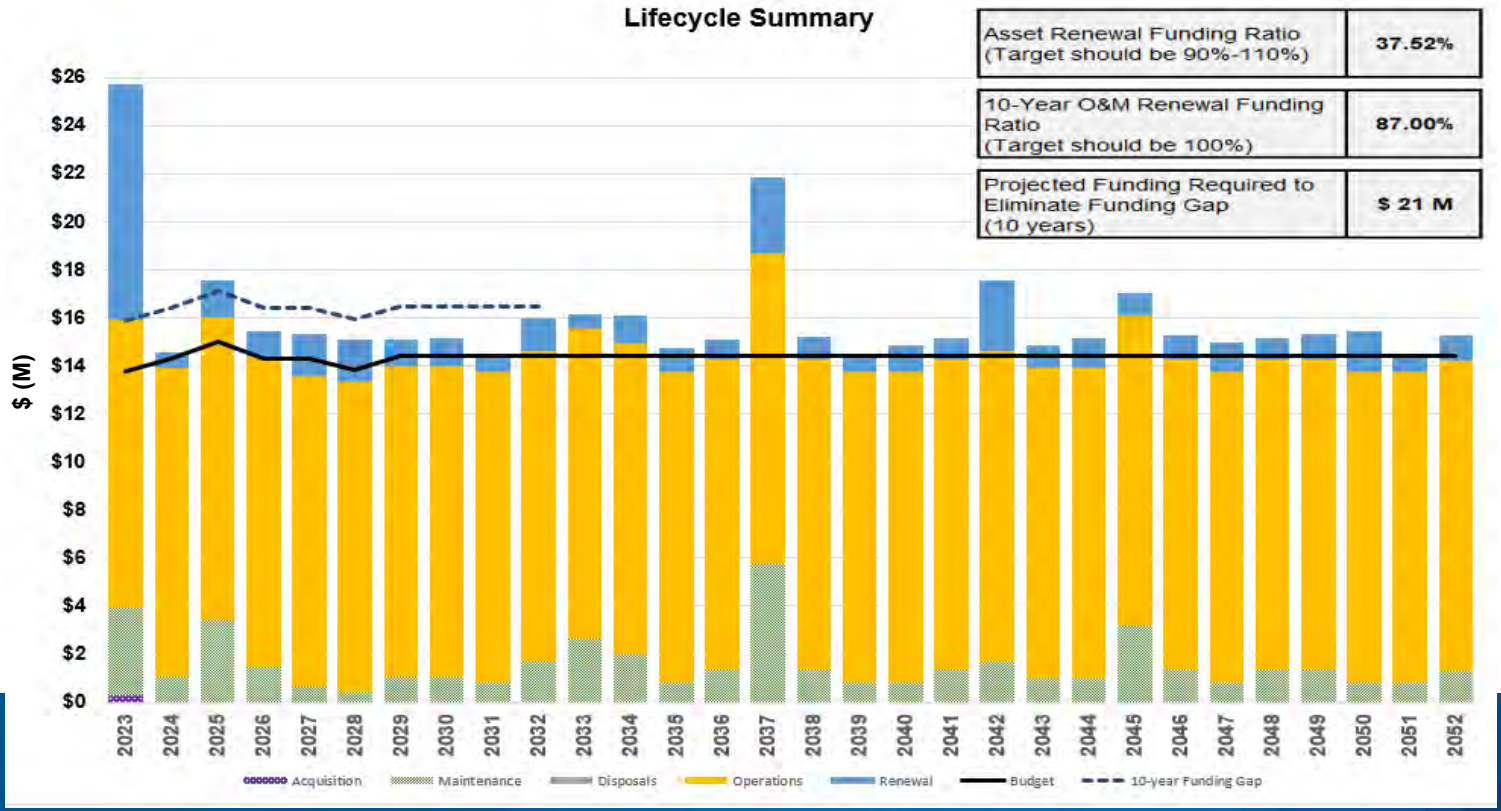
Mitigation

- New small and Light Duty Fleet to be electric by 2040
- LED Lighting Installations
- Support safe secure parking for bicycles and/or micro mobility solutions

Adaptation

- No Adaption Projects identified at this time

LIFECYCLE SUMMARY



1. INTRODUCTION

The Hamilton Municipal Parking System (HMPS) consists of parking operations and parking enforcement sections, a parking property portfolio, and associated infrastructure. HMPS collectively provides management of on-street and municipal off-street parking in the City of Hamilton. HMPS is responsible for operations across the municipality, from Downtown Hamilton to Stoney Creek, Dundas, Ancaster, Waterdown, Glanbrook and everywhere in between, each with their own unique characteristics.

The HMPS Asset Management Plan (AM Plan) is to identify the intended asset management (AM) programs for assets delivering the HMPS services. The City of Hamilton (the City) will identify these programs based on its understanding of the current service level requirements and the current ability of HMPS to meet those requirements and proposed service level requirements for the future.

The infrastructure assets covered by this AM Plan include assets which are part of the City's overall municipal parking system and written in accordance with O. Reg 588/17. As mentioned in ***Section 5.2*** of the AM Plan Overview, these AM Plans were completed using the Federation of Canadian Municipalities (FCM) approach to asset management in partnership with the Institute of Public Works Engineering Australasia (IPWEA) and NAMS (National Asset Management System) Canada framework for asset management to fulfill the O.Reg. 588/17 timeline and requirements. It is important to note that this is the first iteration of the HMPS AM Plan completed by the Corporate Asset Management (CAM) office using this framework for asset management.

2. BACKGROUND

This AM Plan is intended to communicate the requirements for the sustainable delivery of services through the management of assets, compliance with regulatory requirements and required funding to provide the appropriate levels of service over the 2023- 2052 planning period. The assets covered by this plan include the major components required to deliver effective parking operations and enforcement to the City's residents.

2.1 RELATED DOCUMENTS

Listed below are related documents reviewed in preparation of the Asset Management Plan:

- Asset Management Plan Overview Document;
- City of Hamilton Parking Master Plan, August 17, 2021, prepared by IBI Group;
  - Background Report I – Existing Conditions and Best Practices, April 1, 2021,
  - Background Report II – Future Conditions and Financial Assessment April 1, 2021,
- Planning Committee Report PED20051(b).

Additional financial related documents are identified in ***Section 10*** Plan Improvement and Monitoring.

2.2 LEGISLATIVE REQUIREMENTS

The most significant legislative requirements that impact the delivery of the service are outlined in ***Table 1***. These requirements are considered throughout the report, and where relevant, are included in the levels of service measurements.

Table 1: Legislative Requirements

LEGISLATION OR REGULATION	REQUIREMENT
Accessibility for Ontarians with Disabilities Act, 2005, S.O. 2005, c.11 Ontario Regulation 191/11	Prescribes requirements for off-street accessible parking spaces.
Highway Traffic Act, R.S.O. 1990, c.H.8; R.R.O. 1990, Reg. 615: Signs	Provides instructions for all matters related to highway traffic within Ontario.
Municipal Act, 2001, S.O. 2002, C. 25, O. Reg 239/02 Minimum Maintenance Standards for Municipal Highways	Prescribes frequency of inspecting regulatory signs or warning signs to meet retro-reflectivity requirements of the Ontario Traffic Manual.
Fire Protection and Prevention Act 1997; Ontario Regulation 213/07	Prescribes requirements for inspection and testing of Fire Protection equipment
Technical Standards and Safety Act, 2000	Prescribes Technical Standards for Elevating Devices

2.3 ALIGNMENT WITH COUNCIL PRIORITIES

As referenced in the AM Plan Overview in Section 5.4, Strategic Alignment, The City's strategic goals and objectives are shaped by internal drivers such as Council approved strategies and plans, as well as external forces such as citizen expectations, and legislative and regulatory requirements. The specific legislative and regulatory requirements for service areas are provided in each AM Plan.

City objectives provide asset owners with direction regarding levels of service and asset investment priorities. This AM Plan will demonstrate how the City's objectives for core assets can influence levels of service and direct asset expenditures.

2.4 SERVICE PROFILE

The service profile consists of four (4) main aspects of the service:

- Service History;
- Service Function;
- Users of the Service; and,
- Unique Service Challenges.

2.5 SERVICE HISTORY

Prior to 1998 Municipal Parking was operated by the former Parking Authority Board. This was an independent public agency responsible for paid parking operations in the City. In 1998, the former Parking Authority Board was dissolved and integrated with other city parking services, creating the Hamilton Municipal Parking System (HMPS). HMPS is operated within the Planning and Economic Development, Transportation Planning & Parking Division.

HMPS operates with a self-funding model. When parking revenue exceeds HMPS operating expenses, the surplus is used to fund the Parking Capital Reserve, Business Improvement Area (BIA) revenue sharing, and the City's General Tax Levy.

Capital expenditures are funded through the reserve, which at the end of 2022 had approximately $7.6 million uncommitted to projects. The reserve is primarily funded through annual contributions from surplus, with some additional variable funding from special programs and property sales. The last full reserve contribution from surplus was $840k in 2020, there was no surplus in 2020 – 2022 due to impacts of COVID-19. Annual reserve contributions are currently at a fixed rate as determined by Council which increases by $25,000 a year, i.e., the 2021 contribution would have been $865k if there had been a surplus. Partial contributions were made for 2022 ($740k) and 2023 ($765k). This gap in funding due to COVID-19 represents a loss of approximately $1.2 million to pre-pandemic forecasts for the parking capital reserve.

Between 1998 and 2015, HMPS did not operate a capital improvement plan and had very low capital expenditures. The lack of renewal and replacement over an extended period has resulted in a significant backlog of aged infrastructure with a replacement value significantly exceeding reserve funding.

HMPS also participates in revenue sharing with the BIAs that host paid parking for up to 10% of the revenue earned within a BIA going back into the same BIA, to a maximum of $167,280/year for all BIAs combined. This provides funding for them to maintain improvement programs and to undertake promotional initiatives within their boundaries.

All remaining funds go to the General Tax Levy. Historically this contribution was between $1 and $2 million per year.

2.6 SERVICE FUNCTION

HMPS provides parking enforcement, maintenance, and operation of all paid on-street and municipally owned off-street parking facilities. They also maintain and manage all on-street and off-street parking by-laws and relevant parking permit programs including enforcement of the parking by-laws. HMPS is also responsible for reviewing development proposals to ensure compliance with any parking requirements or by-laws. HMPS operates 57 surface parking lots, two (2) parking structures with approximately 4320 off-street spaces and approximately 2200 metered on--street parking spaces across the City.

In order to deliver adequate and effective parking services, HMPS requires assets. Some ways assets support the delivery of the service include:

- The provision of off-street parking in municipal surface lots and parking structures;
- Equipment that supports flexible payment options to ensure choice and reliability when paying for parking both on and off street;
- Equipment and resources to maintain parking facilities and services at the desired level of service;
- Required officer equipment and vehicles to ensure efficient enforcement of parking by-laws; and,
- Administrative equipment to support the delivery of services.

2.7 USERS OF THE SERVICE

Hamilton Municipal Parking Service provides services to residents, visitors and businesses within the City and serves to support economic development, tourism, and events across the City. The 2021 Hamilton Parking Master Plan focused on parking operations in the Downtown area and within the existing Business Improvement Areas (BIA's). Each has unique characteristics and usage patterns summarized in ***Table 3*** below, for more details please refer to the Master Plan.

Table 2: BIA Area details from 2021 Parking Master Plan

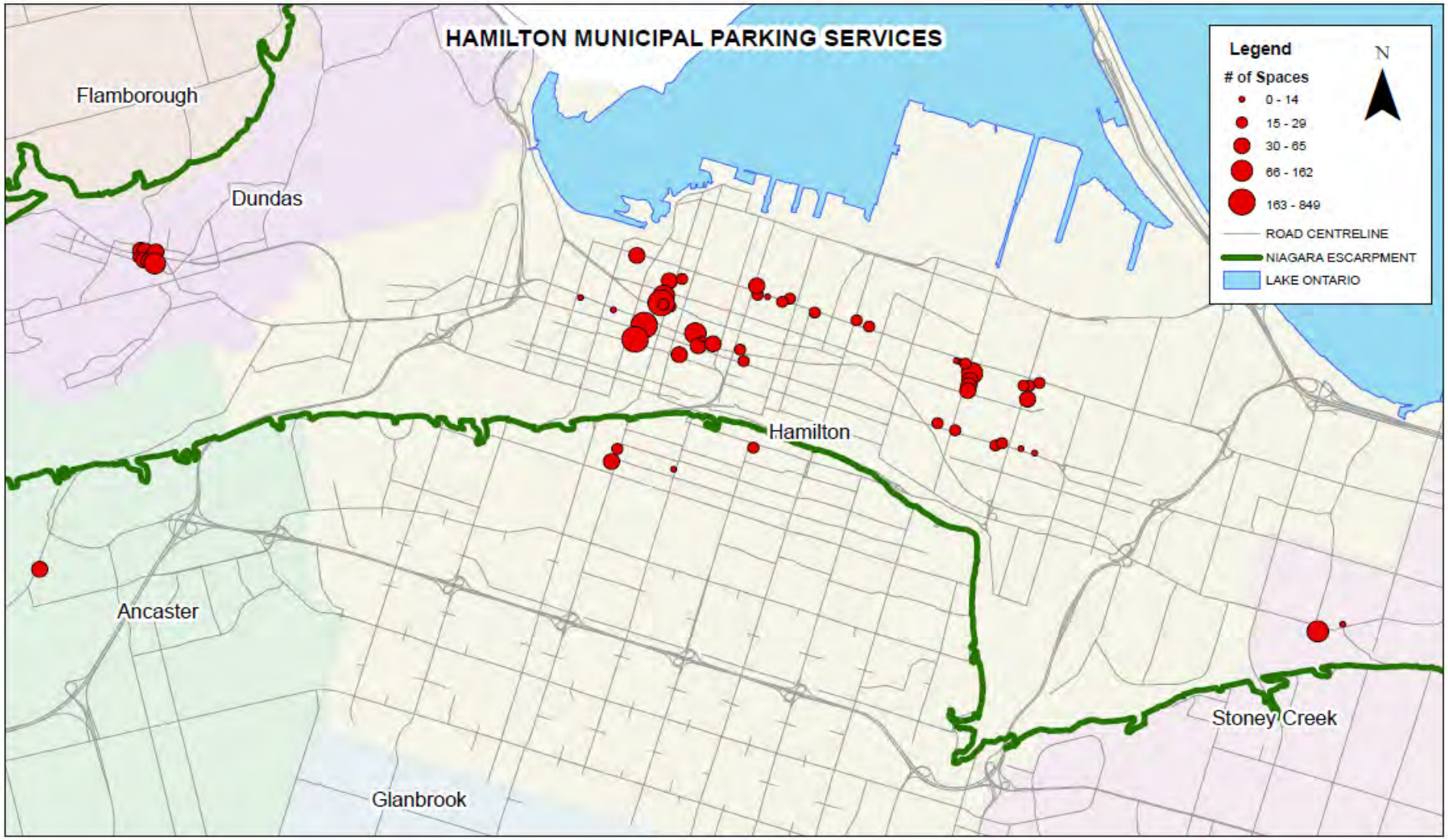
BIA AREA	HMPS ON STREET SPOTS	HMPS OFF STREET SPOTS	COMMENT ON PARKING, MAJOR GENERATORS / USERS:
Ancaster	17	38	High vehicle mode share, 11 of 17 on-street spaces observed occupied. Off street parking is free.
Barton Village	186	156	Hamilton General Hospital creates large parking demand spilling over into residential areas
Concession Street	133	24	Juravinski is a major trip generator but has on-site parking. 20% of on-street available when observed. Supply is sufficient
Downtown Dundas	90	331	On-street well utilized, almost 100 off-street spots available at all times
Downtown Hamilton	224	71	95% of parking spaces occupied during weekday peak. Large volumes of alternative curb side activities (transit, passenger pickup/drop-off deliveries, patios, etc.) occur.

BIA AREA	HMPS ON STREET SPOTS	HMPS OFF STREET SPOTS	COMMENT ON PARKING, MAJOR GENERATORS / USERS:
International Village	117	281	Users experience difficulty finding parking spaces during weekday business hours. A large number of passenger pickup/drop off and ride sharing activities occur.
King Street	16	11	Most parking needs are met privately. Challenging to find on-street during peak periods
Locke Street	124	0	Private parking complements on-street parking. Available on-street parking observed at all times.
Main Street West Esplanade	39	0	Private parking complements on-street parking. Abundant on-street parking opportunities but conflict with high traffic volumes.
Ottawa Street	102	306	Plentiful available parking opportunities at all times.
Stoney Creek	0	169	Large supply of municipal off street and on-street parking available at no cost with maximum 2 hour. Parking is known to be limited during weekday business hours
Waterdown	55	8	On Site parking supply shortages may develop partially due to lack of local municipally operated parking facilities. On-street parking is no cost.
Westdale Village	98	0	On-street parking demand is known to be high but opportunities available in 2019 utilization survey. Parking infiltration from surrounding areas is known to be an issue.

Based on the 2021 census[1] results Hamilton's population is 569,353 and the average age of Hamilton's population is 41.5 years. Over 77% of the population indicates they primarily commute by car/truck or van as a driver. 65% report a commute of less than 29 minutes. Many of these commuters will park in private facilities provided by business or employers but others will rely on both private and municipal off-street parking lots for work and for business use.

[1] https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&GENDERlist=1&STATISTIClist=1&HEADERlist=0&DGUIDlist=2021A00033525&SearchText=Hamilton

Figure 1 : Hamilton Municipal Parking Services Map



2.8 UNIQUE SERVICE CHALLENGES

There are several unique service challenges facing Hamilton Municipal Parking Services:

- The 2021 Parking Master Plan predicted that the downtown area is approaching the peak parking utilization of 91%. This utilization calculation did not account for the redevelopment of the York Parkade and adjoining surface lot on York with the Hamilton Urban Precinct Group (HUPEG) agreement or Light Rail Transit (LRT) implementation. Combined, these two major projects will result in the loss of approximately 950 off-street and 500 on-street metered parking spaces above what was anticipated in the 2021 Master Plan. With these reductions it will not be feasible to support unconstrained parking demand in the downtown area. This will require significant operational changes to shift parking to other areas and modes of travel while protecting loading zones for businesses.

- Parking demand is expected to exceed capacity in some areas, but no additional parking facilities are being planned for those locations at this time, with the exception of a study looking at parking demand and opportunities in the West Harbour area as well as joint parking opportunities with private developments. Shifting demand away from single occupant vehicles to transit, active transportation and shared mobility will be critical given the increasing challenges, costs and environmental impacts associated with expanding parking supply.

- HMPS managed parking supply, on and off street, is spread out across the city with variation in intensity of use and parking regulations. This creates difficulties providing appropriate enforcement, maintenance, and coin collection activity levels.

- A lack of a standardized capital improvement program since dissolution of the parking authority in 1998 has resulted in significant degradation in physical surface lot infrastructure and created a significant renewal backlog.

- Historic records are limited, and numerous parking lot properties have poorly defined leases or agreements predating amalgamation and dissolution of the parking authority.

- As the convention center parking garage ages, it is expected to have higher reactive maintenance costs and risks related to aging infrastructure.

- Enforcement requests in 2019 were 57% higher than 2015, post COVID-19 the trend of increasing demand has resumed.

- Availability of parking enforcement staff creates service challenges. Responsive enforcement for parking complaints is limited by the size of the City and centralization of

staff, additionally no Parking Enforcement staff are scheduled from 5:45 am to 10:00 pm on Sundays or holidays.

- The primary mode of funding for the Parking Capital Reserve is annual contributions from parking revenue surplus, the amount of which is set by Council. Reserve contributions are scheduled to increase by $25,000/year. The 2023 reserve contribution would have been up to $915,000 had a surplus been achieved in 2022, however the last full reserve contribution was $840,000 in 2020 due to decreased revenue. The 2022 and 2023 reserve contributions were $740,000 and $765,000 respectively. There are additional funding streams for the reserve including property sales and some fees which are variable year to year.

- The Parking Capital Reserve balance is currently insufficient to cover the backlog of required capital repairs. The annual funding of the reserve, even when fully realized, is likely inadequate to maintain the HMPS asset portfolio meaning the backlog will continue to increase without correction.

- While HMPS is intended to be self-funding, it is not an autonomous organization and Council dictates how revenue is used and what rates can be charged for rates and fines.

- HMPS has historically transferred parking revenues to the levy each year, pre-COVID. The amount is the balance of revenues after the capital transfer reserve has been subtracted from the operating balance. In cases where there is a deficit in the Operating Balance or revenues are less than the capital reserve fund transfer $0, zero dollars are transferred to the levy.

- The transition to higher order transit in the downtown area will take several years while LRT construction and bus network redevelopment occur. Parking will be impacted prior to the alternative transportation systems being implemented.

- The downtown parking area will be impacted by implementation of the Hamilton Urban Precinct Entertainment Group (HUPEG). This proposal announced in 2020 at a value of $500 million dollars to renovate downtown entertainment facilities. As part of the agreement, the City will “transact” the MCP 68 York Boulevard Parkade, MCP 69 and the Surface parking lot located at MCP 62 14 Vine Street to become development sites. Timing of the transaction of these parking facilities is not known at this time. At this time for the purposes of the plan it is assumed these are still HMPS assets but recognize at some point they will be removed once the agreement specific to these assets is finalized.

- HMPS maintains some lots in areas with very low utilization rates where it may make sense to review HMPS operations in the near term to make more efficient use of limited resources.

- The City has many different areas which are distinctly different markets with different travel patterns and parking demands as outlined in ***Section 2.7***. This results in differences in how public parking facilities are operated across the city.

3. SUMMARY OF ASSETS

3.1 ASSET HIERARCHY

In order to deliver effective and efficient parking services, HMPS requires assets. The HMPS area has been broken down into four (4) asset classes for the purpose of this AM Plan section: Parking Facilities, Site Works, Meters & Signs, and Administrative.

- **Parking Facilities:** refers to the physical parking assets, specifically the parking garages and the Surface Lots which includes the pavement and granular base of the parking lots. This also includes hard surfaces such as internal sidewalks and perimeter curbing.
- **Site Works:** refers to parking lot support assets exclusive of hard surfaces
- **Meters & Signs** refers to payment machines, parking meters and signs
- **Administrative:** refers to all equipment and fleet that support delivery of the parking service.

The HMPS also has a real estate portfolio related to the delivery of the service. The valuation of the real estate portfolio is not included in any valuation or asset information contained in this plan. The value of the real estate portfolio is over and above any financial data and information provided in this plan. HMPS has identified they have incomplete property and/or leasing records and a continuous improvement item has been identified to complete property profiles for all HMPS leased or owned properties.

The asset class hierarchy outlining assets included in this section is shown below in ***Table 4***.

Table 3: Asset Class Hierarchy

PARKING FACILITIES	SITE WORKS	METERS & SIGNS	ADMINISTRATIVE
Surface Lots – Surface Pavement and granular (Includes curbs/interlock Misc. Surfaces)	Surface Lot Lighting System	Pay Machines	Vehicles
Parking Garages*	Linear Barriers (Crash Guard, Decorative Walls)	Parking Meters	Maintenance Equipment
	Privacy Fencing	Non-Regulatory Signs	Officer Equipment
	Stormwater Facilities (CBMH, Storm Sewer)	Regulatory Parking Control Signs	Technology
	Retaining Walls		Coin Handling Equipment
	Electric Vehicle Chargers		

*Facilities Parking Administration Offices is included in the Parking Garage Condition at this time as the data is not broken out separately from Facilities

3.2 DETAILED SUMMARY OF ASSETS

Table 5 displays the detailed summary of assets for the parking service area. The sources for this data are a combination of data provided by HMPS and other available data from the City's database information. It is important to note that inventory information does change often, and that this is a snapshot of information available largely as of December 31, 2022.

The City owns approximately **$131 million** in municipal parking assets which are on average in **3-FAIR** condition. Assets are an average of **39 years** in age which is **15%** of the average remaining service life (RSL). For most assets this means that the City should be completing preventative, preservation and maintenance activities as well as operating activities (e.g., inspection, cleaning) to prevent any premature failures. As detailed in ***Table 5*** below, many of the assets, particularly surface lots and site works assets, are at the end of or exceed their estimated service lives. The overall asset condition is being inflated by the condition of the York Street Parkade.

The Corporate Asset Management (CAM) Office acknowledges that some works and projects are being completed on an ongoing basis and that some of the noted deficiencies may already be completed at the time of publication. In addition, the assets included below are assets that are assumed and in service at the time of writing. There also may be assets not currently managed by HMPS that may be considered HMPS assets which are missing from this inventory or conversely assets that are better aligned to another City of Hamilton division that could be removed from this inventory in future editions of the AM Plan. This asset review has been identified as a continuous improvement Item in ***Table 32.***

Table 4: Detailed Summary of Assets
Weighted Average by Replacement Value

ASSET CATEGORY	NUMBER OF ASSETS	REPLACEMENT VALUE	AVERAGE AGE (% RSL)	AVERAGE CONDITION
PARKING FACILITIES				
Surface Lots – Surface Pavement* Includes curbs/interlock Misc. Surfaces	57	$14.6M	37 years (0%)	4-POOR
Data Confidence	High	Low	Low	Low
Parking Garages (*Includes Parking Administrative Facilities)	2	$102.6M	41 years (54%)	3-FAIR
Data Confidence	Very High	Medium	Very High	Medium

ASSET CATEGORY	NUMBER OF ASSETS	REPLACEMENT VALUE	AVERAGE AGE (% RSL)	AVERAGE CONDITION
SUBTOTAL		**$117.2M**	**41 years* (42%)***	**3-FAIR***
Data Confidence		**Medium**	**Low**	**Low**
SITE WORKS				
Surface Lot Lighting System (poles, luminaires, wiring and controls)	161 Poles 215 Fixtures	$1.52M	38 years (0%)	4-POOR
Data Confidence	High	High	Low	Medium
Linear Barriers (Crash Guard, Decorative Walls)	3.2 km	$0.20M	39 years (0%)	2-GOOD
Data Confidence	Medium	Low	Low	Low
Privacy Fencing	2.0 km	$0.26M	38 years (0%)	No Data
Data Confidence	Medium	Low	Low	Very Low
Stormwater Facilities (CBMH)	152	$0.15M	36 years (0%)	3-FAIR
Data Confidence	Medium	Low	Low	Low
Retaining Walls	3	$0.05M	38 years (0%)	No Data
Data Confidence	Medium	Very Low	Low	Very Low
Electric Vehicle Chargers	19	$0.45M	1 year (90%)	1-VERY GOOD
Data Confidence	Very High	High	Very High	High
SUBTOTAL		**$2.6M**	**32 years* (0%)***	**3-FAIR***
Data Confidence		**High**	**Low**	**Medium**

METERS AND SIGNS				
Pay Machines	126	$0.82M	8 years (47%)	3-FAIR
Data Confidence	High	Medium	Medium	Low
Parking Meters	2310	$2.3M	No Data	3-FAIR
Data Confidence	High	Medium	Very Low	Low

ASSET CATEGORY	NUMBER OF ASSETS	REPLACEMENT VALUE	AVERAGE AGE (% RSL)	AVERAGE CONDITION
Non-Regulatory Signs	475	$0.2M	No Data	2-GOOD
Data Confidence	Very Low	Low	Very Low	Low
Regulatory Parking Control Signs	No Data	$6.0M**	No Data	No Data
Data Confidence	Very Low	Very Low	Very Low	Very Low
	SUBTOTAL	**$9.3M**	**8 years (47%)**	**3-FAIR**
	Data Confidence	**Very Low**	**Low**	**Low**

**Replacement Value of Regulatory Parking Control Signs is based on the assumption HMPS provides $400K to Public Works per year to renew signs under work orders with an estimated service life of 15 years. This totals to an approximate value of $6M dollars. This value is not based on an actual inventory and has very low data confidence.

ADMINISTRATIVE				
Vehicles	30	$1.2M	6 years (33%)	4 - POOR
Data Confidence	Very High	Medium	High	Low
Maintenance Equipment	5	$0.15M	10 years (0%)	5 – VERY POOR
Data Confidence	High	Medium	High	Low
Officer Equipment (Uniforms/Mobile Printers/Phones)	168	$0.24M	No Data	2-GOOD
Data Confidence	High	High	Very Low	Low
IT Equipment & Curbside Mgmt. Tool	60	$0.2M	3 years (33%)	4 – POOR
Data Confidence	Medium	Medium	Medium	Low
Coin Handling Equipment	3	$0.06M	9 years (33%)	4 - POOR
Data Confidence	Very High	High	Medium	Low
	SUBTOTAL	**$1.85M**	**7 years* (29%)***	**4-POOR***
	Data Confidence	**Medium**	**High**	**Low**

ASSET CATEGORY	NUMBER OF ASSETS	REPLACEMENT VALUE	AVERAGE AGE (% RSL)	AVERAGE CONDITION
TOTAL		$131.0M	39 years* (41%)*	3-FAIR*
Data Confidence		Low	Low	Low

The overall replacement value data confidence for the registry is low. The replacement values are generally based on staff expert opinion or inflationary values of original purchase/replacement cost estimates. In most of the asset classes, current market data is not available for replacement value.

The overall average age data confidence is rated as Low. For most of the asset classes (i.e., surface parking lots, pay machines and signs) the data is largely estimated based on staff expert opinion and not based on actual in-service dates. However, the parking structures have the highest weighted contribution to the overall results and the age of the structures is documented.

The overall average condition data confidence is rated as Low. For the majority of the assets the condition is based on age and not based on actual physical inspection and data condition analysis. Exceptions to this are the Convention Center parking garage, where condition is based on Facility Condition Index (%FCI) and the surface parking lots where condition is based on staff expert opinion. More details can be found in ***Section 3.4.1***.

Please refer to the AM Plan Overview for a detailed description of data confidence.

3.3 ASSET CONDITION GRADING

Condition refers to the physical state of HMPS assets and are a measure of the physical integrity of these assets or components and is the preferred measurement for planning lifecycle activities to ensure assets reach their expected useful life. Condition is the preferred measurement for planning lifecycle activities to ensure assets reach their expected useful life. Since condition scores are reported using different scales and ranges depending on the asset, ***Table 6*** below shows how each rating was converted to a standardized 5-point condition category so that the condition could be reported consistently across the AM Plan. A continuous improvement item identified in ***Table 32***, is to review existing internal condition assessments and ensure they are revised to report on the same 5-point scale with equivalent descriptions.

Table 5: Conditional Conversion Table

EQUIVALENT CONDITION GRADING CATEGORY	CONDITION DESCRIPTION	% REMAINING SERVICE LIFE	FACILITIES CONDITION INDEX (FCI)	PARKING LOT SURFACE PAVEMENT	PARKING LOT LIGHTING	LINEAR BARRIERS / FENCE/ STORMWATER FACILITIES
1-Very Good	The asset is new, recently rehabilitated, or very well maintained. Preventative maintenance required only.	>79.5%	N/A	N/A	Excellent	N/A
2-Good	The asset is adequate and has slight defects and shows signs of some deterioration that has no significant impact on the asset's usage. Minor/preventative maintenance may be required.	69.5% – 79.4%	< 5%	Good	Good	Good
3-Fair	The asset is sound but has minor defects. Deterioration has some impact on asset usage. Minor to significant maintenance is required.	39.5% - 69.4%	>= 5% to < 10%	Passable	Fair	Fair
4-Poor	Asset has significant defects and deterioration. Deterioration has an impact on asset's usage. Rehabilitation or major maintenance required in the next year.	19.5% -39.4%	>= 10% to <30%	Poor	Poor	Poor
5-Very Poor	Asset has serious defects and deterioration. Asset is not fit for use. Urgent rehabilitation or closure required.	<19.4%	>= 30%	Very Poor	Very Poor	N/A

The following conversion assumptions were made:

- For assets where a condition assessment was not completed, but age information was known, the condition was based on the % of remaining service life.
- For Surface Pavement, Stormwater Facilities, Fencing and Linear Barriers the condition assessment is on a 3-point scale ranging from Good to Poor.
- Surface Pavement Condition was based on subject expert opinion based on the condition descriptions above.

3.4 ASSET CLASS BREAKDOWN

This section outlines the Age Profile, Condition Methodology, Condition Profile, and Performance Issues for each of the asset classes.

The age of an asset is an important consideration in the asset management process as it can be used for planning purposes as typically assets have an ESL where they can be planned for replacement. Some lower cost or lower criticality assets can be planned for renewal based on age as a proxy for condition or until other condition methodologies are established. It should be noted that if an assets' condition is based on age, it is typically considered to be of a lower confidence level.

As previously mentioned, condition refers to the physical state of assets and are a measure of the physical integrity of assets or components and is the preferred measurement for planning lifecycle activities to ensure assets reach their expected useful life. Assets are inspected/assessed at different frequencies and using different methodologies which are noted in this section.

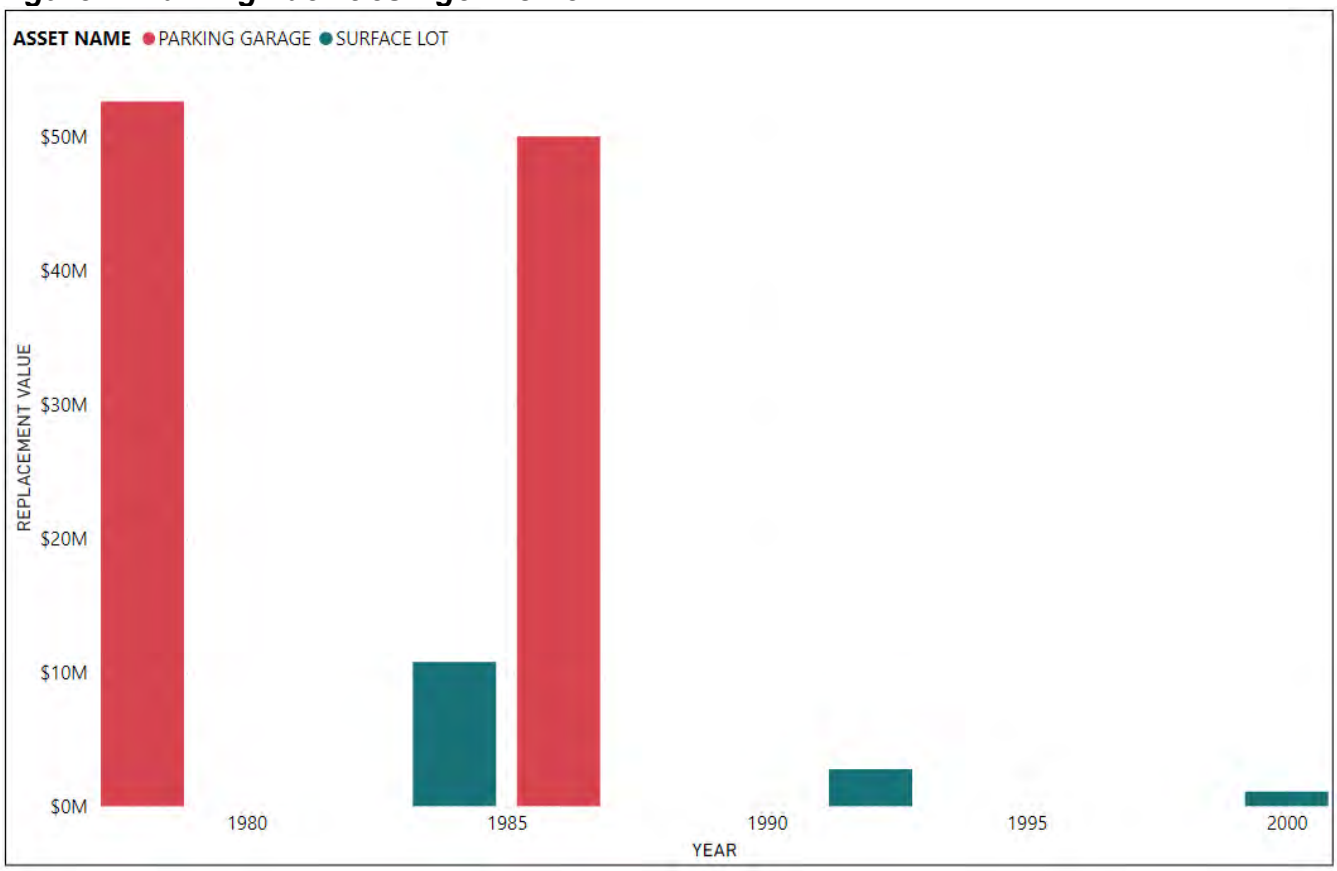
Finally, assets are generally provided to meet design standards where available. However, there are often insufficient resources to address all known deficiencies, and so performance deficiencies inevitably arise which should be noted.

3.4.1 PARKING FACILITIES

AGE PROFILE

The age profile of the parking facilities assets is shown in ***Figure 2***. An analysis of the age profile is provided below.

Figure 2: Parking Facilities Age Profile



Average age data confidence for surface lots is very low as the last major reconstruction and/or original construction year for surface lots is estimated by staff from available records. Most parking lots were built between the late 1960's and early 1980's and are in similar condition. The plan assumes the year of construction to be 1984 where otherwise unknown. Many surface lot pavements are approaching or exceeding the end of their service life and this clustering of construction dates in 1984 will lead to a significant spike in reconstruction (renewal) and resurfacing (maintenance) needs.

HMPS has estimated the service life of the surface lot asphalt pavement structure between full reconstructions (renewal) of the asphalt and granular at 30 years for a large parking lot and 40 years for a small parking lot, based on differing usage patterns. The prescribed treatment to reaching the full-service life would be for asphalt resurfacing (mill and pave), a maintenance

treatment to be done halfway through the estimated service life at 15 years, large and 20 years, small respectively.

The city has two (2) parking garages operated and maintained by HMPS. The estimated service life of a parking garage based on staff expert opinion is 75 years, it should be noted this differs from service life estimated in the Parking Master Plan of 50 years. For this asset management plan a service life of 75 years has been used. The data confidence for age of parking garages is Very High given the limited number of assets and verifiable construction dates.

The 80 Main Street West underground parking garage, Lot 37, was constructed in approximately 1978. The York Street former Eaton's Parkade, Lot 68, was constructed in 1986. This parking garage is one of the properties identified for transaction to the Hamilton Urban Precinct Entertainment Group (HUPEG), for more detail see ***Section 2.8***. Moving forward, this property will likely not be managed by HMPS and replacement may not be required by HMPS. The Parkade has been included in the AM Plan at this time due to uncertainty over timing and final arrangements of this component of the HUPEG agreement.

Both parking structures are nearing the end of their estimated service life and planning should begin for their ultimate replacement.

CONDITION METHODOLOGY

Building Condition Assessments (BCA) are completed on a 5-year cycle by the Facilities & Energy Management department. The BCA identifies necessary major and minor maintenance activities in a 10-year forecast with projected costs, and outputs a detailed report outlining methodology, overall findings, and condition. The condition is reported as a Facilities Condition Index (FCI), which is a ratio of total cost for required repairs, renewal or upgrades to replacement value of building components. The 10-year forecast from the BCAs were incorporated into the lifecycle models in ***Section 8*** indicating facilities maintenance requirements. BCA data is available for the Convention Center parking garage only. The York Parkade is not part of the Energy and Facilities Management portfolio and so as such, it does not have a standardized FCI Rating.

Specialized Engineering reports are commissioned by HMPS in advance of major projects in the parking garages to evaluate the condition of the waterproofing membrane and to provide expert opinion on the structure and any needed repairs or remediation work.

The Surface Lots condition is based on a 2022 HMPS staff visual condition rating using a 3-point scale. Previously condition ratings were from a 2016 consultant report using a 5-point scale. These condition ratings used differing visual assessment descriptions of the scoring criteria.

The condition score output for Surface Lots has been inconsistent over time with various condition scores and rating systems used. A comprehensive asset inspection program for all assets should be developed identifying the frequency of inspection and developing 5-point scales for use during inspection so a condition can be determined. Condition assessment frequency should also be determined for asset categories, so condition is being reviewed and

updated on a regular basis to better identify asset service lives. This is detailed in the Continuous improvement plan in ***Table 32.***

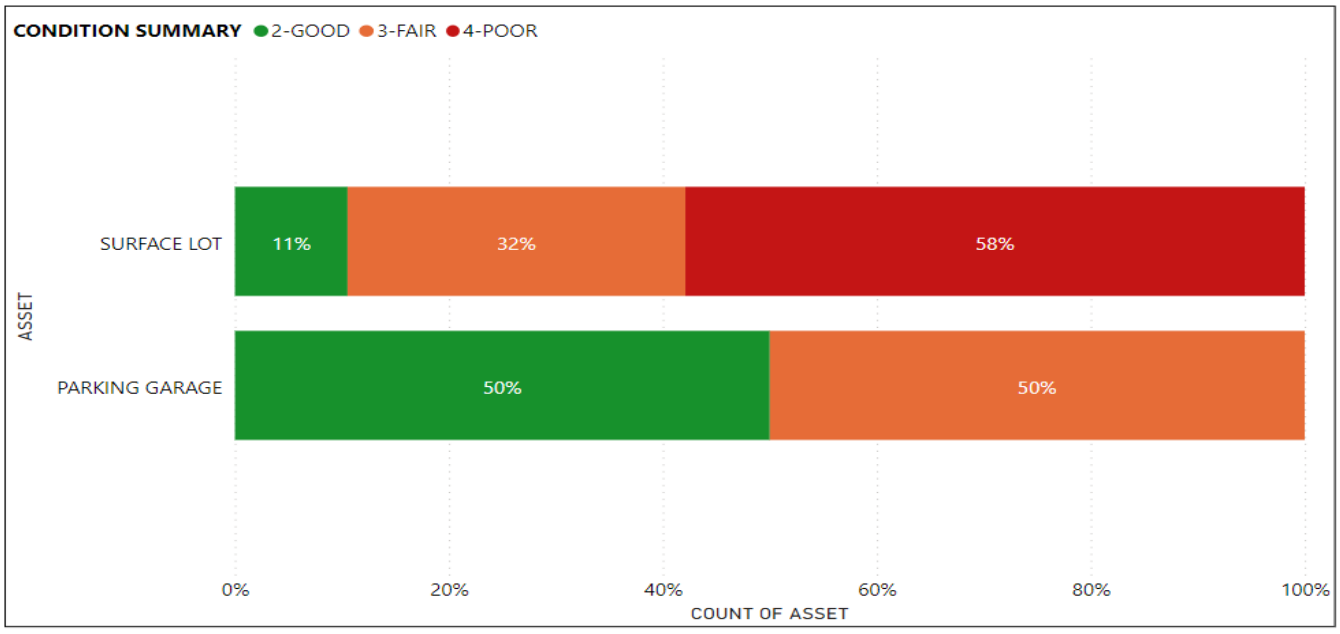
Table 6: Inspection and Condition Information

ASSET	INSPECTION FREQUENCY	LAST INSPECTION	CONDITION SCORE OUTPUT
Surface Lots – Pavement* Includes curbs/interlock Misc. Surfaces	Ad Hoc	2012 2016 2022	3 Point Scale 5 Point Scale 3 Point Scale
Parking Garage(s)	Lot 37 – 5 years Lot 37 - 5 years Lot 68 - Unknown	2015, 2020 2022 Unknown	Engineering Reports on Structure and Waterproofing; Facilities Condition Index (FCI) + staff expert opinion on outstanding work and value of work with adjusted FCI. 2017, 2018 Rehab. Condition based on staff expert opinion.

ASSET CONDITION PROFILE

The condition profile of the City's parking facilities assets is shown in ***Figure 3.*** As mentioned in ***section 3.3***, the original condition grades were converted to a standardized condition category for report consistency.

Figure 3: Parking Facilities Asset Condition



The majority of surface lots are in poor condition (58%), with only 11% of lots rated as Good condition. The condition is based on “each” or count of the lots and is not weighted to the area of pavement. This is not an ideal asset distribution and shows that many lots are in need of renewal (full reconstruction) to improve their condition and will require significant funding to improve the overall condition of surface lots. It should be noted that some surface lots are on leased land and consideration must be given to asset renewal in conjunction with the length and terms of the lease to optimize renewal investments and therefore condition. Lot 40, City Hall, is managed as a surface lot by HMPS. Corporate Facilities and Energy Management Division has responsibility for waterproofing the roof of the maintenance garage that is underneath areas of the parking lot at the rear of the lot that fronts onto Hunter Street West.

The parking garages are evenly split between good and fair condition. The Convention Center garage is in fair condition based on a revised Facility Condition Index. A BCA was completed in late 2022 which drastically revised the previous FCI from the 2017 BCA. The 2017 BCA identified an FCI of 26.31% (Approx. $13 Million in needs) which based on ***Table 6*** outputs a condition score of 4-Poor. The 2022 BCA identified an FCI of 1% ($331,000 in needs) which based on ***Table 6*** outputs a condition score of 2-Good. Based on this drastic change in outstanding needs, a review of planned maintenance work based on the ongoing rehabilitation was added to the 2022 BCA identified maintenance needs which then totaled Approx. $2.6 Million. Using the 2022 replacement value of the parking garage ($52.6M) this puts the FCI at approximately 5%. Based on discussion with Subject Matter Expert parking staff and a review of the ***Table 6*** conversion table they felt that the condition of the parking garage is best described as 3-Fair.

The condition of the Parkade is based on Subject Matter Expert Opinion from HMPS as this facility is not included in the portfolio overseen by Corporate Facilities & Energy Management and as such replacement value and FCI are not readily available.

ASSET USAGE AND PERFORMANCE

Assets are generally provided to meet design standards where available. However, there are often insufficient resources to address all known deficiencies.

The largest performance issues with parking facilities involve the underground parking garage and surface lot pavement condition. The known service performance deficiencies in ***Table 8*** were identified using staff input.

Table 7: Known Service Perform Deficiencies

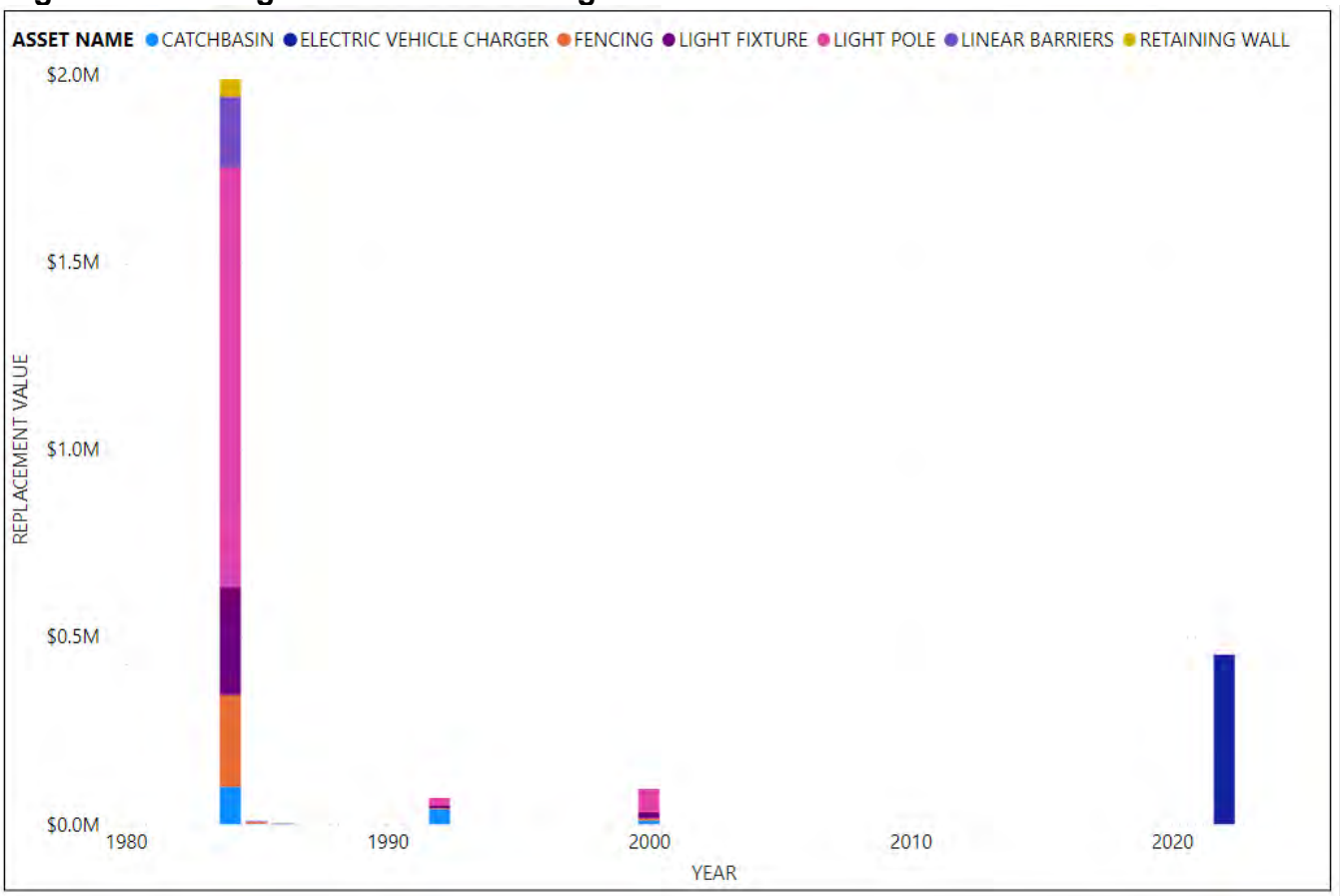
ASSET	LOCATION	SERVICE DEFICIENCY	DESCRIPTION OF DEFICIENCY
PARKING FACILITIES	**Parking Garage Lot 37**	Waterproofing at end of life	Waterproofing membrane within the garage has become brittle with extensive areas of cracking and delamination. Project underway to replace garage waterproofing. Rooftop waterproofing (Summers Lane and the Open Space) has begun to break down causing leaks into the parking garage structure and parking offices. This waterproofing is part of the Corporate Facilities and Energy Management Division portfolio, not HMPS, however the leaks are causing damage within the areas operated by HMPS.
		Structural concrete degradation	Concrete slab, soffits and walls have numerous localized areas of deterioration including loose concrete and rusting rebar.
		Garage drainage system in poor repair	Storm drains and associated pipes are in overall poor condition with extensive rusting and leaks. In 2022 a multi-year rehabilitation project began to address the structure, waterproofing and drainage system.
		Doors and finishing's in poor repair	Doors and finishing's are aged and lack accessibility and security features.
	Surface Lot Asphalt	Poor Condition	Surface Lot Pavement Condition identified as Poor at 33 of 57 locations from 2022 assessment.
	Surface Lot	Poor Condition	Several Surface Lots are on Leased Land which impacts long term asset renewal decisions and investments

3.4.2 PARKING SITE WORKS

AGE PROFILE

The age profile of the parking site works assets are shown in ***Figure 4***. An analysis of the age profile is provided below. For parking site works assets, the data confidence for age is typically Low because site works asset ages are derived from the Parking Facilities ages which are generally assumed.

Figure 4 : Parking Site Works Asset Age Profile



The ages of many of the Site Works assets are unknown. The age of many of the surface parking lots (facilities) have been assumed to be 1984 unless otherwise known and a similar assumption has been made for the age of site works asset groupings, which include surface lot lighting, linear barriers, stormwater facilities and retaining walls. This results in a low data confidence for Site Works age. This also results in a large spike in asset acquisitions in this particular year. Many of these assets are beyond their ESL and will contribute to the renewal backlog in the Lifecycle Model in ***Section 8***.

It is important to note that linear barriers are not replaced like-for-like and will be replaced with concrete curbing during renewal as the use of steel beam guardrail in that manner is an older practice.
Retaining walls for surface lots should be considered as part of retaining wall inventory condition assessments completed by the Engineering Services division in Public Works and as outlined in the Ontario Structure Inspection Manual (OSIM). This has been included as a continuous improvement item for investigation in ***Table 32.***

Finally, the quantity and age of Electric Vehicle (EV) Charges have a Very High data confidence as these assets are all recently installed as part of a major project in 2022 and are also easily verified in the field.

CONDITION METHODOLOGY

Condition for assets was determined from available inspection data or parking staff expert opinion where inspection data was not available.

The condition of stormwater facilities is limited to a visual inspection of the catch basin surface condition. A condition assessment of the below grade concrete structure and related storm water connection pipes has not been completed. The condition of Surface lot lighting is limited to a review of the above ground poles and fixtures only. The assessment did not review wiring or condition of the breaker/service entrance panels.

A comprehensive asset inspection program for all assets should be developed identifying the frequency of inspection and developing 5-point scales for use during inspection so a condition can be determined. Condition assessment frequency should also be determined for asset categories, so condition is being reviewed and updated on a regular basis to better identify asset service lives. This is detailed in the Continuous improvement plan in ***Table 32***.

Table 8: Inspection and Condition Information

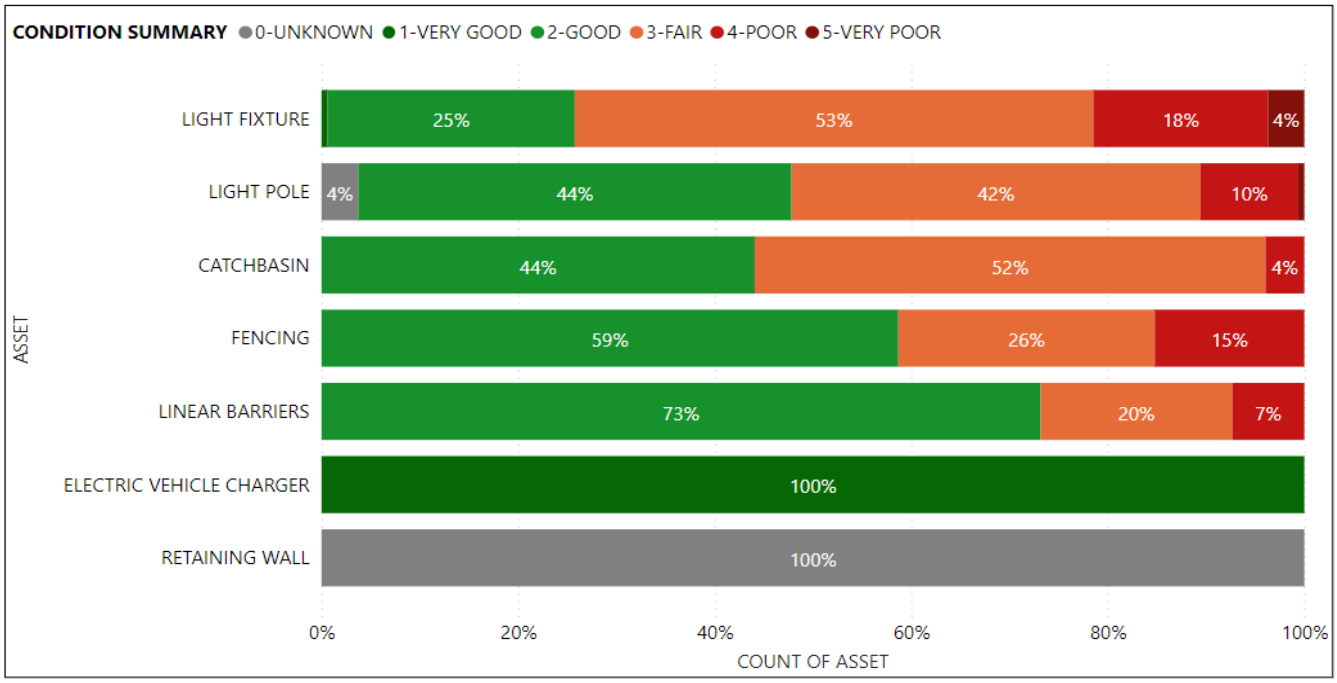
ASSET	INSPECTION FREQUENCY	LAST INSPECTION	CONDITION SCORE OUTPUT
Surface Lot Lighting (poles, luminaires, wiring and controls)	Ad Hoc, above ground Poles and Fixtures only. No wiring or service condition available	2012 2022	3 Point Scale Poles – 4 Point Scale Fixtures – 5 Point Scale Wiring / Supply Points – No Condition
Linear Barriers	Ad Hoc	2012	3 Point Scale
Privacy Fencing	Ad Hoc	Ad Hoc	No Condition Data
Stormwater Facilities	Ad Hoc	2012	3 Point Scale for CBMH No condition on sewer lateral

ASSET	INSPECTION FREQUENCY	LAST INSPECTION	CONDITION SCORE OUTPUT
Retaining Walls	Currently Ad Hoc; should be investigated as per Ontario Structural Inspection Manual (OSIM)	Unknown	N/A, assumed based on age
Electric Vehicle Chargers	Ad Hoc	New Asset 2022	N/A, assumed based on age

ASSET CONDITION PROFILE

The condition profile of the City's assets is shown in ***Figure 5***. As mentioned in ***section 3.3***, the original condition grades were converted to a standardized condition category for report consistency.

Figure 5 : Parking Site Works Asset Condition Distribution



The condition of the overall surface lot lighting system is based on staff subject matter expert opinion and is considered to be Poor. Although the poles and luminaires have had a recent inspection and condition rating which are detailed in the Figure above, this inspection did not review the wiring or electrical power supplies to the lights and the subject matter expert opinion is that the overall lighting system is in Poor Condition which is not reflected in the individual asset breakdown shown in the figure above.

The condition of retaining walls is unknown and no physical attribute data is available. Data collection is required to determine the appropriate inspection requirements and reporting requirements as outlined in the Ontario Structure Inspection Manual (OSIM) which outlines that all retaining walls shall be inspected every two years.

A comprehensive asset inspection program for all assets should be developed identifying the frequency of inspection and developing 5-point scales for use during inspection so a condition can be determined. Condition assessment frequency should also be determined for asset categories, so condition is being reviewed and updated on a regular basis to better identify asset service lives. This is detailed in the Continuous improvement plan in **Table 32**.

ASSET USAGE & PERFORMANCE

Assets are generally provided to meet design standards where available. However, there are often insufficient resources to address all known deficiencies.

The largest performance issues with parking site services involve overall age and condition of the assets. The known service performance deficiencies as shown in **Table 10** were identified using staff input.

Table 9 : Known Service Performance Deficiencies

ASSET	LOCATION	SERVICE DEFICIENCY	DESCRIPTION OF DEFICIENCY
SITE WORKS	**Surface Lot - Lighting**	Poor illumination (requiring installation of additional fixtures and/or poles)	39 Surface Lots
		Existing Lighting in poor condition (requiring full pole replacements and other repairs)	12 Surface Lots
		Existing Lighting requiring localized repair (new fixtures, handhole covers or painting)	9 Surface Lots
		Underground wiring/conduit and electrical service entrances panels	The 2022 Lighting assessment did not include the underground wiring or electrical service entrances which were not inspected or assessed and are generally believed to be at end of life.

ASSET	LOCATION	SERVICE DEFICIENCY	DESCRIPTION OF DEFICIENCY
	Electric Vehicle Chargers	Out of Service	Frequent Vandalism / theft of cable
	Linear Barriers	Condition	Poor Condition due to deterioration and vehicle impacts. Replaced with Curbs when lots are reconstructed.
	Stormwater Facilities	Condition	Based on age, most surface lots have exceeded the lifespan of underground infrastructure.

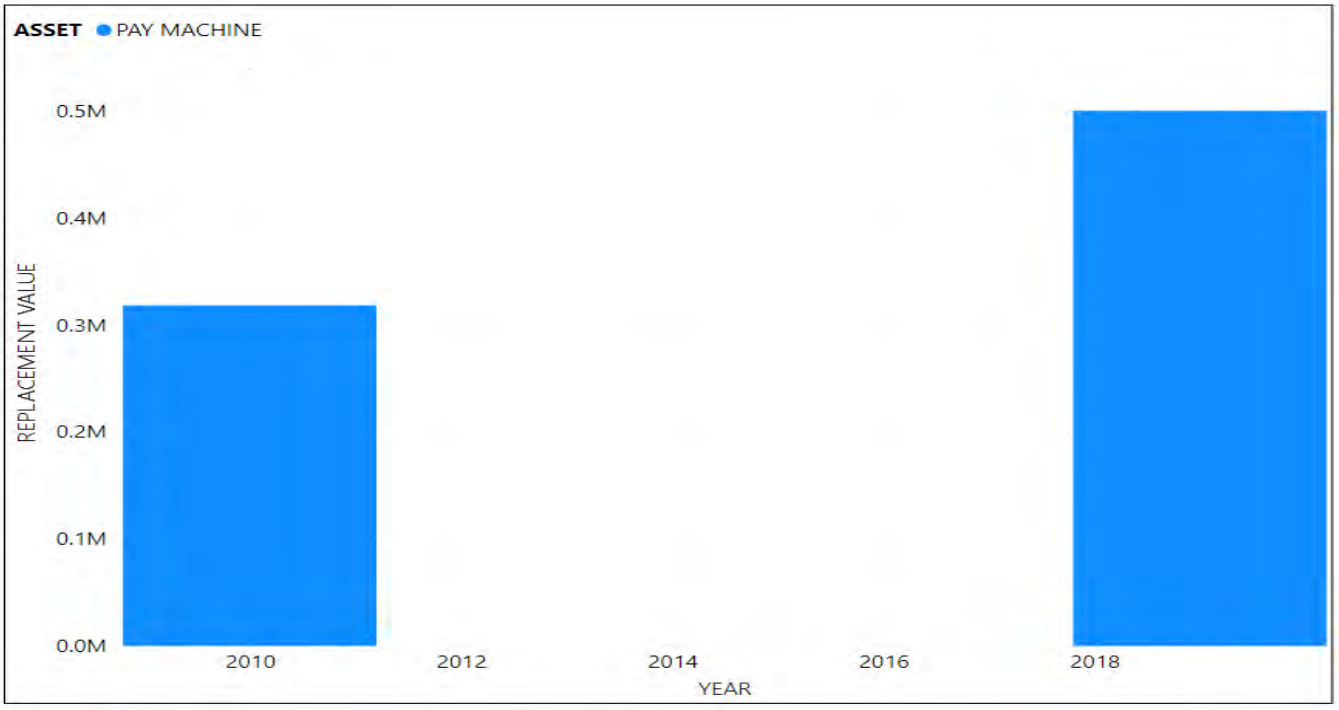
3.4.3 METERS AND SIGNS

The asset profile information for Meters and Signs asset classes is included in each section below and includes an age profile, the condition methodology used, the condition profile, and asset usage and performance.

AGE PROFILE

The age profile of the meters and signs assets is shown in **Figure 6**. An analysis of the age profile is provided below. For meters and signs assets, the data confidence for age is typically Low because age is generally unknown or assumed.

Figure 6: Meters and Signs Age Profile



The age profile distribution of Pay Machines was determined in consultation with HMPS based on the manufacturer and years purchased from those manufacturers. The current pay machine inventory database does not capture the year of manufacture for the device. The confidence of age data for Pay Machines is medium based on this.

No data is available for the age of parking meters. Based on expert discussions with HMPS staff, Parking Meter metal casings generally have an estimated service life of 25 years and the electronic mechanism within the casing can be replaced separately. The mechanism has an estimated service life of 10 years. Generally, most meters are then believed to be less than 25 years of age. The confidence of age data for Pay Machines is medium based on the above.

No age data is available for non-regulatory signs. Non-regulatory signs are typically removed and replaced often; age data often is typically not a reliable indicator of condition. Signs can deteriorate based on many factors including weather, vehicular accidents, graffiti, etc. They are also typically a low value asset that can be replaced at a low cost with minimal impact.

No data is available for parking control regulatory signs.

CONDITION METHODOLOGY

As shown in ***Table 11*** below, inspections are completed for meters and signs on an ad-hoc basis and condition is largely based on age or subject matter expert opinion.

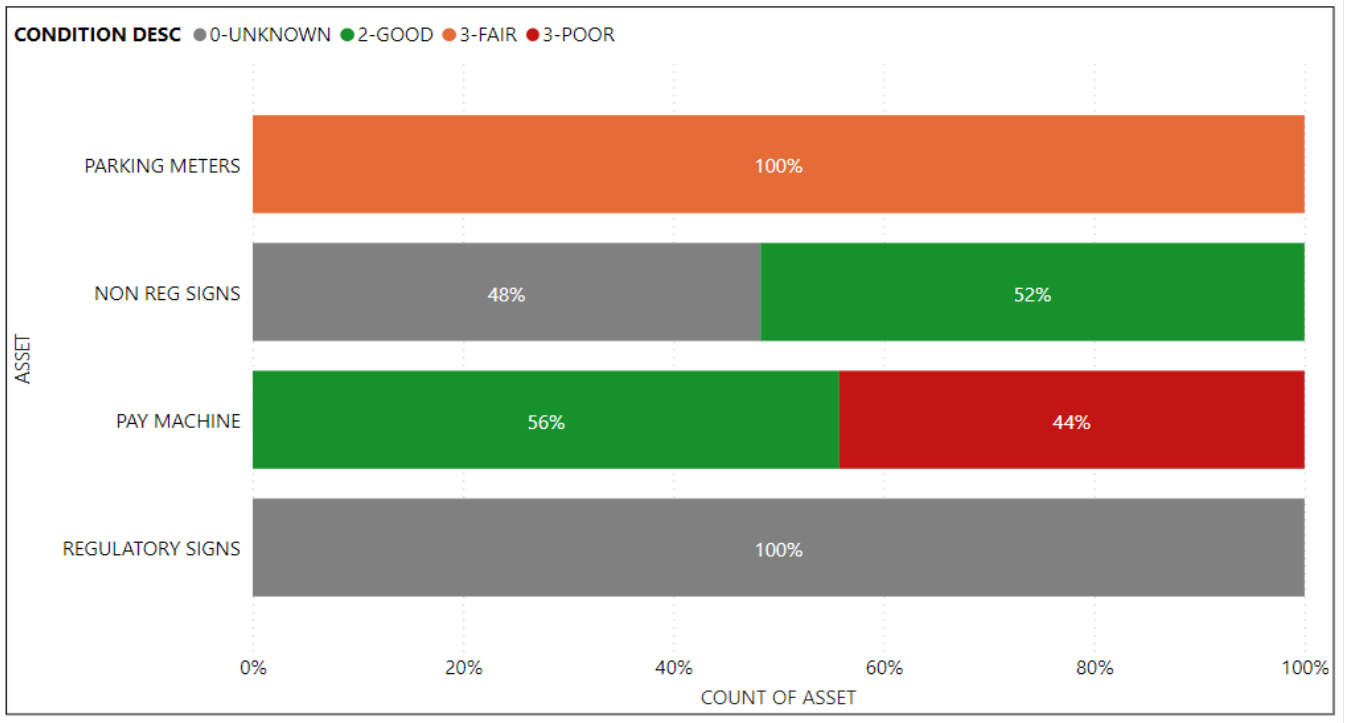
Table 10: Inspection and Condition Information

ASSET	INSPECTION FREQUENCY	LAST INSPECTION	CONDITION SCORE OUTPUT
Pay Machines	Ad Hoc	N/A	N/A, assumed based on age
Parking Meters	Ad Hoc Visual on Coin Pickup	N/A	N/A, not permitted to deteriorate below 3 - FAIR
Non-Regulatory Signs	Ad Hoc	N/A	N/A, assumed based on asset owner opinion
Regulatory Parking Control Signs	Ad Hoc - MMS 16 Months	N/A	N/A, assumed based on asset owner opinion

ASSET CONDITION PROFILE

The condition profile of the City's assets is shown in ***Figure 7***. As mentioned in section 3.3, the original condition grades were converted to a standardized condition category for report consistency.

Figure 7: Facilities Asset Condition Distribution



Parking meter condition has been assumed to be in Fair condition based on subject matter expert opinion. These assets are patrolled regularly as part of coin collection activities and non-functioning parking meters are generally repaired within 24 hours when reported. In addition, the internal mechanisms can be replaced separately from the external metal housing and mechanisms. The data confidence for condition is evaluated as low as it is based on assumption and subject matter expert opinion.

Non-Regulatory signs are largely replaced due to rate changes in parking and are typically replaced before the condition deteriorates significantly and the asset reaches the estimated service life.

Parking Regulatory signs do not have condition or inventory data. As part of a larger program this gap analysis in meeting Minimum Maintenance Standards has been identified and previously reported in Council Report PW18096(a). Work is ongoing between Transportation Planning and Parking Division (TPP) in the Planning & Economic Development Department and the Transportation Division in Public Works to determine how the levels of service will be met which should generate an inventory and condition as part of this work for future asset management plans. This item is identified in ***Table 32*** as a continuous improvement item.

ASSET USAGE & PERFORMANCE

Assets are generally provided to meet design standards where available. However, there are often insufficient resources to address all known deficiencies.

The largest performance issues with meters and signs involve machines and meters malfunctioning. The known service performance deficiencies in ***Table 12*** were identified using staff input.

Table 11: Known Service Performance Deficiencies

ASSET	LOCATION	SERVICE DEFICIENCY	DESCRIPTION OF DEFICIENCY
METERS AND SIGNS	Various	Outage, Vandalism	Pay Machines not working
	Various	Outage, Vandalism	Parking Meters not working
	Various	Poor condition signs, missing signs or improperly spaced signs	Regulatory Signs in poor condition requiring inspection and/or replacement or new installations to meet spacing requirements.

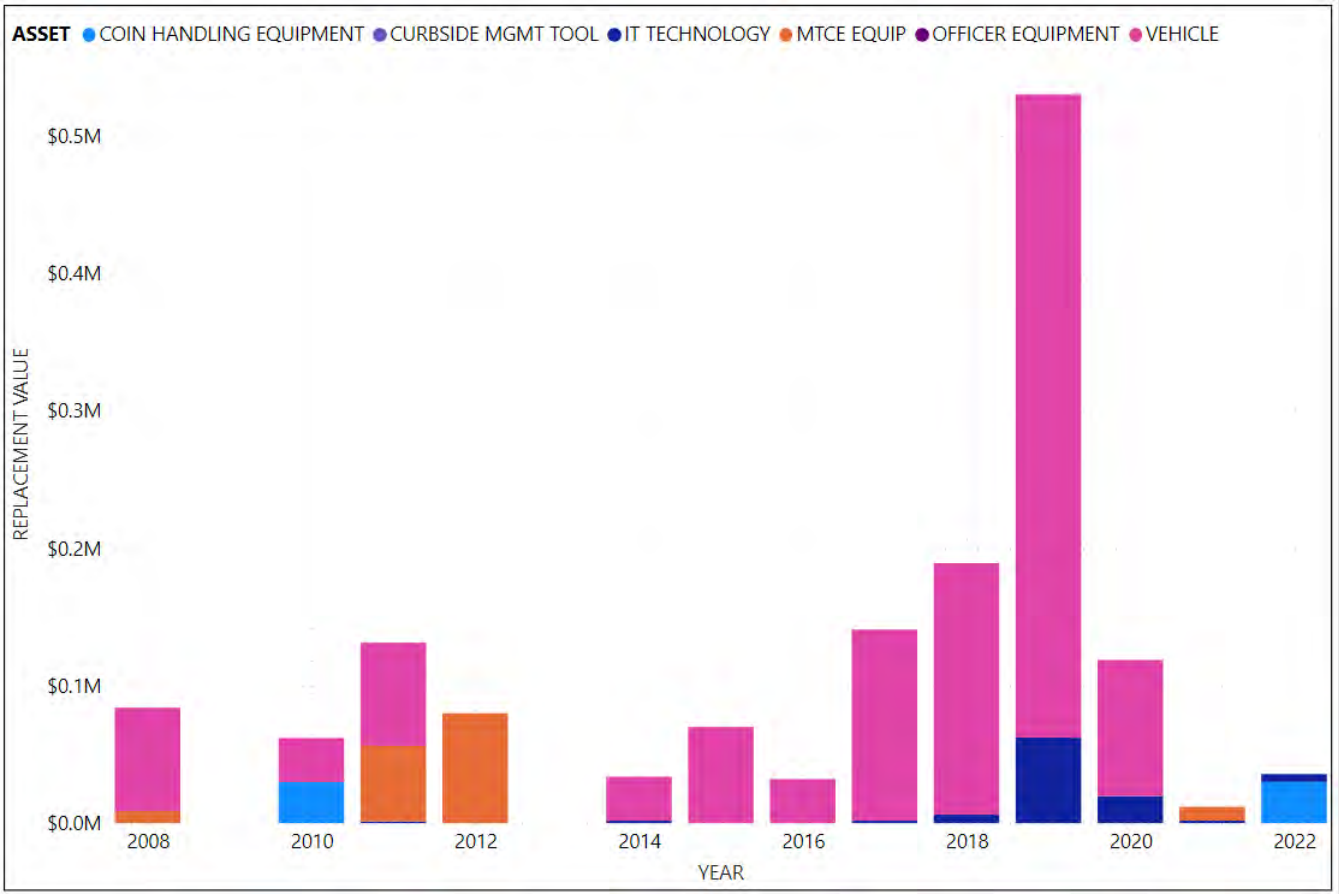
3.4.4 ADMINISTRATIVE ASSETS

The asset profile information for administrative asset classes is included in each section below and includes an age profile, the condition methodology used, the condition profile, and asset usage and performance. At this time, administration assets such as facilities and vehicles have been included in the AM Plan in a very limited capacity to ensure the replacement value has been encompassed since these assets are assisting in the delivery of the parking service. More details related to these assets will be included in future iterations of the plan.

AGE PROFILE

The age profile of the administrative assets is shown in ***Figure 8.*** For administrative assets, the data confidence for age is typically high because age is generally known for administrative assets with the exception of Officer Equipment (uniforms and technology), which are replaced as needed.

Figure 8 : Administrative Asset Age Profile



Maintenance Equipment and the coin handling equipment generally exceed their estimated service life.

CONDITION METHODOLOGY

As shown in ***Table 13*** below, the condition for Administrative Assets is based on age as there are no regular condition assessments completed on these assets which reflects a data confidence of low for these assets.

Table 12 : Inspection and Condition Information

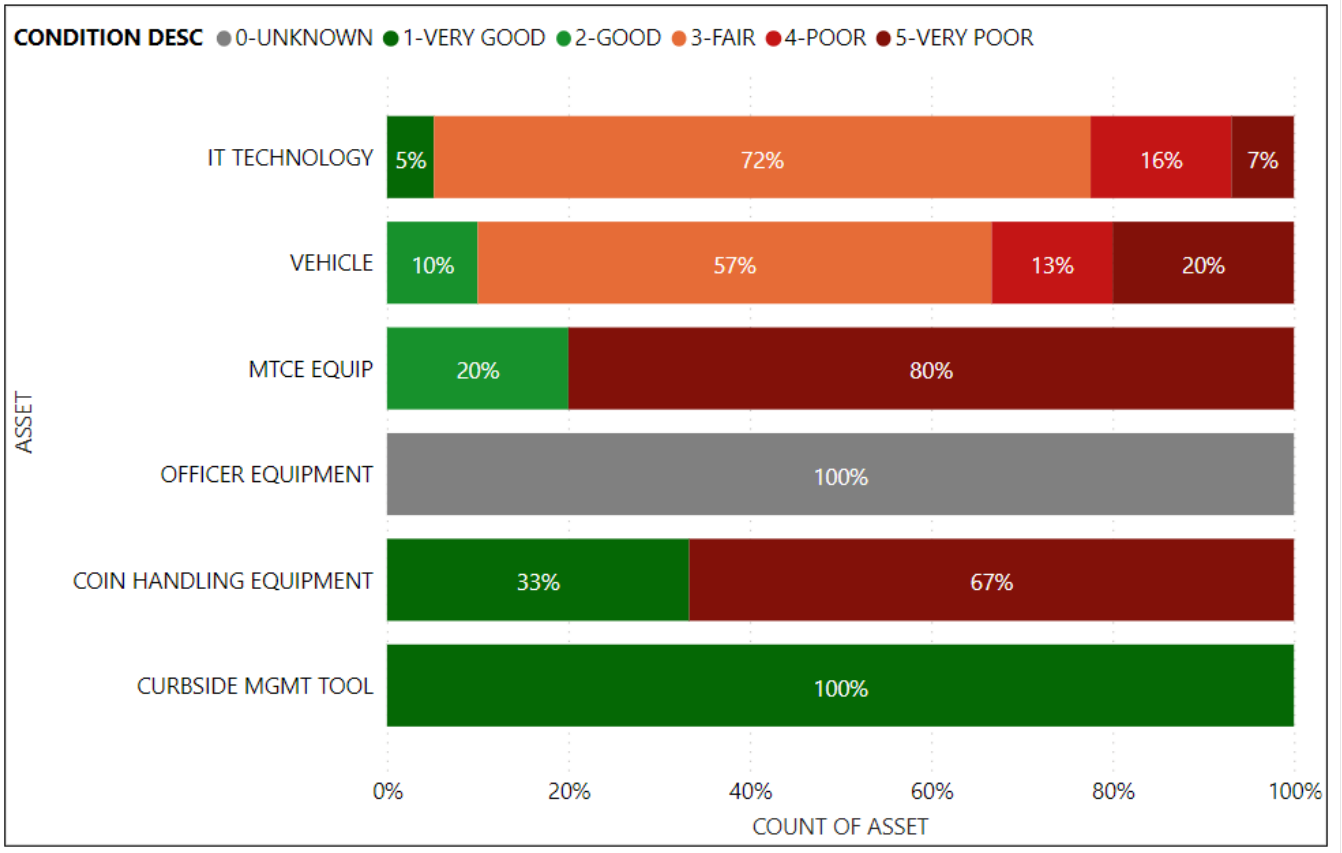
ASSET	INSPECTION FREQUENCY	LAST INSPECTION	CONDITION SCORE OUTPUT
Vehicles	As Per Fleet	N/A	N/A, assumed based on age
Maintenance Equipment	As Per Fleet	N/A	N/A, assumed based on age
Officer Equipment	Ad Hoc	N/A	Replaced as Needed, not allowed to deteriorate. Condition would not drop below 3 - FAIR

ASSET	INSPECTION FREQUENCY	LAST INSPECTION	CONDITION SCORE OUTPUT
IT Technology	None	N/A	Based on Age
Coin Handling Equipment	Ad Hoc	N/A	Based on Age

ASSET CONDITION PROFILE

The condition profile of the HMPS Administrative assets is shown in ***Figure 9***. As mentioned in ***section 3.3***, the original condition grades were converted to a standardized condition category for report consistency.

Figure 9 : Administrative Asset Condition Distribution



The condition of both maintenance equipment and coin handling equipment is generally very poor. There is no formal condition assessment provided for this equipment, but it exceeds the estimated service life and planning for replacement should be considered.

Officer Equipment condition is not tracked; however, this equipment is replaced as needed and is maintained in operating condition and generally not permitted to deteriorate below Fair Condition based on expert staff opinion.

ASSET USAGE & PERFORMANCE

Assets are generally provided to meet design standards where available. However, there are often insufficient resources to address all known deficiencies.

The largest performance issues with administrative assets involve maintenance equipment. The known service performance deficiencies in ***Table 14*** were identified using staff input.

Table 13: Known Service Performance Deficiencies

ASSET	LOCATION	SERVICE DEFICIENCY	DESCRIPTION OF DEFICIENCY
ADMINISTRATIVE ASSETS	**Fleet**	Sweeper nearing end of life. Replacement planned in 2024	Reduced operating efficiency and increased repair costs

4. MUNICIPALLY DEFINED CURRENT LEVELS OF SERVICE

Levels of service are measures of what the City provides to its customers, residents, and visitors, and are best described as the link between providing the outcomes the community desires, and the way that the City provides those services.

O. Reg 588/17 does not define levels of service for HPS assets and therefore the City has developed municipally defined levels of service. Levels of service are defined in three ways, customer values, customer levels of service and technical levels of service which are outlined in this section. An explanation for how these were developed is provided in ***Section 6.5 of the AMP Overview.***

4.1 SURVEY METHODOLOGY

To develop customer values and customer levels of service, a Customer Engagement Survey entitled *Let's Connect, Hamilton – City Services & Assets Review: Hamilton Parking Services* was released February 13, 2023 on the Engage Hamilton platform and closed on March 20, 2023. The survey results can be found in ***Appendix "A***".

The survey received submissions from 132 respondents and contained twenty (20) questions related to the Hamilton Municipal Parking Services service delivery. Based on the number of responses, a sample size of 132 correlates to a 95% confidence level with an 8.6% margin of error based on an approximate population size of 570,000. This was determined to be an acceptable confidence level to use to develop the customer values and customer performance measures for this AMP. It is important to note that respondents were allowed to opt out of questions, and so different questions may have different confidence levels depending on the opt out rate for that question.

While these surveys were used to establish customer values and customer performance measures, it is important to note that there were also limitations to the survey methodology which may reduce the confidence level in the survey data. The survey was only released using an online platform and did not include telephone surveys and consequently there is no way to confirm the identity information provided in the survey. In addition, the survey did not control for IP addresses, and therefore it is possible that respondents could complete the survey more than once and skew the survey results.

However, when reviewing the demographic responses for the survey, there was no clear evidence that the survey results had been skewed. When comparing the age and postal code demographics from the survey to the age demographics of the City there appears to be a slight over-representation of ages 55 and up. For postal code demographics for the City there does not seem to be a significant over-representation of postal code demographics within the survey. In addition, the responses were distributed across the City with responses from most communities as well as from a variety of self-identifications. Even when assessing the spikes in respondents per day, the results were distributed across different ages, postal codes, and self-identifiers. Therefore, although there are limitations to the survey, it does appear that these

results can be used to make some conclusions about the feelings of customers on the services HMPS provides.

The future intent is to release this survey on a regular basis to measure the trends in customer satisfaction and ensure that the City is providing the agreed level of service as well as to improve the marketing strategy by incorporating telephone surveys and IP controls to improve confidence levels in the survey responses. This has been noted in **Table 32** in the continuous improvement section.

4.2 CUSTOMER VALUES

Customer values are what the customer can expect from their tax dollar in "customer speak" which outlines what is important to the customer, whether they see value in the service, and the expected trend based on the 10-year budget. These values are used to develop the level of service statements.

Customer Values indicate:

- what aspects of the service is important to the customer;
- whether they see value in what is currently provided; and,
- the likely trend over time based on the current budget provision.

As previously mentioned, the customer values below were determined using the results from the *Let's Connect, Hamilton – City Services & Assets Review: Hamilton Parking Service* survey.

Table 14: Customer Values

SERVICE OBJECTIVE:			
CUSTOMER VALUES	**CUSTOMER SATISFACTION MEASURE**	**CURRENT FEEDBACK**	**EXPECTED TREND BASED ON PLANNED BUDGET (10-YEAR HORIZON)**
Car Park Lighting, On-Street Parking and Car Park Accessibility, are very important services.	2023 HMPS City Services & Assets Review Survey	Based on survey responses, on average, these are ***very important*** services for HMPS to be responsible for providing.	Decrease

SERVICE OBJECTIVE:			
CUSTOMER VALUES	**CUSTOMER SATISFACTION MEASURE**	**CURRENT FEEDBACK**	**EXPECTED TREND BASED ON PLANNED BUDGET (10-YEAR HORIZON)**
Car Park Condition and Appearance, Car Park Locations, Accessible Parking Permit Exemptions, Municipal Car Parks and Parking Structures, Parking Penalty Dispute Options, Parking Meters and Pay Machines, Temporary Regulation Enforcement Request, Parking Penalty Payment Options are important services.		Survey respondents on average feel these are **important** services for HMPS to be responsible for providing.	Decrease
Residential Boulevard Parking, Residential Driveway Access Permit, "Passport Parking" Mobile APP, Special Event Parking Permit for Residents are important services.		Based on survey respondents there are ***differing opinions*** on whether it is ***important*** for HMPS to be responsible for providing these services, but on average, these are considered important services.	Maintain
More stormwater runoff controls and more parking near transit are an important potential service.		Survey respondents on average feel these are ***important potential services*** for HMPS to be providing.	Decrease

SERVICE OBJECTIVE:			
CUSTOMER VALUES	**CUSTOMER SATISFACTION MEASURE**	**CURRENT FEEDBACK**	**EXPECTED TREND BASED ON PLANNED BUDGET (10-YEAR HORIZON)**
More secure storage facilities and more bike racks and more electric vehicle charging stations are fairly important potential services, but customers are divided.		Based on survey respondents, there are ***differing opinions*** on these ***potential services*** but on average they are rated as ***fairly important.***	Decrease
Increasing fees for environmentally sustainable changes, increasing monthly parking fees to prioritize transit and time of use pricing are not that important potential services but customers are divided.		Based on survey respondents there are ***differing opinions*** on these ***potential services*** but on average they are rated as ***not that important.***	Maintain
Surface lot condition impacts how well it meets needs of customers.		Survey respondents, on average who rate the ***condition*** of surface lots as ***average or below*** indicate that parking lots in those conditions ***only meet some of their needs.*** The lower the condition score the less likely the surface lot meets their needs.	Decrease

SERVICE OBJECTIVE:			
CUSTOMER VALUES	**CUSTOMER SATISFACTION MEASURE**	**CURRENT FEEDBACK**	**EXPECTED TREND BASED ON PLANNED BUDGET (10-YEAR HORIZON)**
Current fees are reasonable for the service level provided, customers, based on average, generally do not want increases to improve services and want to maintain rates.		Survey respondents feel on average, HMPS should ***minimize service cuts and maintain rates.***	Slight Decrease

4.3 CUSTOMER LEVELS OF SERVICE

Ultimately customer performance measures are the measures that the City will use to assess whether it is delivering the level of service the customer's desire. Customer level of service measurements relate to how the customer feels about the City's HMPS in terms of their quality, reliability, accessibility, responsiveness, sustainability and, over course, their cost. The City will continue to measure these customer levels of service to ensure a clear understanding of how the customers feel about the services and the value for their tax dollars.

The Customer Levels of Service are considered in terms of:

Condition	How good is the service? What is the condition or quality of the service?
Function	Is it suitable for its intended purpose? Is it the right service?
Capacity/Use	Is the service over or under used? Do we need more or less of these assets?

In ***Table 16*** under each of the service measure types (Condition, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

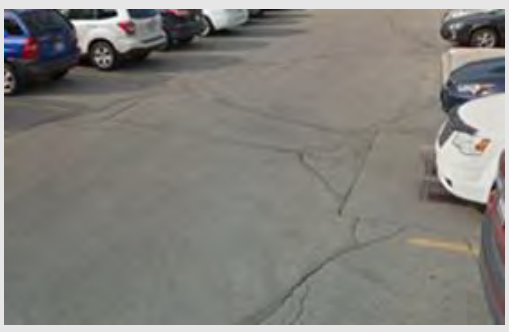
Table 15: Customer Levels of Service

TYPE OF MEASURE	LEVEL OF SERVICE STATEMENT	SOURCE	PERFORMANCE MEASURE	CURRENT PERFORMANCE	EXPECTED TREND BASED ON PLANNED BUDGET
Quality / Condition	Provide efficient HMPS services	2023 HMPS City Services & Assets Review Survey	Average survey respondent opinion on how HMPS has performed overall in the last 24 months across all service areas.	Average	Maintain
			Confidence levels	11% at 95% confidence level	
			Average survey respondent opinion on whether HMPS services felt comfortable and safe when being accessed.	Neither Comfortable nor Uncomfortable	Maintain
			Confidence levels	11% at 95% confidence level	
	Be fiscally responsible when delivering infrastructure and services to the Community	2023 HMPS City Services & Assets Review Survey	Average survey respondent opinion on whether HMPS is providing good value for money when providing infrastructure and services.	Average	Slight Decrease
			Confidence levels	11% at 95% confidence level	
Function	Provide services that meet needs	2023 HMPS City Services & Assets Review Survey	Average survey respondent opinion on if HMPS is meeting service needs overall	Meets Some	Slight Decrease
			Confidence levels	11% at 95% confidence level	

TYPE OF MEASURE	LEVEL OF SERVICE STATEMENT	SOURCE	PERFORMANCE MEASURE	CURRENT PERFORMANCE	EXPECTED TREND BASED ON PLANNED BUDGET
Capacity	Ensure HMPS services are accessible when needed	2023 HMPS City Services & Assets Review Survey	Average survey respondent opinion on if HMPS is providing access to parking across various communities and On-Street parking across the City.	Neither Satisfied nor Dissatisfied	Decrease
			Confidence levels	11% at 95% confidence level	

Table 17 below shows the comparison between HMPS staff condition ratings of asphalt pavement and customer condition ratings from the survey to see if there is general alignment between how asset condition is evaluated between staff and customers. It is interesting to note that City staff were focused on Asset Condition specifically the pavement when determining condition rating. Customers from their written responses are considering all of the assets shown in the photographs and lot configuration. It is also interesting to note than when customers responded to the follow up Question "Please consider if this parking lot would meet your needs" the response seemed to be based on the overall functionality of the lot and related features and attributes such as trees, walkways, accessibility of parking spots and not just on how the condition of the pavement asset might affect useability. Generally, it appears that HMPS staff and customers are generally aligned in condition rating Very Good to Poor and that even lots in Poor and Very Poor condition as rated by customers still meet some of their needs.

Table 16 : Comparison of Customer Ratings to HMPS Condition Ratings

HMPS ASPHALT CONDITION RATING	PHOTO USED IN SURVEY*	AVERAGE CUSTOMER RESPONSE TO "PLEASE RATE THE CONDITION OF THE PARKING LOT AND SPACES""**	AVERAGE CUSTOMER RESPONSE TO "PLEASE CONSIDER IF THIS PARKING LOT WOULD MEET YOUR NEEDS"
1-Very Good		**1-Very Good** (Very Good = 4.53, standard deviation 0.75)	Meets (3.34, standard deviation 1.03)
2-Good		**3–Fair** (Average = 3.06, standard deviation 0.99)	Meets Some (2.43, standard deviation 0.90)
3-Fair		**3-Fair** (Average = 2.74, standard deviation 0.83)	Meets Some (2.33, standard deviation 0.78)
4-Poor		**4-Poor** (Poor = 1.99, standard deviation 0.90)	Meets Some (1.94, standard deviation 0.80)
5-Very Poor		**4-Poor** (Poor = 2.05, standard deviation 0.78)	Meets Some (1.93, standard deviation 0.66)

Note: * Photos used in Survey were not all from HMPS lots
** Response scales used for survey were reversed from CAM asset condition scales, in the survey was 5-Very Good and 1-Very Poor.

4.4 CUSTOMER VALUES AND LEVELS OF SERVICE ALIGNMENT

The three (3) indices calculated to assess how customer expectations for a service are aligning with the perceived performance for HMPS are listed below in ***Table 18***. These indices are explained and analyzed in detail in the sections below and will be included for all assets (when available) in the overall measures in the AM Plan Overview.

Table 17 : Customer Indices

CUSTOMER INDICES	AVERAGE RESULT	CONFIDENCE LEVEL
Service Importance Versus Performance Net Differential	-19	10% at 95% Confidence Level
Net Promoter Score (%)	-57%	TBD
Service Rates Versus Value for Money Net Differential	-1	TBD

SERVICE IMPORTANCE VERSUS PERFORMANCE INDICE

The Service Importance versus Performance indices is used to determine if a service's importance correlates with the perceived performance. Service areas where the average importance rating exceeds the average performance rating by 20 points is indicative of a mismatch between expectations and service levels, equal to one point on the Likert scale.

Generally, it appears that most responders see a mismatch between importance and performance in infrastructure driven areas such as Car Park Lighting, Car Park Condition and Appearance. There are also mismatches in some service driven areas such as On-Street Parking, Temporary Regulation Enforcement Requests, Residential Boulevard Parking and Parking Penalty Dispute Options. To reduce the net differential, HMPS would have to increase their performance by improving the responses given by respondents on the Likert Scale, which they would accomplish by altering their Technical Levels of Service. If HMPS was looking for areas to improve these would be the key services to investigate further. However, whether the customer is willing to pay for this increase in service is determined by the Service Rates Versus Value for Money Net Differential which is explained in detail in the section below.

Although there were percentages of respondents who opted out of the question, there is still a significant enough sample size to have a degree of confidence in these results.

Figure 10:Performance Versus Importance Index Score

Service Area	Importance (index score)	Performance (index score)	Net Differential	Opt Out %
Average	**76**	**57**	**-19**	**29.8**
Temporary Regulation Enforcement Request	73	39	-33	58.0
Residential Boulevard Parking	75	47	-28	39.0
Car Park Lighting	86	61	-25	15.2
On Street Parking	81	57	-24	4.2
Parking Penalty Dispute Options	75	50	-24	36.7
Car Park Condition and Appearance	80	59	-21	10.6
Accessible Parking Permit Exemptions	79	59	-20	42.8
Car Park Accessibility	81	61	-20	20.1
Residential Driveway Access Permit	72	51	-20	57.2
Car Park Locations	80	61	-19	9.5
Special Event Parking Permit for Residents	69	51	-17	55.7
Municipal Car Parks and Parking Structures	78	62	-15	12.9
Parking Meters and Pay Machines	74	61	-12	12.6
Parking Penalty Payment Options	72	62	-10	32.6
"Passport Parking" Mobile APP	71	70	-1	40.9

*It is important to note the opt out % for some of the responses when evaluating the overall results.

NET PROMOTER SCORE INDICE

The Net Promoter Score indices outline how likely an individual is to recommend a service to another person and measures customer loyalty. For municipal services this score is difficult to interpret because often times individuals do not have many alternatives for utilizing different services and also there may be internal biases for certain service areas. However, this score does provide valuable information for determining if customers would recommend using the service or whether they may seek alternatives or avoid using the service altogether.

Likert choices less than a score of 4, are considered 'Detractors' meaning that they would not recommend the service, while scores of 5 are considered 'Promoters' who would recommend the service, and scores of 4 are considered 'Passive' which means they do not have strong feelings about the service. Respondents who opted out by not answering or selecting 'Can't Say' were removed from the sample. Net Promoter score is calculated by subtracting (% Promoters) and (% Detractors). The Standard Deviation (σ) is calculated in percent, the same units as the Net Promoter Score.

Per ***Figure 11*** below, generally most users of the service would not recommend HMPS to another person. However, the standard deviation being greater than 20 does consistently show that survey respondents were divided on most of these services. Generally, there are large quantities of detractors for nearly all services. The highest related to car park condition and appearance, car park locations and car park lighting with the highest related to services such as parking penalty dispute options, residential boulevard parking and temporary regulation /enforcement request.

Figure 11:Net Promoter Score

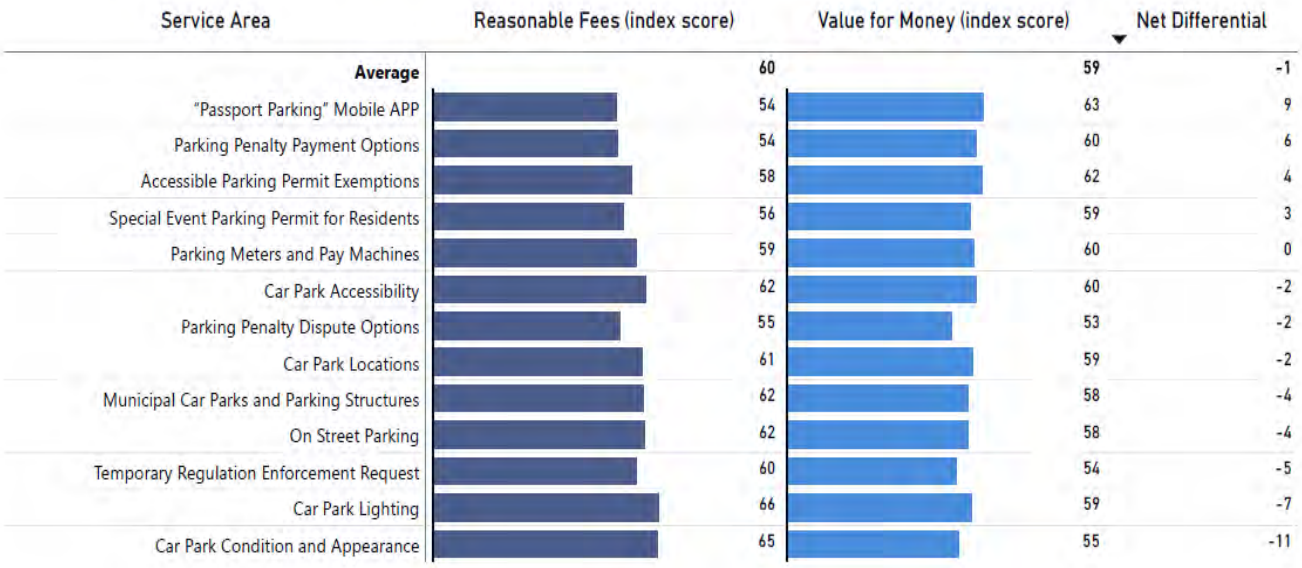
	σ	Net Promoter Score	Detractors	Passives	Promoters
All Service Areas	**22.9**	**-57.22**	**750**	**271**	**106**
"Passport Parking" Mobile APP	27.0	-30.88	38	13	17
Accessible Parking Permit Exemptions	24.4	-45.10	29	16	6
On Street Parking	23.5	-51.79	67	36	9
Parking Meters and Pay Machines	22.9	-51.79	69	32	11
Municipal Car Parks and Parking Structures	21.5	-51.82	67	33	10
Residential Driveway Access Permit	24.4	-60.00	24	8	3
Special Event Parking Permit for Residents	22.2	-60.00	24	8	3
Car Park Accessibility	20.0	-60.49	57	16	8
Parking Penalty Payment Options	23.0	-62.12	46	15	5
Temporary Regulation Enforcement Request	24.2	-62.16	26	8	3
Residential Boulevard Parking	23.6	-62.71	39	18	2
Car Park Lighting	22.0	-62.77	69	15	10
Parking Penalty Dispute Options	24.9	-62.90	44	13	5
Car Park Locations	19.0	-63.46	74	22	8
Car Park Condition and Appearance	21.4	-70.30	77	18	6

SERVICES RATES VERSUS VALUE FOR MONEY INDICE

The Service Rates versus Value for Money indices is used to determine if the rate an individual is paying for a service correlates with the perceived value for money. Service areas where rate level ratings exceed value for money ratings by 20 points is indicative of a mismatch between expectations and service levels, equal to one point on the Likert scale. Positive Net Differential values indicate that 'Value for Money' was greater than willingness for 'Rates'. Low index scores in 'Rates' indicate that respondents are not willing to pay increased rates for the service area. All values were calculated and then rounded to the nearest whole number.

Generally, customers see value for money in the Passport Parking Mobile App and parking penalty payment options. Customers do not see value for money in car park condition and appearance, car park lighting and temporary regulation enforcement request.

Figure 12: Services Rates Versus Value for Money Index Score



Service Area	Reasonable Fees (index score)	Value for Money (index score)	Net Differential
Average	60	59	-1
"Passport Parking" Mobile APP	54	63	9
Parking Penalty Payment Options	54	60	6
Accessible Parking Permit Exemptions	58	62	4
Special Event Parking Permit for Residents	56	59	3
Parking Meters and Pay Machines	59	60	0
Car Park Accessibility	62	60	-2
Parking Penalty Dispute Options	55	53	-2
Car Park Locations	61	59	-2
Municipal Car Parks and Parking Structures	62	58	-4
On Street Parking	62	58	-4
Temporary Regulation Enforcement Request	60	54	-5
Car Park Lighting	66	59	-7
Car Park Condition and Appearance	65	55	-11

**Please note that due to a survey error the dimensions "Residential Boulevard Parking" and "Residential Driveway Access Permit" do not appear in the results as they were omitted for survey Questions 19 and 20.*

4.5 TECHNICAL LEVELS OF SERVICE

Technical levels of service are operational or technical measures of performance, which measure how the City plans to achieve the desired customer outcomes and demonstrate effective performance, compliance and management. The metrics should demonstrate how the City delivers its services in alignment with its customer values; and should be viewed as possible levers to impact and influence the Customer Levels of Service. The City will measure specific lifecycle activities to demonstrate how the City is performing on delivering the desired level of service as well as to influence how customers perceive the services they receive from the assets.

Technical service measures are linked to the activities and annual budgets covering Acquisition, Operation, Maintenance, and Renewal. Asset owners and managers create, implement and control technical service levels to influence the service outcomes.[2]

At this time HMPS does not have a large number of Technical Levels of Service. A continuous improvement item has been identified in ***Table 32*** to identify and develop additional Asset Related performance measures that could be used as Technical LOS for future iterations of the AM Plan.

Table 19 shows the activities expected to be provided under the current 10-year Planned Budget allocation and the Forecast activity requirements being recommended in this AM Plan.

Table 18: Current Technical Levels of Service

LIFECYCLE ACTIVITY	LEVEL OF SERVICE STATEMENT	ACTIVITY MEASURE	CURRENT PERFORMANCE (2023) *	CURRENT TARGET PERFORMANCE (2023) **	PROPOSED 10 YEAR PERFORMANCE (2023-2032) ***
Operations	**Ensure appropriate level of resources to meet service requests**	Average Response Time to complaints requesting parking enforcement (Time measured from call to on-site)	Approx. 56 Minutes	TBD	TBD
		Budget			**$430K per 5 additional FTE officers**
	Ensure appropriate level of parking utilization	2021 Downtown On-Street parking utilization rate – Weekday12:00 pm (1,158 spaces) ****	74%	Below 85%	Below 85%
		2021 Downtown Off-Street Weekday 12:00 pm (public) utilization rate (2,811) ****	82%	Below 85%	Increase above 85%
		Budget		**Current Budget**	**Current Budget**
	Ensure optimum costs are achieved over the whole life of the asset	Actual Operating Expenditures vs Planned Budget (2022 Actuals)	98%	**100%**	**100%**
		Budget		**N/A**	**N/A**
	Compliant with Minimum Maintenance Standards	Inspection and Inventory of Regulatory Parking Control Signs	0%	0%	100%
		Budget			**$500 K**

LIFECYCLE ACTIVITY	LEVEL OF SERVICE STATEMENT	ACTIVITY MEASURE	CURRENT PERFORMANCE (2023) *	CURRENT TARGET PERFORMANCE (2023) **	PROPOSED 10 YEAR PERFORMANCE (2023-2032) ***
Maintenance*	**Ensure Parking assets are kept in a safe and acceptable repair and issues are resolved in a timely manner**	Average Response Time to repair non-functioning meter or pay machine	TBD	24 Hours	24 Hours
		% of off-street Parking Lots where Surface Asphalt rated as Fair or Above in condition assessments	42%	42%	42%
		Budget		**Maintain**	**Maintain**
	Ensure efficient operation of on and off-street parking and enforcement	Net Revenue per parking space (4320 off street, 2200 on-street) / Operating + Capital budgets - Less Revenue per space	$27.11 per space	Maintain	Maintain
		Budget		**N/A**	**N/A**
Renewal	**Ensure parking assets are renewed in a timely manner and Accessibility is a component of renewal**	Percent (%) Surface Parking Lots with Pavement renewed (full reconstruction of asphalt and granular) within Estimated Service Life (30 years since last renewal for lots > 1000 m^2 and 40 years for lots <1000 m^2)	0%	0%	TBD
		Budget			**TBD**
		Percent (%) of Parking lot Lighting Retrofits completed to 2022 Design Plan	0%	TBD	TBD
		Budget			**$400,000**
		% of off-street parking lots and garages that are AODA Compliant for Signs and Pavement Markings	5%	60%	100%
		Budget		**$16K**	**$14K**
	Renew Regulatory Parking Signs identified as Non-Compliant from Inspection	Renew identified non-compliant MMS Regulatory Parking Control Signs and/or Install signs as required to meet spacing requirements. Assumes 25% will require renewal or acquisition.	0%	0%	100%
		Budget (Assumes $400k per year for 4 years)			**$1.6M**

Note: * Current activities related to Planned Budget.
**** Current internal target**
***** Expected performance related to forecast lifecycle costs.**
****** These values are taken from the 2021 Parking Master Plan background study. The Target of 85% is also defined in that report. At this time there is no automated way to update or calculate these values outside of a dedicated parking use study. A Continuous Improvement Item in Table 32 is to investigate ways to simplify the data collection for this LOS in the future so operational capacity can be tracked in real time.**

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time. These metrics were created specifically for this 2023 AMP with available data. Many of these metrics should be improved to include a target to be in line with SMART objectives identified in the AMP Overview. In addition, performance measure data should be both easy to extract and measured over time, and a data collection process may likely need to be created. These have been identified as continuous improvement items in ***Table 32.***

4.6 PROPOSED LEVELS OF SERVICE DISCUSSION

At this time, the City's technical metrics for the HMPS service area are largely based on utilization rates and asset condition. Calculation of utilization rates is complex and requires manual vehicle counts and is largely only available during major Master Plan type studies. Technical Levels of Service have been added to track and identify additional costs needed to become compliant with the Minimum Maintenance Standards for regulatory parking control signs.

Customer preferences and expectations do not always match technical targets. It is difficult to make any conclusive decisions based on the initial survey. In the interim it has been assumed that the current levels of service will be the proposed levels of service moving forward past 2025 in accordance with O. Reg 588/17. Therefore, the information below is intended to provide context to HMPS to areas for further investigation before proposing any new Levels of Service.

CONDITION

Based on ***Table 16*** above, survey respondents rated overall quality and condition of HMPS services as generally Average and feel neither safe nor unsafe accessing services. There is a mismatch in how important customers rated Car Park Lighting, Car Park Condition and Appearance and the related performance. These could be an area where HMPS could investigate and propose new levels of service to improve the overall condition of physical assets such Parking Lots and Lighting. These are also some of the items that most negatively impact the Net Promotor Score. However, based on the services rates versus value for money indices it does not appear that customers are willing to pay more for improved performance in these areas. It is also noted that when comparing physical photos of car parking lots that customers identified that car parking lots in Fair or lesser condition still meet most of their needs.

FUNCTION

Based on ***Table 16***, survey respondents rated that HMPS services met some of their needs when considering the service overall. Customers felt that important potential services could be considered relating to more stormwater runoff controls from parking lots and more parking near transit are an important potential service. Customers were more divided but also identified desire for more secure storage facilities, more bike racks and more electric vehicle charging stations. Willingness to pay was not a survey component for these potential future services so HMPS should do further study on these items prior to proposing changes to Levels of Service in these areas.

CAPACITY

Based on ***Table 16***, survey respondents were neither satisfied nor unsatisfied with generally finding parking both on and off street across the various communities. These is a mismatch in performance and importance for On-Street Parking and car park locations indicating this could be an area to proposed improved levels of service. It is expected that capacity will be reduced

in certain areas of the City as described elsewhere due to LRT and HUPEG. This will affect capacity for physical municipal parking locations and lead to reduction. The services rates versus value for money indices is largely balanced for On-Street Parking and Car Park Locations meaning most customers are balanced on this matter so there is no real desire to pay more or less for additional parking capacity to be created.

There are a number of staffing focused services in the survey that could largely be grouped as “enforcement” types of activities such as, Temporary Regulation Enforcement Request and Special Event Parking Permits for Residents. There were a large percentage of opt-outs in responding to these specialized programs however customers who did respond felt that performance was below importance. HMPS as part of their 2023 budget business case did request and receive approval from Council to add an additional five (5) Full Time Equivalent (FTE) enforcement staff. The impact of these additional staff should be measured to see if there are improvements to enforcement type services and response times. HMPS should review and determine if additional officers are required and propose them as a future level of service once the impact of the new officers is fully implemented. Ideally performance on these items will improve in future surveys as a result of increased capacity of additional staff.

5. FUTURE DEMAND

Demand is defined as the desire customers have for assets or services and that they are willing to pay for. These desires are for either new assets/services or current assets.

The ability for the City to be able to predict future demand for services enables the City to effectively plan and identify the best way of meeting the current demand while also being responsive to inevitable changes in demand. Demand will inevitably change over time and will impact the needs and desires of the community in terms of the quantity of services (assumption of assets due to development growth) and types of service required (alternative pavement options or traffic calming devices)

5.1 DEMAND DRIVERS

For Parking service area, the key drivers identified in the Parking Master Plan are population and employment growth, new developments, changes to parking supply, and changing travel patterns. Other drivers are the cost of parking.

5.2 DEMAND FORECASTS

The high level present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented in Table 20. Growth projections have been shown in the AM Plan Overview.

The 2021 Parking Master Plan identified the peak periods for the Downtown Area by 2030:

- On-Street: 840 vehicles (72% utilization);
- Off-street (Public): 2,200 vehicles (90% utilization);
- Off-street (Private): 4,100 vehicles (97% utilization); and,
- Overall: 7,100 vehicles (91% utilization).

The Parking Master Plan was completed prior to the finalization of the LRT System and the HUPEG agreement. As part of the agreement, the City will “transact” the MCP 68 York Boulevard Parkade, MCP 69 and the Surface parking lot located at MCP 62 14 Vine Street to become development sites. Finalization of the LRT System will impact and eliminate areas of on-street parking in the downtown core. These two issues combined will result in the loss of more than 1000 (950 off street and 100 on-street) spaces in the downtown area, which will reduce available parking required to meet future demand since utilization will greatly exceed the 90% forecast.

It is also predicted that several downtown private off-street parking lots will be lost in the next decade as development occurs on these properties creating additional demand in this area while further reducing supply.

The Parking Master Plan also identified several municipal lots in the downtown that are currently operating above the recommended threshold capacity of 85% and operate at 100%. These include Lot 5 (King William/Mary); Lot 7 (Ferguson/Main) and Lot 76 (Catherine/Hunter).

Future parking operations are projected to approach and likely exceed capacity under these demands and result in parking shortages and an inefficient parking system, specifically in the downtown area but other areas such as Stoney Creek and Waterdown are also experiencing parking shortages.

The redevelopment of the west harbour also results in the loss of a surface parking lot between Pier 4 and Pier 8 of approximately 883 spots. These spots are not currently managed by HMPS.

As per Report PED17181(e) It is estimated that 500-600 new spaces will be required to address the longer-term shortage related to a redeveloped West Harbour Area and a new centralized parking structure may be required for this area.

The Parking Master Plan also identified several dispersed lots that are operating above the recommended effective capacity threshold of 85%. These include Lot 20 (Southam) at 100%, Lot 33 (Southam) at 98% and Lot 34 (Homeside) at 100%.

There are also areas of the City where the available supply of parking regularly exceeds demand such as Dundas where nearly 100 vacant spots were observed at all times and Ottawa Street where Off-street parking Utilization is 18%. These areas should be reviewed to determine if assets can be rationalized, and the resources needed to maintain them redeployed to other areas.

5.3 DEMAND IMPACT AND DEMAND MANAGEMENT

The impact of demand drivers that may affect future service delivery and use of assets are shown in ***Table 20.***

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

Opportunities identified to date for demand management are shown in ***Table 20.*** Climate change mitigation and adaptation demands are included in **Section 7.0**. Many of these demands are difficult to predict at this time and therefore they are not included in the Lifecycle Management Plan at this time. Further opportunities will be developed in future revisions of this AM Plan, as identified in ***Table 32*** in the continuous improvement section.

Table 19: Demand Management Plan

DEMAND DRIVER	CURRENT POSITION	PROJECTION	IMPACT ON SERVICES	DEMAND MANAGEMENT PLAN
Parking Price Changes*	1% Increase in pricing yields 0.2 reduction in demand*	Approx. 4% rate increase annually	Economic Solution reduce demand	Pricing Framework approved by Council. Reduce demand by 0.8% annually
Single Occupancy Vehicle (SOV) Modal Share Changes*	2018 (67%) of Trips SOV*	2031 – reduce SOV trips to 52%*	1.02% annual decrease in parking demand*	Influence modal choice to reduce parking demand
Background population and employment growth*	Growth factors developed for each BIA*	2019-2030 Growth Factors vary 1.090 – 1.204*	Growth will not be linear across the city, concentrated downtown. Demand exceeds supply in some BIA areas.	Improve distribution of parking demand in Downtown from popular facilities to underutilized facilities. No additional surface lots planned at this time.
New Developments in the Downtown Area and BIA's*	Developments assumed to be self-sustaining no impact to demand	No Change	No Change	No Plan required
Parking supply losses and gains*	Development will reduce available parking as private and public lots are converted*	719 spaces removed estimated by 2030*	Sufficient capacity may not be available	Improve distribution of parking demand in Downtown from popular facilities to underutilized facilities via Parking Wayfinding/App
Parking supply losses and gains	HUPEG Agreement Loss of York Parkade and Vine Street Lot	950 spaces removed by 2030 if not earlier	Sufficient capacity may not be available	Improve distribution of parking demand in Downtown from popular facilities to underutilized facilities

DEMAND DRIVER	CURRENT POSITION	PROJECTION	IMPACT ON SERVICES	DEMAND MANAGEMENT PLAN
Parking supply losses and gains	LRT Construction will impact on-street parking	Anticipated 2024 – Approx. 100 spaces	Loss of on-street short term parking availability	Proactive parking enforcement
Parking Enforcement Calls for service	2015-2019 57% increase in service calls	Population Growth will drive additional requests for enforcement	Longer wait time for response	Additional 5 FTE Enforcement officers approved as part of 2023 Budget Process

*Details taken from Background Report II Future Conditions and Financial Assessment of 2022 Parking Master Plan and 2022 Parking Master Plan
**Details taken from West Harbour Re-Development Plan Status Update (PED17181(e))

5.4 ASSET PROGRAMS TO MEET DEMAND

At this time there are approximately two (2) new assets being acquired to manage demand over the 10-year planning horizon. Acquiring new assets would commit the City to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan

No additional HMPS parking garages or surface lots are planned over the 10-year planning horizon for the Downtown, Waterdown or Stoney Creek areas.

(1) Automated License Place Reader System

The City of Hamilton is planning to purchase an Automated License Plate Reader system. This will increase the efficiency of enforcement and permit more proactive enforcement both on and off-street. This increased enforcement should improve the turnover of parking spaces, which will assist in meeting demand. The City is also planning where economically feasible to remove approximately 500 parking meters for individual spaces and replace them with 75 new pay and display machines or in some instances signage to facilitate mobile payment. This is not a true acquisition as the pay machines are effectively renewal of the parking meters as the costs are very similar with one machine replacing several meters. This will not necessarily assist with demand reduction but will streamline parking operations by eliminating coin collection from individual meters and maintenance activities with individual meters, including rate change modifications. This will free up staff to focus on other demands and maintenance needs including meter refurbishment activities. There is no anticipated reduction in the operating budget related to this change as staff will be reassigned to other needs in HMPS.

(2) West Harbour Parking Garage

The West Harbour long term Transportation and Parking study has identified a possible need for a new parking garage in this area to be constructed with approximately 500 new spaces. In 2017 it was suggested this garage would be needed within 5-12 years and Council had previously budgeted $23.5 Million for a parking garage to be constructed at a later date. Studies are ongoing and at this time the owner/operator of this garage is undetermined and could be outside of the scope of HMPS services. At this time this potential asset and related lifecycle costs is not included in the AM Plan.

6. RISK MANAGMENT

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'[3].

The City is developing and implementing a formalized risk assessment process to identify risks associated with service delivery and to implement proactive strategies to mitigate risk to tolerable levels. The risk assessment process identifies credible risks associated with service delivery and will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

The risk assessment process identifies credible risks, the likelihood of those risks occurring, and the consequences should the event occur. The City utilizes two risk assessment methods to determine risk along with subject matter expert opinion to inform the prioritization. Hamilton is further developing its risk assessment maturity with the inclusion of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable in the next iteration of the plan.

6.1 CRITICAL ASSETS

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarized in ***Table 21***. Failure modes may include physical failure, collapse or essential service interruption.

Table 20: Critical Assets

CRITICAL ASSET(S)	FAILURE MODE	IMPACT
Parking Garage(s)	Collapse	Severe Injury Service Interruption Financial Reputational
Surface Lot(s)	Physical Failure	Service Interruption Reputational

By identifying critical assets and failure modes an organization can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 RISK ASSESSMENT

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action), and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in ***Table 22***. It is essential that these critical risks and costs are reported to management. Additional risks will be developed in future iterations of the plan and are identified in ***Table 32*** in the Continuous Improvement Section of the plan.

Table 21: Risks And Treatment Plans
Note * The Residual Risk Is The Risk Remaining After The Selected Risk Treatment Plan Is Implemented.

SERVICE OR ASSET AT RISK	WHAT CAN HAPPEN?	RISK RATING	RISK TREATMENT PLAN	RESIDUAL RISK *	TREATMENT COSTS
Convention Center Parking Garage	Structural deterioration from water infiltration into garage leads to major structural failure or failure of life safety system. There have been previous high-profile parking structure collapses in other North American cities. Water comes from assets owned by others (King Street Drainage, Convention Center, Roof / Summers Lane Structure.	Very High	Inspections by P.Eng. every 10 years; Budget for Major Maintenance every 10-12 years Coordinate response to water infiltration from all external sources (Continuous improvement plan Table 32) Working Group of asset owners to determine accountability for each shared asset, regular	Medium	$3.7M every 10-12 years

SERVICE OR ASSET AT RISK	WHAT CAN HAPPEN?	RISK RATING	RISK TREATMENT PLAN	RESIDUAL RISK *	TREATMENT COSTS
	Uncoordinated inspections and/or comprehensive inspection program by all asset owners misses root cause		parking garage committee meetings; coordinate inspections and asset management plans		
	Extreme flooding of Parking Garage lower levels caused by storm event	High	Regular Inspection and testing of sump pumps and their electrical power supply	Low	TBD
	Sustained Power outage in Parking Garage – No Lighting, Elevators, Sump pumps, Fire detection	High	Regular Inspection and Testing of Backup Generator by Facilities; Regular Inspection of electrical system as preventative maintenance. Consider connecting Elevators and garage lighting to backup generator supply. Consider implementing the inspection and maintenance standards of CSA 282 –	Medium	TBD

SERVICE OR ASSET AT RISK	WHAT CAN HAPPEN?	RISK RATING	RISK TREATMENT PLAN	RESIDUAL RISK *	TREATMENT COSTS
			Emergency Electrical power supply for buildings		
Pavement	Pavement not being renewed when at end of service life; increases reactive maintenance costs; decreases LOS;	High	Develop Pavement Lifecycle Strategy; Implement a Work Order Management System; Investigate Transitioning Pavement Management to Roads/Facilities	Low	TBD
Site Works - Storm Sewers	collapse / sinkhole of storm sewers causing sinkhole/flooding	High	Develop Overall Asset Management Strategy (Asset Inventory, standardized inspection criteria, standardized condition rating and prioritization) Maintenance Strategy; Investigate Transitioning Storm Water Inspections / Maintenance to Water	Low	TBD

SERVICE OR ASSET AT RISK	WHAT CAN HAPPEN?	RISK RATING	RISK TREATMENT PLAN	RESIDUAL RISK *	TREATMENT COSTS
Site Works - Lighting System	Lighting Systems (poles/luminaires/service entrance and u/g cables)	High	Develop Overall Asset Management Strategy (Asset Inventory, standardized inspection criteria, standardized condition rating and prioritization) Maintenance Strategy; Investigate Transitioning Management of Lighting to Street Lighting group	Low	TBD
Accessibility Initiatives in Parking Lots	Unable to Renew lots to incorporate greater accessibility for all users	High	When parking lots are renewed implement AODA (Accessibility for Ontarians with Disabilities Act,) Requirements	Medium	Varies – Renewal Costs by Lot
Retaining Walls	Structural failure of retaining wall, impact to adjoining properties, injury/property damage.	High	Develop Overall Asset Management Strategy (Asset Inventory, standardized inspection criteria, standardized condition rating and prioritization) Maintenance Strategy; Investigate transitioning	Low	TBD

SERVICE OR ASSET AT RISK	WHAT CAN HAPPEN?	RISK RATING	RISK TREATMENT PLAN	RESIDUAL RISK *	TREATMENT COSTS
			Inspection of retaining walls to Engineering Services		

6.3 INFRASTRUCTURE RESILIENCE APPROACH

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions the City needs to understand its capacity to 'withstand a given level of stress or demand', and to respond to possible disruptions to ensure continuity of service. We do not currently measure our resilience in service delivery and this will be included in the next iteration of the AM Plan.

Resilience covers the capacity of the City to withstand any service disruptions, act appropriately and effectively in a crisis, absorb shocks and disturbances as well as adapting to ever changing conditions. Resilience is built on aspects such as response and recovery planning, financial capacity, climate change risk, assessment and crisis leadership.

6.4 SERVICE AND RISKS TRADE-OFFS

The decisions made in AM Plans are based on the objective to achieve the optimum benefits from the available resources outlined in ***Table 23*** Below:

Table 22: Services and Risk Trade-Offs

WHAT WE CANNOT DO (WHAT CAN WE NOT AFFORD OVER NEXT 10 YEARS?)	SERVICE TRADE OFF (HOW WILL NOT COMPLETING THIS AFFECT OUR SERVICE?)	RISK TRADE OFF (WHAT RISK CONSEQUENCES ARE WE UNDERTAKING)
Renew Convention Centre Parking Garage at end of Estimated Service Life.	Service interruptions due to higher maintenance needs, longer and more expensive repair timelines. Floors out of service	Increased risk of structural failure and maintenance costs.
Renew Surface Lots and Site works at needed rate	Surface lots will continue to deteriorate. Unable to improve lighting and mitigate localized flooding risk. Higher reactive maintenance costs.	Risk of Injury to public from trip/fall. Reputational impacts, safety concerns.

WHAT WE CANNOT DO (WHAT CAN WE NOT AFFORD OVER NEXT 10 YEARS?)	SERVICE TRADE OFF (HOW WILL NOT COMPLETING THIS AFFECT OUR SERVICE?)	RISK TRADE OFF (WHAT RISK CONSEQUENCES ARE WE UNDERTAKING)
Increase supply of parking in Waterdown, Downtown and Stoney creek or others where utilization exceeds capacity	Utilization rates will exceed capacity and impact businesses and residents. Shift in Transportation mode can be dependent upon LRT and re(Envision) bus network which have long implementation timelines.	Reputation Risk, Economic risk to businesses.

7. CLIMATE CHANGE MITIGATION & ADAPTATION

Cities have a vital role to play in reducing the emission of greenhouse gases (mitigation), as well as preparing assets for the accelerating changes we have already begun to experience (adaptation). At a minimum the City must consider how to manage our existing assets given potential climate change impacts for our region.

Changes to Hamilton's climate will impact City assets in the following ways:

- Affect the asset lifecycle;
- Affect the levels of service that can be provided and the cost to maintain;
- Increase or change the demand on some of our systems; and,
- Increase or change the risks involved in delivering service.

To quantify the above asset/service impacts due to climate change in the Asset Management Plan, climate change is considered as both a future demand and a risk for both mitigation and adaptation efforts. These demands and risks should be quantified and incorporated into the lifecycle models as well as levels of service targets.

If climate change mitigation/adaptation projects have already been budgeted, these costs have been incorporated into the lifecycle models. However, many asset owners have not yet quantified the effects of the proposed demand management and risk adaptation plans described in this section, and so associated levels of service and costs will be addressed in future revisions of the plan. This has been identified as a Continuous Improvement item in ***Table 32***.

7.1 CLIMATE CHANGE MITIGATION

Climate Mitigation refers to human intervention to reduce GHG emissions or enhance GHG removals (e.g., building transportation infrastructure that can support cycling and public transit and reduces the need for car travel). The City of Hamilton's Community Energy + Emissions Plan (CEEP includes five (5) Low-carbon Transformations necessary to achieve the City's target of net-zero GHG emissions by 2050:

- Innovating our industry;
- Transforming our buildings;
- Changing how we move;
- Revolutionizing renewables; and,
- Growing Green.

These transformations were incorporated into the climate mitigation demand analysis for this service area by:

- Identifying the City's modelled targets for the low carbon transformations that applied to the service/asset;
- Discussing the impact, the targets would have on the service/asset; and,

- Proposing a preliminary demand management plan for how this modelled target will be achieved by 2050 as shown in ***Table 24*** below.

As previously mentioned, due to the high level of uncertainty with the demand management plans, the cost of the demand impacts below has not been included in the lifecycle models or levels of service at this time. The demand management plans discussed in this section should be explored by asset owners in more detail following the AM PLAN, and new projects should incorporate GHG emissions reductions methods, and changes which will be incorporated into future iterations of the AM PLAN. This has been identified as a continuous improvement item in Table 32.

Moving forward, the Climate Lens tool discussed in the AM PLAN Overview will assess projects based on these targets and will assist with the prioritization of climate mitigation projects.

Table 23: Climate Change Mitigation

CLIMATE CHANGE MITIGATION TRANSFORMATION	MODELLED TARGET	POTENTIAL IMPACT TO SERVICE/ASSET	DEMAND MANAGEMENT PLAN
Changing How We Move	100% of new municipal small and light-duty vehicles are electric by 2040.	Current charging infrastructure would be inadequate if all patrol and maintenance vehicles were electric	Develop plan for fleet vehicle charging. Determine if the increased scale would support sharing charging infrastructure with public users. Assess if current vehicle types are appropriate
Changing How We Move	Private vehicle trips decline by 9% relative to 2016 per person by 2050.	Less reliance on parking for commuting trips in single occupant vehicles. Private vehicle trips will not decrease when parking is less expensive than alternative transport modes and parking is readily available	Market-based pricing to address increasing demand as opposed to adding spaces

CLIMATE CHANGE MITIGATION TRANSFORMATION	MODELLED TARGET	POTENTIAL IMPACT TO SERVICE/ASSET	DEMAND MANAGEMENT PLAN
Changing How We Move	By 2050, 50% of short trips in the urban area take place through walking or cycling.	Parking becomes more of a luxury. Private vehicle trips will not decrease when parking is less expensive than alternative transport modes and readily available	Market-based pricing to address increasing demand as opposed to adding spaces Support safe secure parking for bicycles and/or micro mobility solutions.
Changing How We Move	Increase transit use to 15% of trips by 2050 in the urban area	Parking becomes more of a luxury. Private vehicle trips will not decrease when parking is less expensive than alternative transport modes and readily available	Increase user fees and enforcement to address increasing demand as opposed to adding spaces
Growing Green	Planting 50,000 trees a year through to 2050	Adding trees to parking lots and urban streets will reduce the number of spaces. Trees are very expensive to install in a hardscaped environment	Adopt standards for greening (all) City parking facilities and account for the cost. It would be preferable to offer cost sharing incentives to add trees for public and private properties with existing significant hardscaping to overcome the prohibitive cost to properly install viable trees in these environments

CLIMATE CHANGE MITIGATION TRANSFORMATION	MODELLED TARGET	POTENTIAL IMPACT TO SERVICE/ASSET	DEMAND MANAGEMENT PLAN
Transforming Our Buildings	By 2050, all municipal buildings are retrofitted to achieve 50% energy efficiency relative to 2016.	Convert parking lot lighting and parking garage lighting systems to LED. Review electric motors and replace them with High Efficiency when replacement is required.	Facilities 10-year needs identify LED conversion for parking garage in 2032. Parking lot lighting will be replaced with LED when replaced where possible. Consider performing Lifecycle cost analysis on pumps / motors to drive selection of more efficient types
Transforming Our Buildings	By 2050, all new municipal buildings achieve net-zero emissions.	If new buildings are constructed, they would be designed with this target.	If new buildings are constructed, they would be designed with this target.
Revolutionizing renewables	By 2050 50% of municipal buildings will add rooftop solar PV, covering 30% of the building's electrical load.	Incorporate target into any new construction.	Incorporate target into any new construction.

Additionally, since the risk of not completing climate change mitigation projects is that the City continues to contribute to climate change in varying degrees which were modelled in the Climate Science Report for the City of Hamilton completed by ICLEI Canada, a risk analysis has not

been completed in this AM PLAN for not completing climate mitigation projects (ICLEI Canada, 2021).

In addition, there are mitigation projects the City is currently pursuing or considering in this service area which are outlined below in ***Table 25.***

Table 24: Building Asset Mitigation to Climate Change

PROJECT	PROJECT DESCRIPTION	CLIMATE CHANGE IMPACT
Installation of new LED luminaires in surface lots	10-year capital budget identifies funding for replacement of some parking lot lighting. Where possible it will be installed as LED.	Reduce demand for electricity will reduce production of greenhouse gases.
Conversion of lighting in parking garage to LED	Building Condition Assessment identifies conversion to LED in 10-year facilities needs for convention center parking garage. Not yet incorporated into the capital budget.	Reduce demand for electricity will reduce production of greenhouse gases.

7.2 CLIMATE CHANGE ADAPTATION

Climate Adaptation refers to the process of adjusting to actual or expected climate and its effects (e.g., building stormwater pipes under roads that will handle forecasted increased stormwater capacity and reduce regular road flooding).

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. Climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which those impacts are responded to and managed.[4]

In 2021, the City of Hamilton completed a Vulnerability and Risk Assessment Report guided by ICLEI's Building Adaptive and Resilient Communities (BARC) Framework as part of the Climate Change Impact Adaptation Plan (CCIAP) (ICLEI, 2021). The BARC Framework identified thirteen high impact areas. These impact areas were incorporated into the climate change adaptation analysis for this service area by:

- Identifying the asset specific adaptation impact statements that affected the service areas;
- Discussing the potential impacts on the asset/service using the projected change in climate using the RCP4.5 Scenario; and,
- Proposing a preliminary demand management plan to adapt to these impacts as shown in ***Table 32*** below.

[4] IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

It is important to note that due to the high level of uncertainty with the demand management plans, the cost of the demand impacts below have not been included in the lifecycle and financial models at this time. The demand management plans discussed in this section should be explored by asset owners in more detail following the AM PLAN, and new projects should consider these adaptation impacts during the planning and design processes. Once the demand management plans are finalized, the information will be incorporated into future iterations of the AM PLAN. This has been identified as a continuous improvement item in ***Table 32***.

Moving forward, the Climate Lens tool discussed in the AM PLAN Overview will assess projects based on these targets and will assist with the prioritization of climate adaptation projects.

Table 25: Managing the Demand of Climate Change on Assets and Services

Adaptation Impact Statement	Baseline** (1976 - 2005)	Average Projected** Change in 2021-2050 (assuming RCP4.5* Scenario)	Potential Impact on Assets and Services	Demand Management Plan
Reduced capacity of flood protection measures and water storage caused by an increase in rainfall intensity leading to flooding.	6.7 total heavy precipitation days (20 mm)	7.7 total heavy precipitation days (20 mm)	Flooding can close parking facilities as well as damage structures	Identify and address locations with a history of flooding through retrofits (additional connected or dry well Catch basins) and prioritize rainwater capture and flood mitigation when reconstruction. Follow City standards for storm water management.
Increased instances of heat-related issues due to extreme heat.	16.1 average days where temperature is 30 degrees	34.4 average days where temperature is 30 degrees Celsius or more	Extended periods of extreme heat can damage infrastructure	Increase tree cover in parking lots to limit periods of direct sun on

Adaptation Impact Statement	Baseline** (1976 - 2005)	Average Projected** Change in 2021-2050 (assuming RCP4.5* Scenario)	Potential Impact on Assets and Services	Demand Management Plan
	Celsius or more			infrastructure or investigate solar installations that provide shade.
Increased intensity of rainfall leading to increasing runoff into rivers and lakes, and washing of sediment, nutrients, pollutants and other materials.	25.8 heavy precipitation days (10 mm)	27.6 heavy precipitation days (10 mm)	Limited impact to service or asset, significant impact on environment due to the nature of the asset	Incorporate run off management (bio swales, silva cells) in reconstructions
Increased intensity and frequency of ice storms leading to increased hazardous roads, pathways and sidewalk conditions.	187 mm average total winter precipitation	204 mm average total winter precipitation	Increased salt use, a pollutant, and/or increased liability	Adopt Smart About Salt practices including salt alternatives, application standards, investigate closing areas with low winter utilization.

*RCP4.5 Scenario: Moderate projected GHG concentrations, resulting from substantial climate change mitigation measures. It represents an increase of 4.5 W/m2 in radiative forcing to the climate system. RCP 4.5 is associated with 580-720ppm of CO2 and would more than likely lead to 3°C of warming by the end of the 21st century.
**Baseline and Projected numbers based on 2021 Climate Science Report.

Additionally, the City should consider the risks for the asset or service as a result of climate change and consider ways to adapt to reduce the risk. Adaptation can have the following benefits:

- Assets will withstand the impacts of climate change;

- Services can be sustained; and,
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint.

Similarly, to the exercise above and using the risk process in ***Section 6***, asset owners:

- Reviewed the likelihood scores in the Vulnerability and Risk Assessment Report for the adaptation impact occurring;
- Identified the consequence to the asset/service if the event did happen to develop a risk rating; and,
- If the risk was identified as high, the asset owner produced a preliminary risk adaptation plan shown below in ***Table 27***.

It is important to note that due to the high level of uncertainty with the climate change risk adaptation plans, the cost of the mitigating the risks below have not been included in the lifecycle and financial models at this time. The adaptation plans discussed in this section should be explored by asset owners in more detail following the AM PLAN, and new projects should consider these risks during the planning and design processes. Future changes which will be incorporated into future iterations of the AM PLAN. Moving forward, the Climate Lens tool will assess projects based on these targets and will assist with the prioritization of climate adaptation projects. This has been identified as a continuous improvement item in ***Table 32.***

Table 26: Adapting to Climate Change

Adaptation Impact Statement	Service or Asset at Risk Due to Impact	What Can Happen	Risk Rating	Risk Adaptation Plan
Reduced capacity of flood protection measures and water storage caused by an increase in rainfall intensity leading to flooding.	Convention Center Parking Garage	Flooding due to extreme rainfall in parking garage impacting below grade levels.	Very High	Model severe stormwater inflows and impacts of pumps or pump failure; Develop stormwater working group to address water infiltration to convention center parking garage. Implement Inspection and maintenance and contingency plans for sump pumps.
Increased instances of heat-related issues due to extreme heat.	Parking lot pavements	Parking lot conditions can deteriorate faster resulting in reduced Estimated service life due to increased	Medium	Prioritize replacements, review condition lifecycle model and develop preventative maintenance

Adaptation Impact Statement	Service or Asset at Risk Due to Impact	What Can Happen	Risk Rating	Risk Adaptation Plan
		frequency of storm events and/or freeze thaw events.		measures to optimize Estimated Service Life
All Adaptation statements	HMPS Assets	Unable to mitigate impacts from climate change with current budget allocation; increased offsite flow from storm events as no local storage/mitigation; funding for additional car chargers; hardy tree planting; shade structures	Medium	Monitor Opportunities to address sustainability / climate change initiatives during asset renewal and funding becomes available.

HMPS does not have any planned Climate Adaptation projects now. The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AM Plan.

8. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the City plans to manage HMPS assets at the agreed levels of service and at the projected. lifecycle costs

In order to quantify the whole life costs for assets, asset management focuses on how taxpayer or ratepayer dollars are invested by lifecycle activities and not by budget allocation. Therefore, forecast costs for each lifecycle stage (i.e., acquisition, operations, maintenance, renewal, disposal) may include costs from both the Capital and Operating budget. For example, values from the capital budget may appear under operations/maintenance, and values from the operating budget may appear under acquisition/renewal depending on the purpose of the activity.

It is important to note that inflationary values are excluded from this analysis, as the purpose of the AM Plan is to be able to compare needs in today's dollars to be able to incorporate into financial planning completed by others.

8.1 ACQUISITION PLAN

Acquisition reflects new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its current capacity. They may result from growth, demand, legal obligations or social or environmental needs.

CURRENT PROJECT DRIVERS – 10 YEAR PLANNING HORIZON

The City prioritizes capital projects based on various drivers to help determine ranking for project priorities and investment decisions. As part of future AM Plans, the City will be continuing to develop its understanding of how projects are prioritized and ensure that multiple factors are being considered to drive investment decisions in the next iteration of the AM Plan. These drivers will include legal compliance, risk mitigation, O&M impacts, growth impacts, health and safety, reputation and others. These drivers should be reviewed during each iteration of the AM Plan to ensure they are appropriate and effective in informing decision making.

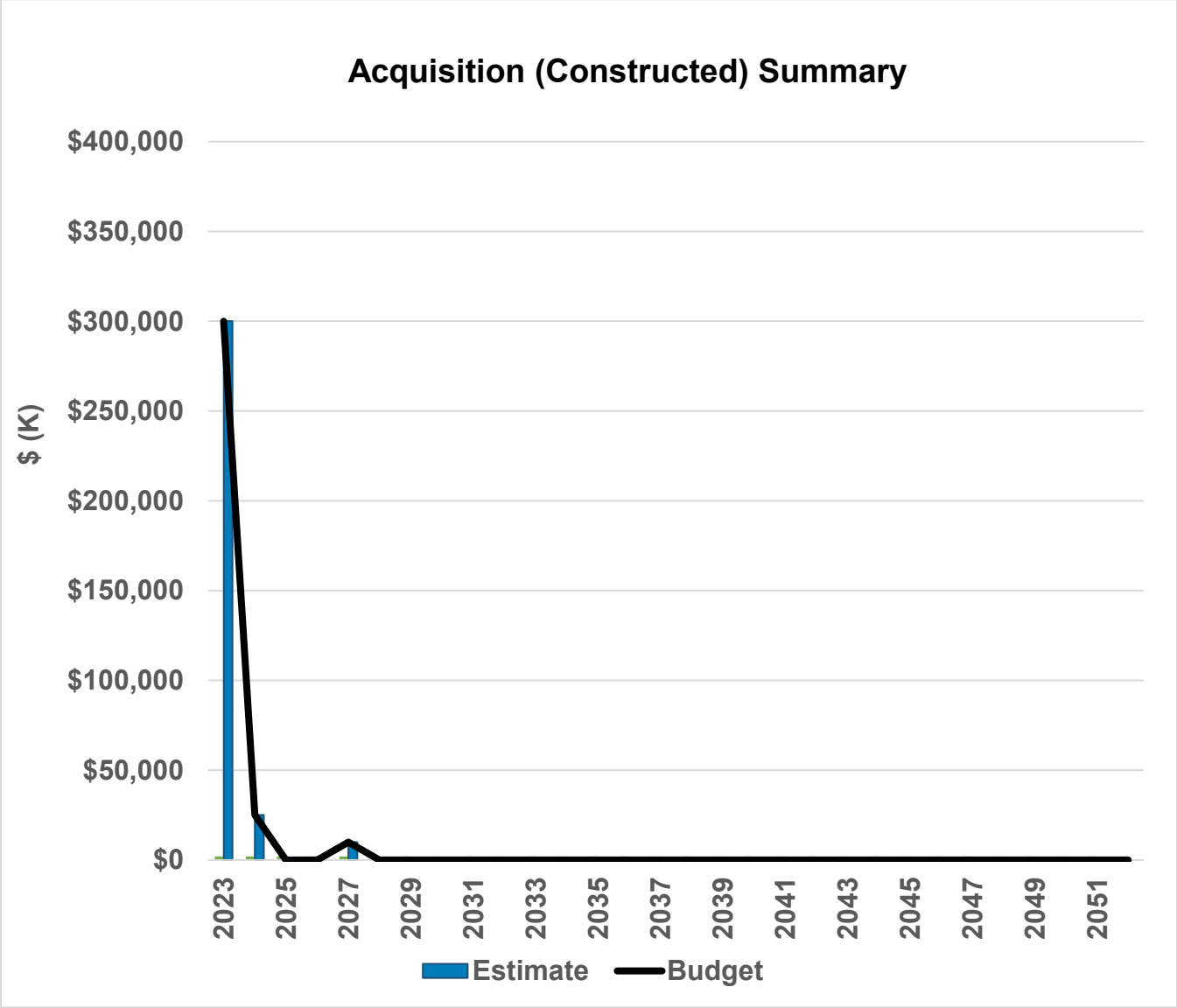
SELECTION CRITERIA

Proposed acquisition of new assets and upgrade of existing assets are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrades and new works should be reviewed to verify that they are essential to the City’s needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programs.

SUMMARY OF ASSET ACQUISITION (CONSTRUCTED) COSTS

Forecast acquisition costs are summarized in Figure 13 and show the cumulative effect of asset acquisition over the next 10-year planning period.

Figure 13: Acquisition (Constructed) Summary
All Figure Values Are Shown In 2023 Dollars



Over the next 10 Year planning period, the City will acquire approximately **$335 K** of constructed HMPS assets which can either be new assets which did not exist before or expansion of assets when they are to be replaced. Major acquisition expenditures over the next ten years include:

- **$300 K** for acquisition of Automated License Plate Reader for parking enforcement in 2023; and,

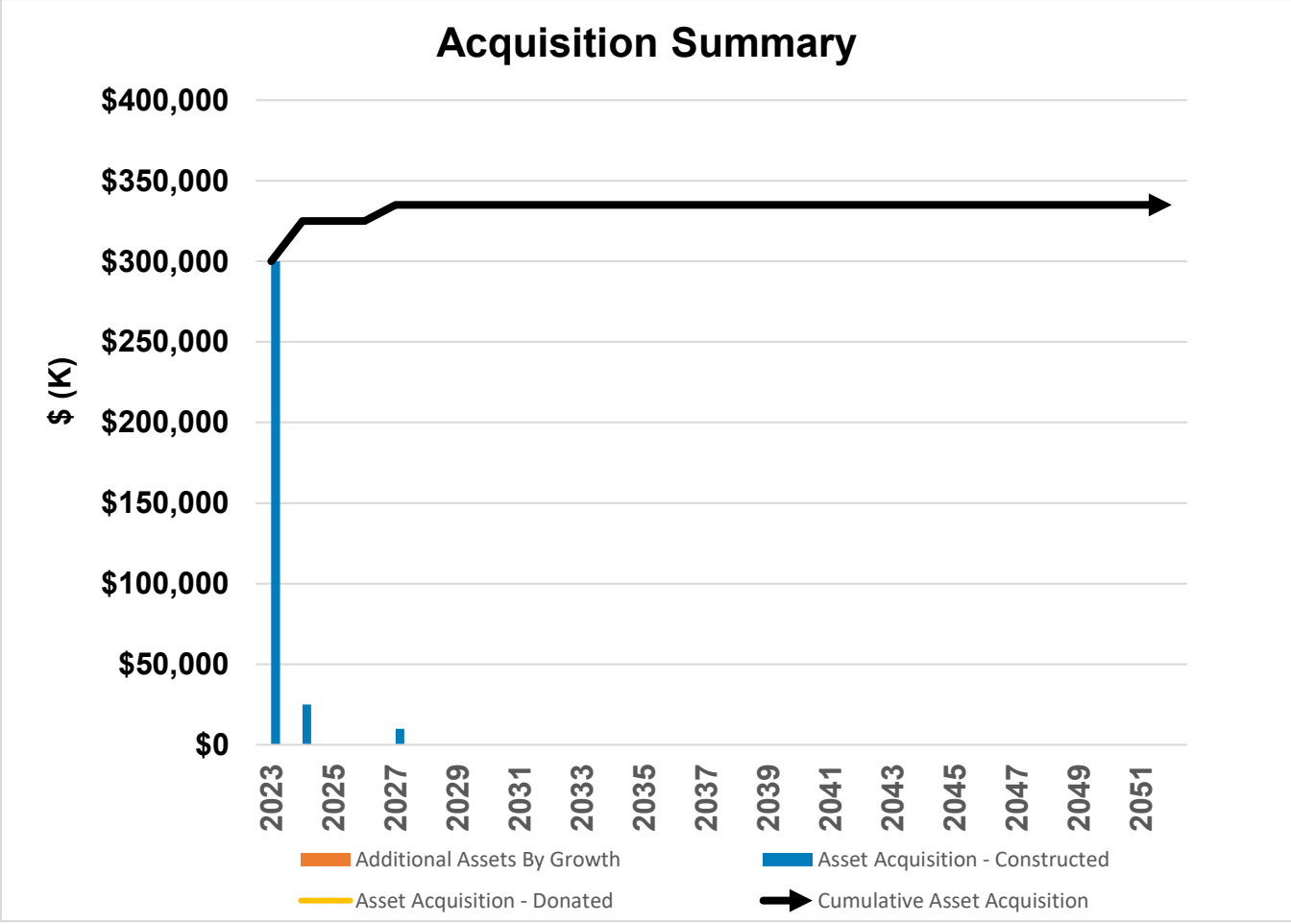
- **$35 K** assumed 10% of capital budget for surface lot lighting will be spent on new lighting and balance on renewals of existing lighting.

The lack of acquired assets in the balance of the years is due to limited forecasting ability at this time and not from the likelihood of actual new acquisitions. As AM knowledge, practices and abilities mature within the City then in all likelihood there will be additional projects with equally significant costs that will appear within the later years of the 10-year planning horizon.

The City has sufficient budget for the license plate reader and surface lot lighting acquisitions. With competing needs for resources across the entire city there will be a need to investigate tradeoffs and design options to further optimize asset decisions and ensure intergenerational equity can be achieved.

Hamilton will continue to monitor its constructed assets annually and update the AM Plan when new information becomes available.

Figure 14: Acquisition Summary
All Figure Values Are Shown in 2023 Dollars



When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by Hamilton. The cumulative value of all acquisition work, including assets that are constructed shown in ***Figure 14*** above. Over the next 10 Year planning period Hamilton will acquire approximately **$335K** of HMPS assets.

When new assets are acquired, the City commits to funding the ongoing operations, maintenance and renewal costs which are very significant and have been incorporated into the other lifecycle stage figures in the following sections. Hamilton must also account for future depreciation when reviewing long term sustainability. Hamilton will need to address how to best fund these ongoing costs as well as the costs to construct the assets while seeking the highest level of service possible.

Future AM Plans will focus on improving the understanding of Whole Life Costs and funding options. However, at this time the plan is limited in those aspects. Expenditure on new assets and services will be accommodated in the long-term financial plan but only to the extent that there is available funding.

8.2 OPERATIONS & MAINTENANCE PLAN

Operations include all regular activities to provide services. Daily, weekly, seasonal and annual activities are undertaken by staff to ensure the assets perform within acceptable parameters and to monitor the condition of the assets for safety and regulatory reasons. Examples of typical operational activities include regular inspections, snow clearing, patching of lots, sweeping, coin collecting, utility costs and the necessary staffing resources to perform these activities.

Some of the major operational investments over the next 10 years include:

- **$7.5 M** annually in employee related costs, this includes beginning in 2023 **$0.43 M annually ($4.3 M over 10 years)** allocated for an additional 5 FTE parking enforcement officers.

Maintenance should be viewed as the ongoing management of deterioration. The purpose of planned maintenance is to ensure that the correct interventions are applied to assets in a proactive manner and to ensure it reaches its intended useful life. Maintenance does not significantly extend the useful life of the asset but allows assets to reach their intended useful life by returning the assets to a desired condition.

Examples of typical maintenance activities include replacement of waterproofing membrane and structural repairs in the parking garages, mill and pave in surface lots with localized asphalt repairs, parking meter mechanism repairs and equipment repairs along with appropriate staffing and material resources required to perform these activities.

Proactively planning of maintenance significantly reduces the occurrence of reactive maintenance which is always linked to a higher risk to human safety and higher financial costs. With the funding available to HMPS and the condition of many of the assets, almost all maintenance work is reactive resulting in excessive deferred maintenance of assts. A continuous improvement item identified in ***Table 32*** is to develop a proactive maintenance

program for all HMPS assets and then to develop the appropriate lifecycle model and costs to support the shift to a proactive maintenance program, including renewal of assets when condition requires.

Major maintenance projects the City plans to manage over the next 10 years include:

- **$2.0 M** York Parkade membrane replacement (pending HUPEG assumption of asset);
- **$1.0 M** (balance of $2.5 M project ongoing since 2020) until 2025 for Convention Center parking garage membrane replacement and structural repairs;
- **$1.4 M** Surface lot and garage repairs and improvements;
- **$0.4 M** Convention Center elevator work; and,
- **$0.15 M** Convention Center painting.

From **2023-2032** the City will invest an additional approximate **$2.75M** for various other maintenance projects across the City. These investments for maintenance are intended to allow these assets to reach their estimated service life and minimize reactive maintenance costs. It should be acknowledged that these forecasted costs do not yet fully include the recommended works that need to be undertaken to ensure the entire inventory of assets will achieve their desired service lives and level of service.

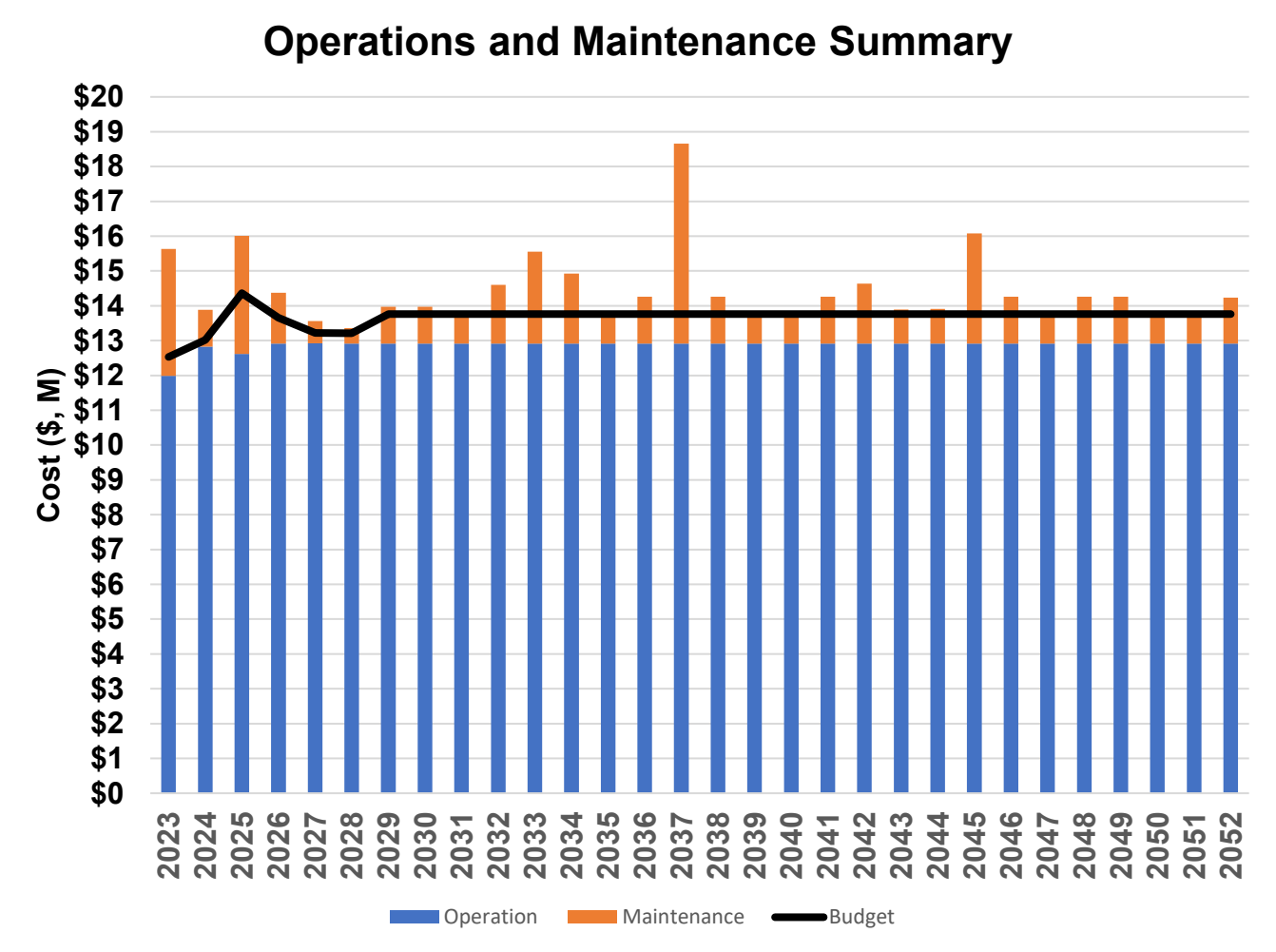
Deferred maintenance (i.e., works that are identified for maintenance activities but unable to be completed due to available resources) will be included in the infrastructure risk management plan in future iterations once those works have been identified and prioritized.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

HMPS does not have a work order management system so the breakdown of total annual costs by asset are unknown and rely on total budget costs and allocation of the budget accounts to Lifecycle activities for this analysis. A continuous improvement item in ***Table 32*** is to improve this information through the implementation of an asset management system which can track worder orders to unique assets and by lifecycle activity.

Forecast operations and maintenance costs vary in relation to the total value of the asset registry. When additional assets are acquired, the future operations and maintenance costs are forecast to increase. When assets are disposed of the forecast operation and maintenance costs are reduced. ***Figure 15*** shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 15: Operations and Maintenance Summary
All Figure Values Are Shown In 2023 Dollars.



The forecast of operations costs are mainly steady over time based on available information. Maintenance costs show several spikes related to specific forecasted maintenance activities the spikes relate to forecast needs as follows:

- Surface Lot resurfacing – (2023 resurfacing backlog, 2037 resurfacings);
- Parking Garage(s) waterproofing and structural repairs (2023 Balance of project, 2026, 2035, 2047, 2048); and,
- Parking Garage possible conversion to LED Lighting (2032).

It is anticipated that at the current budget levels there will be insufficient budget to address all operating and maintenance needs over the 30-year planning horizon. The graph above illustrates that without increased funding or changes to lifecycle activities there is a significant shortage of funding which will lead to:

- Higher cost reactive maintenance;
- Possible reduction to the availability of the assets;

- Impacts to private property;
- Increased financial and reputational risk; and,
- Assets do not reach estimated service life.

This shortfall is primarily due to deferred maintenance activities for surface lot resurfacing, the 10-year facilities needs backlog and future replacement cycles for parking garage waterproofing and structure repair activities.

As the City continues to develop condition profiles and necessary works are identified based on their condition, it is anticipated this operation and maintenance forecasts will increase significantly. Where maintenance budget allocations will result in a lesser level of service, the service consequences and risks have been identified and are highlighted in the ***Risk Section 6.***

Future iterations of this plan will provide a more thorough analysis of operations and maintenance costs including types of expenditures for training, mandatory certifications, insurance, staffing costs and requirements, equipment, and maintenance activities.

HMPS also has similar assets to other areas within the city such as Public Works. Cost efficiencies might be achieved by modifying existing contracts or changing scope when tendered next to bundle these assets together for maintenance and operations purposes. A Continuous Improvement Item has been identified in ***Table 32*** to investigate cross-departmental contracts for maintenance and construction. Similarly, the City may benefit from the development of common construction and design standards for parking facilities. A Continuous Improvement item has been identified in ***Table 32*** to further investigate where opportunities for design efficiencies may be achieved.

8.3 RENEWAL PLAN

Renewal is major work which does not increase the assets design capacity but restores, rehabilitates, replaces, or renews an existing asset to its original service potential. Works over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs

Asset renewals are typically undertaken to either ensure the assets reliability or quality will meet the service requirements set out by the City. Renewal projects are often triggered by service quality failure and can often be prioritized by those that have the highest consequence of failure, have high usage, have high operational and maintenance costs and other deciding factors.

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in ***Table 28*** and are based on estimated design life for this iteration. Future iterations of the plan will focus on the Lifecycle approach to ESL which can vary greatly from design life. Asset useful lives were last reviewed in 2023 however they will be reviewed annually until their accuracy reflects the City's current practices.

Table 27: Useful Lives of Assets

ASSET (SUB)CATEGORY	EXPECTED USEFUL LIFE (YEARS)
Surface Lot Pavement (full depth reconstruction)	30 (large) / 40 (small)
Parking Garage	75
Surface Lot Lighting	15 - Fixture, 30 - Poles
Linear Barriers	30
Privacy Fencing	20
Stormwater Facilities	30
Retaining Walls	30
Electric Vehicle Chargers	10
Pay Machines	15
Parking Meters	25
Non-Regulatory Signs	5
Regulatory Parking Control Signs	15
Vehicles	9
Maintenance Equipment	9
Officer Equipment (uniforms/handhelds/printers)	5 (replaced as needed)
IT Technology	5
Coin Handling Equipment	12

Parking lot surface pavement renewal and maintenance was determined from existing condition. Assumptions for lifecycle modelling were as follows:

Surface parking lots were divided into two categories and different estimates of service life and treatments were determined based on their level of usage and risk detailed in the table below. Large Parking Lots > 1000 m2 and small parking lots <1000 m2. Reconstruction is defined as complete replacement of the asphalt, curbs, sidewalks and granular and is considered a renewal activity. Resurfacing is milling the asphalt surface and replacement of the surface asphalt and is considered a maintenance activity.

CURRENT CONDITION	GOOD	FAIR	POOR
Large lot (>1000 m2)	Resurface (maintenance) 15 years from last estimated resurfacing	Reconstruct (renewal) 15 years from last estimated resurfacing	Overdue for Reconstruction (renewal) Renewal Backlog
Small lot (<1000 m2)	Resurface (maintenance) 20 years from last estimated resurfacing (maintenance)	Resurface (maintenance) 20 years from last estimated resurfacing (maintenance)	Overdue for resurfacing (maintenance). Maintenance Backlog

The lifecycle model for Parking Facilities, surface lots, assumes alternating cycles of Resurfacing and Reconstruction with resurfacing occurring at 50% of ESL (15/20 years). The development of an ideal pavement management program is identified as a continuous improvement item in ***Table 32***.

Funding for the renewal of fleet and IT equipment is identified in the operating budget. Account 58102 – Trsf to Veh/Equip Rsve and account 59433 DIR_Hardware Lease/Mtce Recov are classified as Renewal in the lifecycle model as these funds accumulate for renewal of these items.

The estimates for renewals in this AM Plan were based on the register method which utilizes the data from the City's asset registry to analyse all available lifecycle information and then determine the optimal timing for renewals.

RENEWAL RANKING CRITERIA

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g., replacing a bridge that has a load limit); or,
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g., condition of a culvert).[5]

Future methodologies may be developed to optimize and prioritize renewals by identifying assets or asset groups that:

- Have a high consequence of failure;
- Have high use and subsequent impact on users would be significant;

[5] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

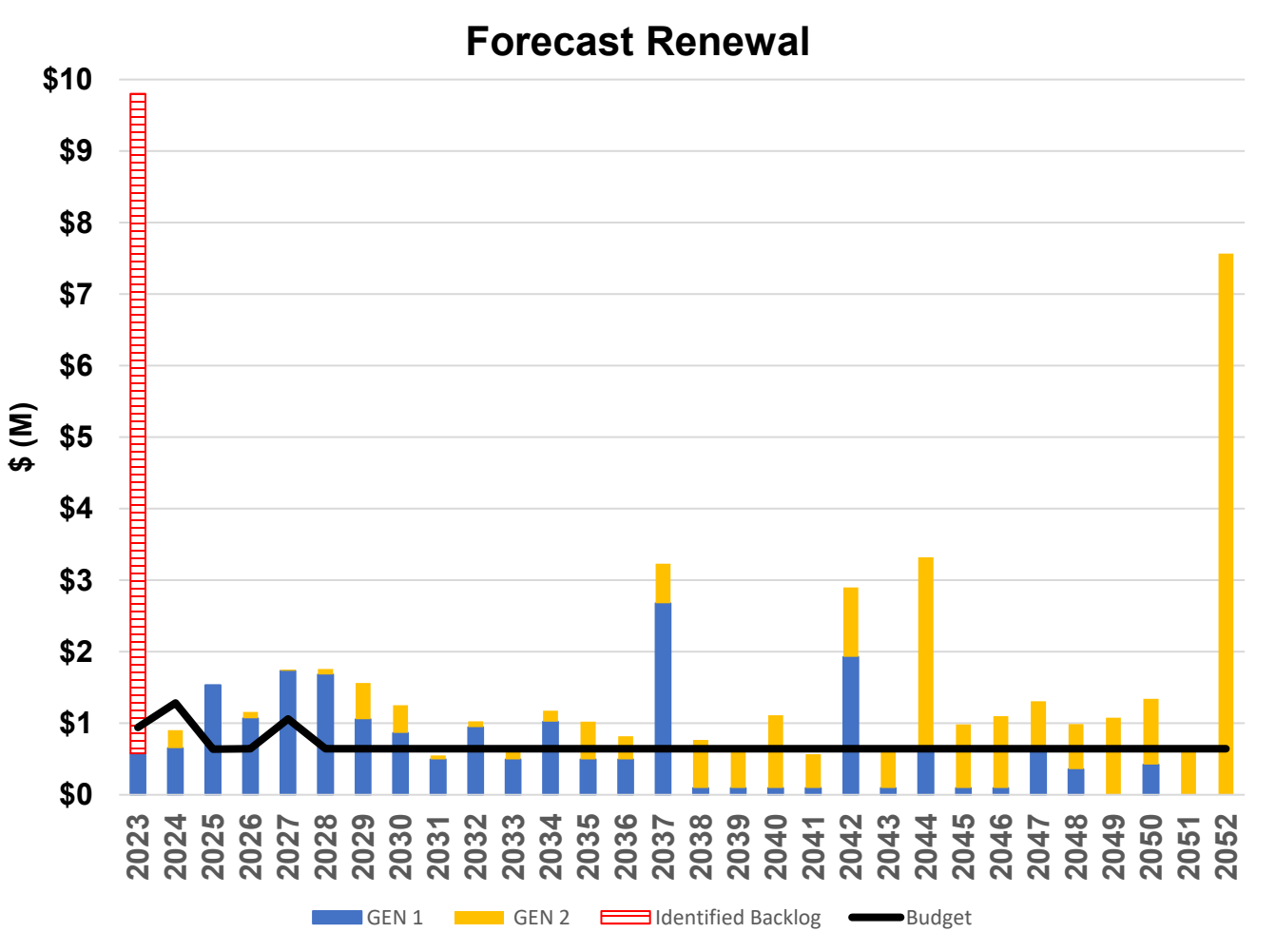
- Have higher than expected operational or maintenance costs; and,
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[6]

HMPS does not currently have a renewal priority ranking criteria. A renewal priority ranking criteria has been identified as a Continuous Improvement Item in ***Table 32*** and will be developed future AM Plans when completed.

SUMMARY OF FUTURE RENEWAL COSTS

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in ***Figure 16.***

Figure 16: Forecast Renewal Costs
All Figure Values Are Shown In 2023 Dollars.



[6] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

The significant amount highlighted as unfunded in 2023 represents the cumulative backlog of deferred work needed to be completed that has been either identified through its current estimated condition or age per ***Table 6*** when condition was not available. This back log represents nearly **$9.2 million** of deferred works that have accumulated over multiple decades and for and have created a significant backlog of necessary works.

Major backlog items include:

- Surface Lot Renewal;
- Site Works Renewal; and,
- Vehicle and Maintenance Renewal.

There is sufficient budget to support the planned renewal projects only. Without additional funding the backlog will remain and continue to grow as future projects outside of the 30-year planning horizon continue to move forward into the 30-year scope. Continued deferrals of projects will lead to significantly higher operational and maintenance costs and will affect the availability of services in the future and impact levels of service.

The expected planned renewal works over the 10-year planning horizon include a remaining balance of **$0.3 million** in 2023 for PARCS and MAPPS (pay on foot) replacement project completion and **$0.525 million** in **2024** for surface lot lighting renewal, sweeper replacement and parking meter/pay machine replacement. In **2027** the City will invest **$0.4 million** to renew privacy fencing, parking lot lighting and parking meters/pay machines.

Deferring renewals (assets identified for renewal and not funded) create risks of higher financial costs, decreased availability, and decreased satisfaction with asset performance. Continuously deferring renewals works ensures Hamilton will not achieve intergenerational equality. If Hamilton continues to push out necessary renewals, there is a high risk that future generations will be unable to maintain the level of service the customers currently enjoy. It will burden future generations with significant costs that inevitably they will be unable to sustain. Prioritization of these projects will need to be funded and managed over time to ensure renewal occurs at the optimal time.

Properly funded and timely renewals will ensure the assets perform as expected and it is recommended to continue to analyze asset renewals based on criticality and availability of funds for future AM Plans.

A Continuous Improvement item has been identified in ***Table 32.*** to conduct a business review and establish a funding plan for the Parking Capital Reserve and 10-year capital budget.

8.4 DISPOSAL PLAN

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, possible closure of service, decommissioning, disposal of asset materials, or relocation. Disposals will occur when an asset reaches the end of its useful life. The end of its useful life can be determined by factors such as excessive operation and maintenance costs, regulatory changes, obsolescence, or demand for the parking facility has fallen.

Assets identified for possible decommissioning and disposal are shown in ***Table 29***. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in ***Table 29***. Any costs or revenue gained from asset disposals will be included in future iterations of the plan and the long-term financial plan as the timing of these disposals is still unknown no reduction in Operations or Maintenance costs has been accounted for in the current Asset Management Plan.

Table 28: Assets Identified for Disposal

ASSET	REASON FOR DISPOSAL	TIMING	DISPOSAL COSTS	OPERATIONS & MAINTENANCE ANNUAL SAVINGS
Lot 68 York Parking Garage – 813 Spaces	PED 18168(g) HUPEG Agreement	Possible 2024	To be determined	Revenue Reduction: $558 K O&M Savings: $ 679 K
Lot 69 York Parkette – 17 Spaces	PED 18168(g) HUPEG Agreement	Possible 2024	To be determined	Revenue Reduction: $13 K O&M Saving: $57 K
Lot 62 Surface Parking Lot (Vine) – 137 Spaces	PED 18168(g) HUPEG Agreement	Possible 2024	To be determined	Revenue Reduction: $157 K O&M Savings: $59 K

At this time any Operations and Maintenance savings have not been removed from the current lifecycle model as timing for HUPEG agreement is not yet confirmed. Total Revenue Reduction from the 3 lots identified above is estimated at $728K and O&M Savings estimated at $795K (low confidence estimates of O&M Savings). These disposals would also eliminate future renewal requirements for these assets. Generally, the loss in revenue (budget) is balanced by a reduction in O&M costs, as such the lifecycle model is not greatly impacted by not including this at this time.

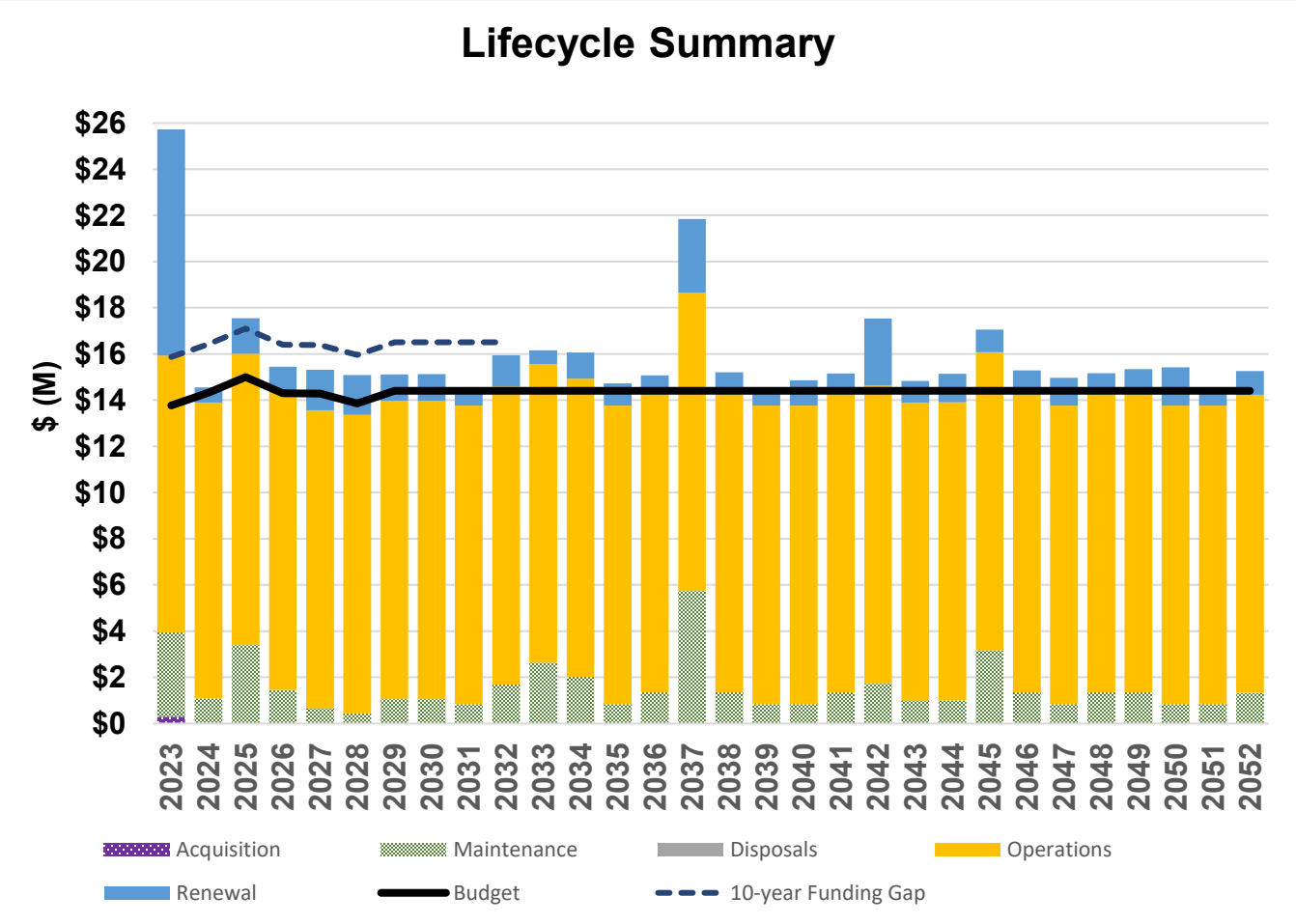
As a Continuous improvement item identified in ***Table 32***, a financial analysis should be completed to identify potential disposal opportunities using the utilization rates in the 2021 Parking Master Plan and an analysis completed on parking lots with low utilization or areas where there is an oversupply to determine if some lots should be identified for disposal or non-lease renewal to reduce future renewal costs and ongoing Operating and Maintenance expenses.

8.5 SUMMARY OF CURRENT ASSET FORECAST COSTS

The financial projections from this asset plan are shown in ***Figure 17***. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimize the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 17: Lifecycle Summary
All Figure Values Are Shown In 2023 Dollars



There is sufficient budget to address most of the planned operational and maintenance activities for the planning period. However, with their increased costs over time or the implementation of an idealized maintenance strategy then there may be impacts to the service itself. Without some adjustment to available funds or other lifecycle management decisions there will be insufficient budget to address all planned lifecycle activities.

Hamilton currently has insufficient budget to address the large backlog of renewal work projected by the plan over the 30-year horizon. When deferring of renewals occurs Hamilton runs the risk of higher cost reactive maintenance, service interruptions, decreased satisfaction, harm to its reputation along with other risk costs such as legal fees. Deferring renewals is not the optimal

recommendation and Hamilton would benefit from seeking out long term financing strategies to enable a more rapid renewal plan.

Without sufficient funding the City has little option but to defer these necessary lifecycle activities. Deferring important lifecycle activities is never recommended. The City will benefit from allocating sufficient resources to developing its long-term financial plan to ensure that over time the City can fully fund the necessary lifecycle activities. Funding these activities helps to ensure the assets are compliant, safe and effectively deliver the service the customers need and desire.

Renewing at a greater rate and increasing major maintenance projects would allow Hamilton to mitigate ever decreasing parking asset conditions proactively. With 57 surface lots and two (2) garages in addition to thousands of regulatory signs and parking meters to manage it is imperative that Hamilton optimize its renewal and major maintenance planning so that over time, high cost reactive maintenance will be avoided or deferred to a later date.

The lack of funding allocated for the backlog of renewals and the necessary lifecycle activities creates an additional issue which is intergenerational equity. Each year the City defers necessary lifecycle activities, it pushes the ever-increasing financial burden on to future generations. It is imperative the City begin addressing the lack of consistent and necessary funding to ensure that intergenerational equity will be achieved. Over time, allocating sufficient funding on a consistent basis ensures that future generations will be able to enjoy the same standards being enjoyed today.

Over time the City will continue to improve its lifecycle data, and this will allow for informed choices as to how best to mitigate those impacts and how to address the funding gap itself. This gap in funding future plans will be refined over the next 5 years and improve the confidence and accuracy of the forecasts in future revisions of this AM Plan.

The lifecycle summary includes additional needs to:

- Undertake a Consultant Assignment to undertake MMS Parking Regulatory Sign Inventory and Condition Assessment. This is a one-time $500K increase added to Operating in 2024;
- Anticipated Remediation of Non-MMS Compliance with additional Parking Regulatory Sign Renewal estimated at $400K per year for 4 years beginning in 2025-2029; and,
- Compliance with AODA requirements for Signs and Pavement markings at 100% of Lots - Cost internal staff time to repaint plus additional sign costs estimated at $21 K.

9. FINANCIAL SUMMARY

This section contains the financial requirements resulting from the information presented in the previous sections of this AM Plan. Effective asset and financial management will enable the City to ensure HMPS provides the appropriate level of service for the City to achieve its goals and objectives. Reporting to stakeholders on service and financial performance ensures the City is transparently fulfilling its stewardship accountabilities.

Long-Term financial planning (LTFP) is critical for the City to ensure the networks lifecycle activities such as renewals, operations, maintenance, and acquisitions can happen at the optimal time. The City is under increasing pressure to meet the wants and needs of its customers while keeping costs at an affordable level and maintaining its financial sustainability.

Without funding asset activities properly HMPS and the City will have difficult choices to make in the future which will include options such as higher costs, reactive maintenance and operational costs, reduction of service and potential reputational damage.

Aligning the LTFP with the AM Plan is critical to ensure all of the networks needs will be met while the City is finalizing a clear financial strategy with measurable financial targets. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

9.1 SUSTAINABILITY OF SERVICE DELIVERY

There are two key indicators of sustainable service delivery that are considered within the AM Plan for this service area. The two indicators are the:

- Asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years); and,
- Medium term forecast costs/proposed budget (over 10 years of the planning period).

ASSET RENEWAL FUNDING RATIO

Asset Renewal Funding Ratio[7] **37.52%**

The Asset Renewal Funding Ratio is used to determine if the City is accommodating asset renewals in an **optimal** and **cost effective** manner from a timing perspective and relative to financial constraints, the risk the City is prepared to accept and targeted service levels it wishes to maintain. The target renewal funding ratio should be ideally between **90% - 110%** over the entire planning period. A low indicator result generally indicates that service levels are achievable, however Hamilton is below this level in some areas predominantly due to underinvestment, including a lack of permanent infrastructure funding from senior levels of government, as well as large spikes of growth throughout the years.

[7] AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Over the next ten (10) years the City expects to have **37.52%** of the funds required for the optimal renewal of assets. This is a significantly low number and should be addressed through this plan in the next iteration. By only having sufficient funding to renew **37.52%** of the required assets in the appropriate timing it will inevitably require difficult trade off choices that could include:

- A significant reduction of the level of service and availability of assets;
- Increased complaints and reduced customer satisfaction;
- Substantially increased reactive maintenance and renewal costs; and,
- Damage to the City's reputation and risk of fines or legal costs.

This low Asset Renewal Funding Ratio outlines that this service is very underfunded and will not be able to renew and maintain assets at an appropriate rate. This ratio is largely driven by the significant costs anticipated to renew Surface Lots and related site works.

The lack of renewal resources will be addressed in future AM Plan's while aligning the plan to the LTFP. This will allow staff to develop options and long-term strategies to address the renewal rate. The City will review its renewal allocations once the entire inventory has been confirmed and amalgamated.

MEDIUM TERM – 10 YEAR FINANCIAL PLANNING PERIOD

O&M & Renewal Ratio **87%**

This AM Plan identifies the forecast operations, maintenance and renewal costs required to provide an agreed level of service to the community over a 10-year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

This forecast work can be compared to the proposed budget over the first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10-year planning period is **$16.4** on average per year. Over time as improved information becomes available it is anticipated to see this number increase. In future AM Plans, staff will connect the operational and maintenance needs to the forecasts, and this will result in a significantly higher cost than is outlined here.

The proposed (budget) operations, maintenance and renewal funding is **$14.3M** on average per year giving a 10-year funding shortfall of **$2.1M** per year or **$21M** over the 10-year planning period. This indicates that **87%** of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. Note, these calculations exclude acquired assets (if any).

Funding an annual funding shortfall or funding 'gap' of **$2.1M** per year cannot be addressed in a single year and has not been incorporated as identified within this plan into any existing plan or budget. The gap will require vetting, planning and resources to begin to incorporate gap management into the future budgets. This gap will need to be managed over time to reduce it

in a sustainable manner and limit financial shock to customers. It is intended that HMPS remain a self-funded business unit. Options for managing the gap include:

- Financing strategies – leverage alternative funding (e.g. grants), block funding for specific lifecycle activities, long term debt utilization;
- Adjustments to lifecycle activities – increase/decrease maintenance or operations, increase/decrease frequency of renewals, limit acquisitions or dispose of underutilized assets;
- Influence level of service expectations or demand drivers;
- Increase revenues – strategically increase rates/fees/fines to achieve cost recovery and other business objectives;
- Assess parking revenue subsidized programs and the allocation of parking revenue surplus for alignment with business objectives and transparency; and,
- HMPS is a revenue generating service. There are initiatives that could be used to maintain HMPS as self-funded. The portion of revenue that is allocated to the capital reserve could be modified. Parking Rates and other fees for service could be increased. A review of the cost/benefits of operating programs and assets can also be completed as part of a financial analysis to determine where services and fees to maintain the service are not matched.

These options and others will allow Hamilton to ensure the gap is managed appropriately and ensure the level of service outcomes the customers desire.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately **90-110%** for the first years of the AM Plan and ideally over the 10-year life of the Long-Term Financial Plan.

LONG TERM – LIFECYLE COSTS

This AM Plan identifies the Lifecyle forecast (average 10 years) for operations, maintenance and depreciation. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

The Lifecycle forecast operations, maintenance and depreciation over the 10-year planning period is **$17.1M** on average per year. Over time as improved information becomes available it is anticipated to see this number increase. In future AM Plans, staff will connect the operational and maintenance needs to the forecasts, and this will result in a significantly higher cost than is outlined here.

The proposed Lifecycle (budget) operations, maintenance and depreciation funding is **$14.3M** on average per year giving a Lifecycle Gap of **$2.8M** per year. This indicates that the Lifecycle Indictor comparing Planned Budget to Lifecyle Forecast is **83.54**%. Note, these calculations exclude acquired assets (if any).

9.2 FORECAST COSTS (OUTLAYS) FOR THE LONG-TERM FINANCIAL PLAN

Table 30 shows the forecast costs (outlays) required for consideration in the 10-year long-term financial plan.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the operational and capital budget. The City will begin developing its long-term financial plan (LTFP) to incorporate both the operational and capital budget information and help align the LTFP to the AM Plan which is critical for effective asset management planning.

A gap between the forecast outlays and the amounts allocated in the financial plan indicates further work is required on reviewing service levels in the AM Plan (including possibly revising the long-term financial plan).

The City will manage the 'gap' by continuing to develop this AM Plan to provide guidance on future service levels and resources required to provide these services in consultation with the community. Options to manage the gap include reduction and closure of low use assets, increased funding allocations, reduce the expected level of service, utilize debt-based funding over the long term, adjustments to lifecycle activities, improved renewals and multiple other options or combinations of options.

These options will be explored in the next AM Plan and the City will provide analysis and options for Council to consider going forward.

Table 29: Forecast Costs (Outlays) For the Long-Term Financial Plan
Forecast Costs Are Shown In 2023 Dollar Values.

YEAR	ACQUISITION	OPERATION	MAINTENANCE	RENEWAL	DISPOSAL
2023	$300,000	$11,986,509	$3,644,984	$9,799,066	0
2024	$25,000	$12,827,943	$1,052,381	$651,938	0
2025	0	$12,618,610	$3,391,985	$1,534,310	0
2026	0	$12,915,560	$1,460,302	$1,070,830	0
2027	$10,000	$12,925,560	$632,952	$1,749,644	0
2028	0	$12,915,560	$441,902	$1,730,726	0
2029	0	$12,915,560	$1,057,777	$1,143,232	0
2030	0	$12,915,560	$1,056,177	$1,155,925	0

YEAR	ACQUISITION	OPERATION	MAINTENANCE	RENEWAL	DISPOSAL
2031	0	$12,915,560	$845,302	$548,822	0
2032	0	$12,915,560	$1,684,642	$1,350,529	0

9.3 FUNDING STRATEGY

The proposed funding for assets is outlined in the City's operational budget and 10-year capital budget.

These operational and capital budgets determine how funding will be provided, whereas the AM Plan typically communicates how and when this will be spent, along with the service and risk consequences. Future iterations of the AM plan will provide service delivery options and alternatives to optimize limited financial resources.

HMPS is a revenue generating division of the City and typically revenues exceed expenses creating a positive operating balance, but capital funding is insufficient to continue HMPS' self-funding model long term. It is necessary to decrease costs and/or increase revenues to address the funding gap without utilizing levy funding. The fixed annual funding for the Parking Capital Reserve would need to be adjusted for the reserve to address the asset maintenance and renewal backlog and capture any increases in revenue. This would likely require reducing the levy transfer and impact levy funding. This item will require more discussion between HMPS and Council on the optimal balance between addressing the state of the assets and the impacts to the levy transfer.

9.4 VALUATION FORECASTS

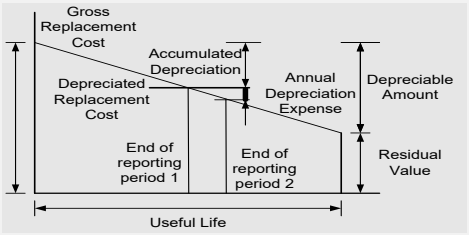
Asset values are forecast to increase as additional assets are added into service. As projections improve and can be validated with market pricing, the net valuations will increase.

Additional assets will add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts. Any disposals of assets would decrease the operations and maintenance needs in the longer term and removes the high costs renewal obligations. At this time, it is not possible to separate the disposal costs from the renewal or maintenance costs, however this will be improved for the next iteration of the plan.

9.5 ASSET VALUATIONS

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at estimated replacement costs:

Replacement Cost (Current/Gross)	**$131,146,082**
Depreciable Amount	**$131,146,082**
Depreciated Replacement Cost[8]	**$ 55,756,108**
Depreciation	**$ 2,786,113**



The current replacement cost is the most common valuation approach for specialized infrastructure assets. The methodology includes establishing a comprehensive asset registry, assessing replacement costs (based on market pricing for the modern equivalent assets) and useful lives, determining the appropriate depreciation method, testing for impairments, and determining remaining useful life.

As the City matures its asset data, it is highly likely that these valuations will fluctuate significantly over the next 3 years, and they should increase over time based on improved market equivalent costs

9.6 KEY ASSUMPTIONS MADE IN FINANCIAL FORECASTS

In compiling this AM Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AM Plan are:

- Operational forecasts are based on current budget allocations and are the basis for the projections for the 10-year horizon and do not address other operational needs not yet identified;
- Maintenance forecasts are based on current budget allocations and do not identify asset needs at this time. It is solely based on planned activities; and,
- Replacement costs were based on historical costing and engineering estimates. They were also made without determining what the asset would be replaced with in the future.

[8] Also reported as Written Down Value, Carrying or Net Book Value.

9.7 FORECAST RELIABILITY AND CONFIDENCE

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is defined in the AM PLAN Overview.

Table 30: Data Confidence Assessment for Data Used in AM Plan

DATA	CONFIDENCE ASSESSMENT	COMMENT
Demand drivers	Medium	Demand Drivers were taken from the 2021 Parking Master Plan. Improvement is needed to validate the demand driver assumptions over time to verify if they are accurate. All drivers require annual monitoring
Growth projections	Low	Population Data is of high confidence. Current growth projection will need to be vetted and improved.
Acquisition forecast	High	Additional assets beyond those identified are not anticipated at this time.
Operation forecast	Low	Currently budget based and required future improvement to ensure allocation is accurate and all operational needs accounted for.
Maintenance forecast	Low	Currently budget based and required future improvement to ensure allocation is accurate and all maintenance needs accounted for.
Renewal forecast - Asset values	Low	Asset renewal values are based on SME (subject matter experts) estimates, Facilities estimates, and Public Works roads estimating tool.
- Asset useful lives	Low	Based on SME opinion. Continuous improvement required to ensure data is vetted and ensure it aligns with Hamilton's actual practices and experiences in other areas with similar assets.
- Condition modelling	Low	Condition assessments are inconsistent and largely not current. Requires standardization of methodology along with predictable timelines for condition assessments.
Disposal forecast	Low	Current disposal information is rolled into renewal. Continuous improvements are required to ensure accurate data is available.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be a **Low** confidence level.

10. PLAN IMPROVEMENT AND MONITORING

10.1 STATUS OF ASSET MANAGEMENT PRACTICES

ACCOUNTING AND FINANCIAL DATA SOURCES

This AM Plan utilizes accounting and financial data. The sources of the data are:

- 10 Year Capital Plan updated Feb 2023;
- HMPS Net Levy Multi-Year Budget 2023-04-14;
- Asset Management Data Collection Templates;
- Audited Financial Statements and Government Reporting (FIR, TCA, etc.);
- Financial Exports from internal financial systems; and,
- Historical cost and estimates of budget allocation based on SME experience.

ASSET MANAGEMENT DATA SOURCES

This AM Plan also utilizes asset management data. The sources of the data are:

- Data extracts from various city applications and management software;
- 10-Year Facility's Needs;
- IT Inventory for HMPS;
- Asset Management Data Collection Templates;
- Tender documents, subdivision agreements and projected growth forecasts as well as internal reports;
- Condition Assessments;
- Subject Matter Expert Opinion and Anecdotal Information; and,
- Reports from the mandatory biennial inspection, operational & maintenance activities internal reports.

10.2 IMPROVEMENT PLAN

It is important that the City recognize areas of the AM Plan and planning processes that require future improvements to ensure both effective asset management and informed decision making. The tasks listed below are essential to improving the AM Plan and the City's ability to make evidence based and informed decisions. These improvements span from improved lifecycle activities, improved financial planning and to plans to physically improve the assets.

The Improvement plan ***Table 32*** below highlights proposed improvement items that will require further discussion and analysis to determine feasibility, resource requirements and alignment to current workplans. Future iterations of this AM Plan will provide updates on these improvement plans.

Table 31: Improvement Plan

	TASK	RESPONSIBILITY	RESOURCES REQUIRED	PRIORITY (High / Med / Low)	TIMELINE
1.	Develop an inventory and condition assessment program for parking assets **Description:** Inventory all assets in GIS, develop condition inspection protocol based on a 5-point scale, create inspection templates and implement a routine inspection program. Investigate digital solutions to streamline the program and analyze data collected.	Lead: HMPS Support: CAM / Possible EAM Team.	**15,000 Total** Internal Staff Time Digital Solution Cost **TBD.**	High	**1 Year** (2023-2024) Digital Solution TBD.
2.	Address on-street signage inspection requirements for MMS (Also ties into CI Item 7 and 10 on standardization) **Description:** Investigate regular inspections of Regulatory signage in compliance with Minimum Maintenance Standards requirements (MMS). A continuous improvement item is already identified, and underway as outlined in PW18096 dated Feb 1, 2021, to collect an inventory and a plan to determine the state of repair inspections.	Lead: HMPS Support: TOM	**$500,000 Total** Consultant to collect inventory and initial condition.	High	**1 Year** (2024)

	TASK	RESPONSIBILITY	RESOURCES REQUIRED	PRIORITY (High / Med / Low)	TIMELINE
3.	Adopt a work order tracking system for asset maintenance **Description:** Develop and implement a work order tracking system to organize and categorize work on assets. This will permit the tracking of lifecycle activities, frequency and costs. Investigate Partnering with Public Works on EAM implementation.	Lead: HMPS Support: CAM / Possible EAM Team	**TBD**	High	**1 Year** (2024)
4.	Work with other City Departments to address "grey" assets **Description:** Review known "Grey" Assets (private or abandoned infrastructure on City property, private infrastructure using un-metered City utilities, unallocated assets on old lots) to ensure all assets have clear ownership and responsibility for maintenance, inspection and repair. Develop a protocol to address grey assets when identified.	Lead: CAM Support: Parking, Corporate Real Estate, Facilities, Legal, Public Works	**$25,000 Total** Internal Staff Time	Low	**3 Years** (2026-2028)
5.	Develop Asset Related Key Performance Indictors **Description:** Develop SMART KPI (Technical LOS) for frequently used or	HMPS	**$4,000 p.a.** **$8000 Total** Internal Staff Time	Medium	**2 Years** (2024-2025)

	TASK	RESPONSIBILITY	RESOURCES REQUIRED	PRIORITY (High / Med / Low)	TIMELINE
	requested metrics such as enforcement or maintenance request times, parking utilization, downtime etc.				
6.	Develop a Working Group for the Convention Center Garage MCP 37 **<u>Description:</u>** Develop working group to determine asset responsibilities/SOP/RASCI for all co-mingled parking garage assets, including those causing external impacts from water infiltration to ensure clear lines of accountability for ownership, maintenance, repair and replacement. Utilize internal expertise regarding the maintenance of the facility.	Lead: HMPS Facilities Support: Building / Engineering	**$5,000 p.a.** **$10,000 Total** Phase 1: Internal Staff Time, Possible Consultants	High	**2 Years** (2023-2024)
7.	Investigate cross-departmental contracts for maintenance and construction **<u>Description:</u>** Develop working group with Public Works to discuss maintenance and renewal of physical assets where there are synergies (lighting, storm sewer, pavement, regulatory signs, Engineering Services)	Lead: CAM Support: HMPS / Public Works	**$10,000 p.a.** **$20,000 Total** Internal Staff Time	Medium	**2 Years** (2023-2024)

	TASK	RESPONSIBILITY	RESOURCES REQUIRED	PRIORITY (High / Med / Low)	TIMELINE
8.	Develop a renewal priority ranking criterion **Description:** Develop a renewal priority ranking criterion to allocate capital to renewal projects using multi criteria evaluation approach (i.e. condition, age, environmental impact, health and safety)	HMPS	**$5,000**	Low	**1 Year** 2026
9.	Develop City-wide standards for asset management for Common Assets **Description:** Develop planned asset management strategies for all assets (i.e. define maintenance treatments, preventive maintenance strategy, inspection and assessment frequency, costs)	Lead: CAM Support: HMPS / Public Works / Engineering Services	**$15,000** Internal Staff Time	High	**2 Years** 2024 - 2026
10.	Develop City-wide construction and design standards for parking facilities **Description:** Investigate Standardizing Construction Standards and Design Guidelines for Parking facilities across all City facilities (lighting/space width/pavement design guidelines)	Lead: Public Works Support: Engineering Services; HMPS	**$15,000** Internal Staff Time	Medium	**1 Year** 2025

	TASK	RESPONSIBILITY	RESOURCES REQUIRED	PRIORITY (High / Med / Low)	TIMELINE
11.	Investigate improvements for financial Tracking **Description:** Investigate tools to permit Financial Tracking for on and off-street parking areas to compare revenue to costs; possible EAM. Moving from manual spreadsheets to a dynamic analysis in a dashboard format.	Lead: HMPS Support: Finance	**$1,000 Total** Internal Staff Time Digital Platform cost **TBD**	Medium	**1 Year** 2025
12.	Conduct a financial analysis of Parking Facilities Description: Assess revenue vs. expenses for all off street parking facilities. Identify opportunities to improve cost recovery in facilities operating at a loss and/or asses for disposal to ensure stable funding for required lifecycle costs across assets.	HMPS	**$5,000 Total** Internal Staff Time	High	**1 Year** 2023-2024
13.	Explore Opportunities for routine parking occupancy data collection Description Investigate ways or technology to simplify parking utilization rate data collection establish demand patterns.	HMPS	**$4,000** Internal Staff Time Plus possible technology costs **TBD**.	Low	**1 Year** 2025

	TASK	RESPONSIBILITY	RESOURCES REQUIRED	PRIORITY (High / Med / Low)	TIMELINE
12.	Complete property profiles for all HMPS leased or owned properties <u>Description:</u> Parking does not have comprehensive data on its properties, relying on Real Estate staff to provide documents as requested. Additionally, some documents lack clarity (leases without diagrams), and many properties are used for private access without formal agreements.	Lead: HMPS Support: CREO / Legal	**$5,000** Internal Staff Time	Medium	**2 Years** (2023-2025)
13.	Conduct a business review and establish a funding plan for the Parking Capital Reserve and a 10-year budget Description: Addressing the funding gap will require a multi-pronged approach of reducing expenses, increasing revenues and long-term planning. An in-depth assessment of all HMPS business operations (permits, tickets, driveways, signs, rates, etc.) will identify where resources are being expended vs. public and financial value.	Lead: HMPS Support: External Consultant	**$100,000 for internal staff time and consultant**	High	**2 Years** 2023-2025

	TASK	RESPONSIBILITY	RESOURCES REQUIRED	PRIORITY (High / Med / Low)	TIMELINE
14.	Release public engagement survey annually to ensure customer satisfaction and track customer trends	Lead: CAM Support: HMPS	$3,100 Internal Staff Time	Medium	2025
15.	Further investigate climate mitigation and adaptation effects on assets and revise lifecycle model (e.g. . when is fleet going to convert to green fuel before 2050?).	Lead: HMPS Support: Climate Change Office	N/A	N/A	Ongoing
16.	Identify additional risks and trade-offs/shortfalls and develop detailed risk management plans with treatment costs	Lead: HMPS Support: CAM	$1540 Internal Staff Time	Medium	2024-2026

10.3 MONITORING AND REVIEW PROCEDURES

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated on a regular basis to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget will be incorporated into the Long-Term Financial Plan once completed.

10.4 PERFORMANCE MEASURES

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan;
- The degree to which the 1-10-year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan;

- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans; and,
- The Asset Renewal Funding Ratio achieving the Organizational target (this target is often 90 – 100% and/or steady improvement to the Asset Renewal Ratio.

Appendix A: Survey Analysis

Hamilton
Corporate Asset Management

Hamilton Parking Services

Survey Period: February 13 - March 20, 2023

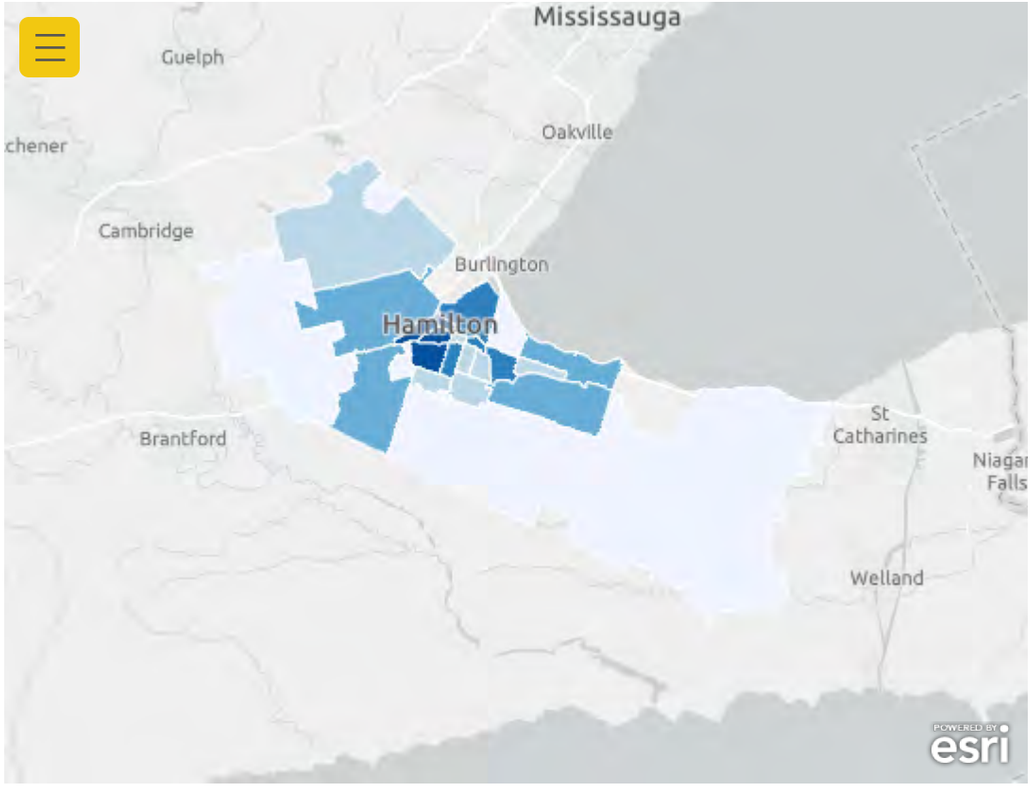
April 2023

Survey Response Demographics

132	134	5	17556	759
Respondents	Survey Questions	Demographic Questions	Survey Responses	Demographic Responses

Postal Code	Respondents	% Respondents	Population		
L9C	16	12.60%	64,505		
L8P	15	11.81%	42,655		
L8R	9	7.09%	19,375		
L8S	9	7.09%	26,295		
L8M	8	6.30%	22,530		
L8K	7	5.51%	52,085		
L8L	7	5.51%	50,110		
L9A	7	5.51%	40,750		
L8E	6	4.72%	64,835		
L8J	5	3.94%	42,665		
L9G	5	3.94%	38,540		
L9H	5	3.94%	50,480		
L8G	4	3.15%	36,075		
L8N	4	3.15%	26,220		
L8T	4	3.15%	31,140		
L8B	3	2.36%	38,035		
L8V	3	2.36%	34,910		
L8W	3	2.36%	39,195		
L9B	3	2.36%	38,295		
L0R	2	1.57%	123,805		
L8H	1	0.79%	41,715		
L9K	1	0.79%	23,485		
Total	**127**	**100.00%**	**947,700**	**1.20**	**3.05**

% Respondents and Sum of Count by Value



Age	% Pop. by Age	% Respondents	Respondents
25 to 34	15.3%	12.40%	16
35 to 44	13.8%	15.50%	20
45 to 54	13.2%	17.05%	22
55 to 64	14.7%	33.33%	43
65 to 79	14.3%	20.93%	27
80+	5.2%	0.78%	1
Total		**100.00%**	**129**

Respondents by Day

Self Identification	% Respondents	Respondents
2SLGBTQIA+	9.57%	11
I do not identify with any of the above groups	73.04%	84
Immigrant +10	5.22%	6
Immigrant <10	1.74%	2
Indigenous	1.74%	2
People with disabilities	13.04%	15
Racialized	5.22%	6
Total	**100.00%**	**115**

Residence	% Respondents	Respondents
I live elsewhere	0.79%	1
I live in Hamilton	99.21%	126
I run a Hamilton-based business	7.09%	9
I work in Hamilton	0.79%	1
Total	**100.00%**	**127**

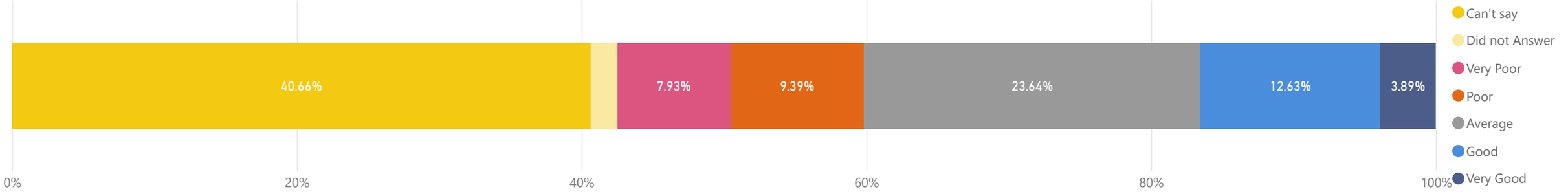
Gender	% Respondents	Respondents
Female	51.52%	68
Male	40.15%	53
Other	1.52%	2
Prefer not to answer	15.91%	21
Total	**100.00%**	**132**

Q1 Performance, last 24mo

132 Respondents
1980 Responses

Over the last 24 months, how do you feel Parking Services has performed overall in the following services?

City Services & Asset Review
Hamilton Parking Services
April 2023



	σ	Avg.	Avg. %	Opt out	Opt out %	Very Poor	Poor	Average	Good	Very Good
All Service Areas	**1.08**	**2.8**	**58.3**	**842**	**42.5**	**157**	**186**	**468**	**250**	**77**
"Passport Parking" Mobile APP	1.25	3.5	69.7	74	56.0	6	5	17	15	15
Municipal Car Parks and Parking Structures	0.94	3.1	62.5	26	19.7	8	11	53	28	6
Parking Penalty Payment Options	1.11	3.1	61.8	64	48.5	9	5	32	15	7
Car Park Locations	0.95	3.1	61.1	20	15.1	9	16	52	30	5
Car Park Accessibility	1.02	3.0	60.9	46	34.9	9	11	38	23	5
Car Park Lighting	0.94	3.0	60.8	33	25.0	4	24	41	24	6
Parking Meters and Pay Machines	1.02	3.0	60.6	25	19.0	10	17	47	26	7
Accessible Parking Permit Exemptions	1.19	3.0	59.2	83	62.9	7	9	18	9	6
Car Park Condition and Appearance	0.92	3.0	59.1	22	16.7	8	21	53	24	4
On Street Parking	1.14	2.8	56.5	5	3.8	20	27	44	27	9
Special Event Parking Permit for Residents	1.21	2.6	51.4	104	78.8	9	1	12	5	1
Residential Driveway Access Permit	1.26	2.5	50.7	102	77.3	9	5	9	5	2
Parking Penalty Dispute Options	1.14	2.5	50.2	75	56.8	15	11	20	9	2
Residential Boulevard Parking	1.14	2.4	47.4	64	48.5	21	14	22	9	2
Temporary Regulation Enforcement Request	0.90	2.0	39.4	99	75.0	13	9	10	1	

Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

Q2

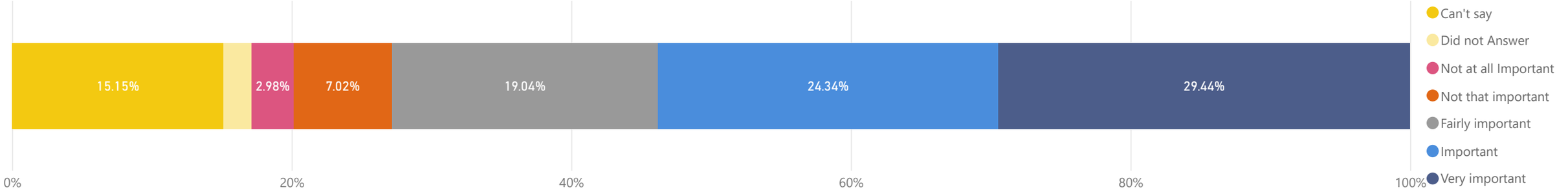
132
Respondents

1980
Responses

Importance

How important should the following services be as a responsibility for Parking Services?

City Services & Asset Review
Hamilton Parking Services
April 2023



	σ	Avg.	Avg. %	Opt out	Opt out %	Not at all Important	Not that important	Fairly important	Important	Very important
All Service Areas	**1.09**	**3.8**	**77.0**	**340**	**17.2**	**59**	**139**	**377**	**482**	**583**
Car Park Lighting	0.91	4.3	86.4	7	5.3	1	6	14	35	69
On Street Parking	1.04	4.1	81.4	6	4.5	3	7	25	34	57
Car Park Accessibility	0.97	4.1	81.1	7	5.3	2	5	28	39	51
Car Park Condition and Appearance	0.95	4.0	80.2	6	4.5	1	8	26	45	46
Car Park Locations	0.98	4.0	80.2	5	3.8	2	6	30	40	49
Accessible Parking Permit Exemptions	1.04	4.0	79.2	30	22.7	3	6	21	34	38
Municipal Car Parks and Parking Structures	1.01	3.9	78.1	8	6.0	2	8	34	36	44
Residential Boulevard Parking	1.24	3.8	75.5	39	29.5	8	5	21	25	34
Parking Penalty Dispute Options	1.08	3.7	74.7	22	16.6	3	12	29	33	33
Parking Meters and Pay Machines	1.07	3.7	73.5	8	6.1	2	17	35	35	35
Temporary Regulation Enforcement Request	1.15	3.6	72.8	54	40.9	4	9	20	23	22
Parking Penalty Payment Options	1.07	3.6	71.8	22	16.7	4	12	35	33	26
Residential Driveway Access Permit	1.25	3.6	71.6	49	37.1	7	10	18	24	24
“Passport Parking” Mobile APP	1.34	3.6	71.4	34	25.7	10	14	16	26	32
Special Event Parking Permit for Residents	1.24	3.4	68.5	43	32.6	7	14	25	20	23

Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

132
Respondents

3960
Responses

Individual Service Areas Importance vs. Performance

Service areas where importance exceeds performance by 20 points is indicative of a mismatch between expectations and service levels, equal to one point on the Likert scale used.

City Services & Asset Review
Hamilton Parking Services
April 2023

Service Area	Importance (index score)	Performance (index score)	Net Differential
Average	**76**	**57**	**-19**
Temporary Regulation Enforcement Request	73	39	-33
Residential Boulevard Parking	75	47	-28
Car Park Lighting	86	61	-25
On Street Parking	81	57	-24
Parking Penalty Dispute Options	75	50	-24
Car Park Condition and Appearance	80	59	-21
Accessible Parking Permit Exemptions	79	59	-20
Car Park Accessibility	81	61	-20
Residential Driveway Access Permit	72	51	-20
Car Park Locations	80	61	-19
Special Event Parking Permit for Residents	69	51	-17
Municipal Car Parks and Parking Structures	78	62	-15
Parking Meters and Pay Machines	74	61	-12
Parking Penalty Payment Options	72	62	-10
"Passport Parking" Mobile APP	71	70	-1

Performance *Q1 Over the last 24 months, how do you feel Parking Services has performed overall in the following services?*

Importance *Q2 How important should the following services be as a responsibility for Parking Services?* All values were calculated and then rounded to the nearest whole number.

Q3

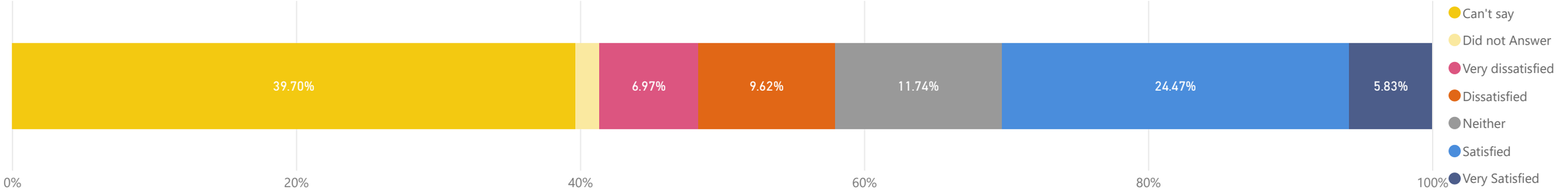
132
Respondents

1320
Responses

Access, last 24 mo

In the last 24 months if you have used Hamilton Parking's services, how satisfied are you with your ability to access parking in these locations?

City Services & Asset Review
Hamilton Parking Services
April 2023



	σ	Avg.	Avg. %	Opt out	Opt out %	Very Dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied
All Service Areas	**1.14**	**3.3**	**64.3**	**546**	**41.4**	**92**	**127**	**155**	**323**	**77**
Ancaster	0.94	3.6	72.5	76	57.6	2	4	15	27	8
Stoney Creek	1.17	3.5	70.0	78	59.1	6	3	12	24	9
Waterdown	1.07	3.5	69.5	92	69.7	4	2	9	21	4
Dundas	1.12	3.5	69.3	48	36.3	8	7	18	40	11
Ottawa Street North	1.16	3.4	69.0	45	34.1	9	9	15	42	12
On Street Parking across the city	1.14	3.2	64.7	13	9.9	11	23	23	51	11
Concession Street	1.17	3.1	61.5	64	48.5	8	15	14	26	5
Barton Village	1.21	3.0	60.7	72	54.5	9	12	11	24	4
Locke Street	1.15	3.0	59.3	43	32.5	10	25	17	32	5
Downtown Hamilton	1.27	2.8	55.7	15	11.4	25	27	21	36	8

Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

Q4

132
Respondents

1980
Responses

Meet Needs

Do the following services meet your needs?

City Services & Asset Review
Hamilton Parking Services
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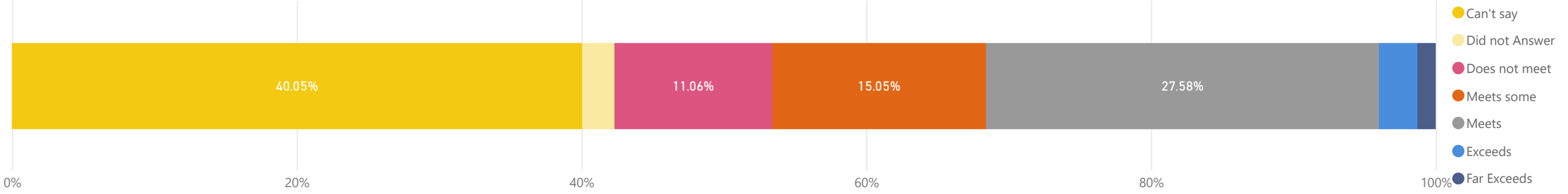
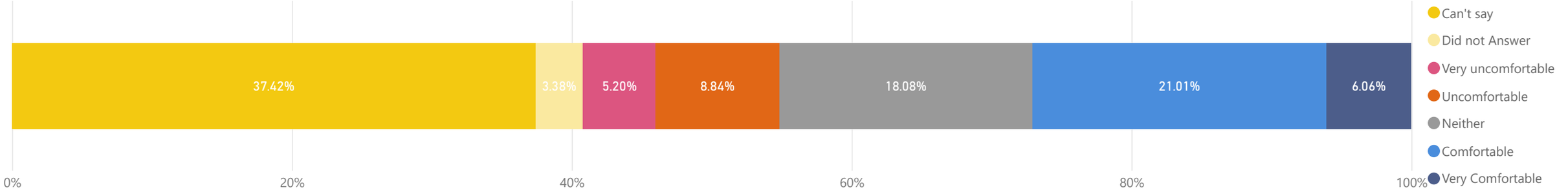


	σ	Avg.	Avg. %	Opt out	Opt out %	Does not meet	Meets some	Meets	Exceeds	Far Exceeds
All Service Areas	**0.93**	**2.5**	**48.9**	**838**	**42.3**	**219**	**298**	**546**	**54**	**25**
"Passport Parking" Mobile APP	1.14	2.9	58.2	75	56.8	10	5	27	10	5
Special Event Parking Permit for Residents	1.04	2.6	51.6	101	76.5	6	6	16	1	2
Accessible Parking Permit Exemptions	0.78	2.5	50.7	87	65.9	6	11	26	2	
Municipal Car Parks and Parking Structures	0.81	2.5	50.6	21	15.9	15	29	61	5	1
Car Park Accessibility	0.82	2.5	50.2	50	37.9	11	23	44	3	1
Parking Penalty Payment Options	0.93	2.5	50.0	70	53.1	12	13	32	4	1
Parking Meters and Pay Machines	0.92	2.5	49.3	12	9.1	22	32	56	8	2
Car Park Lighting	0.90	2.4	48.5	29	22.0	18	32	46	5	2
Car Park Locations	0.78	2.4	48.4	20	15.1	14	42	52	3	1
Car Park Condition and Appearance	0.88	2.4	47.4	29	21.9	21	29	48	4	1
Residential Driveway Access Permit	0.98	2.4	47.2	96	72.7	9	8	17	1	1
On Street Parking	0.94	2.4	47.1	5	3.8	28	37	54	5	3
Temporary Regulation Enforcement Request	1.13	2.3	46.5	98	74.3	11	6	14	1	2
Residential Boulevard Parking	0.99	2.3	45.1	69	52.3	18	16	26	1	2
Parking Penalty Dispute Options	0.99	2.3	45.0	76	57.5	18	9	27	1	1

Q5 Comfortable and Safe

132 Respondents
1980 Responses

Do you feel comfortable and safe accessing these services?



	σ	Avg.	Avg. %	Opt out	Opt out %	Very Uncomfortable	Uncomfortable	Neither	Comfortable	Very Comfortable
All Service Areas	**1.09**	**3.2**	**64.7**	**808**	**40.8**	**103**	**175**	**358**	**416**	**120**
"Passport Parking" Mobile APP	1.38	3.6	71.3	70	53.0	10	4	6	25	17
Accessible Parking Permit Exemptions	1.10	3.3	65.3	87	65.9	4	6	14	16	5
Car Park Accessibility	0.99	3.3	66.1	47	35.6	4	13	29	31	8
Car Park Condition and Appearance	1.07	3.0	60.2	23	17.4	11	23	35	34	6
Car Park Lighting	1.09	3.0	60.6	28	21.2	10	22	35	29	8
Car Park Locations	0.97	3.3	66.4	23	17.4	4	17	38	40	10
Municipal Car Parks and Parking Structures	1.01	3.3	65.5	12	9.1	6	22	34	49	9
On Street Parking	1.07	3.5	69.9	7	5.3	5	21	26	53	20
Parking Meters and Pay Machines	1.01	3.5	70.7	9	6.8	5	16	26	60	16
Parking Penalty Dispute Options	1.14	2.8	56.9	74	56.0	10	10	20	15	3
Parking Penalty Payment Options	1.10	3.2	63.8	68	51.5	8	5	23	23	5
Residential Boulevard Parking	1.19	3.0	60.0	70	53.0	11	6	22	18	5
Residential Driveway Access Permit	1.18	2.9	58.9	95	71.9	6	5	15	7	4
Special Event Parking Permit for Residents	0.95	3.1	61.8	98	74.3	3	3	18	8	2
Temporary Regulation Enforcement Request	1.09	2.9	58.9	97	73.5	6	2	17	8	2

Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

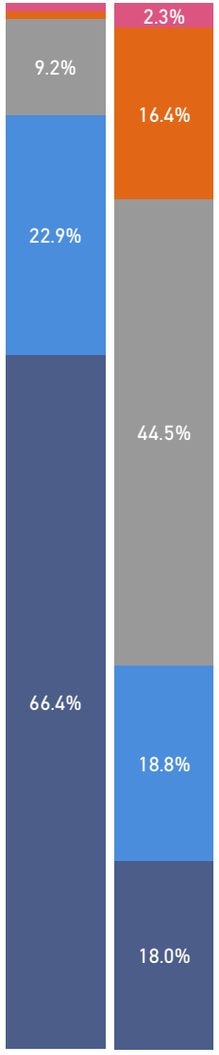
Q6	132 Respondents	132 Responses
Q7	132 Respondents	132 Responses

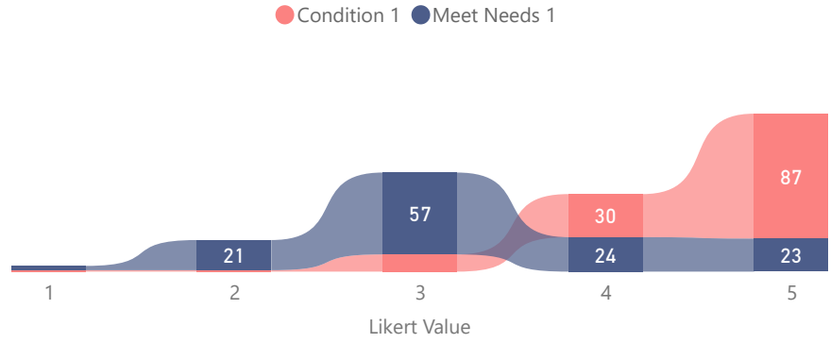
Condition 1

Please rate the condition of the above parking lot and spaces.

Meet Needs 1

Please consider if this parking lot would meet your needs





		Avg.	σ
Q6	Please rate the condition of the above parking lot and spaces.	4.53	0.75
Q7	Please consider if this parking lot would meet your needs	3.34	1.03
Total		**3.94**	**1.08**

Due to an error Q6 to Q15 did not provide respondents the "Can't Say" response option

City Services & Asset Review
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Q8 132 Respondents 132 Responses

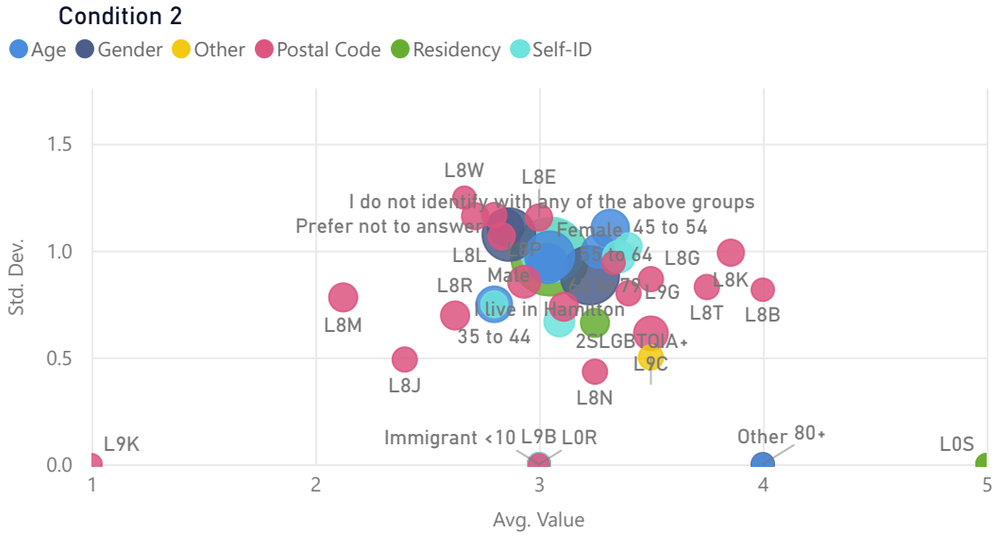
Condition 2

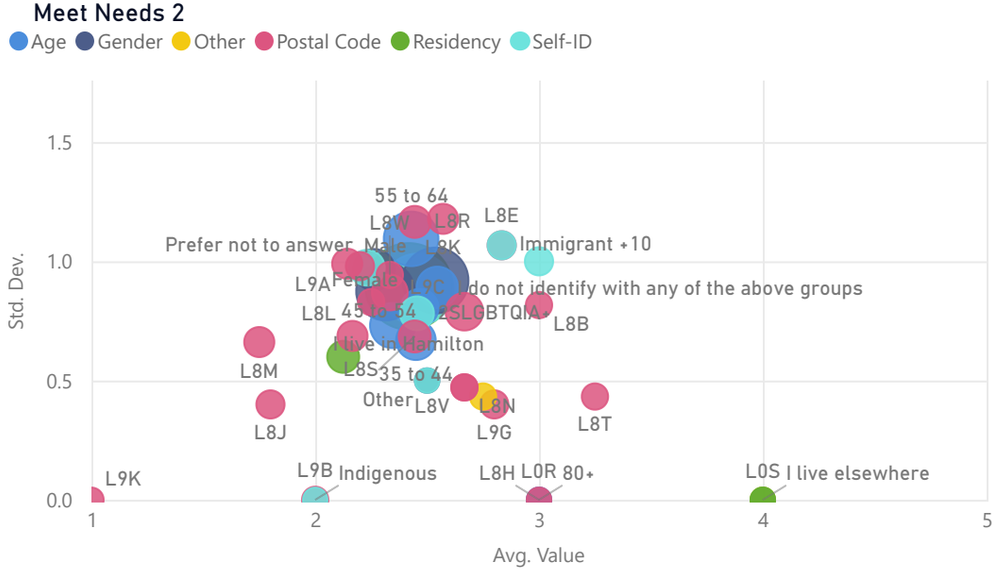
Please rate the condition of the above parking lot and spaces.

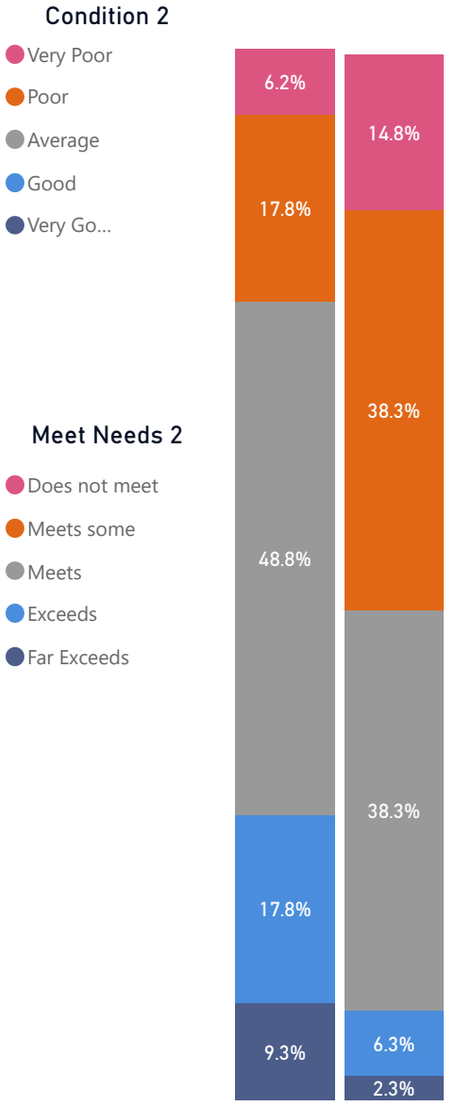
Q9 132 Respondents 132 Responses

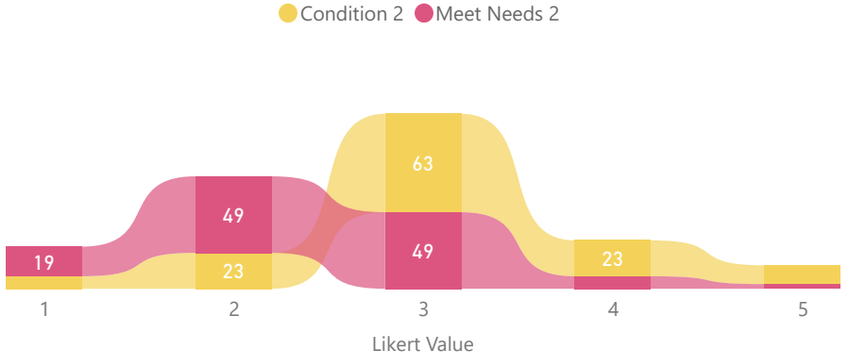
Meet Needs 2

Please consider if this parking lot would meet your needs









		Avg.	σ
Q9	Please consider if this parking lot would meet your needs	2.43	0.90
Q8	Please rate the condition of the above parking lot and spaces.	3.06	0.99
Total		**2.75**	**1.00**

Due to an error Q6 to Q15 did not provide respondents the "Can't Say" response option

City Services & Asset Review
Hamilton Parking Services
April 2023

Q10 132 Respondents 132 Responses

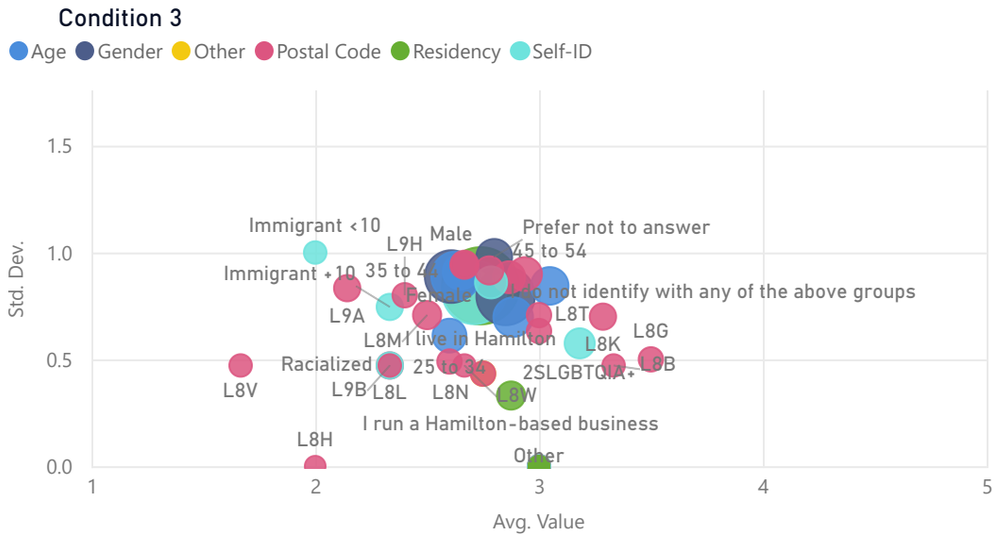
Condition 3

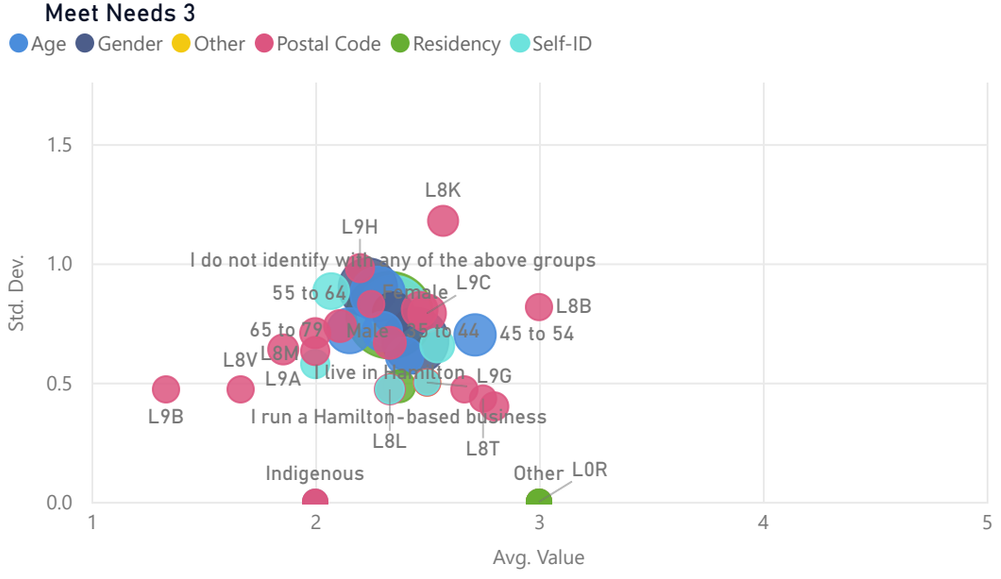
Please rate the condition of the above parking lot and spaces.

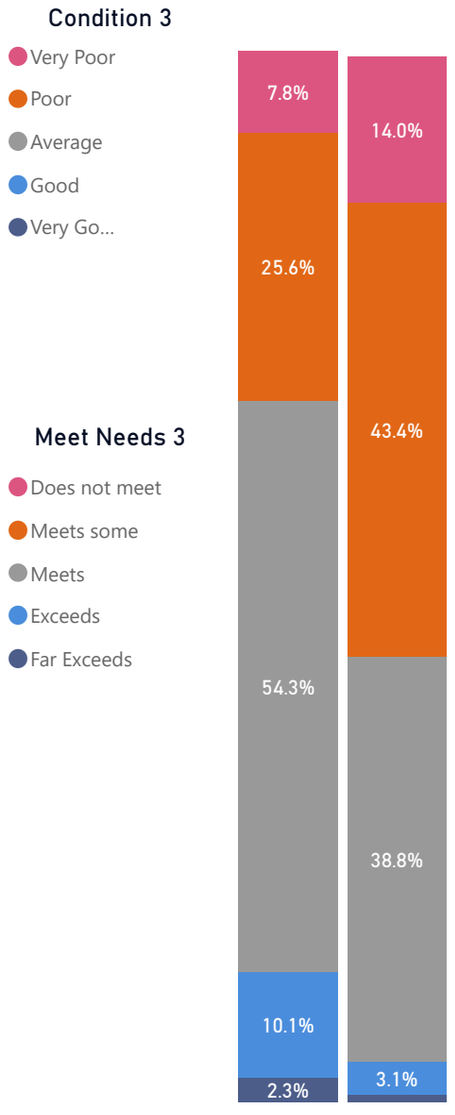
Q11 132 Respondents 132 Responses

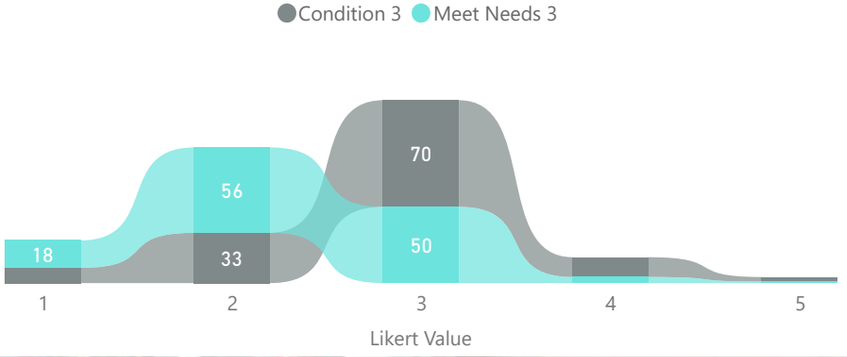
Meet Needs 3

Please consider if this parking lot would meet your needs









		Avg.	σ
Q10	Please rate the condition of the above parking lot and spaces.	2.74	0.83
Q11	Please consider if this parking lot would meet your needs	2.33	0.78
Total		**2.53**	**0.83**

Due to an error Q6 to Q15 did not provide respondents the "Can't Say" response option

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Q12 132 Respondents 132 Responses

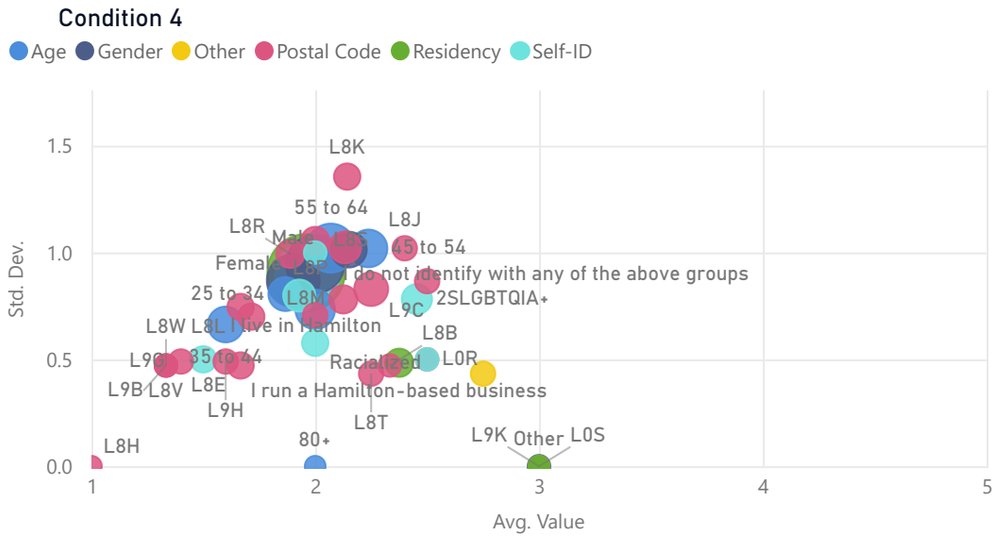
Condition 4

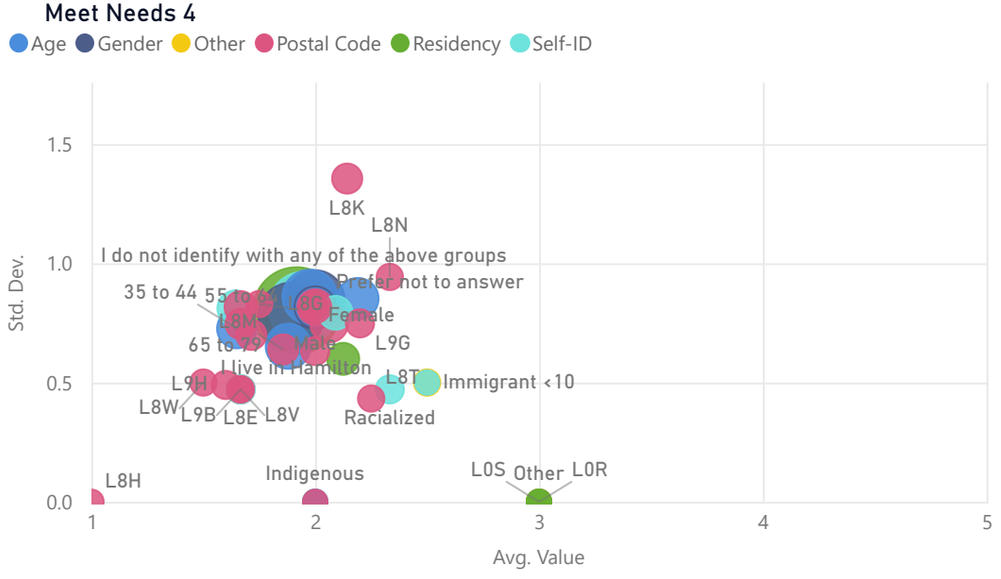
Please rate the condition of the above parking lot and spaces.

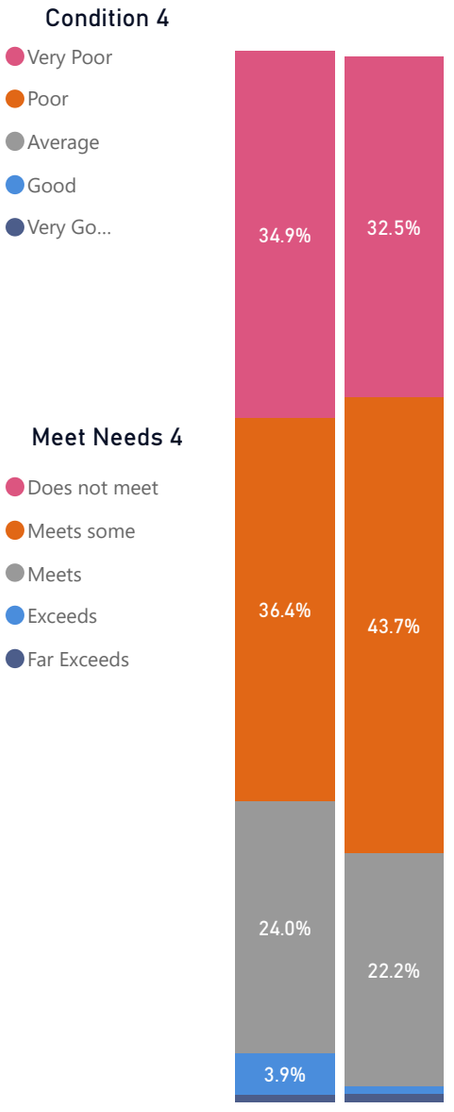
Q13 132 Respondents 132 Responses

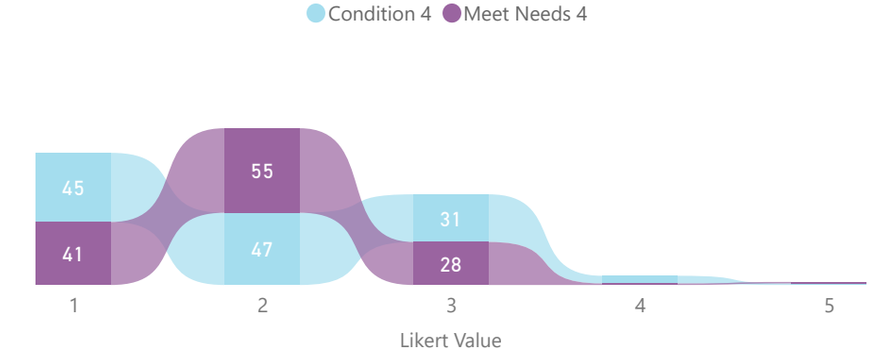
Meet Needs 4

Please consider if this parking lot would meet your needs









		Avg.	σ
Q12	Please rate the condition of the above parking lot and spaces.	1.99	0.90
Q13	Please consider if this parking lot would meet your needs	1.94	0.80
Total		**1.96**	**0.86**

Due to an error Q6 to Q15 did not provide respondents the "Can't Say" response option

Q14 132 Respondents 132 Responses

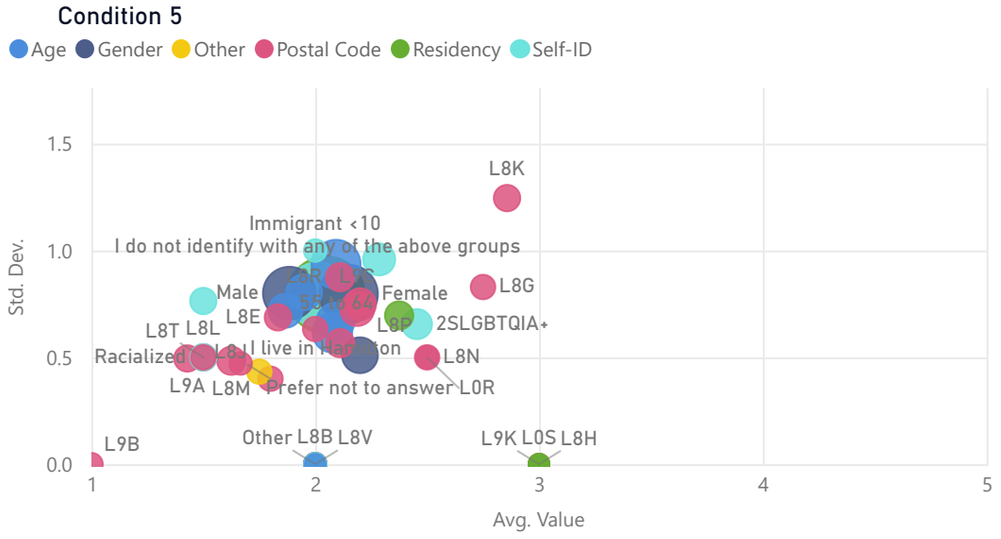
Condition 5

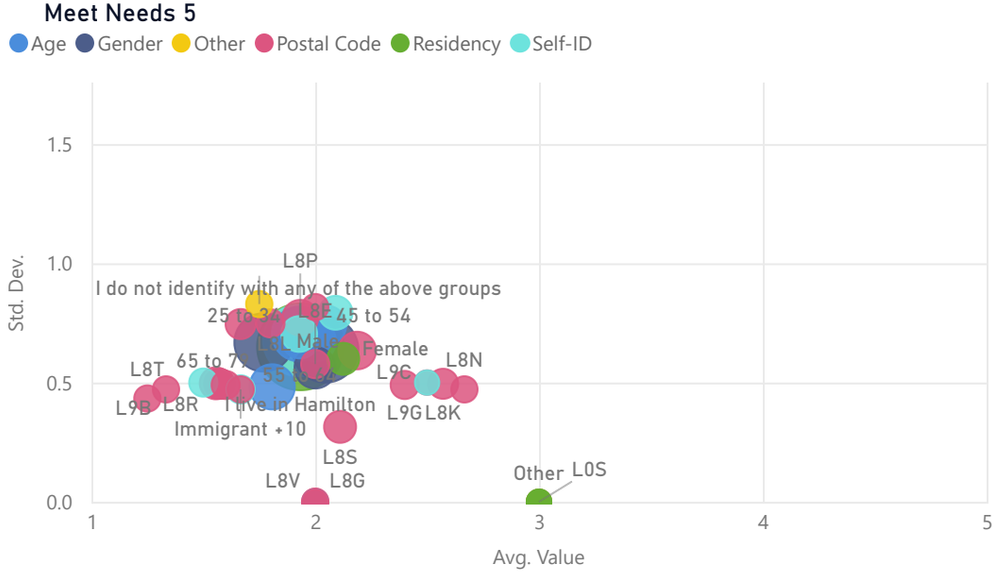
Please rate the condition of the above parking lot and spaces.

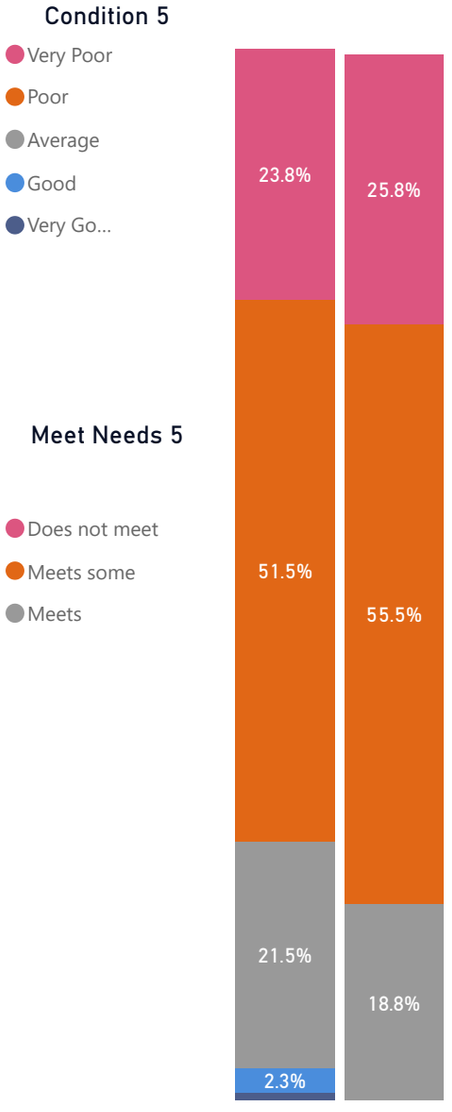
Q15 132 Respondents 132 Responses

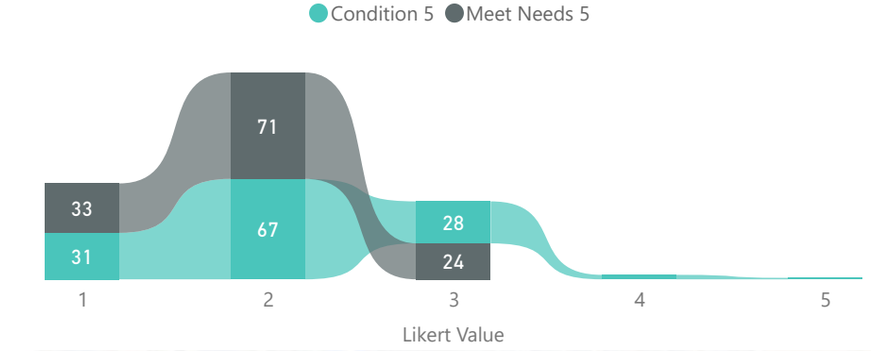
Meet Needs 5

Please consider if this parking lot would meet your needs









		Avg.	σ
Q14	Please rate the condition of the above parking lot and spaces.	2.05	0.78
Q15	Please consider if this parking lot would meet your needs	1.93	0.66
Total		**1.99**	**0.73**

Due to an error Q6 to Q15 did not provide respondents the "Can't Say" response option

Q16 Potential Services

132 Respondents
1056 Responses

Please rate the following potential services based on importance to you.

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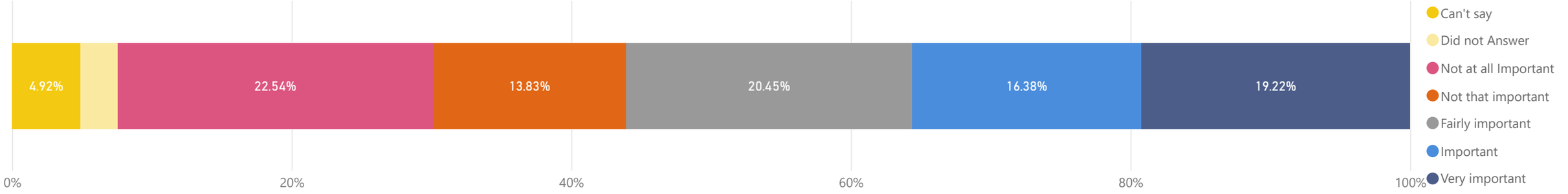

	σ	Avg.	Avg. %	Opt out	Opt out %	Not at all Important	Not that important	Fairly important	Important	Very important
All Service Areas	**1.36**	**3.0**	**59.1**	**80**	**7.6**	**238**	**146**	**216**	**173**	**203**
More stormwater runoff controls	1.16	3.8	76.2	7	5.3	6	9	35	28	47
More parking near transit	1.24	3.7	74.4	10	7.5	11	8	25	38	40
More secure storage facilities	1.45	3.1	61.7	11	8.4	28	12	30	24	27
More bike racks	1.43	3.0	60.2	12	9.1	28	14	32	21	25
More electric vehicle charging stations	1.45	2.6	52.2	12	9.1	38	25	22	16	19
Increase fees for environmental sustainable changes	1.37	2.5	50.2	4	3.1	40	31	26	14	17
Increase monthly parking fees to prioiritize transit	1.44	2.5	49.2	12	9.1	43	27	20	12	18
Time of Use Pricing	1.35	2.4	48.7	12	9.1	44	20	26	20	10

Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

Q18 Recommend to Others

132 Respondents
1980 Responses

How likely would you be to recommend Parking Services to others?

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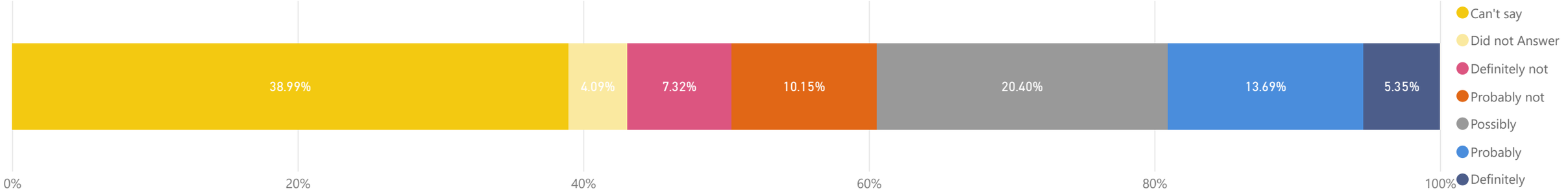

	σ	Avg.	Avg. %	Opt out	Opt out %	Definitely not	Probably not	Possibly	Probably	Definitely
All Service Areas	**1.15**	**3.0**	**59.9**	**853**	**43.1**	**145**	**201**	**404**	**271**	**106**
"Passport Parking" Mobile APP	1.35	3.3	65.9	64	48.5	11	5	22	13	17
Accessible Parking Permit Exemptions	1.22	3.1	62.7	81	61.4	8	5	16	16	6
Car Park Accessibility	1.00	3.1	62.0	51	38.6	5	14	38	16	8
Car Park Condition and Appearance	1.07	2.8	55.6	31	23.4	13	26	38	18	6
Car Park Lighting	1.10	3.0	59.1	38	28.7	10	19	40	15	10
Car Park Locations	0.95	3.1	61.7	28	21.2	6	17	51	22	8
Municipal Car Parks and Parking Structures	1.07	3.1	62.7	22	16.6	9	20	38	33	10
On Street Parking	1.18	3.0	60.5	20	15.2	16	19	32	36	9
Parking Meters and Pay Machines	1.15	3.1	61.4	20	15.2	13	20	36	32	11
Parking Penalty Dispute Options	1.25	2.7	54.5	70	53.0	14	12	18	13	5
Parking Penalty Payment Options	1.15	2.9	57.6	66	50.0	10	13	23	15	5
Residential Boulevard Parking	1.18	2.8	55.6	73	55.3	12	11	16	18	2
Residential Driveway Access Permit	1.22	2.9	57.1	97	73.4	7	5	12	8	3
Special Event Parking Permit for Residents	1.11	3.0	59.4	97	73.5	4	7	13	8	3
Temporary Regulation Enforcement Request	1.21	2.8	55.7	95	72.0	7	8	11	8	3

Q18 is used to build a customer loyalty metric, Net Promoter Score. Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

Q18

132
Respondents

1980
Responses

Net Promoter Score

Typically the Net Promoter Score is used to measure customer loyalty.

How likely would you be to recommend Parking Services to others?

	σ	Net Promoter Score	Detractors	Passives	Promoters
All Service Areas	**22.9**	**-57.22**	**750**	**271**	**106**
"Passport Parking" Mobile APP	27.0	-30.88	38	13	17
Accessible Parking Permit Exemptions	24.4	-45.10	29	16	6
On Street Parking	23.5	-51.79	67	36	9
Parking Meters and Pay Machines	22.9	-51.79	69	32	11
Municipal Car Parks and Parking Structures	21.5	-51.82	67	33	10
Residential Driveway Access Permit	24.4	-60.00	24	8	3
Special Event Parking Permit for Residents	22.2	-60.00	24	8	3
Car Park Accessibility	20.0	-60.49	57	16	8
Parking Penalty Payment Options	23.0	-62.12	46	15	5
Temporary Regulation Enforcement Request	24.2	-62.16	26	8	3
Residential Boulevard Parking	23.6	-62.71	39	18	2
Car Park Lighting	22.0	-62.77	69	15	10
Parking Penalty Dispute Options	24.9	-62.90	44	13	5
Car Park Locations	19.0	-63.46	74	22	8
Car Park Condition and Appearance	21.4	-70.30	77	18	6

Likert choices less than 4 are considered 'Detractors' while 5s are considered 'Promoters' and 4s are 'Passive'. Respondents who opted out by not answering or selecting 'Can't Say' were removed from the sample. Net Promoter score is calculated by subtracting (% Detractors) from (% Promoters). σ (Standard Deviation) is calculated in percent, the same units as the Net Promoter Score.

Q19 Value for Money

132 Respondents

1980 Responses

How would you rate the Parking Services Division for providing good value for money in the infrastructure and services provided to your community?

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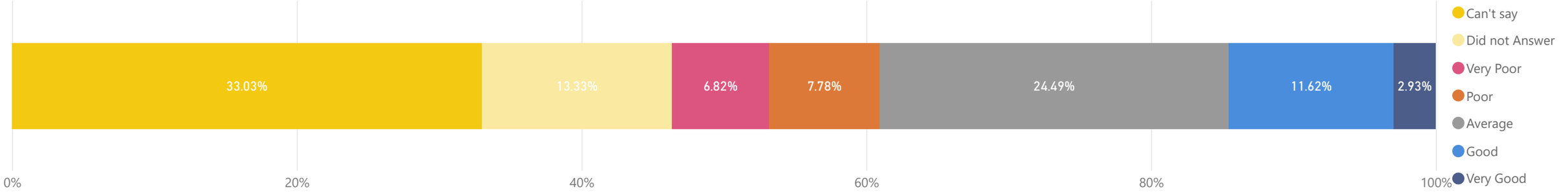

	σ	Avg.	Avg. %	Opt out	Opt out %	Very Poor	Poor	Average	Good	Very Good
All Service Areas	**1.05**	**2.9**	**58.5**	**654**	**38.1**	**135**	**154**	**485**	**230**	**58**
"Passport Parking" Mobile APP	1.28	3.1	62.5	69	52.3	12	3	22	17	9
Accessible Parking Permit Exemptions	1.06	3.1	62.4	83	62.9	5	5	23	11	5
Car Park Accessibility	0.95	3.0	60.5	47	35.6	6	14	42	18	5
Car Park Condition and Appearance	0.93	2.7	55.0	25	18.9	11	27	50	16	3
Car Park Lighting	0.93	3.0	59.0	30	22.7	7	21	49	20	5
Car Park Locations	0.89	3.0	59.4	25	18.9	10	11	61	22	3
Municipal Car Parks and Parking Structures	0.97	2.9	57.9	17	12.9	14	17	53	29	2
On Street Parking	1.13	2.9	57.9	8	6.1	20	19	46	32	7
Parking Meters and Pay Machines	1.04	3.0	59.7	12	9.1	15	16	50	34	5
Parking Penalty Dispute Options	1.16	2.6	52.9	76	57.6	13	9	22	9	3
Parking Penalty Payment Options	1.09	3.0	60.3	69	52.3	8	7	30	12	6
Special Event Parking Permit for Residents	1.13	2.9	58.8	99	75.0	6	1	18	5	3
Temporary Regulation Enforcement Request	1.10	2.7	54.2	94	71.2	8	4	19	5	2

Due to an error Q19 and Q20 are missing the Service Area Questions for 'Residential Boulevard Parking' and 'Residential Driveway Access Permit'. Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

Q20 Reasonable Fees

132 Respondents

1980 Responses

Are the current fees reasonable for the Parking service provided? Would you prefer to see rates rise to increase or maintain service, or would you rather see services reduced to maintain current rates?

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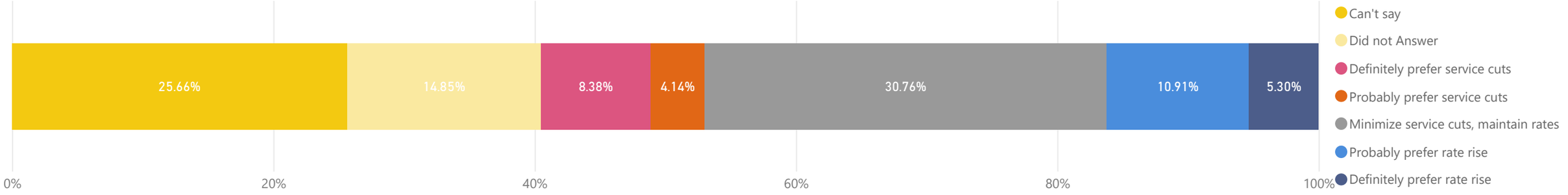

	σ	Avg.	Avg. %	Opt out	Opt out %	Definitely prefer service cuts	Probably prefer service cuts	Minimize service cuts, maintain rates	Probably prefer rate rise	Definitely prefer rate rise
All Service Areas	**1.08**	**3.0**	**60.2**	**538**	**31.4**	**166**	**82**	**609**	**216**	**105**
Car Park Lighting	1.00	3.3	65.8	25	18.9	9	3	55	28	12
Car Park Condition and Appearance	0.93	3.3	65.5	22	16.7	6	9	54	31	10
Car Park Accessibility	1.06	3.1	62.1	37	28.0	11	6	50	18	10
On Street Parking	1.09	3.1	61.9	16	12.1	15	6	61	21	13
Municipal Car Parks and Parking Structures	1.05	3.1	61.5	15	11.4	13	11	57	26	10
Car Park Locations	1.03	3.1	61.4	29	22.0	12	6	57	19	9
Temporary Regulation Enforcement Request	1.22	3.0	59.7	70	53.1	11	5	29	8	9
Parking Meters and Pay Machines	1.04	3.0	59.5	15	11.4	15	12	59	23	8
Accessible Parking Permit Exemptions	1.17	2.9	58.1	59	44.7	15	3	35	14	6
Special Event Parking Permit for Residents	1.16	2.8	55.9	74	56.0	12	5	29	7	5
Parking Penalty Dispute Options	1.09	2.7	54.7	60	45.5	14	8	38	7	5
Parking Penalty Payment Options	1.02	2.7	54.3	58	43.9	14	6	45	5	4
“Passport Parking” Mobile APP	1.14	2.7	53.8	58	43.9	19	2	40	9	4

Due to an error Q19 and Q20 are missing the Service Area Questions for 'Residential Boulevard Parking' and 'Residential Driveway Access Permit'. Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.

132
Respondents

3960
Responses

Individual Service Areas Reasonable Fees vs. Value for Money

Service areas where reasonable fees exceed value for money by 20 points is indicative of a mismatch between expectations and service levels, equal to one point on the Likert scale used.

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Service Area	Reasonable Fees (index score)	Value for Money (index score)	Net Differential
Average	**60**	**59**	**-1**
"Passport Parking" Mobile APP	54	63	9
Parking Penalty Payment Options	54	60	6
Accessible Parking Permit Exemptions	58	62	4
Special Event Parking Permit for Residents	56	59	3
Parking Meters and Pay Machines	59	60	0
Car Park Accessibility	62	60	-2
Parking Penalty Dispute Options	55	53	-2
Car Park Locations	61	59	-2
Municipal Car Parks and Parking Structures	62	58	-4
On Street Parking	62	58	-4
Temporary Regulation Enforcement Request	60	54	-5
Car Park Lighting	66	59	-7
Car Park Condition and Appearance	65	55	-11

Positive Net Differential values indicate that 'Value for Money' was greater than 'Reasonable Fees'. All values were calculated and then rounded to the nearest whole number. Due to an error Q19 and Q20 are missing the Dimensions "Residential Boulevard Parking" and "Residential Driveway Access Permit"

Value for Money *Q19 How would you rate the Parking Services Division for providing good value for money in the infrastructure and services provided to your community?*

Reasonable Fees *Q20 Are the current fees reasonable for the Parking service provided? Would you prefer to see rates rise to increase or maintain service, or would you rather see services reduced to maintain current rates?*

Summary of Survey Results

132
Respondents

16236
Responses

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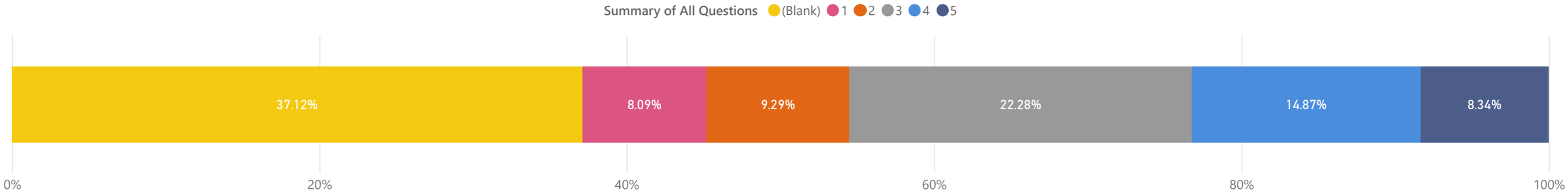
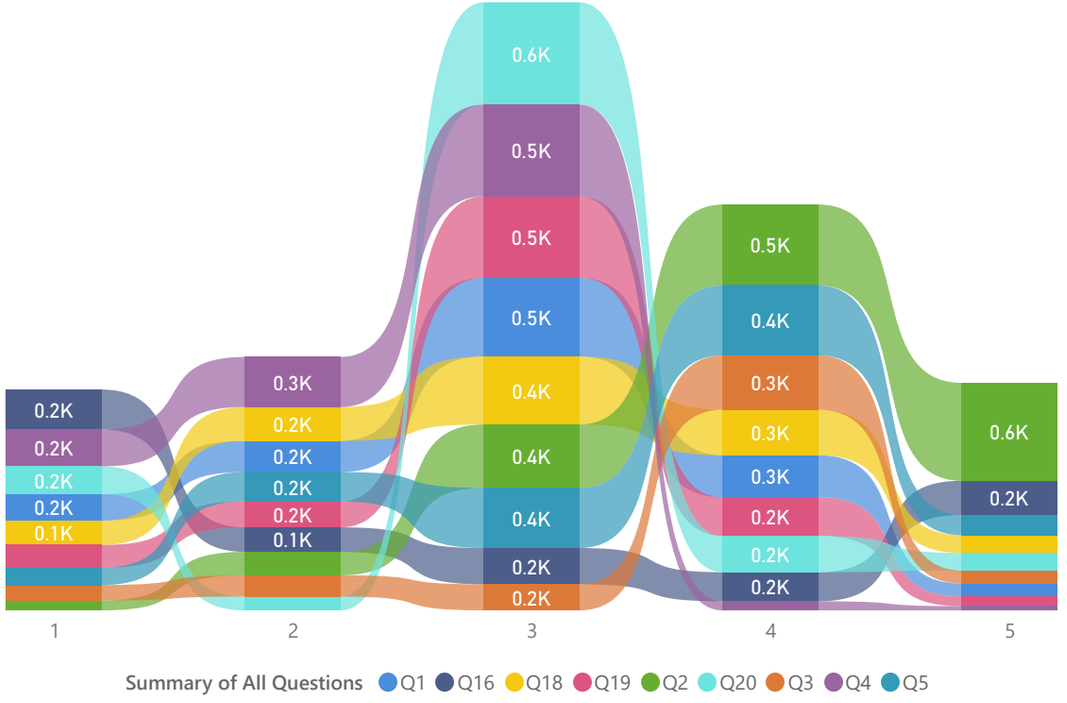


	σ	Avg.	Avg. %	Opt Out	Opt out %
All Service Areas	**1.21**	**3.1**	**61.9**	**6027**	**37.1**
Q2 Importance	1.09	3.8	77.0	340	17.2
Q3 Access, last 24 mo	1.14	3.3	64.3	546	41.4
Q5 Comfortable and Safe	1.09	3.2	64.7	808	40.8
Q20 Reasonable Fees	1.08	3.0	60.2	802	40.5
Q18 Recommend to Others	1.15	3.0	59.9	853	43.1
Q16 Potential Services	1.36	3.0	59.1	80	7.6
Q19 Value for Money	1.05	2.9	58.5	918	46.4
Q1 Performance, last 24mo	1.08	2.8	58.3	842	42.5
Q4 Meet Needs	0.93	2.5	48.9	838	42.3



Due to an error Q19 and Q20 are missing the Dimensions "Residential Boulevard Parking" and "Residential Driveway Access Permit". Respondents who opted out by not answering or selecting 'Can't Say' are included in Opt out.