HAMILTON PUBLIC HEALTH SERVICES ASSET MANAGEMENT PLAN 2024

Hamilton

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SUMMARY AND QUICK FACTS

SERVICE PROFILE

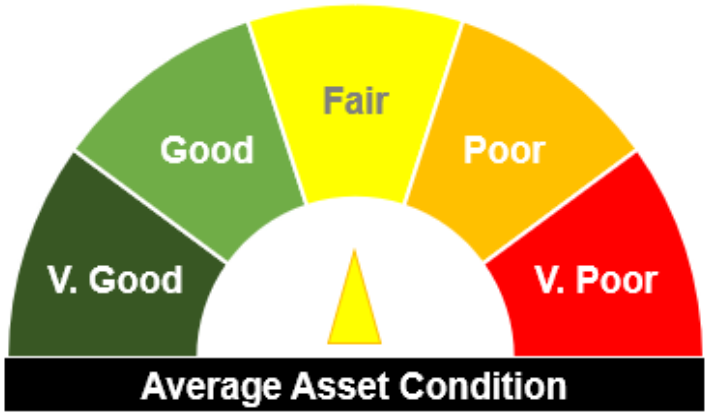
Hamilton Public Health Services (PHS) is responsible for the assessment, planning, delivery, management, and evaluation of a range of public health programs and services that address the growing and changing health needs of Hamilton residents.

These PHS responsibilities are carried out by a diverse multidisciplinary workforce which are its most prized resource. PHS operates in compliance with ever-changing provincial mandates and guidelines. How PHS assets are sourced, managed, and disposed of is closely aligned with current ministry policies.

ASSET SUMMARY

Replacement Value:
$3.4M

Average Age:
5 years or **36%**
of estimated life remaining



LEVEL OF SERVICE SUMMARY

Customer Values

- Public spaces should be free of needles.
- School-aged children should be vaccinated in school.
- Health outcomes should be equitable across Hamilton.

Customer Levels of Service

- Ensure the provision of mandatory health programs and services.
- Ensure public health services are accessible to the public.

Technical Levels of Service (2022)

- 3,486 dental clients seen.
- 259 radon kits distributed.
- 10,798 naloxone kits distributed.

MAJOR ASSET HIGHLIGHTS			
ASSETS	**QUANTITY**	**REPLACEMENT COST**	**AVERAGE CONDITION**
Vehicles	4	$1.2M	Fair
Information Technology	1,443	$1.2M	Poor

DATA CONFIDENCE

VERY HIGH **MEDIUM** **VERY LOW**

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DEMAND DRIVERS

Legislative Requirements- Public Health Services is required to provide services mandated by various regulations.

Population Growth- Public Health Service aims to provide services to meet client needs based on population size.

RISK

Critical Assets are identified as, essential data and software, Senior Dental Bus and Equipment, Vaccine Fridges, and Needle Return Vans and Kiosks.

Major Risks include overall service delivery risk, cyber security risk and information risk.

CLIMATE CHANGE

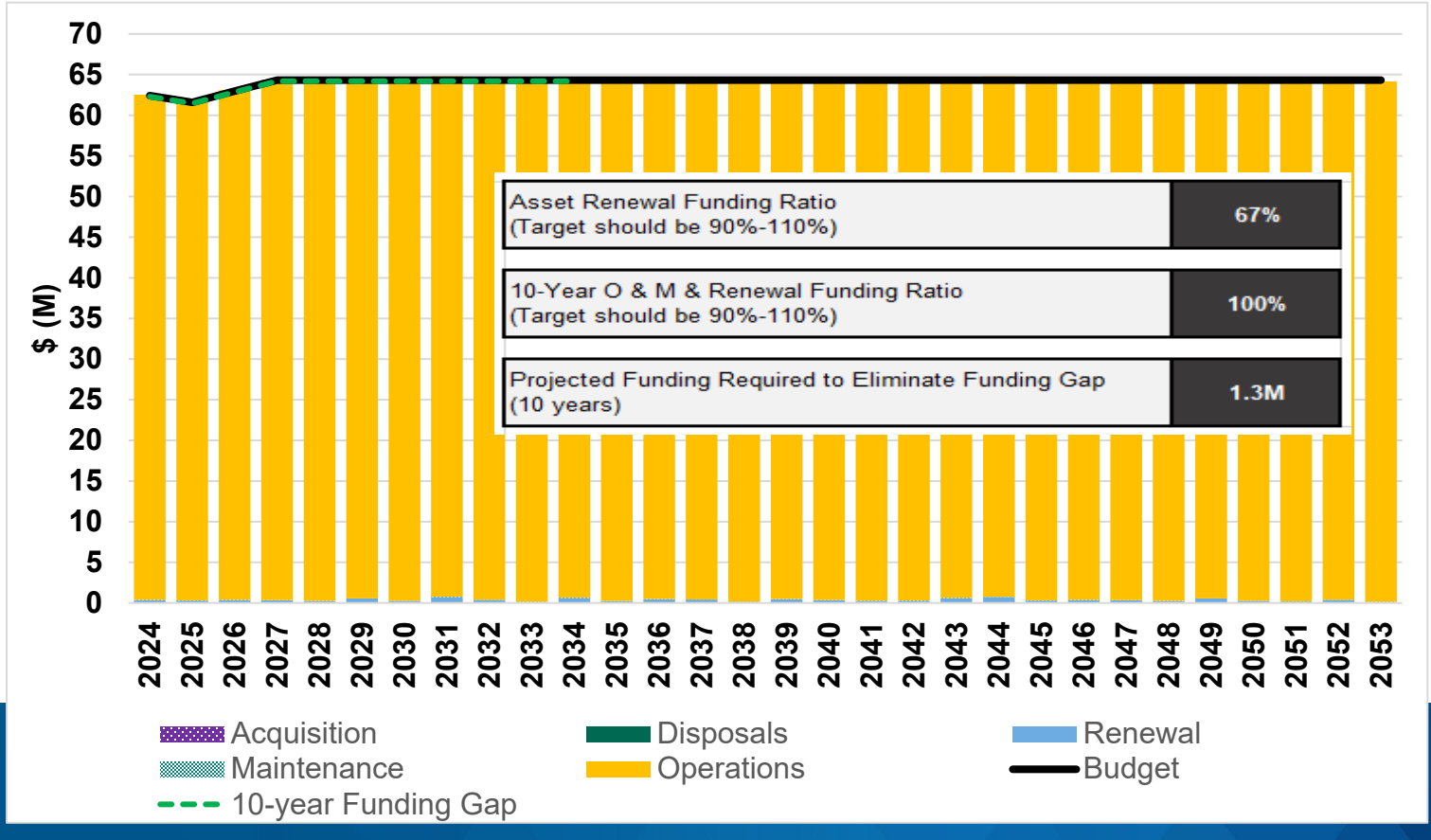
Mitigation

- Changing how we move: Meet the City of Hamilton's modelled targets by switching to electric or clean energy vehicles by 2040.

Adaptation

- Heat-related issues: Developing a Heat Response Strategy. Implemented a Heat Response Plan in collaboration with other City divisions and external partners. Coordinating efforts to issue heat and cold alerts.

LIFECYCLE SUMMARY



HAMILTON PUBLIC HEALTH SERVICES 2024 ASSET MANAGEMENT PLAN

1. INTRODUCTION

Hamilton Public Health Services (PHS) is responsible for the assessment, planning, delivery, management, and evaluation of a range of public health programs and services that address the growing and changing needs of Hamilton. The purpose of this Asset Management (AM) Plan is to ensure that PHS has fulfilled the Asset Management Planning requirements outlined in O. Reg 588/17 for current and proposed levels of service as well as to ensure PHS has the required assets to deliver effective and equitable public health services in accordance with the *Health Protection and Promotion Act*.[1]

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 2024-2053 planning period.

Since Sunday, February 25, 2024, the City of Hamilton experienced a cyber incident that disabled some of the IT systems. As a result, this AM Plan was created based on the data that was accessible at the time of publication.

[1] (Government of Ontario, Health Protection and Promotion Act, 1990)

2. BACKGROUND

The information in this section is intended to provide background on services provided by PHS, by providing a service profile, outlining legislative requirements, and defining the asset hierarchy used throughout the report. This section will provide the necessary background for the remainder of the AM Plan.

2.1 SERVICE PROFILE

The service profile consists of four main aspects of the service:

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

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

- ***Asset Management Plan Overview Document;***
- ***2024 Annual Service Plan and Budget and Public Health Priorities;***
- 2024 PHS Risk Management Framework; and,
- ***2022 Public Health Services Annual Performance & Financial Report.***

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

2.1.1 SERVICE HISTORY

The Hamilton Board of Health was established in 1873. Prior to this date, public health matters were dealt with by the City's Board of Works. A civic health department was established sometime after the passing of Ontario's Public Health Act in 1884. Between 1908 and 1910, many expansions took place including a public health lab for water and medical sampling; public health nurses in schools; and food and dairy inspections and dental clinics within schools. After the 1918 Influenza pandemic, services were reorganized and expanded, and additional Public Health Nurse (PHN) positions were created. In 1921, a Superintendent of Nurses was appointed and PHNs were running immunization clinics, examining school children and teaching child hygiene. In 1924, the City's first outpatient Mental Health Clinic was opened employing Social Workers to examine cases recommended by PHNs, physicians and other local agencies. Hamilton Public Health Services continues to be one of the only Public Health Units in Ontario with this service for residents under 18 years of age.

In 1967, the Ontario Ministry of Health passed regulations that more closely affiliated local health departments to the Provincial Health Department. The Ministry also proposed that the City, and what was then known as Wentworth County, amalgamate their respective health departments to form a new district health unit serving the populations of both Wentworth County and the City of Hamilton, completed in 1968. The Regional Municipality of Hamilton-Wentworth, as well as the former regional municipalities of Stoney Creek, Ancaster, Flamborough, Dundas and the township of Glanbrook, were dissolved on January 1, 2001.

2.1.2 SERVICE FUNCTION

As with all public health boards in Ontario, PHS is governed by the ***Health Protection and Promotion Act***. The Act defines which services and programs Hamilton Public Health Services must offer to the community. The following are the mandatory areas in which Hamilton Public Health Services is to provide programming:

- Community sanitation;
- Provision of safe drinking water;
- Control of infectious diseases;
- Health promotion, health protection and disease and injury prevention;
- Family health;
- Collection and analysis of epidemiological data; and,
- Additional programs and services, as directed by the regulations.

Public health is defined as promoting health and preventing disease for a population, both for the province of Ontario as a whole, and for individual communities, such as the City of Hamilton. This is what is known as a “population health” approach. Public health works to promote health and prevent disease by acting in anticipation of a future outcome. Public health develops services that aim to tackle health concerns that are projected to affect communities, such as health conditions related to aging and the spread of infection and disease.

Pursuant to the Health Promotion and Protection Act are the Ontario Public Health Standards (OPHS).[2] The Public Health Standards are a set of requirements for provisioning the mandatory public health programs and services outlined in the Health Promotion and Protection Act. The program standards defined by the OPHS are categorized by the following Foundational and Program Standards to address factors attributed to good health and broadly target population-based goals and program outcomes.

[2] (Government of Ontario, Ontario Public Health Standards, 2021)

Foundational Standards

- Population Health Assessment;
- Health Equity;
- Effective Public Health Practice; and,
- Emergency Management.

Program Standards

- Chronic Disease Prevention and Well-Being;
- Food Safety;
- Healthy Environments;
- Healthy Growth and Development;
- Immunization;
- Infectious and Communicable Disease Prevention and Control;
- Safe Water;
- School Health; and,
- Substance Use and Injury Prevention.

Moreover, the OPHS uses The **Public Health Accountability Framework** to 'outline the parameters and requirements to hold boards of health accountable for the work they do, how they do it, and the results achieved'.[3]

The OPHS also sets out a number of requirements, such as:

- Organizational Requirements where reporting and/or monitoring are required to demonstrate accountability to the ministry;
- Fiduciary Requirements for using ministry funding efficiently for its intended purpose. Including but not limited to maintaining an inventory of all tangible capital assets developed or acquired with a value exceeding $5,000 or a value determined locally that is appropriate under the circumstances;
- Good Governance and Management Practices to ensure effective functioning of health and management of public health units; and,
- Public Health Practice Requirements for achieving a high standard and quality of practice in the delivery of public health programs and services.

[3] (Government of Ontario, Ontario Public Health Standards, 2021)

To ensure boards of health are transparent and demonstrate impact, the OPHS requires the following:

- Public Health Indicator Framework for Program Outcomes;
- Contributions to Population Health Outcomes; and,
- Transparency Framework: Disclosure and Reporting Requirements.

Some of the areas identified as priorities in the community are:

- Needle-free public spaces;
- Reliable access to harm reduction supplies;
- Up-to-date vaccinations for children at school;
- Prenatal and breastfeeding support that suits individual needs;
- Accessible dental services;
- Mental health supports;
- Climate change; and,
- Air quality.

In order to deliver effective and equitable public health services, PHS requires assets.
Some assets that support the delivery of the service include:

- Reliable vehicles including dental buses to make services more accessible and utility vehicles to manage operations;
- Secure and reliable technology to support staff to perform their work as well as safeguarding the privacy, records and information management of both personal information and personal health information;
- Adequate furnishings to provide comfortable spaces; and,
- Well-maintained equipment to deliver various public health services.

2.1.3 USERS OF THE SERVICE

As such, the table shown in this section is not an exhaustive representation of the service provided by PHSs but rather is a snapshot of the scope and diversity of service delivery. Public health services are available to almost 606,000 Hamilton residents, as well as visitors to Hamilton, serving age groups ranging from infants to seniors. ***Table 1*** shows, for each mandatory programming area, a metric related to users of the service.

Table 1: Public Health Service Provision

PUBLIC HEALTH PROGRAMMING	USER METRIC (2022)
Chronic Disease Prevention and Well-being	3,486 dental clients seen
Food Safety	3,007 food safety inspections
Healthy Environments	259 radon kits distributed
Healthy Growth and Development	1,537 pregnant individuals accessed prenatal support
Immunization	5,790 catch-up immunizations administered
Infectious and Communicable Disease Prevention and Control	11,611 reportable disease cases investigated
Safe Water	198 safe water inspections
School Health	63 schools completed the Healthy Schools certification
Substance Use and Injury Prevention	3,989 needle exchange van service requests responded to
	10,798 naloxone kits distributed

2.1.4 UNIQUE SERVICE CHALLENGES

PHS has some unique service challenges which will be discussed throughout this report. Some of these challenges are summarized below:

- Unlike most City of Hamilton services, PHS is mostly (around 70%) funded by Ontario's Ministry of Health while the rest is funded largely by the City. This creates a unique dynamic where PHS is required to provide programming mandated by the province as well as accommodate requests from the City of Hamilton to meet local community needs. This results in PHS needing to balance competing priorities while utilizing limited financial and human resources.

- The Ontario Public Health Standards (OPHS) determine the scope and quality of services that PHS needs to provide. As part of the unfolding Strengthening Public Health Strategy from the Ministry of Health, potentially major changes are anticipated for these standards (applicable from Jan 1, 2025) that may result in PHS requiring to quickly adjust its programs and services to meet the new requirements.

- Hamilton is moving toward adopting a new board of health model. Implementing the new governance structure may also require additional resources which may strain Public Health Service's capacity to manage the change effectively.

- Growth in provincial funding levels remains less than increases in wages, benefits, and inflation, alongside rising costs associated with population growth and increased service demand, resulting in budget pressures. The Ministry of Health also discontinued provincial COVID-19 funding at the end of December 2023 while requiring boards of health to integrate ongoing COVID-related outbreak management, infection prevention and control and immunization work into base budgets through adjustments in programming. As a result of these imbalances, City Levy as a percent of total expenditure is expected to increase from 32.5% in 2024 to 37.0% in 2027.

- Health inequity remains a reality for Hamilton as various health risk factors and outcomes are disproportionately experienced by Hamiltonians. Among health outcomes, substance poisoning, assault, sexually transmitted and blood-borne infections, diabetes, and self-harm have the greatest inequities in Hamilton.

- Hamilton's opioid-related death rate was 63% greater than the provincial average in 2022 and is the 9th highest among the 34 provincial public health units. In 2023, the City of Hamilton declared an emergency in the areas of opioids, mental health, and homelessness. PHS has a key role to play in the City's various strategies to combat these challenges.

- Climate change poses many challenges for PHS due to associated risks to population health. These include but are not limited to expected increases in the incidence and type of vector-borne diseases of public health significance, as well as an expected increase in extreme heat, flooding, and wildfire events that can adversely impact human health. PHS is working with other City of Hamilton departments and community groups to support public-facing risk communications related to the health impacts of climate change and actions that can be taken to reduce the impact of those risks.

- The Community Dental Health Bus which is used by PHS to facilitate easy access to its dental services, is currently immobile due to poor structural integrity. The demand for this service remains high so a solution to replace the service provided on the bus is required. PHS is bringing a recommendation report forward to the Public Health Committee on June 3rd, 2024.

- The percentage of students with a vaccine record continues to be lower after the 2022-2023 school year compared to pre-pandemic school years. Following the 2022-2023 school year, over 1 in 3 students born in 2015 do not have an up-to-date vaccination record with Hamilton Public Health for most diseases listed under Ontario's Immunization of School Pupils Act.

- The COVID-19 pandemic greatly impacted service delivery for PHS. Some of the services that were routinely provided were reduced or temporarily discontinued to respond to the emergency efforts. Now as the City of Hamilton enters the post-pandemic phase of the response, a number of these services continue to experience backlogs. Clients who would otherwise access these services have been impacted by worsening health status (e.g., opioid use), while services such as vaccination clinics face the same challenges along with skepticism post-pandemic. For example, almost half of school-aged children in Hamilton do not have up-to-date vaccination records.

- The recovery phase from COVID-19 also includes the re-establishment of internal administrative, business and quality improvement processes. Therefore, routine program evaluation activities were not completed in recent years that may otherwise have been available to inform this report.

2.2 LEGISLATIVE REQUIREMENTS

The most significant legislative requirements that impact the delivery of PHS services are outlined in ***Table 2***. These requirements are considered throughout the report, and where relevant, are included in the levels of service measurements. There are approximately 20 additional Acts/Legislation that place duties on the Board of Health (BOH), Medical Officer of Health (MOH) and public health staff.

Table 2: Legislative Requirements

LEGISLATION OR REGULATION	REQUIREMENT
Health Protection and Promotion Act, R.S.O. 1990, c. H.7	The purpose of this Act is to provide for the organization and delivery of public health programs and services, the prevention of the spread of disease and the promotion and protection of the health of the people of Ontario. R.S.O. 1990, c. H.7, s. 2.
Ontario Public Health Standards: Effective June/2021	Requirements for Programs, Services, and Accountability are published as the public health standards for the provision of mandatory health programs and services by the Minister of Health, pursuant to Section 7 of the Health Protection and Promotion Act
Personal Health Information Protection Act, 2004, S.O. 2004, c. 3, Sched. A[4]	This act establishes rules for the collection, use and disclosure of personal health information about individuals that protect the confidentiality of that information and the privacy of individuals with respect to that information while facilitating the effective provision of health care.
Immunization of School Pupils Act, R.S.O. 1990, c.I.1[5]	This Act is in place to increase the protection of the health of children against the diseases that are designated diseases under this Act

2.3 ASSET HIERARCHY

In order to deliver effective and equitable services, PHS requires assets. The PHS Service Area has been broken down into four asset classes (***Table 3***) for the purpose of this AM Plan:

1. Vehicles: describes different types of vehicles which are used to provide public health services;
2. Information Technology: describes the different types of technology required to deliver the service including hardware and software assets owned by PHS;
3. Furnishings: refers to any PHS-owned furnishings and fixtures utilized to deliver public health services; and,
4. Equipment: refers to all equipment used by the different sections of PHS to deliver their respective services.

[4] (Government of Ontario, Personal Health Information Protection Act, 2004)
[5] (Government of Ontario, Immunization of School Pupils Act, 1990)

Table 3: Asset Class Hierarchy

VEHICLES	INFORMATION TECHNOLOGY	FURNISHINGS	EQUIPMENT (RELATED TO EACH SERVICE AREA)
Dental Buses	Staff Devices	Furnishings & Fixtures	Communicable Disease Control e.g., vaccine fridges,
Utility Vehicles	Intangible Assets		Epidemiology & Wellness e.g., needle return kiosks
			Healthy Environment e.g., air samplers & infrared thermometers
			Healthy Families e.g., dental equipment

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3. SUMMARY OF ASSETS

This section provides a detailed summary and analysis of the existing inventory information as of June 2023 including age profile, condition methodology, condition profile, asset usage, and performance for each of the asset classes.

Table 4 displays the detailed summary of assets for the PHS service area. The information used for this report was sourced from various City databases discussed in ***Section 10.1***. It is important to note that inventory information does change often and that this is a snapshot in time of information.

The City owns approximately **$3.4 Million** in PHS assets which are on average in **FAIR** condition. Assets are a weighted average of **5 years** in age which is **36%** of the average remaining service life (RSL). The majority of the weighting for these averages comes from Vehicles and Information Technology (IT) asset classes.

A continuous improvement item identified in ***Table 24*** is to develop an asset registry for PHS assets since at the time of writing PHS did not have an inventory of Equipment assets, and this data was collected specifically for this report.

Data confidence descriptions are outlined on ***page 31*** of the AM Plan Overview. The replacement costs below are typically at a **LOW** data confidence level overall. For Vehicles, replacement costs are based on the amounts specified in PHS's 10-Year Capital Plan and estimates from Corporate Fleet Services. Replacement costs for staff devices within the IT asset class are based on estimates provided by Corporate IT Services whereas the valuation of intangible assets has been identified as a continuous improvement item in ***Table 24.***

Data confidence for average age is **HIGH** overall as most of the assets have their ages formally tracked. On the other hand, the average equivalent condition has a **MEDIUM** data confidence as most assets do not have a formal condition scoring methodology and the condition is based on SME opinion and/or estimated remaining service life. Continuous improvement items identified in ***Table 24*** include developing methodologies to determine asset conditions for PHS's assets.

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 in service at the time of writing, and leased assets (e.g., leased office space) are not included as assets, but the cost to lease assets would be incorporated under operations costs in ***Section 8.2***.

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Table 4: Detailed Summary of Assets
(Weighted Average based on Replacement Cost)

VEHICLES				
ASSET CATEGORY	**NUMBER OF ASSETS**	**REPLACEMENT VALUE**	**AGE (% RSL)**	**AVERAGE EQUIVALENT CONDITION**
Community Dental Health Bus	1	$569k	11 Years (8%)	4-POOR
DATA CONFIDENCE	**Very High**	**Very Low**	**High**	**Medium**
Senior Dental Health Bus	1	$569k	4 Years (67%)	2-GOOD
DATA CONFIDENCE	**Very High**	**Very Low**	**High**	**Medium**
Van for Needle Exchange	1	$55k	4 Years (60%)	3-FAIR
DATA CONFIDENCE	**Very High**	**High**	**High**	**Medium**
Vaccine Transport Vehicle	1	$33k	5 Years (50%)	3-FAIR
DATA CONFIDENCE	**Very High**	**High**	**High**	**Medium**
SUBTOTAL	**$1.2M**		**7 Years (39%)**	**3-FAIR**
DATA CONFIDENCE	**Low**		**High**	**Medium**

INFORMATION TECHNOLOGY				
ASSET CATEGORY	**NUMBER OF ASSETS**	**REPLACEMENT VALUE**	**AVERAGE AGE (% RSL)**	**AVERAGE EQUIVALENT CONDITION**
Computers	709	$892k	3 Years (22%)	4-POOR
DATA CONFIDENCE	**High**	**High**	**High**	**Medium**
Mobile Devices	734	$327k	3 Years (37%)	4-POOR
DATA CONFIDENCE	**High**	**High**	**High**	**Medium**
Intangible Assets	No Data	No Data	N/A	N/A
DATA CONFIDENCE				
SUBTOTAL	**$1.2M**		**3 Years (26%)**	**4-POOR**
DATA CONFIDENCE	**High**		**High**	**Medium**

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FURNISHINGS				
ASSET CATEGORY	NUMBER OF ASSETS	REPLACEMENT VALUE	AVERAGE AGE (% RSL)	AVERAGE EQUIVALENT CONDITION
Furnishings & Fixtures	2,128	$596k	7 Years (29%)	2 - GOOD
DATA CONFIDENCE	High	Medium	High	Medium
SUBTOTAL	$0.6M		7 Years (29%)	2 - GOOD
DATA CONFIDENCE	Medium		High	Medium

EQUIPMENT				
ASSET CATEGORY	NUMBER OF ASSETS	REPLACEMENT VALUE	AVERAGE AGE (% RSL)	AVERAGE EQUIVALENT CONDITION
Healthy Environment	45	$19k	7 Years (29%)	2-GOOD
DATA CONFIDENCE	High	Medium	Medium	Medium
Healthy Families	1,495	$154k	5 Years (50%)	2-GOOD
DATA CONFIDENCE	Medium	Medium	Medium	Medium
Communicable Disease Control	21	$192k	2 Years (82%)	1-VERY GOOD
DATA CONFIDENCE	High	Very Low	Medium	Medium
Epidemiology & Wellness	18	$43k	3 Years (72%)	2-GOOD
DATA CONFIDENCE	High	Medium	Medium	Medium
SUBTOTAL	$0.4M		4 Years (66%)	2-GOOD
DATA CONFIDENCE	Low		Medium	Medium

TOTAL	$3.4M	5 Years (36%)	3-FAIR
DATA CONFIDENCE	Low	High	Medium

3.1 ASSET CONDITION GRADING

Condition refers to the physical state of the PHS assets and is 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. Since condition scores are reported using different scales and ranges depending on the asset, ***Table 5*** 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 24*** 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: Equivalent Condition Conversion Table

EQUIVALENT CONDITION GRADING CATEGORY	CONDITION DESCRIPTION	% REMAINING SERVICE LIFE
1 Very Good	The asset is new, recently rehabilitated, or very well maintained. Preventative maintenance is required only.	>79.5%
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%
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%
4 Poor	The asset has significant defects and deterioration. Deterioration has an impact on asset usage. Rehabilitation or major maintenance is required in the next year.	19.5% -39.4%
5 Very Poor	The asset has serious defects and deterioration. The asset is not fit for use. Urgent rehabilitation or closure is required.	<19.4%

The following conversion assumptions were made:

- For assets where a condition rating was provided by the asset owner, the same was converted to a five-point condition scale (i.e., Vehicles, Equipment and Furnishings); and,
- For assets where a condition assessment was not completed, but age information was known, the condition was based on the % of remaining service life (i.e., Information Technology assets).

3.2 ASSET CLASS PROFILE ANALYSIS

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 estimated service life (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 asset's condition is based on age, it is typically considered to be of a low confidence level. Although typically, age is used when projecting replacements beyond the 10-year forecast to predict degradation.

- Condition refers to the physical state of assets and is a measure of the physical integrity of assets or their 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 to determine their condition, which is noted in this section.

- Finally, there are often insufficient resources to address all known asset deficiencies, and so performance issues may arise which must be noted and prioritized.

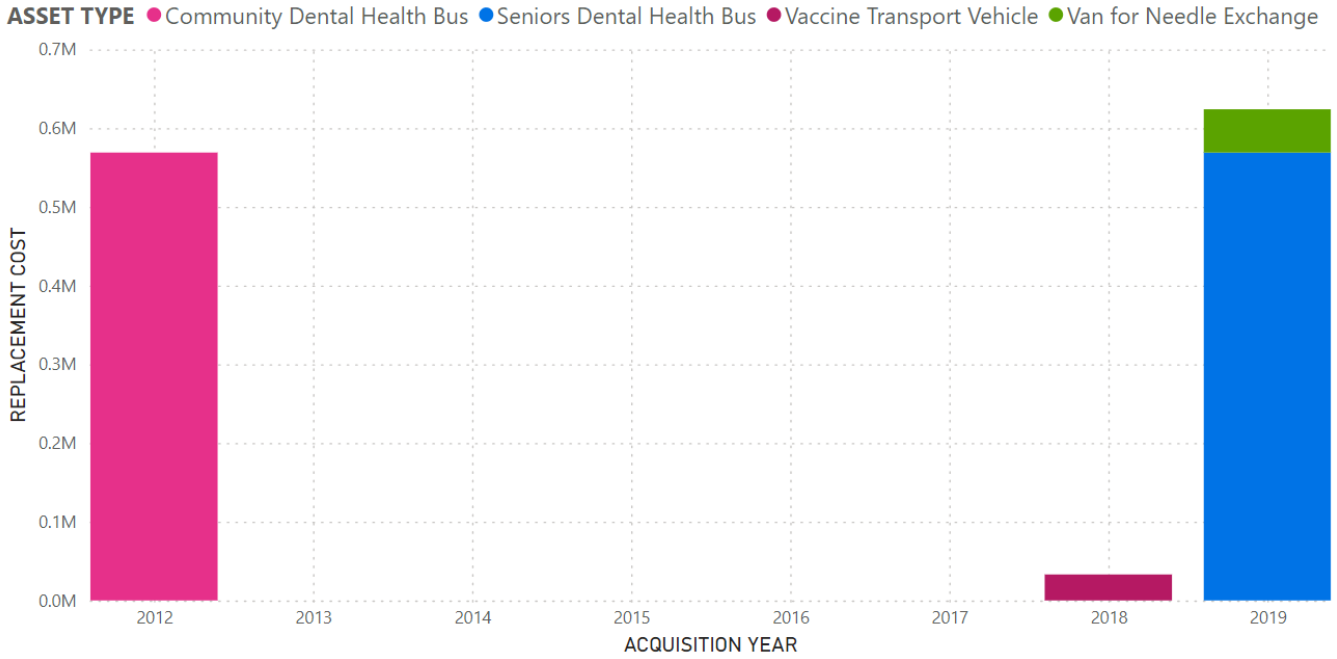
3.2.1 VEHICLES PROFILE

Vehicles are PHS's most valuable asset class in terms of replacement cost. PHS owns four vehicles. These include two dental buses, a van to service needle exchange requests, and a vehicle for vaccine transport.

3.2.1.1 AGE PROFILE

The age profile of the PHS vehicle assets is shown in ***Figure 1.*** For Vehicle assets, the data confidence for the age is typically High because assets' ages are formally tracked.

Figure 1: PHS Vehicles Age Profile



The spikes in 2012 and 2019 correspond to the acquisition of the two dental buses. The dental buses have an Estimated Service Life (ESL) of 20 years while the two utility vehicles have an ESL of 10 years. All vehicles are currently within their ESL.

3.2.1.2 CONDITION METHODOLOGY & PROFILE

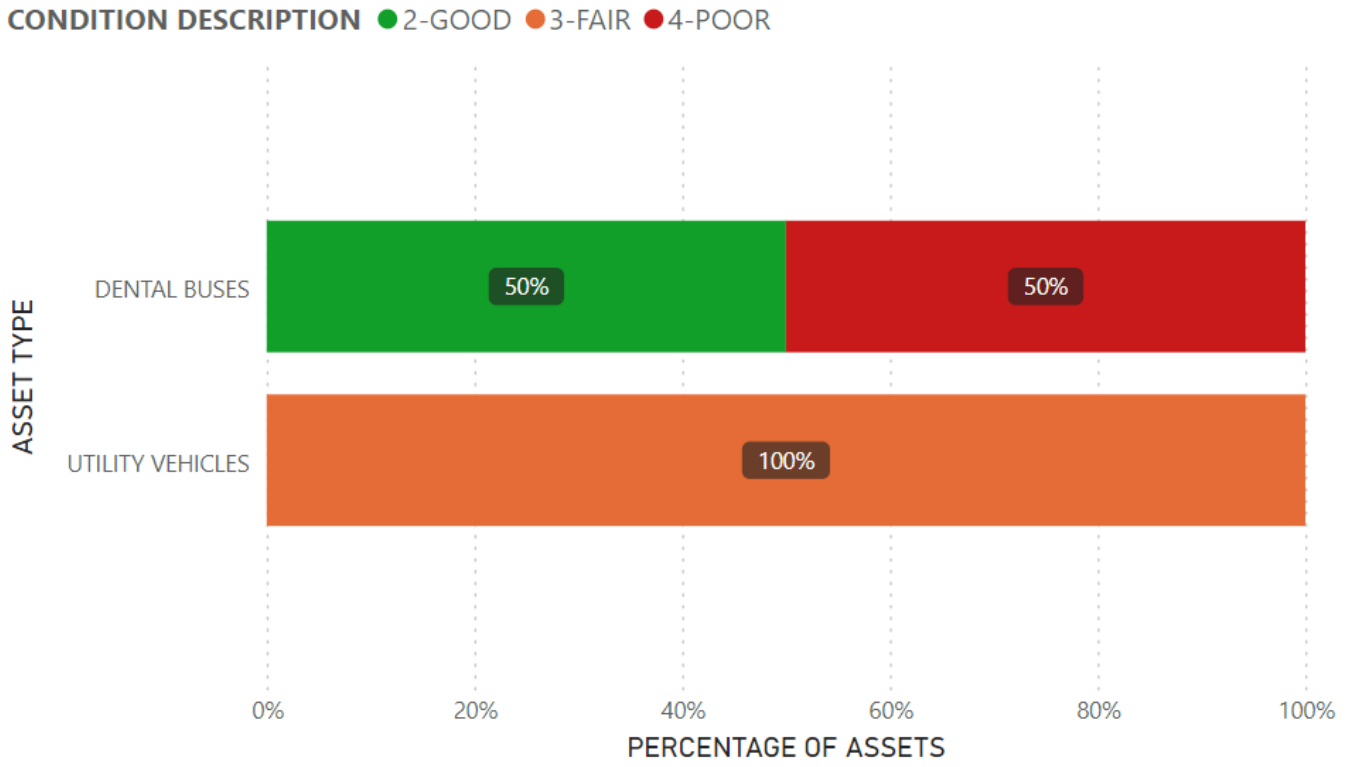
Vehicles are inspected and maintenance activities are conducted at specific intervals throughout the asset's lifecycle however no formal condition rating is assigned to each vehicle. Public Health Services relies on the Fleet section in the Corporate Asset Management (CAM) division to assist with the inspection, maintenance, and procurement of vehicles on their behalf. In the absence of a formal condition methodology, the condition has been assigned based on the asset owner's opinion. Developing a condition methodology has been identified as a continuous improvement item in ***Table 24.***

Table 6: PHS Vehicles Inspection and Condition Information

ASSET	INSPECTION TYPE	DESCRIPTION	FREQUENCY	CONDITION SCORE OUTPUT
Vehicles	**Inspection**	Regular Maintenance Inspection	Scheduled twice per year	N/A

The condition profile of PHS's Vehicle assets is shown in ***Figure 2***. At this time, the average condition of vehicle assets is considered to be Fair based on asset owner judgment and weighed by replacement cost. As shown, the Community Dental Health Bus is in Poor condition while the other vehicles are in Fair or Good condition. The Community Dental Bus is currently immobile but providing service and is discussed throughout the report in ***Section 3.2.1.3***, ***Section 4.5,*** and ***Section 6.4*** as this is considered a reduction in level of service that should be investigated further. From the onset, there was no capital replacement cost set aside to replace the Community Dental Health Bus. After extensive investigation of different alternatives, service delivery options are being brought forward to PHC on June 3, 2024.

Figure 2: PHS Vehicles Condition Distribution



3.2.1.3 ASSET USAGE AND PERFORMANCE

The most significant service performance deficiency associated with PHS's vehicle assets relates to the Community Dental Health Bus. The Community Dental Health Bus stopped operating in the community in August 2023 and has been parked because of the poor structural integrity of the vehicle. It can no longer be driven and is not roadworthy.

Table 7: PHS Vehicles Known Service Performance Deficiencies

ASSET	SERVICE DEFICIENCY	DESCRIPTION OF DEFICIENCY
Community Dental Bus	Mechanically Out of Service	Emergency dental services are currently being provided at a fixed site at the downtown Robert Thompson Building (RTB) dental clinic. The program was unable to secure a temporary location to provide service at one parked location due to safety concerns, costs, and site barriers.

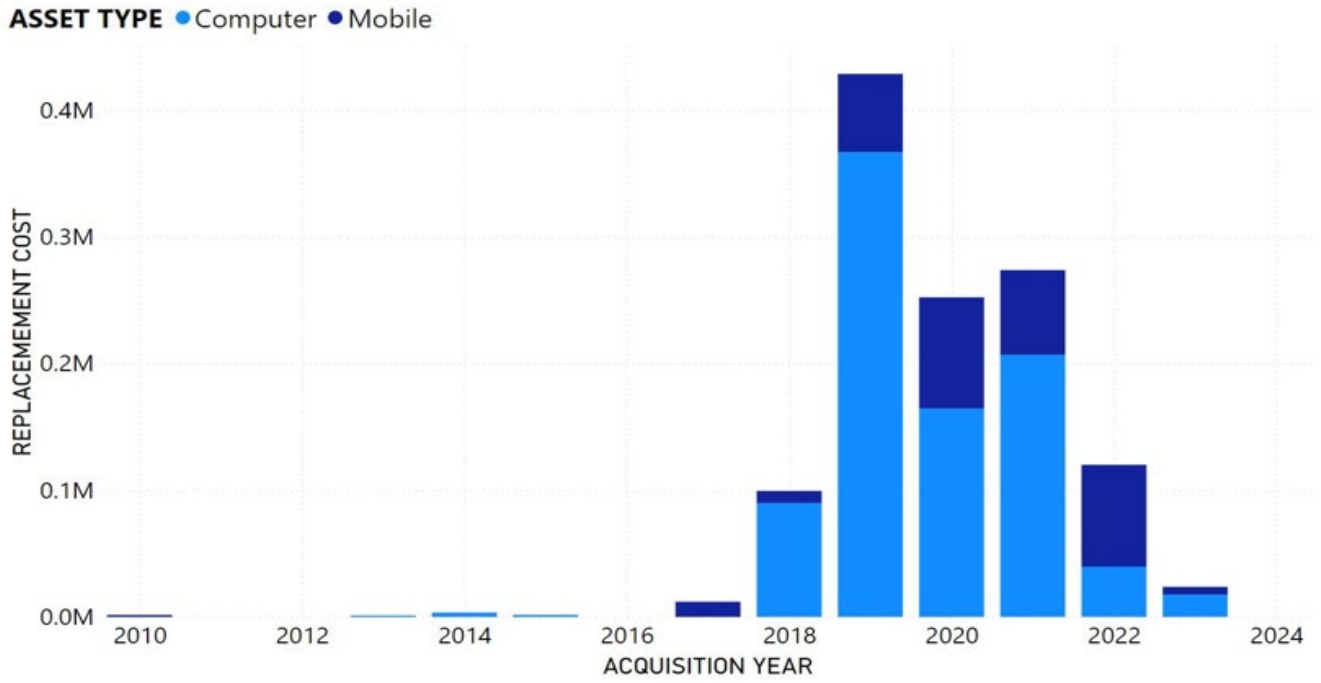
3.2.2 INFORMATION TECHNOLOGY PROFILE

Information Technology (IT) is the second most valuable asset class for PHS in terms of replacement cost. IT assets have been divided into two broad categories: staff devices and intangible assets. Replacement values and estimated service for staff devices have been provided by Corporate IT while replacement values have not yet been assigned to the intangible assets. Developing replacement value estimates for the intangible assets has been identified as a continuous improvement item in ***Table 24.***

3.2.2.1 STAFF DEVICES AGE PROFILE

The age profile for PHS Information Technology (IT) assets is shown in ***Figure 3***. For IT assets, the data confidence for the age is High because assets' ages are formally tracked, and many assets are replaced based on age. The estimated service life (ESL) is between four to five years for staff devices, and therefore it is evident that many devices are approaching or beyond their ESL.

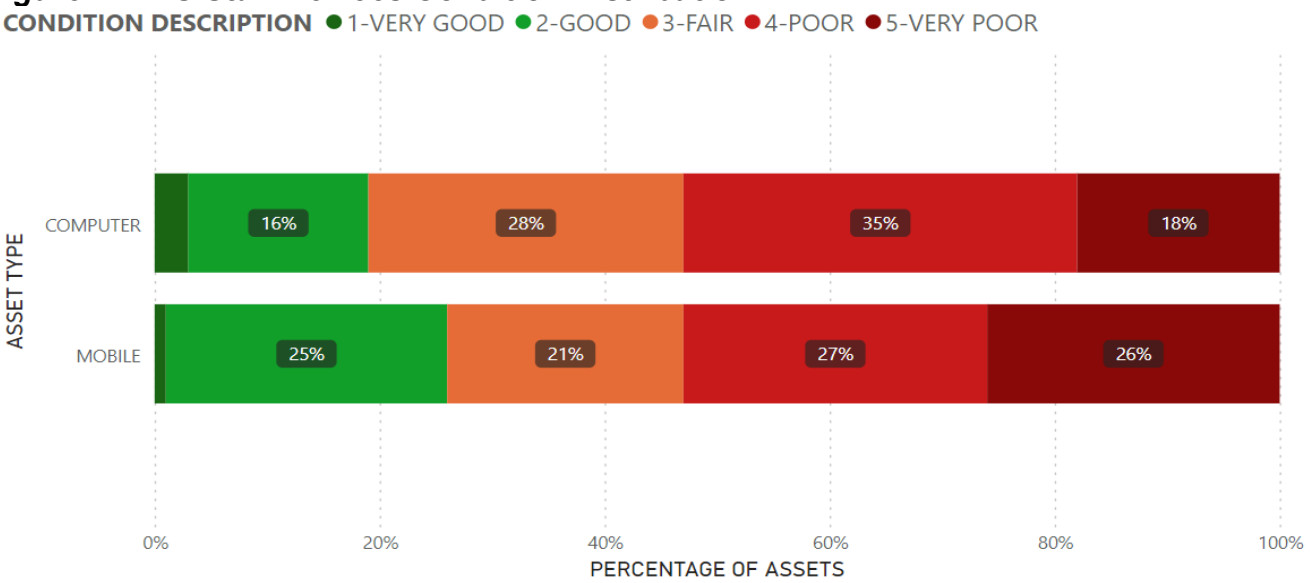
Figure 3: PHS Staff Devices Age Profile



3.2.2.2 CONDITION METHODOLOGY & PROFILE

There is no formal methodology to assess the condition of IT assets. The condition is based on the estimated service life (ESL), which as previously mentioned, is between four to five years for staff devices. ***Figure 4*** shows the condition profile of PHS's staff devices. As shown in ***Figure 4***, over half of the devices are shown to be in Poor or Very Poor condition based on ESL.

Figure 4: PHS Staff Devices Condition Distribution



3.2.2.3 ASSET USAGE AND PERFORMANCE

Assets are generally provided to meet design standards where available. Known service performance issues for technology assets involve assets being beyond their Estimated Service Life and computer monitors not meeting asset owner requirements.

Table 8: PHS Staff Devices Known Service Performance Deficiencies

ASSET	DESCRIPTION OF DEFICIENCY
Staff Devices	Most staff devices are nearing or beyond the end of service life.
Computer Monitors	Computer Monitors are not aligned with current standards within the City of Hamilton.

3.2.2.4 INTANGIBLE ASSETS

Intangible assets are not physical assets but exist in the digital domain. These may be websites, critical datasets, enterprise software or any other such digital asset. PHS's intangible assets include:

- Youth Tobacco Use Prevention Program Website & Domain
- Central West TCAN SharePoint site
- ABELDent software (dental services software)
- SRFax (a secure e-faxing solution)
- OSCAR (electronic medical record)
- FrontDesk (online appointment booking system)
- Hedgehog (inspection database)
- Eschedule (scheduling software for clinics)
- ClinicalConnect (secure access to integrated patient data by authorized healthcare professionals)

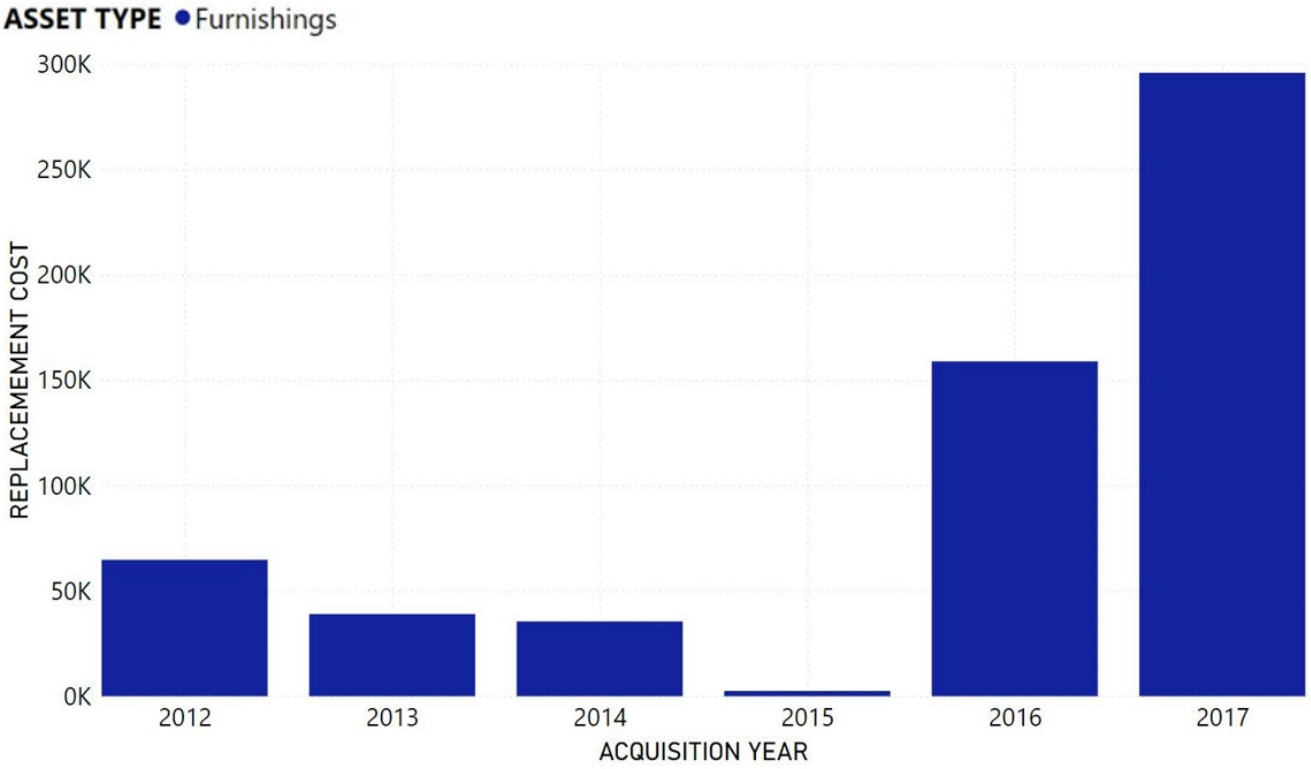
For the current iteration of the plan, an exhaustive list of PHS-owned intangible assets has not been created. Nor have replacement values been assigned to these assets. Age and condition data have also been deemed to be not applicable to this asset class. As a result, age and condition profiles are not presented for intangible assets. However, determining the value of intangible assets has been identified as a continuous improvement item in ***Table 24*** of this plan.

3.2.3 FURNISHINGS PROFILE

3.2.3.1 AGE PROFILE

The age profile for PHS's Furnishings assets is shown in ***Figure 5.*** For Furnishings assets, the data confidence for the age is High because the assets' ages have been recorded at the time of purchase. This asset class has an estimated service life (ESL) of 10 years. As shown in the figure below, most of the Furnishing's assets purchased within the last 10 years are not immediately due for replacement based on age.

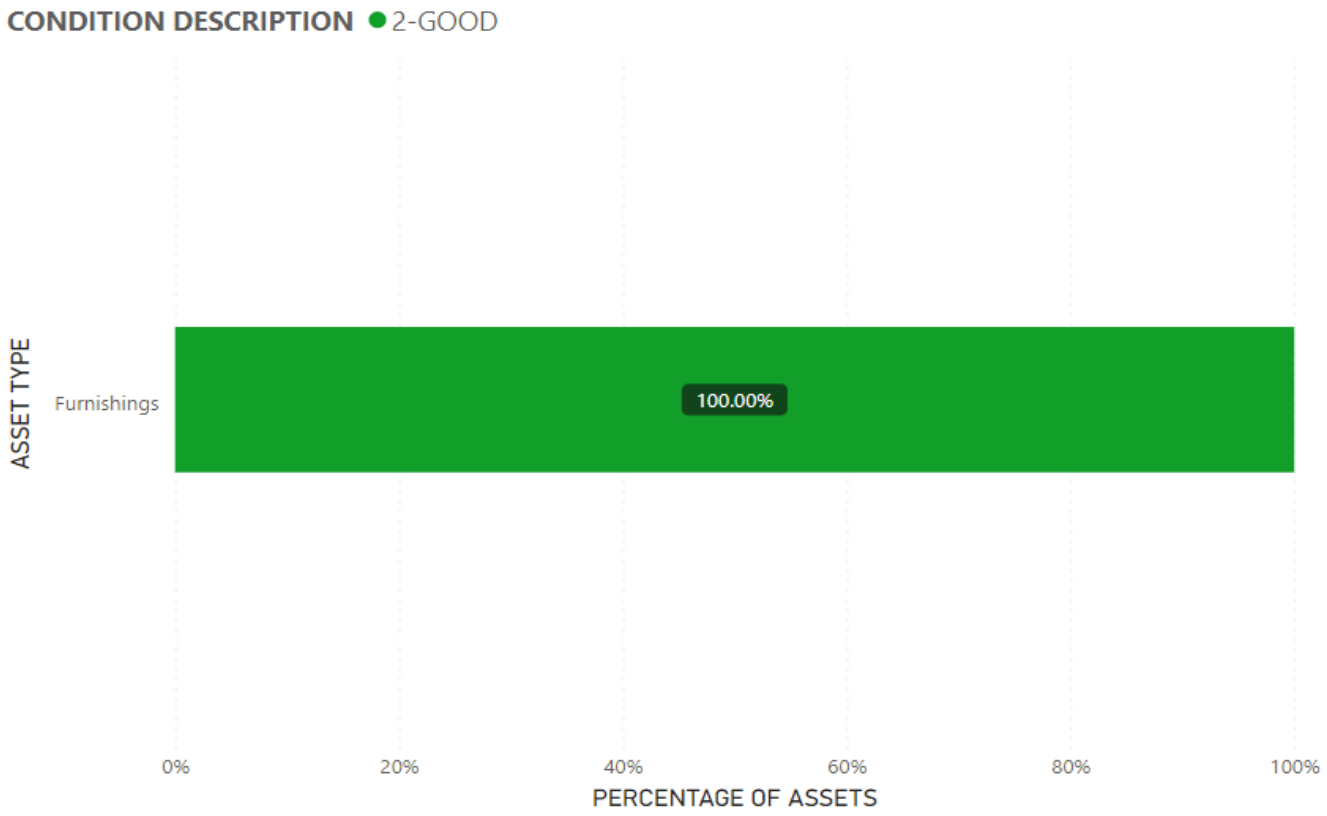
Figure 5: PHS Furnishings Age Profile



3.2.3.2 CONDITION METHODOLOGY & PROFILE

The condition of furnishings is not formally tracked, and no inspection methodology exists to determine the condition. 100% of furnishing assets are determined to be in **GOOD** condition based on the asset owner's opinion.

Figure 6: PHS Furnishings Condition Distribution



3.2.3.3 ASSET USAGE AND PERFORMANCE

Assets are generally provided to meet design standards where available. There are no known service performance deficiencies related to furnishings assets.

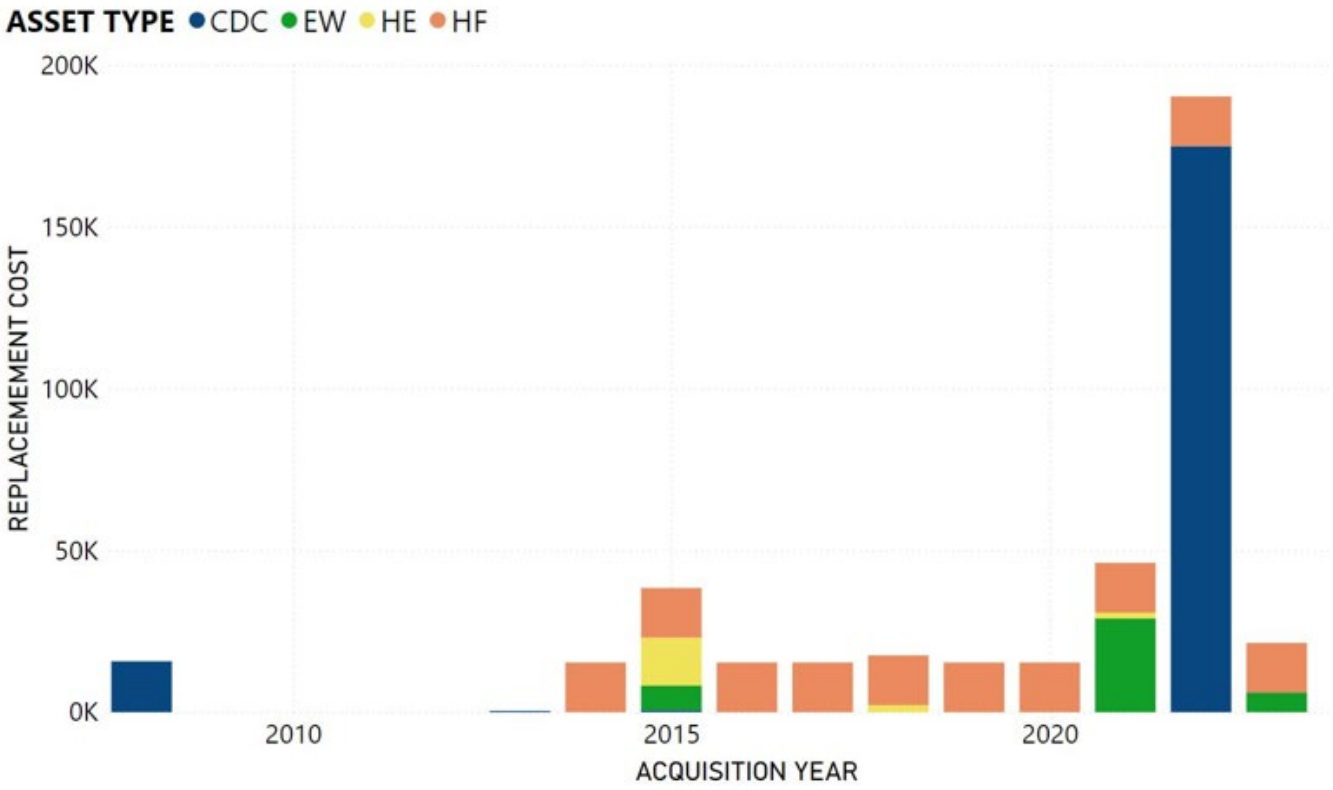
3.2.4 EQUIPMENT PROFILE

3.2.4.1 AGE PROFILE

PHS's equipment assets are divided into four broad categories corresponding to the service they relate to. These include Communicable Disease Control (CDC) e.g., vaccine fridges, Epidemiology and Wellness (EW) e.g., needle return kiosks, Healthy Environment (HE) e.g., air samplers, and Healthy Families (HF) e.g., dental equipment. The age profile for PHS's Equipment assets is shown in ***Figure 7***. Age is not formally tracked for Equipment, however,

age data for a number of assets in this asset class is available from purchasing records. The estimated service life (ESL) for Equipment is 10 years. As can be seen in the figure, most of the equipment has been procured within the last 10 years and is within its estimated service life.

Figure 7: PHS Equipment Age Profile



3.2.4.2 CONDITION METHODOLOGY & PROFILE

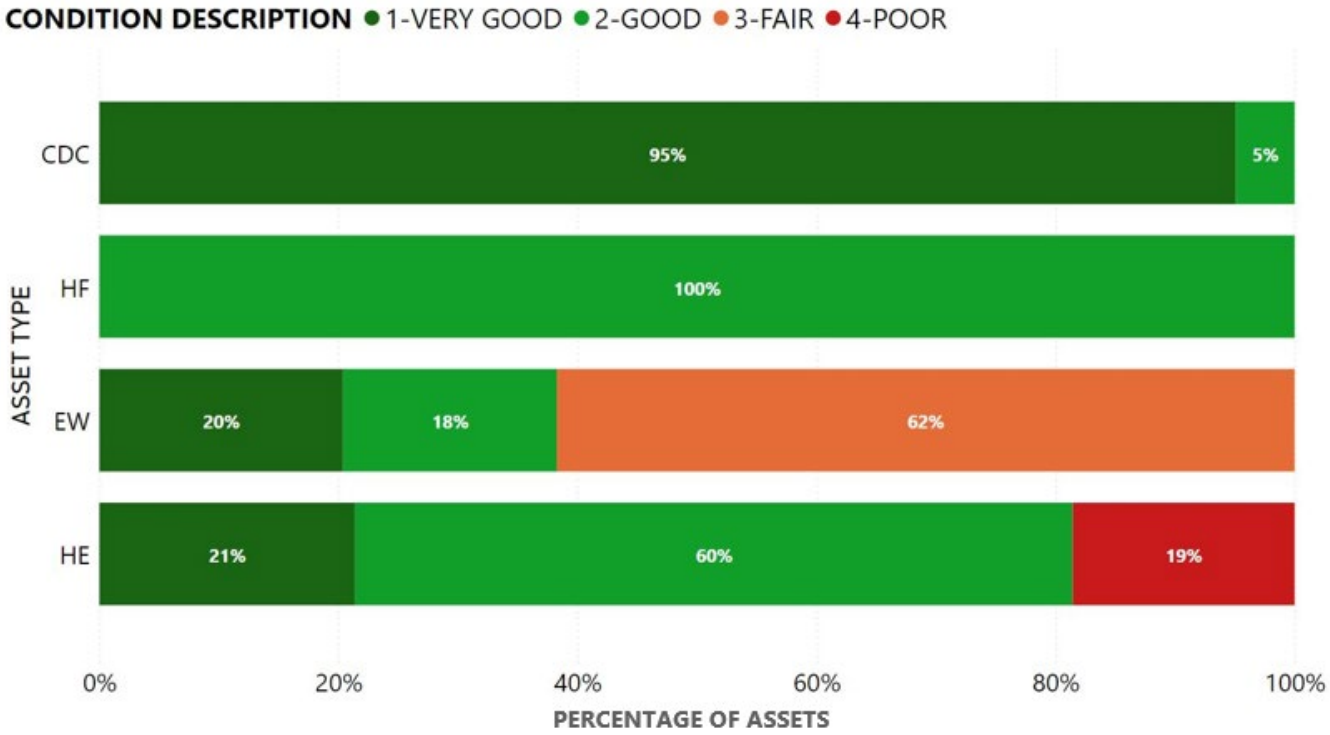
For the majority of Equipment assets, the condition is not formally tracked. However, vaccine fridges belonging to the Communicable Disease Control (CDC) service area, are inspected annually as shown in ***Table 9***.

Table 9: Inspection and Condition Information

ASSET	INSPECTION FREQUENCY	LAST INSPECTION	CONDITION SCORE OUTPUT
Vaccine Fridges	Annual	2023	Pass/Fail

The condition profile of Equipment assets is shown in ***Figure 8***. At this time, the average condition of equipment assets is considered to be Good based on a condition estimated based on asset owner judgment and weighted by replacement cost.

Figure 8: PHS Equipment Condition Distribution



3.2.4.3 ASSET USAGE AND PERFORMANCE

Assets are generally provided to meet design standards where available. Known service performance issues for equipment assets include an insufficient number of needle return kiosks.

Table 10: Known Service Performance Deficiencies

ASSET	LOCATION	SERVICE DEFICIENCY	DESCRIPTION OF DEFICIENCY
Needle Return Kiosks	**Parks or Parkette in Hamilton Downtown Core**	More of these kiosks are needed	The demand for these kiosks is high at locations across the city.
		Susceptible to damage and/or vandalism.	They are exposed to public environments and can be graffitied or used inappropriately (i.e., litter or non-sharps placed in kiosks)

4. MUNICIPALLY DEFINED 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 Public Health Services' 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 are typically developed is provided in Section 7.5 of the ***AM Plan Overview***.

4.1 LEVEL OF SERVICE METHODOLOGY

In the absence of a customer survey, the customer values and customer LOS presented in this plan are based on key performance indicators (KPIs)[6] submitted by PHS. It is important to note that PHS does conduct operational surveys related to its services but the results from those surveys do not provide the full spectrum of information required to develop the Customer Values and Customer LOS sections of an asset management plan.

For future iterations of the plan, PHS will continue to look at opportunities for community engagement and customer feedback across all program areas. This has been identified as a continuous improvement item in ***Table 24.***

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 are 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, for this iteration of the AM Plan, the Customer Values below were developed using key performance indicators, and not customer feedback.

[6] (Board of Health, 2023)

Table 11: Customer Values

CUSTOMER VALUES	SOURCE
Public spaces should be free of needles.	Key Performance Indicators
Requests for harm reduction supplies should be met in a timely manner.	
Wait times to access dental services should be shorter.	
Public Health Inspections should be effective to ensure food safety and safe drinking water.	
The public should be protected against vector-borne diseases.	
Breastfeeding and prenatal support programs should meet individual needs.	
School-aged children should be vaccinated in school.	
Vulnerable populations should be able to get treated for sexually transmitted infections and diseases through effective care.	
Health outcomes should be equitable across Hamilton.	

4.3 CUSTOMER LEVELS OF SERVICE

All Public Health Units are required to follow the service guidelines as outlined in the Ontario Public Health Standards (OPHS) while taking into account local needs. Requirements for programs, services, and accountability are established by the Ontario Minister of Health for the provision of mandatory public health programs and services, pursuant to Section 7 of the Health Protection and Promotion Act, R.S.O. 1990, c. H. 7. As such, customer surveys have not been fully utilized to date.

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 underused? Do we need more or less of these assets?

In ***Table 12*** 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.

For this iteration of the AM Plan, the Customer Levels of Service were derived from key performance indicators (KPIs[7]) that related to the customer experience of the service and not customer feedback. These levels of service are not exhaustive for every aspect of Public Health's programs and services.

Table 12: Summary of Expected Customer Performance Measures

TYPE OF MEASURE	LEVEL OF SERVICE STATEMENT	PERFORMANCE MEASURE	CURRENT PERFORMANCE
Quality/ Condition	Ensure the provision of mandatory health programs and services	Not yet measured.	Not yet measured.
Function	Ensure the provision of mandatory health programs and services	27.5% of pregnant individuals in Hamilton accessed Public Health Services prenatal support	The Target of 25% was met which indicates that the service is suitable for its intended purpose as pregnant individuals chose to access this service.
Capacity	Ensure public health services are accessible to the public	66.3% of eligible clients enrolled in Senior Dental Services accessed the clinic service	The target of 80% was not met. There are many eligible seniors for this program with high demand and limited capacity.
		95.3% of Needle Exchange Van service requests that were responded to	The target of 100% was not met.

[7] Board of Health, 2023

4.4 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 in 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.[8] The technical levels of service presented in this plan are based on key performance indicators (KPIs).

Table 13 shows the activities expected to be provided under the current planned budget allocation and compares the current actual performance to target performance levels. Each of the activities listed in the table below is part of the operations lifecycle stage.

Table 13: Technical Levels of Service

PUBLIC HEALTH SERVICE	LEVEL OF SERVICE	ACTIVITY MEASURE	CURRENT ACTUAL PERFORMANCE (2022)	CURRENT TARGET PERFORMANCE (2022)
Chronic Disease Prevention and Well-being	Ensure eligible seniors have access to dental care	Number of eligible clients enrolled in Senior Dental Services who accessed the clinic service	3,486	5,257
Food Safety	Ensure food-borne illnesses and their associated risk factors are detected, identified, and responded to	Percent of special events inspected as a result of a completed risk assessment of high	100%	100%
Healthy Environments	Increase awareness of radon as a health hazard	Number of radon kits distributed to the public	259	300

[8] IPWEA, 2015, IIMM, p 2|28.

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PUBLIC HEALTH SERVICE	LEVEL OF SERVICE	ACTIVITY MEASURE	CURRENT ACTUAL PERFORMANCE (2022)	CURRENT TARGET PERFORMANCE (2022)
Healthy Growth and Development	Ensure pregnant individuals at risk are screened and referred for further assessment and support	Percent of the annual total number of individuals who reside and give birth in Hamilton screened during pregnancy by the Healthy Babies Healthy Children program	18.6%	18%
Immunization	Improve vaccine management practices	Percent of publicly funded vaccine doses wasted	4.6%	<5%
Infectious and Communicable Disease Prevention and Control	Increase compliance with infectious and communicable diseases prevention and control (IPAC) standards	Percent of high-risk childcare inspections completed (Food Safety and Infection Prevention and Control)	66.7%	50%**
Safe Water	Ensure adverse water quality incidents are responded to in a timely manner	Percent of adverse water quality incidents (AWQIs) that had an initial response by PHS within 24 hours	100%	100%
School Health	Ensure school-going children have up-to-date vaccination records	Percent of i) 7-year-olds and ii) 17-year-olds whose vaccinations are up to date for all Immunization of School Pupils Act (ISPA) designated diseases	i) 44.5% ii) 58.4%	100%
Substance Use and Injury Prevention	Increase access to harm-reduction supplies and services	Number of naloxone kits distributed	10,798	9,909

** The 50% Current Target Performance was established for use only in 2022 as it was related to the Covid-19 Emergency Response. Since then, the Target Performance rate has returned to its normal value of 100%

4.5 PROPOSED LEVELS OF SERVICE DISCUSSION

The level of service that PHS ought to deliver is determined largely by Ontario Public Health Standards. Revised standards are anticipated later this year and will need to be implemented starting next year. At present, performance metrics to determine the quality of PHS services have not been specified and nor has a survey been completed to provide insights on how the customers perceive the quality of services. As a result of these limitations, it is not possible to present a comprehensive analysis of proposed levels of service at this time. However, the following are some areas of service that could be explored further to develop proposed service levels:

The Community Dental Health Bus, which made stops at various locations around the city is currently immobile. The asset is still delivering service, but due to this immobility, the level of service has been reduced since accessibility to the service for many customers has also been reduced. This service is not mandated but was utilized widely by the community. There was no cost recovery in place for the Community Dental Health Bus. PHS has a few options to consider while also listening to the community on their preference. Service delivery options are being brought forward to PHC on June 3, 2024, which will review options and provide recommendations.

The target (80%) for eligible clients enrolled in Senior Dental Services accessing the service was not met (66.3%) and this was found to be due to technology issues and limited capacity. To address these issues, PHS has improved booking processes, monitored appointments, and provided service at satellite clinic locations. It is anticipated that these improvements will improve service performance and will continue to be monitored. The technical limitations on the Senior Dental Bus were the result of a number of factors including unstable internet connectivity challenges and a software solution having reached the end of life. Recruitment for dental staff continues to be challenging.

Only 44.5% of 7-year-olds and 58.4% of 17-year-olds have up-to-date vaccination records for all Immunization of School Pupils Act (ISPA) designated diseases. These numbers are below target levels due to COVID-19 response impacting primary care as well as public health services staff having to be redeployed to COVID-19 response and screening and enforcement of ISPA were paused during the pandemic. A customer expectation is to have up-to-date vaccinations and records for children who are attending school. PHS has been addressing this by delivering catch-up clinics both in the community and school settings.

Finally, health equity is one of the foundational standards of public health. PHS recognizes that there is an inequitable distribution of the social and economic resources that people need to be healthy in Hamilton. All Hamiltonians should be able to attain their full health potential without disadvantage due to social position or other socially determined circumstances. PHS will continue to reduce health inequities and prioritize efforts to ensure that everyone has equal opportunities for optimal health. PHS is currently developing key performance indicators to monitor progress towards health equity which will be included in future AM Plans.

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 plan and identify the best way of meeting the current demand while 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 and types of services required. Demand for PHS programs and services is primarily influenced by the OPHS standards and requirements of the provincial government. PHS will continue to assess the needs of Hamilton residents to inform its programs and services.

5.1 DEMAND DRIVERS

For the PHS service area, the key drivers are legislative requirements, population growth and funding changes.

5.2 DEMAND FORECASTS

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented in ***Table 14.*** Unlike other municipal city departments, PHS programming is dictated by Ministry of Health requirements and as such is limited in its ability to forecast demand.

5.3 DEMAND IMPACT AND DEMAND MANAGEMENT PLAN

The impact of demand drivers that may affect future service delivery and use of assets is shown in ***Table 14***. Demand for new services will be managed through a combination of managing existing assets, upgrading 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.

Table 14: Demand Management Plan

DEMAND DRIVER	CURRENT POSITION	PROJECTION	IMPACT ON SERVICES	DEMAND MANAGEMENT PLAN
Legislative Requirements	PHS is required to provide services as mandated by various regulations outlined in Section 2.2	Ontario Public Health Standards (OPHS) which determine the standards for mandated health programs and services are expected to be updated in 2025.	New standards for the provision of mandated health programs and services will be applicable.	Should changes to OPHS come into place that impact PHS services, adjustments will need to be made to meet new requirements.
Population Growth	PHS provides services to meet client needs based on population size.	Population growth is expected across all age groups	Increase in demand for all PHS programs and services including: • immunization and screening for communicable diseases, • education programs, • family, child, and youth health services, • population health assessment, • sexual health services, • air quality monitoring, • school services, • dental services, • food and water safety, • injury prevention, and, • public health inspections.	Additional resources will be required to maintain current levels of service.

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DEMAND DRIVER	CURRENT POSITION	PROJECTION	IMPACT ON SERVICES	DEMAND MANAGEMENT PLAN
Funding Changes	PHS is funded through the ministry with a municipal contribution	COVID-19 funding is no longer being provided.	Reduction in services based on funding allocations.	Based on funding allocations PHS sets program plans in place and implements changes to meet funding constraints and requirements.
Health Equity	Various health risk factors are disproportionately experienced by Hamiltonians	Health inequities will continue to be driven by factors such as education, racialization, income, and housing.	Continued need to prioritize provision of services to the most vulnerable sections of the community.	Enhance staff competency. Enhance collection and use of data to inform policy and measure outcomes. Increase engagement with priority populations.
Mental Health and Substance Use	Intentional self-harm emergency department visits are higher in Hamilton than in Ontario. Hamilton's opioid-related death rate was 63% greater than the provincial average in 2022.	Mental health and substance use-related challenges are not showing any signs of abating.	Higher demand for mental health resources and harm-reduction supplies.	The City of Hamilton has declared an emergency in the areas of opioids, mental health, and homelessness. PHS will continue to update and implement the various municipal policies on mental health and substance use.

DEMAND DRIVER	CURRENT POSITION	PROJECTION	IMPACT ON SERVICES	DEMAND MANAGEMENT PLAN
Lapsed *Immunization of School Pupils Act* vaccination records	The current level of up-to-date vaccination records for school-going children is close to merely 50%.	Unless vaccination rates pick up, there will be an increased burden of disease and absence from school.	There remains the potential for an outbreak of various diseases such as measles that can be effectively controlled through vaccinations.	Additional catch-up clinics to ensure school-aged students receive any missed vaccines and stay up to date with their immunizations as well as full implementation of ISPA by 2027.

5.4 ASSET PROGRAMS TO MEET DEMAND

The new assets required to meet demand may be acquired, acquired through a donation or constructed. For PHS, typically assets are acquired. At this time there are no asset acquisitions planned in the 10-year capital plan to meet demands. However, PHS may require additional operations costs for human resources during this time to support the demands identified above.

6. RISK MANAGEMENT

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[9].

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 15.*** Failure modes may include physical failure, collapse or essential service interruption.

Table 15: Critical Assets

CRITICAL ASSET	FAILURE MODE	IMPACT
Critical Data and Software	Cyber Attack Obsolete/Unsupported Software	• Potential loss of various public health services • Potential permanent loss of data • Potential for breach of patient privacy

[9] ISO 31000:2009, p 2

CRITICAL ASSET	FAILURE MODE	IMPACT
Seniors Dental Bus and Equipment	Mechanical Failure	• Some clients will not have access to mandated dental programming. • Loss of service. • Less available dental chair time for all programming.
Vaccine Fridges	Physical Failure	• Delay or interruption of service • Loss of vaccine inventory • Not being able to fill physician orders. • Nurses not being able to go into schools to immunize students. • Impact on access to medications for other programs.
Needle Return Van and Kiosks	Physical Failure	• Delay or interruption of service. • Lack of access to clean needles for harm reduction clients. • Increased needle debris in the community.

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, the 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 risks below were derived from the ***2024 PHS Risk Management Framework*** and do not yet include residual risks and treatment costs associated with each of the treatment plans. These will be developed in future iterations of the plan and are identified as a continuous improvement item in ***Table 24*** in **Section 10.1** of this AM Plan.

Table 16: Risks and Treatment Plans

SERVICE RISK	WHAT COULD HAPPEN	RISK RATING	RISK TREATMENT PLAN
Overall Service Delivery Risk	Newly announced provincial funding levels may be inadequate to meet service demands. The Ministry of Health also discontinued provincial COVID-19 funding at the end of December 2023 and directed that this work be integrated into existing programs, services, and business processes and funded by the existing cost-shared base budget.	Very High	Identify and communicate Public Health Services' priorities and action areas to adapt and improve existing programs and services to address population health needs. Regularly review program and financial performance data to ensure effective delivery of services in an efficient and fiscally responsible manner. Continue to identify Public Health Services' priorities and related action areas by balancing core public health functions and mandates, local population health needs, Council priorities, and provincial direction.
Cyber Security Risk	The Board of Health may be at risk of privacy breaches, unauthorized external access to Public Health Services' information (i.e., cyber-attack and ransomware attack), and non-compliance with privacy legislation.	Very High	Build awareness of and competence in the application of privacy policies with updated e-modules and tailored staff training across Public Health Services, including relevant Corporate IT staff. Continue to educate, prohibit, and restrict Public Health Services staff's use of any corporate enterprise software solutions that have not undergone a full privacy impact assessment by Public Health Services.
Information Risk	Varying information management practices and the absence of a formalized record management platform could lead to loss of information, privacy breaches or non-compliance with record management obligations, which include privacy and security requirements.	Very High	Identify and respond to any records and information management policy and governance gaps.

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SERVICE RISK	WHAT COULD HAPPEN	RISK RATING	RISK TREATMENT PLAN
Updated Health Standards	Changes in Ontario Public Health Standards may require adjustments in the skill sets and training of public health professionals, and the allocation of resources within public health. If the revised Ontario Public Health Standards do not adequately consider the diverse needs of local communities, there is a risk of misalignment between the standards and the specific health challenges faced by local communities. This may impede the effectiveness of public health initiatives.	High	Engage in consultation with the Ministry of Health where possible. Advocate for continued and increased funding, resources, and support for public health units. Engagement and participation in various strategic provincial-level forums.
Governance Risk	Recently approved recommendations to change the Board of Health governance structure, slated for implementation in 2024-2025, may also impact the Public Health Service's capability to make prompt decisions and respond effectively to ensuing changes. Implementing the new governance structure may also require additional resources which may strain Public Health Service's capacity to manage the change effectively.	High	Continue to share relevant information with decision-makers to support changes in the Board of Health Governance structure. Develop and implement change management strategies to support the departments through change.
Staffing Challenges	PHS may be at risk of precarious staffing due to challenges with recruitment and retention. This pertains to the dual challenge of attracting suitable candidates and maintaining their engagement over the long term.	High	Regular assessment of current vacancies. Complete succession planning. Advocate for provincial funding to build capacity in the public health system to ensure dedicated staff are available to respond to emergencies without impacting core public health programs and services.

SERVICE RISK	WHAT COULD HAPPEN	RISK RATING	RISK TREATMENT PLAN
Technology Risk	The Board of Health may be at risk due to the use of dated software/technology or ones reaching the end of life. Technology is not being updated or replaced quickly enough, resulting in the use of outdated and/or unsupported applications and systems. Potential for data loss, privacy and security breaches, business disruption, impact on service delivery, and inefficient business processes.	High	Prioritizing the replacement and/or version upgrade of existing software systems and technology.

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 RISK TRADE-OFFS

The decisions made in AM Plans are based on the objective of achieving the optimum benefits from the available resources.

Table 17 outlines what activities PHS cannot afford to do over the next 10 years with their existing budget and provides the associated service and risk tradeoffs.

Table 17: Service and Risk Trade-offs

WHAT WE CANNOT DO	SERVICE TRADE-OFF	RISK TRADE-OFF
The Community Dental Health Bus was deemed not mobile due to poor structural integrity. There was no capital replacement set aside to purchase a new bus.	Decrease in the level of accessibility to dental care for the community.	Health equity risk due to reduced access to dental services for vulnerable members of the community. Potential reputation loss for PHS.

7. CLIMATE CHANGE AND MITIGATION

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 the 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 24.***

7.1 CLIMATE CHANGE MITIGATION (

Climate Mitigation refers to human intervention to reduce Greenhouse Gas (GHG) emissions or enhance GHG removals (e.g. building transportation infrastructure that can support cycling and public transit and reduce the need for car travel). The City of Hamilton's Community Energy + Emissions Plan (CEEP) includes five 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.

Mitigation Demand Analysis

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 18*** below.

As previously mentioned, 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 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 reduction 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 24***.

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

Mitigation Demand Analysis

Table 18: Climate Change Mitigation Transformation

CLIMATE CHANGE MITIGATION TRANSFORMATION	MODELLED TARGET	IMPACT TO SERVICE OR ASSET	DEMAND MANAGEMENT PLAN
Changing How We Move	100% of new municipal small and light-duty vehicles will be electric by 2040. 100% of new municipal heavy-duty vehicles switch to clean hydrogen by 2040.	Electric Vehicle Chargers will need to be installed. Compensation for staff who charge City vehicles at home will need to be considered. Initial upfront capital costs for electric vehicles.	The vehicle conversion schedule for the existing fleet will be developed in partnership with Fleet to convert where feasible and as the market allows. Limitations may exist for heavy-duty vehicles due to availability within the market. Capital budgets will reflect increased costs related to conversions and additions to the existing fleet. Capital budgets will also be developed and submitted for charging stations on facilities.

MITIGATION RISK ANALYSIS

Failure to complete climate change mitigation projects will cause the City to continue contributing to climate change, to varying degrees. These mitigation projections were completed by the International Council for Local Environmental Initiatives (ICLEI) and were modelled in the Climate Science Report for the City of Hamilton. A risk analysis, for not completing climate mitigation projects (ICLEI Canada, 2021), has not been completed in this AMP.

CURRENT MITIGATION PROJECTS

PHS is currently not pursuing any climate mitigation projects.

7.2 CLIMATE CHANGE ADAPTATION

Climate Adaptation refers to the process of adjusting to actual or expected climate and its effects (e.g. building facilities that can handle new climate loads i.e., more extreme temperatures and weather events).

The impacts of climate change may have a significant impact on the assets we manage and the services we 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.[10]

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. Of these, the most applicable to PHS assets are included in ***Table 19*** below.

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

Adaptation Demand Analysis

Table 19: Managing the Demand of Climate Change on Assets and Services

ADAPTATION IMPACT STATEMENT	BASELINE	AVERAGE PROJECTED CHANGE	POTENTIAL IMPACT ON ASSETS AND SERVICES	DEMAND MANAGEMENT PLAN
Dryer, hotter and longer summers may affect the health and safety of local vulnerable populations.	71.6 Days Average Length of The Hot Season	102 Days Average Length of The Hot Season	PHS will need to continue to lead activities that protect the health of the public from heat-related health issues. Additional staffing and funding resources may potentially be required.	Development of a Heat Response Strategy that will help identify actions to be taken to reduce the impacts of extreme heat on the health of the community. Community Heat Response Plan implemented jointly between various City divisions and community agency stakeholders (e.g., Hamilton Public Library, Salvation Army, Shelter networks, etc.). Various facilities in the city function as warming and cooling centres for the community as a result. Increase surveillance, public awareness, and detection of climate-sensitive vector-borne diseases to reduce the incidence of vector-borne diseases.
More frequent and intense heatwaves will increase instances of heat-related health and safety issues, particularly for households without access to reliable air-conditioning and the homeless	2.1 Average Annual Heat Waves	4.7 Average Annual Heat Waves		
Increased temperatures and changes in precipitation increase incidences of infectious diseases and vector-borne diseases as a result of longer transmission periods or changes in the geographic distribution of disease vectors.	52.2 Number of Ice Days (Temperature Below 0 Degrees Celsius)	35.7 Number of Ice Days (Temperature Below 0 Degrees Celsius) Extending The Breeding Season Of Mosquitos/Ticks.		

ADAPTATION RISK ANALYSIS

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 20***.

It is important to note that due to the high level of uncertainty with the climate change risk adaptation plans, the cost of adapting to the risks below has 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 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 24.***

Table 20: Adapting to Climate Change

ADAPTATION IMPACT STATEMENT	SERVICE OR ASSET AT RISK	WHAT COULD HAPPEN	RISK RATING	RISK ADAPTATION PLAN
Dryer, hotter and longer summers may affect the health and safety of local vulnerable populations.	Overall service delivery	A climate emergency could lead to risk exposure in terms of loss or reallocation of resources leading to potential legislative non-compliance and/or negative public image.	High	Implement Emergency Response Plans, Business Continuity Planning, and Hazard-Specific Plans. Participate in Corporate Climate Change Task Force and Building Adaptive & Resilient Communities Work.
More frequent and intense heatwaves will increase instances of heat-related health and safety issues, particularly for households without access to reliable air-conditioning and the homeless				
Increased temperatures and changes in precipitation increase incidences of infectious diseases and vector-borne diseases as a result of longer transmission periods or changes in the geographic distribution of disease vectors.				

CLIMATE ADAPTATION DISCUSSION

As a response to more extreme weather conditions, and to protect its most vulnerable populations, the City has designated a number of its facilities as warming and cooling centres. PHS is the voice stating that these centres are needed and leads the City's overall response to protect the health of its residents. In addition, PHS is also responsible for issuing heat and cold alerts in case of adverse weather events. PHS is leading the development of the City's Heat Response and Winter Response Strategies. An environmental emergency caused by climate change could lead to increased risk for PHS in terms of a shortage of staff and resources, as well as a negative public image.

8. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the City plans to manage these assets at the agreed levels of service and at the accepted lifecycle costs while excluding inflationary values. The costs included in the lifecycle management plan include costs from both the Capital and Operating budgets. Asset management focuses on how taxpayer or ratepayer dollars are invested by lifecycle activities and not by budget allocation. Since both budgets contain various lifecycle activities, they have been consolidated together and separated by lifecycle activity in this section.

As a result of this new process, there may be some areas where the budget was not able to be broken down perfectly by lifecycle activity. Future AM Plans will focus on improving the understanding of whole-life costs and funding options. However, at this time the plan is limited to 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.

8.1 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. Assets can either be donated or constructed.

DONATED ACQUISITIONS

Over the next 10 years, no donated asset acquisitions are anticipated and hence none are included in the lifecycle model.

The City is reviewing its donated asset assumption process to ensure that it proactively understands what assets are being donated annually to ensure they are appropriately planned for. This will allow multiple departments across the City to plan for the assets properly such as:

- AM to forecast the long-term needs and obligations of the assets;
- Operations and maintenance can include the assets in their planned activities (inspections, legislative compliance activities); and,
- Finance can ensure that assets are properly captured and recognized appropriately (Audited Financial Statements, TCA process, Provincial reporting such as the FIR).

CONSTRUCTED OR PURCHASED ACQUISITIONS

Constructed assets can either be new assets which did not exist before or an expansion of assets when they are to be replaced. Over the next 10-year planning period PHS is not acquiring any constructed assets.

Future acquisitions to ensure service levels are maintained over the long term are not included. With competing needs for resources across the entire city, there will be a need to investigate trade-offs 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.

8.2 OPERATIONS AND 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.

For Public Health Services, almost 100% of the annual budget is spent on costs corresponding to the operations lifecycle stage.

- The most significant operating costs are employee-related which add to upwards of $50 Million annually.
- Other important annual operating expenditures include $2.2 Million for contractual services, $2.1 Million for rent of offices and buildings and $534k for external debt repayments.

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 they reach their 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 equipment repairs and component replacements along with appropriate staffing and material resources required to perform these activities. Proactively planning maintenance significantly reduces the occurrence of reactive maintenance which is always linked to a higher risk to human safety and higher financial costs. The City needs to plan and properly fund its maintenance to ensure that PHS assets are reliable to deliver the desired level of service.

As PHS is not an asset-intensive service, the annual maintenance budget is roughly only $30k. This amount is allocated for general repair to equipment and electrical maintenance. 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.

All figure values are shown in 2023 dollars.

Figure 9: Operations and Maintenance Summary

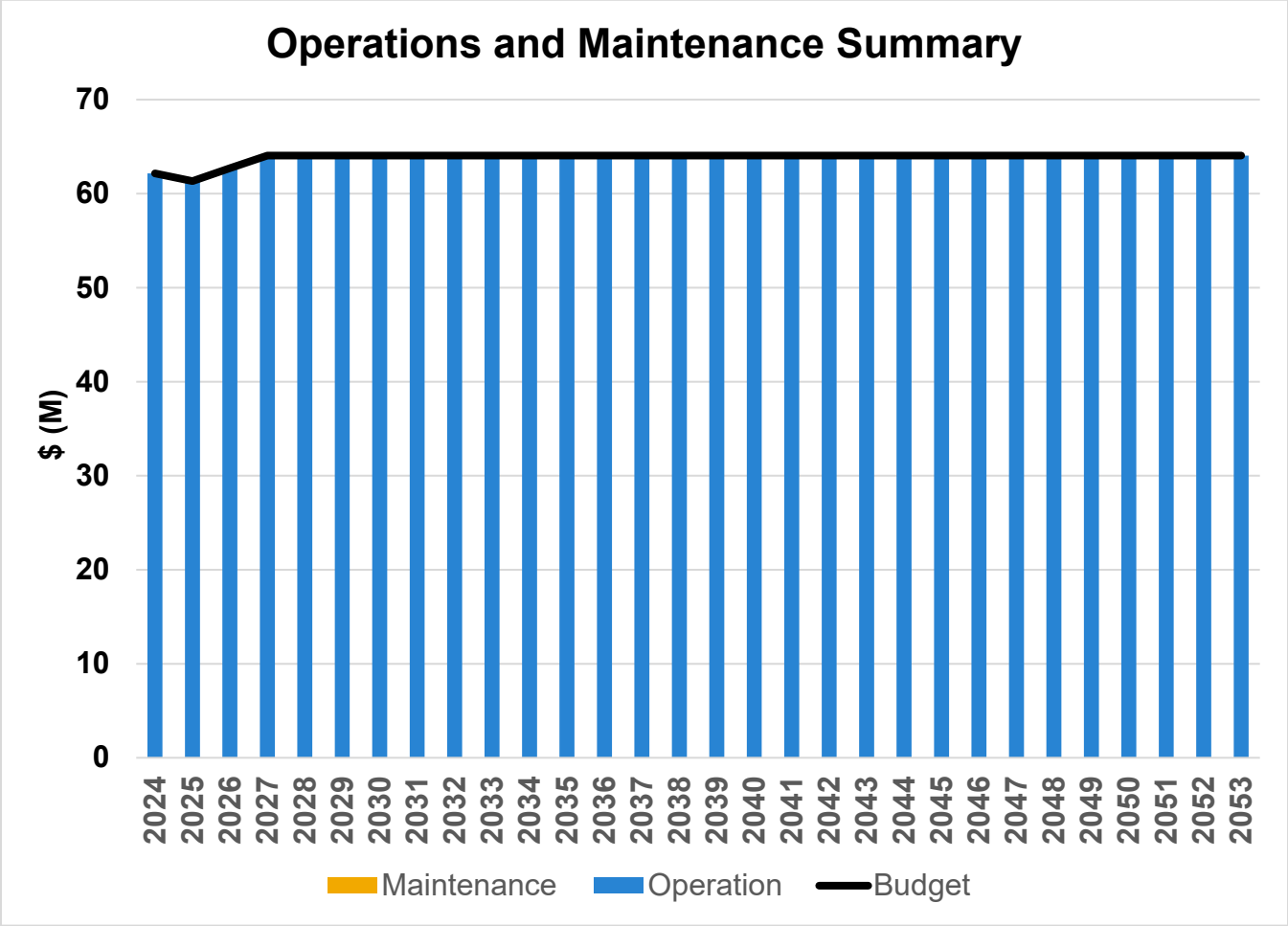


Figure 9 makes it clear that maintenance costs are negligible compared to operations costs for PHS. This is primarily due to PHS being service-intensive while only owning minimal assets. As previously mentioned, the majority of the operations costs are employee-related.

8.3 RENEWAL PLAN

Renewal is major works which does not increase the asset's design capacity but restores, rehabilitates, replaces, or renews an existing asset to its original service potential. Works over and above restoring an asset to its 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 asset's 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 presented in ***Table 21***. Asset useful lives were last reviewed in 2023 however they will be reviewed annually until their accuracy reflects the City's current practices.

Table 21: Useful Lives of Assets

ASSET SUBCATEGORY	ESTIMATED SERVICE LIFE (YEARS)
Dental Buses	12
Utility Vehicles	10
Laptops, Desktops	5
Enhanced Laptops, Enhanced Desktops, Tablets	4
Mobile Devices	2
Furnishings	10
Equipment – Communicable Disease Control	10
Equipment – Epidemiology & Wellness	10
Equipment – Healthy Environment	10
Equipment – Healthy Families	10

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., Facilities can process required volumes); or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g., Vehicles are reliable).[11]

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 the subsequent impact on users would be significant;
- Have higher than expected operational or maintenance costs; and,
- Have the potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[12]

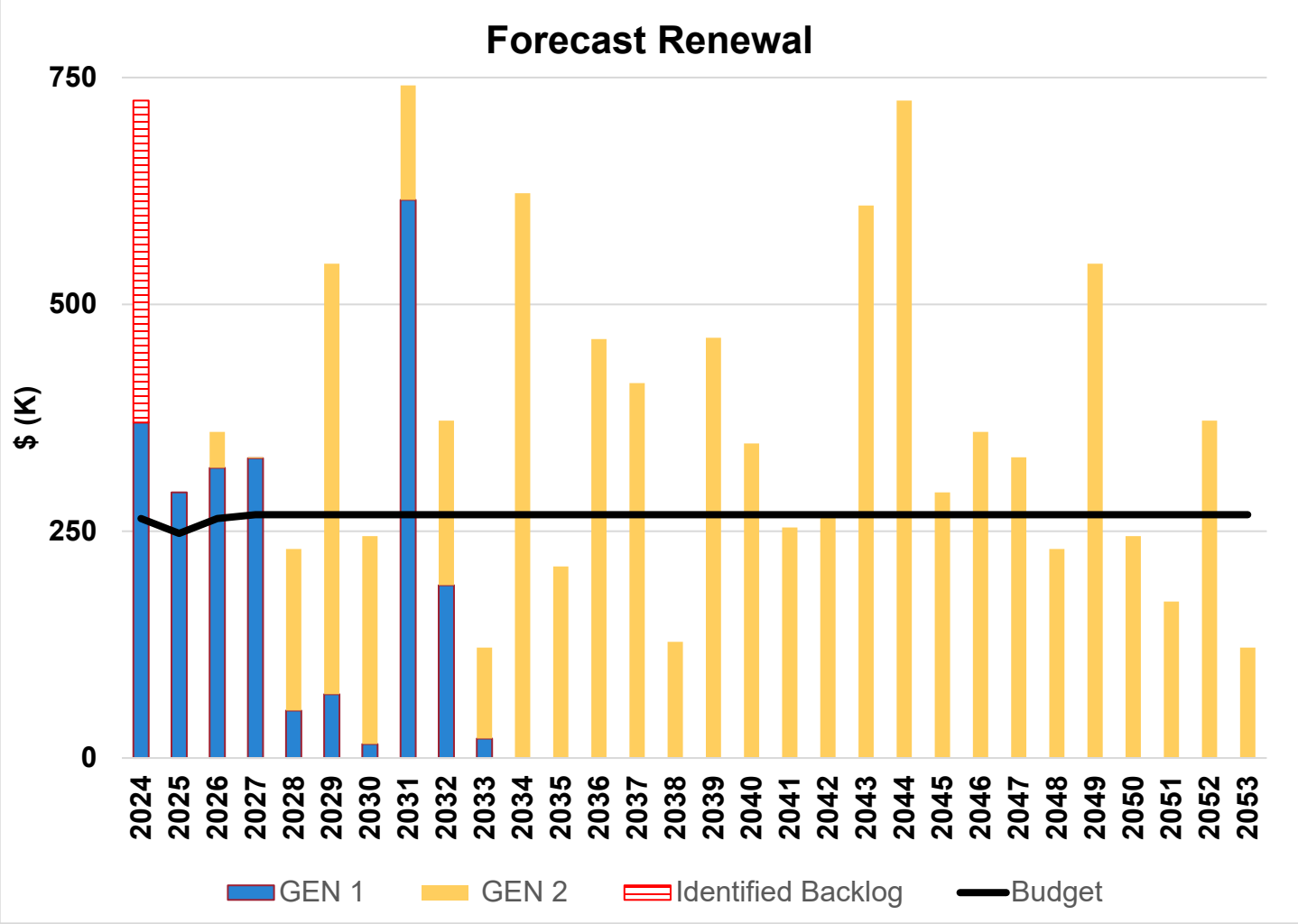
[11] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.
[12] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

SUMMARY OF FUTURE RENEWAL COST

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 10***.

In the figure below, Generation 1 (Gen 1) costs refer to renewals that occur for the first time in the model based on the estimated service life and Generation 2+ (Gen 2+) costs refer to renewals that have occurred twice or more based on the estimated service life.

Figure 10: Forecast Renewal Costs
All figure values are shown in 2023 dollars.



Currently, PHS has a renewal backlog amount of approximately $355k. The major backlog items include:

- $235k for Information Technology assets (staff devices); and,
- $104k or Furnishings assets.

The planned renewal works over the 10-year planning horizon include:

- From the multiyear operating forecast: $265k per annum for ongoing renewal of vehicles, IT assets, equipment, and furnishings as they reach the end of service life.

8.4 DISPOSAL PLAN

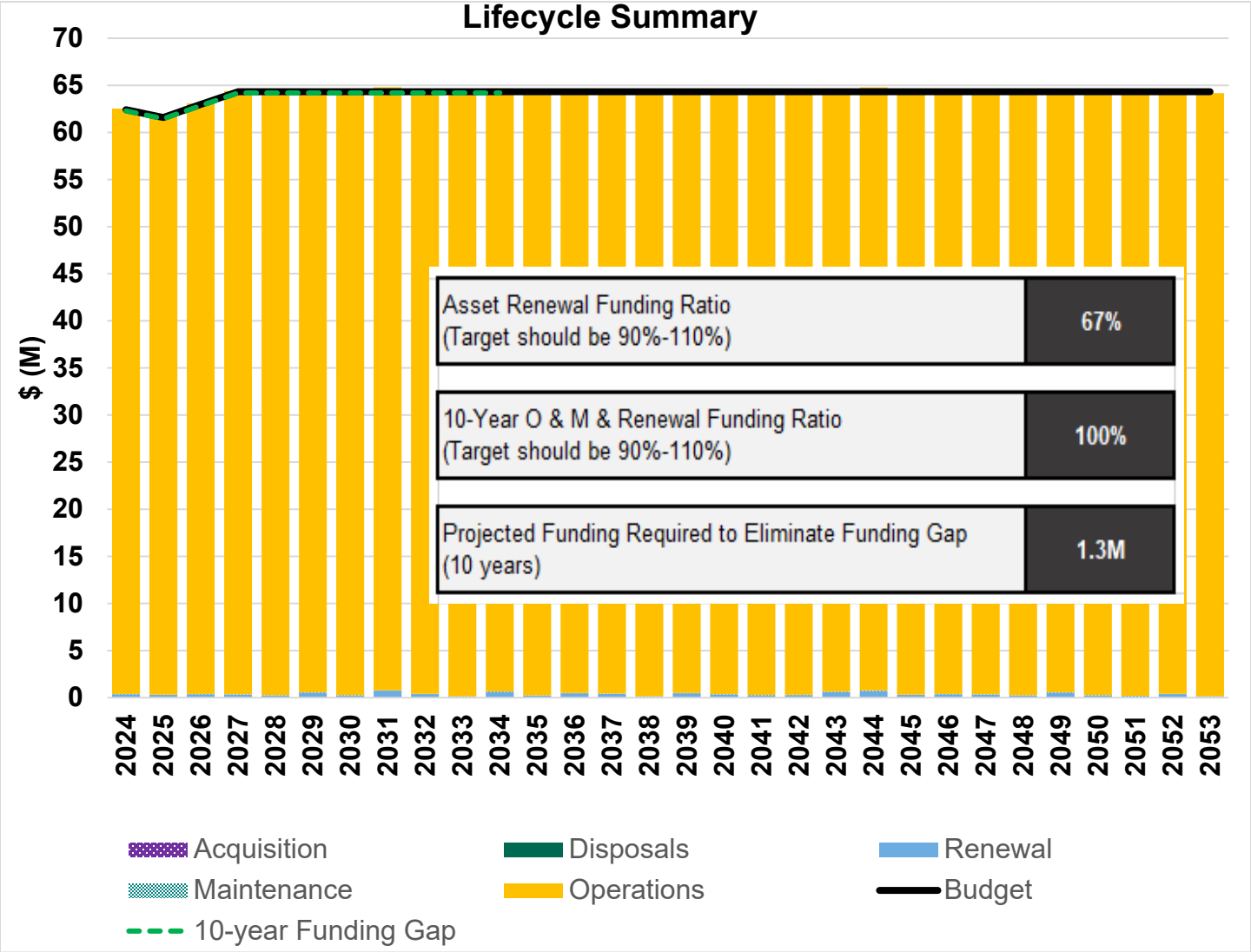
Disposal includes any activity associated with the disposal of a decommissioned asset including sale, possible closure of service, decommissioning, disposal of asset materials, or relocation. Disposals will occur when an asset reaches the end of its useful life. The end of its useful life can be determined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

Currently, no assets have been identified for disposal by PHS.

8.5 LIFECYCLE COST SUMMARY

The financial projections from this asset plan are shown in ***Figure 11***. 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 a balance between costs, levels of service and risk to achieve the best value outcome.

Figure 11: Lifecycle Summary
All figure values are shown in 2023 dollars.



As ***Figure 11*** shows, PHS's budget is almost completely composed of operations expenditures. Based on the current financial data, there is mostly sufficient budget to meet currently identified needs other than some minor unfunded asset renewals mentioned in Section 8.3.

However, with the increase in funding not keeping pace with inflation and population growth, and the discontinuation of certain provincial funding, as well as the unquantified demands, risks, and climate change impacts identified in the report, PHS may still require additional funds to maintain current levels of service in future years.

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 PHS 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 that network 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 properly funding asset activities for PHS; 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 network's 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[13] **67%**

The Asset Renewal Funding Ratio (ARFR) 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, the expenditures are below this level in some service 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.

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

Over the next 10 years, PHS expects to have 67% of the funds required for asset renewals. This is not in the optimal range of 90-110%, but as previously mentioned, the operational cost is the largest cost for PHS and therefore the ARFR is not the best indicator for the service performance of PHS. However, asset renewal is the largest contributor to the minor shortfall discussed below. Major contributors to unfunded renewals include the Seniors Dental Bus and technology assets (i.e., staff devices).

If assets are not renewed at the appropriate timing, it will inevitably require difficult trade-off choices that could include:

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

The lack of renewal resources will be addressed in future AM Plans 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

10-Year Operations, Maintenance and Renewal Financial Ratio 100%

Although this AM Plan includes forecast projections to 30 years, the higher confidence numbers are typically within the first ten years of the lifecycle forecast. The 10-year Operations, Maintenance and Renewal Financial Ratio compares the Planned Budget with the Lifecycle Forecast for the optimal operation, maintenance, and renewal of assets to provide an agreed level of service over the next 10-year period. Similarly, to the ARFR, the optimal ratio is also between **90-110%**. A low ratio would indicate that assets are not being funded at the rate that would meet the organization's risk and service level commitments.

The forecast operations, maintenance and renewal costs over the 10-year planning period is **$63.9 Million** on average per year. Over time as improved information becomes available, it is anticipated to see this number change. The proposed (budget) operations, maintenance and renewal funding is **$63.8 Million** on average per year giving a minor 10-year funding shortfall of **$131k** per year or **$1.3 Million** over the 10-year planning period. Since this shortfall is minor in comparison to their budget, PHS has almost **100%** of the forecast costs needed to provide the services documented in this AM Plan accommodated in the proposed budget, which is within the 90-110% range. As discussed above, the minor shortfall amount is related to unfunded asset renewals mostly attributed to technology assets. Therefore, it can be concluded that PHS is funding their service at an acceptable rate.

It must be noted, however, that PHS faced funding cuts from the provincial government at the end of 2023 and is anticipating changes in the Ontario Public Health Standards. Together, these changes can significantly impact what level of service PHS is mandated to provide and the

amount of funds available to deliver those service levels. Hence, the 10-year O&M and Renewal ratio of 100% is likely to decline in the coming years.

Funding an annual funding shortfall or funding 'gap' should not be addressed immediately. The overall gap in funding city-wide will require vetting, planning and resources to begin to incorporate gap management into the future budgets for all City services. This gap will need to be managed over time to reduce it in a sustainable manner and limit financial shock to customers. Options for managing the gap include;

- Financing strategies – increased funding, 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; and,
- Influence level of service expectations or demand drivers.

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 eventually achieve a financial indicator of **90-110%** for the first years of the AM Plan and ideally over the 10-year life of the Long-Term Financial Plan.

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

Table 22 shows the forecast costs (outlays) required for consideration in the 30-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.

HAMILTON PUBLIC HEALTH SERVICES
2024 ASSET MANAGEMENT PLAN

****Forecast costs are Shown in 2023 Dollar Values**

Table 22: Forecast Costs for the Long-Term Financial Plan

YEAR	ACQUISITION	OPERATION	MAINTENANCE	RENEWAL	DISPOSAL
2024	$ -	$ 62,126,896	$ 29,545	$ 369,833	$ -
2025	$ -	$ 61,307,972	$ 29,615	$ 292,821	$ -
2026	$ -	$ 62,685,848	$ 29,780	$ 359,439	$ -
2027	$ -	$ 64,023,868	$ 30,070	$ 331,489	$ -
2028	$ -	$ 64,023,868	$ 30,070	$ 230,341	$ -
2029	$ -	$ 64,023,868	$ 30,070	$ 544,856	$ -
2030	$ -	$ 64,023,868	$ 30,070	$ 244,495	$ -
2031	$ -	$ 64,023,868	$ 30,070	$ 741,378	$ -
2032	$ -	$ 64,023,868	$ 30,070	$ 371,846	$ -
2033	$ -	$ 64,023,868	$ 30,070	$ 121,738	$ -
2034	$ -	$ 64,023,868	$ 30,070	$ 622,475	$ -
2035	$ -	$ 64,023,868	$ 30,070	$ 211,089	$ -
2036	$ -	$ 64,023,868	$ 30,070	$ 461,676	$ -
2037	$ -	$ 64,023,868	$ 30,070	$ 413,221	$ -
2038	$ -	$ 64,023,868	$ 30,070	$ 128,104	$ -
2039	$ -	$ 64,023,868	$ 30,070	$ 463,124	$ -
2040	$ -	$ 64,023,868	$ 30,070	$ 346,732	$ -
2041	$ -	$ 64,023,868	$ 30,070	$ 254,110	$ -
2042	$ -	$ 64,023,868	$ 30,070	$ 269,609	$ -
2043	$ -	$ 64,023,868	$ 30,070	$ 609,006	$ -
2044	$ -	$ 64,023,868	$ 30,070	$ 724,712	$ -
2045	$ -	$ 64,023,868	$ 30,070	$ 292,821	$ -
2046	$ -	$ 64,023,868	$ 30,070	$ 359,439	$ -

YEAR	ACQUISITION	OPERATION	MAINTENANCE	RENEWAL	DISPOSAL
2047	$ -	$ 64,023,868	$ 30,070	$ 331,489	$ -
2048	$ -	$ 64,023,868	$ 30,070	$ 230,341	$ -
2049	$ -	$ 64,023,868	$ 30,070	$ 544,856	$ -
2050	$ -	$ 64,023,868	$ 30,070	$ 244,495	$ -
2051	$ -	$ 64,023,868	$ 30,070	$ 172,378	$ -
2052	$ -	$ 64,023,868	$ 30,070	$ 371,846	$ -
2053	$ -	$ 64,023,868	$ 30,070	$ 121,738	$ -

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.

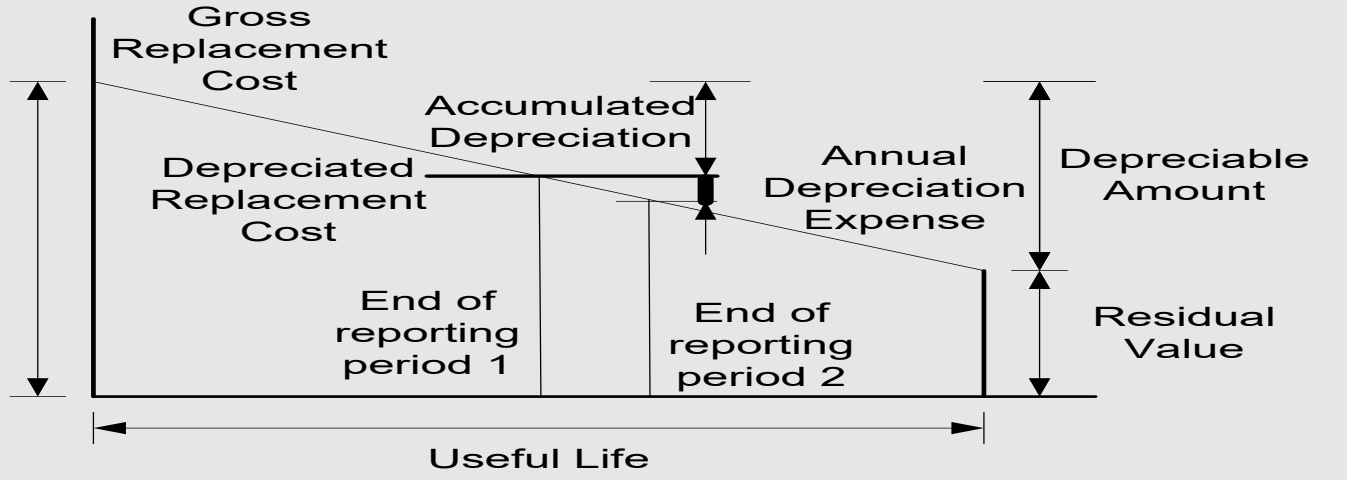
9.4 VALUATION FORECASTS

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 likely increase significantly despite some assets being programmed for disposal that will be removed from the register over the 30-year planning horizon.

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 remove the high costs of 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 VALUATION

Replacement Cost (Current/Gross)	**$3,447,786**
Depreciable Amount	**$2,632,807**
Depreciated Replacement Cost[14]	**$868,058**
Depreciation	**$548,035**



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 30-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. They were also made without determining what the asset would be replaced with in the future.

[14] 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 AMP Overview.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be a **Low to Medium** confidence level. Improving the confidence assessment of the data has been identified as a continuous improvement item in ***Table 24***.

Table 23: Data Confidence Assessment for Data Used in AM Plan

DATA	CONFIDENCE ASSESSMENT	COMMENT
Demand Drivers	Low	The impacts from the identified demand drivers were not added to the lifecycle model for this iteration of the AM plan.
Acquisition Forecast	Low	Used PHS's 10-Year Capital Plan for anticipated acquisitions which are subject to change.
Operations Forecast	Medium	Based on PHS's multiyear operating forecast. Subject to change with changes in funding levels and Ontario Public Health Standards.
Maintenance Forecast	Medium	Based on PHS's multiyear operating forecast.
Renewal Forecast - Asset Values	Low	Renewal costs for vehicles have come from the Corporate Fleet and for Information Technology assets from Corporate IT. A combination of market and historical costs was used for renewal costs of furnishings and equipment.
Renewal Forecast - Asset Useful Life	Medium	Estimated service lives are based on the subject matter expert's opinion for all asset classes.
Renewal Forecast – Condition Modelling	Medium	The condition of vehicles, furnishings and equipment assets was based on the subject matter expert's opinion. Condition of IT assets was based on estimated remaining service life.
Disposal forecast	Not Applicable	No disposals were integrated into the forecast.

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:

- 2023 Approved Operating Budget;
- 2024-2027 Multi-Year Operating Forecast;
- 2024-2033 Multi-Year Capital Forecast;
- Asset Management Data Collection Templates;
- 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;
- 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 inspections, 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 plans to physically improve the assets.

The Improvement Plan ***Table 24*** below highlights proposed improvement items that will require further discussion and analysis to determine feasibility, resource requirements and alignment to current work plans. Future iterations of this AM Plan will provide updates on these improvement plans.

Table 24: Improvement Plan

#	TASK	RESPONSIBILITY	RESOURCES REQUIRED	TIMELINE
1.	Develop an asset register for all PHS assets.	PHS	Internal Resources	Q4 2025
2.	Assign replacement value to PHS's intangible assets	PHS/CAM		2026
3.	Develop methodologies to determine asset conditions for PHS's assets.	PHS		Q4 2025
4.	PHS will continue to look at opportunities for community engagement and customer feedback across all program areas.	PHS		Ongoing
5.	Determine residual risk and treatment costs of implementing the selected treatment plans	PHS		Ongoing
6.	Determine costs related to climate change mitigation and adaptation demands and risks.	PHS		Ongoing
7.	Improve confidence assessment of data used for financial forecast.	PHS		Q4 2025

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 one-to-ten-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 – 110%).

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