Winnipeg

City of Winnipeg

2018 City Asset Management Plan





City Asset Management Plan

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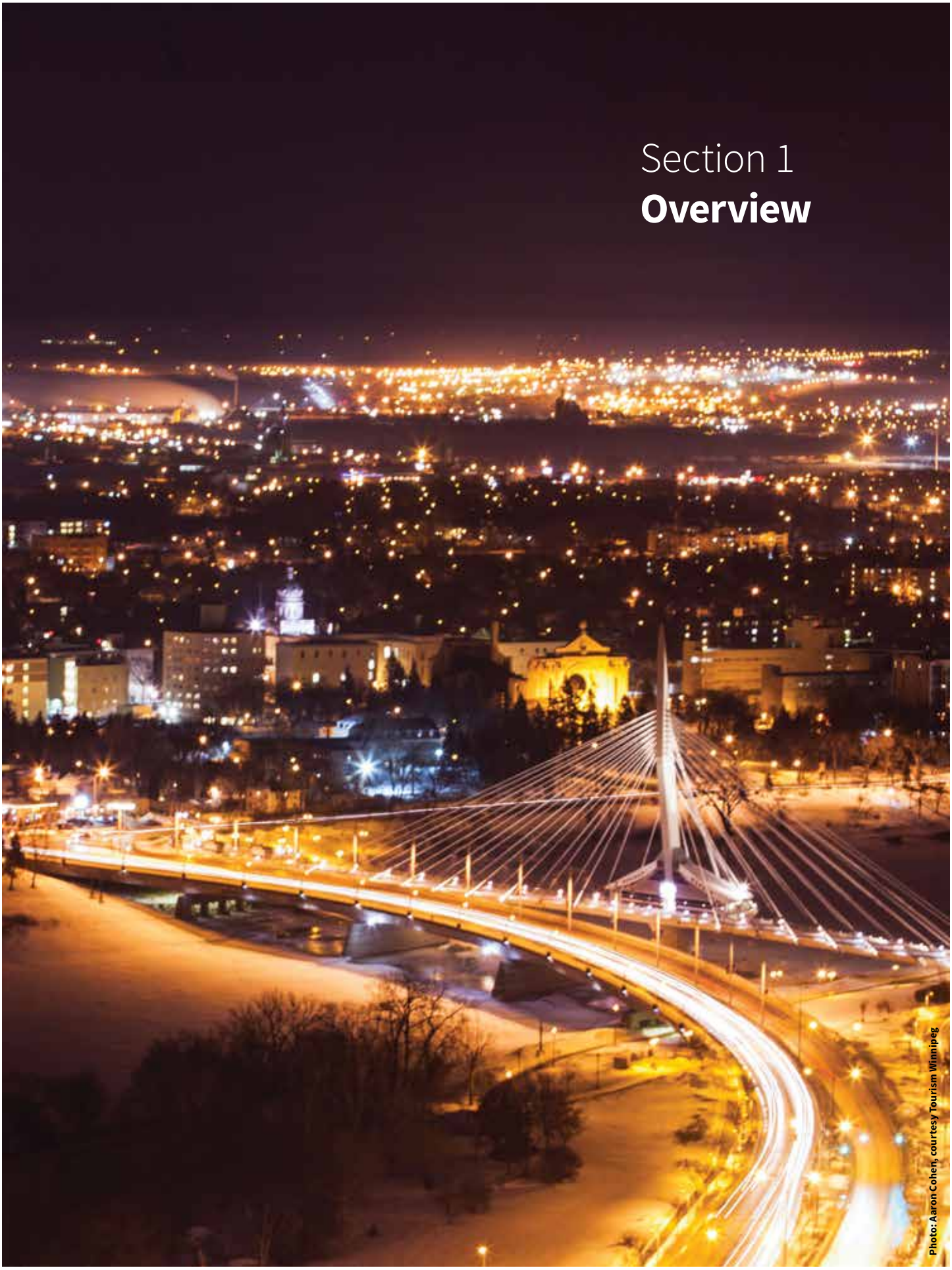
Section 1
Overview



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SECTION 1

Overview

Asset management is a systematic process that facilitates decision making related to the construction, acquisition, operation, maintenance, renewal, replacement, and disposition of assets in the most cost-effective manner to meet level of service targets. Level of service models are a key component of asset management, however the City does not currently have established targets for all its assets. Working towards having better defined service levels will be a key focus in the near term. Development of an Asset Management Plan (AMP) requires a review of existing practices and a standardized approach to consolidating asset data.

This first version of Winnipeg's City Asset Management Plan (CAMP) reports on the major asset groups that the City of Winnipeg (the City) manages in order to deliver services. These asset groups will be referred to as "infrastructure elements" and represent the highest level of asset/service categories. Asset sub-types associated with each infrastructure element are addressed in more detail within their specific sections. The scope of this document includes the following infrastructure elements, each with a specific service delivery focus and departmental AMP:

- Roads
- Bridges
- Parks and Open Space
- Water Utility
- Sewer Utility
- Land Drainage Utility
- Solid Waste Utility
- Municipal Properties
- Community Services
- Transit
- Police Services
- Fire and Paramedic Services
- Information Technology

It is possible that infrastructure elements may be added or removed during future iterations of this document to ensure effective communication and alignment with other supporting strategies or plans.

The CAMP summarizes the inventory, overall replacement value, age, and condition of all the City's major asset groups and presents this information in a format that compares the data across various service areas. It also outlines the funding deficit and strategies associated with meeting assumed levels of service for existing and new infrastructure.

Put simply, this document aims to answer the fundamental questions:

- What do we own?
- What is it worth?
- How old is it? (What is the remaining service life?)
- What condition is it in? (How is it performing?)
- What is the infrastructure funding deficit?

In addition, this report serves as an action plan for continual improvement initiatives across the entire organization. The City's Corporate Asset Management Office (CAMO) aims to address key findings and

make recommendations that benefit all departments and support the objectives of the City's Asset Management Program and Council Policy.

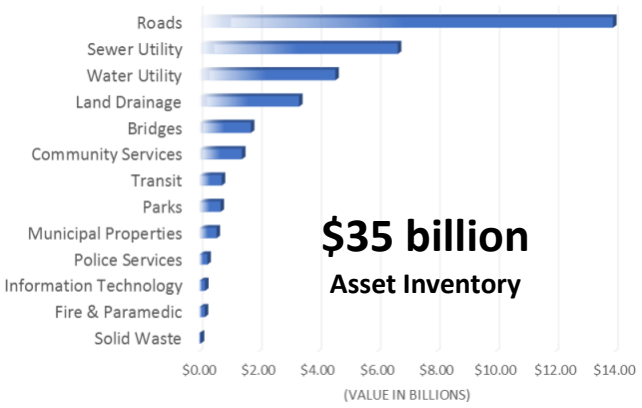
This AMP has been developed following guidance provided in *Building Together – Guide for Municipal Asset Management Plans* (Ontario Ministry of Infrastructure, 2012) and includes the sections outlined in Table 1.0-1.

Table 1.0-1. AMP Sections and Content

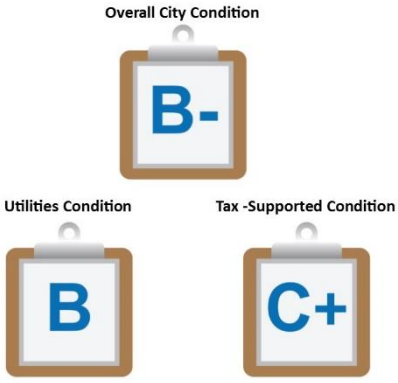
Section		Content
1	Overview	Provides a high-level summary of critical asset information and compares it across the City's service areas.
2	Introduction	Provides an overview of asset management within the City and sets the overall context and expectation for the report.
3	State of Local Infrastructure	Presents information on the infrastructure elements including inventory, condition, age, replacement value, and infrastructure deficit.
4	Expected Levels of Service	Describes how service is linked to infrastructure investment and defines how service is measured and how performance goals and expectations are identified and set.
5	Asset Management Strategy	Sets planned actions that will enable assets to provide the desired levels of service in a sustainable way, while managing risk at the lowest lifecycle cost (e.g., through preventative action).
6	Financial Review of the Infrastructure Deficit	Provides a comparison of historical capital funding and estimated future capital funding relative to the historic and current infrastructure deficit.
7	Plan Improvement and Monitoring	Describes the process for continual improvement and monitoring of the AMP.

1.1 Executive Summary

The City of Winnipeg has consistently been faced with having to balance a multitude of competing spending priorities with a limited availability of required resources. As the City continues to grow, the need to make sustainable, well-timed investment decisions in infrastructure is essential to ensure critical services continue to be delivered to citizens. In January 2015, Winnipeg City Council approved the Asset Management Policy, solidifying asset management as a core business function and establishing the framework for infrastructure stewardship though comprehensive asset management plans.

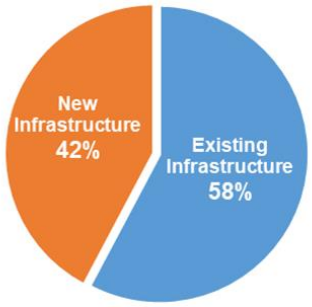


With an asset inventory valued at approximately $35 billion, the CAMP focuses on consolidating and analyzing fundamental asset information across all departments and presenting the historic distribution of capital funding for these assets over the last decade. Providing detailed information about the City's infrastructure as a whole, including the state of existing assets, the assignment of value to needed improvements on existing and future assets, and the remaining service life of current assets, has never been performed on this scale within the City.



The CAMP applies a consistent approach to how data is collected and analyzed across the entire portfolio of City-owned assets. This institutes a solid benchmarking tool for monitoring key performance indictors and allows for an objective comparison over multiple service areas. For the first time, the City is able to strategically categorize asset types and grade the physical condition of its main infrastructure elements. Adopting a holistic overview highlighted service areas with the greatest need and determined that the City's overall condition grade is "B-".

$6.9 billion*
Infrastructure Deficit



**The deficit is based on capital investment needs from 2018 to 2027*

The amalgamation of each department's spending plans and needs over the next ten years is presented in the CAMP and was used to calculate the City's infrastructure deficit. Total capital investment needs for each department were based on a 10-year horizon and included both existing and new infrastructure. The gap between total capital needs and the estimated future funding, results in a $6.9 billion deficit. Understanding the magnitude of this shortfall seems difficult to overcome. It is encouraging to note that compared to the previously reported deficit of $7.0 billion, which is $9.9 billion converted from 2009 to 2018 dollars, progress has been made by investing in priority projects and focusing on maintaining existing infrastructure.

As the City's asset management plans were developed, support from cross-functional teams and dedicated asset management leads fostered a shared vision, which improved communication, provided new insights on asset performance, and sparked a fundamental change in how investment models could be created to maximize value from City assets. Recognizing that this first CAMP is an ever-evolving document, strategies and continual improvement initiatives have been identified and will serve as guidelines as the City continues to gain more knowledge about its assets.

1.2 City-Wide Infrastructure Metrics

Applying a consistent methodology to collecting and analyzing data made it possible to compare the replacement values and condition of the City's core infrastructure elements. It also provided an opportunity to effectively consolidate information and present the overall condition of the City's infrastructure.

The City is responsible to maintain $35 billion of assets to deliver key City services. The majority of assets have been assigned a grade representative of their condition, as shown in Figures 1.2-1 to 1.2-3. Assets where condition assessments have not taken place were identified through the development of this AMP and are detailed in Section 3. The intent is to gather more information about unassessed assets in the future.

Figure 1.2-1 presents the condition of tax-supported and Transit assets, while Figure 1.2-2 presents the condition of assets funded through utility rates. In this AMP, "tax-supported" refers to all tax-supported and Transit assets, while "utilities" refers to Water and Waste Department utilities, which includes water, sewer, land drainage, and solid waste.

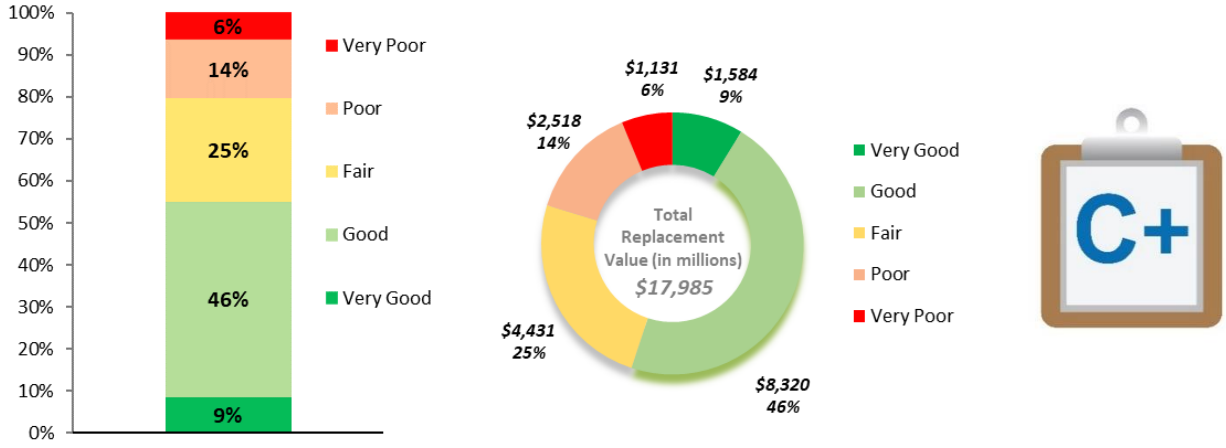


Figure 1.2-1. Overall Condition of Tax-Supported and Transit Assets

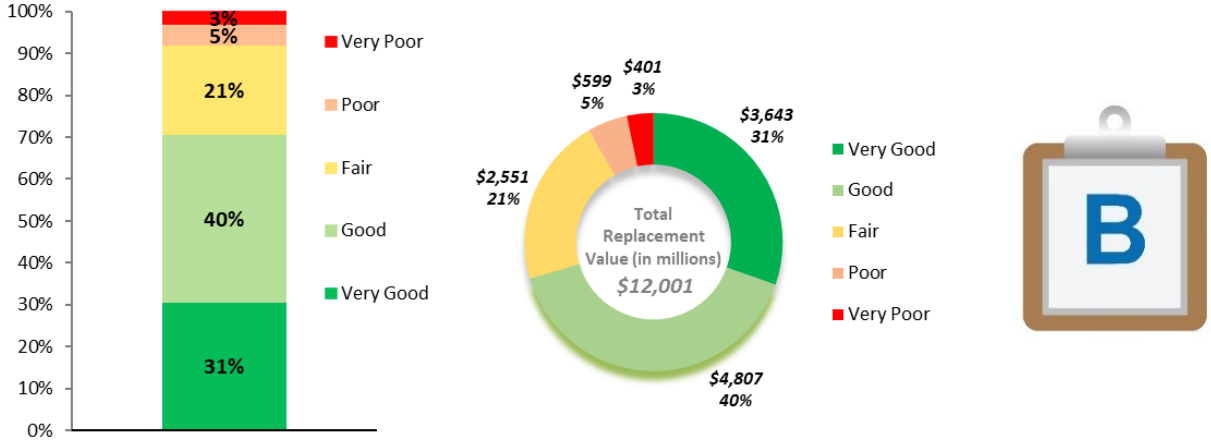


Figure 1.2-2. Overall Condition of Water and Waste Utility Assets

The tax-supported infrastructure condition grade is "C+" (*Fair* condition) and the utilities infrastructure condition grade is "B" (*Good* condition). The $18 billion of tax-supported assets are in worse condition than the $12 billion of assets in the utilities. This is due, in large part, to the fact that the utilities have a dedicated funding source and are governed by significant regulatory and level of service requirements, as compared to the tax-supported assets. Notwithstanding, the overall condition of the tax-supported assets has likely improved over the last decade as the result of Council decisions to increase infrastructure spending through increased use of debt, as well as cash funding road renewals with the annual 2% property tax increases dedicated to road renewals.

In order to maintain service levels for assets outside of the utilities, increased funding levels may be required in order to improve asset condition.

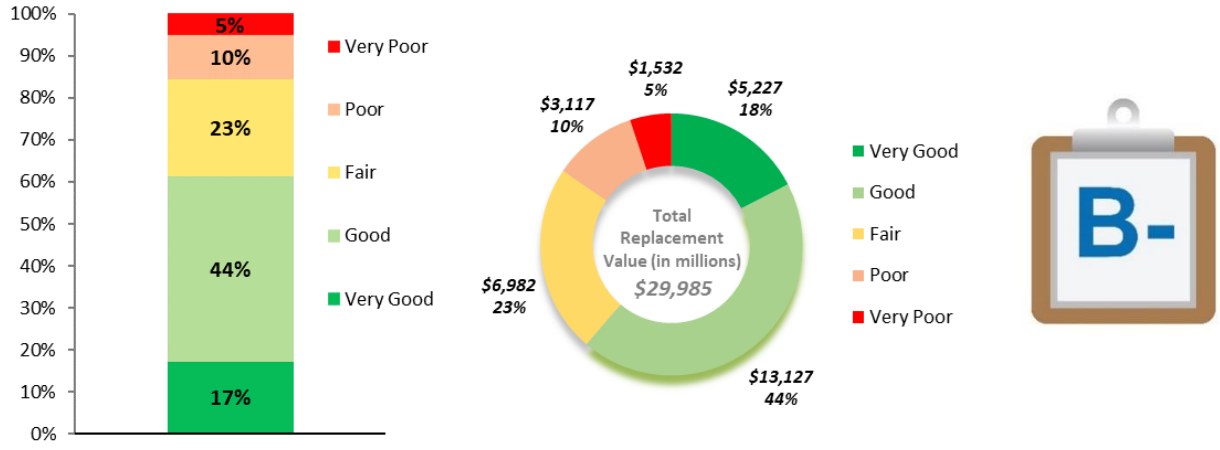


Figure 1.2-3. Overall Condition of City Assets

Overall, the condition of the City's infrastructure condition grade is "B-". This grade translates to a condition rating of *Good* with some assets in *Poor* and *Very Poor* condition, with a replacement value of $4.6 billion exhibiting signs of deterioration that need to be addressed. Without appropriate intervention and continued capital investment, the overall condition of City assets could quickly transition to *Fair* as certain infrastructure elements continue to demonstrate significant deficiencies in condition and performance. These deficiencies could lead to an increased risk of not being able to sustain current levels of service.

1.3 Summary of Replacement Value Per Infrastructure Element

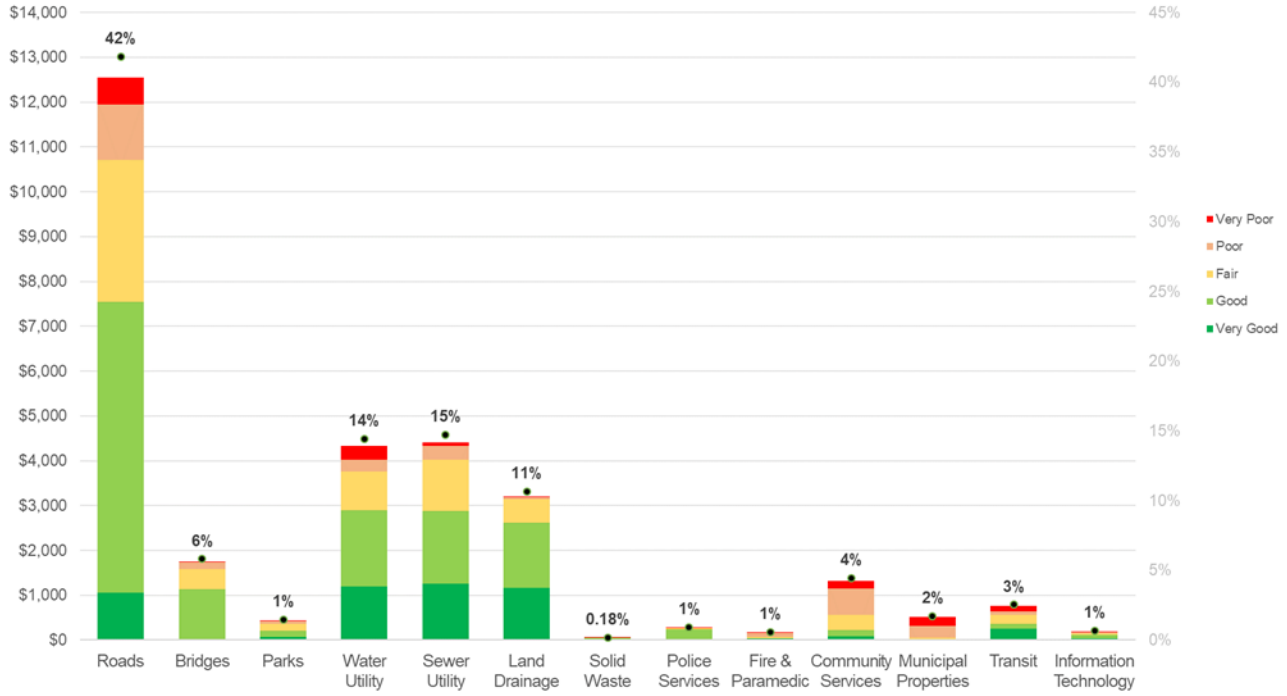


Figure 1.3-1. Summary of Replacement Value per Infrastructure Element (in millions)

**Percentages in this chart have been rounded*

Figure 1.3-1 shows that road assets comprise almost half of the City's total asset replacement value. This is not surprising, as the network of local and regional streets consists of over 7,300 lane kilometers throughout the City of Winnipeg and the cost for road reconstruction is high compared to other assets. This, combined with the fact that quarterly public polling consistently shows that street condition is the top priority for citizens, emphasizes why the City's Regional and Local Street Renewal Program is essential for improving the condition of its road network.

Securing provincial and federal funding and having dedicated annual property tax increases is critical to sustaining annual requirements that will continue to improve regional and local street condition and service delivery.

The top four infrastructure elements comprised of Roads, Water, Sewer, and Land Drainage represent 82% of the total replacement value of all City assets. The funding distribution in the City's estimated capital plan for the next 10 years is fairly consistently aligned to this, with 71% of the capital plan being allocated to these infrastructure elements.

On an annual basis, it is estimated that there will be an average of $404 million of capital funding dedicated to address capital infrastructure requirements for all infrastructure elements. This only leaves 29%, which is equal to an average annual amount of $117 million, to address all other capital requirements for the remaining infrastructure elements.

1.4 Summary of Physical Condition Per Infrastructure Element

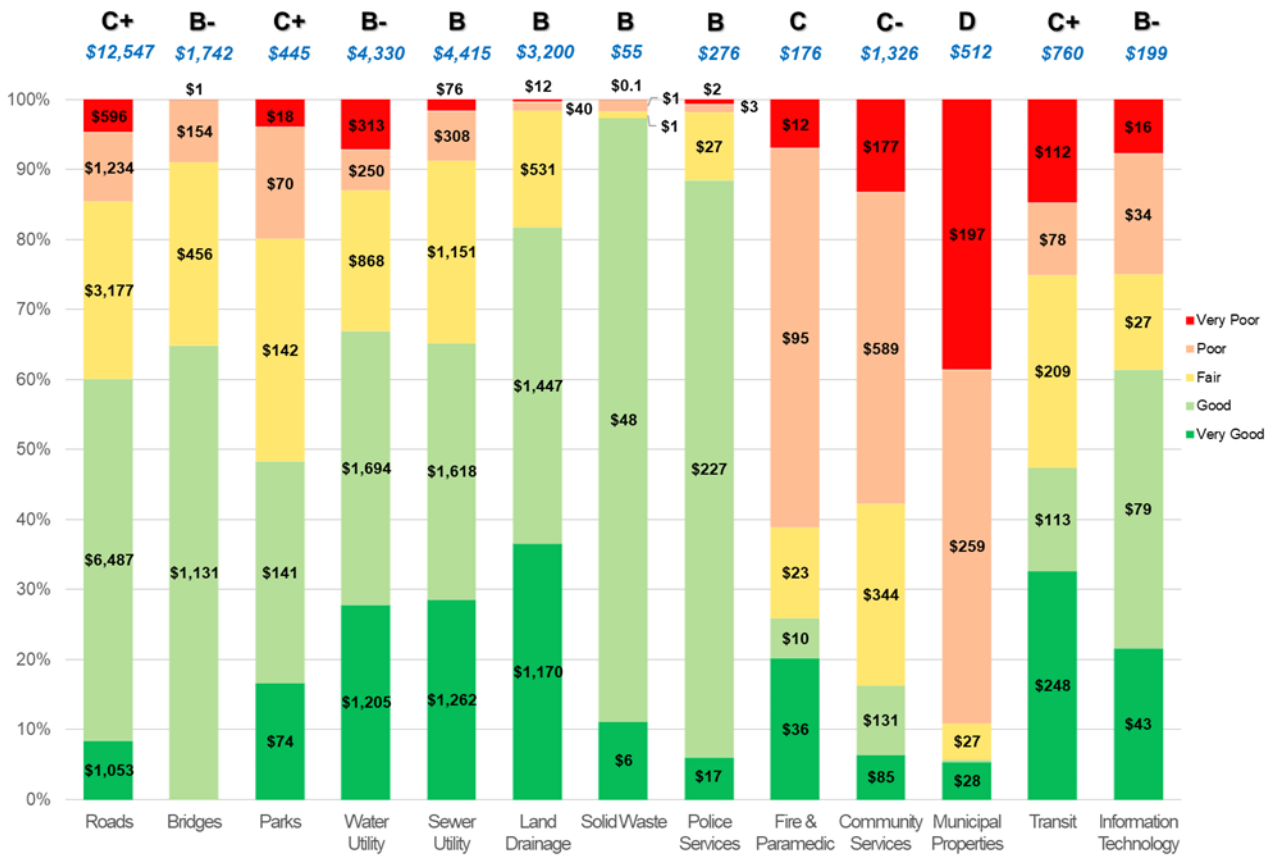


Figure 1.4-1. Summary of Physical Condition and Grades per Infrastructure Element

Section 1.2 presented a high-level overview of the overall condition grade for the City's infrastructure. Figure 1.4-1 breaks this out further for each infrastructure element to identify the respective condition grades, total replacement values, and the replacement value of assets in varying condition categories from *Very Poor* to *Very Good*. For example, it shows that the Roads infrastructure element has an overall grade of "C+" and replacement value of $12.5 billion, where $1.8 billion of the assets are in *Very Poor* to *Poor* condition and the remaining $10.7 billion of assets are in *Fair* to *Very Good* condition.

The information on condition ratings presented in Figure 1.4-1 can be used to help inform future investment planning decisions and requested funding levels. Specifically, areas with a high percentage of assets with a *Poor* to *Very Poor* condition that are essential or provide critical services to citizens, may require an increase or redistribution of funding to improve their condition. City assets in *Poor* to *Very Poor* condition have a replacement value of $4.6 billion and upcoming capital budget planning efforts can validate whether current funding levels and distributions are adequately addressing these assets. A holistic asset management prioritization will continue for all assets regardless of their condition to ensure all investments are prioritized using asset management principles. New information gathered through this AMP on the *Poor* to *Very Poor* condition assets will be included in that prioritization exercise. The City follows stringent Workplace Safety and Health practices that ensure asset condition will not pose a threat to health and safety, even if it is categorized as *Poor* or *Very Poor* in this AMP. If adequate funding is not available for assets in *Poor* to *Very Poor* condition, disruptions to service delivery can be experienced, such as building or bridge closures.

Assets deteriorate at different rates. Departments need to develop their asset deterioration models to analyze the rate at which their specific assets degrade. This will help to make timely investments that maintain service levels. Depending on which assets are considered, the speed of deterioration amongst different asset types varies significantly and correlates to how rapidly the asset's condition grade can change, should the appropriate intervention within its lifecycle not occur. For example, information technology assets with licensing agreements can rapidly go from *Good* to *Poor* condition based on expiry dates, whereas road assets can take many more years to degrade, as they are tied to physical deterioration attributed to use, construction materials, and climate.

1.5 Summary of Age Per Infrastructure Element

When using the average age of an asset as a performance indicator, consideration must be given to a number of other factors related to an asset's age profile. On its own, age provides insight as to how long an asset has been part of the City's inventory.

Typically, the beginning of an asset's life correlates to its original construction date, the date it was manufactured, the date it was placed into service, or when it has been completely replaced. In these instances, the average expected life will reset and the asset's whole lifecycle will be determined using industry recognized standards that are unique to that particular asset.

What is more critical to understand when evaluating the performance of the asset based on age, is that the level of service provided by an asset is linked to its average remaining life, which is calculated by taking the average expected life and subtracting the average age.

The average remaining life shows the number of years an asset can continue to perform at the desired level of service benchmarks. The average remaining life of an asset can be extended by implementing strategic, preventative maintenance programs, and well-timed capital investments.

The figures below provide the age profiles for the City's major infrastructure elements, where age data was available.

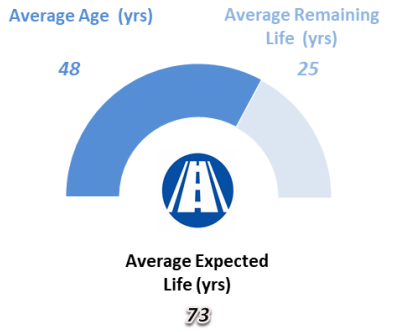


Figure 1.5-1. Average Age – Roads

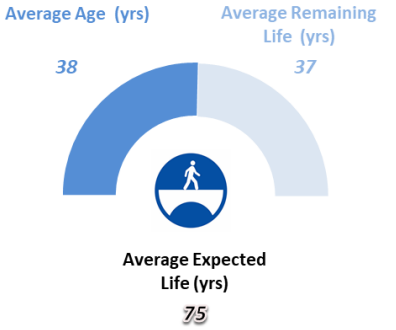


Figure 1.5-2. Average Age – Bridges

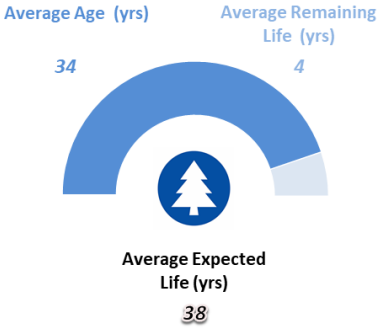


Figure 1.5-3. Average Age – Parks and Open Space

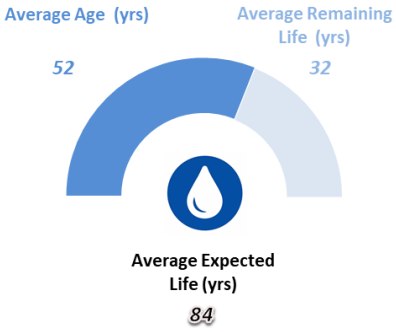


Figure 1.5-4. Average Age – Water Utility

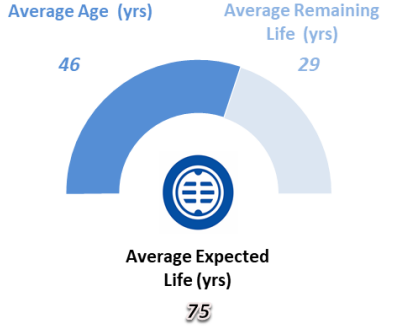


Figure 1.5-5. Average Age – Sewer Utility

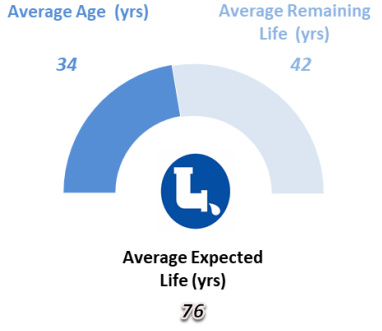


Figure 1.5-6. Average Age – Land Drainage Utility

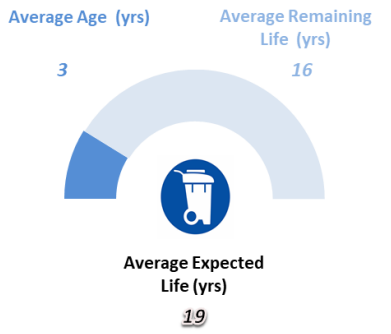


Figure 1.5-7. Average Age – Solid Waste Utility

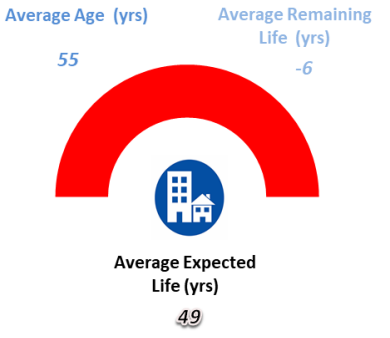


Figure 1.5-8. Average Age – Municipal Properties

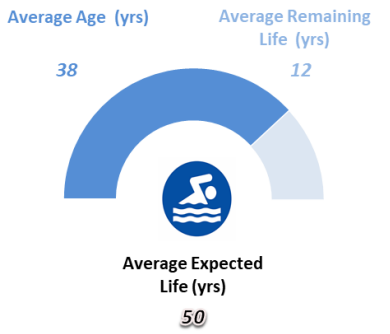


Figure 1.5-9. Average Age – Community Services

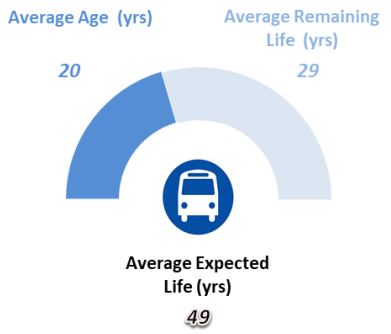


Figure 1.5-10. Average Age – Transit

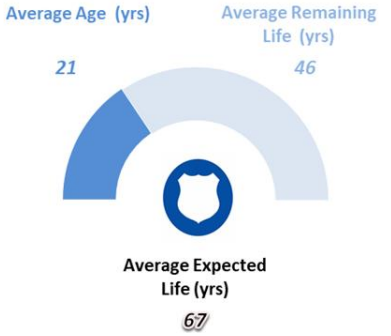


Figure 1.5-11. Average Age – Police Services

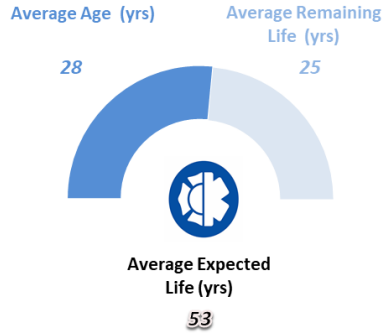


Figure 1.5-12. Average Age – Fire & Paramedic Services

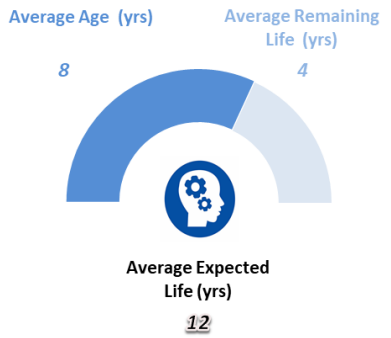


Figure 1.5-13. Average Age – Information Technology

When reviewing the age profiles shown above, the majority of assets are left with approximately 48% of their remaining life. This is strictly based on the age of the asset, rather than its ability to effectively deliver a service. Because many departments may not have correlated measurable levels of service with remaining life, this would not be an accurate representation of performance.

For instance, Municipal Properties is reporting an average remaining life that is 6 years beyond the expected life of its building assets. This does not mean that services are not being provided, although they may be provided at a lower level than expected. Rather, based on the year these assets were constructed and the prescribed expected life of buildings being 75 years, the remaining life has been exhausted.

Note that these calculations are based on using a weighted average methodology that considers the replacement value of the assets. Therefore, the results will emphasize the overall age of assets that are

of higher value. For example, if the majority of the City's inventory consisted of newly constructed, high-value building assets and there were only a few buildings over 100 years old, the age profile would indicate a very "young" asset group with a significant amount of remaining life.

Summarizing the age profiles for these infrastructure elements into one City-wide view was not performed, due to the large variation in asset types across the organization. Seeing as the expected life for all the assets varies significantly, reporting the City's combined asset age profile would not provide sound information for decision making.

1.6 Summary of Infrastructure Deficit Per Infrastructure Element

The infrastructure deficit represents the amount of capital funding currently unavailable to achieve the assumed levels of service for existing infrastructure, optimize the lifecycle cost of the asset, and support future development/growth. The deficit was determined over a 10-year timeframe, from 2018-2027, for capital requirements only.

All dollar values related to the deficit represent the full infrastructure cost assuming no incremental contributions from other levels of government, as no such commitments have been made. All dollar values reported in the estimated capital plan include provincial and federal funding consistent with forecasted amounts in the 2018 preliminary budget and five year forecast. Years 2024-2027 assume federal and provincial funding levels consistent with the five year forecast.

Operating funding requirements are not captured in this version of the deficit calculation, but will be in future versions.

Total Needed Infrastructure Over Next 10 Years	**-**	**10 Year Capital Plan**	**=**	**Infrastructure Deficit**

As the City moves toward defining level of service models for each asset type, there may be additional investment needs identified in the future over and above what has been identified in this plan. Until level of service models are defined, the needs identified in this plan ensure existing infrastructure is maintained at an appropriate condition that sustains current service levels and ensures new infrastructure funding is provided allowing for implementation of strategic planning efforts supporting growth, enhancement, and regulatory requirements.

For the purposes of this AMP, and the deficit calculations, existing and new infrastructure are defined as follows:

- *Existing Infrastructure* – This typically refers to renewals of existing City infrastructure, where the investment driver is to maintain or enhance the current level of service provided. In some instances, there are also investments within existing infrastructure that are intended to address new regulatory requirements or to support growth. In scenarios where an existing asset is at the end of its useful life or it no longer meets its intended use, the replacement of that asset is considered existing infrastructure if there is no net new asset being added to the City's inventory.
- *New Infrastructure*- This is related to the creation of net new assets required by the City to support new regulatory requirements, support growth, or to enhance a level of service not currently provided by an existing infrastructure asset. In this scenario, the City's asset inventory count would increase.

The total deficit to address Capital investments from 2018-2027 is $6.9 billion, which identifies a higher need in existing infrastructure compared to new infrastructure, as detailed in Table 1.6-1.

Table 1.6-1. 2018 Infrastructure Deficit – A Ten Year View: 2018-2027

2018 Infrastructure Deficit Ten Year View: 2018-2027 *(in millions)*			
Infrastructure Element	**Existing Infrastructure**	**New Infrastructure**	**Total Infrastructure**
Roads	$ 1,283	$ 624	$ 1,907
Bridges	$ 843	$ 287	$ 1,130
Parks & Open Spaces	$ 190	$ 10	$ 199
Water Utility	$ 121	$ 25	$ 146
Sewer Utility	$ -	$ 634	$ 634
Land Drainage Utility	$ -	$ -	$ -
Solid Waste Utility	$ -	$ 24	$ 24
Police Services	$ 46	$ 0	$ 46
Fire and Paramedic Services	$ 48	$ 24	$ 72
Community Services	$ 778	$ 65	$ 843
Municipal Properties	$ 538	$ -	$ 538
Transit	$ 94	$ 1,189	$ 1,282
Information Technology	$ 35	$ 28	$ 63
Total	**$ 3,975**	**$ 2,909**	**$ 6,883**

In descending order, Figure 1.6-1 represents the total deficit for capital investments required at the assumed current service level in each service area over the next 10 years. Of note, the transportation services make up the majority of the infrastructure deficit, amounting to 70% of the overall deficit.

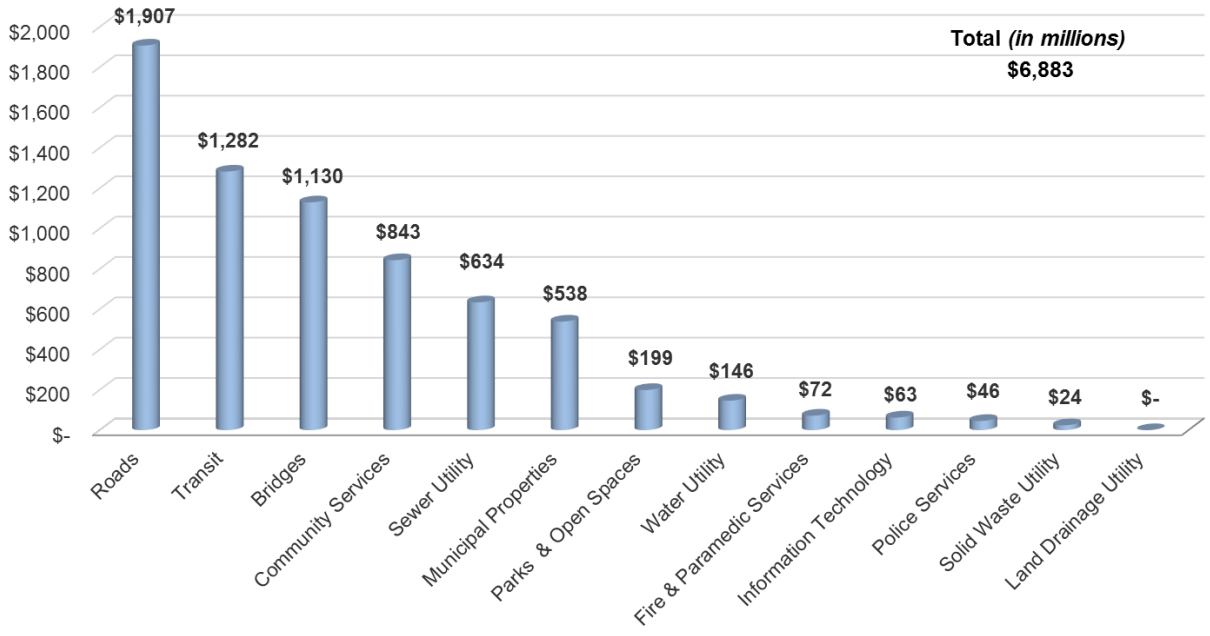


Figure 1.6-1. Infrastructure Deficit by Infrastructure Element

**Figures in this chart have been rounded*

***$- represents a deficit that is still being evaluated*

The last reported deficit was in 2009, at which point the deficit related to capital budget requirements, was estimated at $7.0 billion. Converted to 2018 dollars, this equates to $9.9 billion and provides a more accurate comparison to the 2018 deficit, estimated at $6.9 billion today. Additionally, as the 2009 deficit included a small portion of operating funds, operational costs in the order of $400 million were removed from the 2009 deficit figure to further ensure a fair comparison between the 2009 and 2018 infrastructure deficits. It should also be noted that the amount of work completed in 2009 for $7.0 billion was greater than what could be achieved for the same amount in 2018.

Figure 1.6-2, shows the deficit has decreased between 2009 and 2018, with a proportional shift towards existing infrastructure.

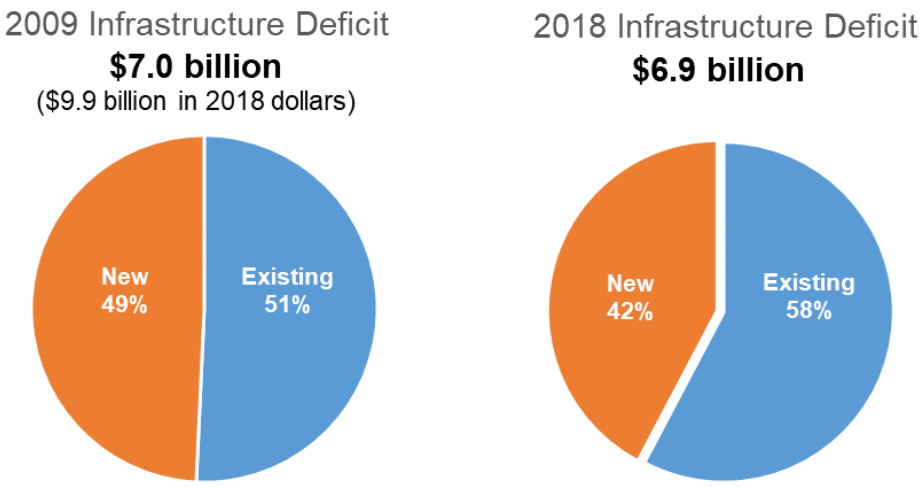


Figure 1.6-2. Comparison of 2009 and 2018 Infrastructure Deficits

Progress to reduce the capital deficit from 2009 to 2018 may be attributed to a number of variables including allocating $2.1 billion more to infrastructure investments than originally planned from 2009-2017, successfully leveraging federal and provincial funding for major capital projects and the City dedicating an annual 2% property tax increase, beginning in 2014, to improve the condition of roads. Progress made to reduce the deficit is encouraging, however, there remains a significant deficit that is becoming more challenging to address as the City nears its maximum borrowing limit set out in the City's debt strategy. Without new sources of revenue, the ability to borrow further debt to finance infrastructure investments is more restrictive now than in the past.

As shown in Figure 1.6-3 the City's net debt increased from 2004 to 2018, and is expected to continue increasing to just under $2 billion, based on current financial commitments. The debt forecast does not currently account for borrowing funds to address the $6.9 billion deficit, which if included, would become an unsustainable level of debt for the City.

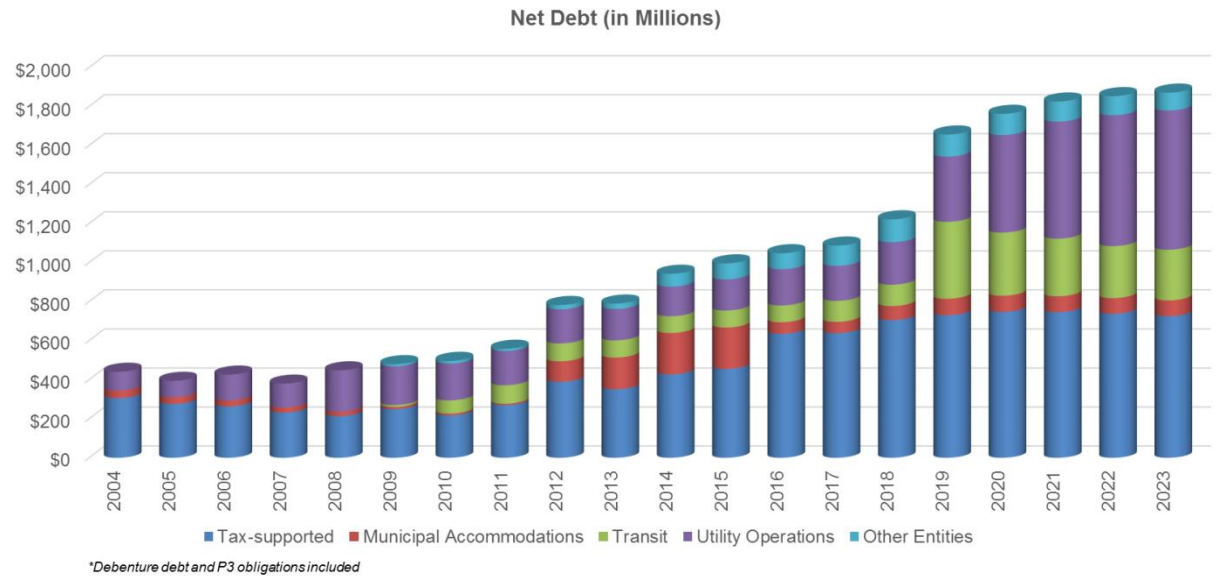


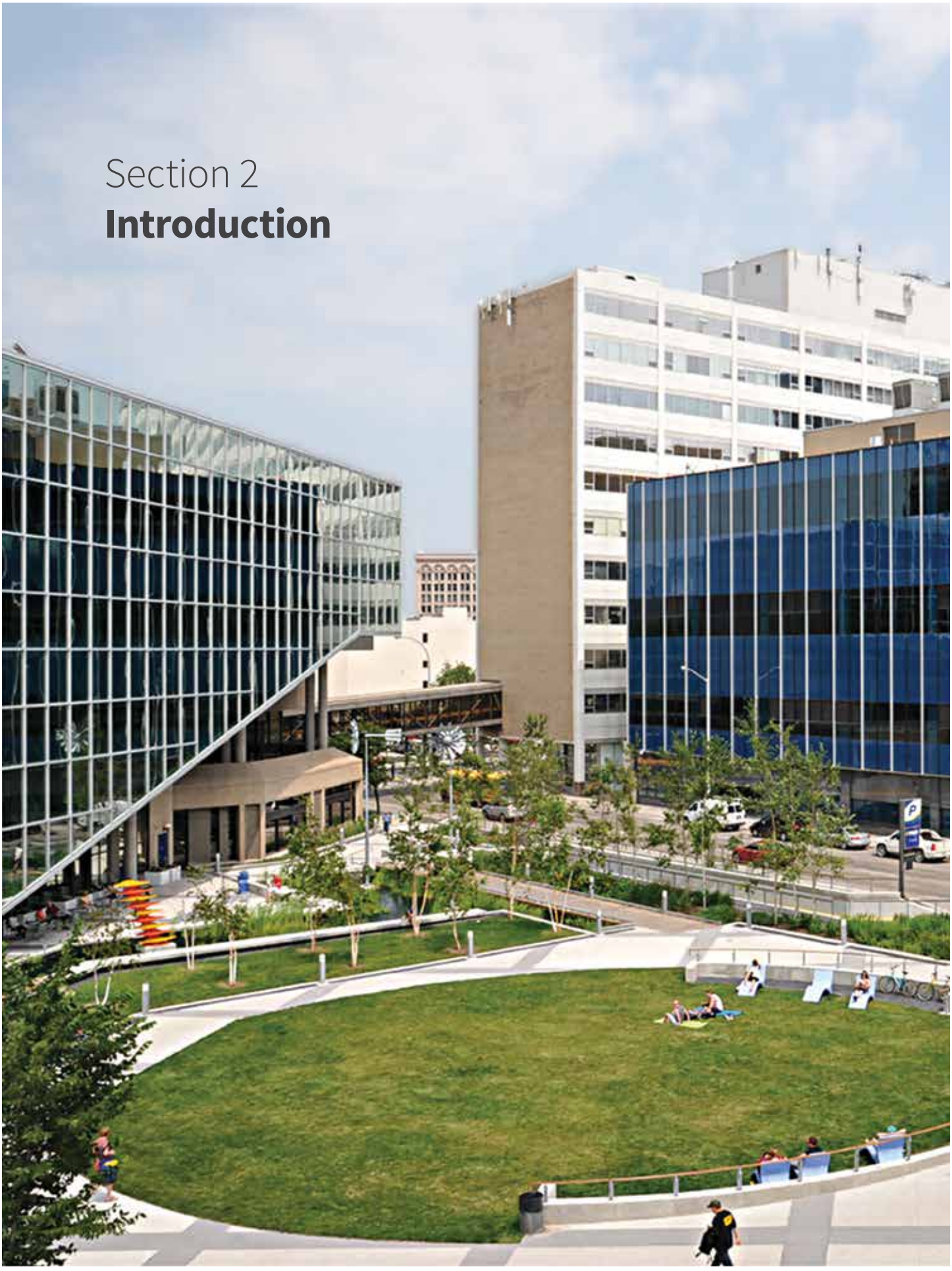
Figure 1.6-3. City of Winnipeg Net Debt: 2004 to 2023 (in millions)

Considering the current borrowing limitations, the City will have to consider a variety of strategies in order to effectively address the deficit. Some key financial strategies the City is considering include:

1. **Increasing Access to Revenue -** through increases to existing revenues, exploring access to new revenues, and leveraging maximum dollars from federal and provincial capital funding.
2. **Developing Level of Service -** which will require innovative approaches to maintain or enhance existing levels of service, as well as challenging decision-making in cases where reductions to service levels are warranted.
3. **Apply an Affordability Lens to Policy Development and Strategic Plans -** to ensure guiding policies, such as *OurWinnipeg,* and service strategic plans, such as the Transportation Master Plan, consider what the City can afford.
4. **Review Assets in Poor to Very Poor Condition -** to ensure critical infrastructure continues to receive adequate funding to address any *Poor* to *Very Poor* condition assets and mitigate against assets deteriorating to this condition.
5. **Better Alignment Between the Budget Process and Asset Management –** as the asset management program and budget process operate as a system that offer the greatest benefit if processes between each are fully integrated. Ongoing alignments between the asset management program and the budget process will allow for improved decision making related to capital infrastructure requirements and associated operational budget impacts through implementation of short-term and near-term actions.

Section 2

Introduction



SECTION 2

Introduction

An Asset Management Plan (AMP) documents an organization's strategy for meeting defined service objectives through strategic infrastructure investment and business change over time. The AMP provides a platform to detail and systematically examine the relationship between service levels and the existing asset base, management practices and levels of investment, and to establish an improvement program to progressively address identified gaps and deficiencies. Once established, the AMP allows the organization to:

1. Demonstrate that the Level of Service (LOS) for each of the Service Areas is being delivered in the most effective and efficient manner.
2. Demonstrate that due regard is being given to the long-term stewardship of the asset base.
3. Demonstrate the responsible management of the asset portfolio.
4. Communicate and justify funding requirements.
5. Show how regulatory compliance will be achieved and growth accommodated while maintaining the asset stock.
6. Easily extract the information needed to produce a City-wide State of Infrastructure Report.

AMPs integrate with and guide the investment planning process. In addition to identifying needed changes to assets, people, and processes, the document's long-range outlook provides insight into the affordability of delivering service at a defined level.

Furthermore, as part of the Administrative Agreement on the Federal Gas Tax between the provincial and federal governments, the Province of Manitoba is entitled to an allocation from the Gas Tax Fund, if local governments take steps to develop and/or implement an AMP, prior to March 31, 2018.

2.1 What is Asset Management

Asset management is not a singular activity or project; rather, it is an integrated business approach with the aim to minimize the lifecycle costs of owning, operating, and maintaining assets, at an acceptable level of risk, while continuously delivering established levels of service to the residents of Winnipeg. It includes the planning, design, construction, operation, and maintenance of infrastructure used to provide City services. By implementing asset management processes, infrastructure needs can be prioritized, while ensuring timely investments to minimize repair and rehabilitation costs, in order to maintain City assets.

Using best practices in asset management across the City ensures decisions are based on a robust, defendable, and transparent process, based on strategic priorities.

In short, it allows the City to make the right investment, at the right time, the right way.

2.2 Assets Included in the Plan

The City has captured and categorized its asset data as follows:

- Infrastructure Element – This is the highest level of asset category, and is typically representative of a service area. There are a variety of asset types that are used to support the overall infrastructure element.

- Asset Type – Each infrastructure element has a variety of asset types that are needed to support delivery of the infrastructure element. For example, the Roads infrastructure element is not only comprised of the regional and local streets, but is also comprised of other asset types, such as active transportation, signals, buildings, and fleet that also support the delivery of road services. All asset type data rolls into the infrastructure element data.
- Asset Sub-Type – The asset sub-type level is the lowest level. The asset sub-types are grouped together and then rolled up into the asset type. For example, the active transportation asset type is made up of asset sub-types such as bike paths and sidewalks.

This type of hierarchy allowed the City to more easily compile asset data in a standardized manner. An example of how this was structured is shown in Table 2.2-1, below.

Table 2.2-1. Sample of Asset Structure

Infrastructure Element Level 1	Asset Type Level 2	Asset Sub-Type Level 3
Roads	Regional Streets	--
	Local Streets	Industrial/Commercial Streets
		Collector Streets
		Residential Streets
		Lanes/Alleys
	Active Transportation	Bike Paths
		Sidewalks
	Signals	Cabinets
		Pole and Cabinet Bases
		Controllers
		Pedestrian Corridor Boxes
		Hardware
		Pedestrian, Bike, and Vehicle Display Heads
		Pole and Arms
		Individual Pedestrian, Bike, Vehicle Displays
	Buildings	--
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment

A full list of all infrastructure elements and associated asset types and sub-types included in this AMP is provided in Appendix A.

2.3 How Infrastructure Supports the City's Goals

Municipalities are unique compared to most businesses in the sense that they provide a multitude of services. In order to effectively deliver services, a diverse portfolio of infrastructure assets is required.

On August 17, 2011, the *OurWinnipeg* initiative took effect, replacing *Plan Winnipeg 2020* as the official development plan guiding growth and change for the City. *OurWinnipeg* presents a 25-year vision for the entire City and positions Winnipeg for sustainable growth. It requires the City to adopt, by by-law, a development plan that sets out long-term plans and policies. The development plan guides and informs more detailed planning on specific topics or for specific areas. The City of Winnipeg has recently begun a process to review and update *OurWinnipeg*.

OurWinnipeg integrates a detailed land use and development strategy ("Complete Communities") and three other direction strategies – "Sustainable Transportation", "Sustainable Water and Waste Infrastructure", and "A Sustainable Winnipeg". Together, the four direction strategies provide detailed policies and objectives necessary for implementation of *OurWinnipeg*.

OurWinnipeg's most encompassing direction strategy is "Complete Communities", which acts as the City's guide to land use and development. Its primary focus is to describe the City's physical characteristics and lay out a framework for the City's future physical growth and development.

The "Sustainable Water and Waste Infrastructure" direction strategy promotes actions required to protect public health and safety, ensure the purity and reliability of the water supply, and maintain or enhance the quality of the built and natural environments. The "Sustainable Transportation" direction strategy provides a vision for transportation in the City for the next 25 years. Its emphasis is on moving people, goods and services in a way that is sustainable. "A Sustainable Winnipeg" is an integrated community sustainability strategy that outlines a plan of action and proposes a system of sustainability indicators and measures.

Following the adoption of the *OurWinnipeg* initiative, the City implemented an official Asset Management Policy. The objectives, vision, and principles of the Asset Management Policy that are specifically supported by this AMP include the following.

Asset Management Policy Objectives

- Link infrastructure investment decisions to service outcomes.
- Make stakeholders aware of the true cost of managing the City's assets necessary to meet agreed LOS.
- Strive to deliver services at approved LOS while minimizing lifecycle costs.
- Allocate limited resources based on lifecycle modeling, multi-criteria prioritization (triple bottom line concept) and risk management.
- Capture relevant asset information and manage this information to enable decision making.
- Provide staff with the necessary knowledge and skills to manage assets effectively.

Asset Management Policy Vision

- Consistently deliver established customer service levels at an acceptable level of risk while minimizing an asset's lifecycle costs.

Asset Management Policy Principles

<u>Customer Focused</u>

- The City will have clearly defined Levels of Customer Service focused on customer outcomes or front-line service delivery.

Strategic

- The City will make appropriate provisions and decisions to better enable its assets to meet future challenges, including changing demographics and populations, customer expectations, legislative requirements, and technological and environmental factors.

Service Focused

- The City will consider all the assets in a service context, taking into account their inter-relationship, as opposed to optimizing individual assets in isolation.

Risk-based

- The City will manage the risks associated with attaining agreed LOS by focusing resources, expenditures, and priorities based upon risk assessments and the corresponding cost/benefit recognizing that public safety is the priority.

Value-Based/Affordable

- The City will develop business case solutions that aim to minimize the lifecycle cost of asset ownership, while satisfying agreed upon LOS. Decisions are based on balancing service, risk, and whole-life cost.

Holistic

- The City will take a comprehensive approach to investment planning and decision making that looks at the "big picture" and considers the combined impact of the entire asset lifecycle.

Systematic

- The City will adopt a formal, consistent, and repeatable approach to the management of its assets that will ensure services are provided in the most effective manner.

Innovative

- The City will continually improve its asset management approach by driving innovation in the development of tools, practices, and solutions.

Triple bottom line (TBL)

- The City will assess investment decisions using TBL sustainability criteria with respect to: economic, environmental, and social outcomes.

Documentation and Knowledge Sharing

- The City will share information and knowledge both internally and externally throughout the asset lifecycle.

Clarity of Roles

- The City will define roles and responsibilities, and assign the authority necessary for effective delivery of services.

Resources

- The City will maintain, within reason, the necessary organizational capacity (including, but not limited to, resourcing, financial support, staff competencies, business processes, data and integrated information systems) to support the asset management framework.

This AMP will support delivery of the Asset Management Policy, by enabling a better understanding of the current lifecycle costs of the existing assets and providing a better understanding of the trigger points for future investment.

2.4 Relationship to Other Municipal Planning and Financial Documents

Beyond *OurWinnipeg*, this AMP contains strategic information that integrates with other City planning documents such as:

- *Capital Forecast*- Capital forecasts are presented in the annual capital budget document. The annual capital budget is approved by Council for the current year and a five-year capital forecast is adopted in-principle. Capital forecasts are used as the staring point for the annual capital budget process.
- *Annual Financial Reports* – These reports include financial statements that describe the City's financial position, the results of its operations, and the methods by which the resources for its various activities have been derived and consumed. The statements within the reports provide information about the economic resources, obligations, and accumulated surplus of the City.
- *Community Trends and Performance Reports* – Published annually, these reports lay out and provide analysis of necessary data to identify needs to support reallocation of resources or realignment of strategic objectives to improve processes and priorities. The City's performance measurement framework uses three types of measures (i.e., service level statistics, effectiveness measures, and efficiency measures), as well as historical data for trending purposes.
- *Financial Management Plan* – City Council adopted the most recent Financial Management Plan on March 23, 2011. The plan establishes the framework for the City's overall financial planning and management. Two of the eight goals identified in the plan that relate most closely to infrastructure are the goals to 'maintain infrastructure assets' and 'ensure a sustainable revenue structure'. A status update is provided annually in volume one of the budget.
- *Services Master Plans* – This AMP is based on service levels, policies, and processes as identified in various service plans and will be used in the development of future business plans, performance measures, and strategic decision making.

2.5 Asset Management Plan Purpose

This AMP guides the consistent application of standards, practices, and tools to support effective service delivery through the sustainable management of public infrastructure. Goals that can be achieved by implementing asset management strategies are improving efficiency, performance and utilization, facilitating data collection and maximizing return on investment while identifying and reducing waste.

This AMP is meant to align investments with infrastructure priorities to deliver established levels of service in a fiscally responsible manner. This AMP allows the City to:

- Provide input into long-term infrastructure master plans and the annual budget
- Document existing and planned work practices and procedures
- Provide a business case for key infrastructure investments to support municipal services
- Develop sustainable financial plans
- Support community engagement regarding customer desired LOS derived from the infrastructure assets
- Consider options related to disposition of certain assets based upon regular updates to this AMP and LOS consideration.
- Meet legislative requirements

- Support funding applications to the federal and provincial levels of government

2.6 Asset Management Plan Development

This AMP contains four components as presented in Figure 2.6-1:

The **State of Local Infrastructure** (Section 3) includes details on the current condition and value of the asset classes covered by this AMP. The condition information for the assets is reported using the Canadian Infrastructure Report Card (CIRC) format. This approach provides a common reporting protocol that can be used for all assets across the City.

The **Expected Levels of Service** (Section 4) contains both currently reported performance measures and a preliminary assessment of potential customer LOS trends. Further work is required to fully develop, measure, and verify the LOS trends and develop LOS models for each Infrastructure Element included in this plan.

The **Asset Management Strategy** (Section 5) sets out the main policies, practices, and actions that are taken to minimize the lifecycle cost of the assets. This covers capital expenditures only.

The **Financial Review of the Infrastructure Deficit** (Section 6) includes both historical and estimated future capital funding. The estimated future capital funding has been compared to investment needs arising from the asset management strategy in order to identify any potential future funding shortfalls.



Figure 2.66-1. Components of this AMP

To ensure the comprehensiveness of this AMP, other resources were consulted including:

- *Building Together – Guide for Municipal Asset Management Plans* as published by the Province of Ontario
- Attendance at workshops and seminars on the topic of asset management
- Following examples and initiatives demonstrated by other municipalities

2.7 Asset Management Plan Updates and Timeframes

This AMP is a living document that will continue to reflect the evolution of asset management practices within the City. A key aspect of good asset management is to continually evaluate, review, and enhance asset management practices. This continual improvement approach will result in periodic updates to the AMP as a better understanding of the asset base and until its needs are obtained. Some specific improvements are detailed in Section 7.

This AMP is a strategic document that should ultimately encompass the full lifecycle of the City's assets included in the plan. Since the full lifecycle for some of the assets covered in this AMP can be in excess of 50 years (e.g., building assets), future versions of this AMP will consider the full lifecycle of all of these assets.

This AMP will be updated every 2-4 years to coincide with other strategic planning documents. If significant changes arise within this timeframe that impact this AMP, an interim review could be undertaken.

Table 2.7-1 shows the proposed update frequencies for this AMP and associated documents.

Table 2.7-1. Proposed Document Update Frequency

Document	Update Frequency
Asset Management Policy	As Required
Asset Management Plan	Every 2-4 years
State of Infrastructure Report	Every 2-4 years
Capital Budget	Annually

2.8 Condition Ratings and Weighted Average Methodology

A 5-point rating scale that aligns with the Canadian Infrastructure Report Card (CIRC), produced by the Federation of Canadian Municipalities (FCM), Canadian Construction Association, Canadian Public Works Association and Canadian Society of Civil Engineering was used to determine the state of the City's assets. The use of this 5-point rating scale allows the City's asset base to be described using a common approach and will enable benchmarking against other municipalities. The rating scale ranges from *Very Good* to *Very Poor*, as described in Table 2.8-1, and reflects the physical condition of the given assets.

Table 2.8-1. CIRC 5-Point Scale for Rating Asset Condition

1	Very Good	The infrastructure in the system or network is generally in very good condition, typically new or recently rehabilitated. A few elements show general signs of deterioration that require attention.
2	Good	The infrastructure in the system or network is in good condition; some elements show general signs of deterioration that require attention. A few elements exhibit significant deficiencies.
3	Fair	The infrastructure in the system or network is in fair condition; it shows general signs of deterioration and requires attention. Some elements exhibit significant deficiencies.
4	Poor	The infrastructure in the system or network is in poor condition and mostly below standard, with many elements approaching the end of their service life. A large portion of the system exhibits significant deterioration.
5	Very Poor	The infrastructure in the system or network is in unacceptable condition with widespread signs of advanced deterioration. Many components in the system exhibit signs of imminent failure, which is affecting service.
-	Not Assessed	This category is reserved for assets where data is either missing, not updated, or cannot be considered reliable. Flagging this data helps the departments identify where gaps in information exist and allows them to develop assessment plans to improve future data reliability and accuracy.

In an effort to effectively report on the overall condition and age of all the asset types identified within a service area, a consistent methodology needed to be applied across all departments.

The City of Winnipeg applied a weighted average methodology using the replacement values of assets to more easily compare a linear asset, such as a road or water main, to non-linear assets, such as buildings, vehicles, or park amenities.

This approach helped shift the overall condition and age ratings towards the assets with the greatest monetary value, as the higher value assets represent greater liability to the City should these assets be underperforming or nearing failure.

Assigning condition ratings to the various assets was performed using a variety of assessment tools. A common tool focused on using detailed inspection reports, while other methods were based on

municipal representatives' working experiences with the assets, as well as using proxy information such as age or remaining service life.

In order to present the overall condition of City assets in a format that could be easily recognizable, the 5-point rating scale used to indicate asset condition ranging from *Very Poor* to *Very Good* was translated into a letter grade system as outlined in Table 2.8-2.

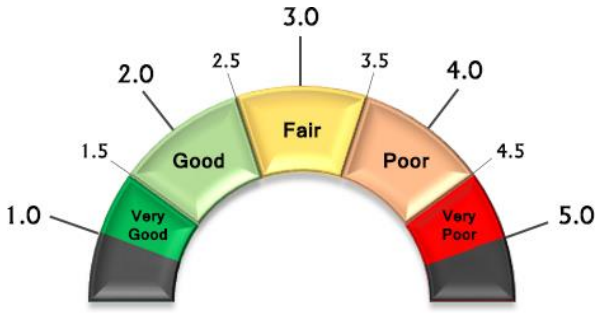
Table 2.8-2. Letter Grade Scale for Rating Asset Condition

Letter Grade	CIRC Rating	Description
A	1	Very Good
B	2	Good
C	3	Fair
D	4	Poor
F	5	Very Poor

Intermediate grades (B+, D-, etc.) could also be determined based on an exact conversion from the 5-point CIRC condition rating scale when the overall condition landed between two numbers. (e.g., a CIRC condition rating of 1.62 = B+).

The assigned letter grade is only an indication of an asset's physical condition. As the AMP evolves, a more sophisticated approach will be developed to integrate additional key criteria for determining letter grades.

Another effective tool for displaying how an asset's condition rates between *Very Poor* (5) and *Very Good* (1) is the condition "speedometer". Rather than simply placing an asset into one of the five categories, the speedometer gauge points to the actual condition score (including intermediate values within the spectrum) and helps predict when the condition of an asset may change. Refer to the scoring breakdown illustrated in Figure 2.8-1, below.



Condition	Rating Range	Letter Grade	Rating Range
Very Good (1)	*1.00 to 1.50*	A A-	*1.00 to 1.25* *1.26 to 1.50*
Good (2)	*1.51 to 2.50*	B+ B B-	*1.51 to 1.75* *1.76 to 2.25* *2.26 to 2.50*
Fair (3)	*2.51 to 3.50*	C+ C C-	*2.51 to 2.75* *2.76 to 3.25* *3.26 to 3.50*
Poor (4)	*3.51 to 4.50*	D+ D D-	*3.51 to 3.75* *3.76 to 4.25* *4.26 to 4.50*
Very Poor (5)	*4.51 to 5.00*	F+ F	*4.51 to 4.75* *4.76 to 5.00*

Figure 2.8-1. Condition Speedometer and Rating Ranges

Note that the center of each segment represents the whole value of the rated condition. As a result, both the *Very Good* and *Very Poor* condition categories have a smaller range considering that the 5-point rating scale does not register ratings less than 1 or greater than 5.

In addition, the border between two segments represents the transition from one condition rating to another and, therefore, provides the degree of that rating and how an asset's condition may be trending.

Section 3

State of Local Infrastructure

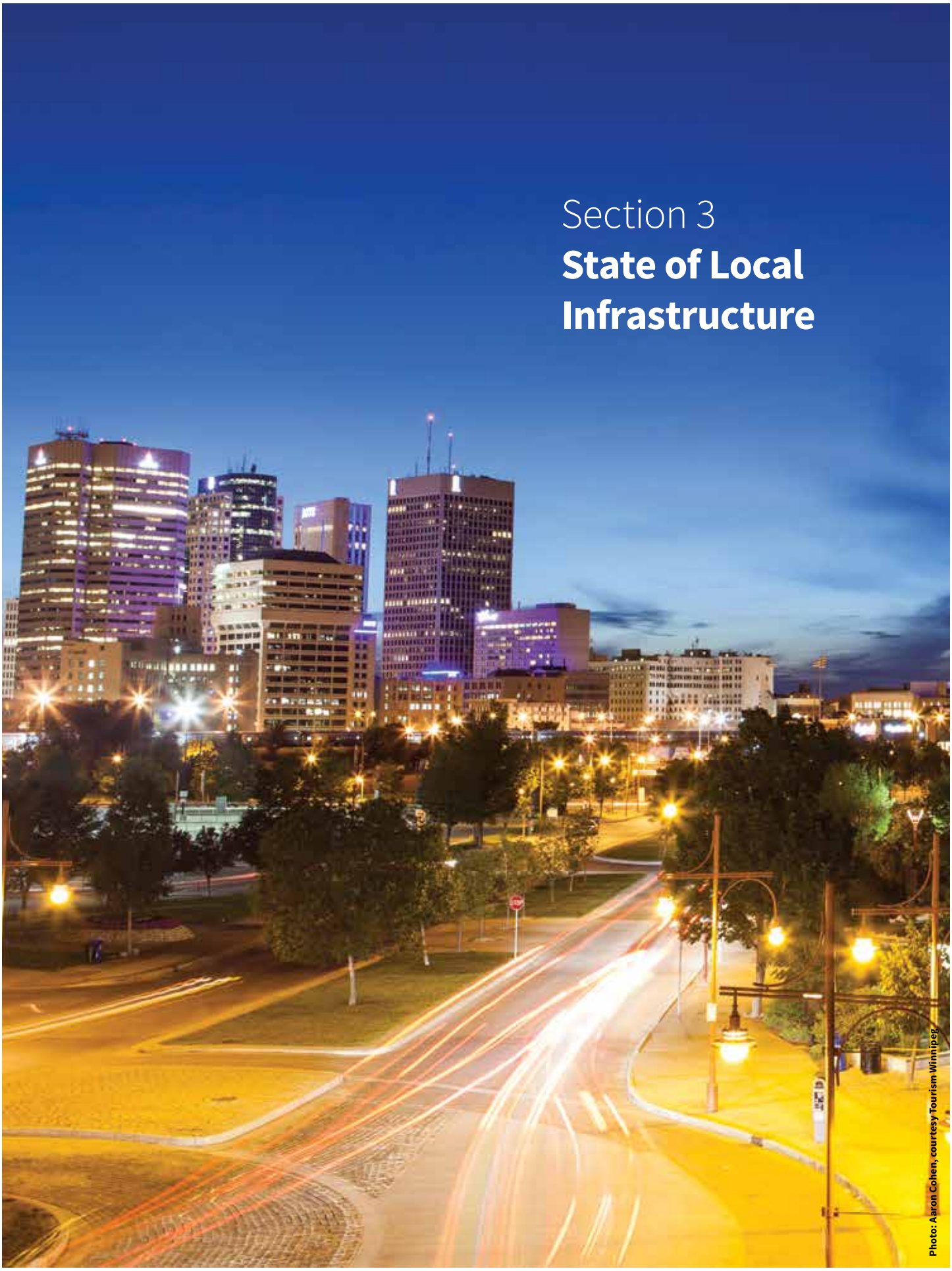


Photo: Aaron Cohen, courtesy Tourism Winnipeg

SECTION 3

State of Local Infrastructure

The City's assets are grouped under 13 infrastructure elements:

1. Roads
2. Bridges
3. Parks and Open Space
4. Water Utility
5. Sewer Utility
6. Land Drainage Utility
7. Solid Waste Utility
8. Municipal Properties
9. Community Services
10. Transit
11. Police Services
12. Fire and Paramedic Services
13. Information Technology

The replacement values reported in this AMP reflect the cost to replace each asset with the same asset and do not include growth, changes and improvements in technologies, or enhancements.

The condition of the assets in this AMP are reported using the CIRC scale described in Section 2.8.

Figures showing the metrics for each infrastructure element and asset type are provided in the following subsections including data on replacement value, condition, inventory, and age, unless the metrics are not available (age is not available in all cases) or in cases where there is only one inventory count per asset type. For specifics on all asset types, see Appendix A, which lists all assets included in the plan, and Appendix B, which provides detailed summaries of the asset data.

3.1 Roads

3.1.1 Service Overview and Performance

Service History

Services that Roads provide to the public are as follows:

- Roadway Construction and Maintenance

  To provide citizens with access to well-maintained roadways, sidewalks and bridges in order to ensure the safe, efficient movement of people, goods and services

- Transportation Planning and Traffic Management

  To plan, design and manage the transportation system and the traffic regulatory environment to provide a safe, environmentally-aware, accessible and sustainable transportation system

- Roadway Snow Removal and Ice Control

  Undertake effective roadway snow and ice control services in order to provide safe and accessible conditions on city streets and sidewalks during the winter season

The Street network consists of approximately 1,900 lane km of regional streets, 6,000 lane km of local streets (including industrial/commercial, collector, residential and lanes/alleys), and 3,000 linear km of active transportation (including bike paths and sidewalks).

The Traffic Signals Branch owns and maintains approximately 96,000 above-ground signal components, as well as many items not included in this plan (below-ground items, intelligent transportation equipment, and Transportation Management Centre [TMC] related IT infrastructure).

Data Collection History

The Public Works Engineering – Asset Management Branch began collecting pavement condition data in the mid-1980s using the PAVER system, which was fine-tuned in 2001 to the inspection process it is today. Regional streets are assessed annually, local streets are assessed every second year (with the exception of lanes/alleys which are assessed every 4-5 years), and active transportation has a variable assessment cycle with bike path assessment every few years whereas sidewalks are not condition assessed.

Street condition data is uploaded to the Pavement Management System, which uses a least-cost approach to identify a draft list of optimized renewal candidates that is then used in the City's investment planning process. The Pavement Management System also contains an asset register where the road inventory is maintained.

The Traffic Signals Branch has created an internally-developed condition and inventory system to record current and historical above-ground traffic signal components along with their location, directionality, condition, and more. This system has been designed to integrate with operation and capital workflows to ensure sustainability of providing valid up-to-date information.

Age data (construction year) for roads is maintained in Public Works' GIS system by the GIS Technologist. Construction year for active transportation and signals is limited and not readily available.

Building condition and age data has been provided to Public Works from Planning, Property & Development's VFA and Maximo programs.

3.1.2 Asset Metrics Summary

Roads – All Assets

The overall condition, value, and age relating to all assets that are required to deliver Roads services is depicted below.

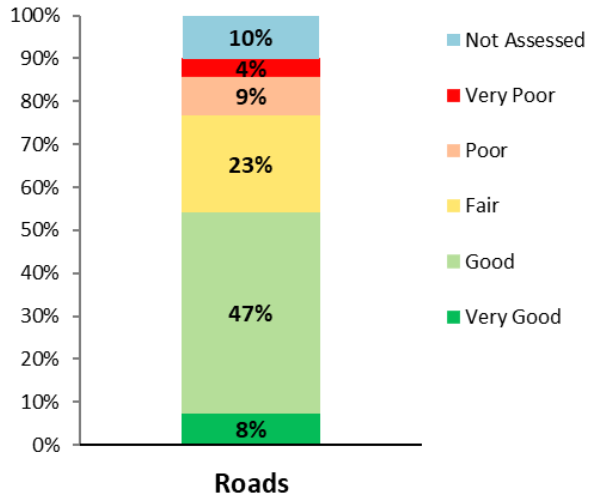


Figure 3.1-1. Roads - Condition

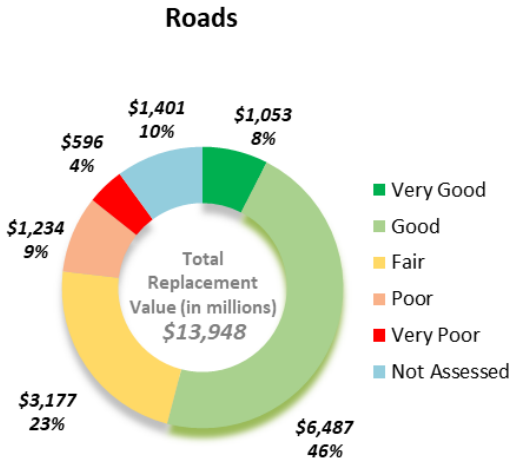


Figure 3.1-2. Roads – Condition and Value

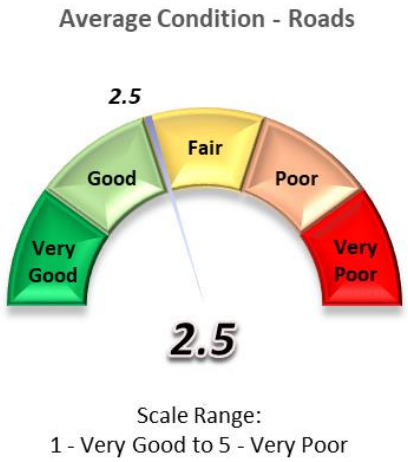


Figure 3.1-3. Roads – Average Condition

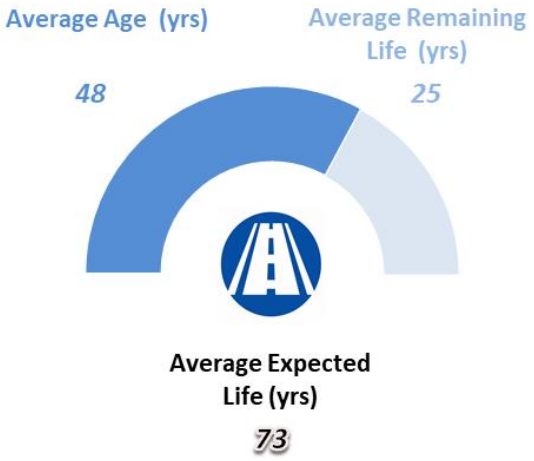


Figure 3.1-4. Roads - Age Profile

Overall, all assets that support the Roads service area are in *Fair* to *Good* condition. Until recently, the overall condition of the road network has been in significant decline. The Regional Street Renewal Reserve was established in 2014 to increase investment in regional streets. With continued funding from dedicated annual property tax increases the new funding stream will allow a gradual improvement in the condition of the road network and aims to vastly reduce the number of *Poor* and *Very Poor* condition streets over a 25-year period.

Industrial/commercial streets have a long history of underfunding and approximately 50% of streets are in *Fair/Poor* or *Very Poor* condition. There is now an annual program of renewals based on need.

Lanes/alleys also have a long history of underfunding and approximately 66% of streets are in *Fair/Poor* or *Very Poor* condition. There is an annual program of lane renewals based on need, and a portion of the additional local street funding is now allocated to lanes/alleys as well, but it may not be sufficient to improve the conditions of this network.

The age of City streets are variable and, due to the efforts to extend their life by applying treatments at the appropriate time in their lifecycle, there is not necessarily a linear relationship between age and condition.

The average condition of the recorded aboveground traffic signals equipment is *Good*, and the expected continuance of capital and maintenance funding will enable further deficiencies to be mitigated and minimize service interruptions and inefficiencies in the system.

Assets with condition “Not Assessed” include the following:

- Unsurfaced streets such as gravel and chip seal
- Median openings, left and right turn lanes in regional streets
- Sidewalk inventory
- Some traffic signals components
- Buildings used for storage of fuel and hazardous materials, vehicles, and equipment

Assets with age “Not Assessed” include the above, as well as the following:

- Lanes/alleys
- Various street blocks with incomplete data
- All traffic signal assets and components

3.1.3 Asset Condition, Value, and Inventory

Roads - Regional Streets

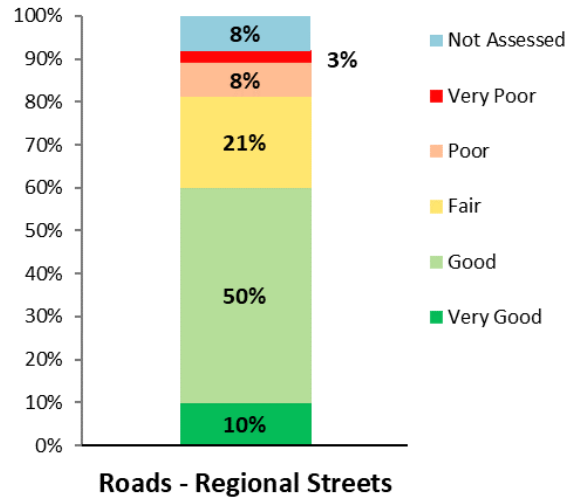


Figure 3.1-5. Regional Streets - Condition

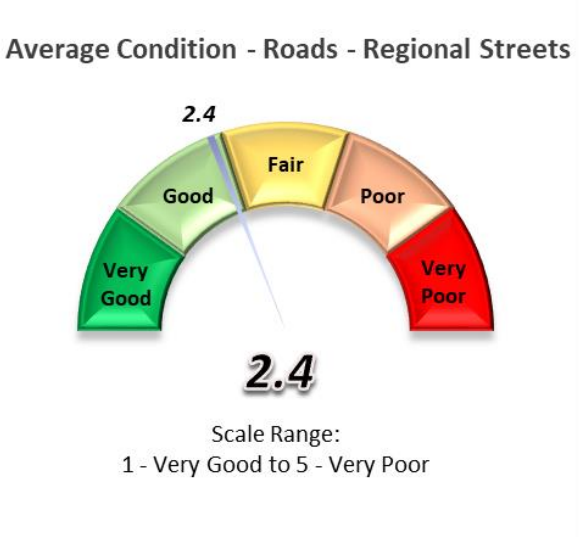


Figure 3.1-6. Regional Streets – Average Condition

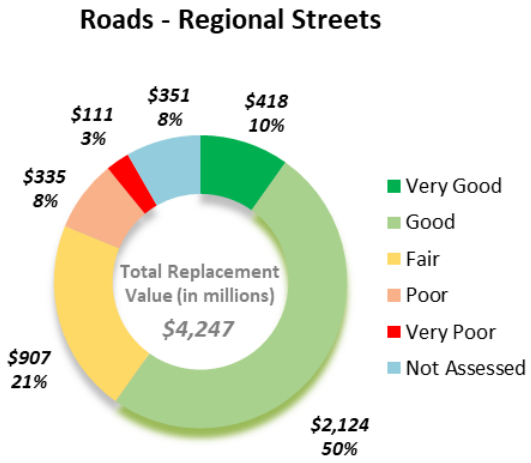


Figure 3.1-7. Regional Streets – Condition and Value

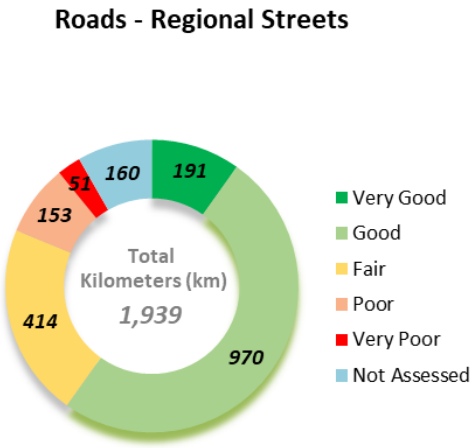


Figure 3.1-8. Regional Streets – Condition and Inventory

Regional streets are generally in *Good* condition, but until recently the overall condition of the road network has been in significant decline. The Regional Street Renewal Reserve was established in 2014 to increase investment in regional streets. A separate dedicated annual property tax increase will continually fund this reserve each year to ensure a dedicated funding stream for regional streets. This has resulted in an improvement in general condition trends for regional streets.

Regional streets that are shown with condition as “Not Assessed” include unsurfaced roads like gravel or chip seal, as well as any road segment that wouldn’t normally be rated, such as median openings and left and right turn lanes. This inventory is typically included with adjacent street segments in the Regional Road Renewal Program.

Roads - Local Streets

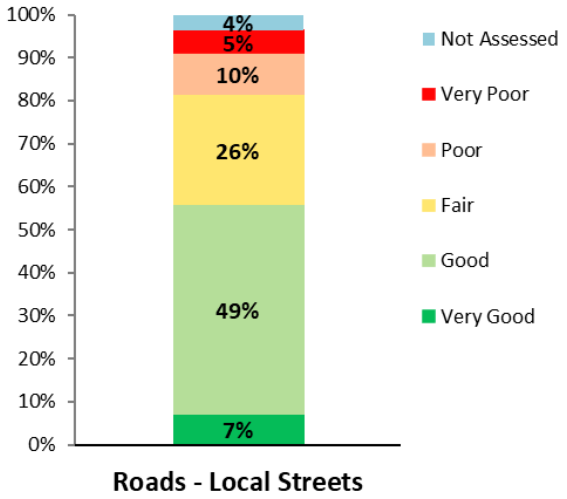


Figure 3.1-9. Local Streets - Condition

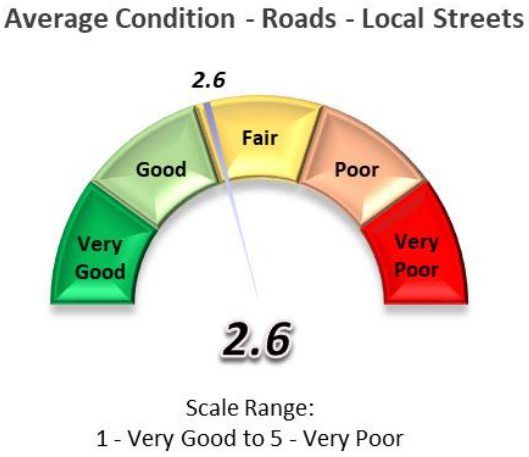


Figure 3.1-10. Local Streets – Average Condition

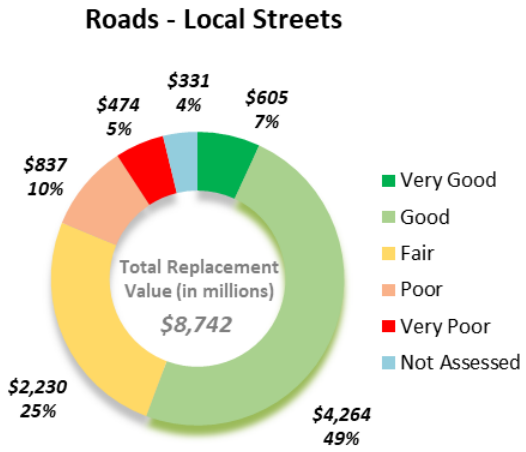


Figure 3.1-11. Local Streets – Condition and Value

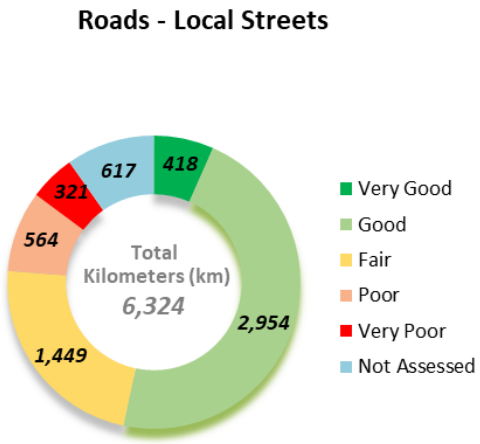


Figure 3.1-12. Local Streets – Condition and Inventory

Local Streets are in *Fair* condition. The graphs above include four asset sub-types: industrial/commercial streets, collector streets, residential streets and lanes/alleys.

Each of these asset sub-types has variable conditions as demonstrated in Figure 3.1-13, below.

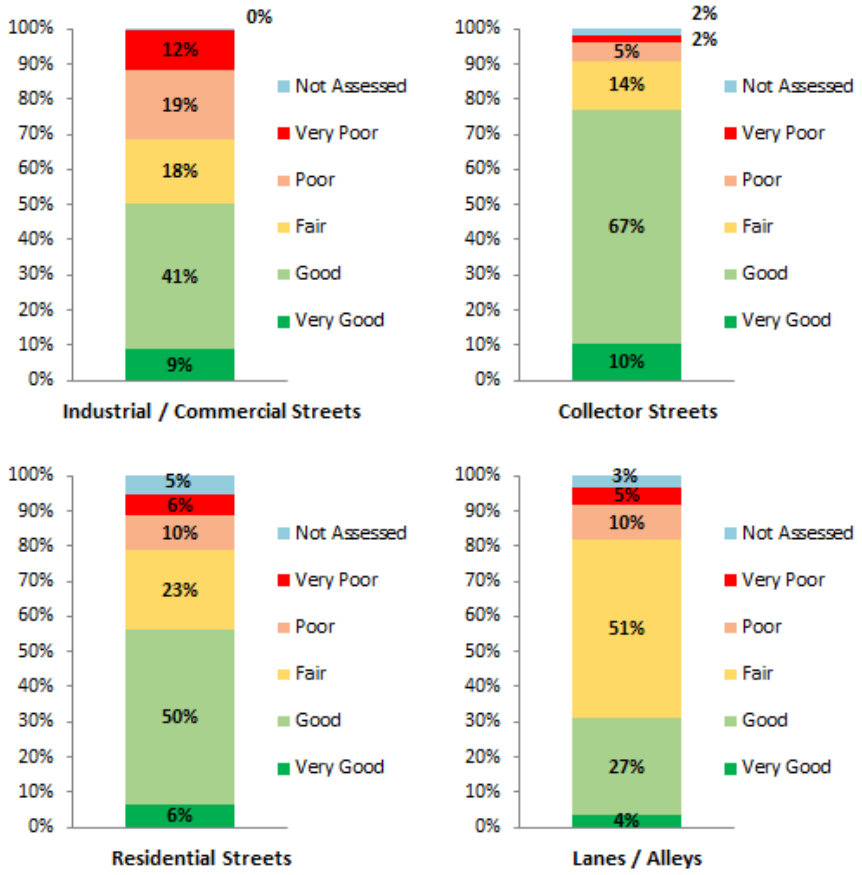


Figure 3.1-13. Local Street Conditions by Asset Sub-Type

Over the last decade, collector streets in residential neighbourhoods have been targeted for a Thin Bituminous Overlay (TBO) program that has extended the life and improved the condition of these streets.

Growth in Winnipeg has resulted in an increase in construction of new developments in suburban areas of the City. These new streets are added to the street inventory every year and affect the overall condition ratings in the Collector Street and Residential Street categories by diluting the dataset with *Very Good* and *Good* streets. This can result in a more optimistic outlook on the state of local streets and offset the natural deterioration rate.

The Local Street Renewal Reserve was established in 2013 to increase investment in local streets. A separate dedicated annual property tax increase was established. This has resulted in an improvement in general condition trends for local streets.

Industrial/commercial streets have a long history of underfunding and approximately 50% of streets are in *Fair/Poor* or *Very Poor* condition. There is now an annual program of renewals based on need.

Lanes/alleys also have a long history of underfunding and approximately 66% of streets are in *Fair/Poor* or *Very Poor* condition. There is an annual program of renewals based on need, but is not sufficient to improve the conditions of this network.

Local streets that are shown with condition as “Not Assessed” include unsurfaced roads like gravel and chip seal, as well as a few that are interlocking brick. Public Works does not intend to assess these roads in the near future.

Roads - Active Transportation

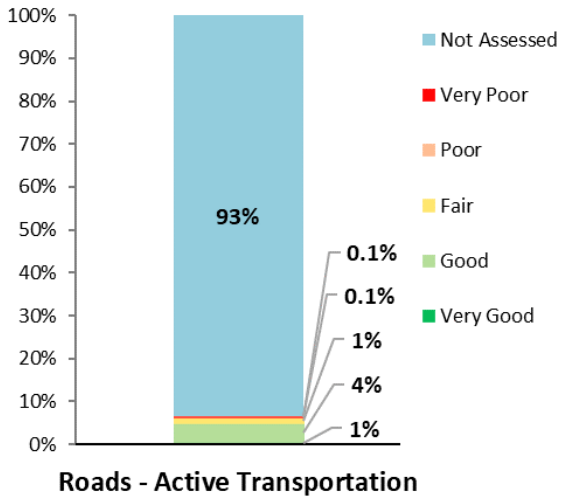


Figure 3.1-14. Active Transportation - Condition

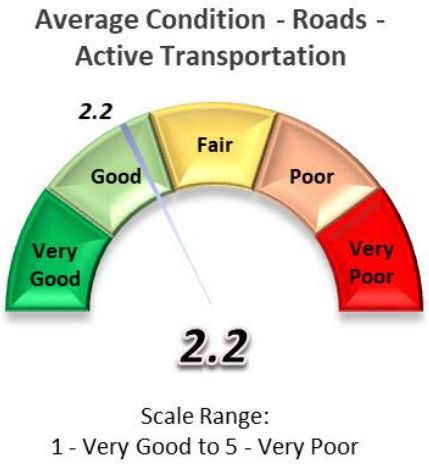


Figure 3.1-15. Active Transportation – Average Condition

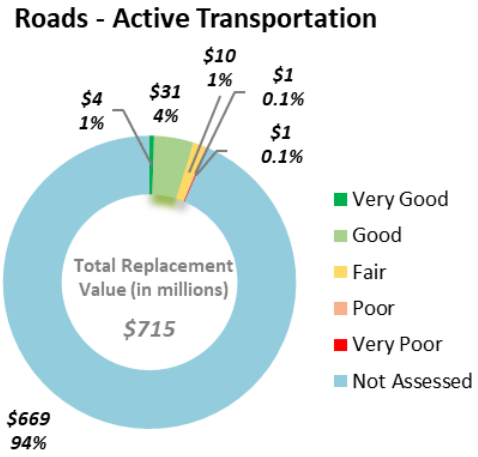


Figure 3.1-16. Active Transportation – Condition and Value

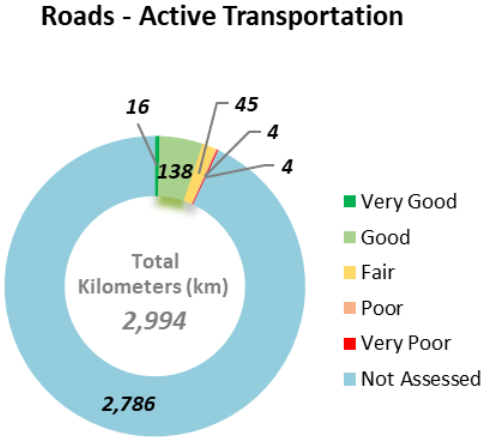


Figure 3.1-17. Active Transportation – Condition and Inventory

The active transportation asset type is composed of approximately 7% bike paths and 93% sidewalks. Bike paths undergo a condition survey regularly, however, sidewalks are assessed from a hazard perspective only and do not have condition assessed. Sidewalks are typically renewed under the existing roads renewal budget.

Figure 3.1-18, below, shows the breakdown of condition of bike paths alone.

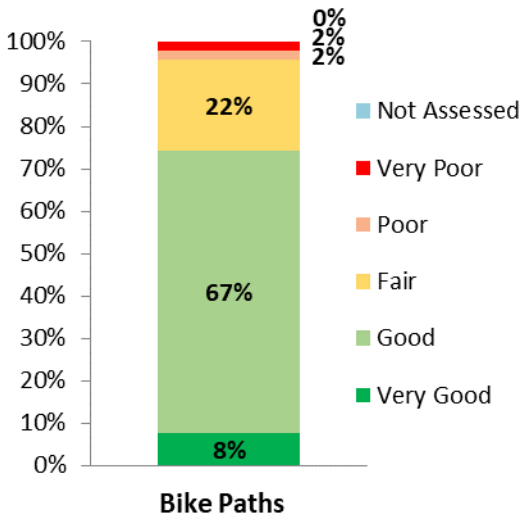


Figure 3.1-18. Active Transportation – Bike Path Condition

The City's commitment to active transportation programs has resulted in a large amount of new bike path inventory in the past few years. This influx of new inventory has influenced the graphs above, as it results in a large proportion of pathways in *Good* condition.

Roads - Signals

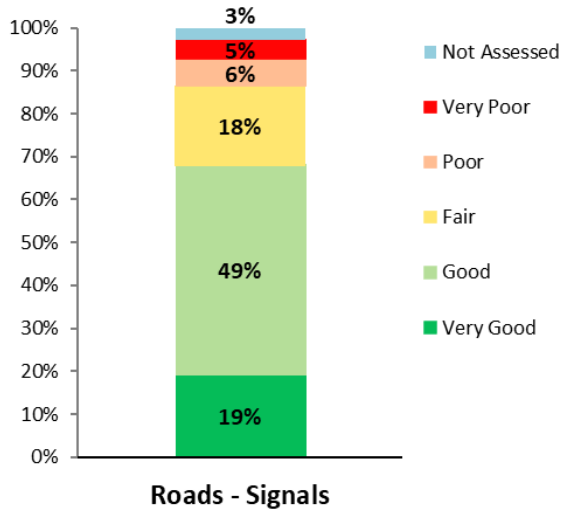


Figure 3.1-19. Signals - Condition

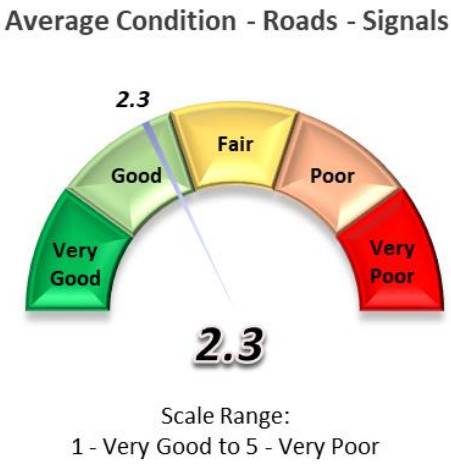


Figure 3.1-20. Signals – Average Condition

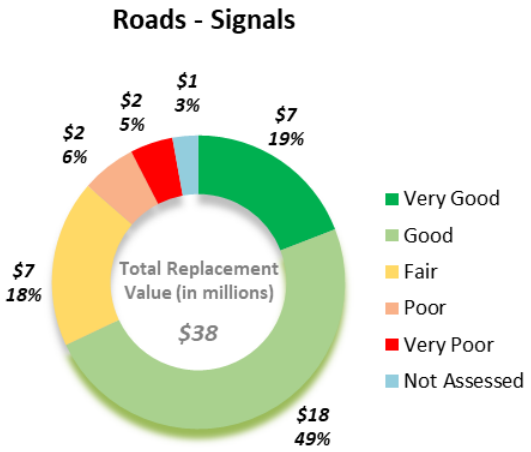


Figure 3.1-21. Signals – Condition and Value

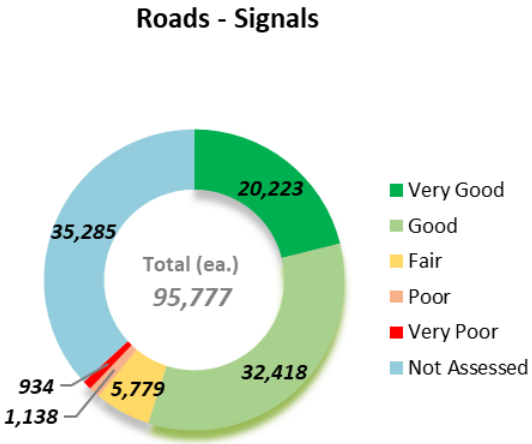


Figure 3.1-22. Signals – Condition and Inventory

The charts above represent the overall condition of above-ground traffic signal assets.

The Traffic Signals Branch has created an internally developed condition and inventory system to record current and historical above-ground traffic signal components along with their location, directionality, condition, and more. This system has been designed to integrate with operation and capital workflows to ensure sustainability of providing valid up-to-date information.

This information combined with traffic signal malfunction reporting and repair information is providing unprecedented capabilities to understand current deficiencies and make system-wide data-driven decisions.

This data-driven approach, combined with related capital road renewal activities, traffic signal capital improvement projects, and a recently created and dedicated maintenance budget, is actively addressing significantly deteriorated, obsolete, and poor performing infrastructure.

The average condition of the recorded above-ground equipment is *Good* and, with the expected continuance of capital and maintenance funding, further deficiencies will be mitigated and service interruptions and inefficiencies in the system will be minimized.

Absent from this reporting is information on underground traffic signal infrastructure and new intelligent transportation system components, such as non-intrusive detection, traffic monitoring cameras, backup power systems, and communications modems. These assets and their condition have not been added to the traffic signal condition and inventory system due to limited system development resources in the Public Works Department.

The underground infrastructure includes assets such as electrical cabling, conduit, and in-ground detection. Repair and/or replacement costs can be significant due to the nature of the underground work and the related restoration of above-ground roadway infrastructure. There has been a significant effort to digitally map all below-ground equipment locations, however, the condition of this infrastructure is not well understood.

There are substantial changes and opportunities occurring in transportation now and in the near future, particularly with regard to Intelligent Transportation Systems (ITS) and Connected and Autonomous Vehicles (CAV).

The inclusion of traffic signal condition reporting in asset management plans is not common, as this information and detail is not typical in other jurisdictions.

Roads - Buildings

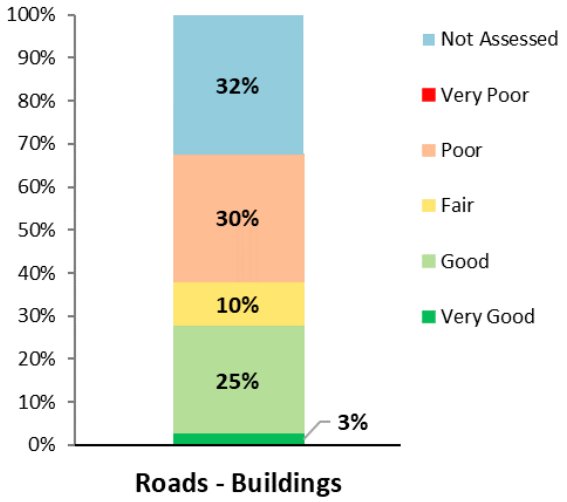


Figure 3.1-23. Buildings - Condition

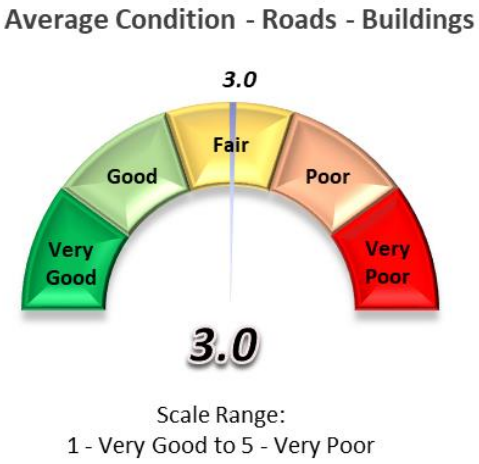


Figure 3.1-24. Buildings – Average Condition

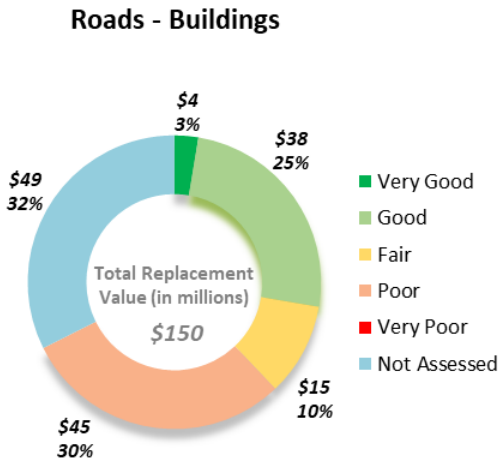


Figure 3.1-25. Buildings – Condition and Value

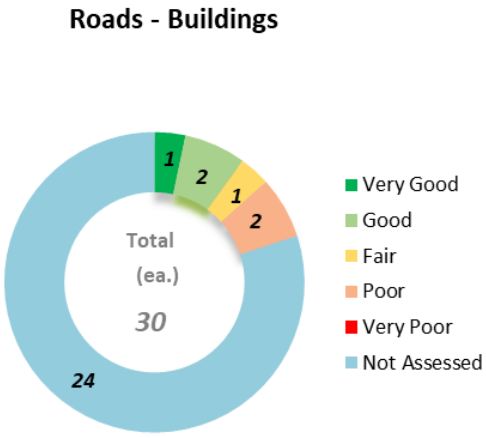


Figure 3.1-26. Buildings – Condition and Inventory

Buildings with condition “Not Assessed” include buildings used for storage of fuel and hazardous materials, vehicles, and general equipment and tools.

The six buildings with a Facility Condition Index (FCI) are buildings used for business and maintenance shops.

Roads - Fleet

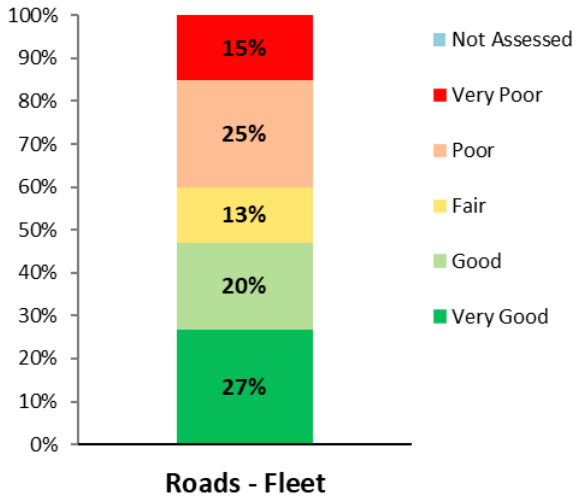


Figure 3.1-27. Fleet - Condition

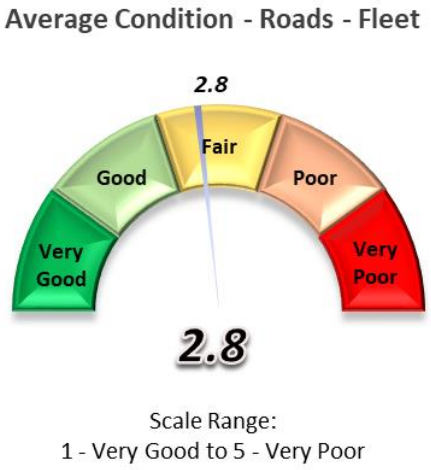


Figure 3.1-28. Fleet – Average Condition

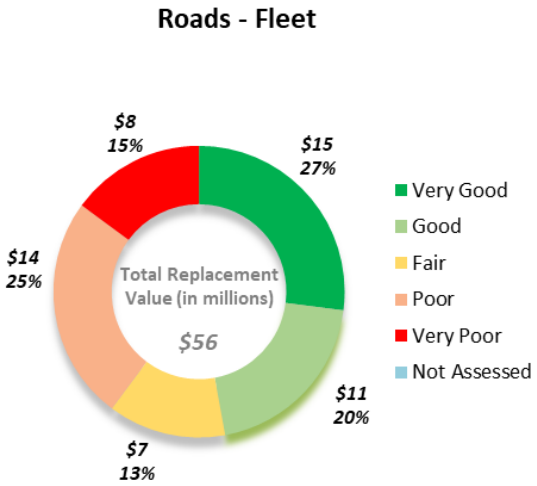


Figure 3.1-29. Fleet – Condition and Value

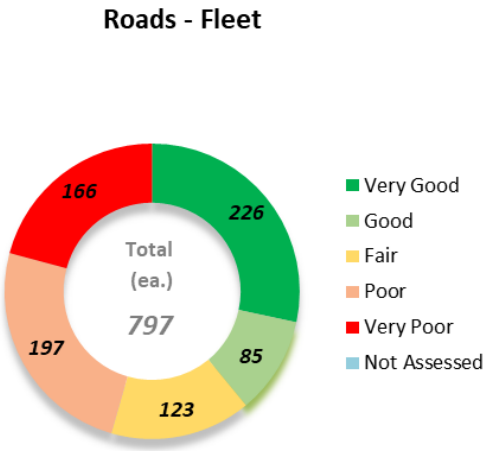


Figure 3.1-30. Fleet – Condition and Inventory

3.1.4 Age Profile

Roads - Regional Streets

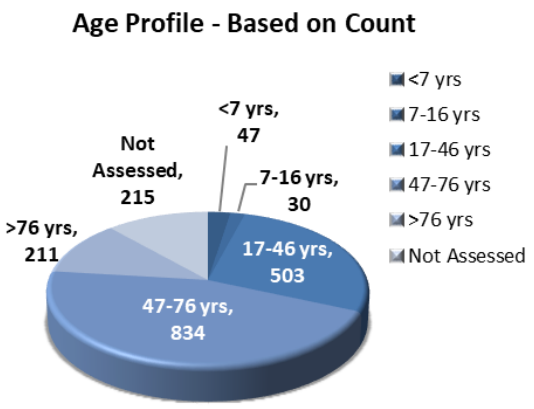


Figure 3.1-31. Regional Streets – Age Profile Based on Count

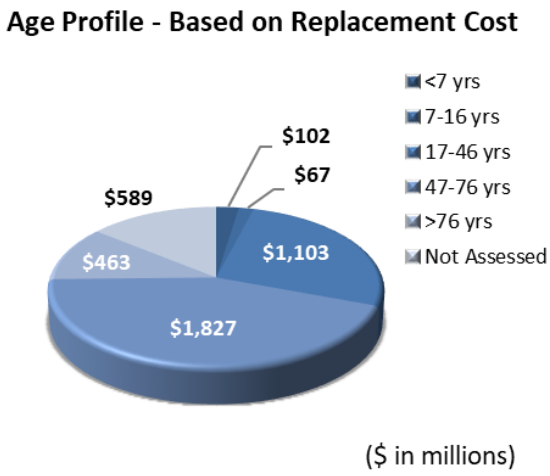


Figure 3.1-32. Regional Streets – Age Profile Based on Replacement Cost

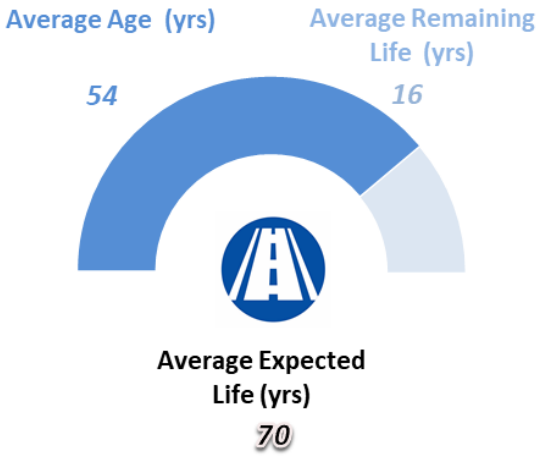


Figure 3.1-33. Regional Streets – Average Age and Remaining Life

The age of City streets is variable and, due to the efforts to extend their life by applying treatments at the appropriate time in their lifecycle, there is not necessarily a linear relationship between age and condition.

Average expected life for roads is the typical lifecycle of a road, including all routine maintenance and intermediate treatments. It is assumed that at the end of a road's expected life, a reconstruction is the only effective treatment remaining.

Regional streets that are shown with age as "Not Assessed" include un-surfaced roads like gravel or chip seal, as well as any road segment that wouldn't normally be rated, such as median openings and left and

right turn lanes. It also includes various blocks where this information is incomplete in the GIS. Blocks that contain incomplete construction year will be gradually addressed over the next few years, as this information becomes available.

Roads - Local Streets

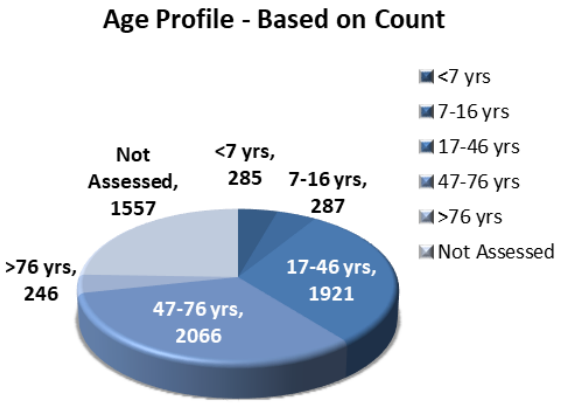


Figure 3.1-34. Local Streets – Age Profile Based on Count

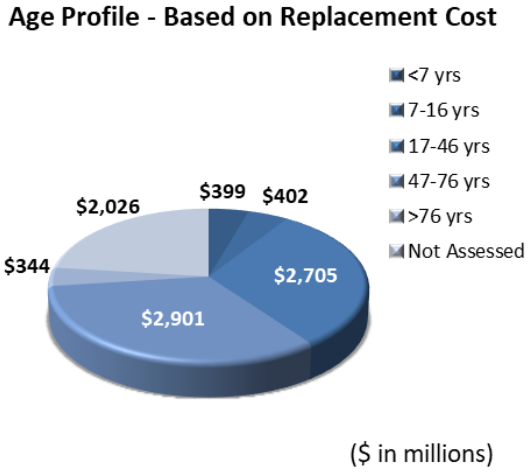


Figure 3.1-35. Local Streets – Age Profile Based on Replacement Cost

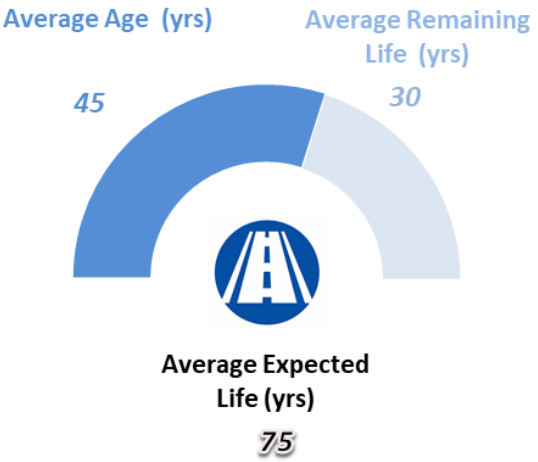


Figure 3.1-36. Local Streets – Average Age and Remaining Life

The age of City streets is variable and, due to the efforts to extend their life by applying treatments at the appropriate time in their lifecycle, there is not necessarily a linear relationship between age and condition.

Average expected life for roads is the typical lifecycle of a road, including all routine maintenance and intermediate treatments. It is assumed that at the end of a road's expected life, a reconstruction is the only effective treatment remaining.

Average age is also affected by the influx of new construction in new residential neighbourhoods at the residential street and collector street level.

Local streets that are shown with age as “Not Assessed” include unsurfaced roads like gravel or chip seal. It also includes various blocks where this information is incomplete in the GIS. Blocks that contain incomplete construction year will be gradually addressed over the next few years, as this information becomes available. Construction year is also not maintained in the lanes/alleys dataset. It will be determined if this information can be added to our asset register for the next version of the AMP, as extracting this information from paper files is a manual task that requires dedicated resourcing.

Roads - Buildings

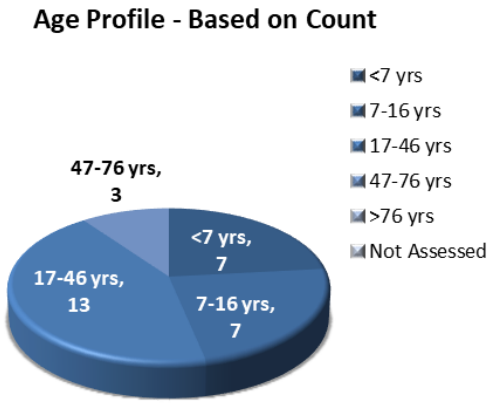


Figure 3.1-37. Buildings – Age Profile Based on Count

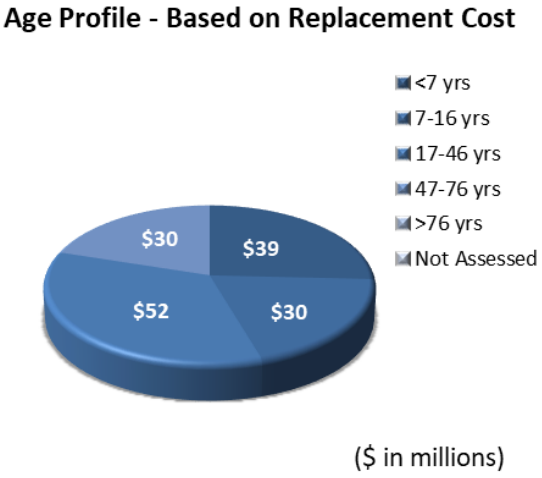


Figure 3.1-38. Buildings – Age Profile Based on Replacement Cost

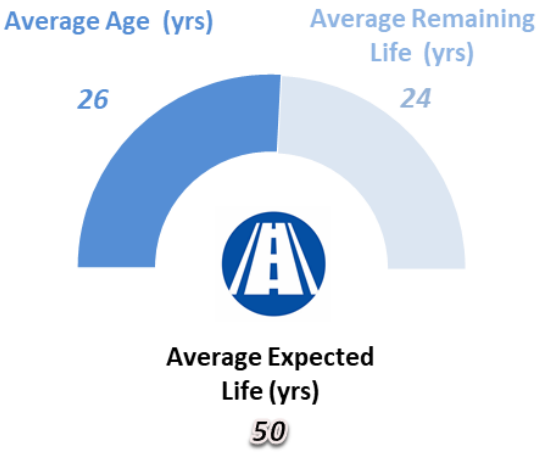


Figure 3.1-39. Buildings – Average Age and Remaining Life

Roads - Fleet

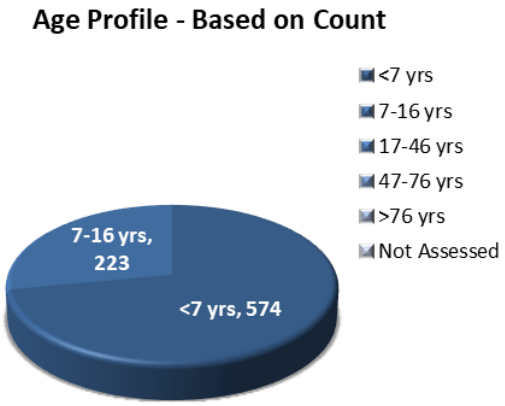


Figure 3-40. Fleet – Age Profile Based on Count

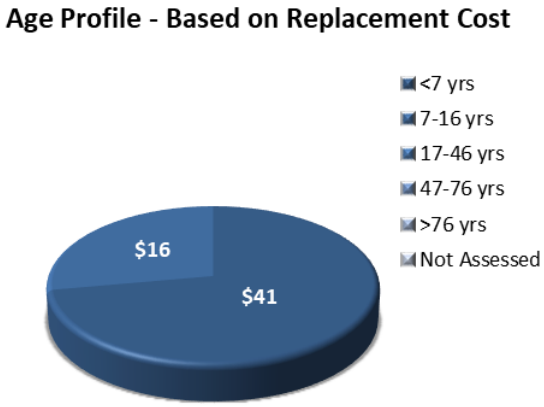


Figure 3-41. Fleet – Age Profile Based on Replacement Cost

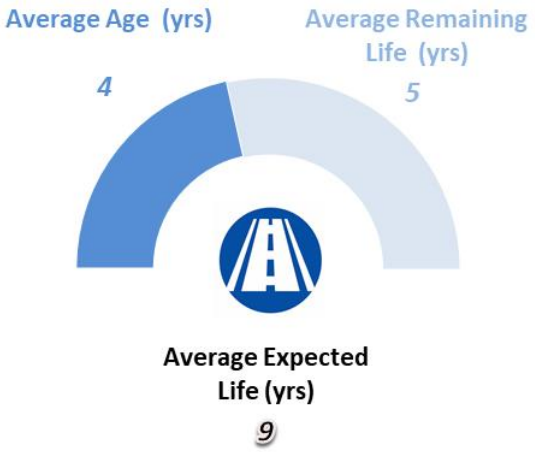


Figure 3-42. Fleet – Average Age and Remaining Life

3.1.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Roads infrastructure element, by asset type, is shown in Figure 3.1-43.

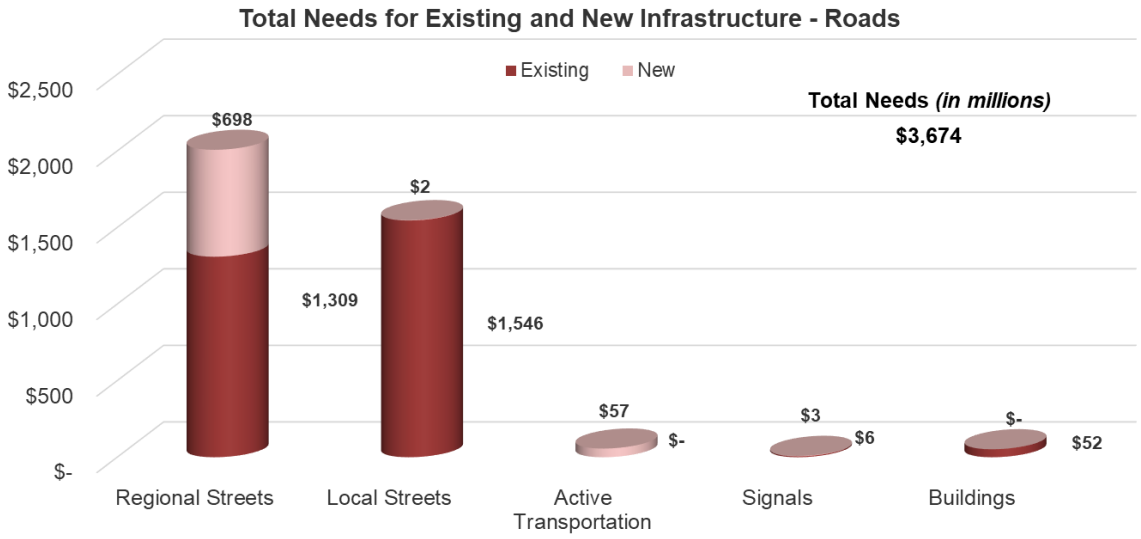


Figure 3.1-43. Roads – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Roads infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.1-44.

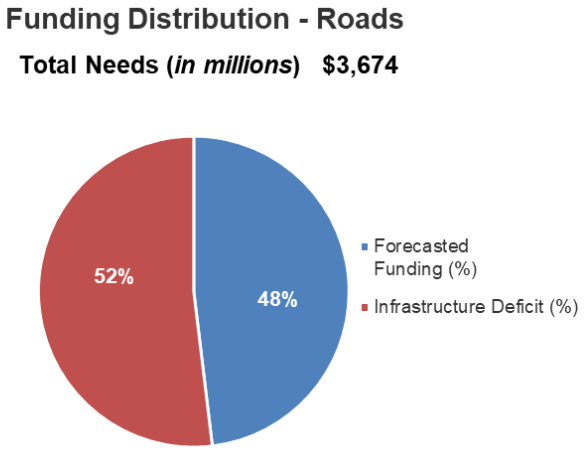


Figure 3.1-44. Funding Distribution - Roads

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years	-	10 Year Capital Plan	=	Infrastructure Deficit

A breakdown of the capital funding deficit for the Roads infrastructure element, by asset type, is shown in Figures 3.1-45 and 3.1-46.

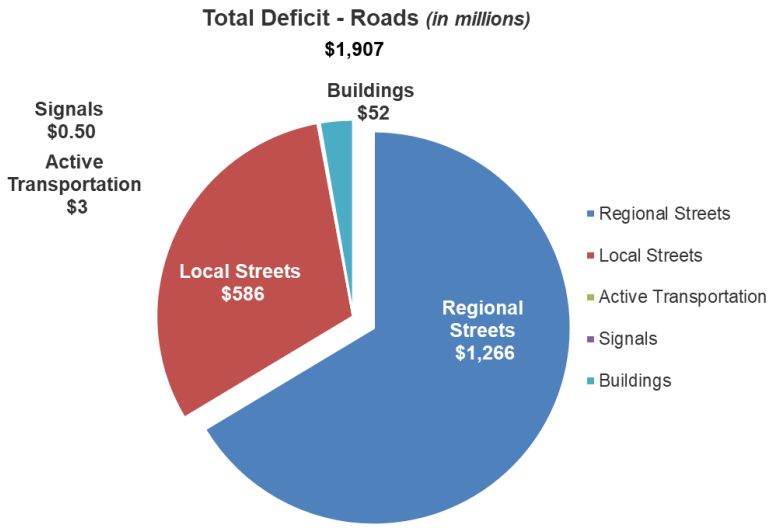


Figure 3.1-45. Total Deficit – Roads
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

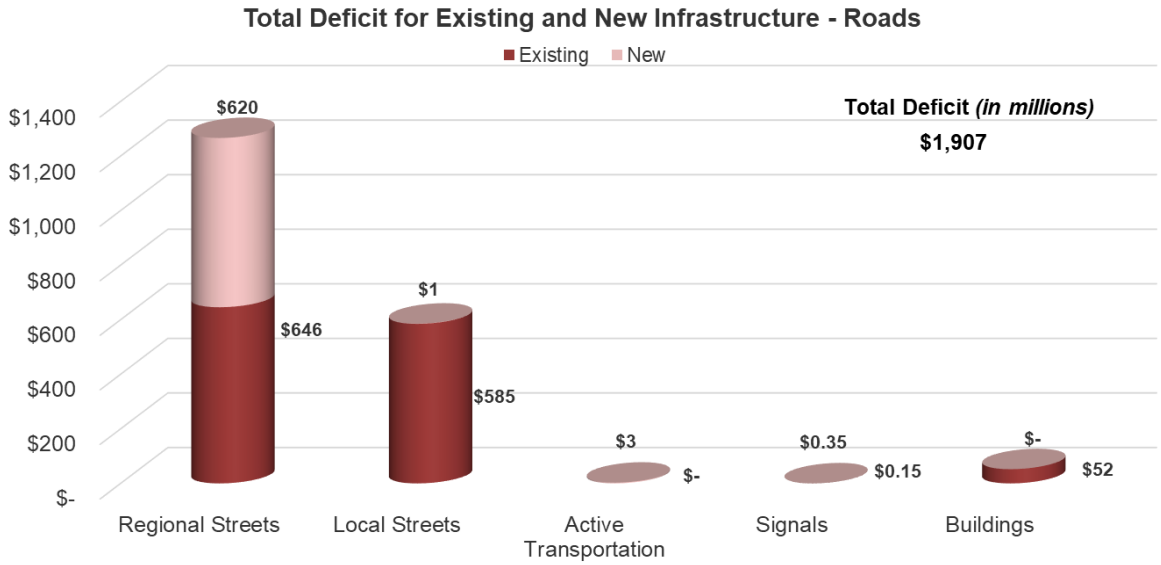


Figure 3.1-46. Roads – Total Deficit for Existing and New Infrastructure
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

It is assumed that the Regional Street Renewal Reserve and the accompanying 1% property tax increase per year will largely eliminate the funding shortfall for regional streets. In addition, there are 10 major

projects arising from the 2011 Transportation Master Plan (TMP) that have funding shortfalls. The projects are a combination of renewals of existing infrastructure as well as new assets to accommodate growth. The total funding shortfall is estimated at $1.25 billion.

Local streets (including lanes/alleys) also have a street renewal reserve of 1% property tax increase per year. This will slow the deterioration of streets in this network but will not meet the goal of eliminating streets in *Poor* condition within 20 years.

3.1.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.1-1. Roads – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Roads	To be determined	Street Signs	To be determined
Roads	To be determined	Underground Assets	To be determined
Roads	To be determined	Intelligent Transportation Equipment	To be determined

Traffic signal underground assets include conduit, electrical pits, and cabling for intersections.

The intelligent transportation equipment asset sub-type includes cameras, modems, non-intrusive intersection sensors, backup battery systems, etc. It does not include Transportation Management Centre IT-related infrastructure.

See condition breakdown for additional comments on what was not included and the need for programming development support to enable sustainable recording of these assets, and ongoing reporting.

3.2 Bridges

3.2.1 Service Overview and Performance

Service History

Services that Bridges provide to the public are as follows:

- Bridge Construction and Maintenance

  To provide citizens with access to well-maintained roadways, sidewalks and bridges in order to ensure the safe, efficient movement of people, goods and services

- Transportation Planning and Traffic Management

  To plan, design and manage the transportation system and the traffic regulatory environment to provide a safe, environmentally-aware, accessible and sustainable transportation system

The Bridge Planning and Operations Branch of the Engineering Division of the Public Works Department is responsible for approximately 145 bridges in Winnipeg, which include vehicular, pedestrian, light rail, and utility bridges, as well as underpasses.

Data Collection History

The Bridge Planning & Operations Branch carries out inspections of major structures on a 2-year cycle and minor structures on a 3-year cycle. Major structures are larger, more complex structures. Inventory and condition data is stored using Bridge Manager software. Structures include vehicular bridges, pedestrian bridges, underpasses, and major culverts. Data for major culverts is not assessed and is incomplete.

Structures are classified as *Good*, *Fair*, or *Poor* at this time.

The valuation of structures is completed by using square meter cost estimates, factoring in inflation and recent construction pricing for similar structures.

3.2.2 Asset Metrics Summary

Bridges – All Assets

The overall condition, value, and age relating to all assets that are required to deliver Bridges services is depicted below.

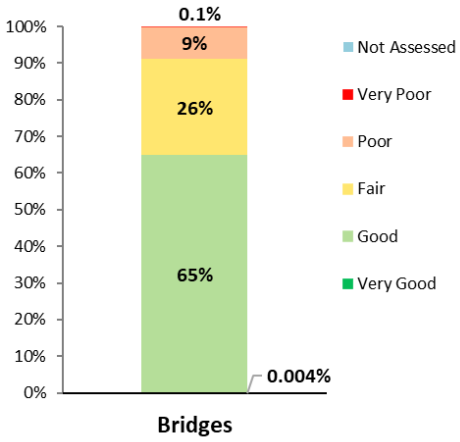


Figure 3.2-1. Bridges - Condition

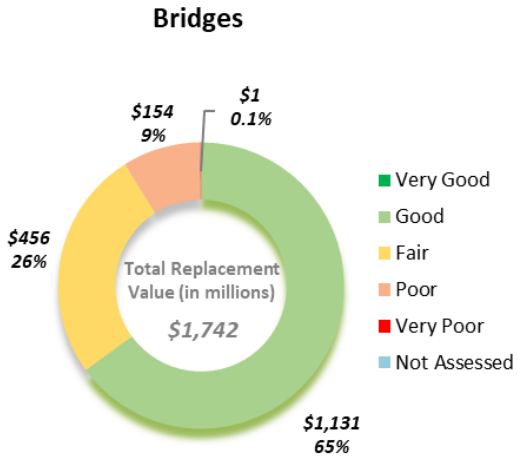


Figure 3.2-2. Bridges – Condition and Value

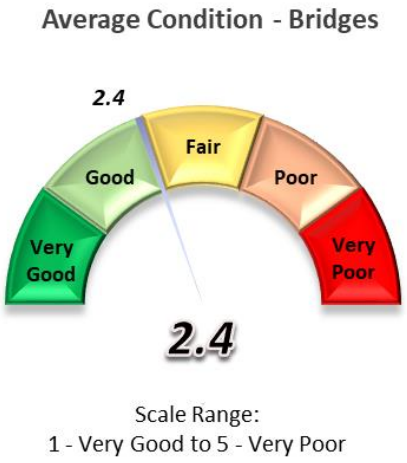


Figure 3.2-3. Bridges – Average Condition

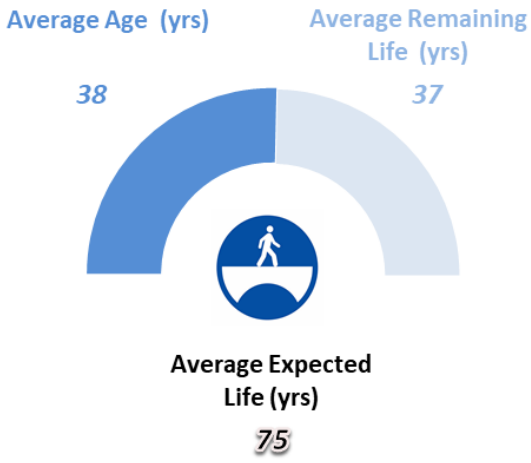


Figure 3.2-4. Bridges - Age Profile

Bridge condition is mainly *Good*. The largest risks to service are with some of the vehicular bridges (e.g., Arlington, Louise), which are near or at the end of their expected life and are currently not funded in the capital program. Replacement costs for these bridges are in the range of hundreds of millions of dollars.

3.2.3 Asset Condition, Value, and Inventory

Bridges - Vehicular Bridges

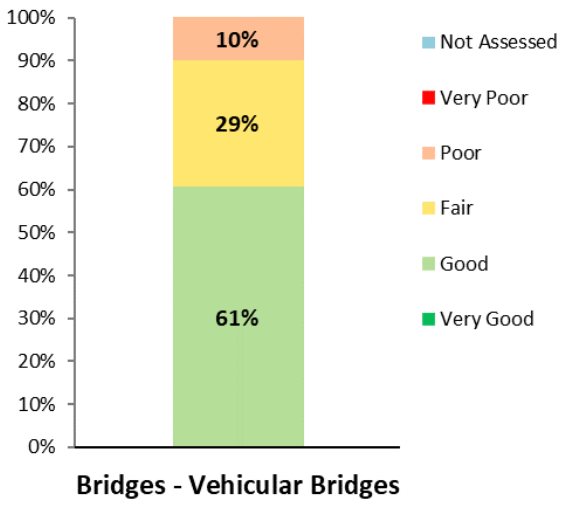


Figure 3.2-5. Vehicular Bridges - Condition

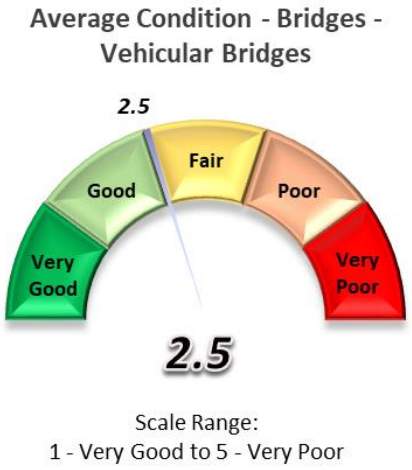


Figure 3.2-6. Vehicular Bridges – Average Condition

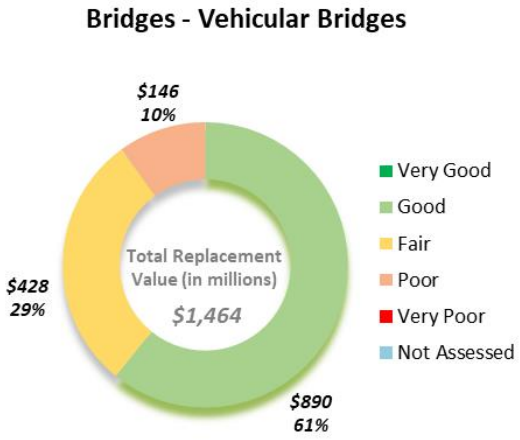


Figure 3.2-7. Vehicular Bridges – Condition and Value

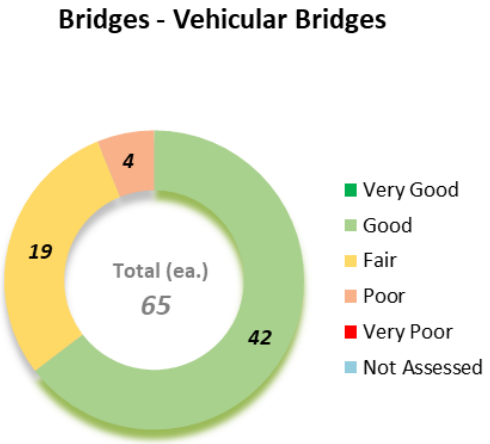


Figure 3.2-8. Vehicular Bridges – Condition and Inventory

Generally, vehicular bridges are in *Good* condition and can be maintained with current operating practices. Any bridge whose condition is in the *Poor* category is considered to be at a high risk of not meeting service levels and considered a high priority for reconstruction/renewal. These are assets that have replacement costs in the hundreds of millions of dollars.

Creek Bend Bridge, Arlington Bridge, and Louise Bridge are all vehicular bridges considered to be in *Poor* condition and improvements are not yet funded in the Public Works Capital Program. The Fermor Bridge is also considered to be in *Poor* condition but is funded.

Bridges - Pedestrian Bridges

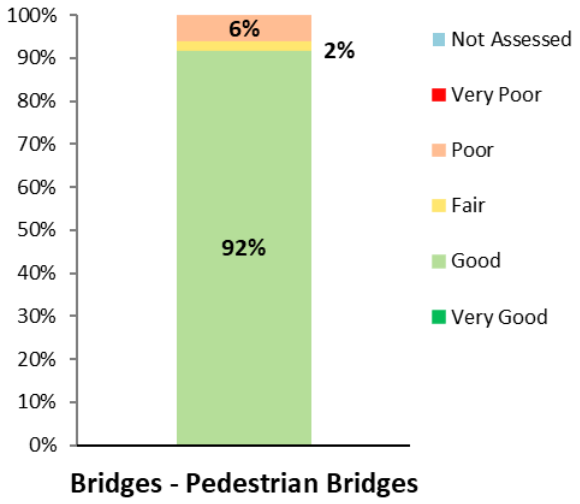


Figure 3.2-9. Pedestrian Bridges - Condition

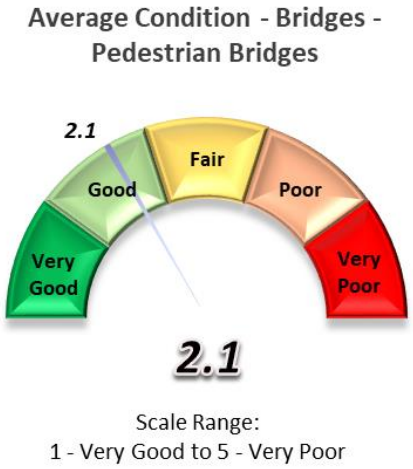


Figure 3.2-10. Pedestrian Bridges – Average Condition

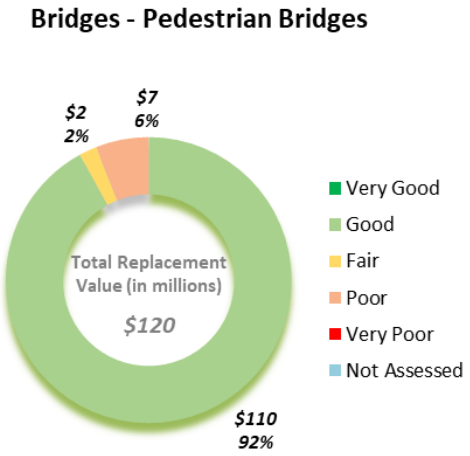


Figure 3.2-11. Pedestrian Bridges – Condition and Value

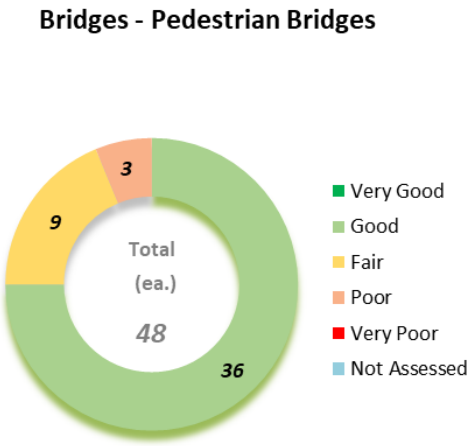


Figure 3.2-12. Pedestrian Bridges – Condition and Inventory

Bridges - Underpasses

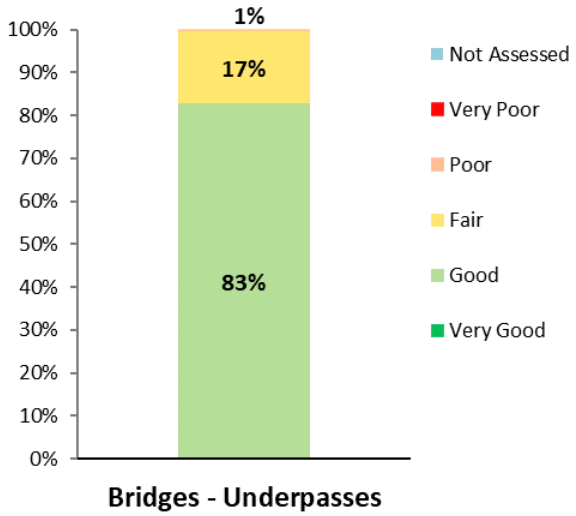


Figure 3.2-13. Underpasses - Condition

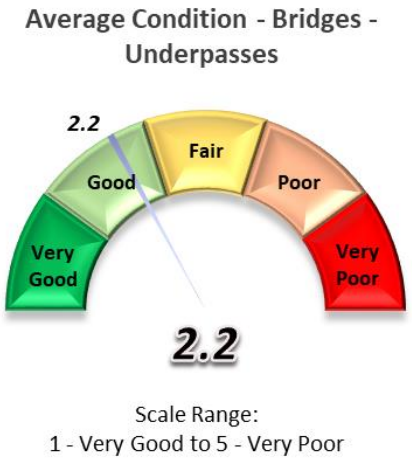


Figure 3.2-14. Underpasses – Average Condition

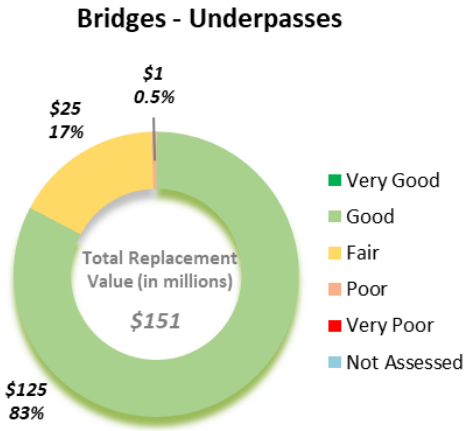


Figure 3.2-15. Underpasses – Condition and Value

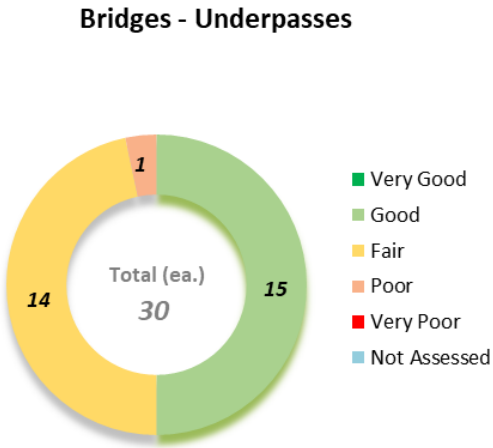


Figure 3.2-16. Underpasses – Condition and Inventory

Bridges - Fleet

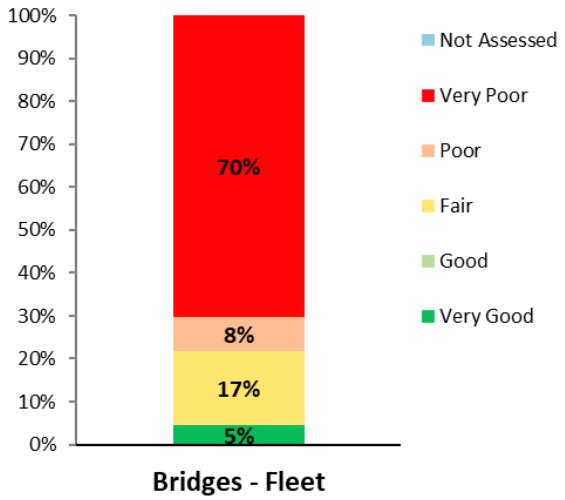


Figure 3.2-17. Fleet - Condition

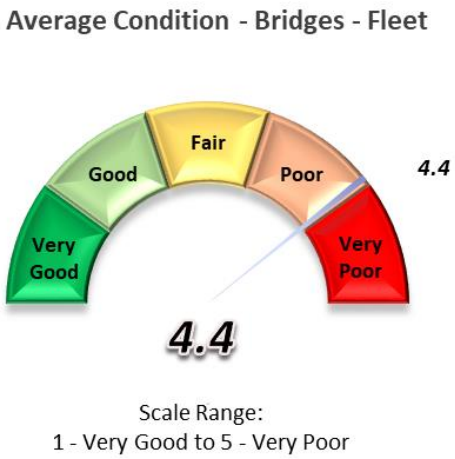


Figure 3.2-18. Fleet – Average Condition

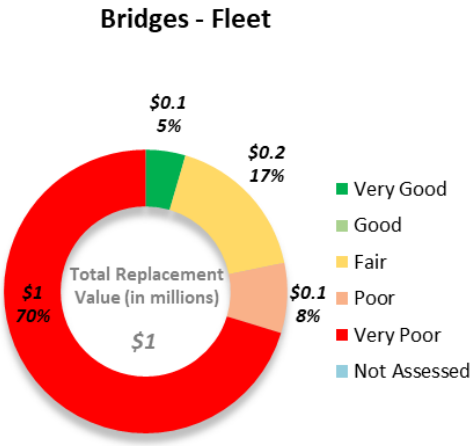


Figure 3.2-19. Fleet – Condition and Value

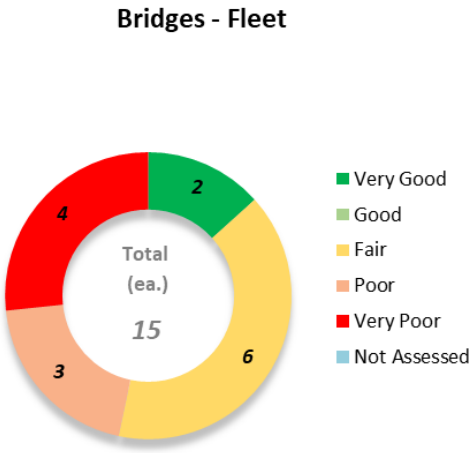


Figure 3.2-20. Fleet – Condition and Inventory

3.2.4 Age Profile

Bridges - Vehicular Bridges

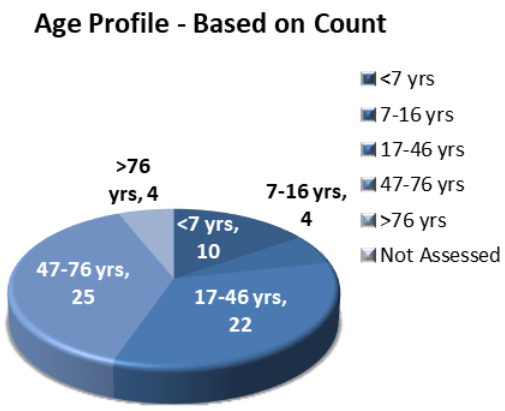


Figure 3.2-21. Vehicular Bridges – Age Profile Based on Count

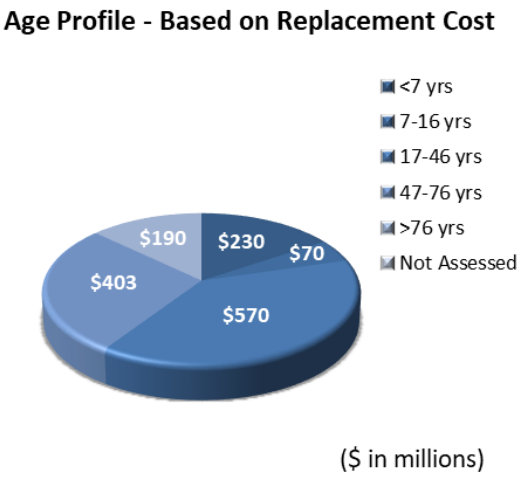


Figure 3.2-22. Vehicular Bridges – Age Profile Based on Replacement Cost

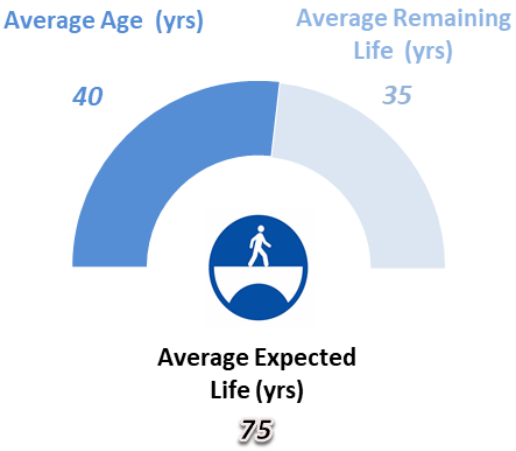


Figure 3.2-23. Vehicular Bridges – Average Age and Remaining Life

Bridges - Pedestrian Bridges

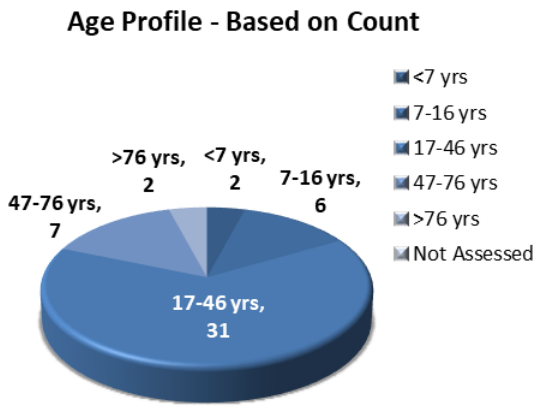


Figure 3.2-24. Pedestrian Bridges – Age Profile Based on Count

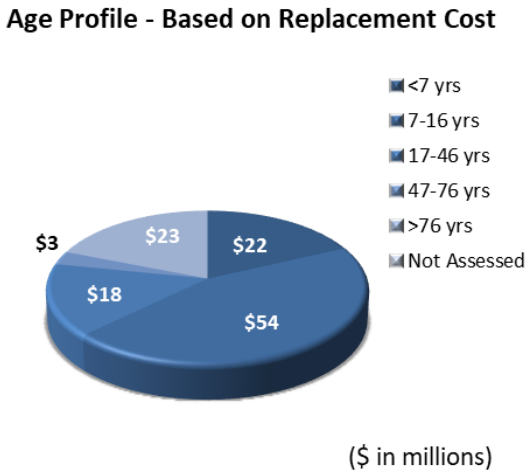


Figure 3.2-25. Pedestrian Bridges – Age Profile Based on Replacement Cost

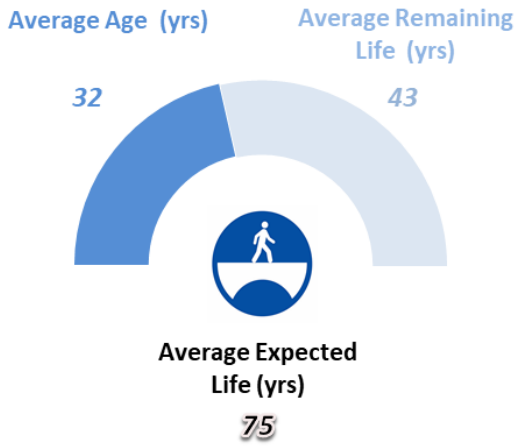


Figure 3.2-26. Pedestrian Bridges – Average Age and Remaining Life

Bridges - Underpasses

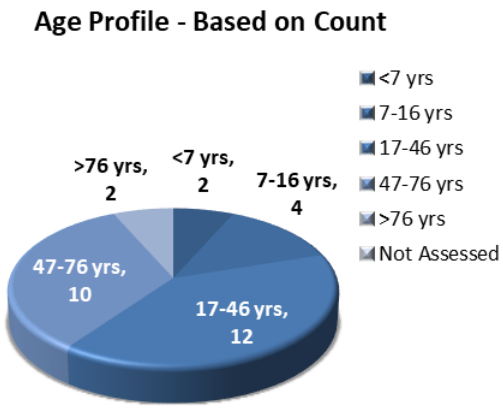


Figure 3.2-27. Underpasses – Age Profile Based on Count

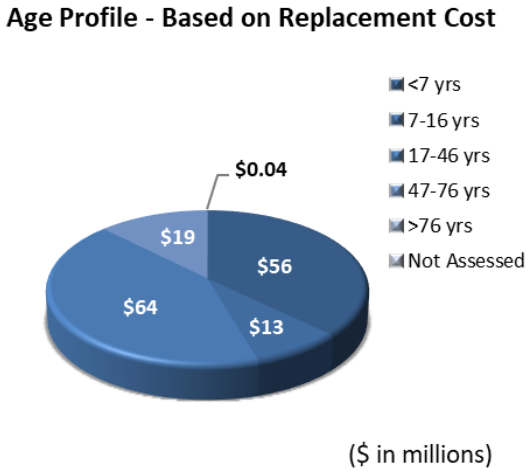


Figure 3.2-28. Underpasses – Age Profile Based on Replacement Cost

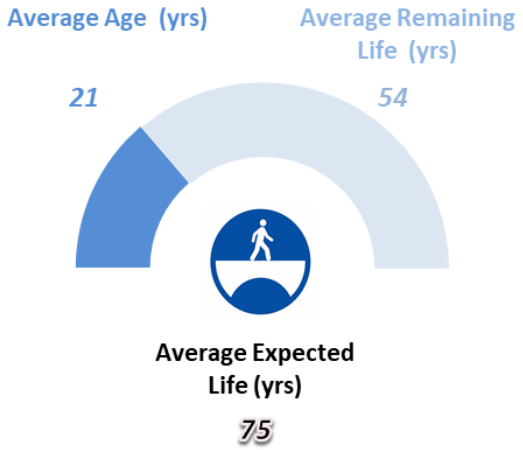


Figure 3.2-29. Underpasses – Average Age and Remaining Life

Underpass structures consist of guardrails, retaining walls, and pavements located under structures. The structure above is not always included in the underpass. Underpass structures may or may not be associated with railways. Older railway underpasses are typically owned and maintained by the railways and are not included in the City-owned underpass inventory, but there are variations based on agreements that were put in place at the time of construction. The City of Winnipeg typically owns entire structures in new underpass structures. The average age is skewed by this fact.

Bridges - Fleet

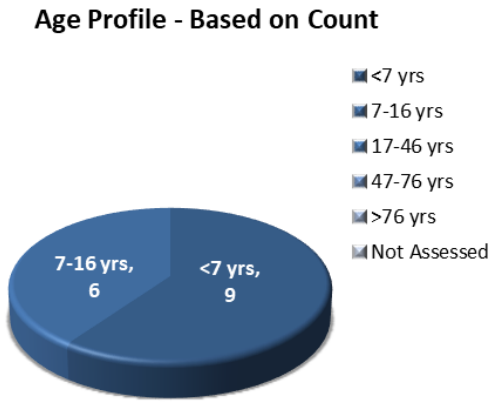


Figure 3.2-30. Fleet – Age Profile Based on Count

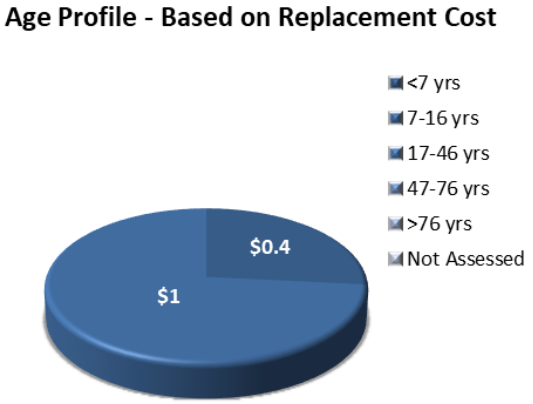


Figure 3.2-31. Fleet – Age Profile Based on Replacement Cost

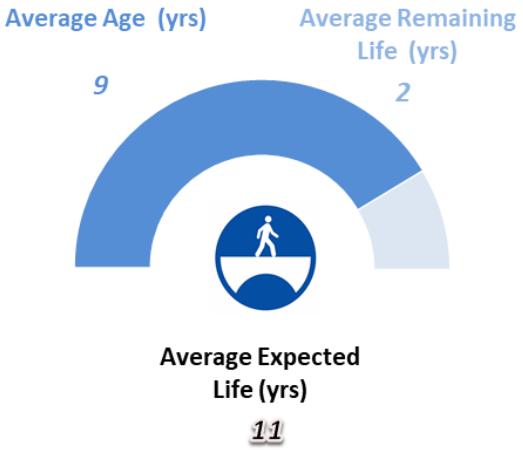


Figure 3.2-32. Fleet – Average Age and Remaining Life

3.2.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Bridges infrastructure element, by asset type, is shown in Figure 3.2-33.

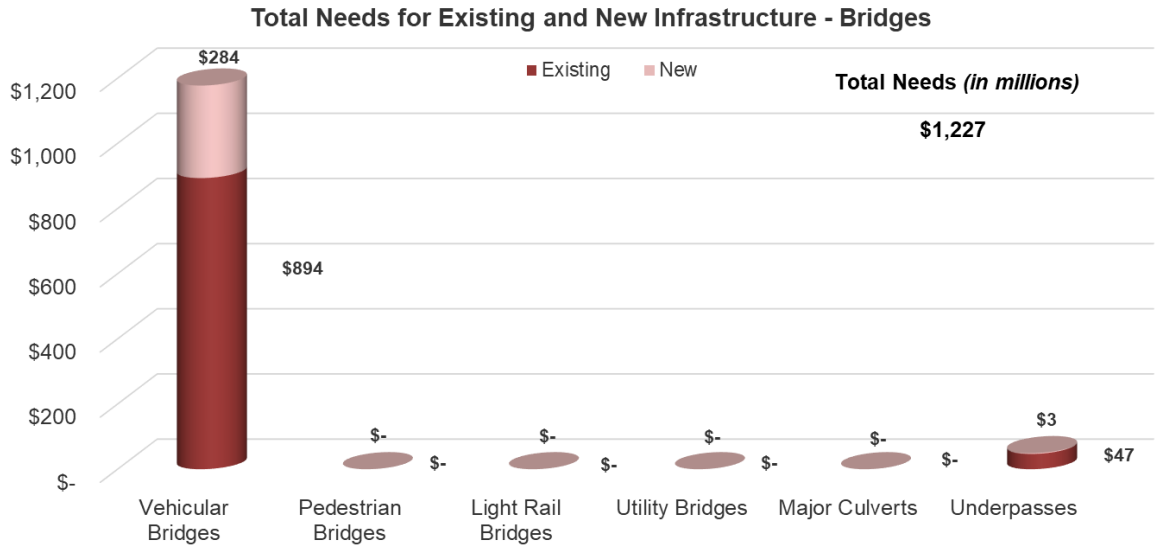


Figure 3.2-33. Bridges – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Bridges infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.2-34.

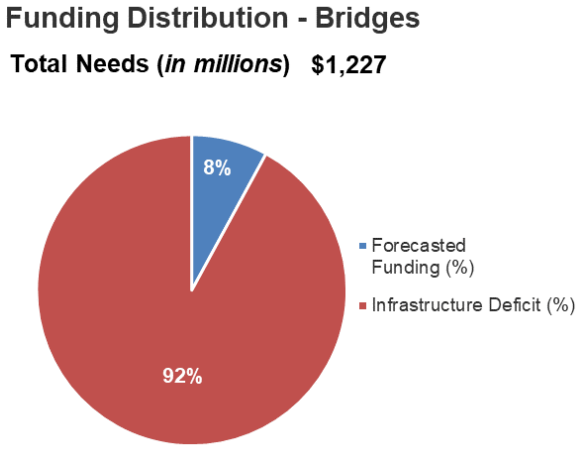


Figure 3.2-34. Funding Distribution – Bridges

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years	-	10 Year Capital Plan	=	Infrastructure Deficit

A breakdown of the capital funding deficit for the Bridges infrastructure element, by asset type, is shown in Figures 3.2-35 and 3.2-36.

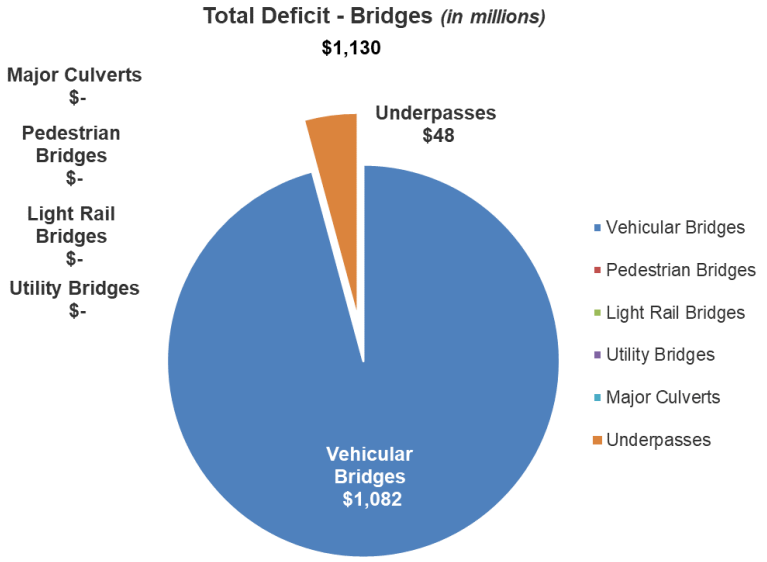


Figure 3.2-35. Total Deficit – Bridges
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

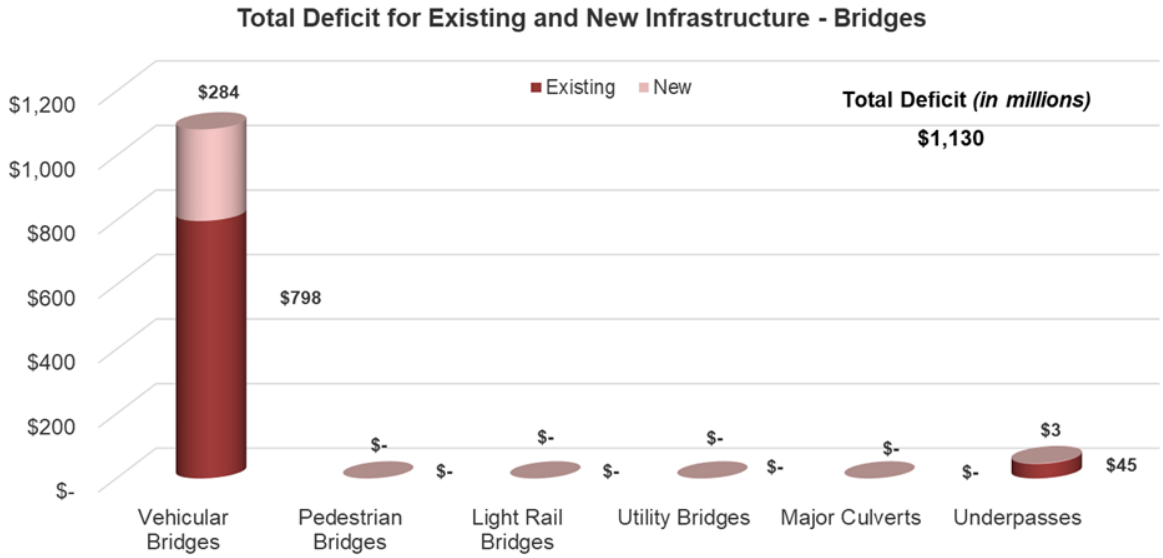


Figure 3.2-36. Bridges – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

Three bridge projects that remain unfunded are the Creek Bend Bridge, Arlington Bridge, and Louise Bridge.

3.2.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.2-1. Bridges – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Bridges	Major Culverts	To be determined	To be determined

The data on major culverts is incomplete and will be provided at the next AMP update cycle.

3.3 Parks and Open Space

3.3.1 Service Overview and Performance

Winnipeg's park and open space system has been designed to contribute to the enjoyment and quality of life for the City's citizens and visitors. It is an essential component of the urban fabric that encourages and promotes healthy lifestyles, cleaner environments, civic pride, and urban beautification. Parks improve our physical and psychological health, strengthen our communities, and make our City a more attractive place to live, work, and play.

The park and open space system consists of approximately 1,200 parks spanning a total area greater than 3,000 hectares. The parks have been classified into both 'catchment' and 'type', as shown in Table 3.3-1, to provide a framework for the development of park service levels.

Table 3.3-1. Park Classifications

TYPE	CATCHMENT			
	Regional	Community	Neighbourhood	Non-Designated
Buffers & Islands				145
Natural	2	4	78	
Passive		5	215	
Play & Leisure	1	6	309	
Recreation & Ecological Linkages (Linear)				214
Special Use	1	13		23
Sport & Recreation	9	157		

The parks and open space service is delivered by the Parks and Open Space Division in collaboration with the Urban, Planning & Design Division of the Planning, Property & Development Department through two main service areas: Parks and Urban Forestry and City Beautification. The Parks and Open Space Division is also responsible for Insect Control service delivery.

Parks and Urban Forestry serves to develop, operate, maintain, and preserve all parks and open spaces to promote vibrant, healthy communities, while fostering environmental stewardship. This service includes park, boulevard, and open space maintenance, litter collection, athletic field maintenance, pathway maintenance, park planning and development, tree planting, pruning and removal, Dutch elm disease control, weed control, natural areas management, playground equipment inspection and repair, and winter amenity maintenance. Our City's largest park, Assiniboine Park, is currently operated under a long-term management agreement with Assiniboine Park Conservancy. Currently, only park roads and trees related to the Dutch Elm Disease Program are included in parks inventories.

The Parks and Open Space Division contributes to City Beautification through litter collection, floral displays, and public art on boulevards and open spaces.

Parks and open space data is housed in three main databases: Parks Asset Registry, Tree Inventory, and Natural Areas Database. Spatial and tabular data for the Parks Asset Registry is captured on a 3 to 5-year rotational basis by asset class, and updated as assets are renewed or replaced. Tree inventory and natural areas data is updated as changes to the inventories are discovered or made.

The method of condition data capture varies depending upon the class of asset. For the majority of park amenities, condition information is recorded by summer students using the guidance of an internally

developed Condition Rating Manual. Road condition information is largely provided by Engineering Division, Public Works Department, while building condition and age data is provided by VFA software used by the Planning, Property & Development Department.

3.3.2 Asset Metrics Summary

Parks and Open Space – All Assets

The overall condition, value, and age relating to all assets that are required to deliver Parks and Open Space services is depicted below.

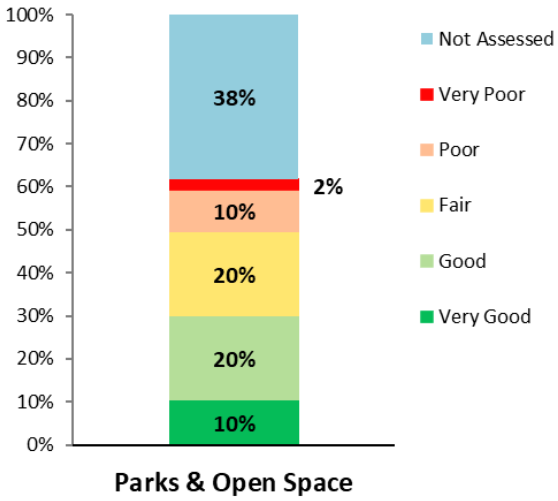


Figure 3.3-1. Parks and Open Space - Condition

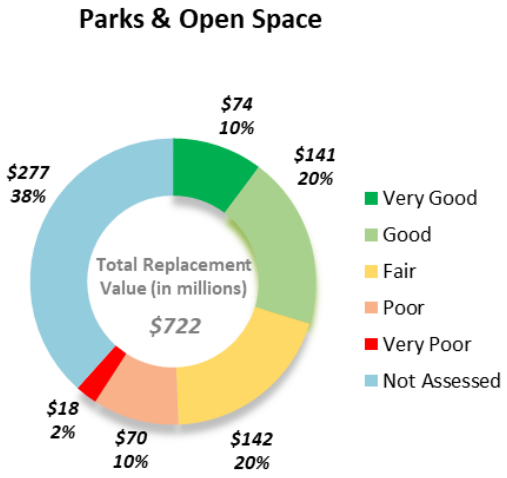


Figure 3.3-2. Parks and Open Space – Condition and Value

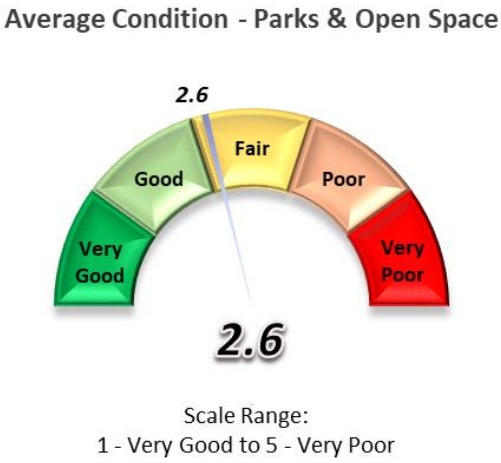


Figure 3.3-3. Parks and Open Space – Average Condition

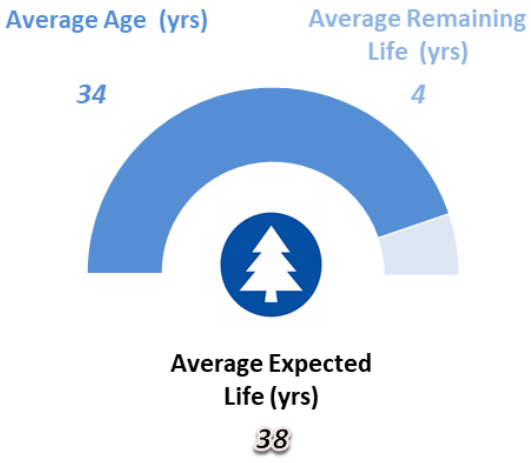


Figure 3.3-4. Parks and Open Space - Age Profile

For decades, Parks infrastructure has aged and deteriorated in condition, while the parks and open space system continues to expand. The majority of new parks are developer-driven and, in many cases, developers install higher-end amenities that require ongoing capital and operating investments in the long-term. At the same time, capital and operating funding levels have remained static or declined.

Under some programs, general practice is that funding is allocated by ward, rather than strictly based on need. Limited resources combined with increased inventory and lack of a Parks Strategic Master Plan promote a reactive approach to park maintenance and renewals.

The growing deficit results in the continued deterioration of parks and amenities, and the reduction in park service levels.

The existing deficit has been calculated based on current knowledge of park and amenity condition, but does not yet represent the true need from a service perspective. Furthermore, not all assets have been condition-rated or valued. Data and processes will continue to be captured and further refined for future plans.

Figure 3.3-1 shows a large percent of Parks data as “Not Assessed”, however, tree condition has not been reported in this AMP and tree inventory represents a large portion of total Parks inventory.

Age data is not available for most of the Parks and Open Space assets. The age profile shown in Figure 3.3-4 only considers park buildings and fleet. Many parks were established in the 1960s and, with an average life expectancy of 15-20 years for most amenities, those assets yet to be replaced can now be considered beyond their useful life.

3.3.3 Asset Condition, Value, and Inventory

Parks and Open Space - Active Transportation

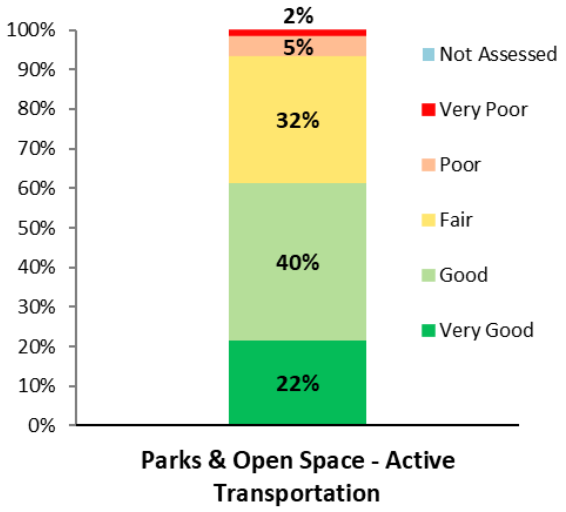


Figure 3.3-5. Active Transportation - Condition

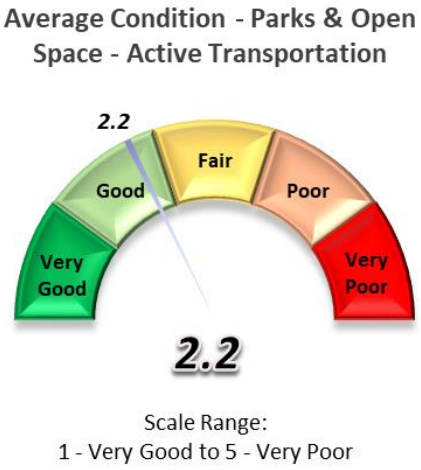


Figure 3.3-6. Active Transportation – Average Condition

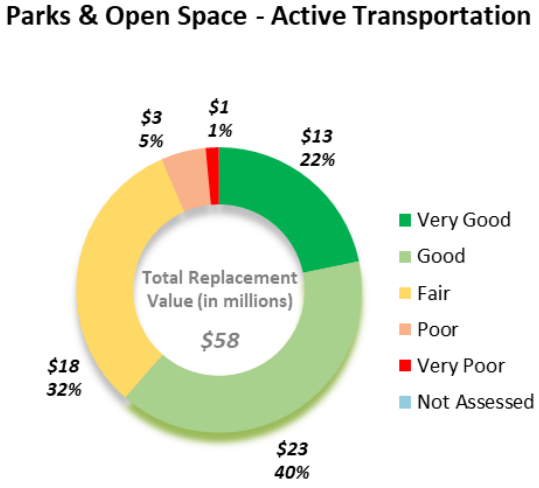


Figure 3.3-7. Active Transportation – Condition and Value

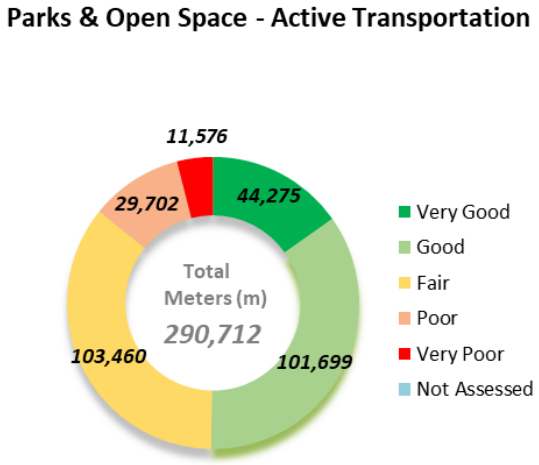


Figure 3.3-8. Active Transportation – Condition and Inventory

Active Transportation includes pedestrian, bike, and multi-use pathways within park and open space boundaries. Surface materials range from woodchips to granular to asphalt and path widths vary in size from 0.5 m to greater than 3 m. Currently, there is some duplication in multi-use active transportation pathways reported under the Roads service.

Parks and Open Space - Park Amenities

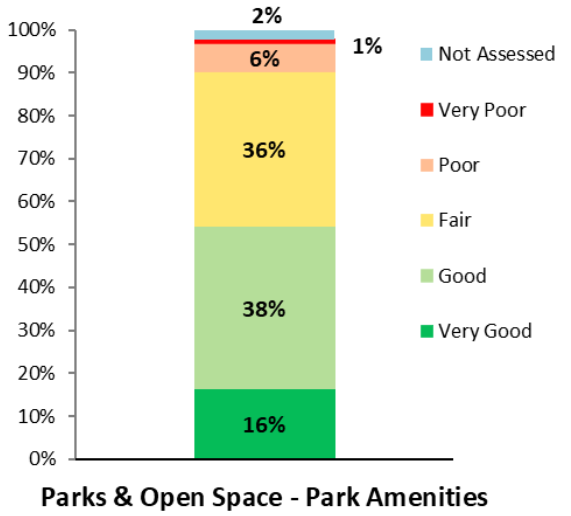


Figure 3.3-9. Park Amenities - Condition

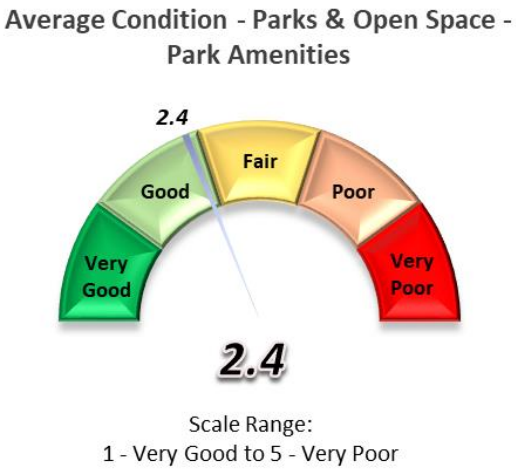


Figure 3.3-10. Park Amenities – Average Condition

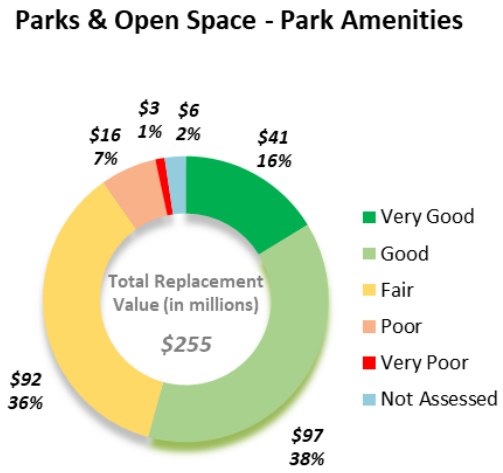


Figure 3.3-11. Park Amenities – Condition and Value

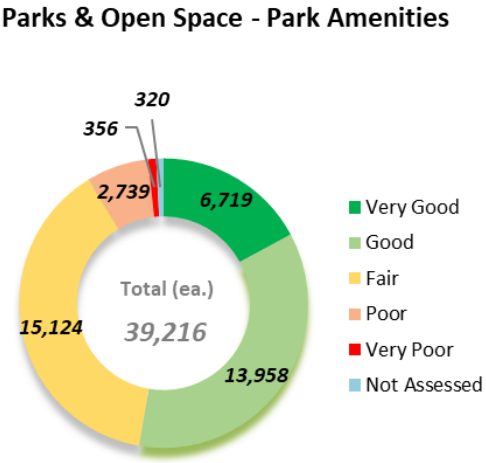


Figure 3.3-12. Park Amenities – Condition and Inventory

Park Amenities is a diverse category of assets which include, but are not limited to, athletic fields, skateparks, toboggan runs, sport courts, play structures and related amenities. Reporting condition based on replacement value is not the same methodology used in previous reports to Council, which determined overall condition based on count. As such, this report and other reports made to Council will have different results as it relates to condition of park assets. As the value of assets in this category ranges considerably, and there are a significant number of low dollar value assets, the condition of the lower dollar value assets may not be reflected, as the weighted average methodology weighs the condition more heavily toward the higher dollar value assets.

Some park amenities of higher value, such as boat docks and launches, have not yet been assessed for replacement value.

Parks and Open Space - Park Buildings

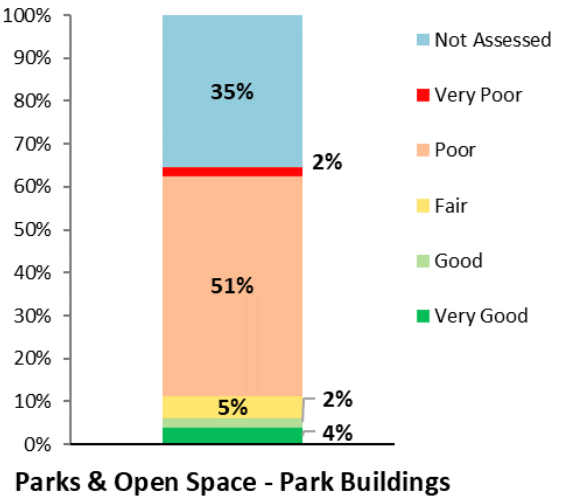


Figure 3.3-13. Park Buildings - Condition

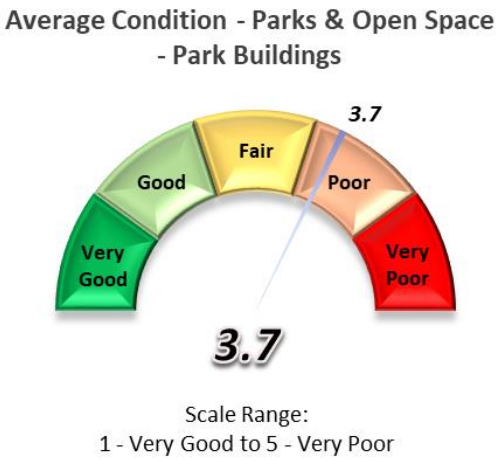


Figure 3.3-14. Park Buildings – Average Condition

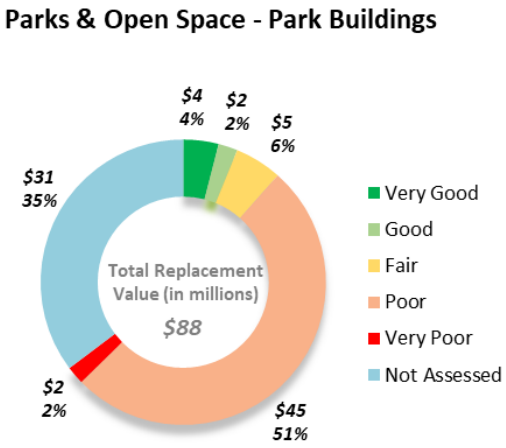


Figure 3.3-15. Park Buildings – Condition and Value

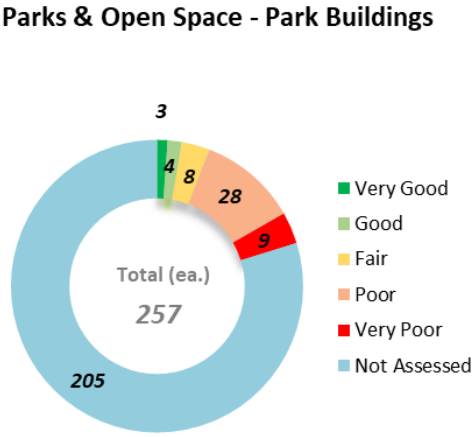


Figure 3.3-16. Park Buildings – Condition and Inventory

Park Buildings include storage sheds, maintenance garages, staff houses, field houses, and shelters. Condition assessments have been provided by VFA, commissioned by Municipal Accommodations Division, Planning, Property & Development Department.

Assets yet to be assessed are largely lower value buildings such as storage sheds.

Parks and Open Space - Park Roads

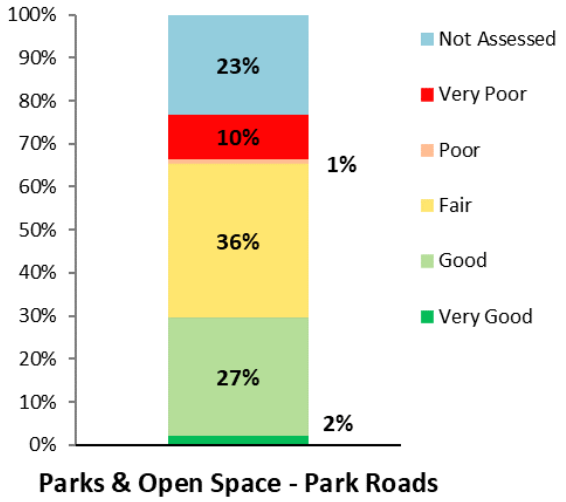


Figure 3.3-17. Park Roads - Condition

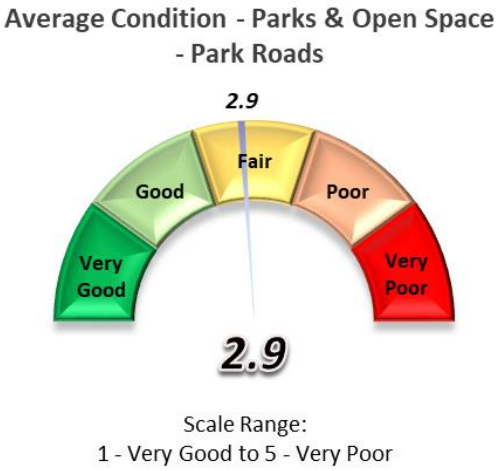


Figure 3.3-18. Park Roads – Average Condition

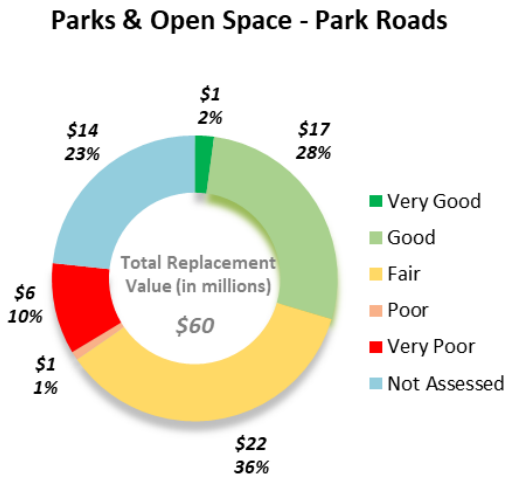


Figure 3.3-19. Park Roads – Condition and Value

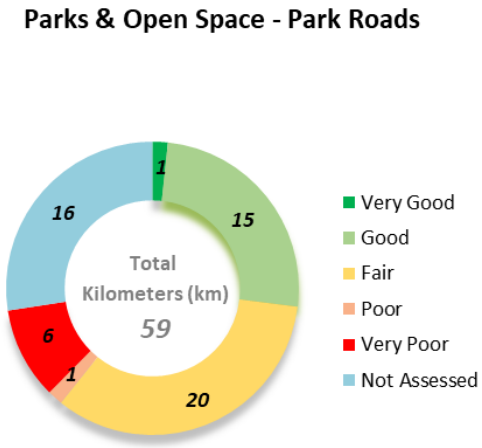


Figure 3.3-20. Park Roads – Condition and Inventory

Park Roads includes asphalt and granular access roads and ring roads in regional parks, including Assiniboine Park. Asphalt roads in regional parks have been assessed and valued by the Engineering Division, Public Works Department.

Parks and Open Space - Trees

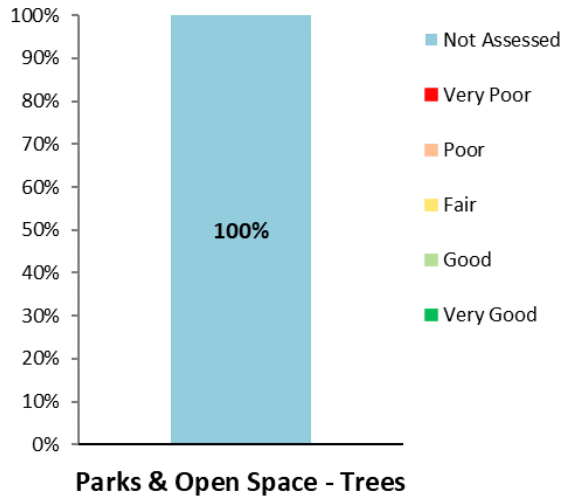


Figure 3.3-21. Trees - Condition

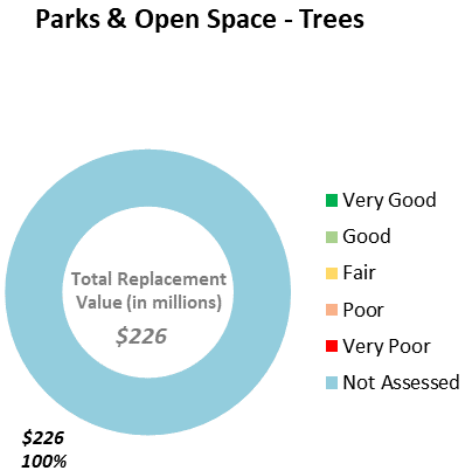


Figure 3.3-22. Trees – Condition and Value

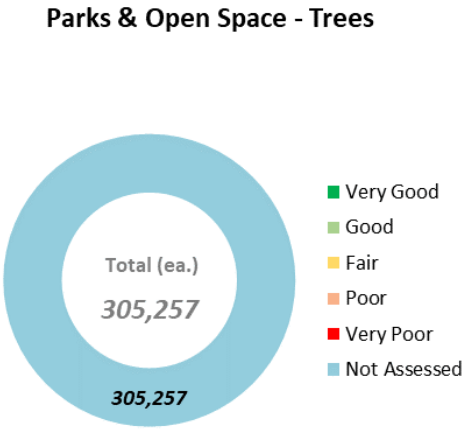


Figure 3.3-23. Trees – Condition and Inventory

Tree data represents assets located in parks and on boulevards only. Inventory of trees in natural areas, other than elm and ash species, and on private lands are not included. Replacement value is determined based on an average estimated cost of $740 per tree, however, this valuation can vary greatly depending upon the age, size, location and species of tree. Detailed inventory assessments do not reflect current status. A variety of factors are changing dynamically including tree decline, disease, drought, and new and replacement plantings. Qualified arborists will refine the condition data as we move forward into the future.

Parks and Open Space - Fleet

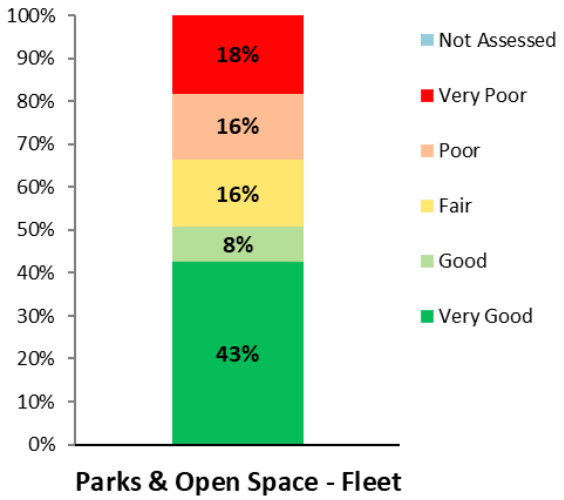


Figure 3.3-24. Fleet - Condition

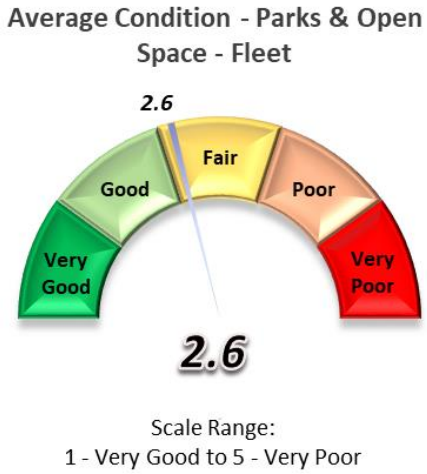


Figure 3.3-25. Fleet – Average Condition

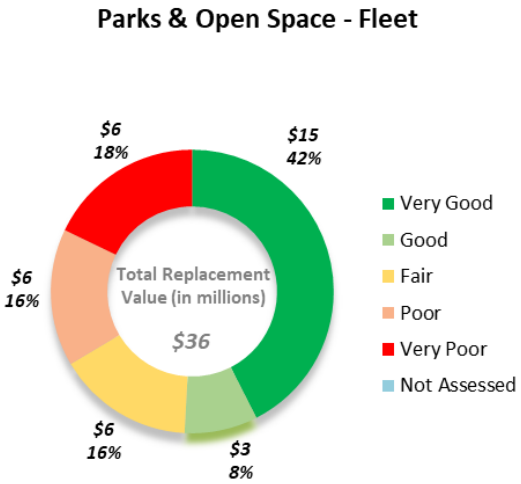


Figure 3.3-26. Fleet – Condition and Value

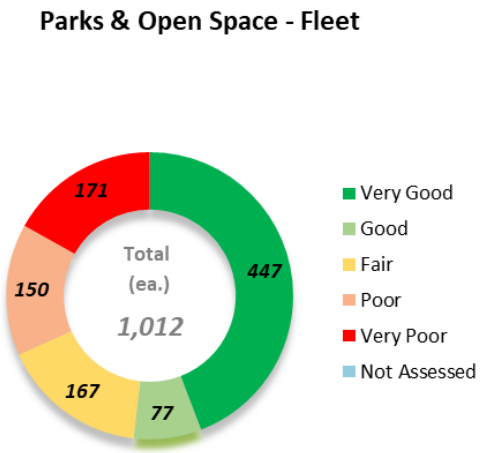


Figure 3.3-27. Fleet –Condition and Inventory

3.3.4 Age Profile

Parks and Open Space - Park Buildings

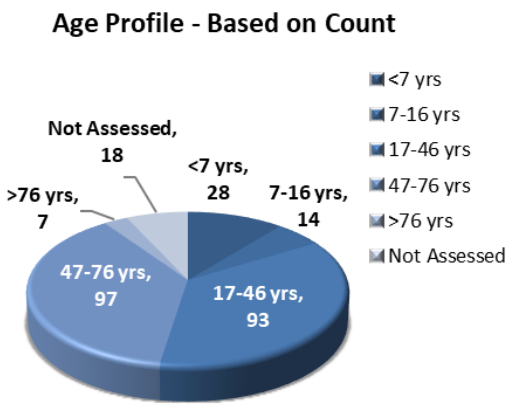


Figure 3.3-28. Park Buildings – Age Profile Based on Count

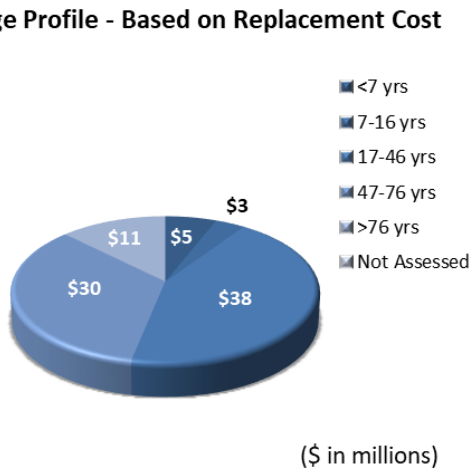


Figure 3.3-29. Park Buildings – Age Profile Based on Replacement Cost

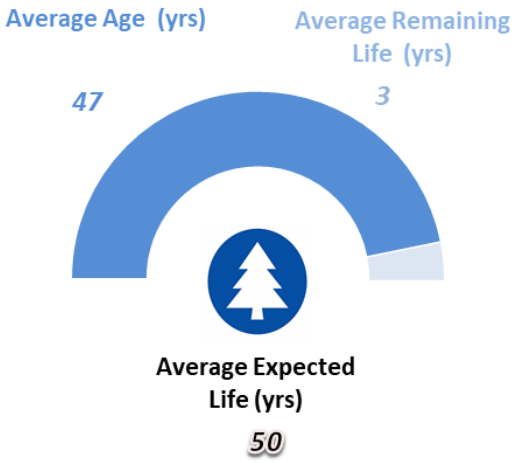


Figure 3.3-30. Park Buildings – Average Age and Remaining Life

Parks and Open Space - Fleet

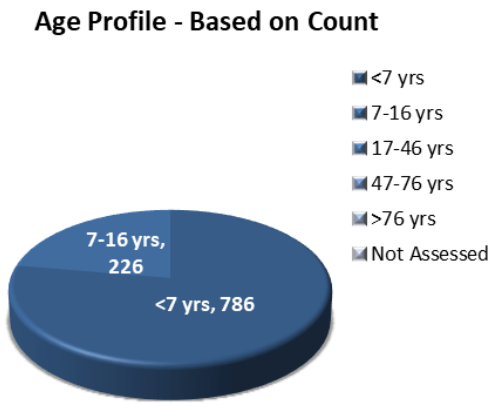


Figure 3.3-31. Fleet – Age Profile Based on Count

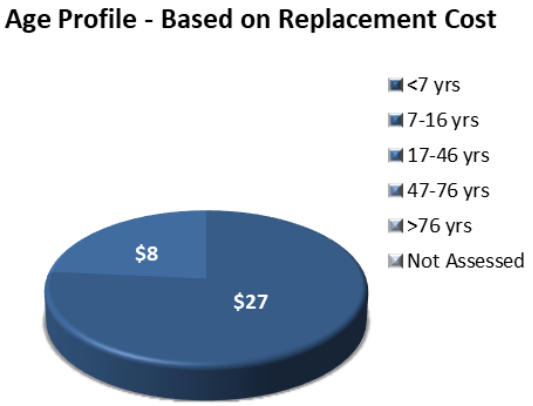


Figure 3.3-32. Fleet – Age Profile Based on Replacement Cost

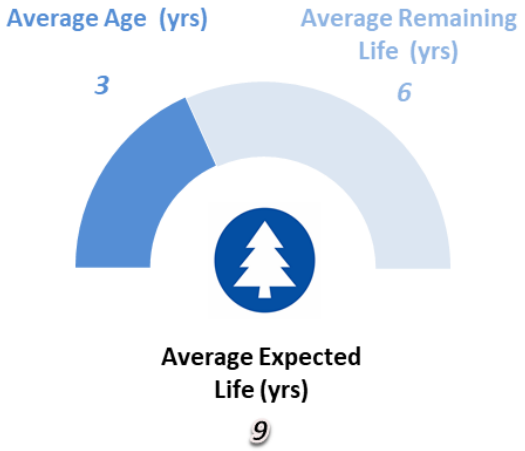


Figure 3.3-33. Fleet – Average Age and Remaining Life

3.3.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Parks and Open Space infrastructure element, by asset type, is shown in Figure 3.3-34.

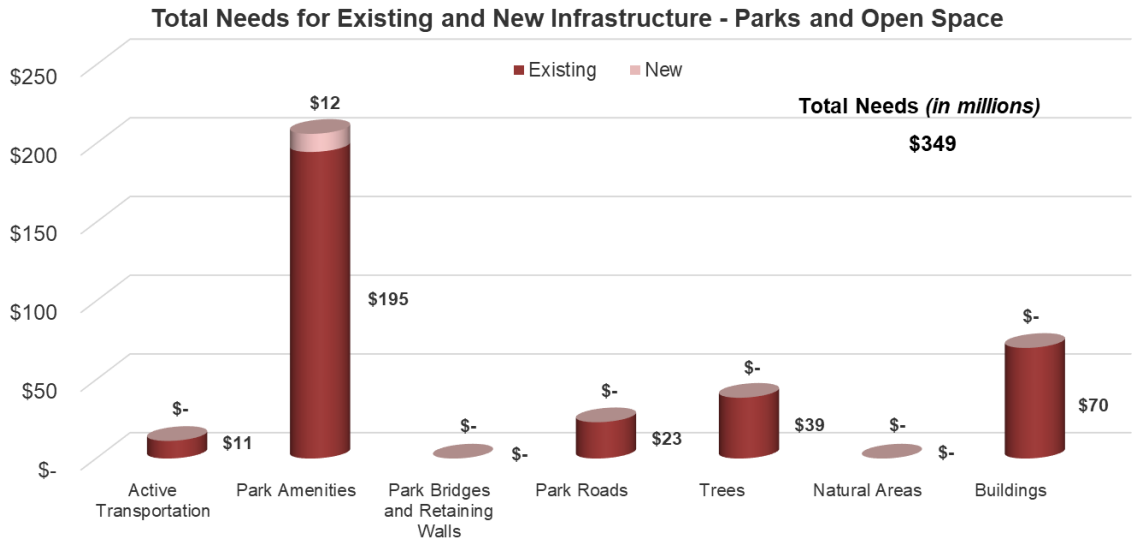


Figure 3.3-34. Parks and Open Space – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Parks and Open Space infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.3-35.

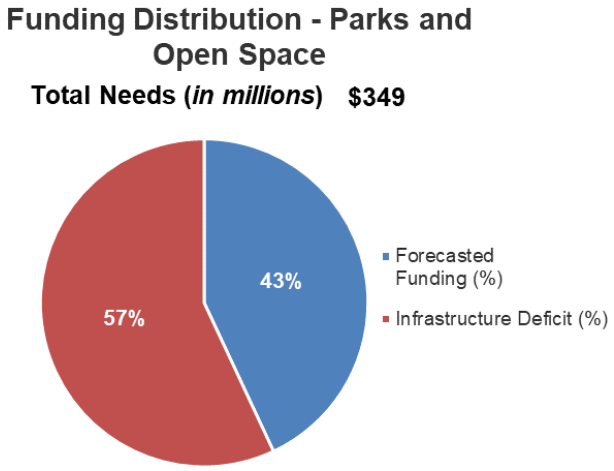


Figure 3.3-35. Funding Distribution – Parks and Open Space

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years - 10 Year Capital Plan = Infrastructure Deficit

A breakdown of the capital funding deficit for the Parks and Open Space infrastructure element, by asset type, is shown in Figures 3.3-36 and 3.3-37.

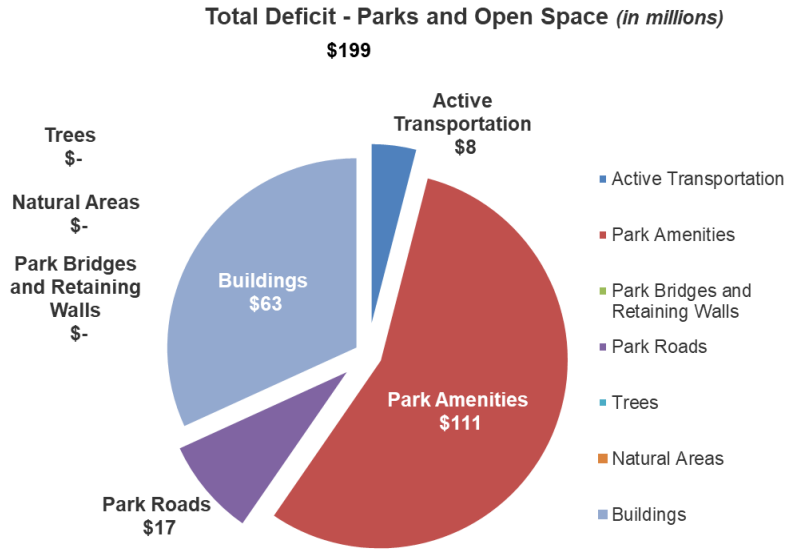


Figure 3.3-36. Total Deficit – Parks and Open Space
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

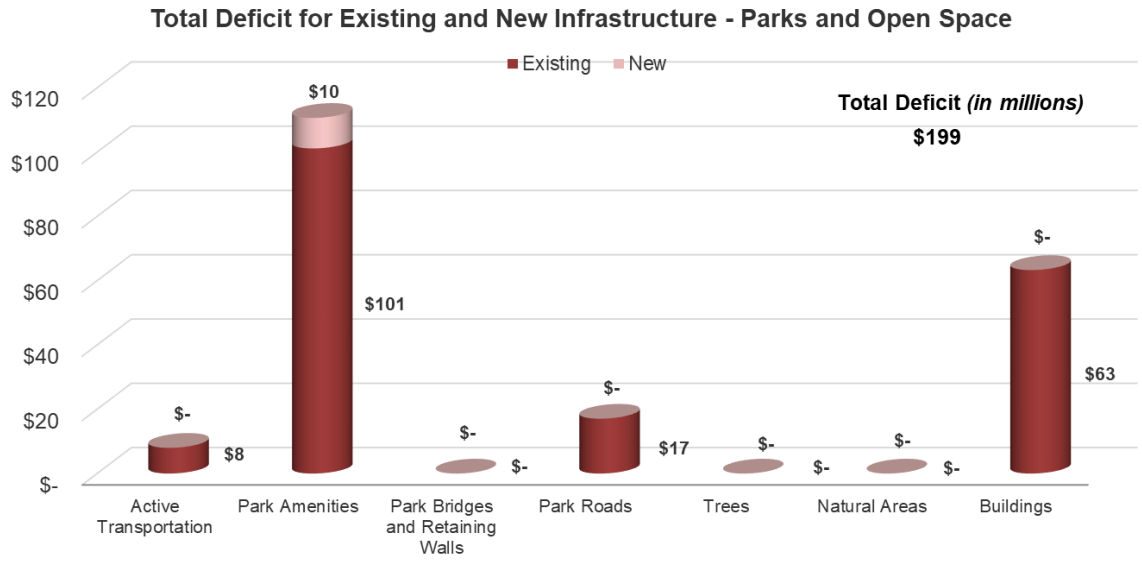


Figure 3.3-37. Parks and Open Space – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

The combination of increased park inventory, static or declining budgets, and ageing infrastructure has resulted in a growing deficit for the Parks and Open Space Division over recent decades. The existing

deficit has been calculated based on current knowledge of park and amenity condition, but does not yet represent the true need from a service perspective. Furthermore, not all assets have been condition-rated or valued. Data and processes will continue to be captured and further refined for future plans.

Initiatives are underway to better assign value to natural assets, such as trees and wetlands, which provide services that would otherwise require the costly equivalent of engineered infrastructure. By identifying natural assets and prioritizing them, infrastructure deficits may be reduced and services delivered more efficiently.

Park bridges and green infrastructure have been included in park inventory, but have not yet been assessed for condition or replacement value. However, approximately 40% of park bridges are included in the current bridge inventory, and reconciliation of these two inventories is underway.

3.3.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.3-2. Parks and Open Space – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Parks & Open Space	Parks Natural Areas	Natural Areas	To be determined
Parks & Open Space	Parks Underground Structures	Irrigation	To be determined
Parks & Open Space	Parks Underground Structures	Catch basins	To be determined

An extensive inventory of natural areas is available, including over 1,000 hectares of prairie, aspen, oak and riverbottom forests, and wetlands. Habitat assessments have been undertaken, and each habitat has been assigned a grade from A-D, with 'A' as *Very Good*. Further work is required to determine and report on replacement costs for this green infrastructure.

3.4 Water Utility

3.4.1 Service Overview and Performance

The Water Utility encompasses all aspects of supply, treatment and distribution of water from the source (Shoal Lake) to the customer's tap. When the City's water system was first developed in the early 20th century, it was an engineering marvel. Ensuring that City drinking water is clean and available will require ongoing investment. Today, potential development around the City's primary water source is governed by the Shoal Lake Agreement Committee in accordance with the Shoal Lake Tripartite Agreement. As well, the aging infrastructure can also make it increasingly challenging to maintain the quality and reliability of the potable water supply. The City of Winnipeg will continue to protect its water supply and build critical upgrades to the Shoal Lake aqueduct, water treatment plant, regional storage facilities, pumping and distribution piping systems, and will continue to explore the potential for more sustainable solutions for operating and maintaining the system and preserving its current supply.

In this AMP, the Water Utility is comprised of two main asset types: water supply and treatment and water distribution; both of these are further subdivided into linear and non-linear assets. In addition to these assets, data on buildings and fleet vehicles is also reported.

Specific assets within the main asset types include the following:

- Water Supply and Treatment – non-linear assets: Shoal Lake aqueduct intake facility (SLAIF), including the railway and aqueduct related structures; water treatment plant; three in-town pumping stations; and reservoirs, tanks and surge towers
- Water Supply and Treatment – linear assets: aqueduct; branch aqueducts; and feeder mains
- Water Distribution – non-linear assets: hydrants and water meters
- Water Distribution – linear assets: water distribution mains and water services

3.4.2 Asset Metrics Summary

Water Utility – All Assets

The overall condition, value, and age relating to all assets that are required to deliver Water Utility services is depicted below.

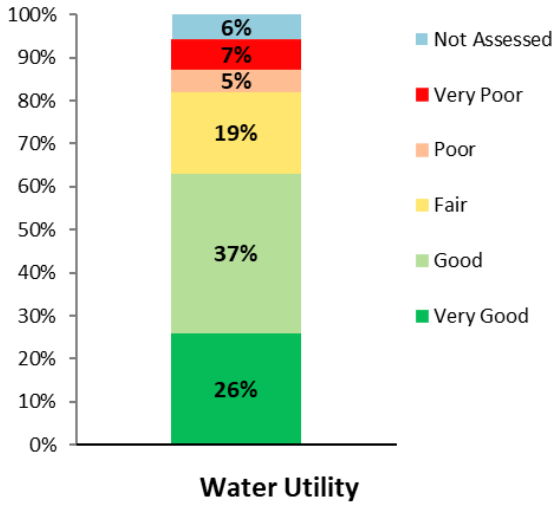


Figure 3.4-1. Water Utility - Condition

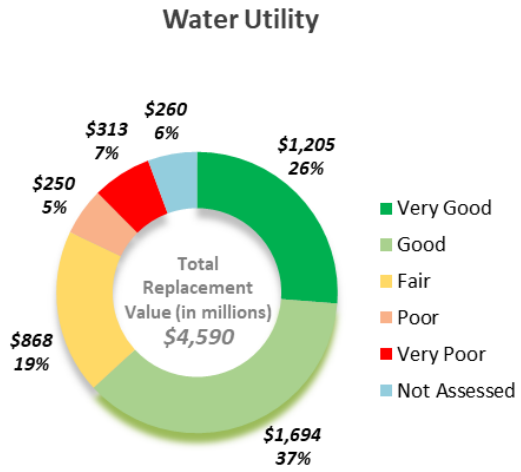


Figure 3.4-2. Water Utility – Condition and Value

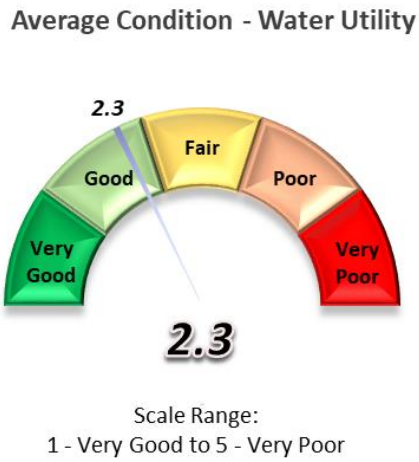


Figure 3.4-3. Water Utility – Average Condition

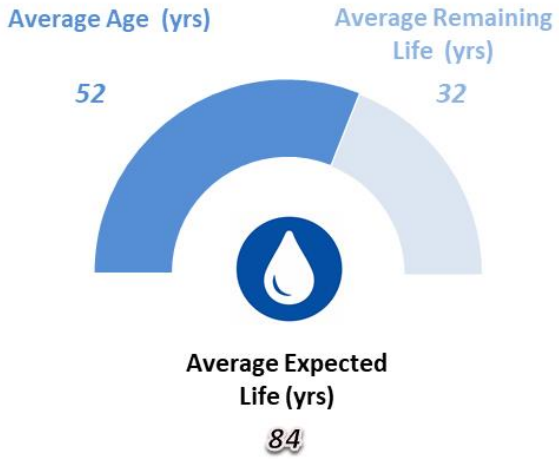


Figure 3.4-4. Water Utility - Age Profile

The overall condition of Water Utility assets is *Good*. A small percentage of assets are *Poor* or *Very Poor*; these are predominantly assets where age is used as a proxy to assess condition, as formal condition assessments have yet to be obtained (e.g., linear infrastructure). Obtaining condition assessments of underground infrastructure can be complex. The City has begun inspecting high-risk linear infrastructure and will continue to augment their knowledge through further condition assessment programs.

3.4.3 Asset Condition, Value, and Inventory

Water Utility - Water Supply and Treatment

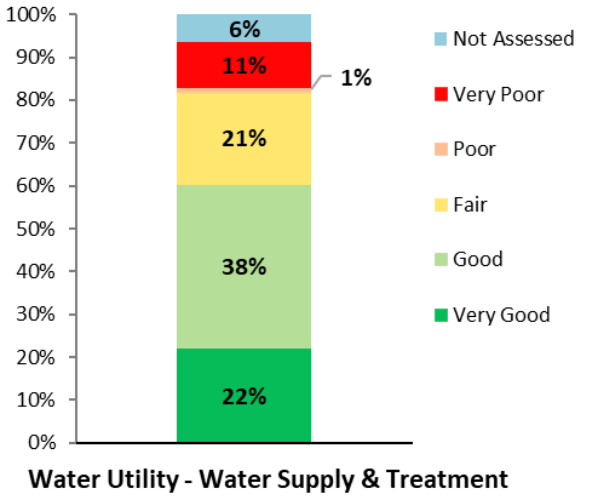


Figure 3.4-5. Water Supply and Treatment – Condition

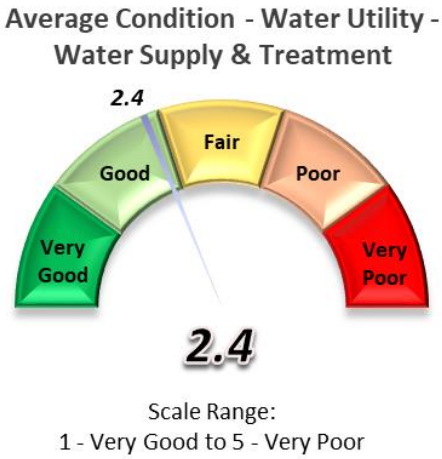


Figure 3.4-6. Water Supply and Treatment – Average Condition

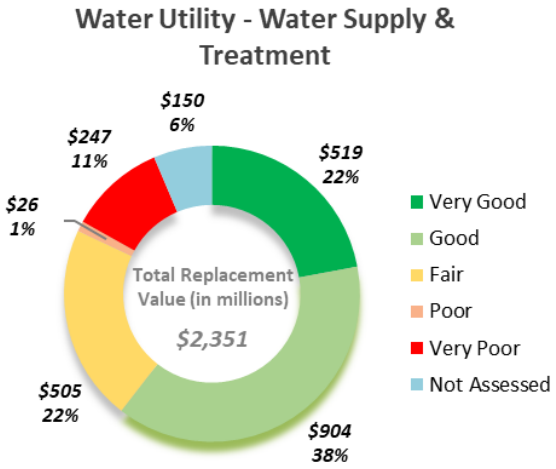


Figure 3.4-7. Water Supply and Treatment – Condition and Value

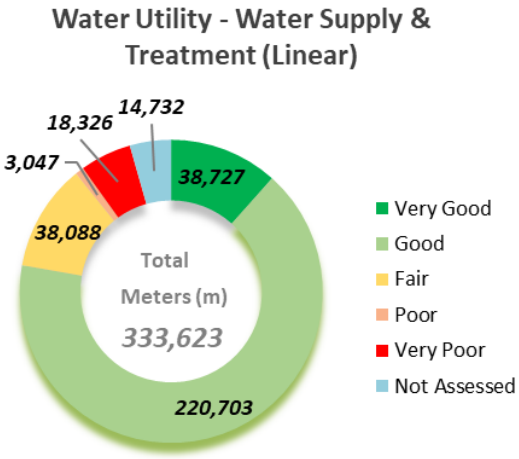


Figure 3.4-8. Water Supply and Treatment – Condition and Inventory of Linear Assets

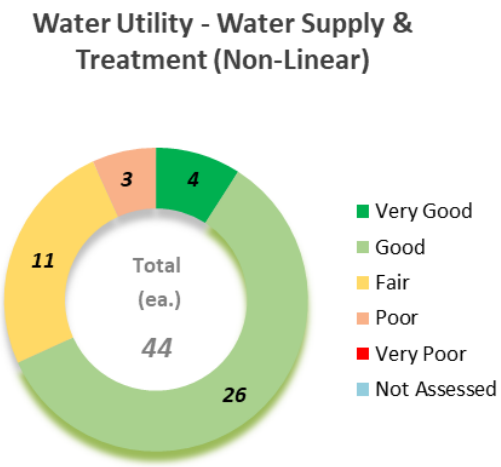


Figure 3.4-9. Water Supply and Treatment – Condition and Inventory of Non-Linear Assets

Overall, the condition of the water supply and treatment assets are *Good*. Despite aging infrastructure, like the aqueduct, regular condition assessment and maintenance is preserving some assets well beyond their expected useful life. Condition assessment of some linear assets, like branch aqueducts and feeder mains, has only just begun. As a result, condition is reported solely based on age, which indicates that some assets are in *Very Poor* condition. Age-based condition information is not a good indicator of true condition, as pipe degradation is non-linear and influenced by many factors. Inspections that have been undertaken to date have largely shown additional remaining life over what was anticipated based on age (e.g., the aqueduct). As additional inspection programs are undertaken, improved condition reporting will be possible with more proactive rehabilitation. Non-linear assets have programmed condition assessments and are being rehabilitated on a risk-based priority to ensure continued service life.

Water Utility - Water Distribution

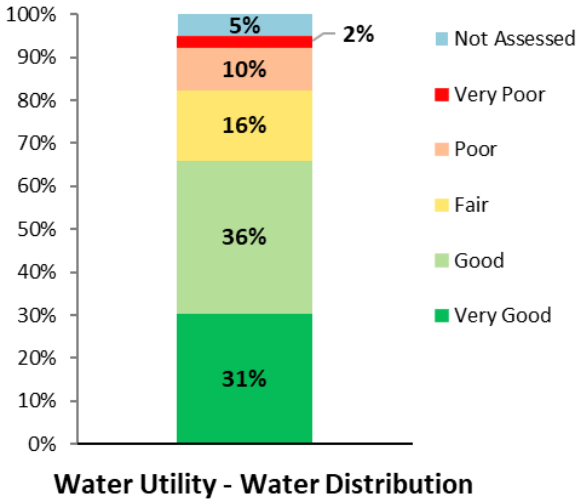


Figure 3.4-10. Water Distribution – Condition

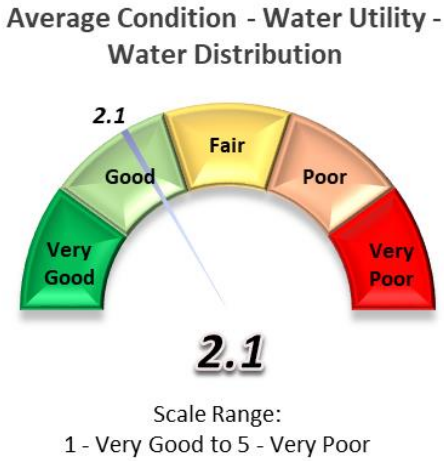


Figure 3.4-11. Water Distribution – Average Condition

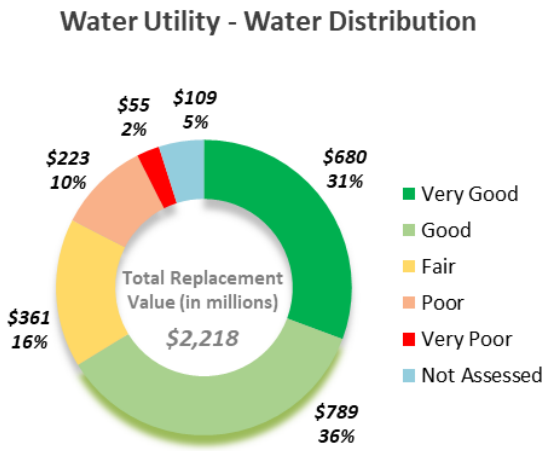


Figure 3.4-12. Water Distribution – Condition and Value

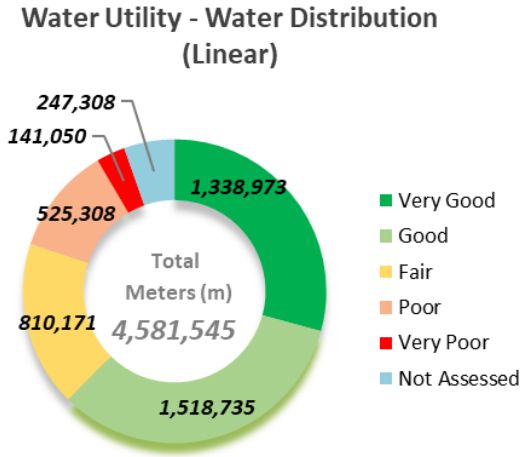


Figure 3.4-13. Water Distribution – Condition and Inventory of Linear Assets

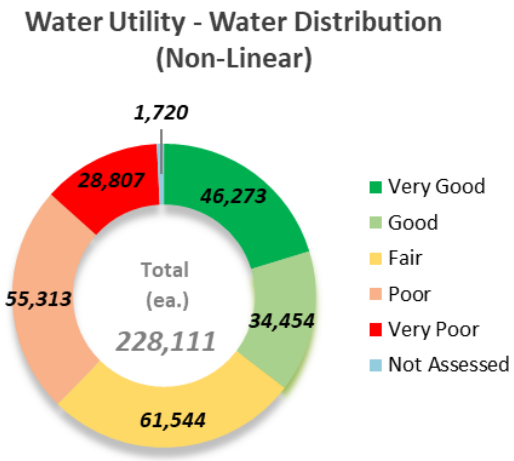


Figure 3.4-14. Water Distribution – Condition and Inventory of Non-Linear Assets

Water distribution assets are also reporting overall *Good* condition. Again, condition for many of the assets is reported on an age-basis, which does not always adequately reflect true condition. Despite the age of some assets, like hydrants, robust annual inspection and maintenance programs extend the asset's lifespan and ensure continued service.

Over the last number of years, the City's water main breaks have been decreasing as a result of a well-funded renewal program to ensure that level of service is maintained throughout the City. Condition of water mains in this AMP is reported based on age. As mentioned above, an age-based condition rating is not always a reliable proxy for true condition as many factors can impact condition like material, loading, soil conditions, and weather patterns.

The City's inventory of water meters is well past their intended lifespan and that asset class is reporting a *Poor* overall condition. Old meters are prone to inaccurate readings which can result in lost revenue. Currently 63% of the City's meter population is due for replacement. A meter replacement program will require significant capital expenditures. The department continues to review the business case to bring forward a capital investment program that can be implemented in an affordable and efficient manner.

Water Utility - Buildings

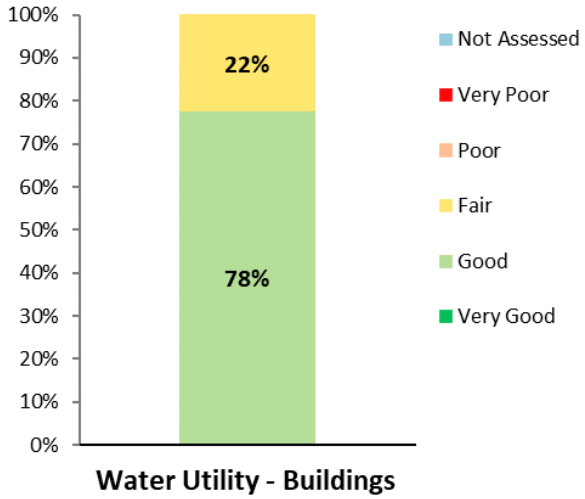


Figure 3.4-15. Buildings – Condition

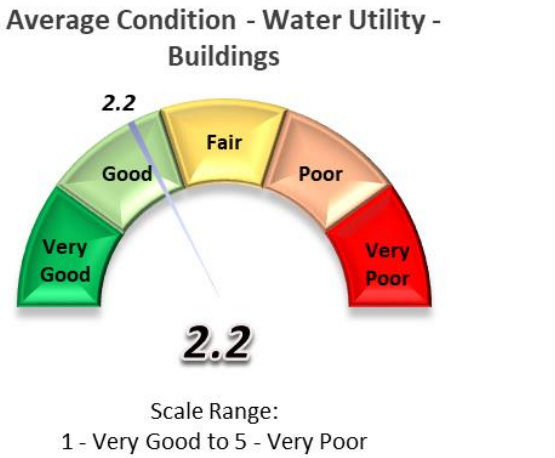


Figure 3.4-16. Buildings – Average Condition

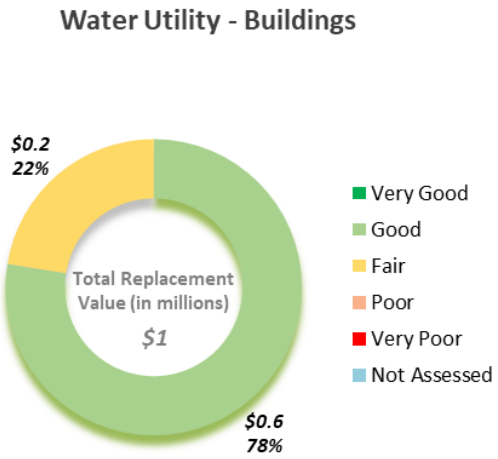


Figure 3.4-17. Buildings – Condition and Value

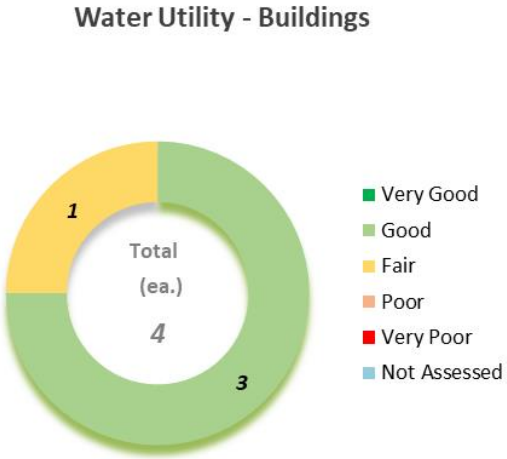


Figure 3.4-18. Buildings – Condition and Inventory

The City's Water Utility related office and maintenance buildings located on Plinguet Street are generally in *Good* condition with regular internal condition assessment and maintenance undertaken, as required.

Water Utility - Fleet

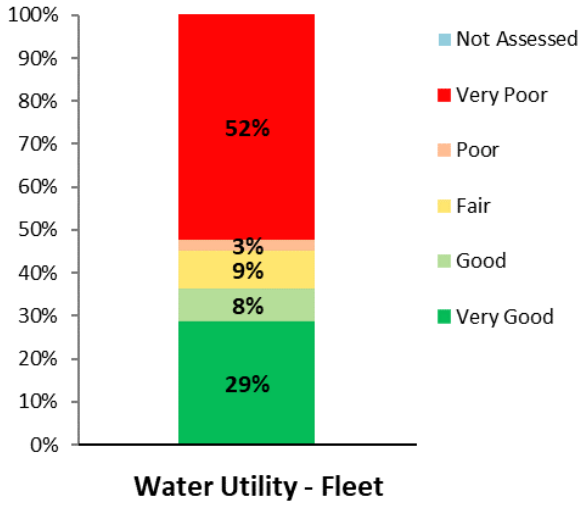


Figure 3.4-19. Fleet – Condition

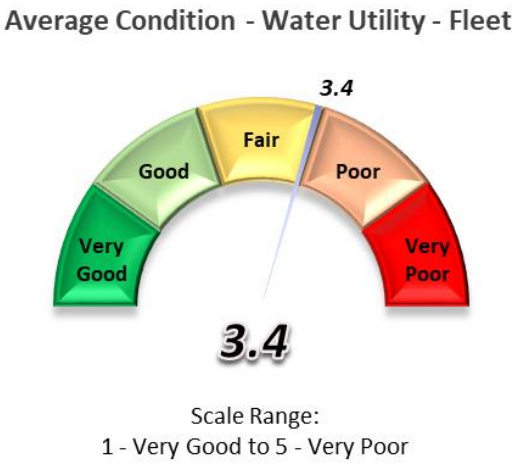


Figure 3.4-20. Fleet – Average Condition

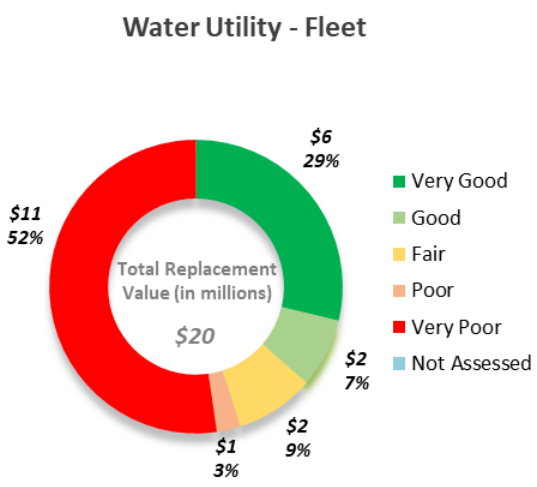


Figure 3.4-21. Fleet – Condition and Value

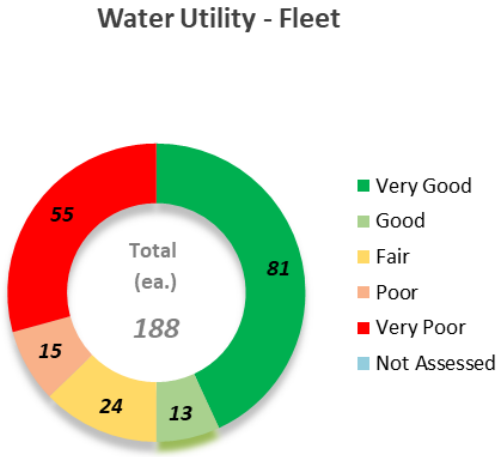


Figure 3.4-22. Fleet –Condition and Inventory

The Water Utility's inventory of 188 fleet vehicles, managed through the Fleet Management Agency, include light duty, super and heavy duty, special equipment, and construction equipment. The total replacement value of these assets is $20 million.

Overall, the condition of the Water Utility Fleet assets is rated as *Fair* to *Poor*. Condition for fleet assets is currently reported solely based on age. Age-based condition information is not always a good indicator of true condition, as factors such as vehicle use and maintenance can impact useful life of an asset. The delivery of water services is not currently impacted by the condition of fleet vehicles.

3.4.4 Age Profile

Water Utility - Water Supply and Treatment

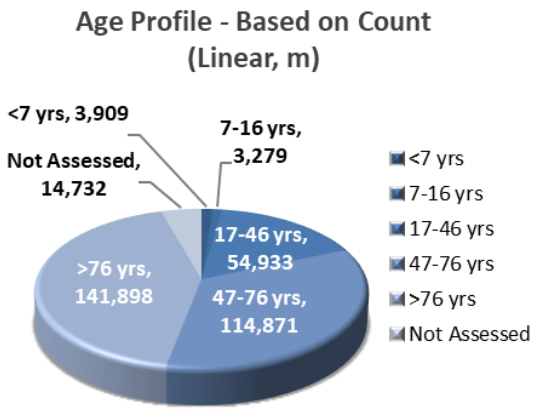


Figure 3.4-23. Water Supply and Treatment – Age Profile Based on Count (Linear)

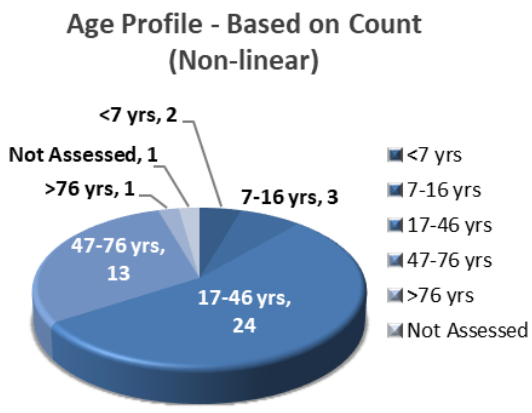


Figure 3.4-24. Water Supply and Treatment – Age Profile Based on Count (Non-Linear)

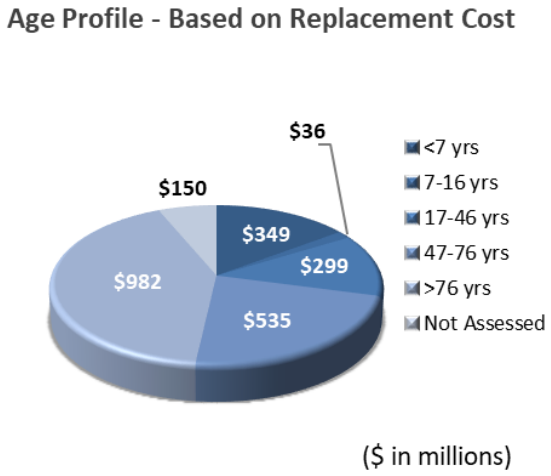


Figure 3.4-25. Water Supply and Treatment – Age Profile Based on Replacement Cost

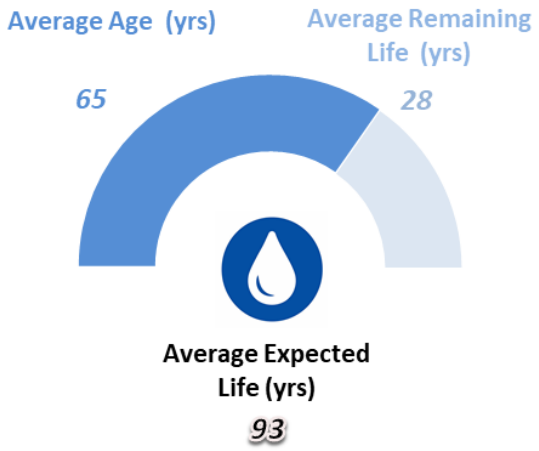


Figure 3.4-26. Water Supply and Treatment – Average Age and Remaining Life

The age of assets in the supply and treatment of water vary from new to aging. Some of the oldest inventory relates to the Shoal Lake aqueduct. The aqueduct went into service in 1919 and had an estimated service life of 100 years. In the late 1980s, an extensive rehabilitation program of the aqueduct was undertaken that was completed in 2003. This rehabilitation program aimed to extend the life of the aqueduct another 50 years (to 2053). Currently, portions of the aqueduct are inspected annually and repairs are performed as required. Another comprehensive inspection of the aqueduct is planned within the next 10 years in order to estimate the remaining service life and identify any required rehabilitation to ensure the ongoing reliability of this critical asset.

Water Utility - Water Distribution

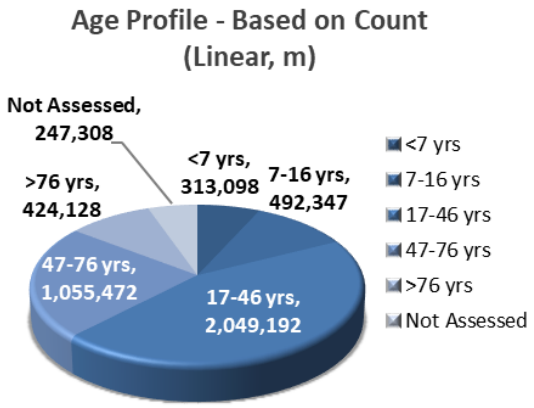


Figure 3.4-27. Water Distribution – Age Profile Based on Count (Linear)

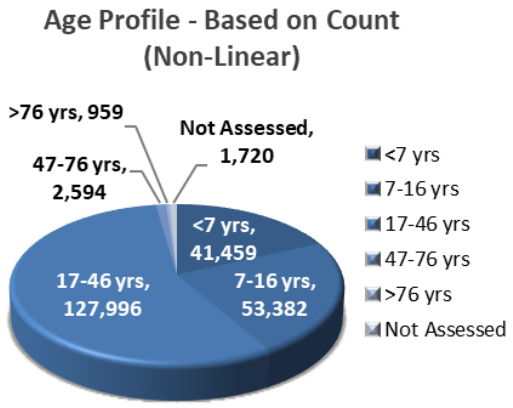


Figure 3.4-28. Water Distribution – Age Profile Based on Count (Non-Linear)

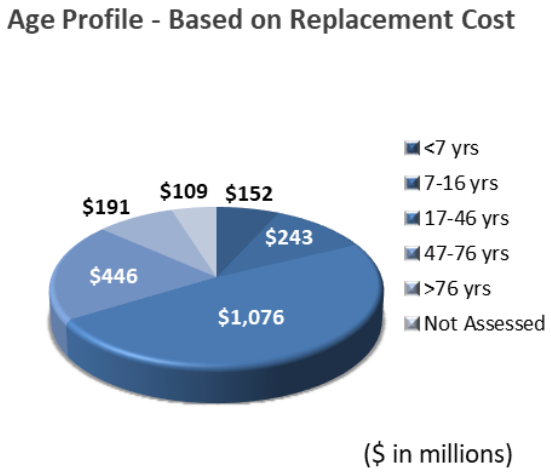


Figure 3.4-29. Water Supply and Treatment – Age Profile Based on Replacement Cost

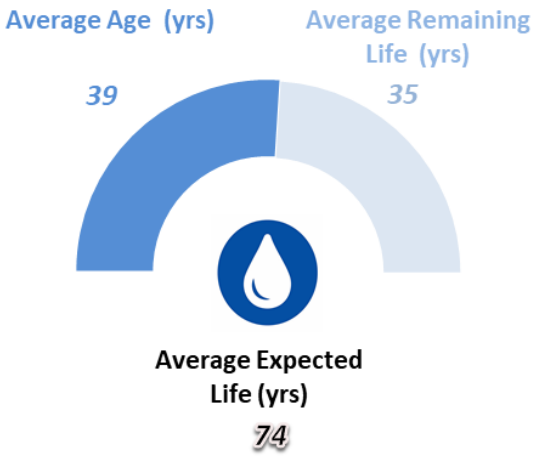


Figure 3.4-30. Water Supply and Treatment – Average Age and Remaining Life

Although the age of some of the distribution assets is advanced (e.g., hydrants), the City has a robust inspection, maintenance, and rehabilitation program to keep assets in service.

Over the years, through annual capital expenditures on water main renewals, the average age of water mains has been steadily decreasing from 45.6 years in 2014 to 44.1 years in 2016, as older inventory is replaced.

Water Utility - Buildings

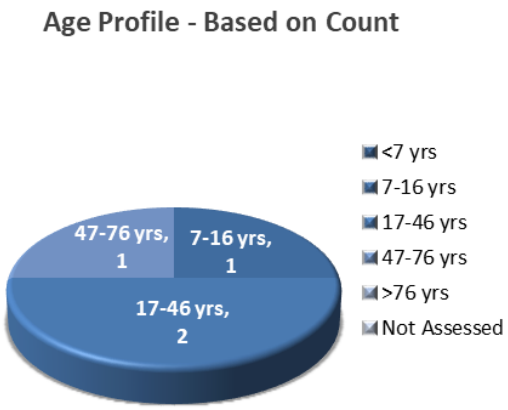


Figure 3.4-31. Buildings – Age Profile Based on Count

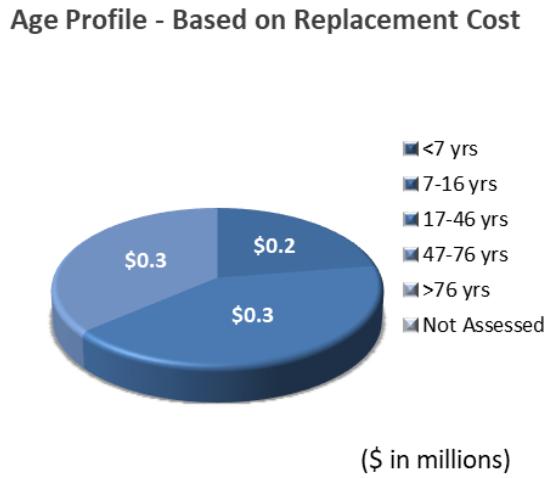


Figure 3.4-32. Buildings – Age Profile Based on Replacement Cost

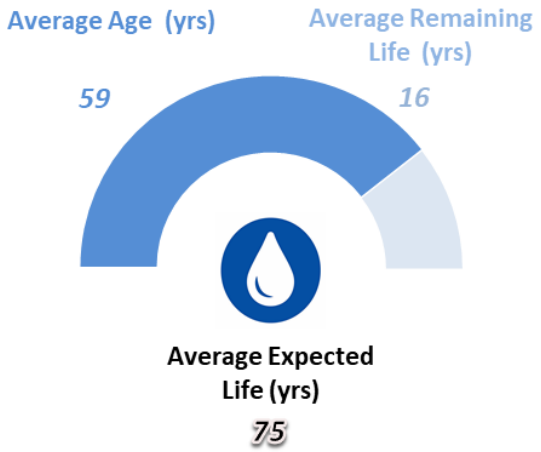


Figure 3.4-33. Buildings – Average Age and Remaining Life

Water Utility buildings are inspected by staff on a regular basis with maintenance and refurbishment scheduled, as required, to ensure ongoing operation.

Water Utility - Fleet

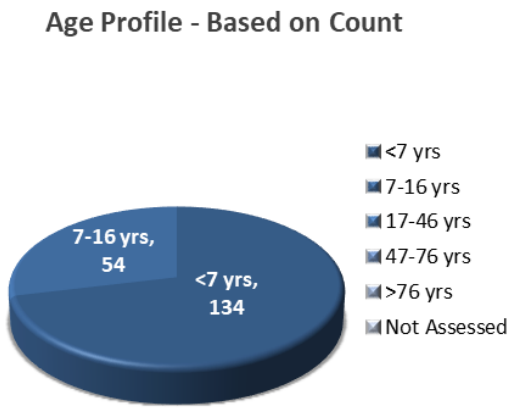


Figure 3.4-34. Fleet – Age Profile Based on Count

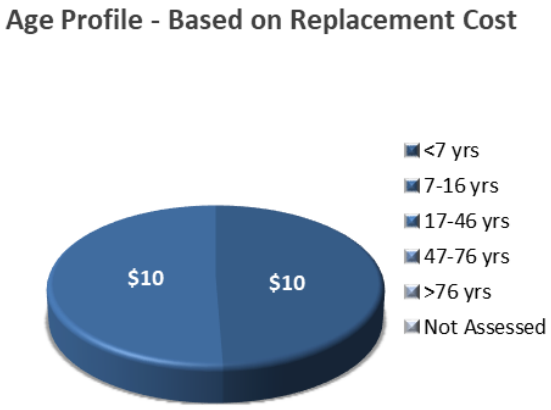


Figure 3.4-35. Fleet – Age Profile Based on Replacement Cost

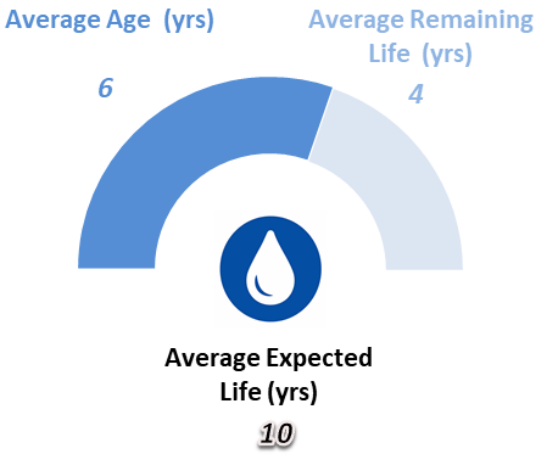


Figure 3.4-36. Fleet – Average Age and Remaining Life

3.4.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Water Utility infrastructure element, by asset type, is shown in Figure 3.4-37.

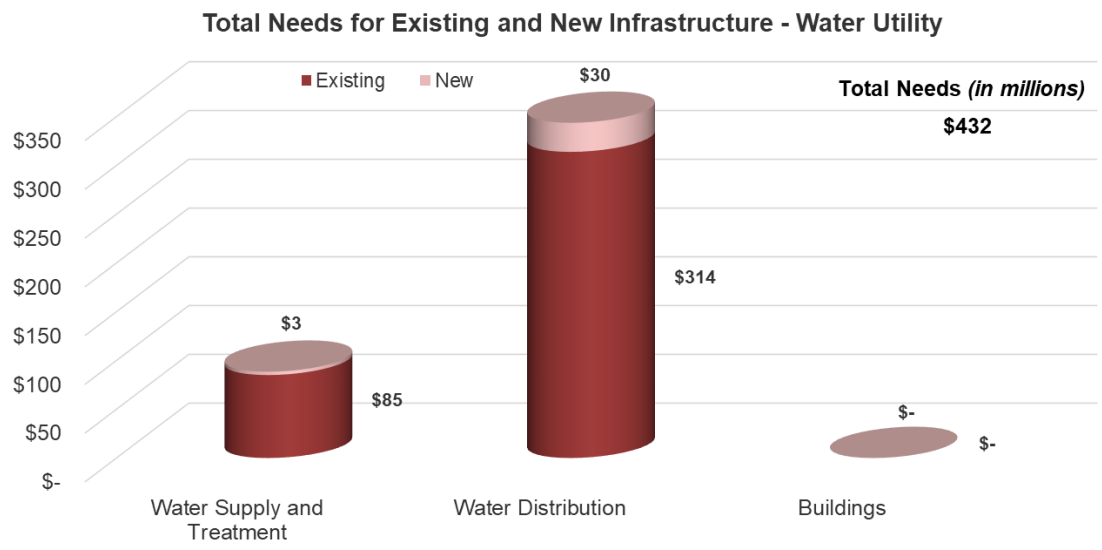


Figure 3.4-37. Water Utility – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Water Utility infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.4-38.

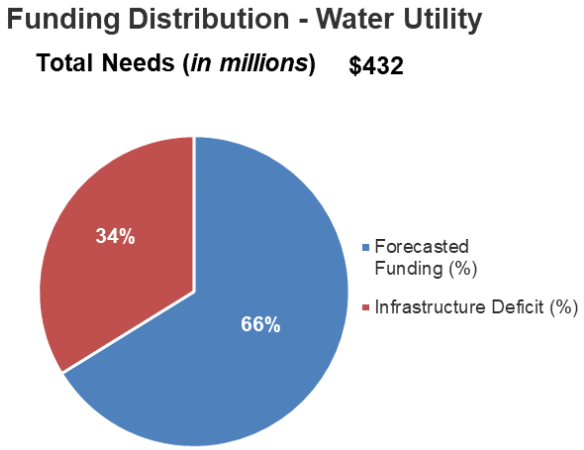


Figure 3.4-38. Funding Distribution - Water Utility

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years - 10 Year Capital Plan = Infrastructure Deficit

A breakdown of the capital funding deficit for the Water Utility infrastructure element, by asset type, is shown in Figures 3.4-39 and 3.4-40.

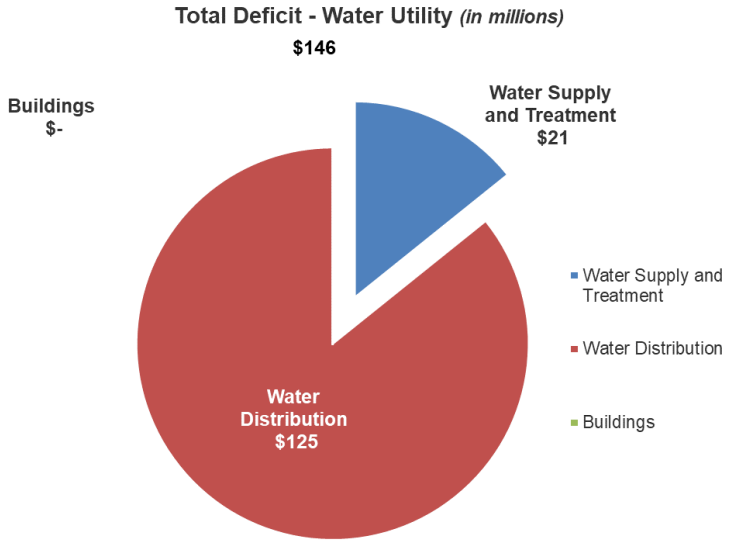


Figure 3.4-39. Total Deficit – Water Utility
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

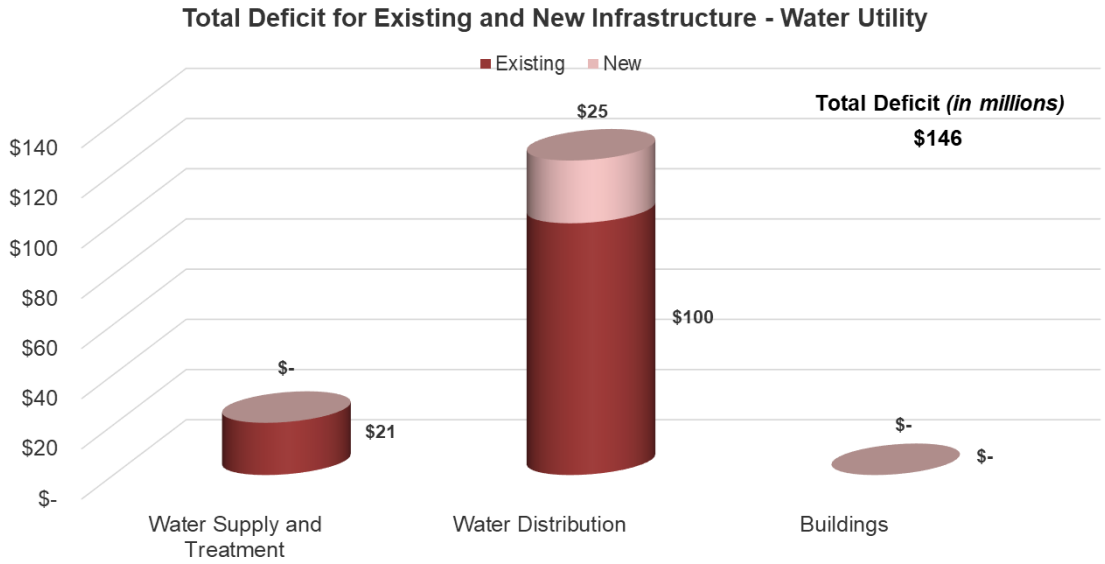


Figure 3.4-40. Water Utility – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

The vast majority of the Water Utility capital funding relates to the ongoing maintenance of existing assets – such as asset refurbishment and replacement at the water treatment plant, rehabilitation of the

in-town pumping stations and reservoirs, and renewal and replacement of the City's linear infrastructure.

The largest deficit in the Water Utility relates to the need to replace end-of-life water meters. It is estimated that currently 63% of the meters are past their service life. Significant capital investment would be required for a large-scale meter replacement program. The Department continues to review the business case to bring forward a capital investment program that can be implemented in an affordable and efficient manner.

The deficit associated with water supply and treatment relates to some of the assets at the water treatment plant that are experiencing a shorter than anticipated lifespan. In response to this, an asset refurbishment and replacement program will be implemented in 2018 that will rehabilitate assets on a risk-based priority as they approach end-of-life to ensure ongoing reliability and operation of the plant.

The deficit pertaining to new infrastructure relates to the extension of services to new developments that have not previously been included in the capital budget submission that could result in an increased rate impact to customers.

3.4.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.4-1. Water Utility – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Water Utility	Water Supply and Treatment	Feeder Main Valves and Fittings	$66,800,000 *Although condition is not reported separately in this AMP, the replacement cost of these assets have been included as part of the linear infrastructure.
Water Utility	Water Distribution	Distribution Main Valves and Fittings	$159,730,000 *Although condition is not reported separately in this AMP, the replacement cost of these assets have been included as part of the linear infrastructure.

3.5 Sewer Utility

3.5.1 Service Overview and Performance

Citizens value and take pride in the abundant and natural surface water amenities both within and downstream of our City. The City of Winnipeg has actively protected these shared water resources and the public health of its citizens by implementing major capital projects and by providing for the operations and maintenance associated with our wastewater collection and treatment systems. Ongoing improvements to our wastewater system will be required to maintain or upgrade the level of service our residents currently enjoy. Provincially mandated upgrades to the sewage treatment plants require significant capital investment to comply with *Environment Act* licenses. It is imperative that upgrades and improvements to the City's wastewater system are based on long-term sustainable solutions that are cost-effective, practicable, environmentally sound and that comply with regulatory requirements. A comprehensive review of the City's assets, operating practices, projected demands and regulatory trends is required to provide the most sustainable, long-term solutions related to the wastewater system. The goal is to develop a strategic framework that will effectively guide future actions and investments in the City's wastewater system that are publicly acceptable, economically sound, and foster the well-being of the community, while protecting the environment.

In this AMP, the Sewer Utility is comprised of two main asset types: wastewater treatment and wastewater collection; wastewater collection is further subdivided into linear and non-linear assets. In addition to these assets, data on buildings and fleet vehicles is also reported.

Specific assets within the main asset types include the following:

- Wastewater Treatment: sewage treatment plants (STPs)
- Wastewater Collection – non-linear assets: lift and diversion stations, chambers and ancillary structures, manholes
- Wastewater Collection – linear assets: sewer mains, combined sewer overflows (CSOs)

3.5.2 Asset Metrics Summary

Sewer Utility – All Assets

The overall condition, value, and age relating to all assets that are required to deliver Sewer Utility services is depicted below.

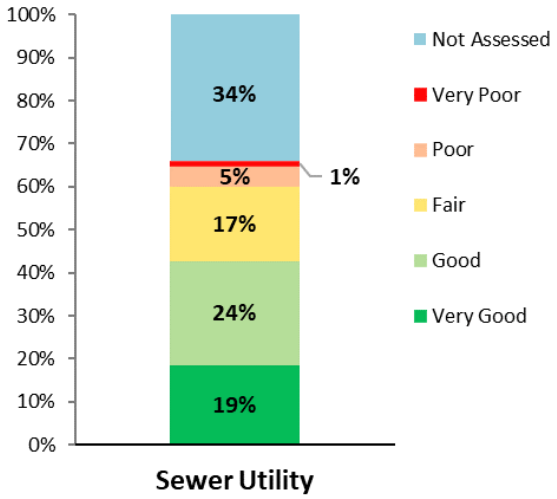


Figure 3.5-1. Sewer Utility – Condition

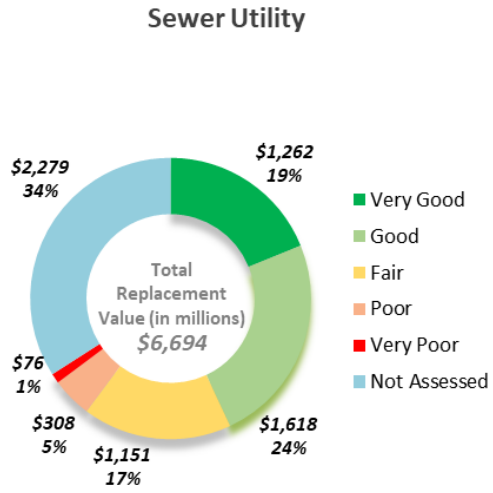


Figure 3.5-2. Sewer Utility – Condition and Value

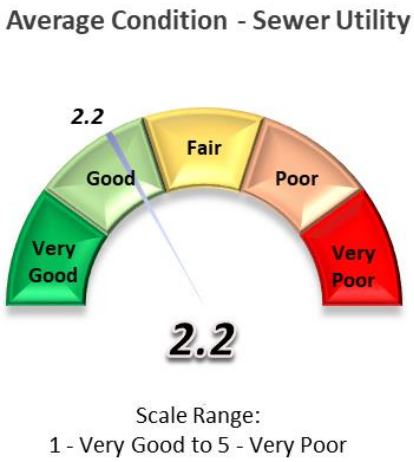


Figure 3.5-3. Sewer Utility – Average Condition

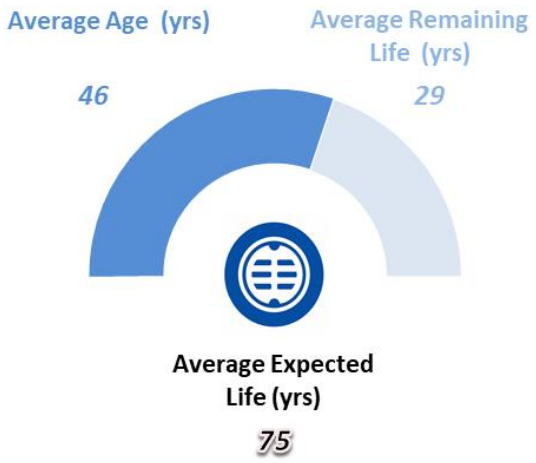


Figure 3.5-4. Sewer Utility – Age Profile

The overall condition of Sewer Utility assets is *Good*. Although 34% of the assets do not have condition data associated with them, this is largely related to newer sewer and manhole assets that do not get inspected until they are 30 years of age and assets where age-based condition is currently used (e.g., force mains, gate chambers) but year of construction is unknown. The City will continue to augment their knowledge of Sewer Utility assets through annual programs such as the sewer condition inspection program and risk-based assessment to prioritize lift-station rehabilitation.

3.5.3 Asset Condition, Value, and Inventory

Sewer Utility - Wastewater Treatment

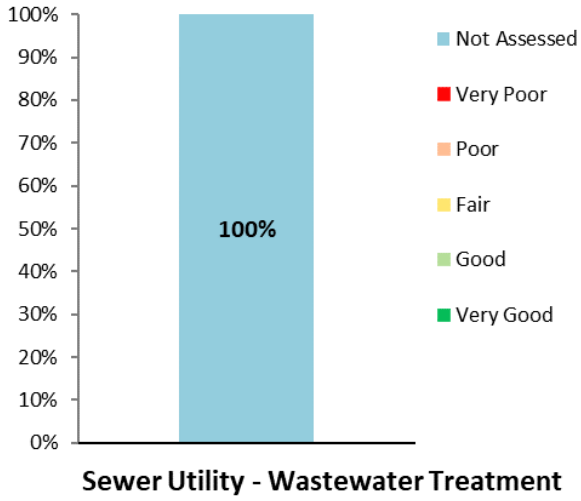


Figure 3.5-5. Wastewater Treatment – Condition

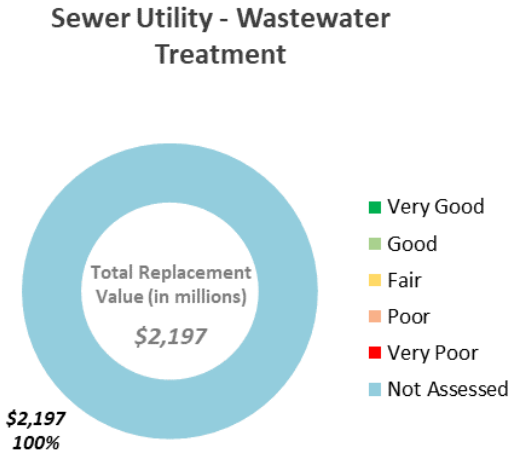


Figure 3.5-6. Wastewater Treatment – Condition and Value

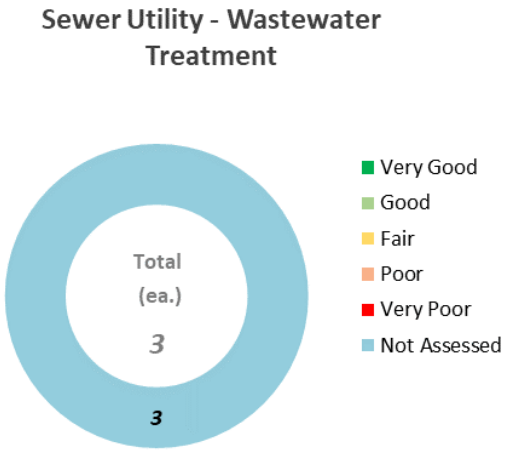


Figure 3.5-7. Wastewater Treatment – Condition and Inventory

The City has three STPs; two of which – North End (NEWPCC) and South End (SEWPCC) Sewage Treatment Plants – are currently undergoing major upgrades to comply with Environment Act Licenses. The West End Sewage Treatment Plant (WEWPCC) was upgraded in 2008 to include biological nutrient removal; future expansion will be required to support development in the area. There have been ongoing inspections of critical assets at all the STPs and the City has a documented understanding of the condition of the key components within the plants as well as a full inventory of all the assets. However, the data is not in a form that can be converted to the CIRC condition grades and reported consistently within this AMP. In conjunction with the upgrades, data will be gathered to produce a condition grade in alignment with the CIRC. The combined replacement value for the three STPS is $2.2 billion.

Sewer Utility - Wastewater Collection

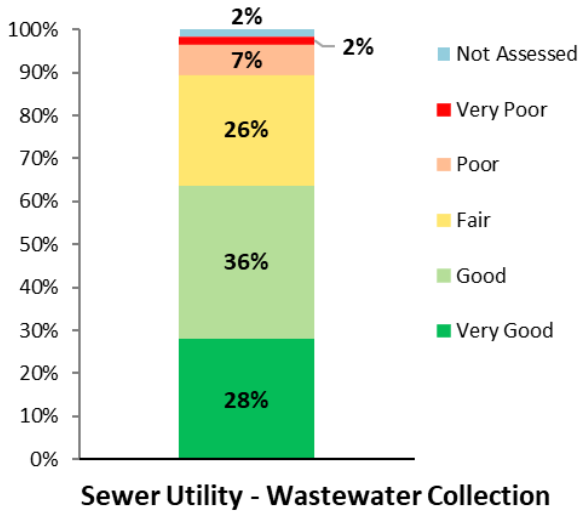


Figure 3.5-8. Wastewater Collection – Condition

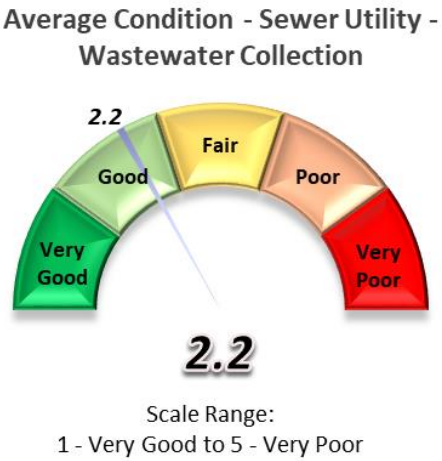


Figure 3.5-9. Wastewater Collection – Average Condition

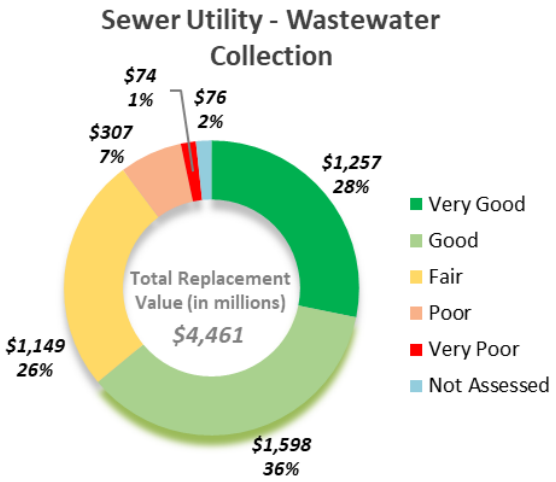


Figure 3.5-10. Wastewater Collection – Condition and Value

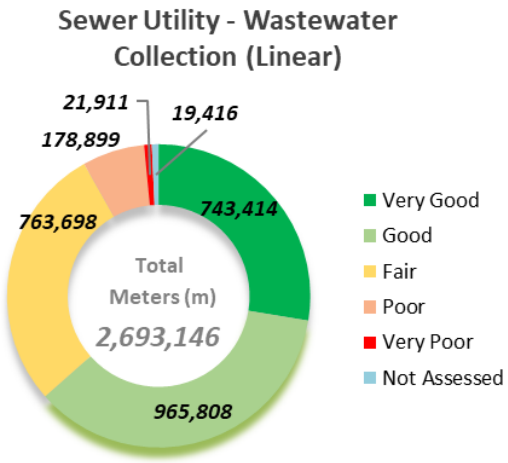


Figure 3.5-11. Wastewater Collection – Condition and Inventory of Linear Assets

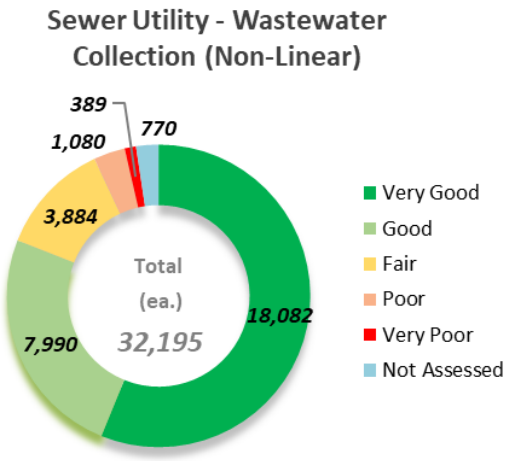


Figure 3.5-12. Wastewater Collection – Condition and Inventory of Non-Linear Assets

Overall, the wastewater collection assets are in *Good* condition. Despite the aging infrastructure of some assets, regular condition assessment and maintenance programs are preserving the assets well beyond their expected useful life.

Some non-linear wastewater collection assets, like lift stations, are currently reporting condition based on age, which does not adequately reflect true condition. Robust maintenance programs ensure the continued and reliable operation of stations despite their advancing age. Annual risk-based assessments of all stations prioritize capital funding to ensure renewal and rehabilitation needs are met and that the level of service is maintained throughout the City.

The linear infrastructure has a robust condition assessment and renewal program. Innovative trenchless rehabilitation technology has been very effective in improving the condition of many sewers with minimal disruption to citizens and at an affordable cost.

Sewer Utility - Buildings

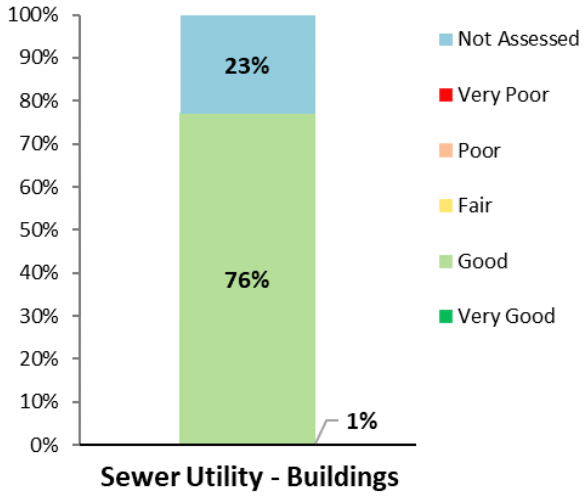


Figure 3.5-13. Buildings – Condition

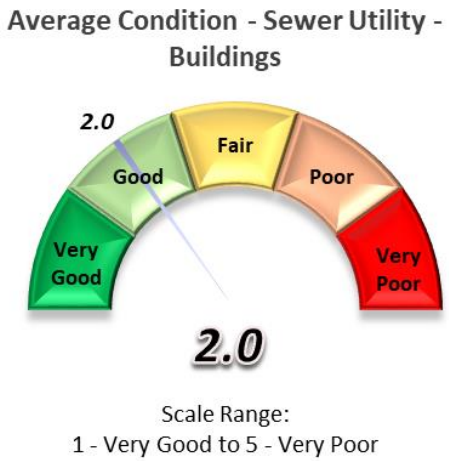


Figure 3.5-14. Buildings – Average Condition

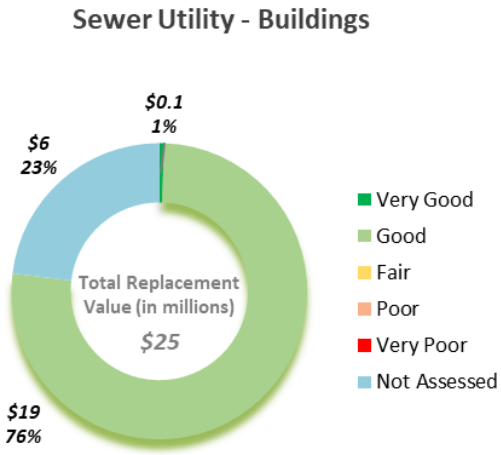


Figure 3.5-15. Buildings – Condition and Value

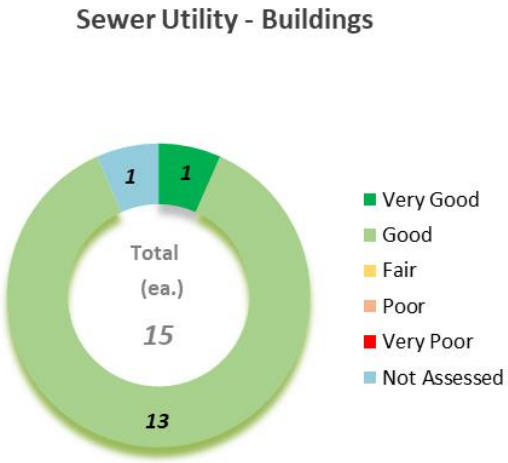


Figure 3.5-16. Buildings – Condition and Inventory

The Sewer Utility-related office and maintenance buildings located on Plinguet Street and McPhillips Street are generally in *Good* condition with regular internal condition assessment and maintenance undertaken as required.

The condition of the monitoring and control equipment was not assessed at this time; however, instrumentation is routinely reviewed and updated, as required, to ensure ongoing and reliable operation of the wastewater collection system. The costs of the equipment have been included in the replacement value.

Sewer Utility - Fleet

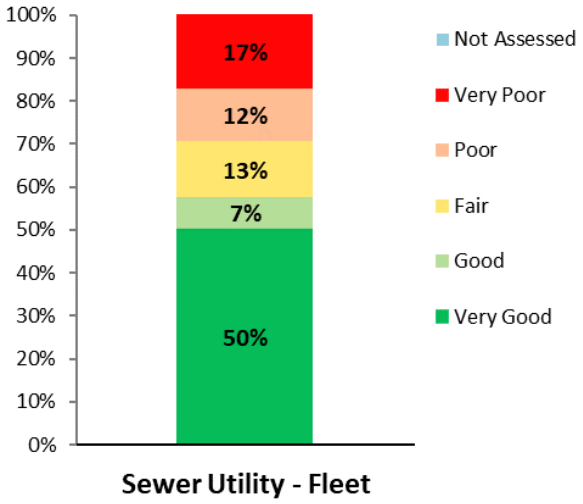


Figure 3.5-17. Fleet – Condition

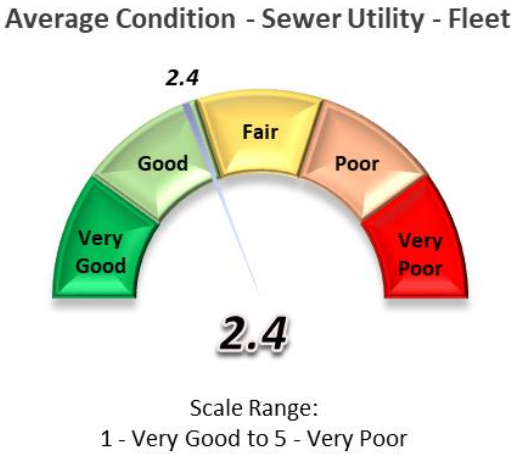


Figure 3.5-18. Fleet – Average Condition

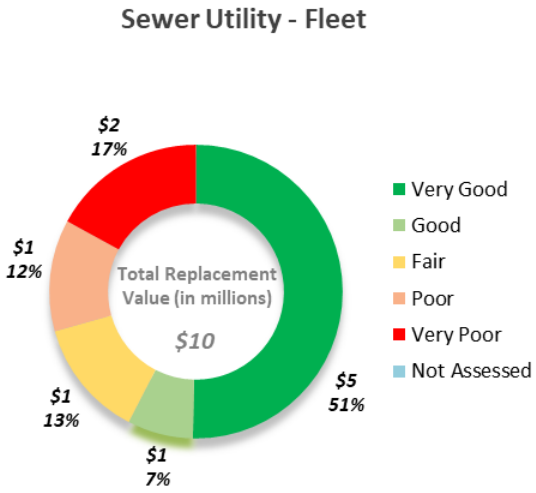


Figure 3.5-19. Fleet – Condition and Value

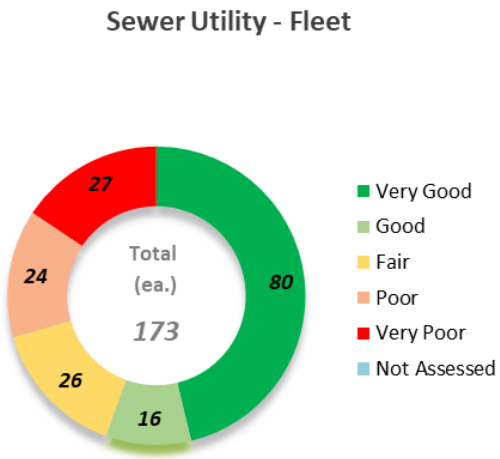


Figure 3.5-20. Fleet – Condition and Inventory

The Sewer Utility's inventory of 173 fleet vehicles, managed through the Fleet Management Agency, include light duty, super and heavy duty, special equipment, and construction equipment. The total replacement value of these assets is $10 million.

3.5.4 Age Profile

Sewer Utility - Wastewater Collection

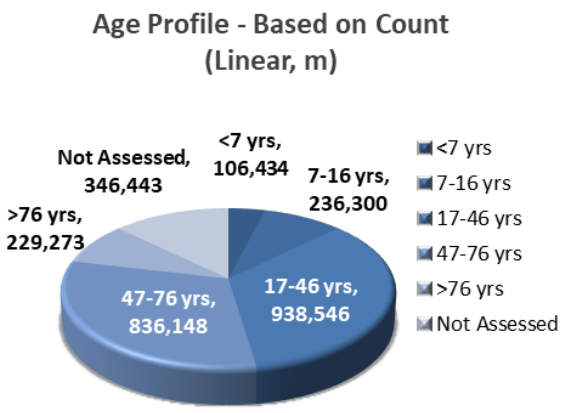


Figure 3.5-21. Wastewater Collection – Age Profile Based on Count (Linear)

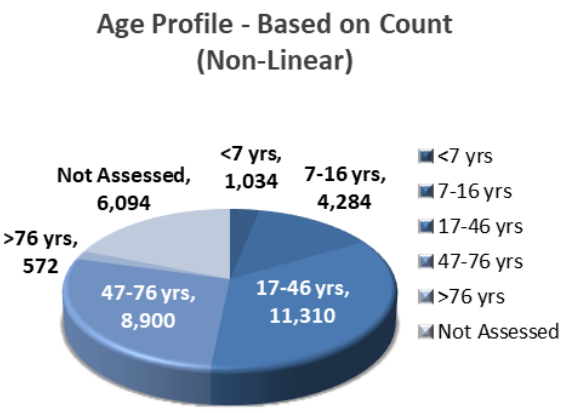


Figure 3.5-22. Wastewater Collection – Age Profile Based on Count (Non-Linear)

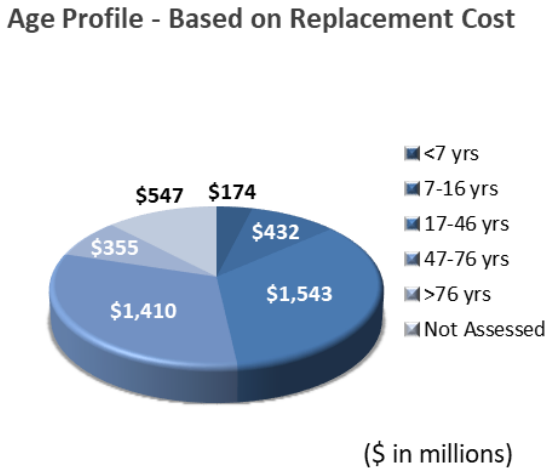


Figure 3.5-23. Wastewater Collection – Age Profile Based on Replacement Cost

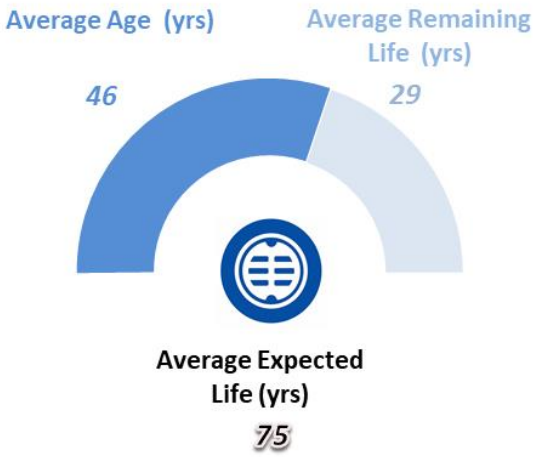


Figure 3.5-24. Wastewater Collection – Average Age and Remaining Life

The age of the linear assets in the collection system vary from new to aging. Reporting on age of linear assets can be misleading as the primary method for renewal is cured in place pipe (CIPP lining) – an innovative trenchless technology that creates an as-new sewer. While a lined sewer condition is rerated as *Very Good*, the construction year of the original asset is still maintained in the GIS. Similarly, for non-linear assets, robust maintenance programs ensure the continued and reliable operation of stations and structures despite their advancing age, indicated by year of original construction.

Sewer Utility - Buildings

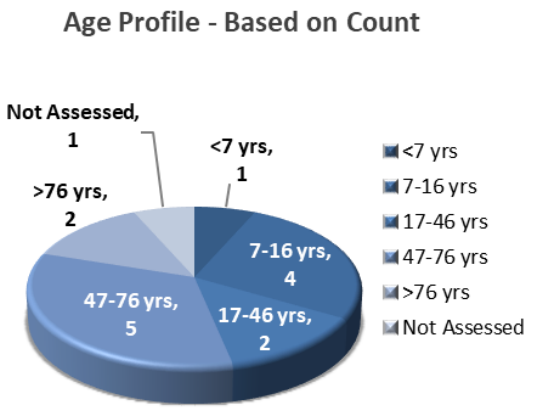


Figure 3.5-25. Buildings – Age Profile Based on Count

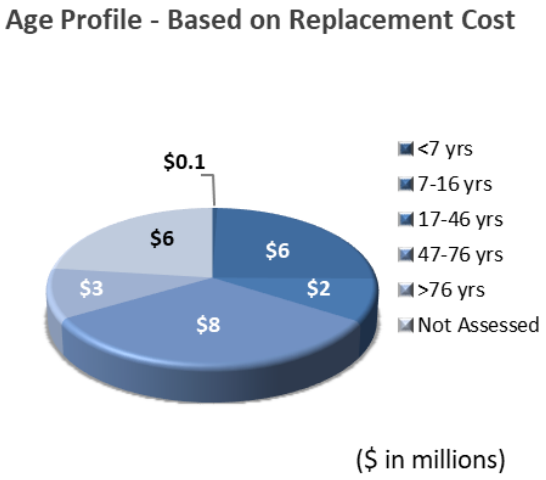


Figure 3.5-26. Buildings – Age Profile Based on Replacement Cost

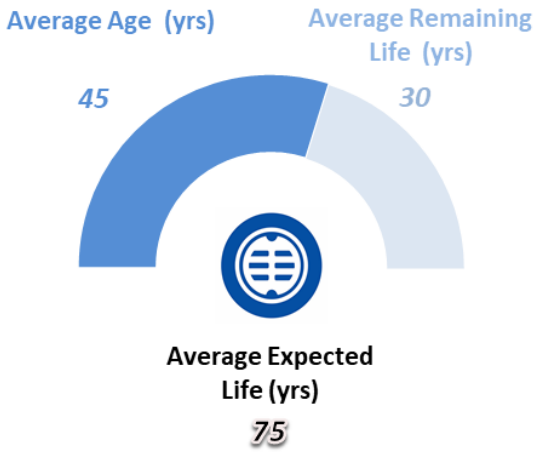


Figure 3.5-27. Buildings – Average Age and Remaining Life

Sewer Utility buildings are inspected by staff on a regular basis with maintenance and refurbishment scheduled, as required, to ensure ongoing operation.

Sewer Utility - Fleet

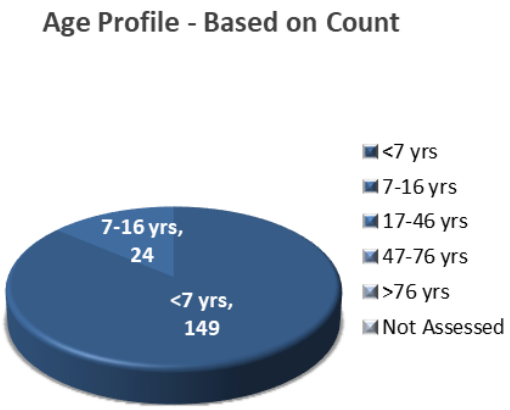


Figure 3.5-28. Fleet – Age Profile Based on Count

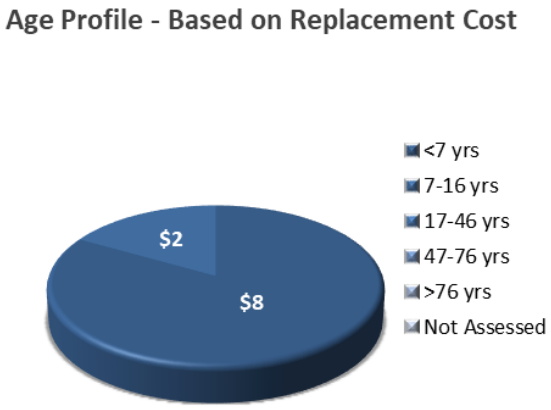


Figure 3.5-29. Fleet – Age Profile Based on Replacement Cost

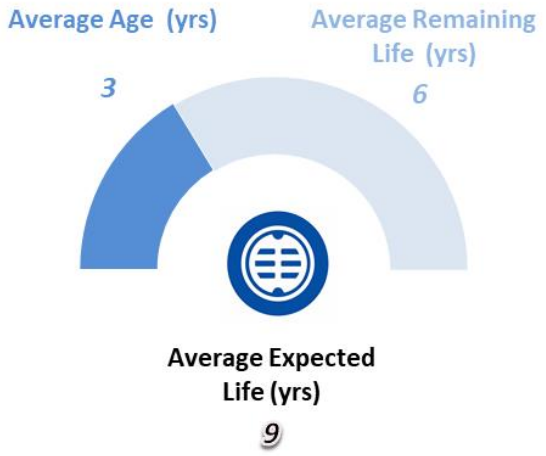


Figure 3.5-30. Fleet – Average Age and Remaining Life

3.5.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Sewer Utility infrastructure element, by asset type, is shown in Figure 3.5-31.

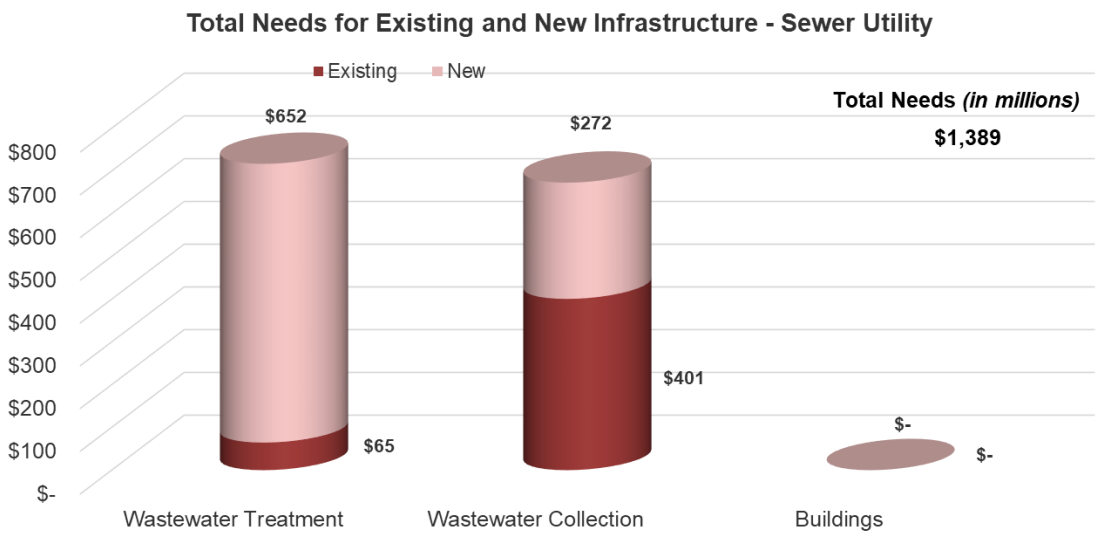


Figure 3.5-31. Sewer Utility – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Sewer Utility infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.5-32.

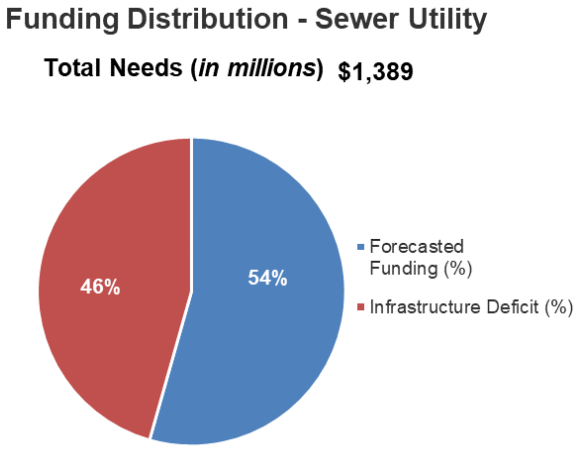


Figure 3.5-32. Funding Distribution - Sewer Utility

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years	-	10 Year Capital Plan	=	Infrastructure Deficit

A breakdown of the capital funding deficit for the Sewer Utility infrastructure element, by asset type, is shown in Figures 3.5-33 and 3.5-34.

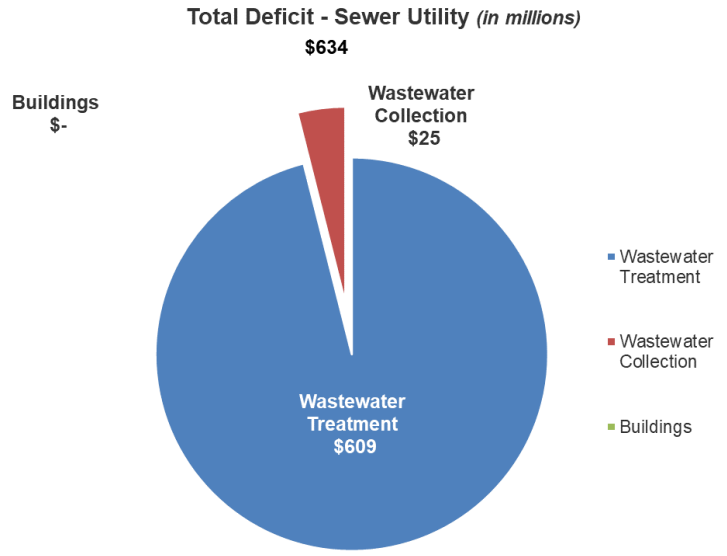


Figure 3.5-33. Total Deficit – Sewer Utility
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

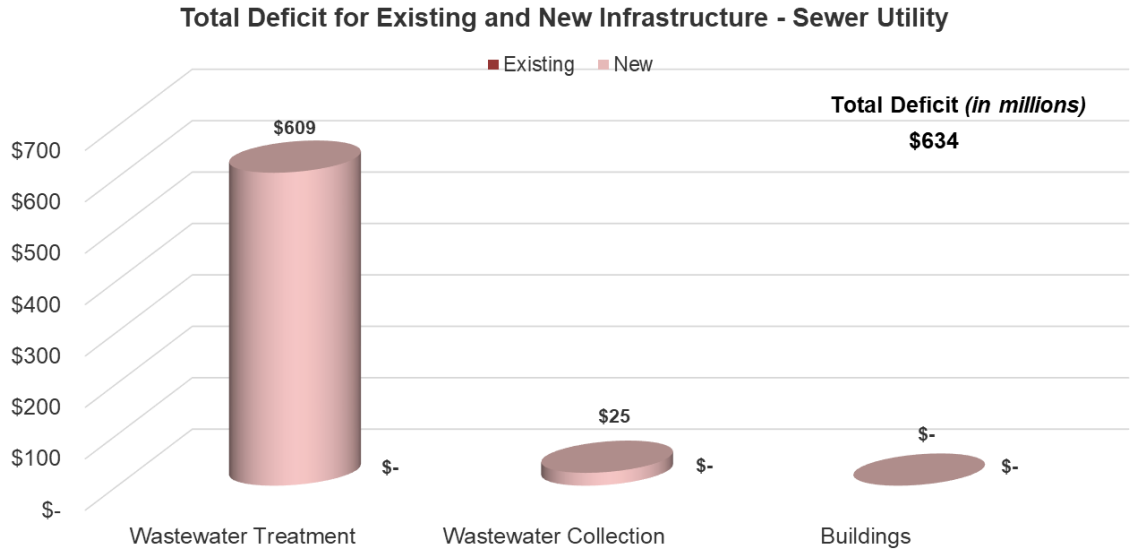


Figure 3.5-34. Sewer Utility – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

The Sewer Utility capital funding needs are almost equally divided between treatment and collection. Most of the treatment needs pertain to upgrades and expansion of the STPs related to more stringent regulatory requirements.

Although the majority of the collection capital needs relate to the ongoing maintenance of existing assets, such as sewer mains and lift stations, some planned infrastructure expansion to service new developments, including new river crossings and interceptors, have been included in the capital program.

The largest deficit for the Sewer Utility relates to the upgrades of the STPs. Although significant capital funding for the NEWPCC Nutrient Removal Upgrade was approved in 2016, estimated costs are increasing as design progresses. These additional costs are currently unfunded.

The deficit for new collection infrastructure relates to the extension of services to new developments that have not previously been included in the capital budget submission. This could result in an increased rate impact to customers.

Although the following items do not form part of the deficit calculations, they may have future funding or rate impacts.

- Provincial funding for STP upgrades – of the money committed in the 2007 Throne Speech for Provincial wastewater funding for the STP upgrades, only a small portion is currently included in an existing agreement; the remaining funding is at risk.
- The City has submitted the CSO Master Plan to the Province with their recommended approach to CSO control; the preliminary Master Plan service level was approved late 2017 and the City is currently developing an implementation program. Currently, there is no provincial or federal funding support for this program. The Clean Environment Commission recommended that "*The City of Winnipeg should be directly assisted by the Province of Manitoba in efforts to secure financial support under existing and future infrastructure programs for upgrades to its wastewater collection and treatment systems… Ideally the funding formula of one-third municipal, one-third provincial, and one-third federal should be used*."
- The capital budget and five-year forecast also provisions for studies for a new laboratory, as well as a new collections facility. There is current funding estimates in the 5-year capital forecast to develop Class 3 estimates for construction of these projects.

3.5.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

The Sewer Utility does not currently have any assets that are not included in this plan.

3.6 Land Drainage Utility

3.6.1 Service Overview and Performance

On average, approximately half of the rainfall that falls to the ground produces runoff within an urban setting. The remaining half is retained on or below pervious surfaces, such as grass or other natural ground cover, or detained on impervious surfaces, such as concrete, that has no connection to a drainage outlet. Runoff is typically collected and conveyed in street gutters or ditches and enters the collection system through street inlets (catch basins), ditch inlets, or manholes.

The City's flood protection system consists of a primary dike system that parallels our major rivers. During high river levels, the flood pumping stations are used to dewater our combined sewer system following rainfall events. The City's separate land drainage system is isolated from the river by outfall gate structures. Major upstream provincially owned and operated flood control works, such as the Red River Floodway and the Portage Diversion, redirect a portion of floodwaters around or away from the City.

The content in the Land Drainage Utility section of this AMP relates to Water and Waste Department assets. A small portion of the Land Drainage Utility Fund capital budget will go towards Public Works Department Regional/Local Streets drainage improvements. This work will be financed by Transfer from the Sewer Utility.

In this AMP, the Land Drainage Utility is comprised of two main asset types: land drainage and flood control; both of these asset types are further subdivided into linear and non-linear assets. There are no separate buildings or fleet vehicles to report on.

Specific assets within the main asset types include the following:

- Land Drainage – non-linear assets: manholes; underpass pumping stations (note: these are Public Works assets that are maintained by the Water and Waste Department); storage tanks; stormwater retention basins (SRBs)
- Land Drainage – linear assets: pipes; drains and major ditches; outfalls
- Flood Control – non-linear assets: flood pumping stations
- Flood Control – linear assets: dikes

3.6.2 Asset Metrics Summary

Land Drainage Utility – All Assets

The overall condition, value, and age relating to all assets that are required to deliver Land Drainage Utility services is depicted below.

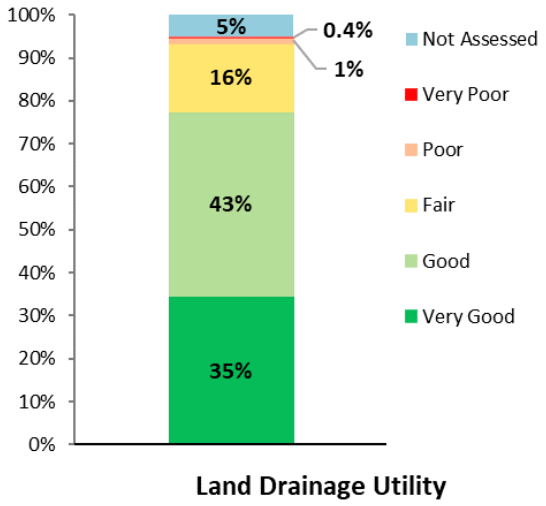


Figure 3.6-1. Land Drainage Utility – Condition

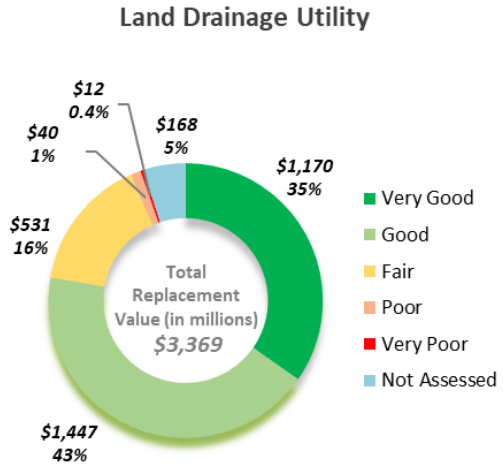


Figure 3.6-2. Land Drainage Utility – Condition and Value

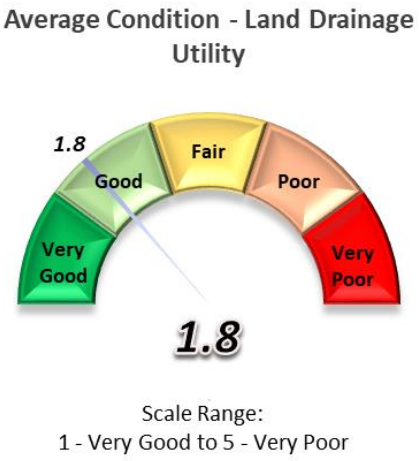


Figure 3.6-3. Land Drainage Utility – Average Condition

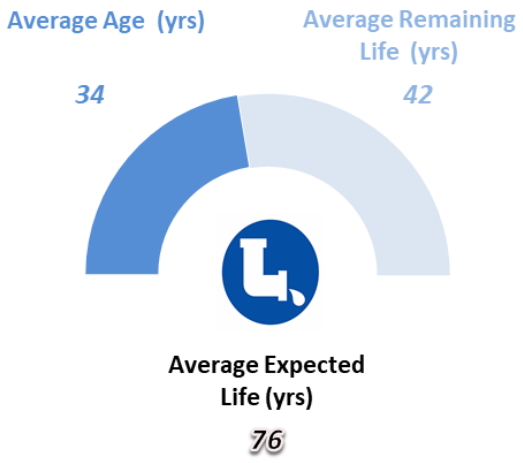


Figure 3.6-4. Land Drainage Utility – Age Profile

The overall condition of the Land Drainage Utility assets is *Good* to *Very Good*. The City will continue to augment their knowledge of Land Drainage Utility assets through the annual sewer inspection program and specialized outfall inspection programs.

3.6.3 Asset Condition, Value, and Inventory

Land Drainage Utility - Land Drainage

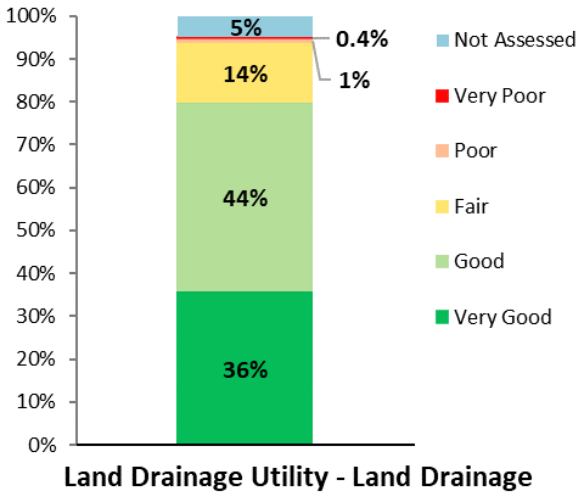


Figure 3.6-5. Land Drainage – Condition

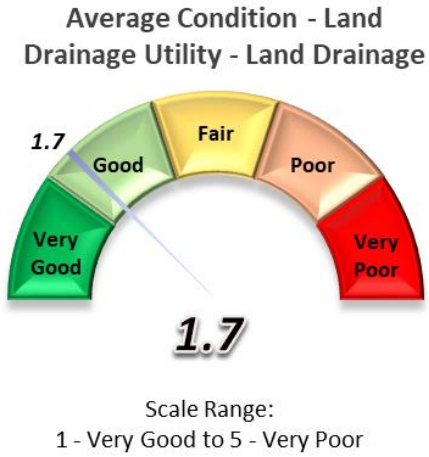


Figure 3.6-6. Land Drainage – Average Condition

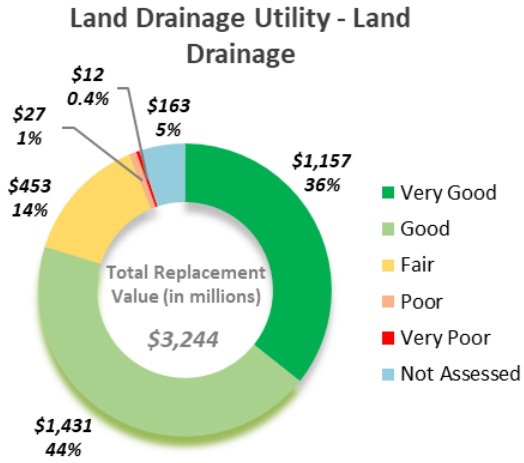


Figure 3.6-7. Land Drainage – Condition and Value

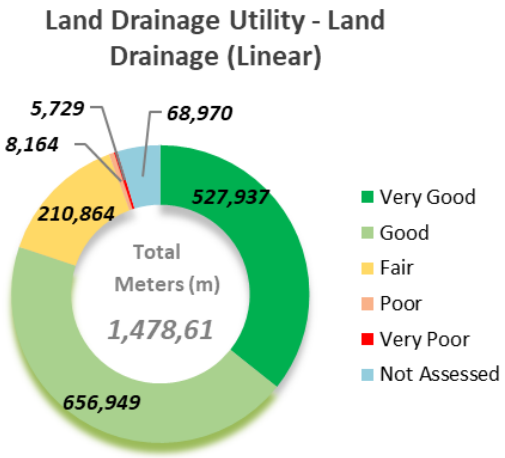


Figure 3.6-8. Land Drainage – Condition and Inventory of Linear Assets

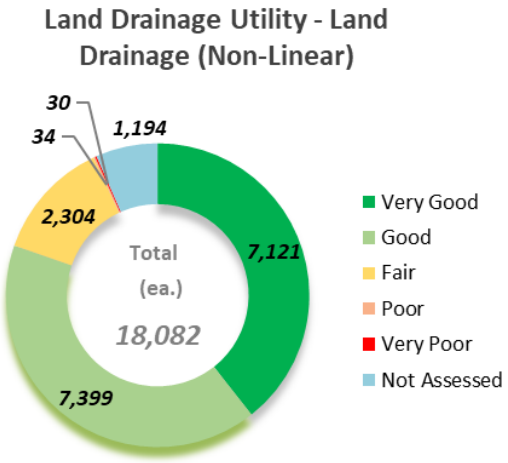


Figure 3.6-9. Land Drainage – Condition and Inventory of Non-Linear Assets

Overall, the condition of the Land Drainage Utility assets is *Good* to *Very Good*. This is largely related to the age of land drainage systems in the City.

For the most part, the linear infrastructure is using age as a surrogate for condition. The land drainage sewer condition assessments that have been undertaken to date have indicated a *Good* to *Very Good* condition of the sewers that does not warrant a formal condition assessment program at this time. The condition of drains and major ditches is assessed through routine inspections by City staff.

Land Drainage Utility - Flood Control

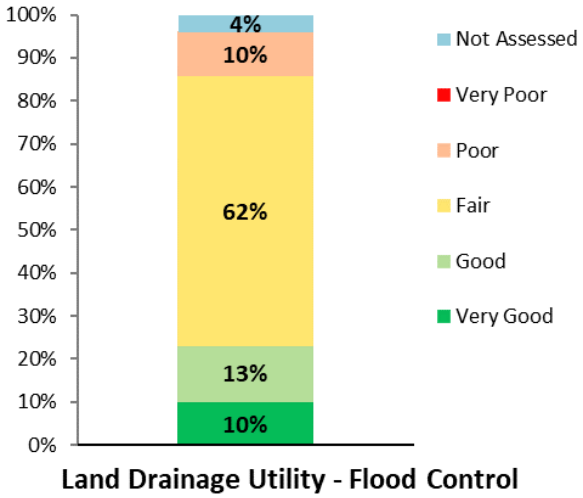


Figure 3.6-10. Flood Control – Condition

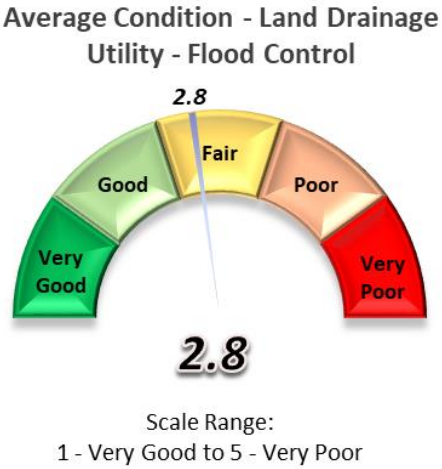


Figure 3.6-11. Flood Control – Average Condition

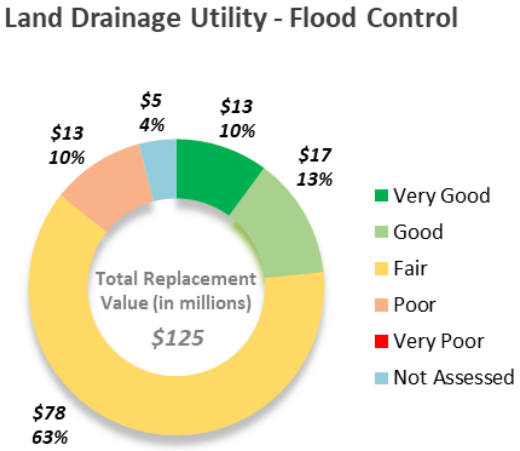


Figure 3.6-12. Flood Control – Condition and Value

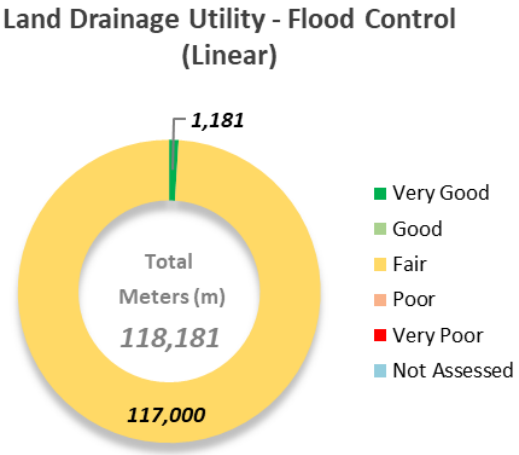


Figure 3.6-13. Flood Control – Condition and Inventory of Linear Assets

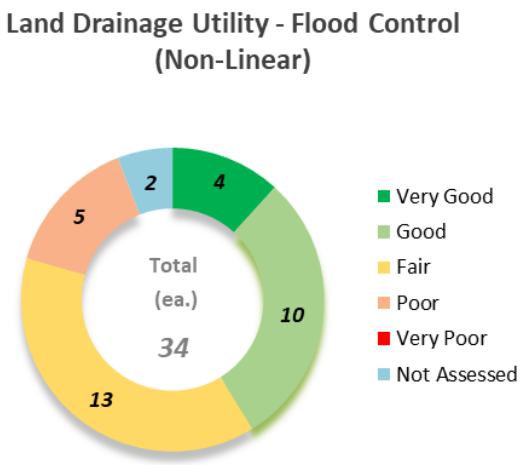


Figure 3.6-14. Flood Control – Condition and Inventory of Non-Linear Assets

Flood control linear assets (dikes) are reporting as *Fair* due to their age-based condition rating. The City is responsible for maintaining the primary dike, which is generally the nearest main road near the river (e.g., parts of St Mary's Road). The dikes are constructed of natural materials and do not exhibit the same type of deterioration rate that other materials do. As a result, using age as a proxy for condition will not accurately reflect the status of the asset class. There is currently no regular inspection protocol for the dikes, other than before a flood when the Geotechnical Emergency Response Team, led by the Planning, Property & Development Department, reviews the structural integrity of the dikes. There are over 20 monitoring locations along the dikes that monitor seepage and stability. During construction activities on a primary dike (e.g., road or active transportation path-related works), the Water and Waste Department will work with the hired consultants to ensure the integrity of the dike is maintained. Maintenance of secondary dikes, including those built as part of permanent flood protection projects, are the responsibility of the homeowner.

Similar to the lift stations in the Sewer Utility, the flood control non-linear assets (flood pumping stations) are currently reporting condition based on age which does not adequately reflect true condition. Robust maintenance programs ensure the continued and reliable operation of stations despite their advancing age. Annual reviews of the stations allow for capital funding to be prioritized to ensure renewal and rehabilitation needs are met and that the level of service is maintained throughout the City.

3.6.4 Age Profile

Land Drainage Utility - Land Drainage

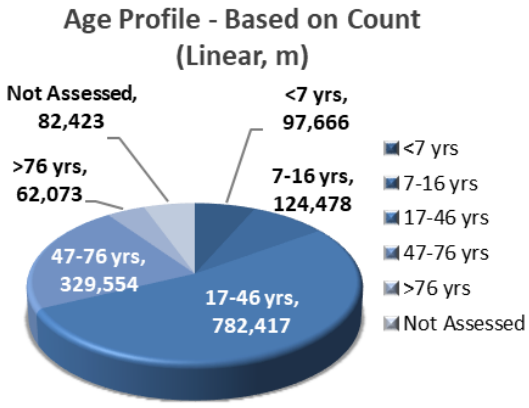


Figure 3.6-15. Land Drainage – Age Profile Based on Count (Linear)

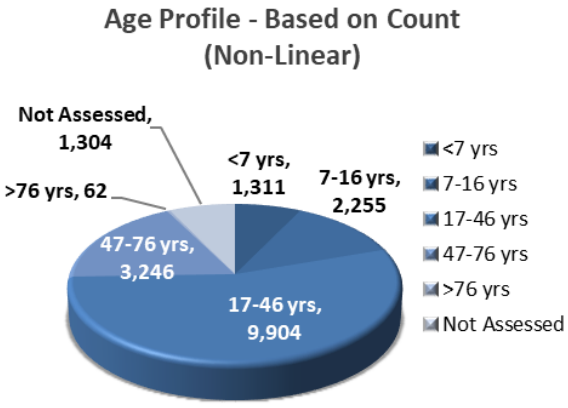


Figure 3.6-16. Land Drainage – Age Profile Based on Count (Non-Linear)

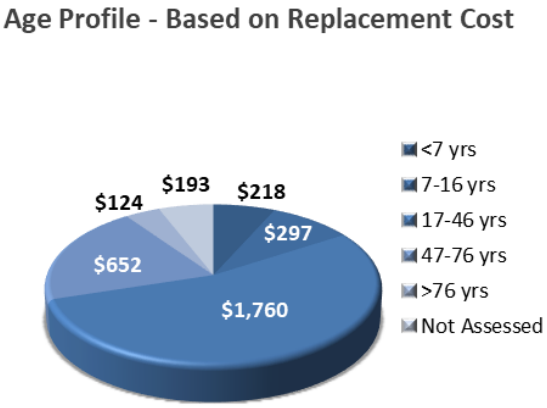


Figure 3.6-17. Land Drainage – Age Profile Based on Replacement Cost

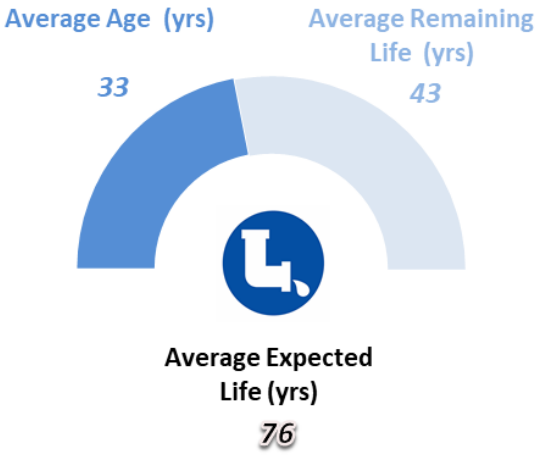


Figure 3.6-18. Land Drainage – Average Age and Remaining Life

Prior to the 1950s, the City was serviced by a combined sewer system which did not include land drainage sewers. As a result, the average age of the land drainage assets is younger than that of the sewer asset counterpart. However, the same issue of how age is reported for linear assets in the Sewer Utility (year of construction irrespective of maintenance) will become increasingly apparent for the land drainage linear elements over the years.

Land Drainage Utility - Flood Control

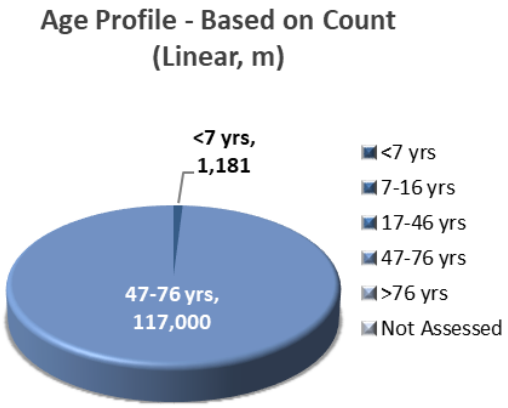


Figure 3.6-19. Flood Control – Age Profile Based on Count (Linear)

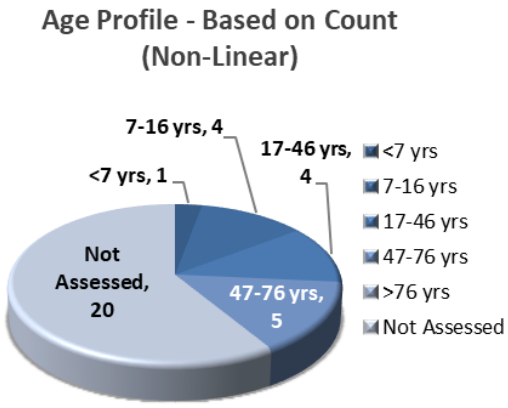


Figure 3.6-20. Flood Control – Age Profile Based on Count (Non-Linear)

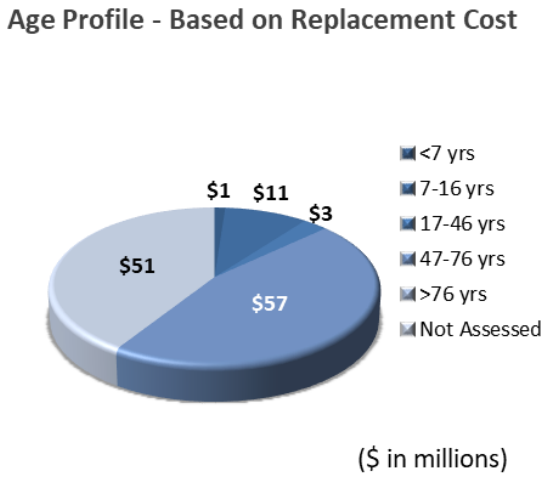


Figure 3.6-21. Flood Control – Age Profile Based on Replacement Cost

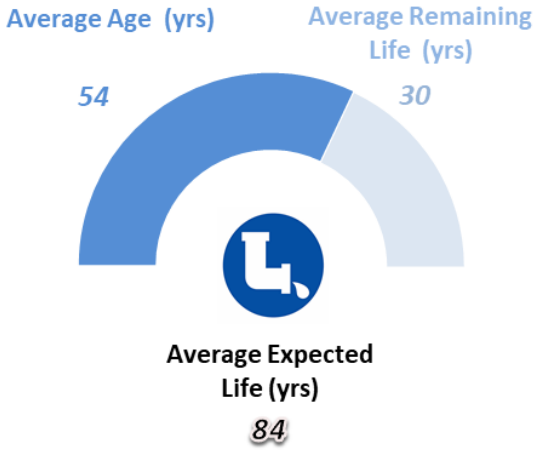


Figure 3.6-22. Flood Control – Average Age and Remaining Life

The age of the non-linear flood control assets (flood pumping stations) is unknown for a significant portion of the asset base. Where known, reporting on age of asset has similar issues to those noted for the Sewer Utility non-linear Collection assets. Age is reported by year of construction despite ongoing asset maintenance programs that ensure the continued and reliable operation of stations and structures.

3.6.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Land Drainage Utility infrastructure element, by asset type, is shown in Figure 3.6-23.

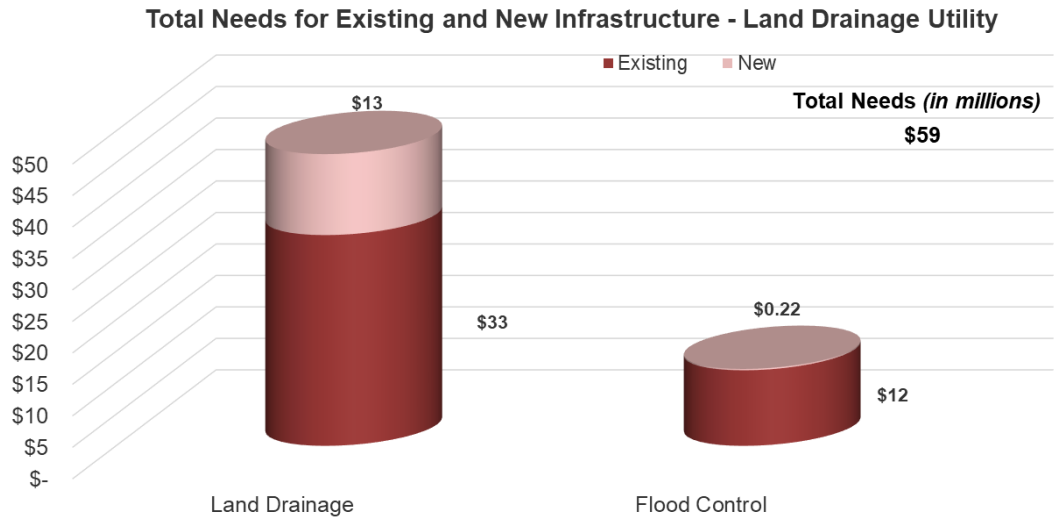


Figure 3.6-23. Land Drainage Utility – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Land Drainage Utility infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.6-24.

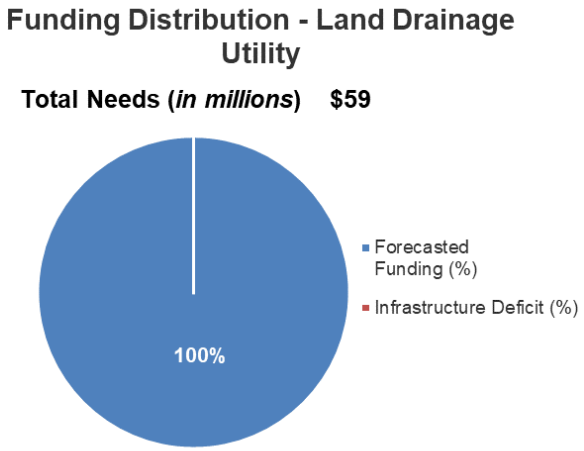


Figure 3.6-24. Funding Distribution - Land Drainage Utility

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

The Land Drainage Utility capital funding needs are currently focused heavily on the land drainage elements. The majority of the funding needs relate to the ongoing maintenance of existing assets and the construction of new gate chambers to protect the land drainage system from river water inundation during high river levels. New land drainage inventory, which services new developments, is paid for by the developers.

The Land Drainage Utility shows no deficit in large part as the construction (non-development related), renewal, and rehabilitation of the linear infrastructure (land drainage sewers) is included in programs funded by the Sewage Disposal System Fund (Combined Sewer Overflow and Basement Flood Management Strategy and Sewer Renewals).

While condition assessment of some Land Drainage Utility assets, such as outfalls, has been ongoing for many years, a number of assets have not had formal condition assessments and rehabilitation has been more reactive. As the Water and Waste Department moves towards incorporating more advanced condition assessment of assets, additional funding needs may be identified.

3.6.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.6-1. Land Drainage Utility – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Land Drainage Utility	Land Drainage	SRB Control Structures	$18,780,000 *Although condition is not reported separately in this AMP, the replacement cost of these assets have been included as part of the linear infrastructure.
Land Drainage Utility	Land Drainage	Catch basins and leads are included with Public Works assets Ownership of these assets is currently being reviewed between the Public Works Department and Water and Waste Department	N/A
Land Drainage Utility	Land Drainage	Gate Chambers/Control Structures were not separately identified in this version of the AMP	N/A

3.7 Solid Waste Utility

3.7.1 Service Overview and Performance

Solid Waste Collection services include weekly collection of garbage from single-family and multi-family homes and other miscellaneous services, such as collection of surplus or bulky waste, that are offered on a fee for service basis. Solid Waste Disposal consists of the Brady Road Resource Management Facility (BRRMF), which is the only active landfill the City operates and it receives all of the City's residential garbage and as well as some commercial waste. A landfill gas system collects and flares landfill gas, which diverts equivalent tonnes of carbon dioxide every year. In addition, it includes the maintenance and environmental monitoring of the 33 closed landfill sites within the City.

Recycling and Waste Diversion services include the weekly collection of recyclables for single-family and some multi-family homes that are delivered to the material recovery facility (MRF). Public recycling drop-off depots are also located throughout the City. Services also include bi-weekly seasonal yard waste collection and the operation of a 9-hectare composting pad located at the BRRMF. It also includes the 4R Winnipeg Depots – one located at BRRMF, one on Pacific Avenue (opened in 2017), and one opening on Panet Road in 2018. These Depots provide residents a one-stop location for recycling materials, divertible materials, and the safe disposal of hazardous household waste including paints, oil, and electronics. With the continued implementation of the Comprehensive Integrated Waste Management Strategy (CIWMS), Winnipeg's residential waste diversion rate continues to increase.

In this AMP, the Solid Waste Utility is comprised of two main asset types: collection and disposal, and recycling and waste Diversion. In addition to these assets, data on fleet vehicles is also reported.

Specific assets within the main asset types include the following:

- Collection and Disposal: BRRMF and ancillary structures; garbage and recycling carts
- Recycling and Waste Diversion: 4R Winnipeg Depots; recycling depots

3.7.2 Asset Metrics Summary

Solid Waste Utility – All Assets

The overall condition, value, and age relating to all assets that are required to deliver Solid Waste Utility services is depicted below.

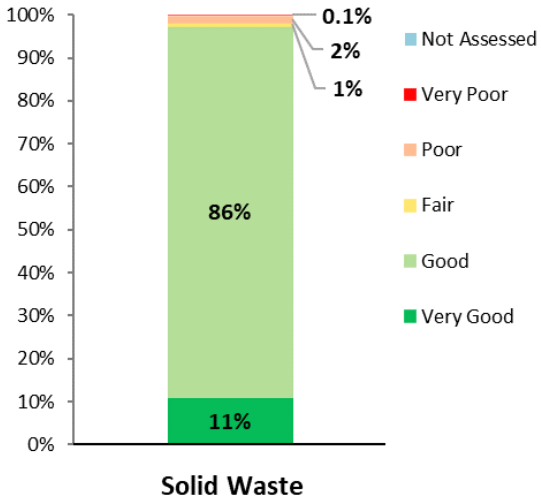


Figure 3.7-1. Solid Waste Utility – Condition

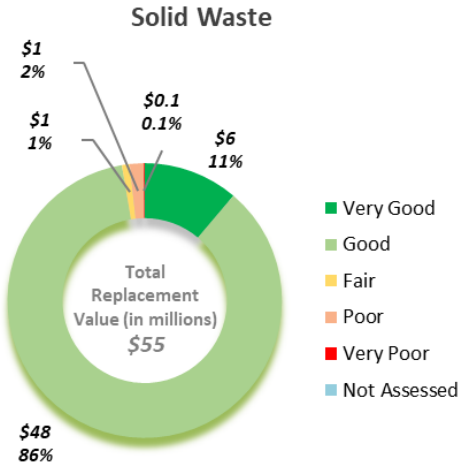


Figure 3.7-2. Solid Waste Utility – Condition and Value

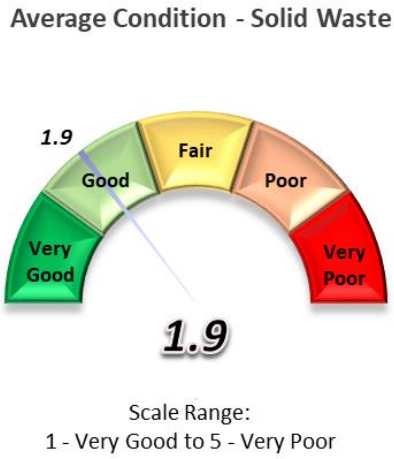


Figure 3.7-3. Solid Waste Utility – Average Condition

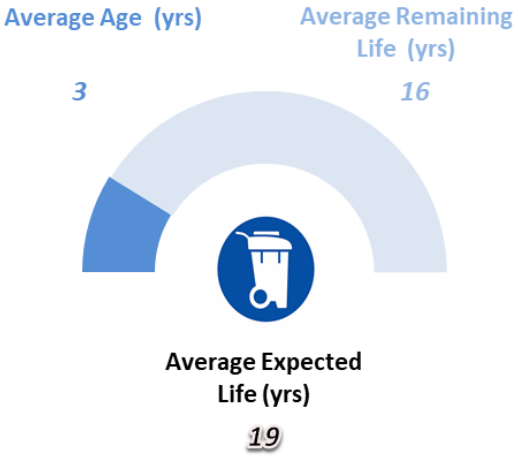


Figure 3.7-4. Solid Waste Utility – Age Profile

The overall condition of the Solid Waste Utility assets is *Good* to *Very Good*. Ongoing capital funding ensures that active and closed landfills are maintained in regulatory compliance. A significant portion of the recycling and waste diversion assets are in new or nearly-new condition. The implementation of a cart asset management system for garbage and recycling carts will allow improved condition reporting of that asset class. Replacement value cannot be determined for closed landfills and was not included in Figure 3.7-2, as development of a closed landfill is difficult due to factors such as buoyancy, leachate, settlement, and slumping, as well as landfill gas. Furthermore, the active and closed landfills are not included in Figure 3.7-4, since expected/remaining life data is not relevant to these assets as the City is responsible for landfill sites in perpetuity.

3.7.3 Asset Condition, Value, and Inventory

Solid Waste Utility - Collection and Disposal

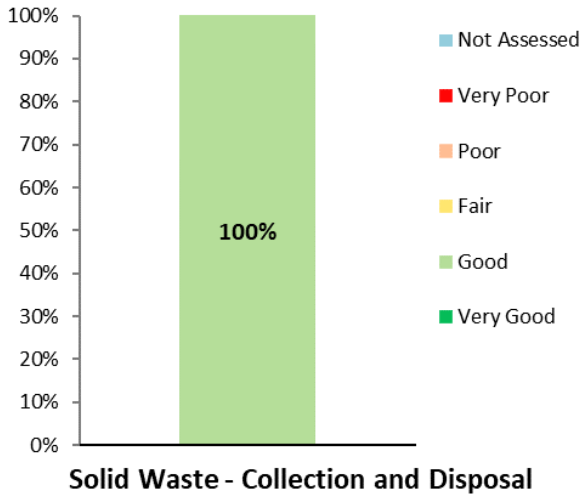


Figure 3.7-5. Collection and Disposal – Condition



Figure 3.7-6. Collection and Disposal – Average Condition



Figure 3.7-7. Collection and Disposal – Condition and Value

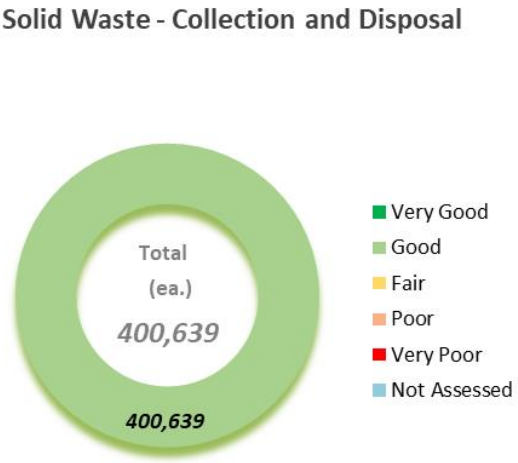


Figure 3.7-8. Collection and Disposal – Condition and Inventory

Overall, the condition of the Solid Waste Utility Collection and Disposal assets is *Good*. Reporting condition of the BRRMF asset as a whole is difficult, as 14 individual asset types are included in this sub-type. Given the nature of the asset, land value has been included in the BRRMF replacement cost.

The condition of garbage and recycling carts is currently being reported based on age. However, following the full implementation of the cart asset management inventory system, improved condition data will be available.

Solid Waste Utility - Recycling and Waste Diversion

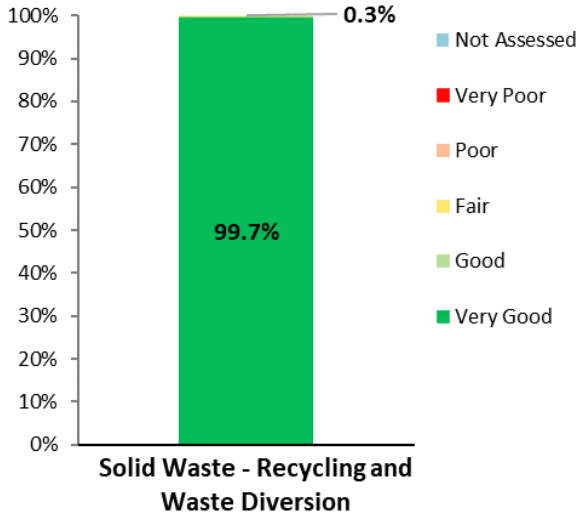


Figure 3.7-9. Recycling and Waste Diversion – Condition

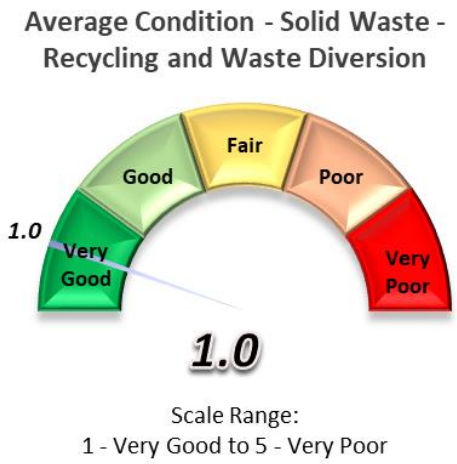


Figure 3.7-10. Recycling and Waste Diversion – Average Condition

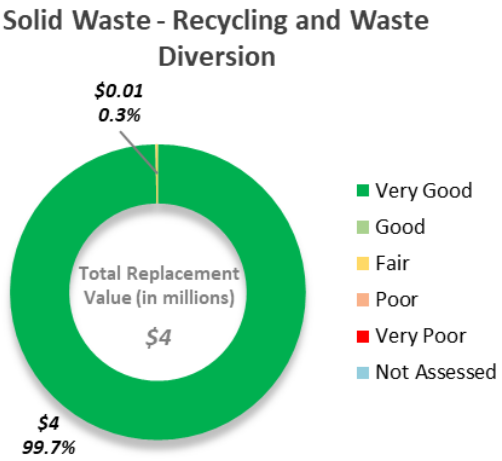


Figure 3.7-11. Recycling and Waste Diversion – Condition and Value



Figure 3.7-12. Recycling and Waste Diversion – Condition and Inventory

The overall condition of the recycling and waste diversion assets is *Very Good*. The City's first 4R Winnipeg Depot opened in 2016 at the BRRMF. The majority of the other recycling depots are also in *Very Good* condition.

Solid Waste Utility - Fleet

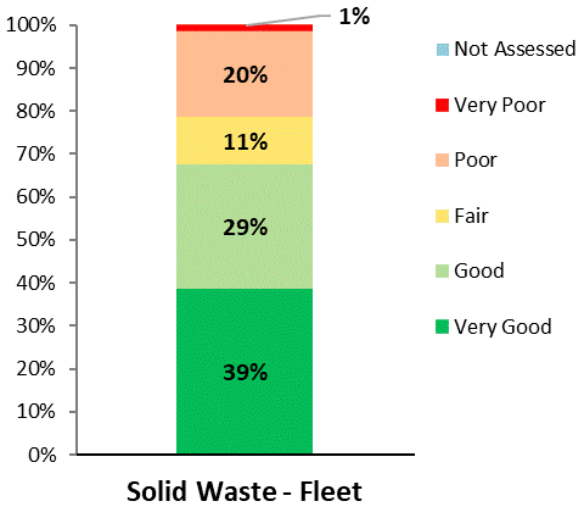


Figure 3.7-13. Fleet – Condition

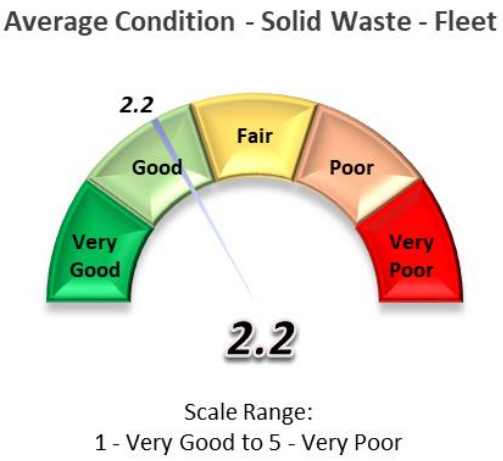


Figure 3.7-14. Fleet – Average Condition

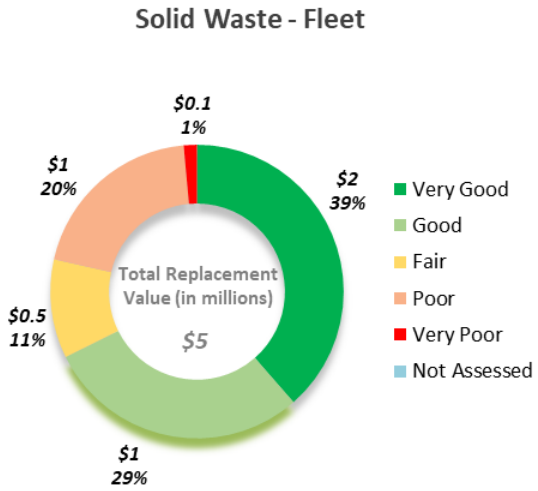


Figure 3.7-15. Fleet – Condition and Value

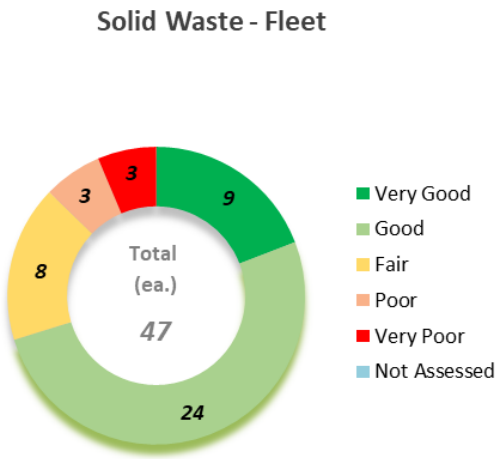


Figure 3.7-16. Fleet – Condition and Inventory

The Solid Waste Utility's inventory of 47 fleet vehicles, managed through the Fleet Management Agency, includes light duty, super and heavy duty, special equipment, and construction equipment. The total replacement value of these assets is $4.5 million.

3.7.4 Age Profile

Solid Waste Utility - Collection and Disposal

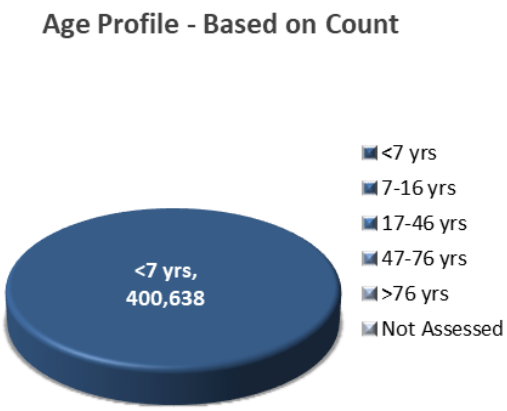


Figure 3.7-17. Collection and Disposal – Age Profile Based on Count

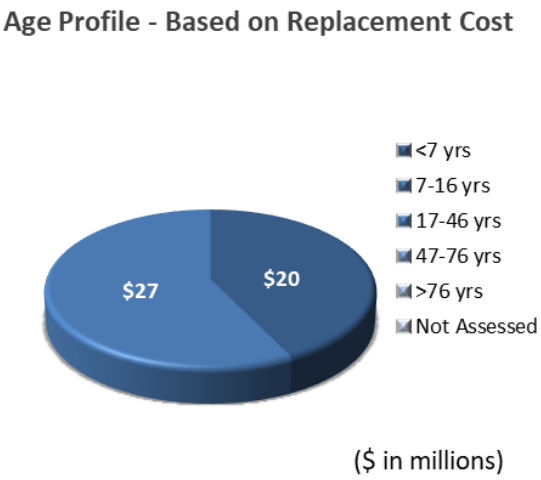


Figure 3.7-18. Collection and Disposal – Age Profile Based on Replacement Cost

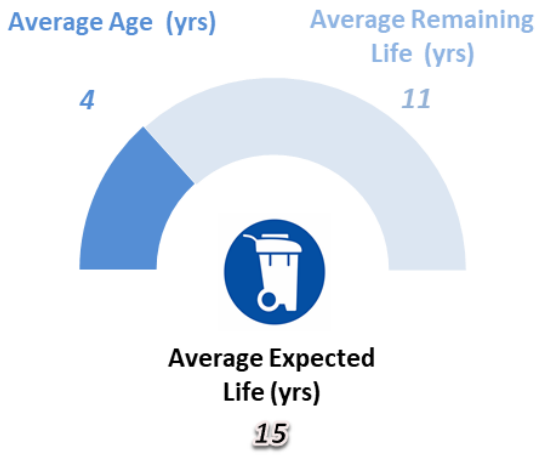


Figure 3.7-19. Collection and Disposal – Average Age and Remaining Life

The individual age of assets within the sub-type varies significantly, and providing age and remaining life information across the sub-type is not meaningful. Based on this, age information for BRRMF is not included in Figure 3.7-17; it is, however, included in the replacement costs shown in Figure 3.7-18, using the age of the landfill opening.

Average remaining life, Figure 3.7-19, is reported for garbage and recycling carts only. Implementation of garbage and recycling carts began in 2012 and they have an expected life of 15 years.

Solid Waste Utility - Recycling and Waste Diversion

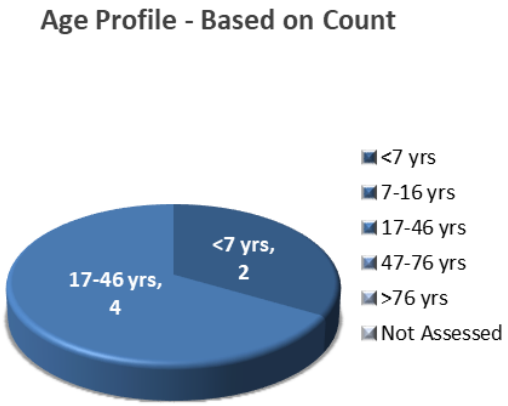


Figure 3.7-20. Recycling and Waste Diversion – Age Profile Based on Count

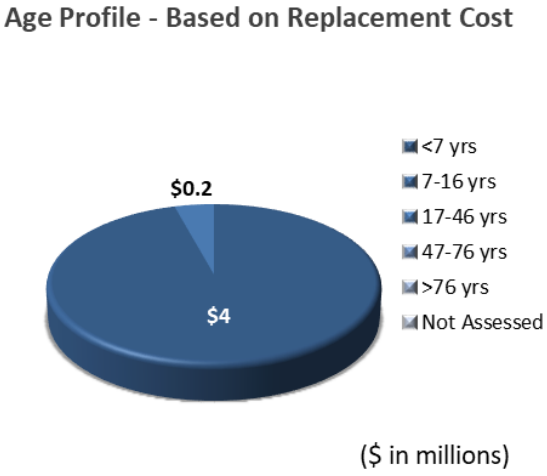


Figure 3.7-21. Recycling and Waste Diversion – Age Profile Based on Replacement Cost

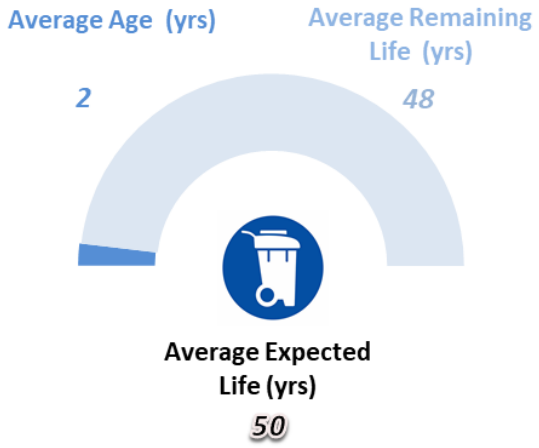


Figure 3.7-22. Recycling and Waste Diversion – Average Age and Remaining Life

The age distribution of the recycling and waste diversion assets varies from 1 year, for the 4R Winnipeg Depot located at the BRRMF, to 18 to 21 years for the five smaller recycling depots. The replacement value of the 4R Depot is significantly greater than the combined replacement value of the recycling depots. Since average age is weighted on replacement value, the average age across the asset type is 2 years.

Solid Waste Utility - Fleet

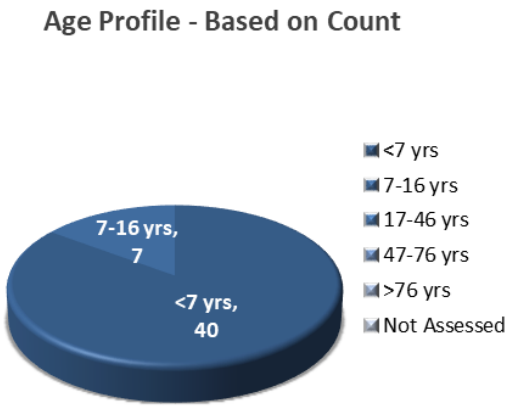


Figure 3.7-23. Fleet – Age Profile Based on Count

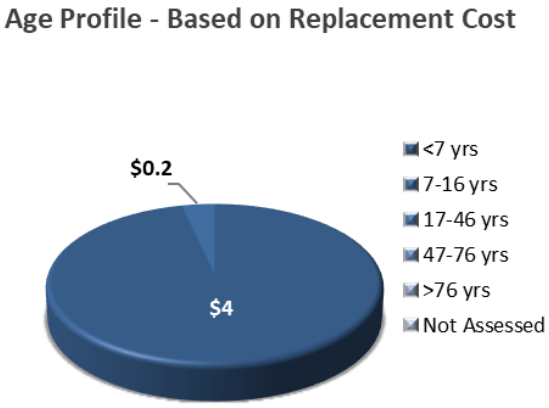


Figure 3.7-24. Fleet – Age Profile Based on Replacement Cost

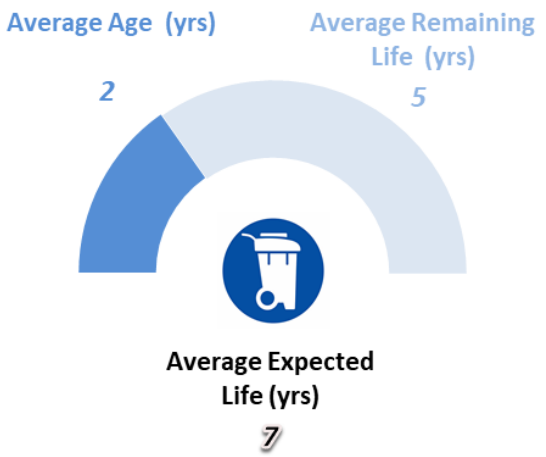


Figure 3.7-25. Fleet – Average Age and Remaining Life

3.7.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Solid Waste Utility infrastructure element, by asset type, is shown in Figure 3.7-26.

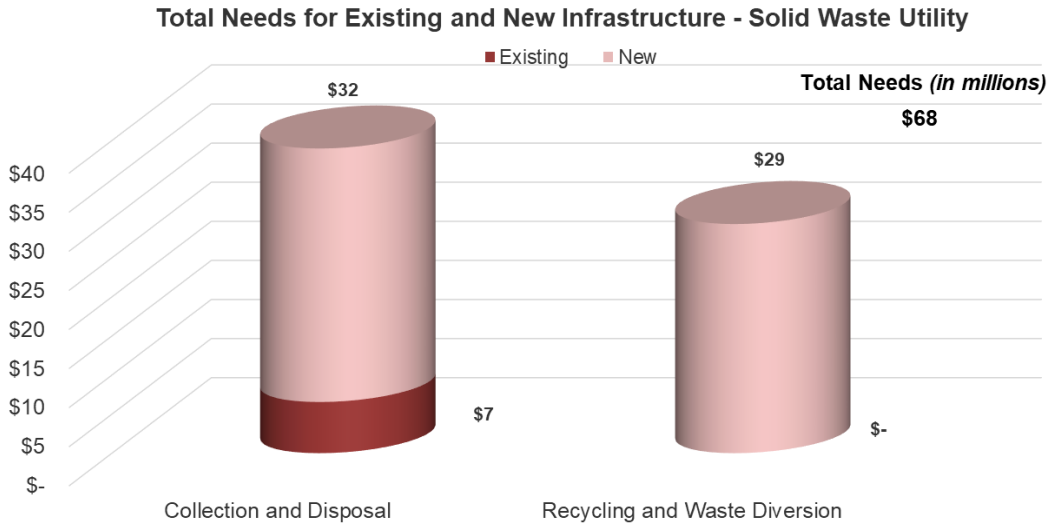


Figure 3.7-26. Solid Waste Utility – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Solid Waste Utility infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.7-27.

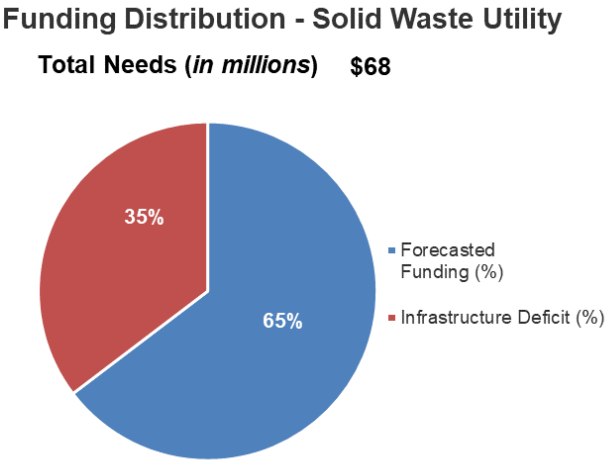


Figure 3.7-27. Funding Distribution - Solid Waste Utility

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years	-	10 Year Capital Plan	=	Infrastructure Deficit

A breakdown of the capital funding deficit for the Solid Waste Utility infrastructure element, by asset type, is shown in Figures 3.7-28 and 3.7-29.

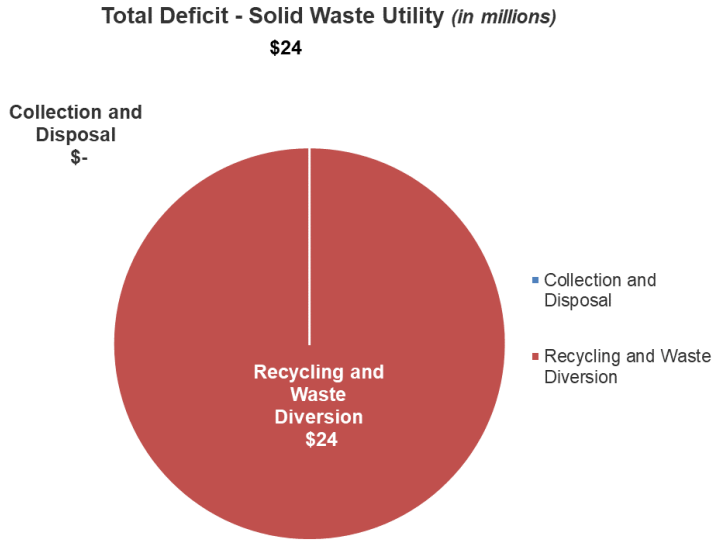


Figure 3.7-28. Total Deficit – Solid Waste Utility
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

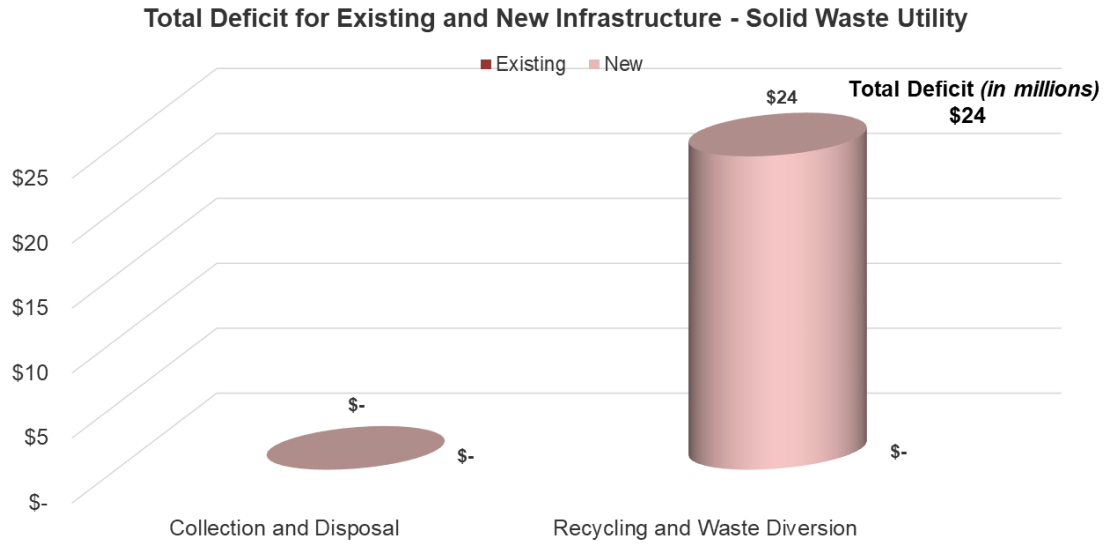


Figure 3.7-29. Solid Waste Utility – Total Deficit for Existing and New Infrastructure
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

The Solid Waste Utility capital funding needs are almost equally divided between collection and disposal, and recycling and waste diversion. Funding for existing infrastructure ensures the continued

compliance with regulatory requirements at BRRMF and the closed landfills. New infrastructure needs include the construction of new landfill cells, along with the expansion of the gas capture system and soil fabrication for closing cells. Recycling and waste diversion funding needs are related to the expansion of the 4R Winnipeg Depots network.

The current deficit being reported for recycling and waste diversion relates to the implementation of an alternative energy project that would convert landfill gas, that is currently flared, into electricity. The electricity generated would offset the Water and Waste Department's utility payments to Manitoba Hydro. Any work to be undertaken will be determined based on the feasibility study being undertaken in conjunction with Manitoba Hydro. This project would only proceed with a positive business case and Council approval.

3.7.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.7-1. Solid Waste Utility – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Solid Waste	Collection and Disposal	Closed Landfills	N/A

The City currently has 33 closed landfills that range in condition from *Fair* to *Good* and range in age from 17-76 years old. It is difficult to assign replacement values to closed landfills as the City is not permitted to transfer the land while it is listed as a closed landfill. Development of a closed landfill is difficult due to factors such as buoyancy, leachate, settlement and slumping, as well as landfill gas. Land may be transferred if the landfill has successfully undergone full remediation. However, benefits of land sale do not outweigh the costs of full remediation. Closed landfills can have significant future costs to maintain environmental protection. The City has ongoing capital funding to ensure closed landfills continue to meet regulatory requirements.

3.8 Municipal Properties

3.8.1 Service Overview and Performance

PLANNING, PROPERTY & DEVELOPMENT

The Property Asset Management Service facilitates the acquisition, development, operation, maintenance, security and disposition of City-owned land and buildings. The service is composed of two sub-services:

1. LAND and PROPERTY: oversees property sales, acquisitions, and appraisals (*riverbanks and cemeteries only noted in this plan).
    - Riverbanks
        - The Waterways Branch is responsible for the administration and enforcement of the City of Winnipeg's Waterways By-law 5888/92, including reviewing Waterway Permit applications for all public and private construction projects within the regulated area. In recent years, 100-150 permits are issued per year for a range of works including residential, commercial, infrastructure and riverbank projects.
    - Cemeteries
        - Provides interment services and perpetually maintained cemeteries.
2. MUNICIPAL ACCOMMODATIONS: This division within the Planning, Property & Development Department manages, leases, operates, maintains, protects, and preserves the City's physical building infrastructure/assets to provide for current and future program accommodation needs and provides design and project management of new and existing civic buildings. This includes the following:
    - Municipal Office Buildings & Facilities
    - Department Offices and Civic Use
    - Cemetery buildings
    - Historic buildings
    - Concourse
    - Leased out buildings
    - Fleet buildings
    - Fleet storage containers
    - Fleet management and fuel sites*
    - Fleet management agency fleet*
    - Golf buildings
    - Golf fleet*
    - Parking authority parking structures*
    - Parking authority surface parking lots*
    - Parking authority on site parking meters*
    - Parking authority fleet*
    - Animal services building
    - Animal services fleet*
    - Other non-building assets
    - Entrance gates
    - Overhead walkways
    - Surface lots
    - Planning, Property & Development fleet*

    Note: (*) These asset types are included in this plan, but are managed by SOAs within the City of Winnipeg.

The Municipal Accommodations Division (MA) is a service provider for various City departments as outlined below on a revenue/expense neutral basis.

The core programs are as follows:

A. Property Management

- Renovations – provides assistance in the development of new buildings, renovations and replacement, and enhancements of major system and program infrastructure that are beyond what would normally be considered maintenance.

- Accommodations Planning – MA assists with planning for future accommodation and rationalization of existing accommodations for the Civic Building portfolio.
- Lease Agreements – MA manages lease agreements as required by internal and external entities.

B. Project Delivery

- Project Delivery – MA provides design, construction, and project management services, associated with new construction, conversion, and renovation projects and programs funded through capital, special levies, government programs, etc. unless otherwise agreed upon. All costs are borne by the project, unless otherwise agreed upon.
- MA maintains plans, fire safety plan records, as-built drawings, O & M Manuals, documentation and other records relevant to the buildings and systems.
- Hazardous material program - Asbestos Management Program, Lead Paint, Radon etc. in accordance with regulations, guidelines and best practices.

C. Building Maintenance

- Maintenance Service – Plans, implements, administers, and budgets the maintenance or upgrades of HVAC, mechanical, structural, locksmithing, envelope, or electrical required to conform to any existing code and legislative requirements to meet customer needs using the MAXIMO work order system and certified tradespeople.
- Maintenance Activities – Legislated inspections, preventative maintenance, reactive maintenance, troubleshooting, inspections, major repairs, major building system replacement and upgrading in order to provide for uninterrupted, safe and trouble-free service to the building portfolio.
- Program, Project and Contract Management – Implements, manages and controls contracts for service, major maintenance, and building maintenance required to deliver service as required.
- Installation, Maintenance, Troubleshooting, and Upgrading of SMART Building Systems – Building security, electronic alarm, card access, CCTV, Building Life Safety System monitoring, building automation system monitoring, fire life safety emergency response systems, and air quality monitoring and management to enable centralized monitoring.

D. Building Operations

- Customer Service – Event and room setup, line of sight contact with staff and program provider in buildings, and service request management required to maintain a safe, healthy and secure environment for programming.
- Frontline maintenance – Minor repairs and troubleshooting of building-related complaints, and regulatory testing of heating and cooling plants.
- Building Monitoring – Twenty-four hour monitoring and response to METASYS monitored facilities (SMART Buildings) as well as provision of security services including on-site, mobile or as-required security officers.
- Custodial Service – Maintain standards specific to the building type and use of space.
- Arena Operations – Plant start-up and shutdown, seasonal installation and removal of ice surface, as well as daily maintenance.
- Aquatic Operations – Chlorination, chemistry testing and remediation, chlorinator maintenance, initial filling of pools and chemical balancing.

- Site Maintenance – Parking lot and sidewalk maintenance, snow clearing on sidewalks and in parking lots, minor landscaping, and maintenance of exterior light associated with the building.

E. Utility and Energy Management

- Make efficient use of utilities, provide information on efficient energy use (and take remedial action if necessary), and manage payment of utilities (power, natural gas, and water).

F. Asset Management

- MA acts as the building advocate providing asset management, identifying need and remedial strategies required in order to preserve the City's buildings for current and future needs of the citizens of Winnipeg. MA manages approved capital funds, in consultation with customers, to accomplish these goals.
- MA updates and keeps current the inventory information included in each building group.
- MA maintains an asset management program utilizing VFA facility software to monitor the condition and to support strategic and tactical decisions relative to prioritize current and capital budget expenditures in accordance with policy.

SPECIAL OPERATING AGENCIES

Special Operating Agencies (SOAs), namely, Winnipeg Fleet Management Agency, Winnipeg Parking Authority, Animal Services, and Golf Services, provide a variety of services to support internal Departmental service delivery as well as providing services directly to the public.

Winnipeg Fleet Management Agency

The Winnipeg Fleet Management Agency is a SOA dedicated to fleet service delivery and the management of approximately 2,200 vehicle and equipment units for City departments.

Animal Services Agency

The Animal Services Agency provides animal control measures under the City of Winnipeg Charter and related by-laws. This service also includes public education and the promotion of responsible pet ownership and care for cats and dogs, as well as the adoption of unclaimed animals.

Winnipeg Parking Authority

The Winnipeg Parking Authority's mandate is to provide superior parking and associated services to the citizens of Winnipeg in pursuit of the public good and to encourage others to do the same. The Winnipeg Parking Authority is responsible for the on-street pay station system, off-street city parking lots and garages, and parking enforcement City-wide.

Golf Services

Golf Services manage a variety of golf courses and provide these services directly to the public.

3.8.2 Asset Metrics Summary

Municipal Properties – All Assets

The overall condition, value, and age relating to all assets that are required to deliver the Municipal Properties services is depicted below.

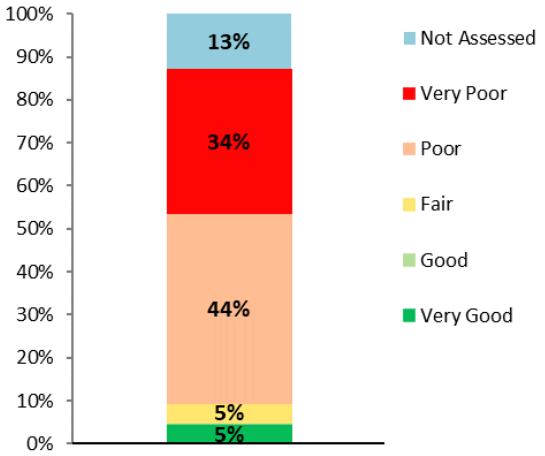


Figure 3.8-1. Municipal Properties - Condition

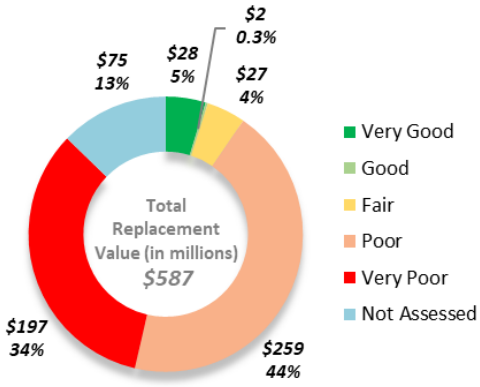


Figure 3.8-2. Municipal Properties– Condition and Value



Figure 3.8-3. Municipal Properties – Average Condition

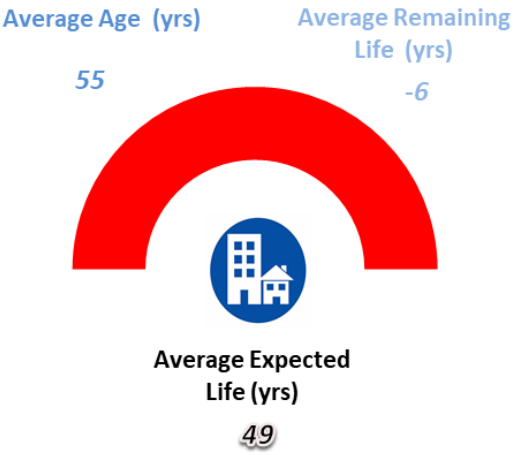


Figure 3.8-4. Municipal Properties - Age Profile

The assets included in this plan are estimated at a replacement value of $587 million and are, on average, past their useful life. This places a majority of the facilities in *Poor* to *Very Poor* condition when building age, condition, and replacement value are considered.

3.8.3 Asset Condition, Value, and Inventory

Municipal Properties - Municipal Office Buildings and Facilities

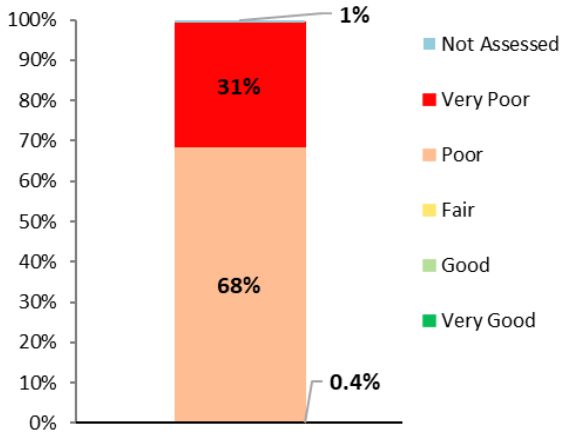


Figure 3.8-5. Municipal Office Buildings and Facilities - Condition



Figure 3.8-6. Municipal Office Buildings and Facilities – Average Condition

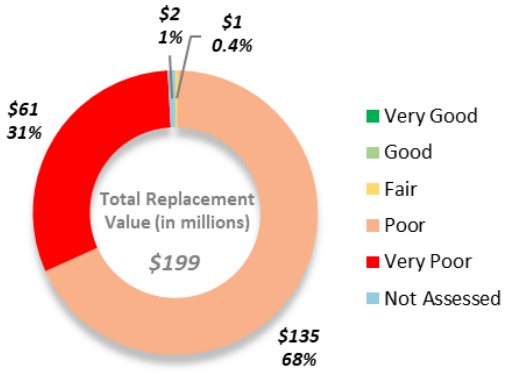


Figure 3.8-7. Municipal Office Buildings and Facilities – Condition and Value

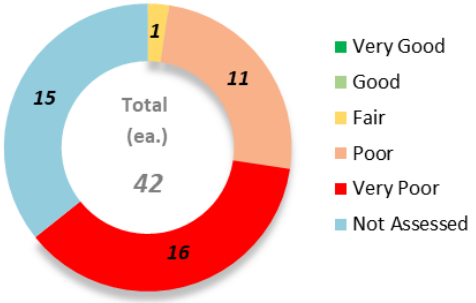


Figure 3.8-8. Municipal Office Buildings and Facilities – Condition and Inventory

The 42 building assets included in this section of the plan are estimated at a total replacement value of $199 million and are, on average, in *Poor* condition. The charts above indicate an overall average condition index of 4.3, being in the low end of the *Poor* range.

Municipal Properties - Leased Out Buildings

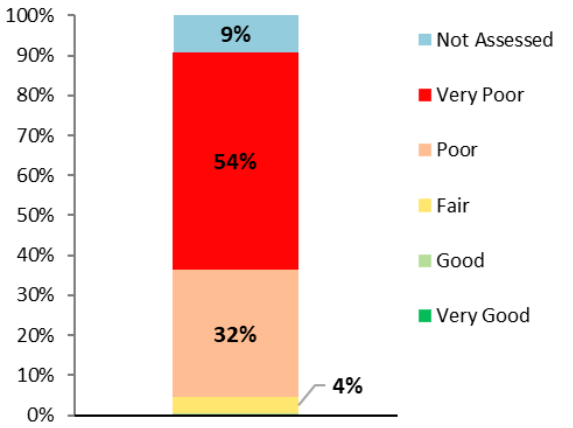


Figure 3.8-9. Leased Out Buildings - Condition



Figure 3.8-10. Leased Out Buildings – Average Condition

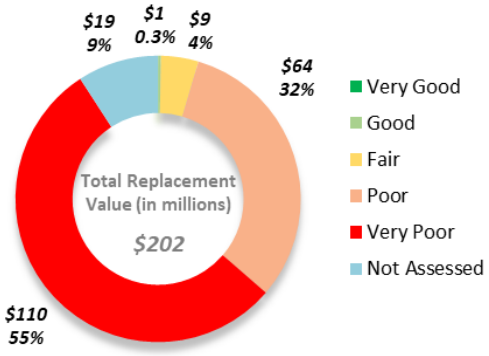


Figure 3.8-11. Leased Out Buildings – Condition and Value

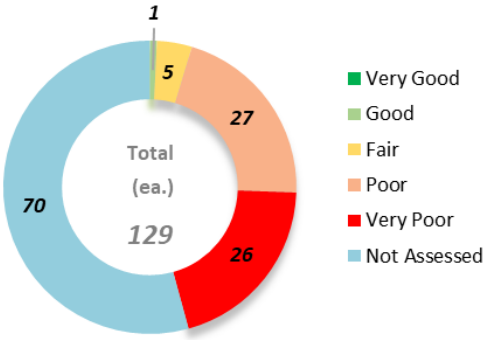


Figure 3.8-12. Leased Out Buildings – Condition and Inventory

The 129 building assets included in this section of the plan are estimated at a total replacement value of $202 million. Approximately 90% of the 129 buildings have had a building condition assessment. Of these, 26 buildings, or approximately 54% of this portion of the portfolio have a building condition rating of *Very Poor*.

Municipal Properties - SOA Assets, Facilities, and Fleet Vehicles

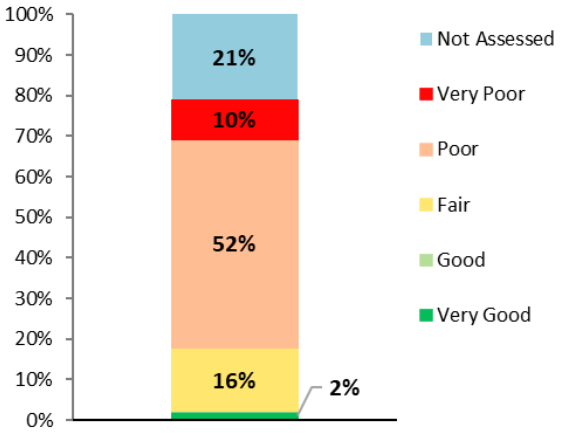


Figure 3.8-13. SOA Assets, Facilities, and Fleet Vehicles – Condition



Figure 3.8-14. SOA Assets, Facilities, and Fleet Vehicles – Average Condition

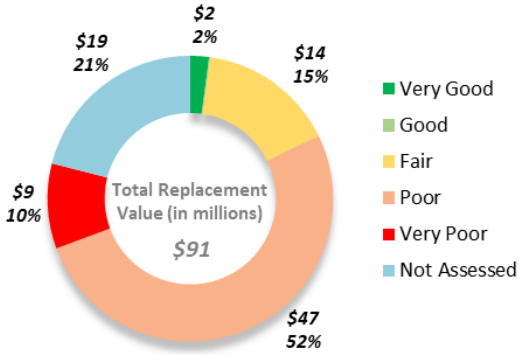


Figure 3.8-15. SOA Assets, Facilities, and Fleet Vehicles – Condition and Value

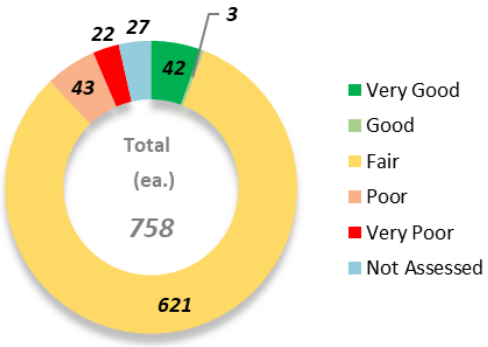


Figure 3.8-16. SOA Assets, Facilities, and Fleet Vehicles – Condition and Inventory

Animal Services, Golf Services, Fleet Management Agency, and Winnipeg Parking Authority assets attained an overall *Poor* rating of 3.8. Approximately 10% of the assets are rated as *Very Poor* and 52% as *Poor* condition.

Municipal Properties - Other Non-Building Assets

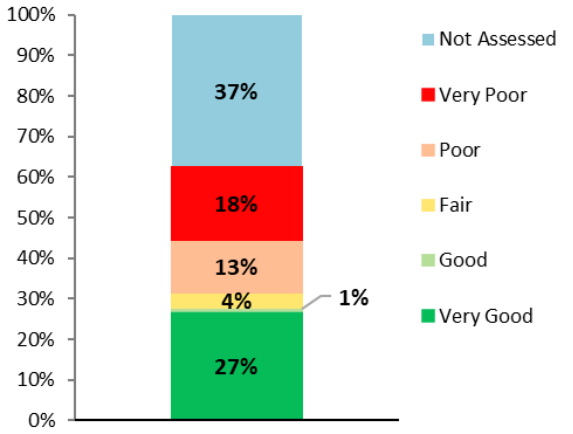


Figure 3.8-17. Other Non-Building Assets - Condition



Figure 3.8-18. Other Non-Building Assets – Average Condition

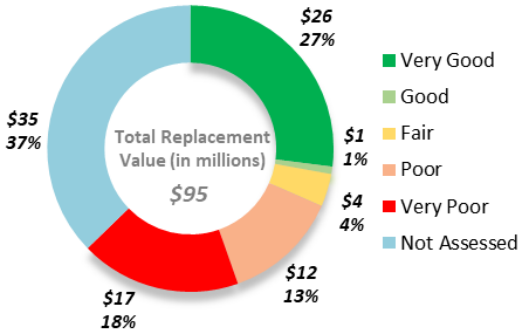


Figure 3.8-19. Other Non-Building Assets – Condition and Value

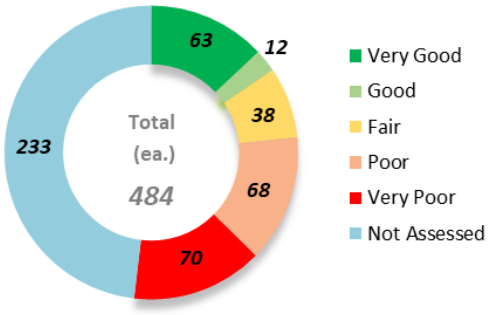


Figure 3.8-20. Other Non-Building Assets – Condition and Inventory

Non-building assets include entrance gates, overhead walkways, surface lots, and Planning, Property & Development fleet vehicles. The average condition is in the *Fair* range.

Note: Riverbanks are not included in other non-building assets shown above, as it relates to replacement value and the methodology to assess condition, however, they are included in this asset type category for the purposes of the deficit calculations. Further information on Riverbank inventory and condition assessments are noted below.

Riverbank Inventory

As a way to more effectively evaluate risk, and manage and prioritize riverbank improvement projects, the branch has developed and populated an inventory of City-owned riverbanks, including 219 sites along the Red and Assiniboine rivers using a spreadsheet-based Riverbank Asset Management System (RAMS). Each site has been evaluated according to over 30 parameters to determine the probability, extent, rate, and consequence of future bank degradation.

The branch also undertakes riverbank protection projects through the Riverbank Stabilization-Physical Asset Protection fund, using RAMS to assist in determining priorities. Approximately 1,500 m of riverbank in City parks have received erosion protection and/or stabilization since 2012 through this program. The City has proactively been involved in research, testing and implementation of new or improved techniques and technologies related to riverbank monitoring, erosion protection, stabilization, and restoration. Waterways staff also provides public awareness, education, information and interdepartmental subject matter expertise on geotechnical and riverbank matters.

Riverbank Condition

The estimated capital plan with a 6-year total of $31 million and 10-year total of $54 million is considered to be generally adequate to stabilize the approximately 6.2 km of riverbank identified as being in *Very Poor* condition, based on RAMS assessments and using a Class 5 estimate. This only considers public riverbank lands on the Red and Assiniboine rivers. Sites ranked as *Very Poor* and *Poor* are considered to be good candidates for riverbank stabilization.

Table 3.8-1. Riverbank Condition Ratings

Condition Rating	# of Sites	Estimated Cost to Remediate	Approximate Length (km)
Very Good	7	--	1.0
Good	28	--	3.3
Fair	70	--	13.1
Poor	88	$145,000,000	22.6
Very Poor	26	$54,000,000	6.3
TBD (includes Seine, La Salle, Bunn's Omand's, Sturgeon, and Truro)	--	--	108

3.8.4 Age Profile

Municipal Properties - Municipal Office Buildings and Facilities

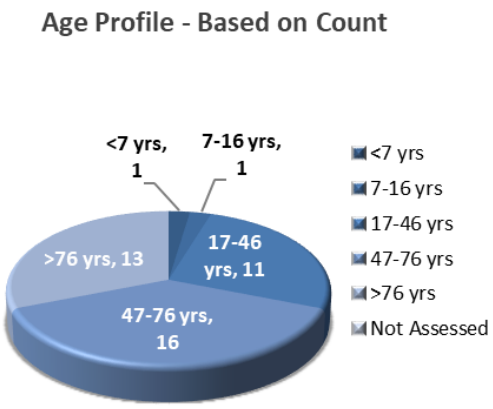


Figure 3.8-21. Municipal Office Buildings and Facilities – Age Profile Based on Count

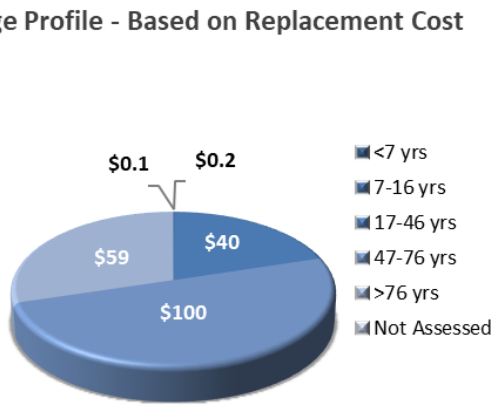


Figure 3.8-22. Municipal Office Buildings and Facilities – Age Profile Based on Count

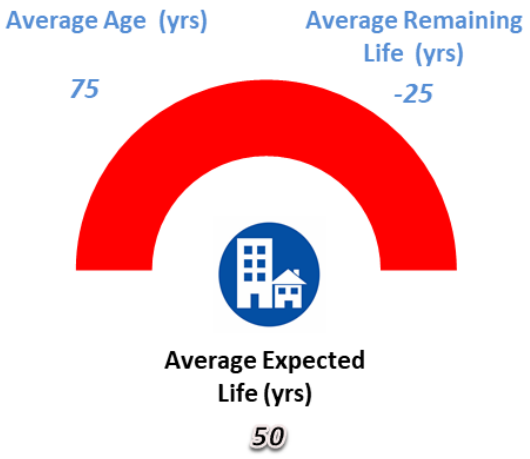


Figure 3.8-23. Municipal Office Buildings and Facilities – Average Age and Remaining Life

The 42 buildings included in this section of the plan are, on average, 75 years old and past their life expectancy.

Municipal Properties - Leased Out Buildings

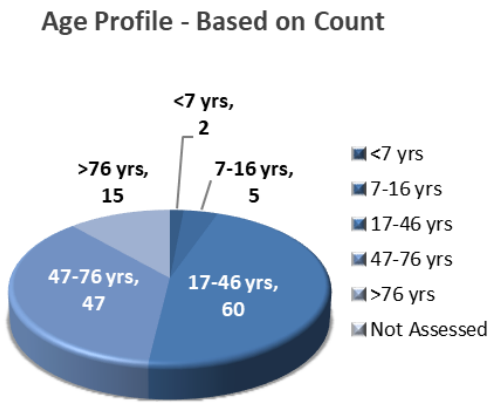


Figure 3.8-24. Leased Out Buildings – Age Profile Based on Count

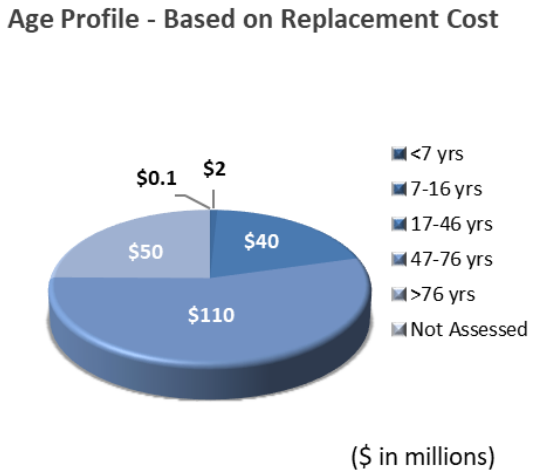


Figure 3.8-25. Leased Out Buildings – Age Profile Based on Replacement Cost

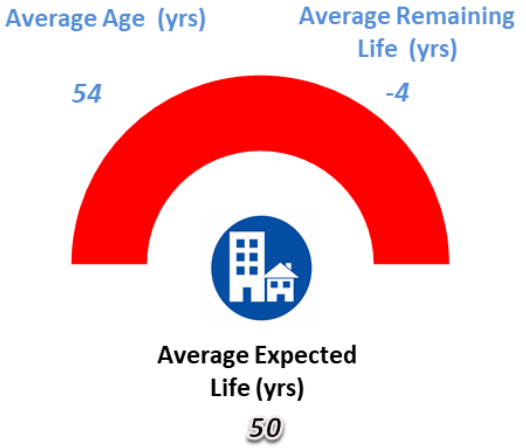


Figure 3.8-26. Leased Out Buildings – Average Age and Remaining Life

The 129 buildings included in this section of the plan are, on average, 75 years old and past their useful life expectancy.

Municipal Properties - SOA Assets, Facilities, and Fleet Vehicles

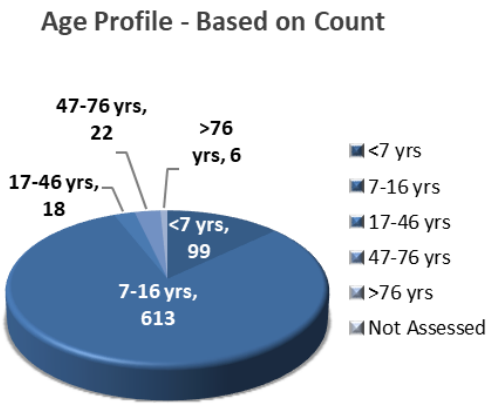


Figure 3.8-27. SOA Assets, Facilities, and Fleet Vehicles – Age Profile Based on Count

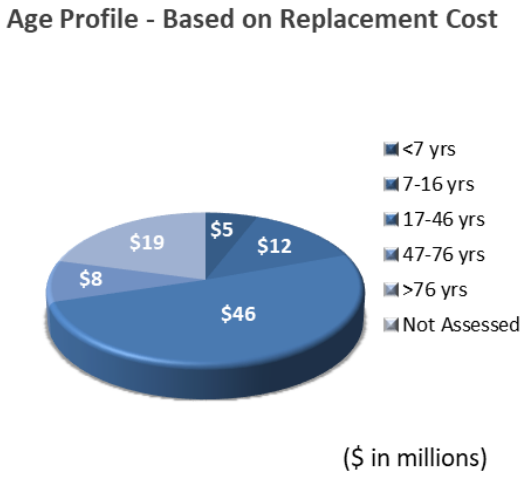


Figure 3.8-28. SOA Assets, Facilities, and Fleet Vehicles – Age Profile Based on Replacement Cost

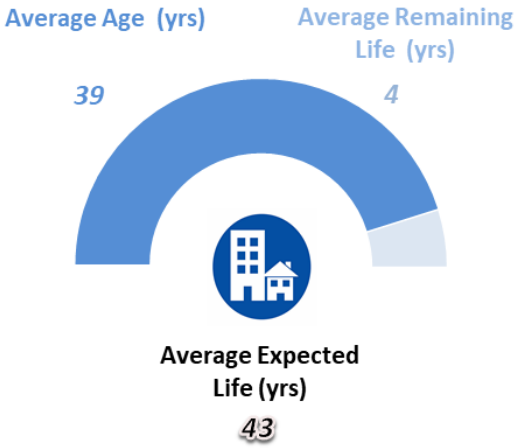


Figure 3.8-29. SOA Assets, Facilities, and Fleet Vehicles – Average Age and Remaining Life

The assets included in this area of the portfolio are a variety of asset types. This includes parking meters and fleet vehicles, which have a lower life expectancy than building assets. This results in an average overall life expectancy of 39 years as compared to other sections of the portfolio.

Animal Services, Golf Services, Fleet Management Agency, and Winnipeg Parking Authority facilities include both owned and leased facilities and are significantly newer facilities with 93% being constructed after 2000.

Municipal Properties - Other Non-Building Assets

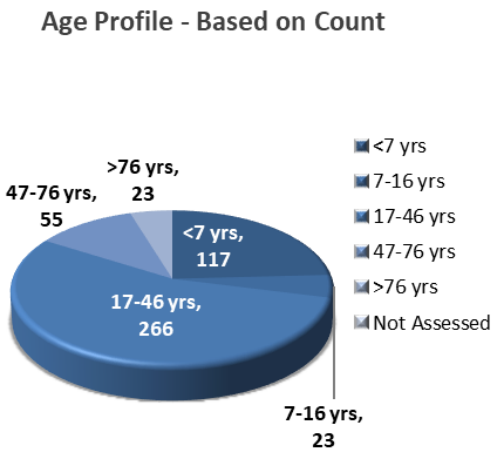


Figure 3.8-30. Other Non-Building Assets – Age Profile Based on Count

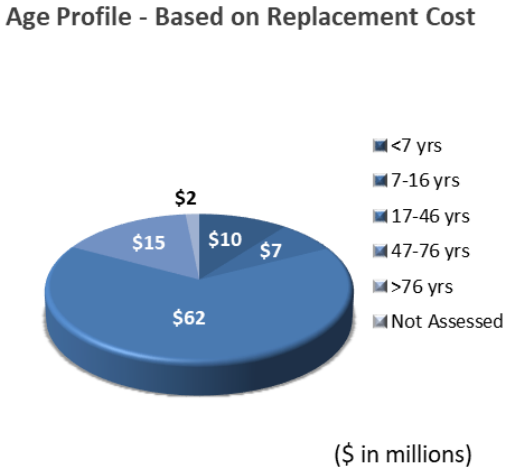


Figure 3.8-31. Other Non-Building Assets – Age Profile Based on Replacement Cost

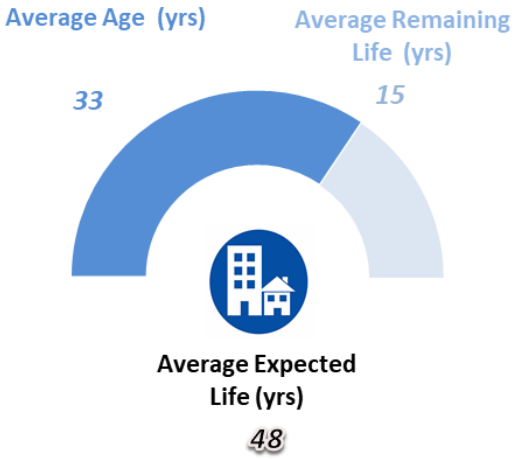


Figure 3.8-32. Other Non-Building Assets – Average Age and Remaining Life

3.8.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Municipal Accommodations infrastructure element, by asset type, is shown in Figure 3.8-33.

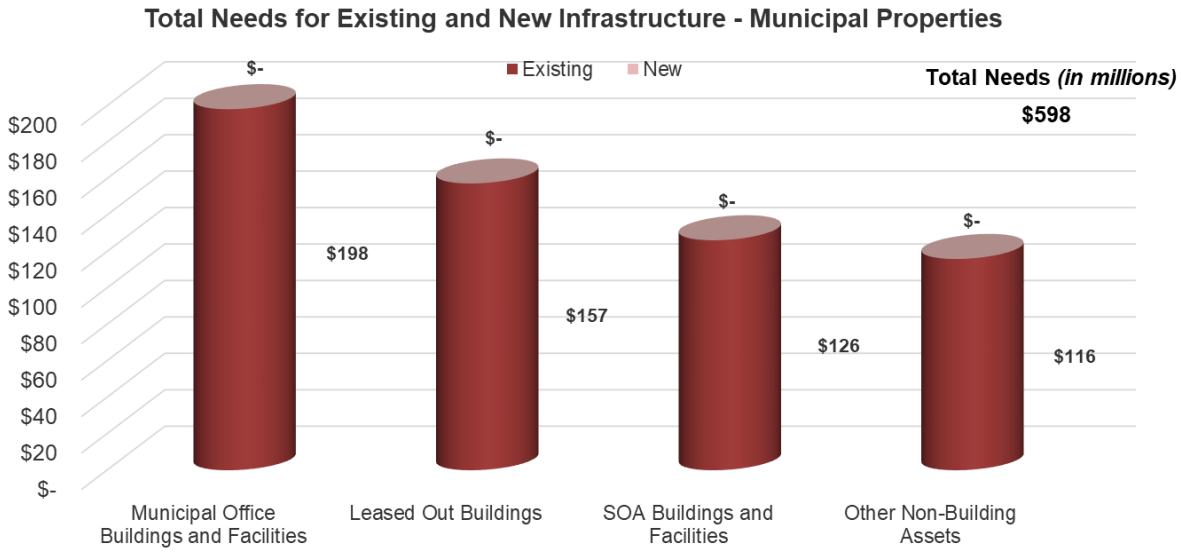


Figure 3.8-33. Municipal Properties – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Municipal Accommodations infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.8-30.

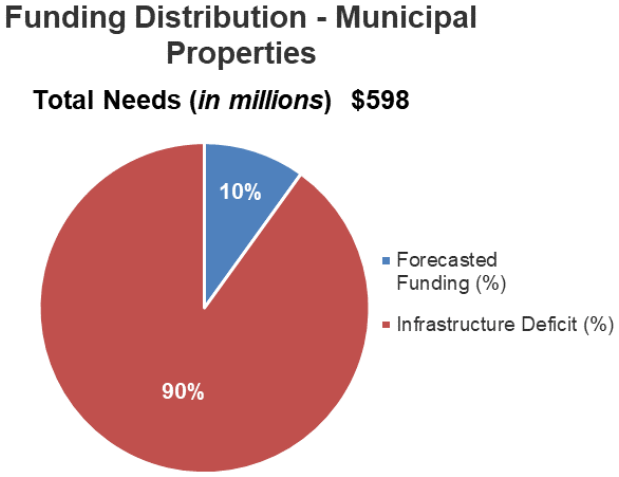


Figure 3.8-34. Funding Distribution - Municipal Properties

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years	-	10 Year Capital Plan	=	Infrastructure Deficit

A breakdown of the capital funding deficit for the Municipal Accommodations infrastructure element, by asset type, is shown in Figures 3.8-35 and 3.8-36.

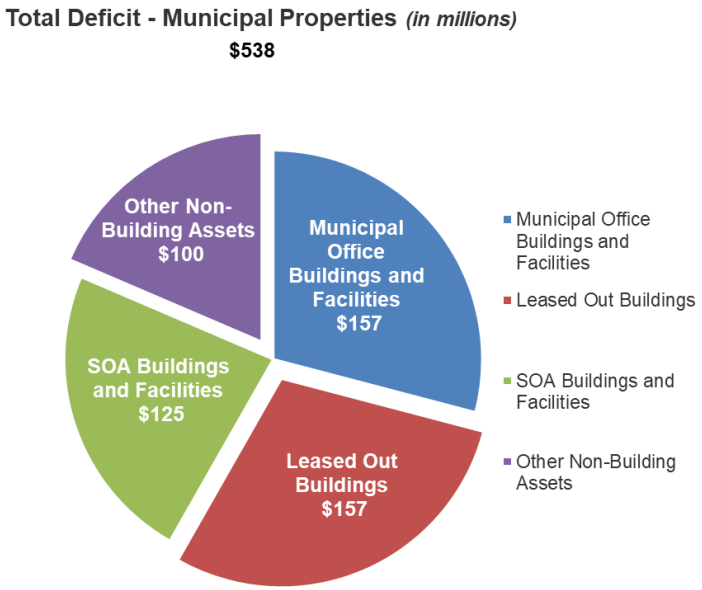


Figure 3.8-35. Total Deficit – Municipal Properties
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

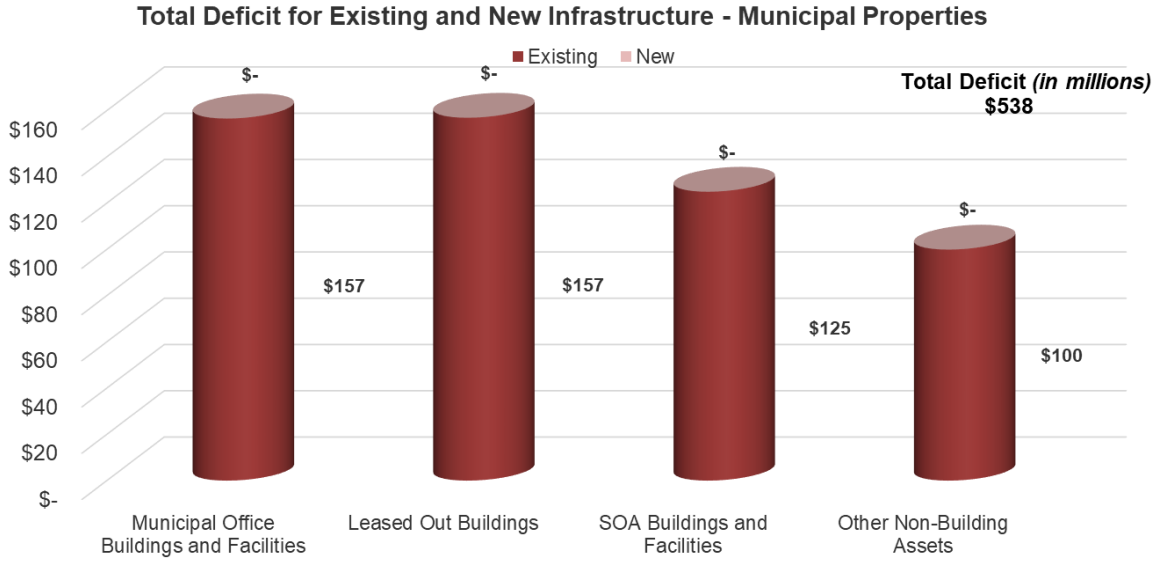


Figure 3.8-36. Municipal Properties – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

The total unfunded capital (deficit) for existing and new infrastructure for municipal office buildings and facilities ($155 million), leased out buildings ($157 million), SOA assets, facilities, and fleet vehicles ($125 million), and other non-building assets ($100 million) totals $537 million.

Deficit amounts currently being assessed, which are not captured in the deficit calculations, include deficits related to capital requirements at City-owned surface lots and related to SOA's capital requirements, outside of amounts associated with SOA buildings managed by Planning, Property & Development. Additionally, the deficit associated with riverbank stabilization (in the other non-building asset type), focuses on the deficit required to address riverbank assets in *Very Poor* condition. An additional $155 million that is not currently captured in the deficit would be required to address the sites identified as being in *Poor* condition. Future iterations of this plan may include a deficit related to these asset types.

Similar to the vast majority of North American infrastructure, this deficit represents a contingent liability with associated risks. Such risks are mitigated by systematic risk assessment and capital rationing of available capital funds to those assets such that our infrastructure remains effective and efficient for civic service delivery.

3.8.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.8-2. Municipal Properties – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Municipal Properties	Land	N/A	To be determined
Municipal Properties	Vacant Buildings	N/A	To be determined
Municipal Properties	Leased Buildings	N/A	To be determined

Not included in this AMP is the City's Employment and Commercial Lands Study. This study, which is being led by Watson & Associates Economists Ltd., will serve as a background report that will eventually inform the review of employment and commercial-related policies within the *OurWinnipeg* policy review.

This study is intended to advise the City of its employment and commercial land requirements over the next 20 years. It will advise how the City should best manage its existing and designated lands, recommendations as to how their management can best contribute to the achievement of City goals, and other planning policy considerations. It will also assess the impacts of recent economic trends on the medium to long-term employment outlook by sector for the City and surrounding region.

Additionally, vacant buildings owned by the City, and buildings that the City leases for its own purposes (and whereby there may be capital requirements in some cases) are not included in the AMP, but may be included in future iterations of the AMP.

3.9 Community Services

3.9.1 Service Overview and Performance

RECREATION

Description:

Provide high quality aquatics, recreation and leisure opportunities and programs in order to enhance life skills, community leadership development, and overall quality of life for citizens in our neighbourhoods.

Key Goals:

1. Continuously improve services to be more responsive to the recreational, cultural, and leisure needs of citizens.
2. Provide leadership and support the work of other service providers to build the foundation for quality of life and to promote a safe and healthy community.
3. Provide recreation services by collaborating and leveraging resources through partnerships.
4. Provide citizens with equitable opportunities to participate in recreation programs and services.
5. Provide meaningful and relevant recreational opportunities in order to increase the participation of Indigenous youth in City of Winnipeg services.
6. Provide community development and recreation opportunities for vulnerable youth as an integral component of crime prevention efforts.
7. Provide safe and healthy environments in the delivery of programs conducive to an enjoyable experience and personal well-being.

Service Level Statistics:

Service Level Statistics

Description	2014	2015	2016
% of Prime Time Ice Sold in the Regular Season	87%	84% [A]	81%
Number of Recreation and Leisure Paid Courses	3,212	3,255	3,303
Number of Paid Aquatics Courses	7,677	8,386 [B]	8,320
Number of Hours of Recreation and Leisure Paid Courses [C]	n/a	n/a	26,342
Participation Visits to Recreation, Leisure & Free Swim Programming [D]	n/a	n/a	196,287 Visits 18,632 Hours
Number of Hours of Wading Pool Free Programming	26,174	26,846	22,422
Number of Hours of Spray Pad Free Programming	13,893	16,720	18,446 [E]
Facility Pass Subsidies Issued [F]	n/a Subsidies $52,365 Value	n/a Subsidies $49,433 Value	2,416 Subsidies $709,554 Value
Registered Course Subsidies Issued	n/a Subsidies $55,726 Value	n/a Subsidies $50,815 Value	1,041 Subsidies $80,681 Value
Total Value of Discount Admissions and Free Swims [G]	$617,643	$727,522	$772,333
Number of Public Swim Visits to Outdoor Pools	99,100	101,706	128,087

[A] Correction to exclude operational closures for December 2015 holidays.

[B] Reopening of Elmwood Kildonan Pool in 2015 and addition of fall interim lessons.

[C] Excludes Aquatics and Leadership Development.

[D] Total Free Public Skate & Free Youth, Children and Adult Drop-In Visits as well as Free Swim.

[E] Reflects opening of Machray Park and Park City West Spray Pads and re-opening of Kinsmen Transcona Spray Pad.

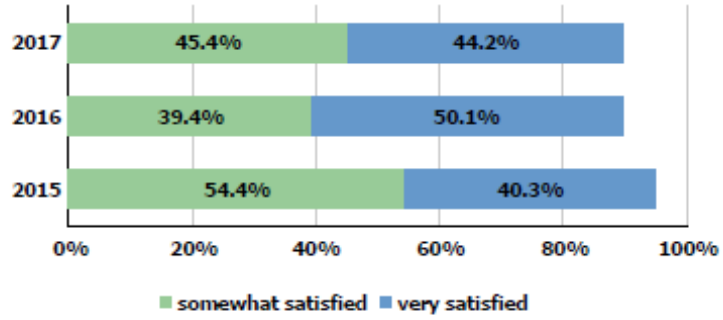
[F] Promotion of Recreation & Aquatics Fee Subsidy Program introduced in March 2016.

[G] Free admission to non-heated outdoor pools was introduced in 2014; attendance expected to fluctuate before normalizing.

Performance Measurements:

Effectiveness Measurements

Citizen Satisfaction with City-Operated Recreation Programs



In 2017, 90% of citizens who participated in recreation programs were satisfied with the programs offered by the City.

In 2014, the City began assessing citizen satisfaction with City-operated programs (like swimming lessons, Learn to Skate, or other Leisure Guide programs).

	2013	2014	2015	2016	2017
Total Satisfied	n/a	90.6%	94.7%	89.5%	89.6%

Source: City of Winnipeg Annual Citizen Survey

COMMUNITY CENTRES

Description:

The community centre model in Winnipeg is unique from other Canadian cities in that, while the community centres are owned by the City, they are not operated or staffed by the City. Instead, they are governed and operated by a group of volunteers, with an independent, incorporated, community-elected Board of Directors. The City provides an annual operating grant that is meant to cover basic facility maintenance and utilities, while the community centres are responsible for all other operating costs, including staffing, programming and equipment. The City is responsible for specific types of larger capital repairs (such as structural repairs or roof replacements) but each community centre is responsible for all other capital improvements. Over ***17,000 people*** volunteer annually at community centres, representing over ***one million*** volunteer hours.

LIBRARIES

Description:

To enrich the lives of all Winnipeg citizens and their communities by providing high quality, responsive and innovative library services.

Key Goals:

1. Provide excellent customer service as public needs evolve.
2. Enhance strategic partnerships with organizations to better meet the unique needs of the community.
3. Invest in more programs and services that advance digital literacy.
4. Support the development of early literacy skills in young children through increased investment in materials, services and programs for families, childcare providers and educators.
5. Ensure all library branches are welcoming and accessible destinations.
6. Adjust open hours of library branches to encourage new library users to visit and to be more convenient.

7. Select material that reflects the diverse needs of the community so that relevant print, digital, and special collections are freely available.
8. Increase awareness of the library and its benefits through expanded promotion of programs and services.
9. Develop stronger relationships with newcomers and Indigenous peoples by providing responsive programs and services.
10. Provide opportunities for older adults to meet, learn, and contribute so that strong connections within the community are built.
11. Expand the impact of the library beyond branches through community outreach and digital services.

Service Level Statistics:

Service Level Statistics

Description	2014	2015	2016
Number of Items Circulated	5,211,846	5,242,048	5,121,266
Number of Information Questions Answered	186,035	182,270	176,058
Number of Library Material Holdings*	1,284,883	1,433,135	1,221,832
Number of Library Programs	3,803	4,320	4,266
Number of Attendees at Programs	91,145	98,035	106,221
Number of Computer Bookings	529,923	464,571	438,244
Number of Visits to Library Website**	10,499,707	13,020,253	14,422,306
Number of Annual In-person Visits	2,861,674	2,958,826	2,990,003

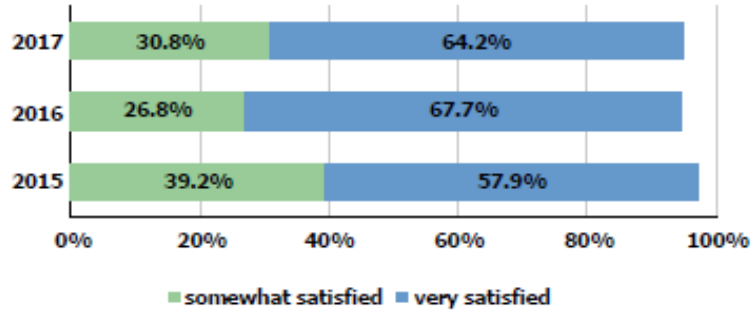
* The number of library holdings has decreased due to a collection management program that focuses on removing outdated, worn and duplicate material across the library system.

** The increase in electronic visits to the library website is a representative of a trend seen over the past few years (and reflected nationally). The number has increased significantly each year. This is also due to the Library's increased use of social media and the resulting activity among citizens connecting through Facebook, Twitter, and other social media.

Performance Measurements:

Effectiveness Measurements

Citizen Satisfaction with Libraries (respondents who used libraries)

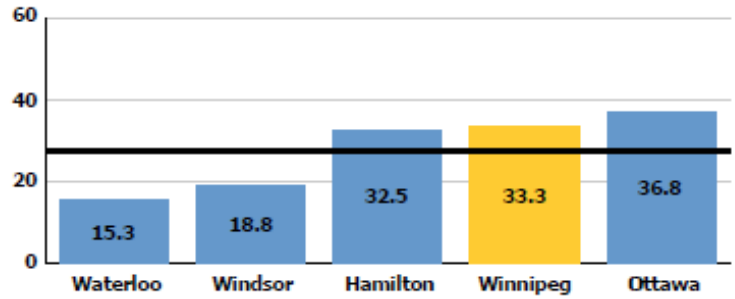


Citizen satisfaction remains very high for library services. Satisfaction was 95% in 2017.

	2013	2014	2015	2016	2017
Total Satisfied	83.7%	91.5%	97.1%	94.5%	95.0%

Source: City of Winnipeg Annual Citizen Survey

Annual Library Uses per Capita (2015)



Wpg. Trend	2011*	2012*	2013	2014	2015
	18.5	19.4	28.4	30.4	33.3

Source: Municipal Benchmarking Network Canada (PLIB105M)
* Restated.

Library use includes both electronic and non-electronic use.

2013 is the first year that Winnipeg included catalogue search session data to reflect what other Municipal Benchmarking Network Canada Libraries are recording.

The average of the comparable cities reported is 27.34.

3.9.2 Asset Metrics Summary

Community Services – All Assets

The overall condition, value and age relating to all assets that are required to deliver Community Services is depicted below.

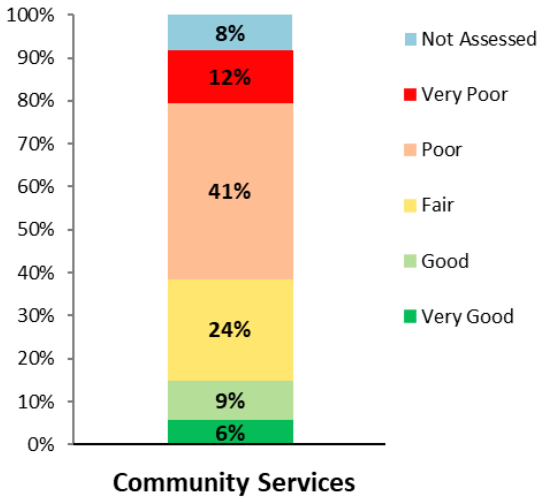


Figure 3.9-1. Community Services - Condition

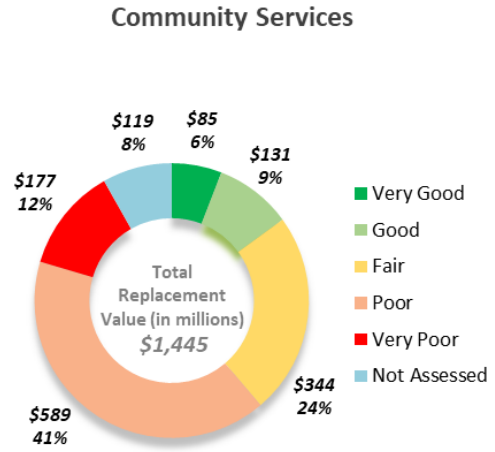


Figure 3.9-2. Community Services – Condition and Value

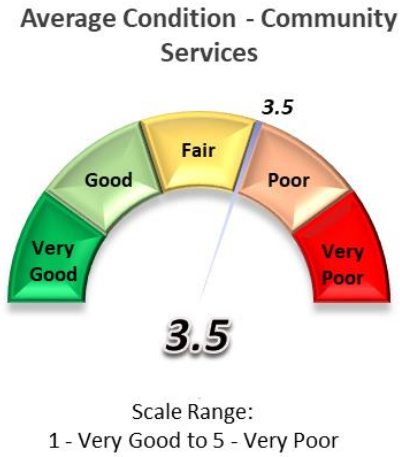


Figure 3.9-3. Community Services – Average Condition

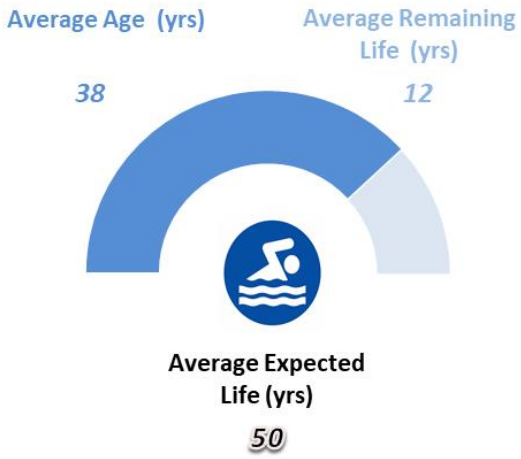


Figure 3.9-4. Community Services – Age Profile

The inventory of Community Services Department assets includes recreation and leisure centres, community centres, arenas, indoor pools, outdoor pools, wading pools and spray pads. The majority of these assets were constructed prior to the Unicity amalgamation in 1972. Over the years, insufficient capital and operational investments have led to the deterioration of assets and their building systems.

While the overall condition of all Community Services assets is *Fair* (and trending toward *Poor*), there are a significant number of assets (53%) in *Poor* to *Very Poor* condition that are reaching the end of their

useful service life. Functional obsolescence and poor physical accessibility further compromises the ability of existing assets to adequately meet current service level needs.

In addition, existing facilities are not geographically distributed in an equitable fashion across the City, leading to a wide variety of service levels by area. Winnipeg has also seen considerable growth in new areas creating demand for new recreation facilities and services.

In 2018-19, the Department will partner with Public Works - Parks and Open Space to develop the Recreation and Parks Strategic Master Plan. This plan will utilize extensive processes of stakeholder and public engagement to define Customer Levels of Service for recreation facility types and services and provide analytical tools for prioritizing cost efficient, community needs-based capital asset investment decisions.

3.9.3 Asset Condition, Value, and Inventory

Community Services - Community Centres & Community Centre Arenas

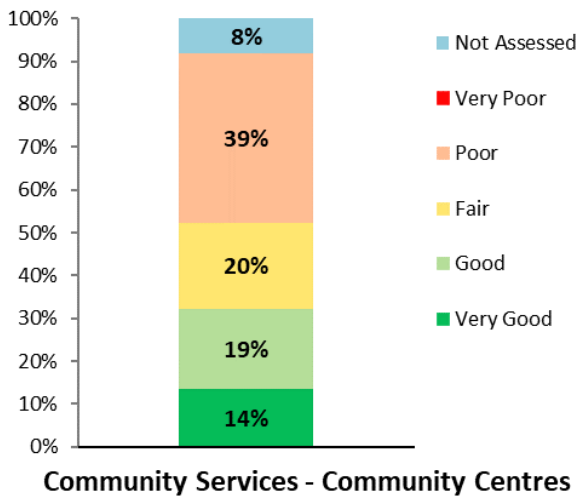


Figure 3.9-5. Community Centres – Condition



Figure 3.9-6. Community Centres – Average Condition

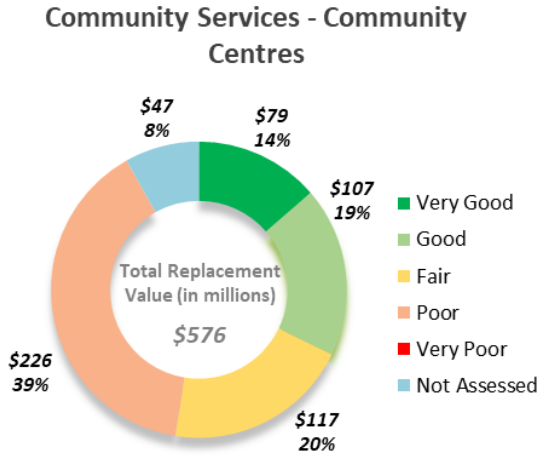


Figure 3.9-7. Community Centres – Condition and Value

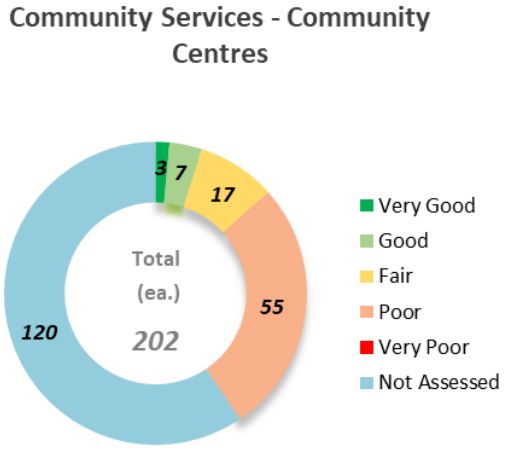


Figure 3.9-8. Community Centres – Condition and Inventory

The community centre asset classification incorporates 63 primary community centre sites and 16 satellite locations. Within the classification there is a wide variety of building sizes and functions including indoor fieldhouses, 14 indoor arenas, gymnasia, halls, multi-purpose space, and a variety of support buildings including players boxes, garages, and storage sheds.

There are 120 buildings in the community centre inventory that have not been assessed. These are typically storage garages and small buildings with an average area of 700 square feet. In addition, the figures above do not include the 141 outdoor rinks at community centres. Age and condition assessments of the outdoor rinks are not currently available. While not included in the calculations above, the replacement value of the outdoor rinks is estimated as $30 million, while the infrastructure requirement on the outdoor rinks is estimated to be $5,000/year for each rink over 10 years for a total of $7 million.

Community Services - Recreation and Leisure Centres

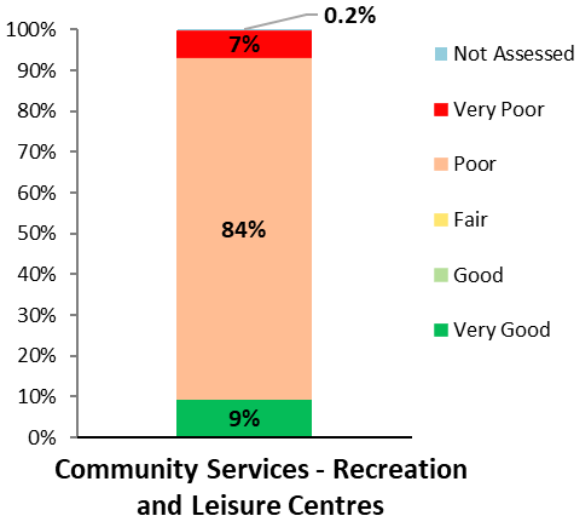


Figure 3.9-9. Recreation & Leisure Centres – Condition

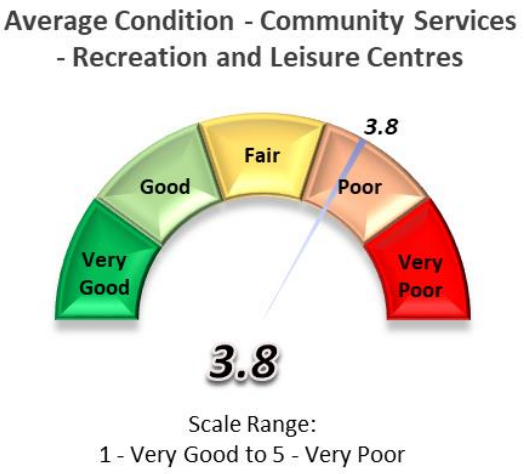


Figure 3.9-10. Recreation & Leisure Centres – Average Condition

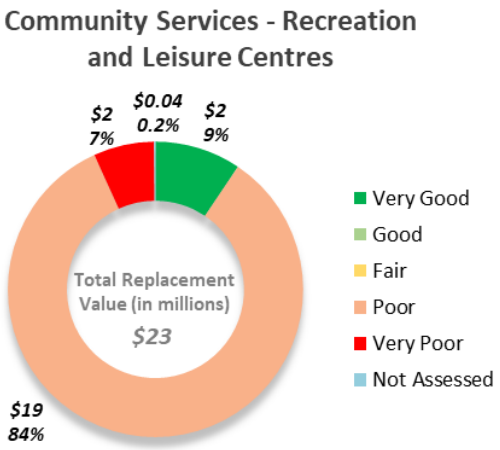


Figure 3.9-11. Recreation & Leisure Centres – Condition and Value

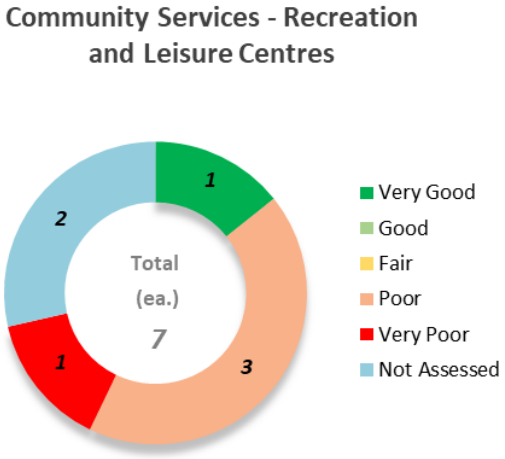


Figure 3.9-12. Recreation & Leisure Centres – Condition and Inventory

The City-operated recreation and leisure centres are in relatively *Poor* condition compared to other departmental assets and lack suitable spaces to provide contemporary programs and services. This classification includes the seven following facilities: Mayfair Recreation Centre, Turtle Island Neighbourhood Centre, Broadway Neighbourhood Centre, Magnus Eliason Recreation Centre St. John's Leisure Centre East End Cultural & Leisure Centre, and Freighthouse Recreation Centre.

Additionally, there are five large multi-use sites (Fort Rouge Leisure Centre, Cindy Klassen Recreation Centre, St. James Civic Centre, St. James Assiniboia Centennial, and North Centennial Recreation & Leisure Facility) with a variety of components including fitness rooms, running tracks, and other multi-purpose spaces that are not counted in the recreation & leisure centres inventory. The data for Fort Rouge Leisure Centre is counted and captured in the City-operated arenas classification. The asset condition and age data for all of the components at Cindy Klassen, St. James Civic, St. James Assiniboia and North Centennial are included within the indoor pool inventory and are not captured in the recreation & leisure centre classification.

Community Services – Arenas (City-Operated)

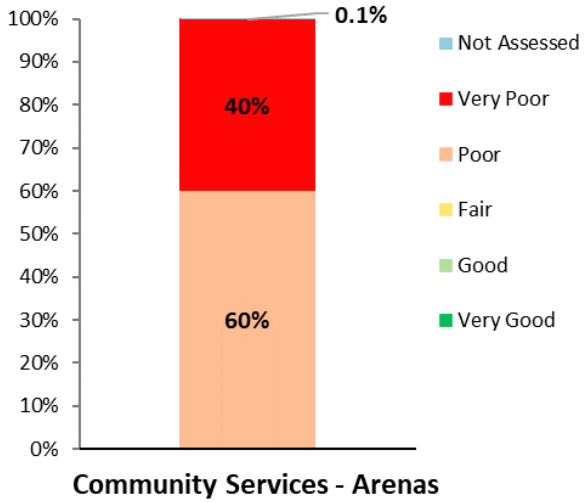


Figure 3.9-13. Arenas – Condition

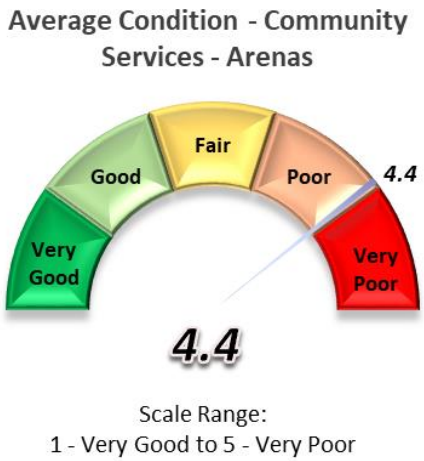


Figure 3.9-14. Arenas – Average Condition

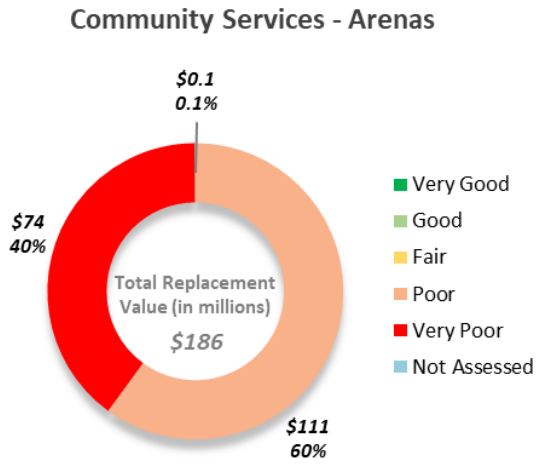


Figure 3.9-15. Arenas – Condition and Value

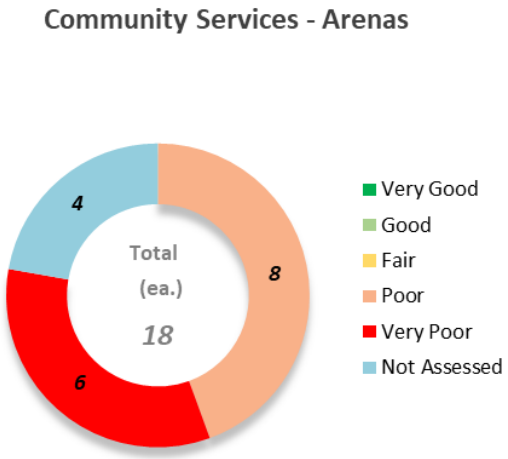


Figure 3.9-16 Arenas – Condition and Inventory

The majority of City-operated arenas were constructed in the late 1960s and early 1970s and are reaching the end of their useful service life. Several of these facilities are under-sized and do not provide regulation size ice surface. In addition, most of these structures are functionally obsolete as they were designed at a time when accessibility and women's sports were not a consideration.

Of the 18 assets counted within this classification, 11 assets are stand-alone City-operated indoor arenas and two are stand-alone arenas operated through a management agreement. The indoor arena inventory also includes one multi-use site, Fort Rouge Leisure Centre, which has Sam Southern Arena as a primary component. The remaining four assets are ice sheds or storage rooms associated with an arena operation.

The St. James Civic Centre is a multi-use site with multiple facility components including an indoor pool and arena. However, the St. James Civic Centre arena has not been included in the arena inventory as the facility information has been included within the indoor pool classification.

Community Services - Indoor Pools

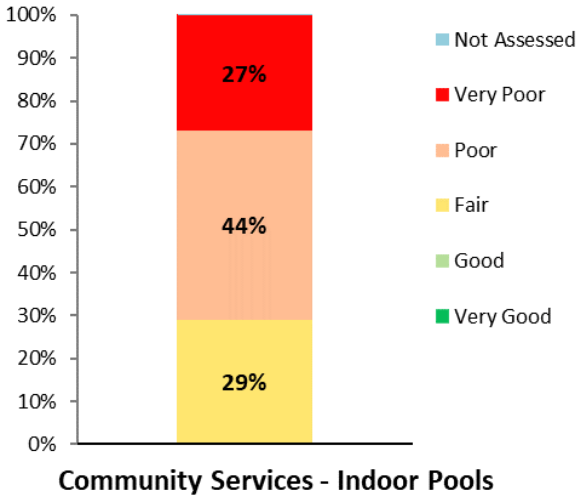


Figure 3.9-17. Indoor Pools – Condition

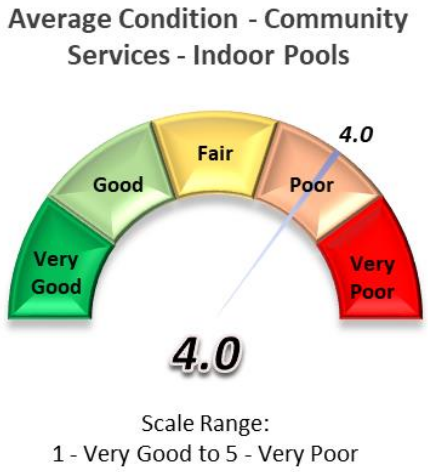


Figure 3.9-18. Indoor Pools – Average Condition

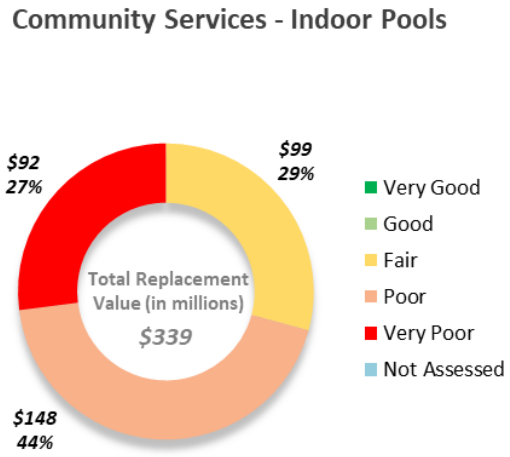


Figure 3.9-19. Indoor Pools – Condition and Value

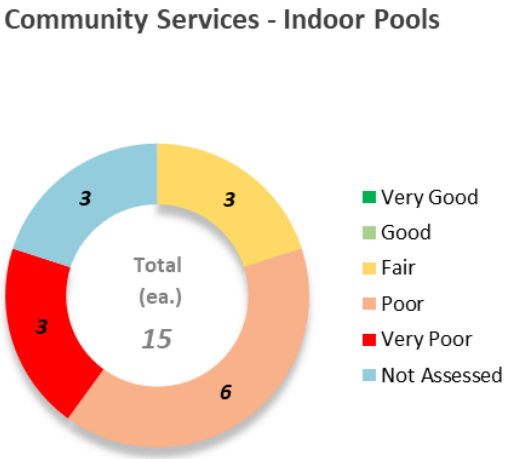


Figure 3.9-20. Indoor Pools – Condition and Inventory

The City's indoor pools were generally constructed in the 1960s and 1970s and are approaching the end of their useful life. Indoor pool building systems and building envelopes are subject to harsh conditions due to their humid and corrosive environments (chlorine). Unplanned closures and loss of service (Sherbrook Pool, EK Pool) have occurred as a result insufficient investment in these assets.

The indoor pool asset class includes 12 indoor pools and three small storage or support buildings. Of the 12 pools, four are larger multi-use sites (Cindy Klassen Recreation Centre, St. James Civic Centre, St. James Assiniboia Centennial, and North Centennial Recreation & Leisure Facility) with a variety of components including fitness rooms, running tracks, and other multi-purpose spaces. The asset condition and age data for all of the components at these four multi-use sites is included within the indoor pool inventory and is not captured in the indoor arenas or recreation & leisure centre classifications.

The current indoor pool inventory consists almost exclusively of rectangular tanks intended for lap swimming. The asset class is devoid of modern aquatic amenities such as leisure pools with accessible sloped/beach entries, lazy rivers, sufficient viewing areas, and family/gender neutral change rooms. In addition, a number of the indoor pool tanks are 25 yards in length rather than the current standard of 25 m and are therefore under-utilized for competitive swimming.

The lack of physical accessibility and contemporary functionality are significant issues affecting service provision. Ongoing efforts to better align these aging assets to contemporary customer service levels include the installation of water slides, sloped ramps, and universal change rooms where technically feasible.

Community Services - Outdoor Pools

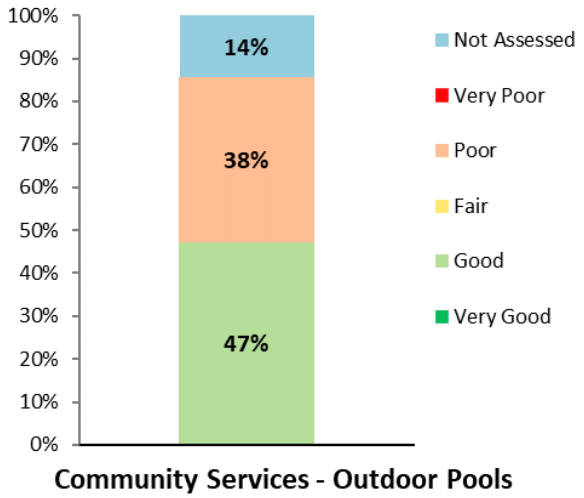


Figure 3.9-21. Outdoor Pools – Condition

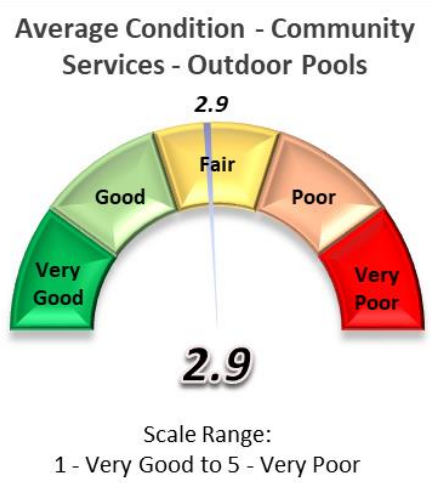


Figure 3.9-22. Outdoor Pools – Average Condition

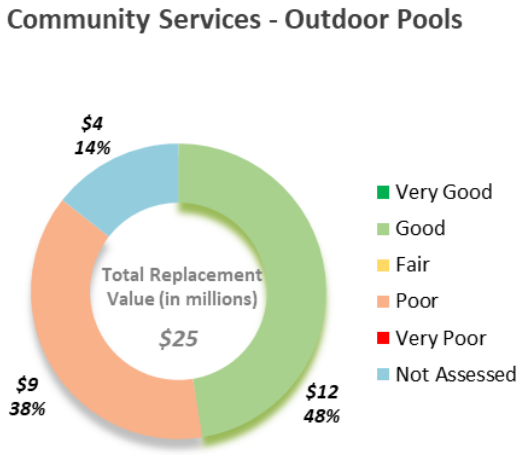


Figure 3.9-23. Outdoor Pools – Condition and Value

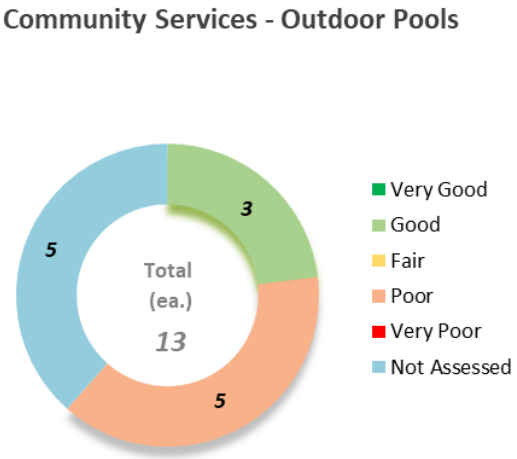


Figure 3.9-24. Outdoor Pools – Condition and Inventory

The Council-adopted *Recreation, Leisure and Library Facility Policy* speaks to closing outdoor pools as new spray pads and Urban Oases (indoor leisure pools) are developed. To date, there has been no rationalization of outdoor pools.

Service delivery for outdoor pools includes 10 outdoor pools and a few small support and storage buildings. Five of the pools are heated and five are unheated. Four of the heated pools are considered 'quadrant pools' (Kildonan Park, St. Vital, Westdale and Transcona Outdoor Aquatic Park). Of the five unheated pools, four are located in St. Boniface.

Community Services - Wading Pools

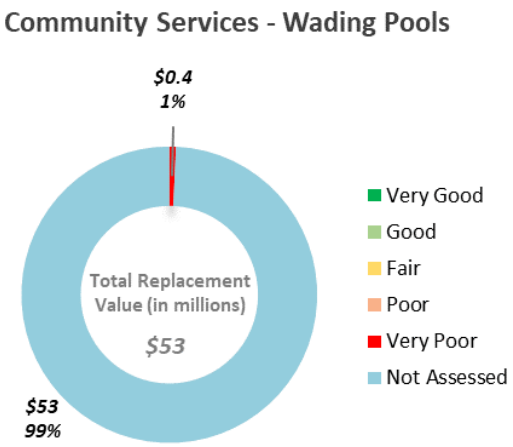


Figure 3.9-25. Wading Pools – Condition and Value

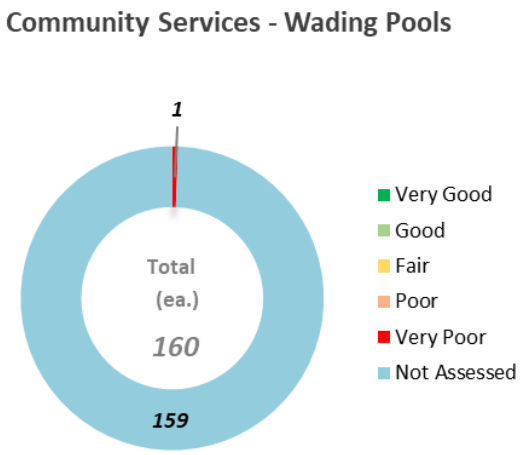


Figure 3.9-26. Wading Pools – Condition and Inventory

The wading pool inventory consists of 83 wading pool basins, supported by 76 small wading pool buildings (washrooms, mechanical rooms). The majority of the City's inventory of wading pool buildings have been assessed, with an identified 10-year investment need of $4.3 million (from VFA). The condition of wading pool basins has not been assessed, however, the estimated replacement value is over $53 million.

Most wading pools were constructed in the 1960s and 1970s, and are reaching the end of their useful life. Each year, maintenance staff deal with increasing challenges with getting the wading pool basins and mechanical systems in suitable condition to meet provincial standards for permits and opening. There is also an inequitable level of service with respect to wading pools, with many neighbourhoods in the older areas of the City being over-serviced with as many as three to four wading pools within a reasonable walking distance, while other areas have no wading pools.

The Council-adopted *Recreation, Leisure and Library Facility Policy* speaks to rationalizing the wading pool inventory over time, keeping a facility to population ratio of one wading pool or spray pad per 10,000 people. Facilitating this rationalization will be the introduction of a better wading pool or spray pad in the vicinity, or the development of a Spray Park or Urban Oasis in the community.

Community Services - Spray Pads



Figure 3.9-27. Spray Pads –Condition and Value

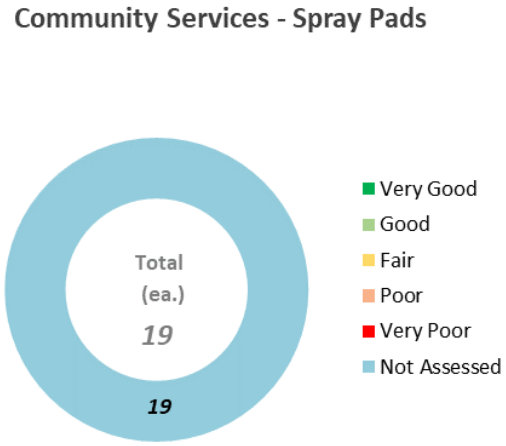


Figure 3.9-28. Spray Pads – Condition and Inventory

The City's inventory of spray pads is relatively new, with the majority being constructed between 2007 and the present. While conditions of these assets have not been assessed, they are in relatively good condition due to their age.

Community Services - Library Buildings

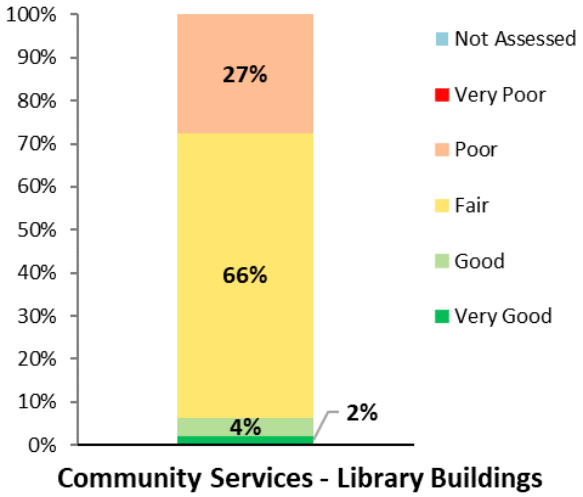


Figure 3.9-29. Library Buildings – Condition

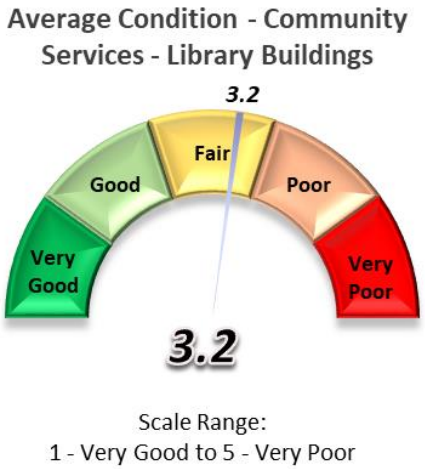


Figure 3.9-30. Library Buildings – Average Condition

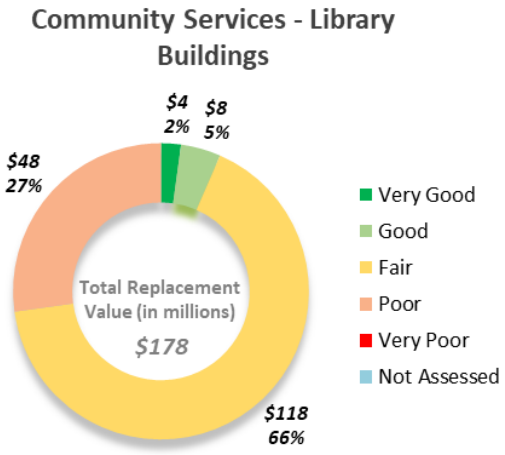


Figure 3.9-31. Library Buildings – Condition and Value

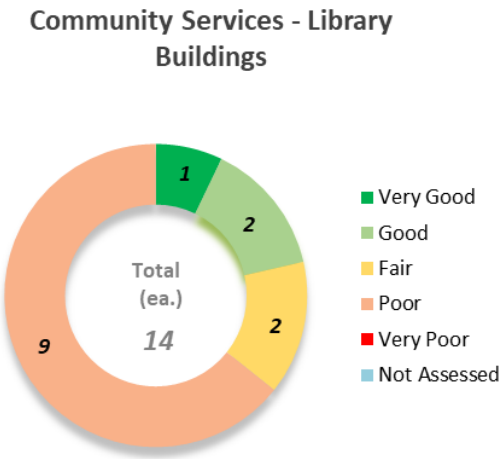


Figure 3.9-32. Library Buildings – Condition and Inventory

There has been and continues to be significant investment in several key libraries under the *Library Redevelopment Strategy* (Windsor Park, St. Vital, Transcona, River Heights, Cornish, St. John's, Westwood, St. James). However, the remaining libraries are in need of investment in building envelope and systems renewals in order to maintain level of service and they also require updates to technology, facility accessibility, and program spaces to meet contemporary library service needs.

Community Services - Assiniboine Park Conservancy Buildings

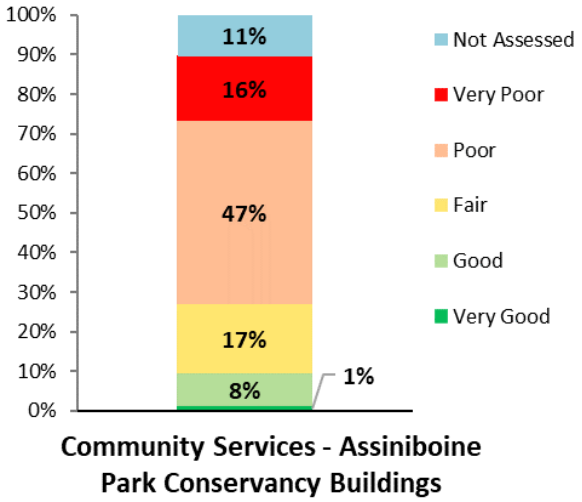


Figure 3.9-33. Assiniboine Park Conservancy Buildings – Condition

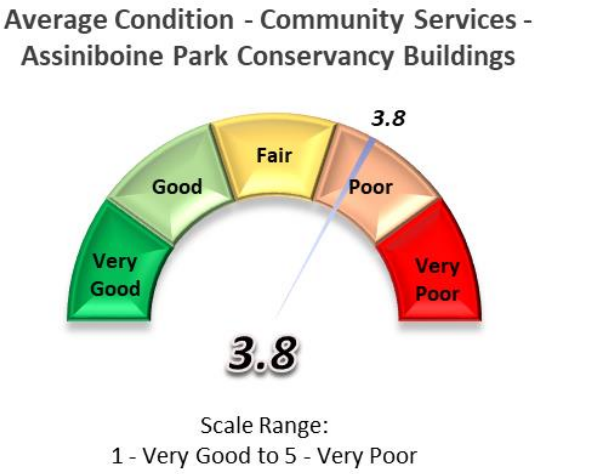


Figure 3.9-34. Assiniboine Park Conservancy Buildings – Average Condition

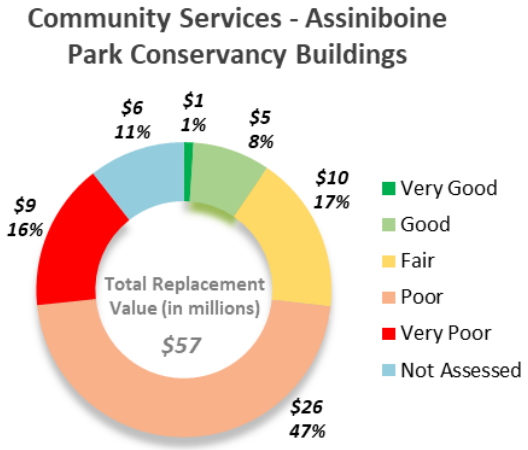


Figure 3.9-35. Assiniboine Park Conservancy Buildings – Condition and Value

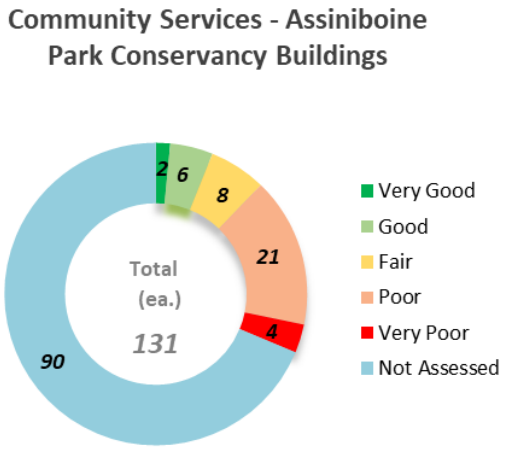


Figure 3.9-36. Assiniboine Park Conservancy Buildings – Condition and Inventory

Asset management of the facilities and assets in Assiniboine Park is overseen by the Assiniboine Park Conservancy (APC) through an agreement with the City of Winnipeg. The City provides annual capital and operating grants to APC, who are responsible for the overall operation and provision of services within the park.

3.9.4 Age Profile

Community Services - Community Centres and Community Centre Arenas

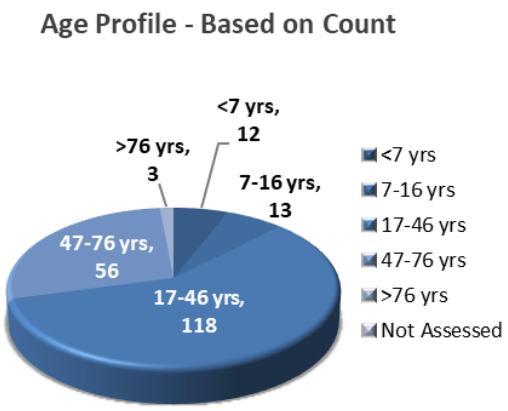


Figure 3.9-37. Community Centres – Age Profile Based on Count

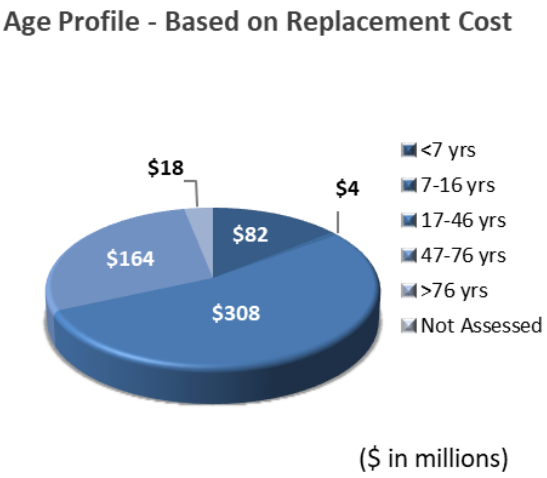


Figure 3.9-38. Community Centres – Age Profile Based on Replacement Cost

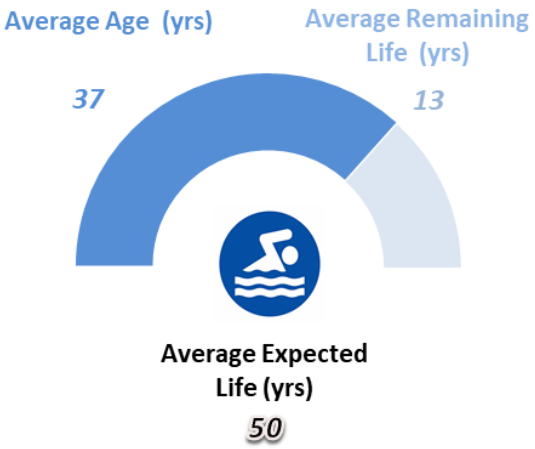


Figure 3.9-39. Community Centres – Average Age and Remaining Life

The majority of the community centres were constructed in the 1960s and 1970s, primarily to support outdoor sports such as hockey, baseball, and soccer and lack the suitable gymnasium and multi-purpose space to support contemporary program needs. There is also a need to upgrade many community centres to meet current building codes and accessibility requirements and to reinvest in replacement of end of service life building systems and building envelope repairs.

Community Services - Recreation and Leisure Centres

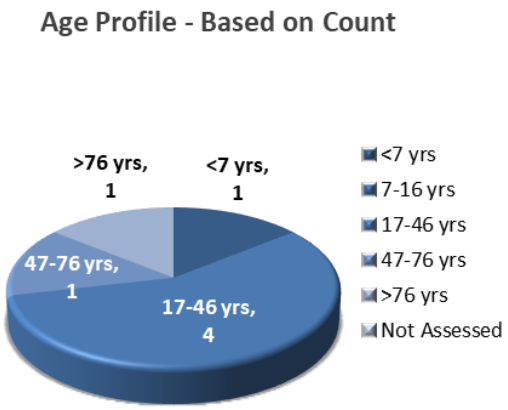


Figure 3.9-40. Recreation & Leisure Centres – Age Profile Based on Count

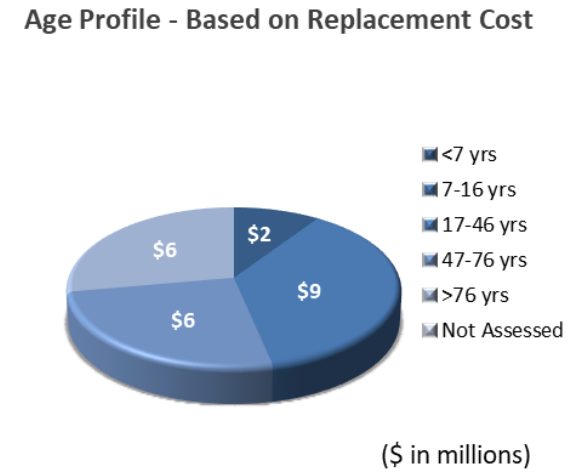


Figure 3.9-41. Recreation & Leisure Centres – Age Profile Based on Replacement Cost

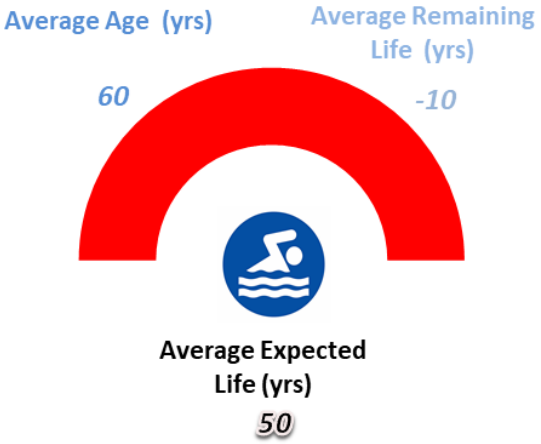


Figure 3.9-42. Recreation & Leisure Centres – Average Age and Remaining Life

Several recreation and leisure centres are at or near the end of their service life. In these cases, Community Services is assessing the reinvestment options for these facilities including remediation, replacement, and relocation and consolidation with other recreation facilities in the service area.

Community Services – Arenas (City-Operated)

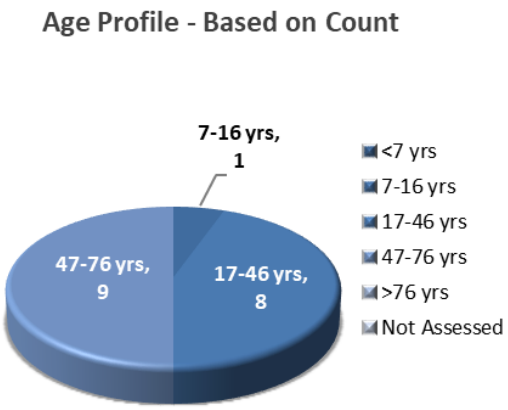


Figure 3.9-43. Arenas – Age Profile Based on Count

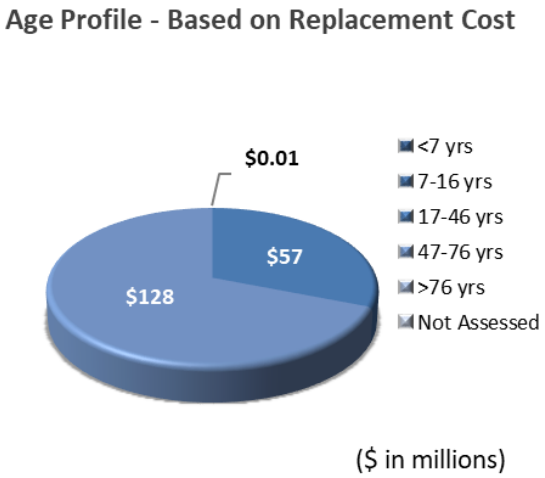


Figure 3.9-44. Arenas – Age Profile Based on Replacement Cost

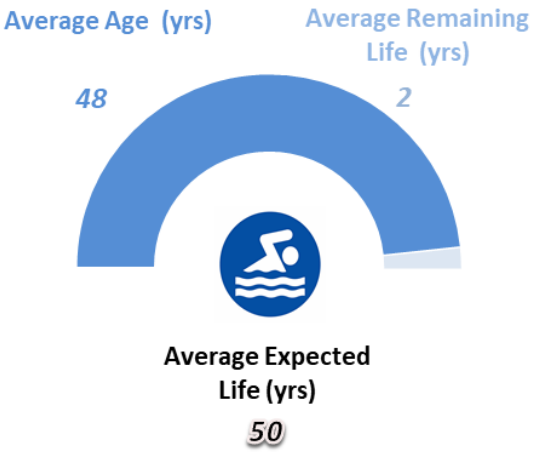


Figure 3.9-45. Arenas – Average Age and Remaining Life

The April 2010 report on the *City's Role in the Provision of Arenas* has led to an approach of rationalizing end of service life City-run arenas to facilitate the development of new multi-pad arena facilities run by community organizations. This has led to the decommissioning of three arenas (Old Ex, Vimy, and Roland Michener) with several others under consideration in the coming years.

By eliminating the financial risks and maintenance burden of these older facilities, limited resources could be invested in the remaining inventory.

Community Services - Indoor Pools

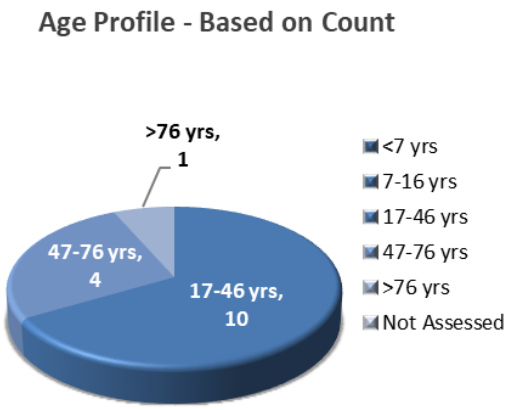


Figure 3.9-46. Indoor Pools – Age Profile Based on Count

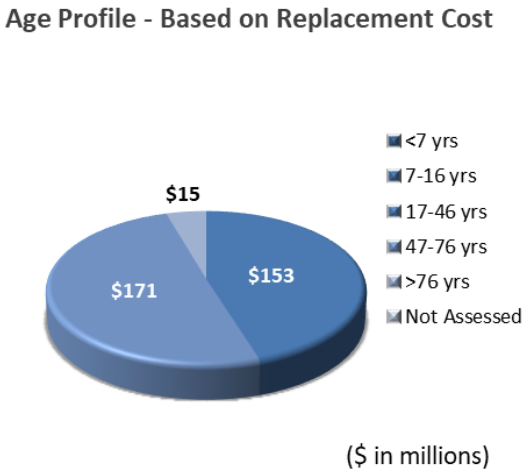


Figure 3.9-47. Indoor Pools – Age Profile Based on Replacement Cost

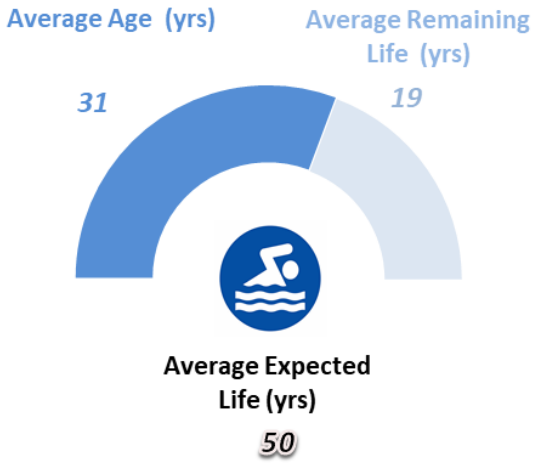


Figure 3.9-48. Indoor Pools – Average Age and Remaining Life

The majority of the indoor pools inventory is nearing the end of its useful service life and requires significant reinvestment to maintain levels of service. The estimated deficit over the next ten years to address requirements in existing pool infrastructure is $242 million, yet the estimated capital plan forecasts only $35 million will be invested in indoor poor infrastructure over that same timeframe.

In addition, all of the City's indoor pools were primarily designed as competitive or lap pools and do not meet contemporary aquatic needs for accessible and fun leisure pools found in other municipalities.

The Recreation and Parks Strategic Master Plans, being developed in 2018-19 will include extensive public engagement to define expected levels of service for indoor pools and strategies for providing that service across the City.

Community Services - Outdoor Pools

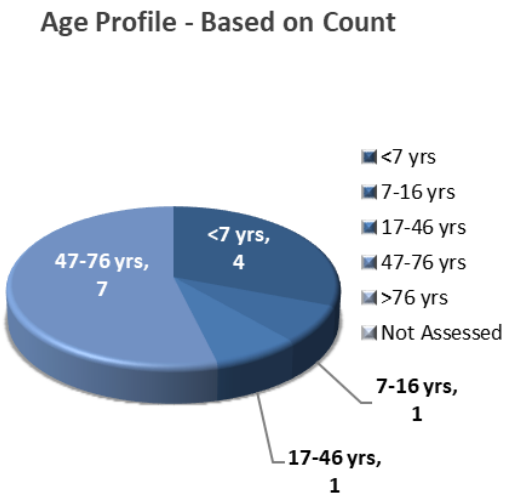


Figure 3.9-49. Outdoor Pools – Age Profile Based on Count

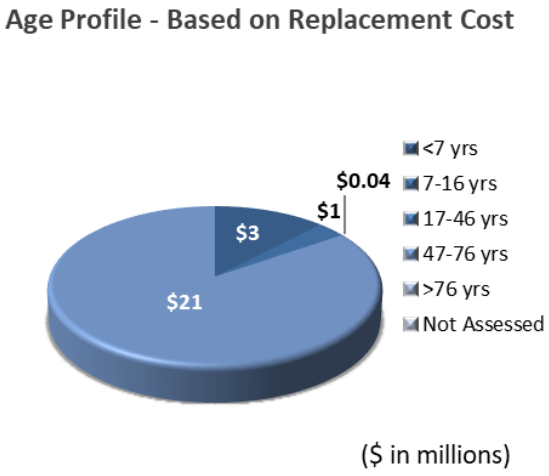


Figure 3.9-50. Outdoor Pools – Age Profile Based on Replacement Cost

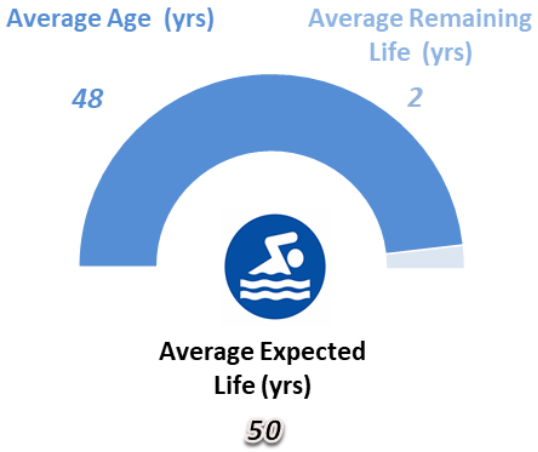


Figure 3.9-51. Outdoor Pools – Average Age and Remaining Life

The majority of outdoor pools are at or near the end of their service life. The *Recreation, Leisure and Library Facility Policy* provides direction on closing outdoor pools as new spray pads and indoor pools are developed. One intent of the Recreation and Parks Strategic Master Plans, being developed in 2018-19, is to reconfirm this policy direction and provide more substantial strategies and prioritization tools necessary to enable reinvestment and rationalization of aquatic facilities.

Community Services - Wading Pools

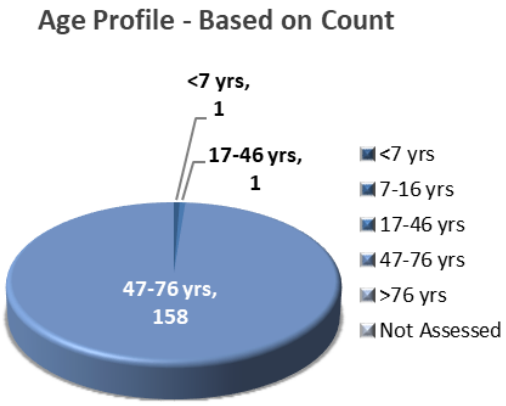


Figure 3.9-52. Wading Pools – Age Profile Based on Count

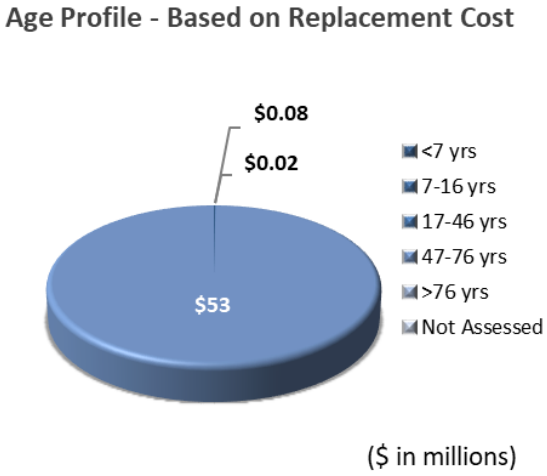


Figure 3.9-53. Wading Pools – Age Profile Based on Replacement Cost

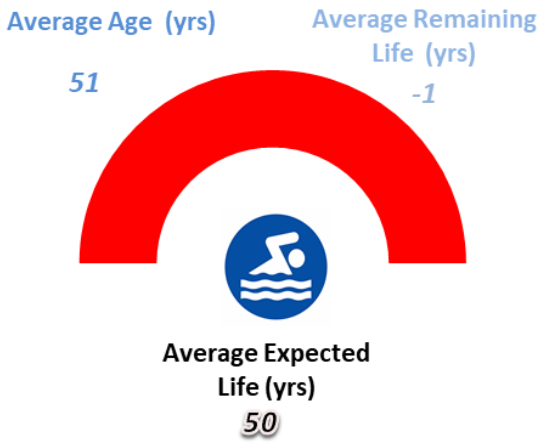


Figure 3.9-54. Wading Pools – Average Age and Remaining Life

Most wading pools were constructed in the 1960s and 1970s and are reaching the end of their useful life. Each year, maintenance staff deal with increasing challenges with getting the wading pool basins and mechanical systems in suitable condition to meet provincial standards for permits and opening. There is also an inequitable level of service with respect to wading pools, with many neighbourhoods in the older areas of the City being over serviced with as many as 3 to 4 wading pools within a reasonable walking distance, while other areas have no wading pools.

The Council-adopted *Recreation, Leisure and Library Facility Policy* speaks to rationalizing the wading pool inventory over time, keeping a facility to population ratio of one wading pool or spray pad per 10,000 people. Facilitating this rationalization will be the introduction of a better wading pool or spray pad in the vicinity, or the development of a Spray Park or Urban Oasis in the community.

The Recreation and Parks Strategic Master Plans will provide further strategies and more clearly defined levels of service to shape future investment in these assets.

Community Services - Spray Pads

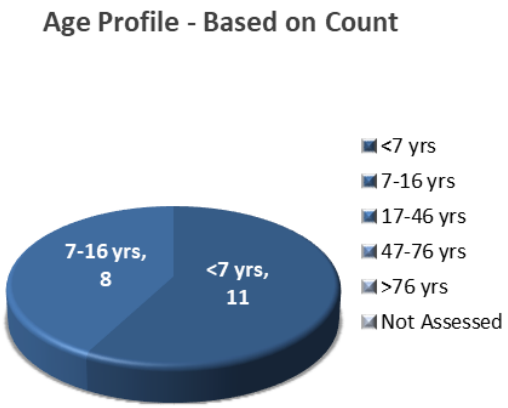


Figure 3.9-55. Spray Pads – Age Profile Based on Count

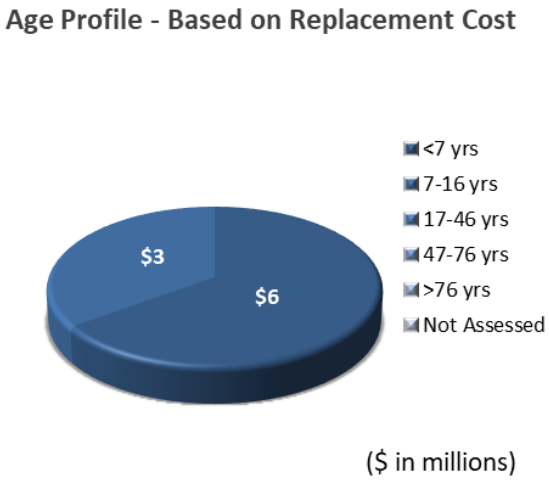


Figure 3.9-56. Spray Pads – Age Profile Based on Replacement Cost

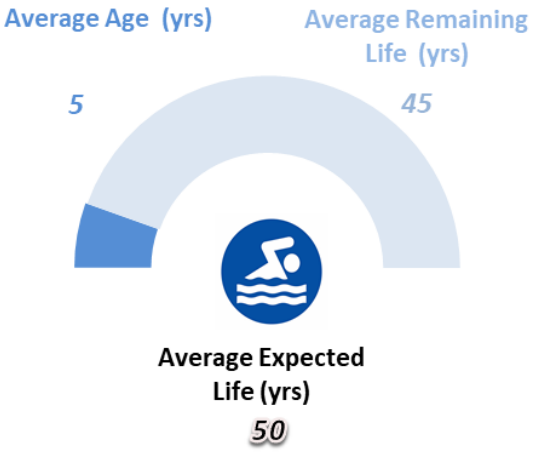


Figure 3.9-57. Spray Pads – Average Age and Remaining Life

As the development of most spray pads has occurred since 2007, the asset inventory is relatively new and in *Good* condition.

Community Services - Library Buildings

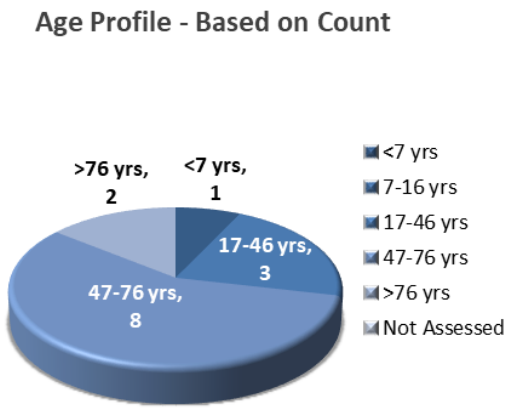


Figure 3.9-58. Library Buildings – Age Profile Based on Count

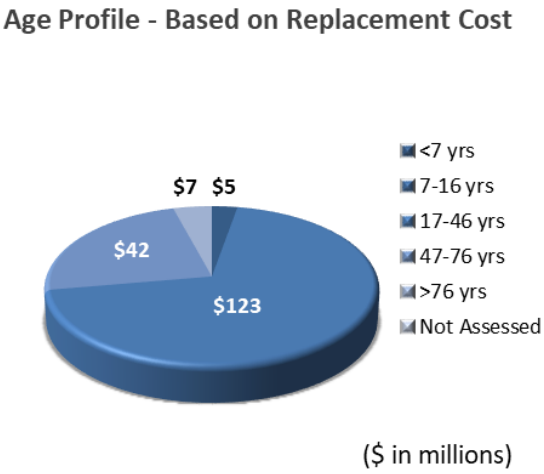


Figure 3.9-59. Library Buildings – Age Profile Based on Replacement Cost

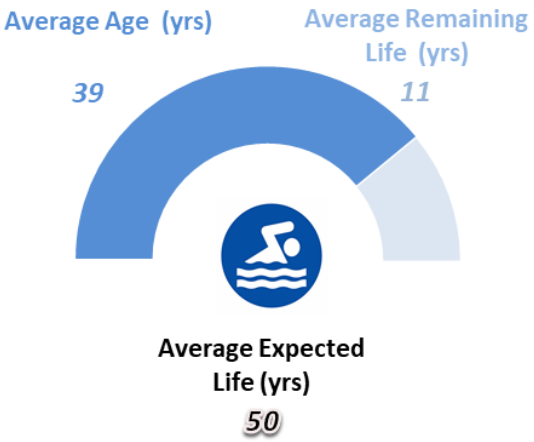


Figure 3.9-60. Library Buildings – Average Age and Remaining Life

As investment continues in new libraries through the *Library Redevelopment Strategy*, the average age of libraries is anticipated to be reduced, while average remaining service life should increase. However, those existing libraries not identified for redevelopment will require ongoing investment to extend service life and ensure levels of service are maintained.

Community Services - Assiniboine Park Conservancy Buildings

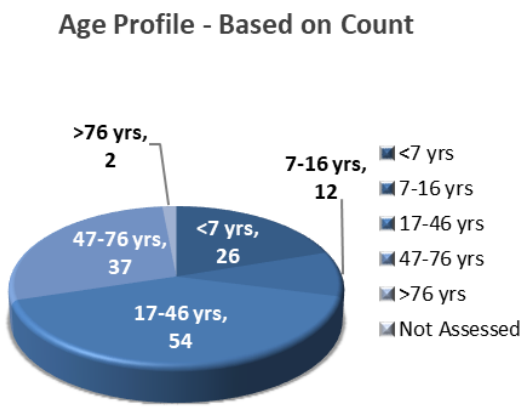


Figure 3.9-61. Assiniboine Park Conservancy Buildings – Age Profile Based on Count

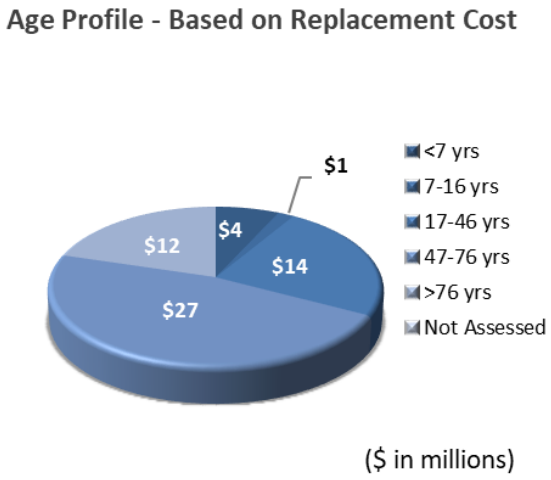


Figure 3.9-62. Assiniboine Park Conservancy Buildings – Age Profile Based on Replacement Cost

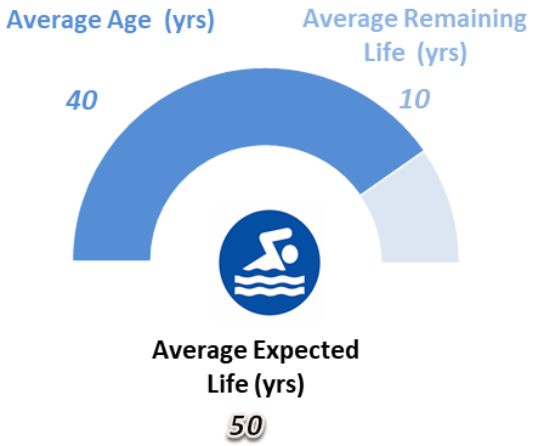


Figure 3.9-63. Assiniboine Park Conservancy Buildings – Average Age and Remaining Life

The Assiniboine Park Conservancy will continue to invest grant funds provided by the City of Winnipeg over a long-term funding agreement to improve the condition of assets and extend the average service life.

3.9.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Community Services infrastructure element, by asset type, is shown in Figure 3.9-64.

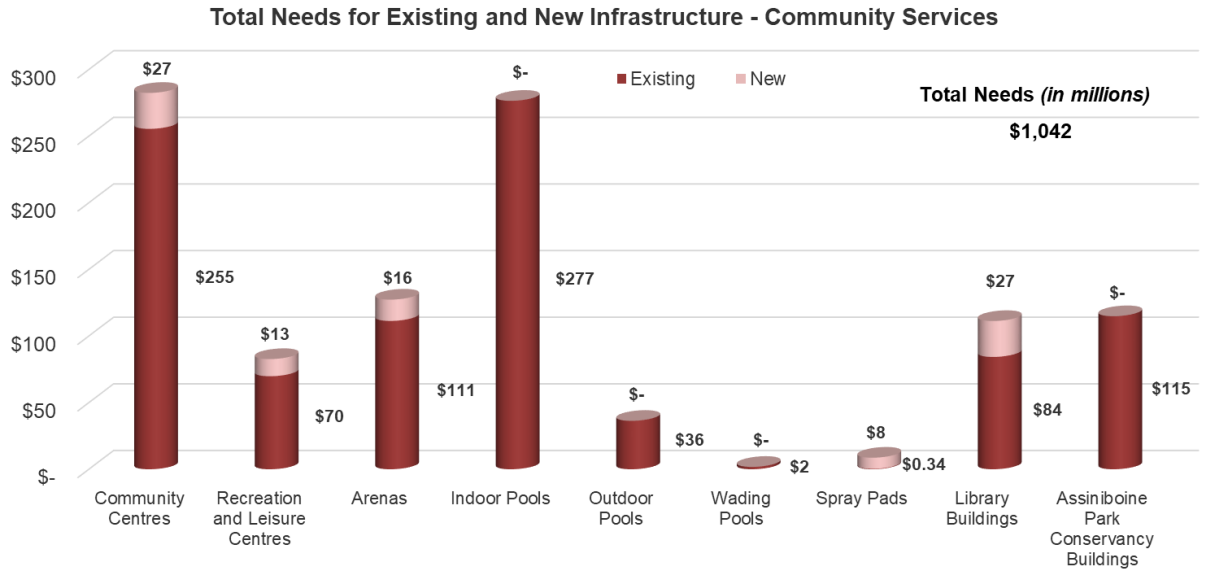


Figure 3.9-64. Community Services – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Community Services infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.9-65.

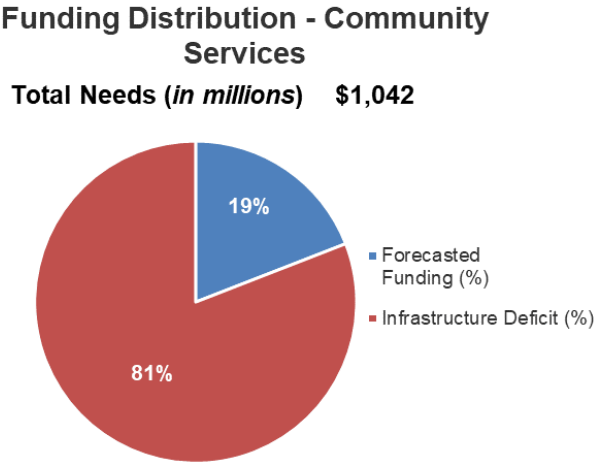


Figure 3.9-65. Funding Distribution – Community Services

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years - 10 Year Capital Plan = Infrastructure Deficit

A breakdown of the capital funding deficit for the Community Services infrastructure element, by asset type, is shown in Figures 3.9-66 and 3.9-67.

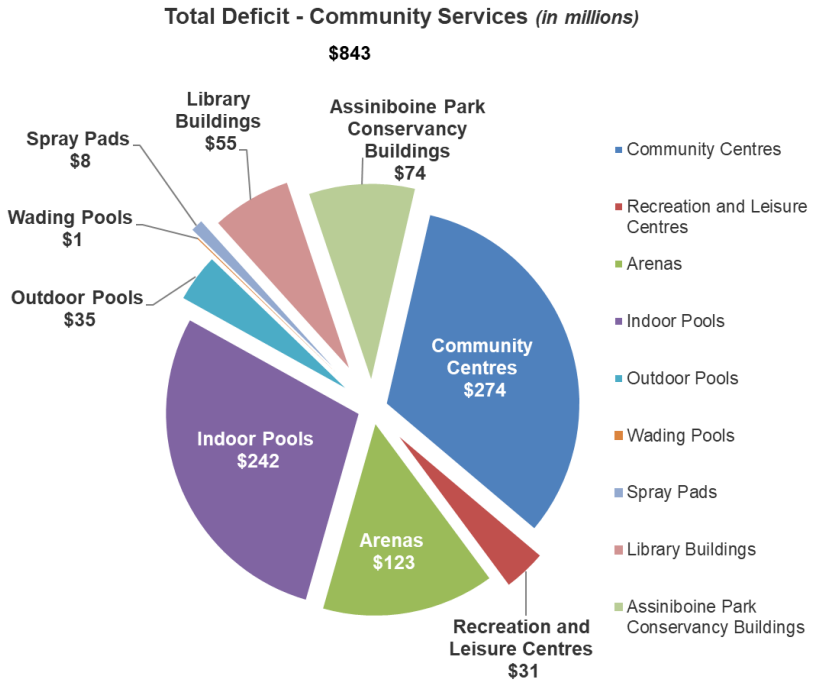


Figure 3.9-66. Total Deficit – Community Services
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

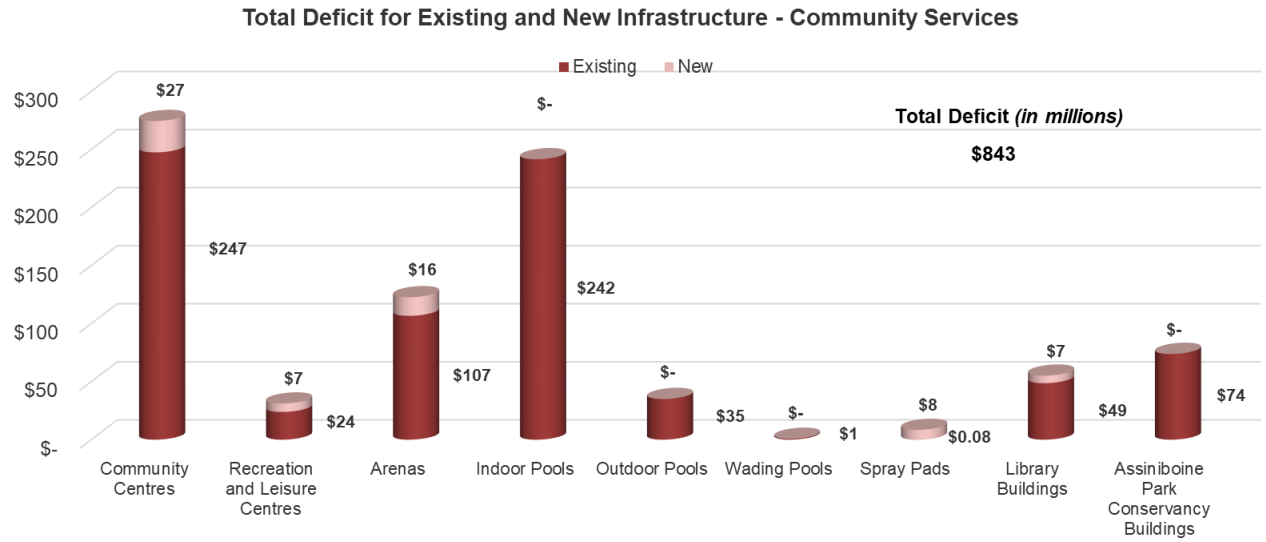


Figure 3.9-67. Community Services – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

The infrastructure deficit for Community Service assets is extensive at $843 million. In order to address this issue, the department is in the process of developing a Recreation and Parks Strategic Master Plan that will involve extensive public engagement to further define levels of service and provide strategies and a prioritized framework to help shape investment decisions that consider affordability.

The Recreation and Parks Strategic Master Plan will have a 10-year planning horizon, which will provide strategic direction for recreation and aquatic service provision that incorporates:

i. A visionary direction for recreation and aquatic service delivery in the City of Winnipeg that reflects the values, needs, and overall capacity of our community;

ii. An assessment of current and future programs and service requirements;

iii. A sustainable decision making model to prioritize new and existing programs and services in order to determine which ones need to be developed, enhanced, maintained, reduced, or discontinued;

iv. Recommendations on which services or programs are best delivered through partnerships, alternative service providers or the private sector;

v. A prioritization framework or matrix for guiding cost-efficient, community needs based capital asset investment decisions that meet the City of Winnipeg's long-term asset management objectives but is not an "end state" infrastructure plan which proposes specific projects or facility rationalizations;

vi. Review of the City's current inventory of recreation facilities in terms of: facility condition, estimated maintenance and capital investment requirements, capacity, geographic distribution, and utilization to determine areas of service gaps and over-servicing;

vii. A facility demand analysis which considers the supply of recreation facilities operated in the private and non-profit sector;

viii. A facility needs assessment based on long-term needs, current service gaps, and recommended strategies to meet growing need for investment in new and existing infrastructure within the limited short and long-term financial capabilities of the City; and

ix. Detailed comparative analysis of best practices and industry standards related to recreation facility Customer Levels of Service (including facility benchmarks and standards), public investment strategies, and suitable outcome assessment models for publicly owned recreation assets.

3.9.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.9-1. Community Services – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Community Services	Community Centre	Outdoor hockey pens	$30,250,000
Community Services	Libraries	Leased locations	To be determined
Community Services	Indoor Pools	Fitness equipment	To be determined
Community Services	Indoor Pools	Joint-Use/School Division Properties (Bernie Wolfe)	To be determined
Community Services	Recreation & Leisure Centres	Fitness equipment	To be determined
Community Services	Recreation & Leisure Centres	Joint-Use/School Division Properties (Peguis Trails Fitness Centre)	To be determined
Community Services	Information Systems	Information Systems	To be determined
Community Services	Fleet	Light Duty	$110,808

3.10 Transit

3.10.1 Service Overview and Performance

Winnipeg Transit provides a vital service to the citizens of Winnipeg with an extensive and robust public transit system. This is reflected in the goals for Winnipeg's entire transportation system found in the *OurWinnipeg* Sustainable Transportation document, as follows:

> **05-1 PUBLIC TRANSIT SYSTEM**
> *"Winnipeg has a high quality and efficient public transit system characterized by its focus on key corridors and incremental improvements to service. Sustainable Transportation will take these improvements to the next level, providing improved transit access across the city. We envision that public transit in Winnipeg will be structured into a hierarchy of three main categories: Rapid Transit, Transit Quality Corridors and Conventional Transit Service."*

Winnipeg Transit has a network of 93 bus routes, made up of: 10 Rapid Transit routes, 24 express and super express routes, 52 regular routes, 3 free Downtown Spirit routes, and 4 on-demand DART routes. Winnipeg Transit's fleet of approximately 620 buses is 100% accessible. The performance of the conventional transit service is aided by transit priority measures along 9 key Quality Corridors. Transit priority measures include diamond lanes, queue jump lanes, and transit priority signals.

Winnipeg Transit also offers door-to-door service through its Handi-Transit system for individuals who are unable to use the conventional Transit service.

Winnipeg Transit has completed Stage 1 of the Southwest Corridor, the first link in Winnipeg's Rapid Transit Network.

The 2011 TMP outlines several future rapid transit corridors:

- Southwest Transitway Stage 2 (Pembina & Jubilee to the University of Manitoba – under construction and set to open in 2020)
- Eastern Corridor (downtown to Transcona)
- Main Street (downtown to Inkster)
- Portage Avenue (downtown to Polo Park, with further extensions beyond)
- Northeast Corridor (from the Eastern Corridor to the Perimeter Highway)
- Southeast Corridor (from the Eastern Corridor to Island Lakes/Royalwood)

Passenger information is available electronically through Transit Tools, which includes: Transit's website, Navigo (online trip planner), BUSguide (mobile website), BUStxt (bus times via text message), TeleBUS (bus times via phone), and BUSwatch (electronic displays at over 100 bus stops).

3.10.2 Asset Metrics Summary

Transit – All Assets

The overall condition, value and age relating to all assets that are required to deliver Transit services is depicted below.

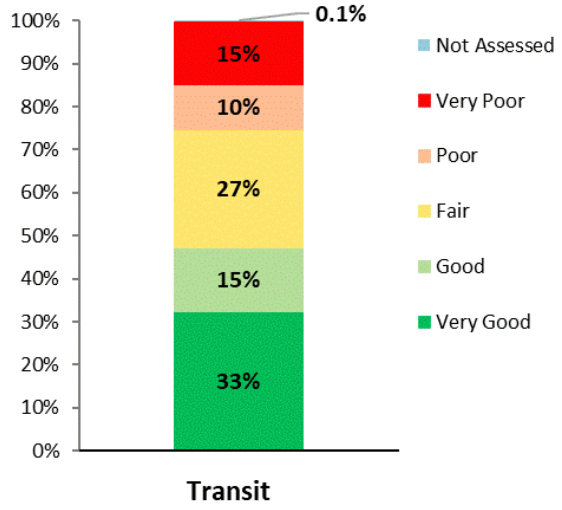


Figure 3.10-1. Transit- Condition

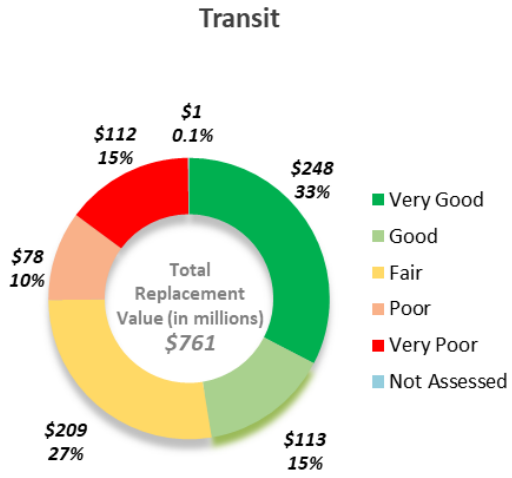


Figure 3.10-2. Transit – Condition and Value

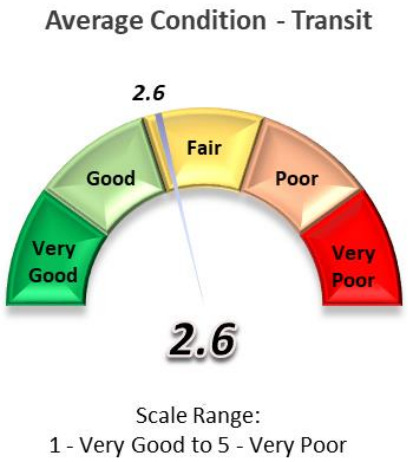


Figure 3.10-3. Transit – Average Condition

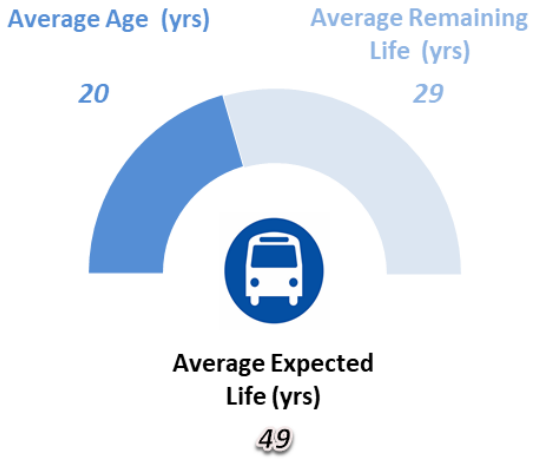


Figure 3.10-4. Transit - Age Profile

As shown in the figures above, the majority of Transit's assets (rolling stock assets, fixed assets, passenger focused facilities, Transit exclusive bridges and tunnels, and facilities) are currently in *Fair* to *Good* condition. The City has made significant investment in Transit over the years, with an estimated replacement value of $761 million for all of its assets. Although some assets are deteriorating, such as buildings and equipment that were built or installed in the late 1960s, regular annual investments help to maintain the overall condition of Transit assets.

3.10.3 Asset Condition, Value, and Inventory

Transit - Fleet (Rolling Stock Assets)

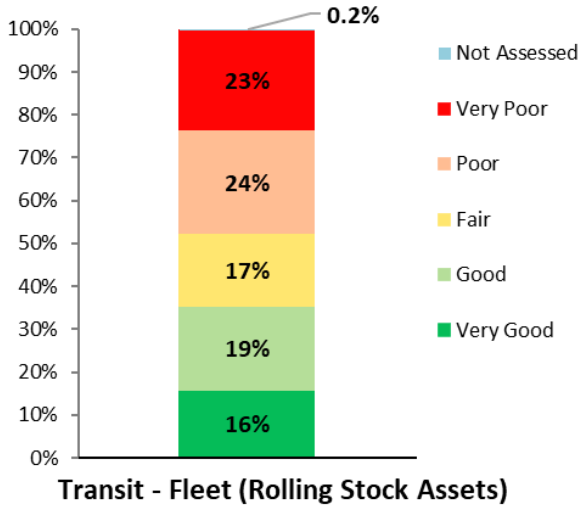


Figure 3.10-5. Fleet (Rolling Stock Assets) - Condition

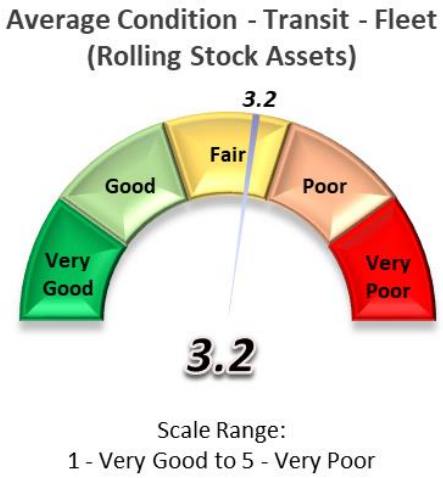


Figure 3.10-6. Fleet (Rolling Stock Assets) – Average Condition

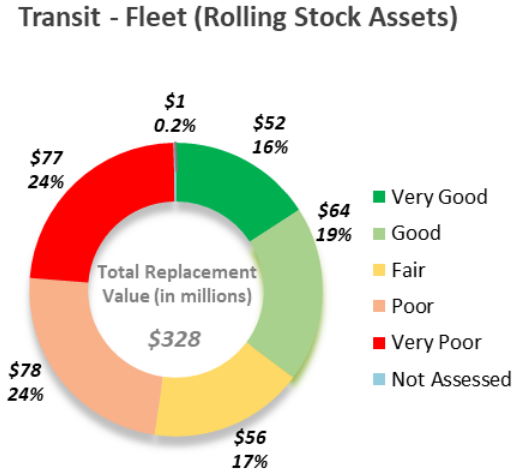


Figure 3.10-7. Fleet (Rolling Stock Assets) – Condition and Value

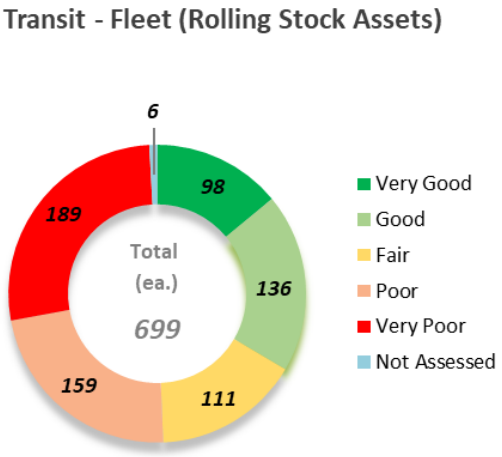


Figure 3.10-8. Fleet (Rolling Stock Assets) – Condition and Inventory

As shown in the figures above, approximately half of Transit's rolling stock assets are currently in *Fair* condition and are more than halfway through their average expected life. These are representative of Transit's most critical and main Rolling Stock assets (i.e., buses). A small portion of support fleet includes tow trucks, forklifts, Bobcats, and service vehicles. The City has a well-identified bus maintenance and rehabilitation program, combined with an annual bus purchase program, which ensures adequate buses are available to meet service demands. In general, the support fleet is older and will require new investment to keep these vehicles in a condition that can support service demands.

Transit - Fixed Assets

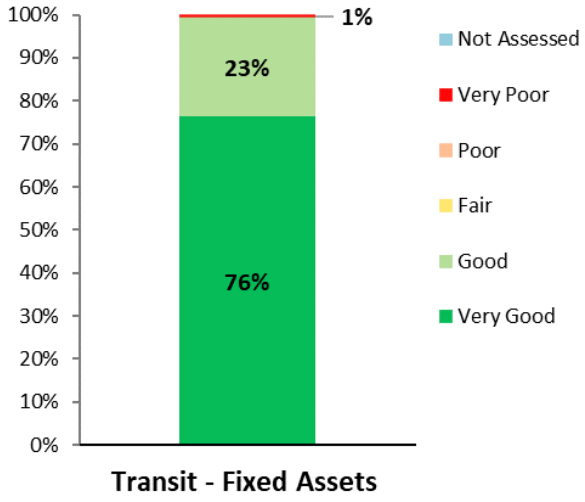


Figure 3.10-9. Fixed Assets - Condition

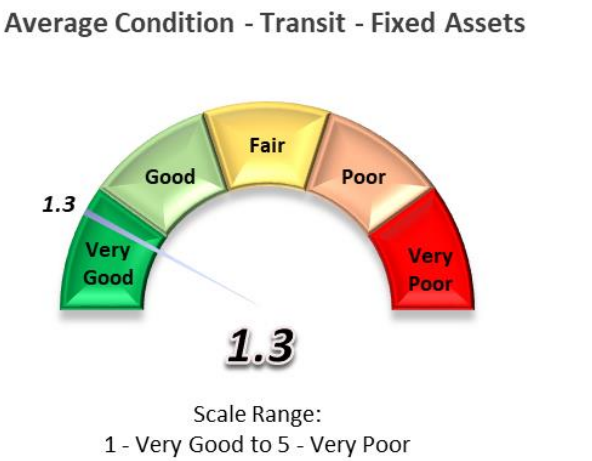


Figure 3.10-10. Fixed Assets – Average Condition

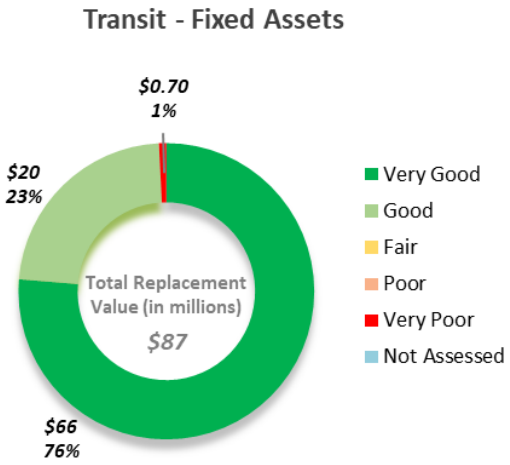


Figure 3.10-11. Fixed Assets – Condition and Value

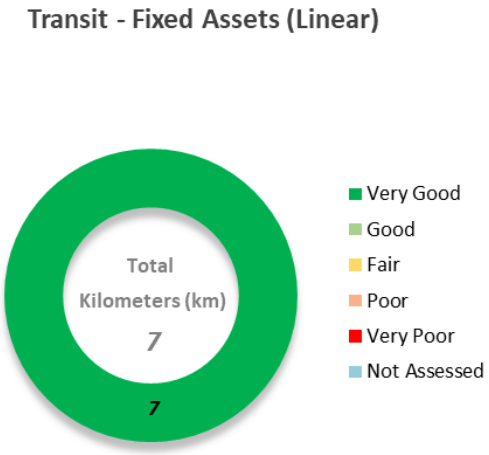


Figure 3.10-12. Fixed Assets – Condition and Inventory of Linear Assets

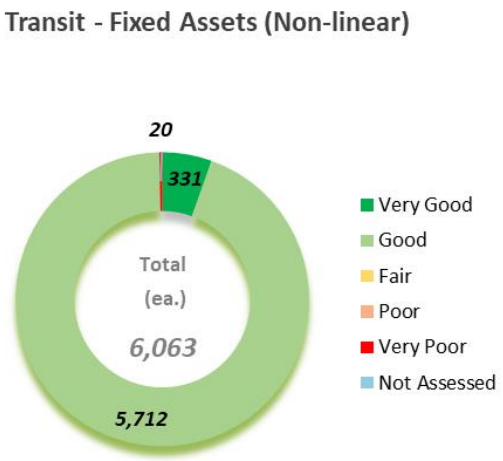


Figure 3.10-13. Fixed Assets – Condition and Inventory of Non-Linear Assets

As shown in the figures above, approximately all of Transit's fixed assets (passenger stations/terminals, transit shelters/stops, comfort stations for bus operators, exclusive Transit rights-of-way) are currently in *Very Good* condition and are less than half their average expected life. The fixed assets are a mix of on-street Transit infrastructure, as well as infrastructure built as part of the Southwest Rapid Transitway (Stage 1). The assets associated with the Transitway (passenger stations/terminals and exclusive Transit rights-of-way) were constructed in 2012 and are in *Good* to *Very Good* condition. The on-street stations and stops are in *Good* to *Very Good* condition, although significant investment is needed to address accessibility issues.

Transit - Passenger Focused Facilities

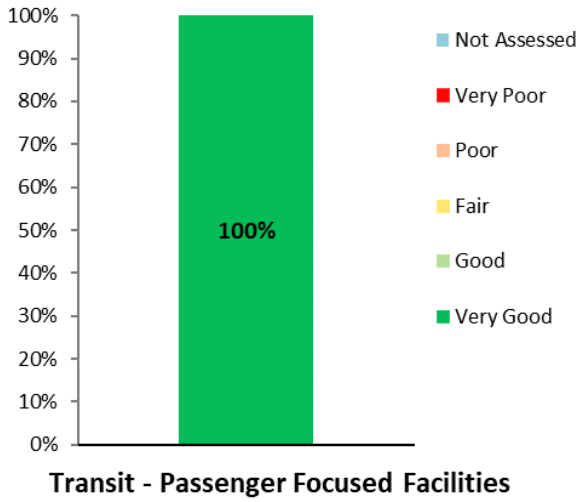


Figure 3.10-14. Passenger Focused Facilities - Condition

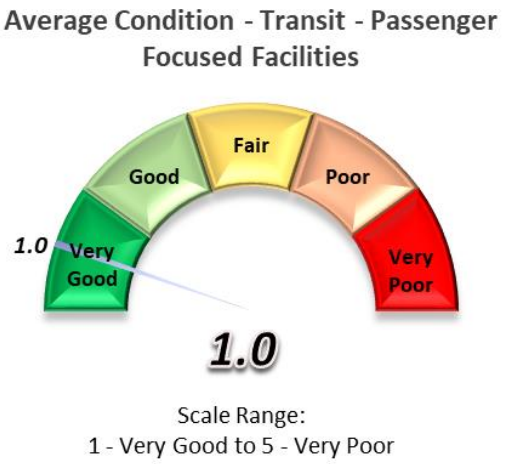


Figure 3.10-15. Passenger Focused Facilities – Average Condition

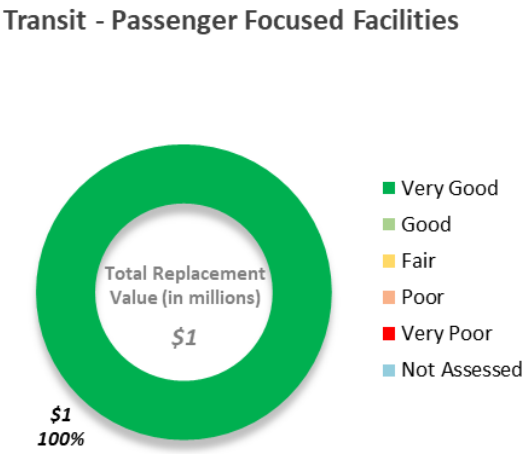


Figure 3.10-16. Passenger Focused Facilities – Condition and Value

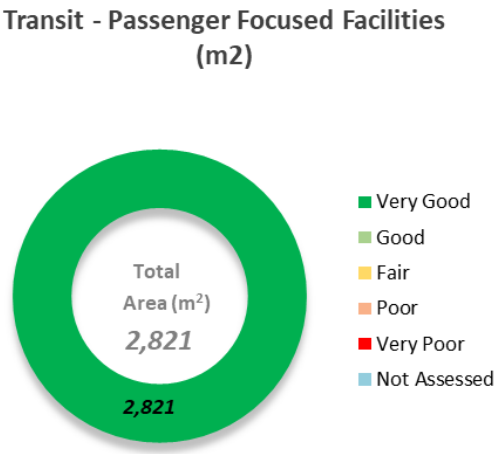


Figure 3.10-17. Passenger Focused Facilities – Condition and Inventory by Total Area (m^2)

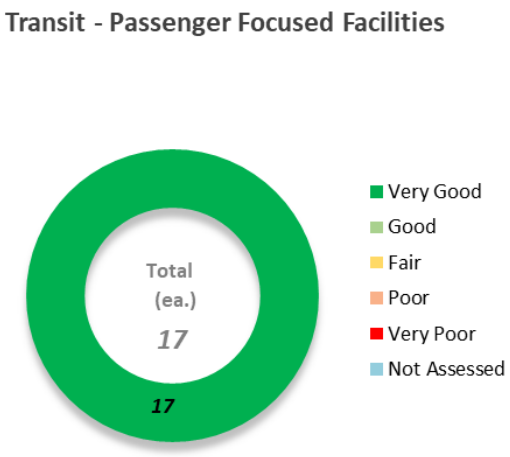


Figure 3.10-18. Fixed Assets – Condition and Inventory by Count

As shown in the figures above, all of Transit's passenger focused facilities (bike racks/shelters, drop off facilities "kiss and rides") are currently in *Very Good* condition. The passenger focused facilities are located on the Southwest Rapid Transitway (Stage 1) and were built in 2012.

Transit - Transit Exclusive Bridges and Tunnels



Figure 3.10-19. Transit Exclusive Bridges and Tunnels - Condition

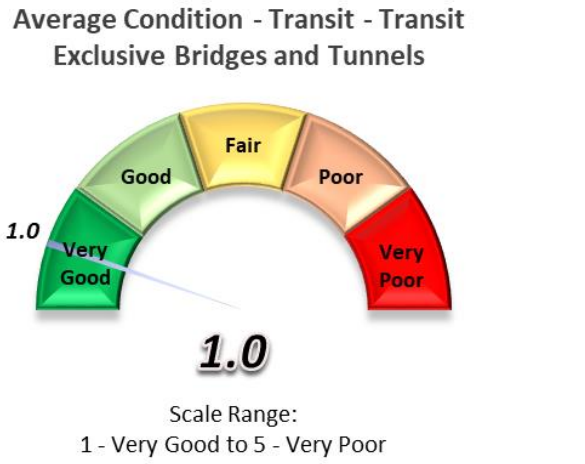


Figure 3.10-20. Transit Exclusive Bridges and Tunnels – Average Condition

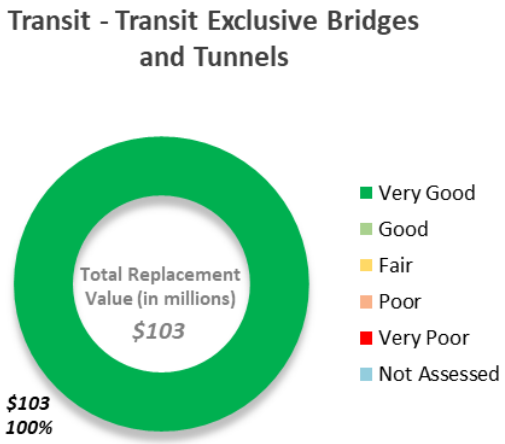


Figure 3.10-21. Transit Exclusive Bridges and Tunnels – Condition and Value

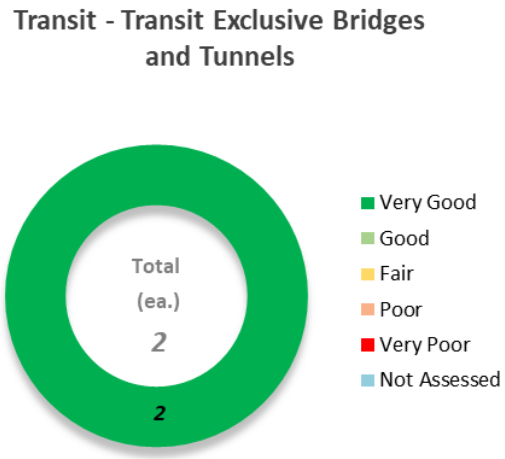


Figure 3.10-22. Transit Exclusive Bridges and Tunnels – Condition and Inventory

As shown in the figures above, all of Transit's exclusive bridges and tunnels (specific to Rapid Transit) are currently in *Very Good* condition. The exclusive bridges and tunnels are located on the Southwest Rapid Transitway (Stage 1) and were built in 2012.

Transit - Facilities

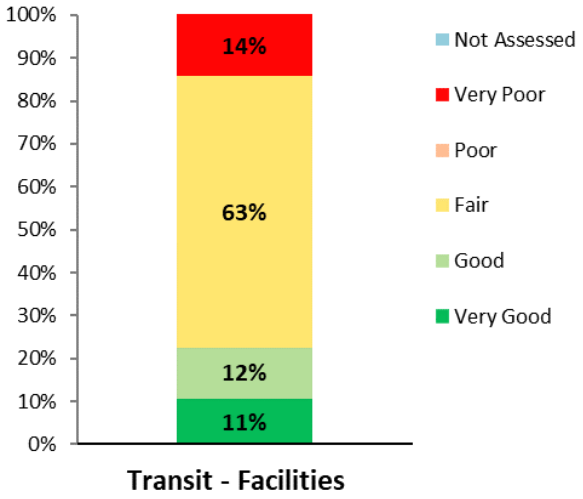


Figure 3.10-23. Facilities - Condition

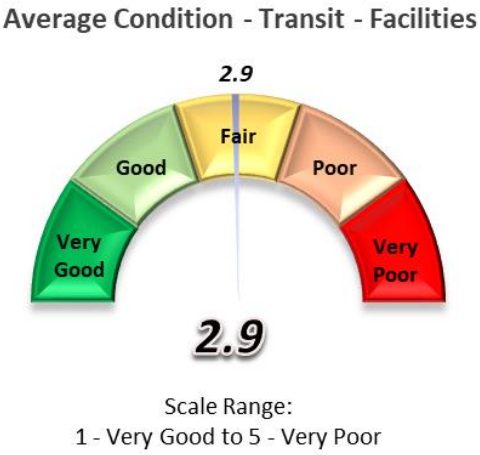


Figure 3.10-24. Facilities – Average Condition

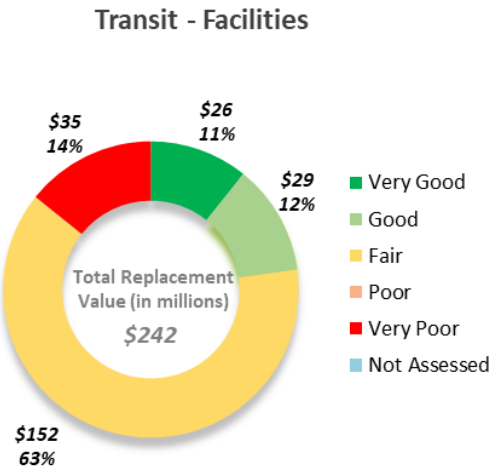


Figure 3.10-25. Facilities – Condition and Value

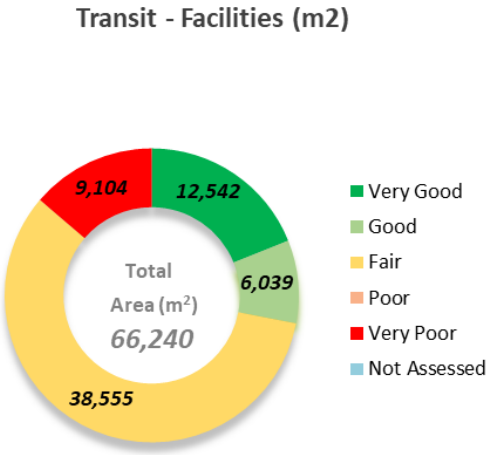


Figure 3.10-26. Facilities – Condition and Inventory by Total Area (m^2)

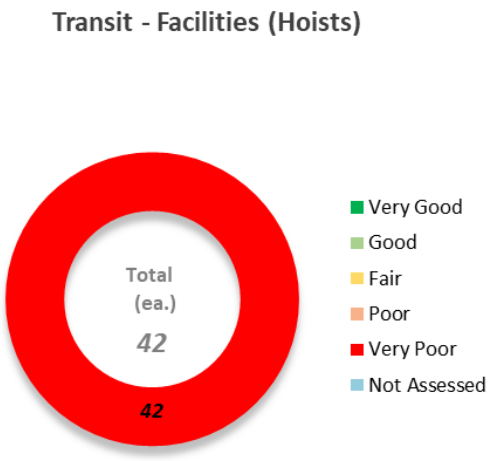


Figure 3.10-27. Facilities – Condition and Inventory of Hoists

As shown in the figures above, the majority of Transit's facilities (storage, maintenance, office, hoist equipment) are currently in *Fair* to *Very Good* condition and are over half their average expected life. Transit facilities are older and undersized for today's Transit fleet. The Main Street garage will require full replacement, as this facility is at the end of its useful life. The City is in the process of investing approximately $52 million in a building addition for the Osborne Street maintenance facility. In addition, existing hoists in the maintenance garages are in *Very Poor* condition and nearing end of life. The City will need to make a future investments in order to maintain and expand Transit's aging facilities, necessary to support the current and expanding fleet.

3.10.4 Age Profile

Transit - Fleet (Rolling Stock Assets)

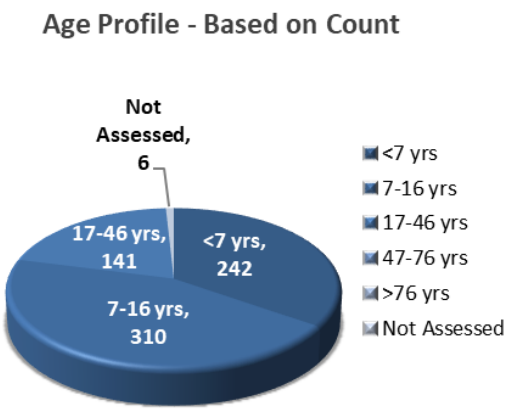


Figure 3.10-28. Fleet (Rolling Stock Assets) – Age Profile Based on Count

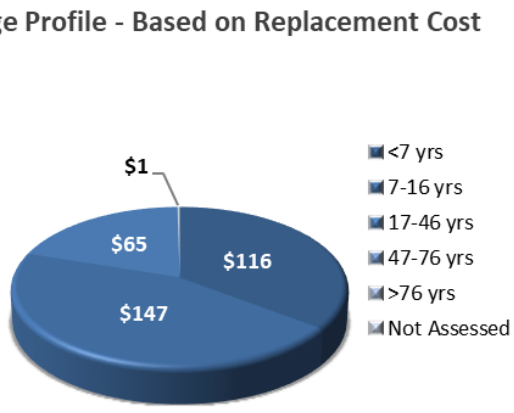


Figure 3.10-29. Fleet (Rolling Stock Assets) – Age Profile Based on Replacement Cost

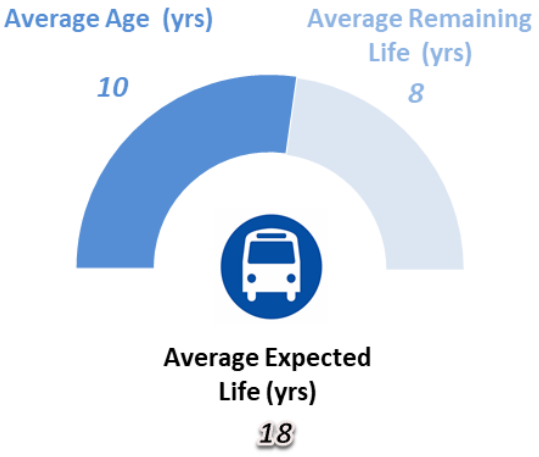


Figure 3.10-30. Fleet (Rolling Stock Assets) – Average Age and Remaining Life

Transit - Fixed Assets

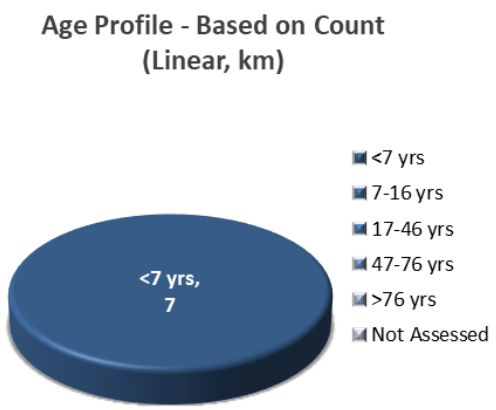


Figure 3.10-31. Fixed Assets – Age Profile Based on Count (Linear)

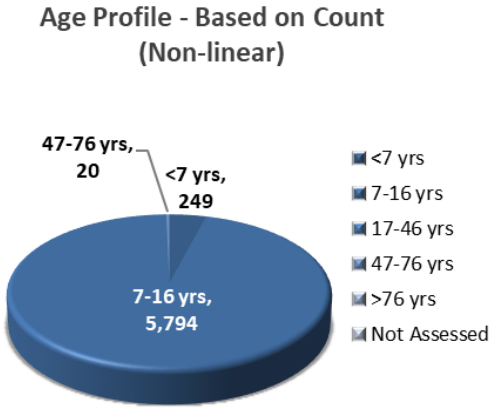


Figure 3.10-32. Fixed Assets – Age Profile Based on Count (Non-Linear)

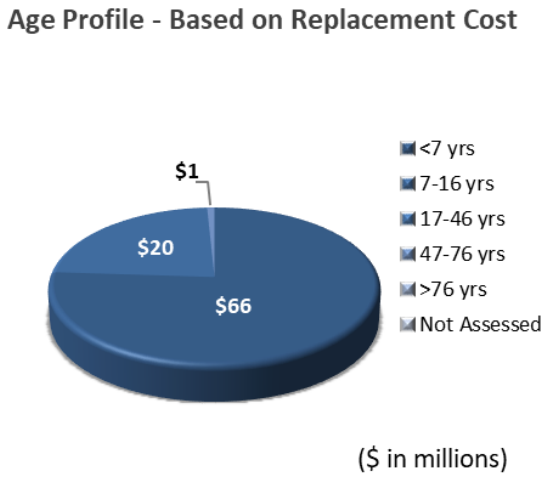


Figure 3.10-33. Fixed Assets – Age Profile Based on Replacement Cost

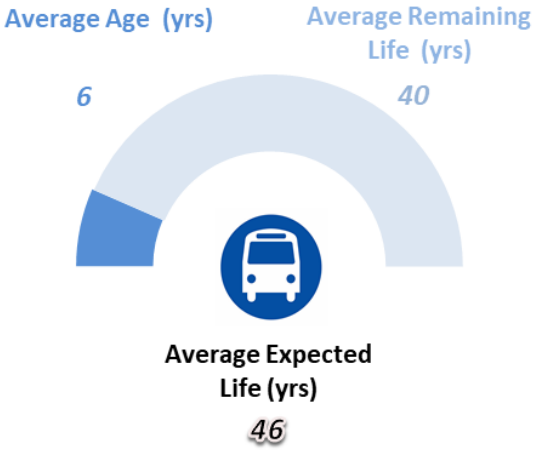


Figure 3.10-34. Fixed Assets – Average Age and Remaining Life

Transit - Passenger Focused Facilities

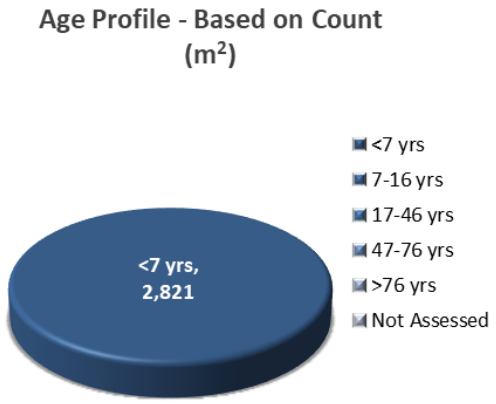


Figure 3.10-35. Passenger Focused Facilities – Age Profile Based on Count (m^2)

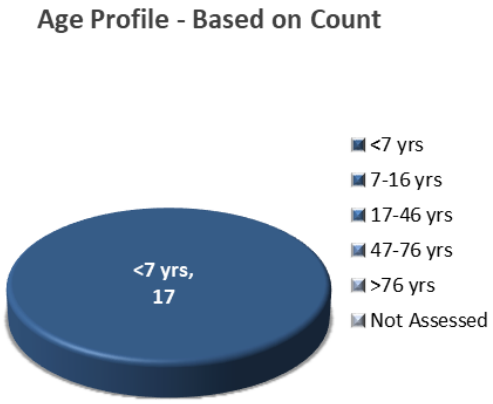


Figure 3.10-36. Passenger Focused Facilities – Age Profile Based on Count

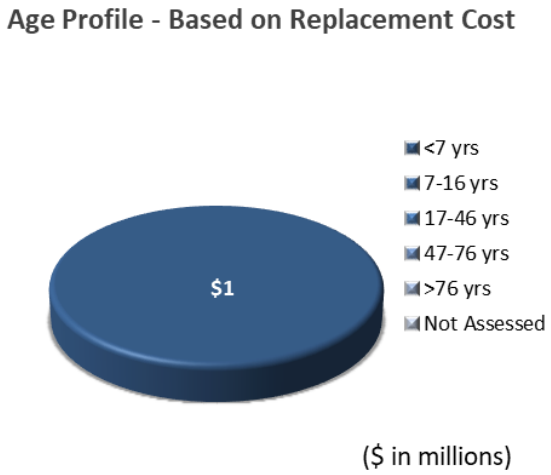


Figure 3.10-37. Passenger Focused Facilities – Age Profile Based on Replacement Cost

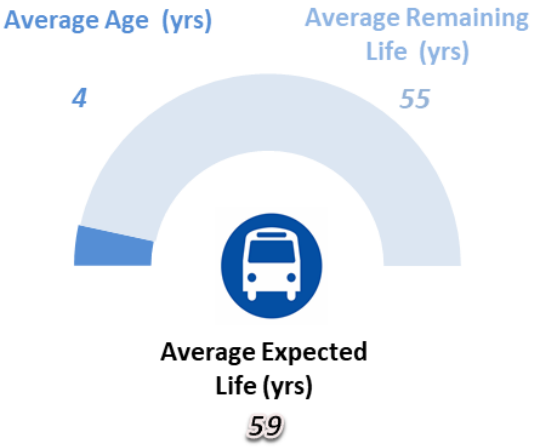


Figure 3.10-38. Passenger Focused Facilities – Average Age and Remaining Life

Transit - Transit Exclusive Bridges and Tunnels

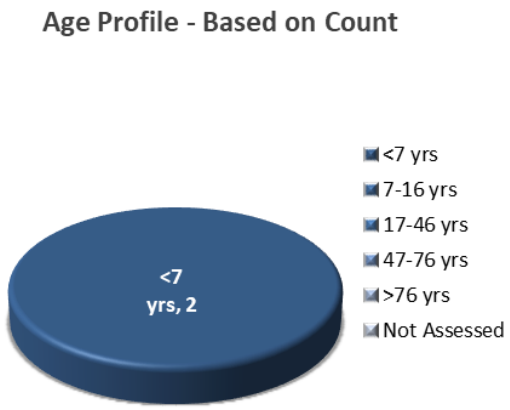


Figure 3.10-39. Transit Exclusive Bridges and Tunnels – Age Profile Based on Count

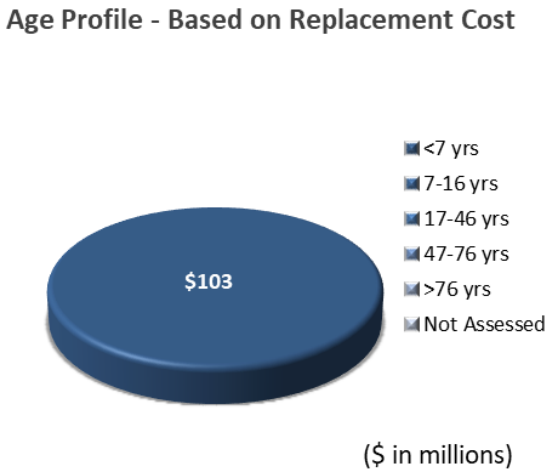


Figure 3.10-40. Transit Exclusive Bridges and Tunnels – Age Profile Based on Replacement Cost

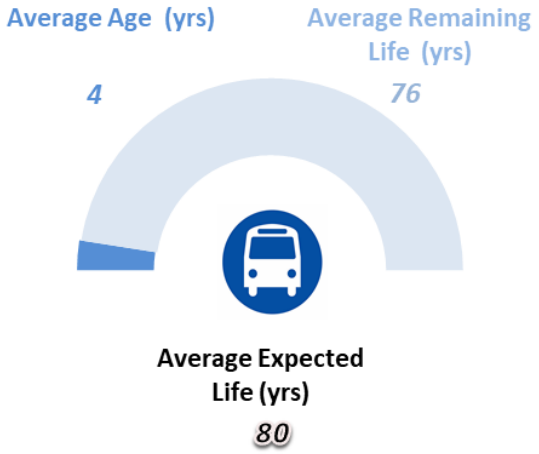


Figure 3.10-41. Transit Exclusive Bridges and Tunnels – Average Age and Remaining Life

Transit - Facilities

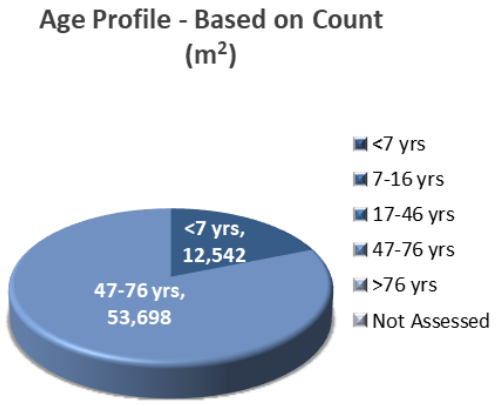


Figure 3.10-42. Facilities – Age Profile Based on Count (m^2)

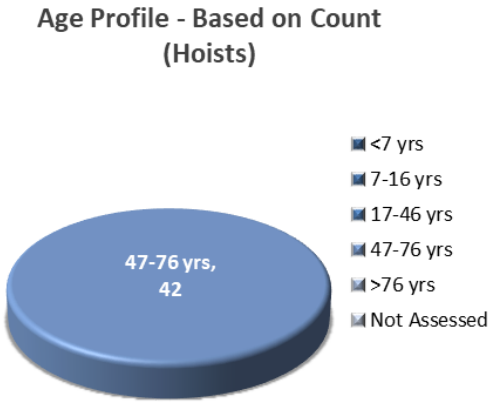


Figure 3.10-43. Facilities – Age Profile Based on Count (Hoists)

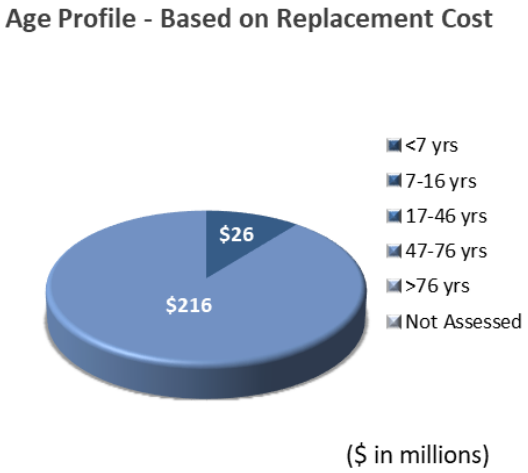


Figure 3.10-44. Facilities – Age Profile Based on Replacement Cost

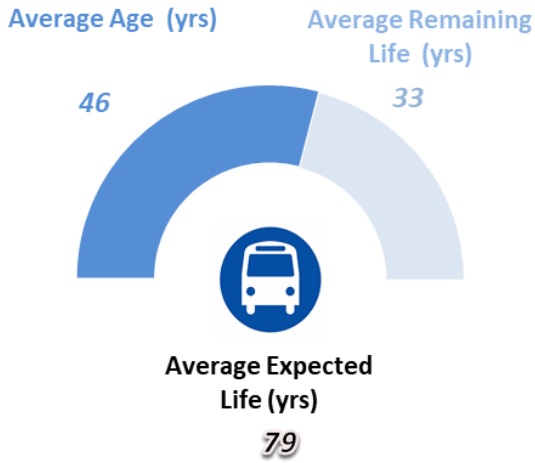


Figure 3.10-45. Facilities – Average Age and Remaining Life

3.10.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Transit infrastructure element, by asset type, is shown in Figure 3.10-46.

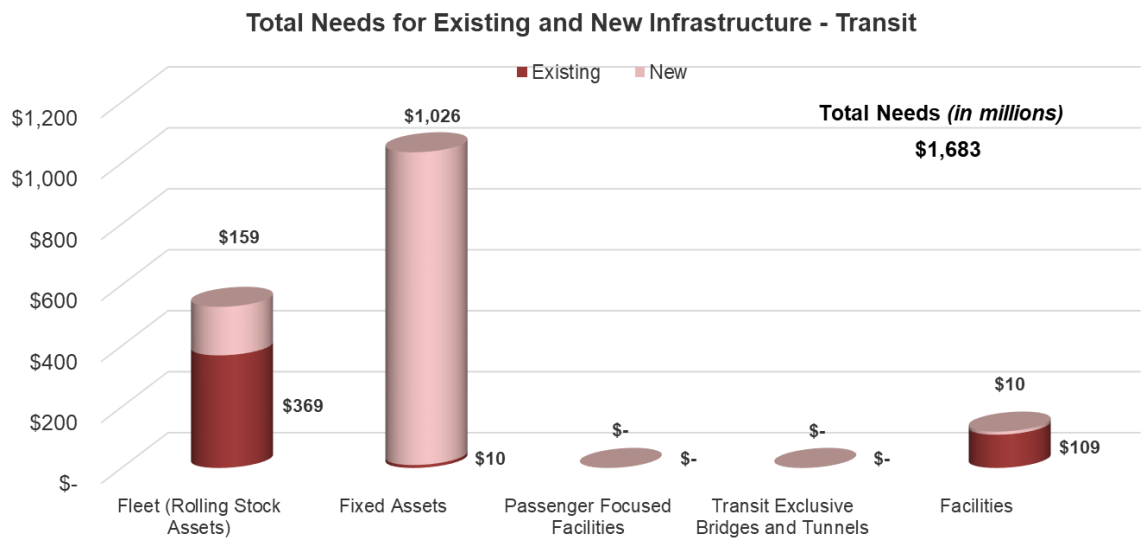


Figure 3.10-46. Transit – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Transit infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.10-47.

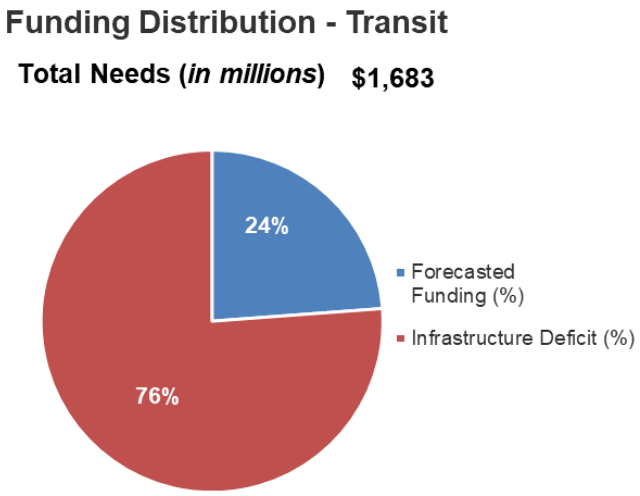


Figure 3.10-47. Funding Distribution - Transit

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years - 10 Year Capital Plan = Infrastructure Deficit

A breakdown of the capital funding deficit for the Transit infrastructure element, by asset type, is shown in Figures 3.10-48 and 3.10-49.

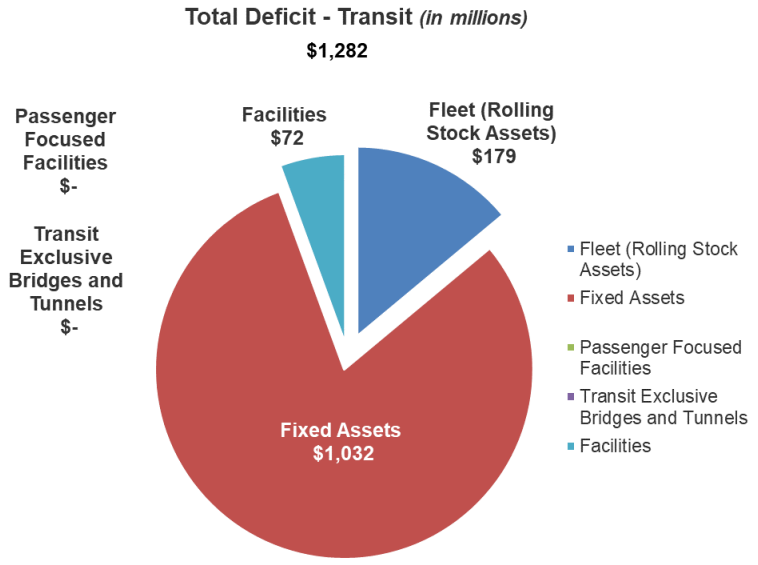


Figure 3.10-48. Total Deficit – Transit
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

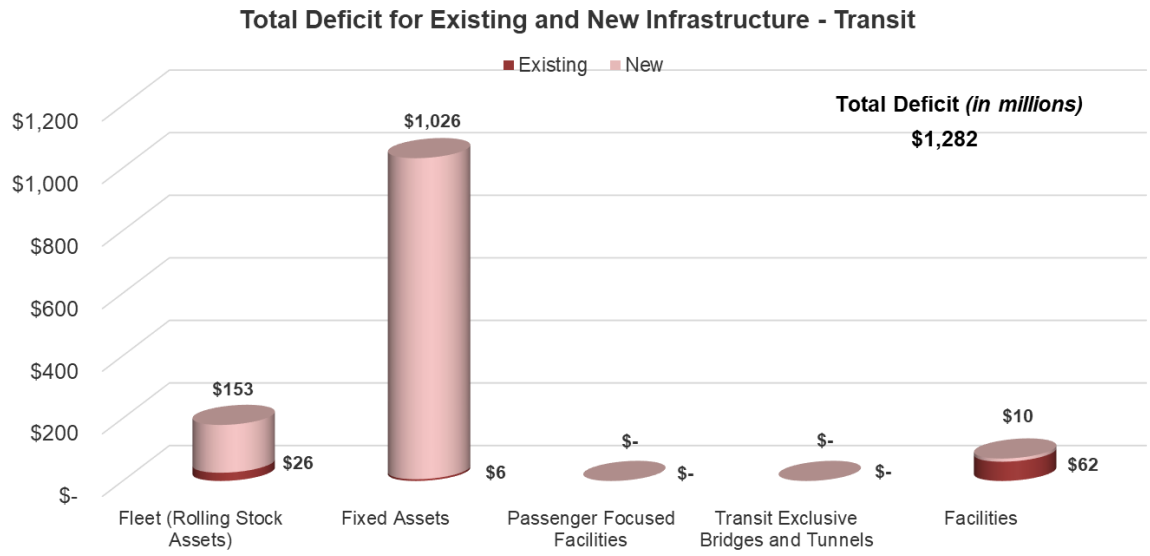


Figure 3.10-49. Transit – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

Transit's total infrastructure deficit is a combination of existing and new asset needs necessary to support existing levels of service and strategic growth.

The majority of Transit's infrastructure deficit, approximately $1 billion, is for the construction of new Rapid Transit corridors. Funding requirements for the Rapid Transit corridors includes funding for passenger facilities and bridges/tunnels. All of these costs have been included in the fixed asset estimate.

The deficit for existing assets is primarily for funding a new Transit garage to replace the existing Main Street garage that is currently at the end of its useful life.

Transit has also included a future funding amount for the conversion of diesel-fueled buses to sustainable, low carbon-producing fueled buses. Technology advances, and interest in using a more cost-effective and green fuel source, will drive the new fleet funding for the next 10 years.

3.10.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.10-1. Transit – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Transit	Facilities	Heavy Shop Equipment	$4,000,000

3.11 Police Services

3.11.1 Service Overview and Performance

Winnipeg is a unique and vibrant city. Over the course of the last 45 years, the Winnipeg Police Service (WPS) has undergone many changes to serve its citizens. The WPS is part of a larger system devoted to providing all residents with safe communities and a good quality of life. The WPS is a central and key player in creating safe communities through crime prevention and effective response to social disorder and criminal activity.

Currently, the WPS is structured into 19 divisions, which are based on programs, specialties, and services available. These are organized in the areas of Uniform Operations, Investigations, Operational Support, Organizational Support, and Human Resource Support.

Since the establishment of the Winnipeg Police Board in June 2013, the WPS is operating under a new governance model. The Winnipeg Police Board is a civilian oversight body that ensures that police services are delivered effectively, efficiently, and in a manner consistent with community needs, values, and expectations. There is public support for the WPS leadership and the Winnipeg Police Board. The new governance model provides an opportunity for growth and development in meeting our citizens' needs.

Winnipeg is not unique in Canada in terms of the challenges it faces, but it does have several distinguishing elements that require tailored solutions. The Winnipeg Police Board and the WPS have worked together to define the vision, goals, and strategic directions for policing in Winnipeg. The WPS and the Winnipeg Police Board have collaboratively requested and listened to input from Winnipeg citizens through public consultation sessions, written submissions, formal presentations, and informal discussions. This information has been merged with empirical data and both groups worked closely together to develop the 2015-2019 Strategic Plan.

3.11.2 Asset Metrics Summary

Police Services – All Assets

The overall condition, value and age relating to all assets that are required to deliver Police Services is depicted below.

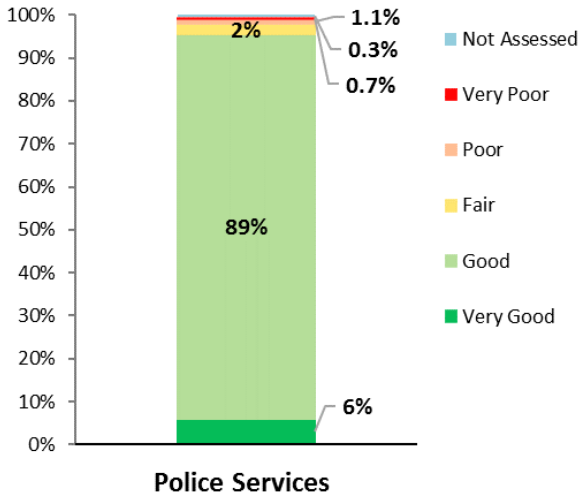


Figure 3.11-1. Police Services - Condition

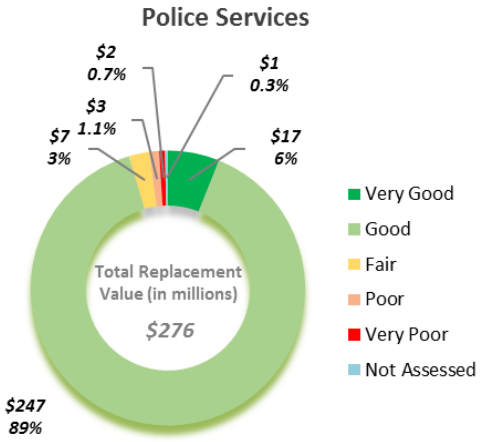


Figure 3.11-2. Police Services – Condition and Value

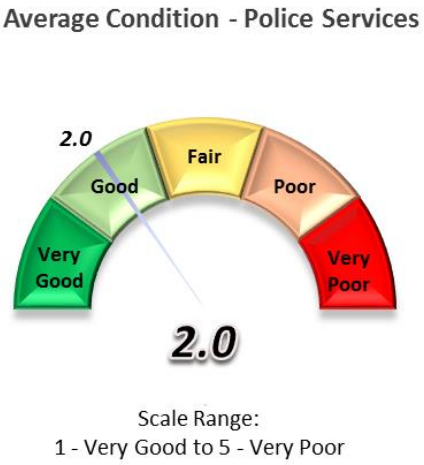


Figure 3.11-3. Police Services – Average Condition

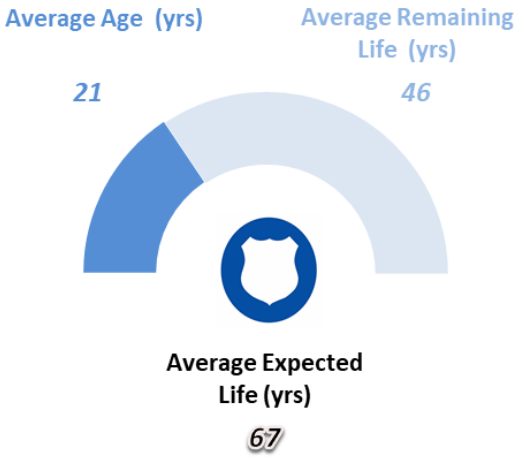


Figure 3.11-4. Police Services - Age Profile

Significant investments have been made within the last 15 years towards the WPS's assets; they are in overall *Good* condition.

3.11.3 Asset Condition, Value, and Inventory

Police Services - Police Stations and Headquarters

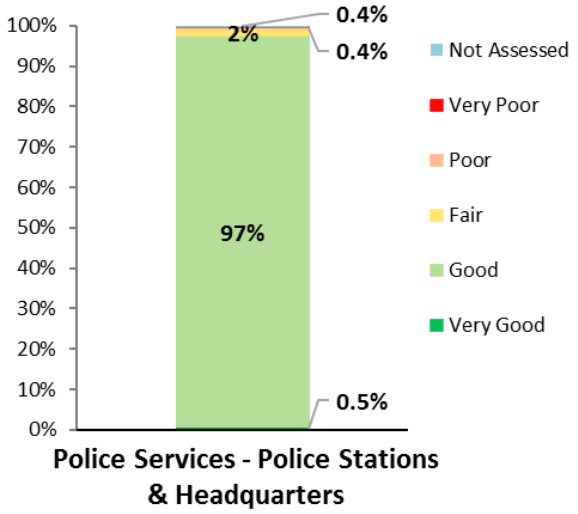


Figure 3.11-5. Police Stations and Headquarters - Condition



Figure 3.11-6. Police Stations and Headquarters – Average Condition

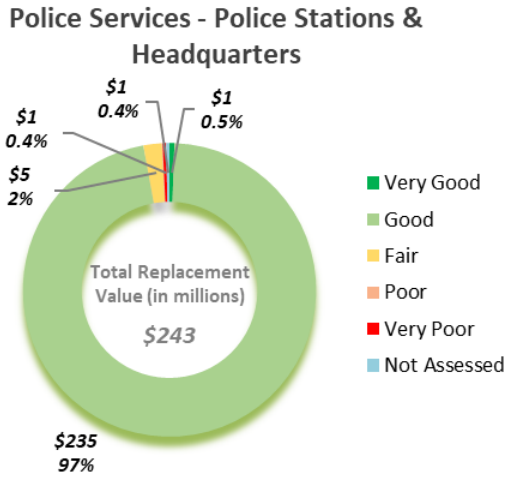


Figure 3.11-7. Police Stations and Headquarters – Condition and Value

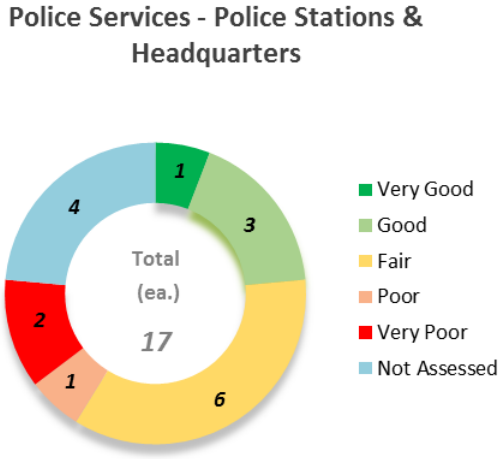


Figure 3.11-8. Police Stations and Headquarters – Condition and Inventory

In 2003, Council approved the consolidation of WPS's six stations into an operationally updated four station model. The new buildings were rolled out in 2007, starting with East District Station, West District in 2013, and most recently the Headquarters in 2016. Currently, funding is in place for the North Station. Several support buildings have upgrades planned in the future to maintain the current level of service.

Police Services - Fleet

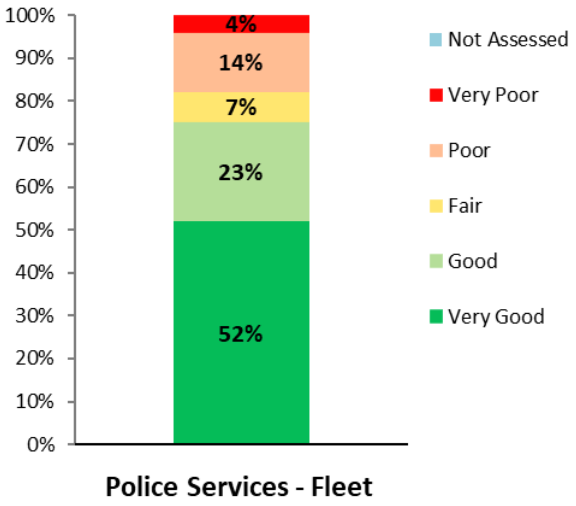


Figure 3.11-9. Fleet - Condition

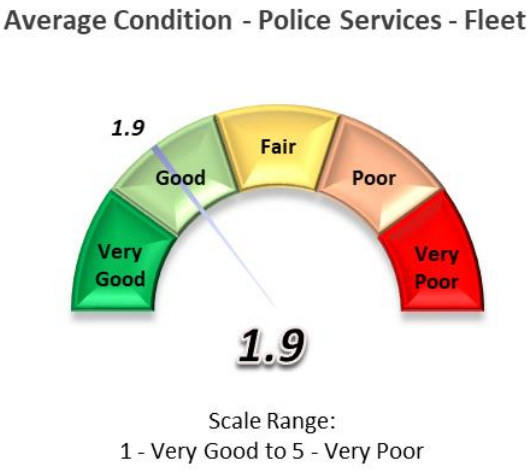


Figure 3.11-10. Fleet – Average Condition

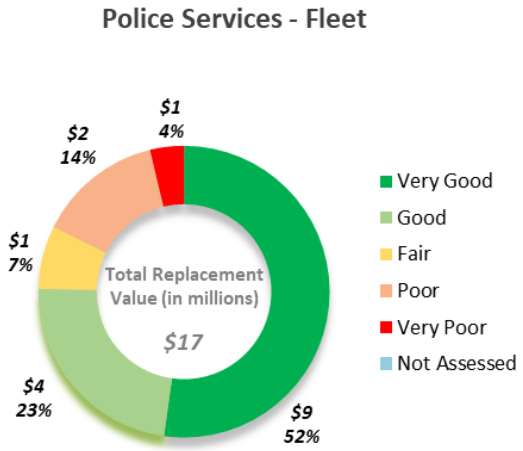


Figure 3.11-11. Fleet – Condition and Value

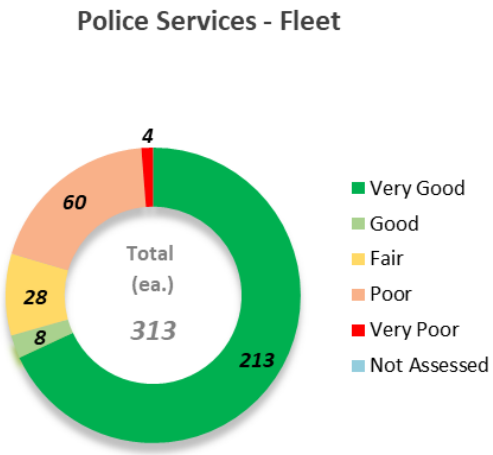


Figure 3.11-12. Fleet – Condition and Inventory

The Winnipeg Fleet Management Agency (WFMA) acquires vehicles and, in turn, leases them to the WPS. Fuel for WPS is also purchased by the WFMA. Fleet assets include light/super/heavy duty vehicles, specialty vehicles, and the Police Helicopter.

WPS's Vehicle Services Unit is responsible for the planning, allocation, and lifecycle of the WPS fleet after the assets have been procured by WFMA. The unit also provides support to the Police sector in the form of technical and mechanical inspections/assistance, related police reports, and court attendance, as required, regarding ongoing police investigations involving non-WPS vehicles. The fleet data presented in this AMP captures WPS fleet inventory from the WFMA database and uses a standard expected life by vehicle type, similar to that used across other City departments. In future iterations of this AMP, the WPS will present detailed lifecycles of the WPS fleet in instances where they may differ from standard expected life calculations noted in this AMP.

Police Services - Specialized Equipment

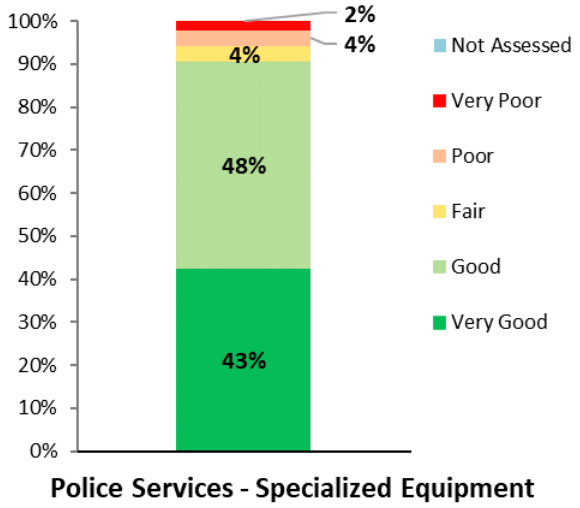


Figure 3.11-13. Specialized Equipment - Condition



Figure 3.11-14. Specialized Equipment – Average Condition

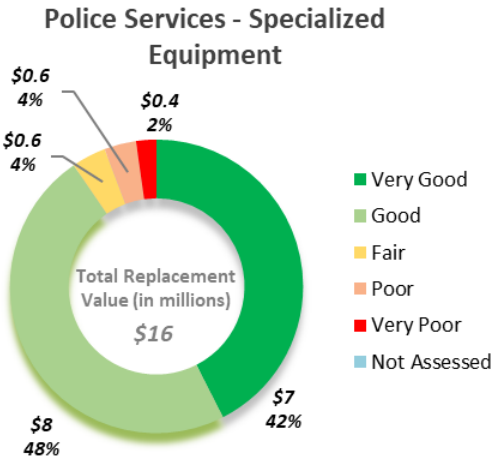


Figure 3.11-15. Specialized Equipment – Condition and Value

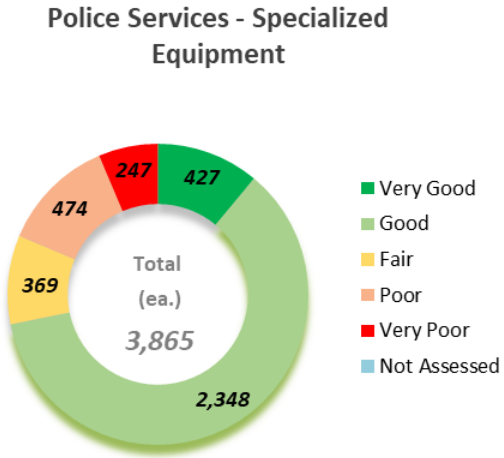


Figure 3.11-16. Specialized Equipment – Condition and Inventory

WPS specialized equipment assets include firearms, associated firearms support equipment, radios, breathalyzers, traffic monitoring equipment, and Vehicles Services Unit maintenance equipment.

3.11.4 Age Profile

Police Services - Police Stations and Headquarters

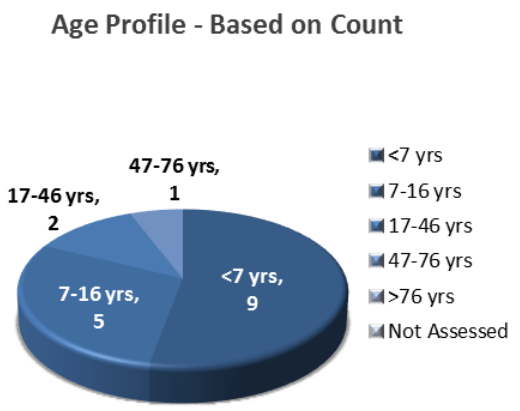


Figure 3.11-17. Police Stations and Headquarters – Age Profile Based on Count

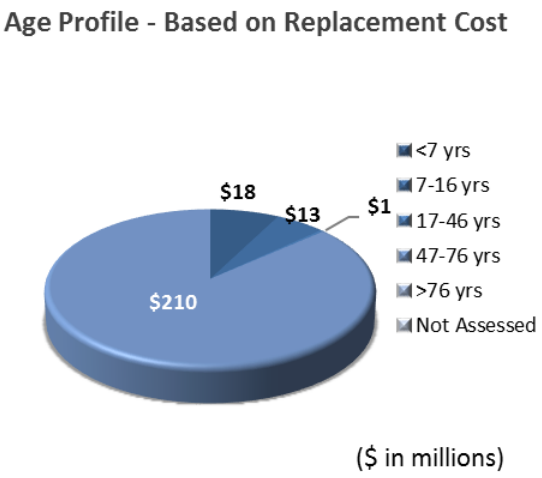


Figure 3.11-18. Police Stations and Headquarters – Age Profile Based on Replacement Cost

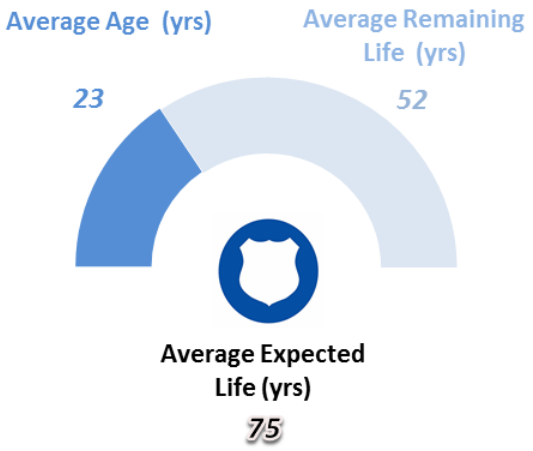


Figure 3.11-19. Police Stations and Headquarters – Average Age and Remaining Life

Significant investments have been made within the last 15 years towards the police stations and headquarter buildings; they are in overall *Good* condition.

Police Services - Fleet

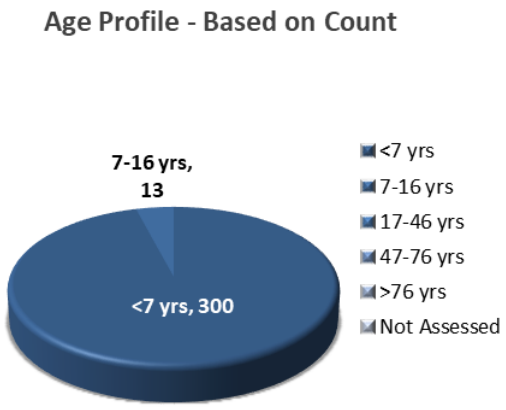


Figure 3.11-20. Fleet – Age Profile Based on Count

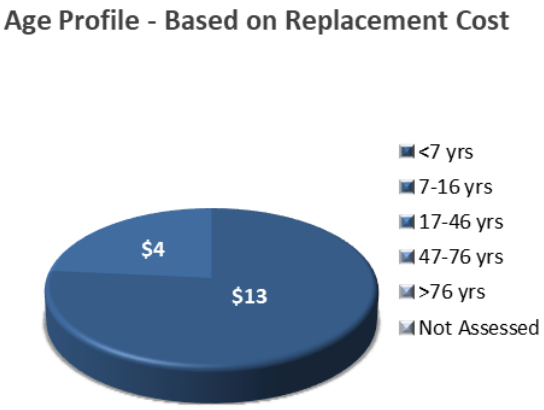


Figure 3.11-21. Fleet – Age Profile Based on Replacement Cost

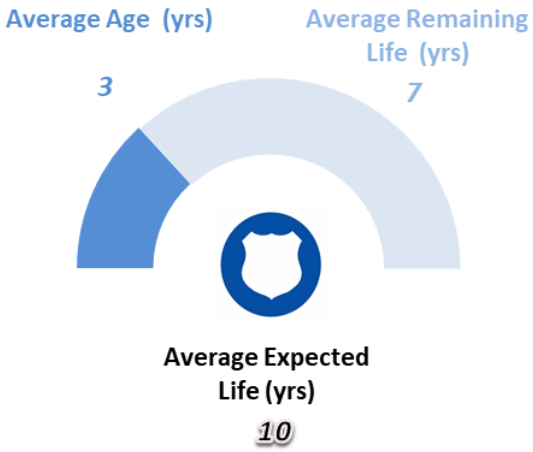


Figure 3.11-22. Fleet – Average Age and Remaining Life

WPS is responsible for the planning, allocation, and lifecycle of the WPS fleet. The Vehicle Services Unit provides all maintenance, repair, overhaul, and fabrication work for the fleet and related equipment including coordinating all outsourced work.

Police Services - Specialized Equipment

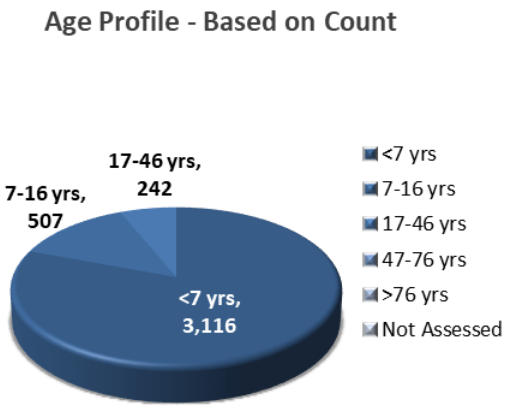


Figure 3.11-23. Specialized Equipment – Age Profile Based on Count

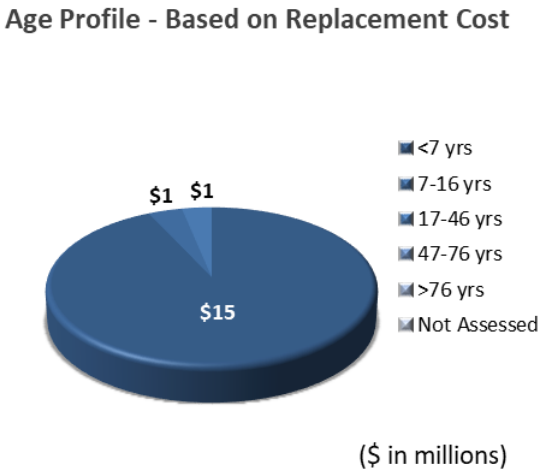


Figure 3.11-24. Specialized Equipment – Age Profile Based on Replacement Cost

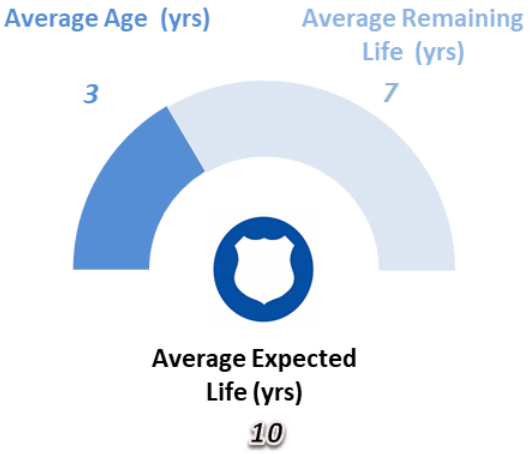


Figure 3.11-25. Specialized Equipment – Average Age and Remaining Life

The nature of some WPS specialized assets require detailed tracking to identify end of life equipment due to the potential risks associated with equipment failure. These items have been prioritized to be captured in the AMP. Future iterations of this AMP will include other specialized equipment that have yet to be evaluated.

3.11.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Police Services infrastructure element, by asset type, is shown in Figure 3.11-26.

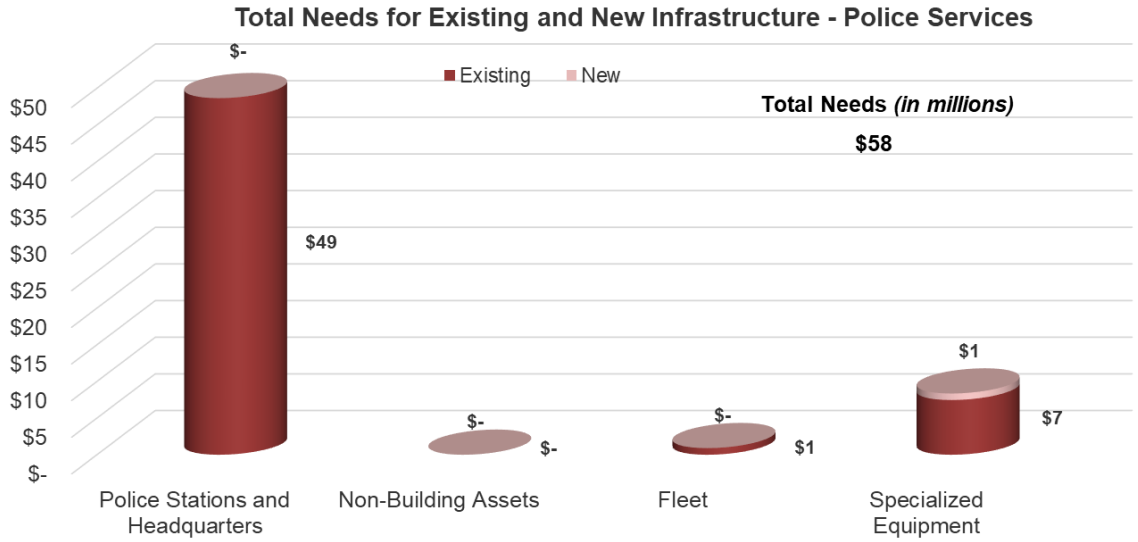


Figure 3.11-26. Police Services – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Police Services infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.11-27.

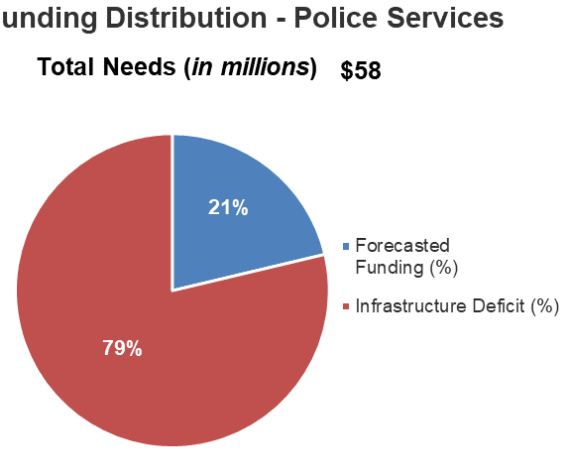


Figure 3.11-27. Funding Distribution – Police Services

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Infrastructure Deficit = Total Needed Infrastructure Over Next 10 Years - 10 Year Capital Plan

A breakdown of the capital funding deficit for the Police Services infrastructure element, by asset type, is shown in Figures 3.11-28 and 3.11-29.

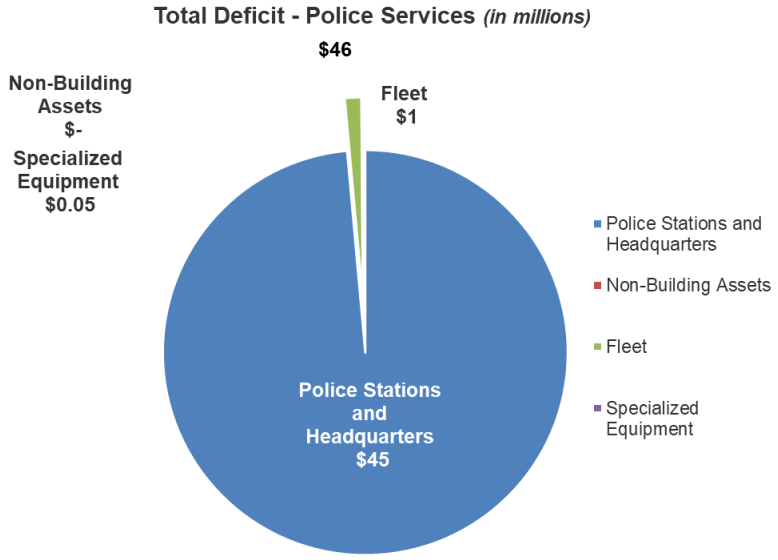


Figure 3.11-28. Total Deficit – Police Services
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

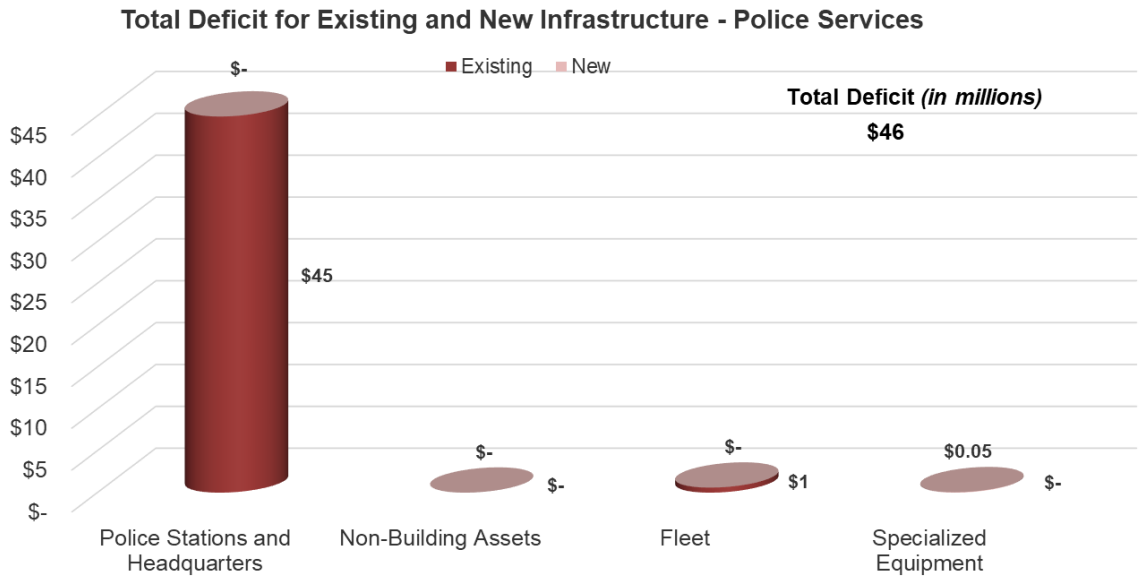


Figure 3.11-29. Police Services – Total Deficit for Existing and New Infrastructure
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

3.11.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.11-1. Police Services – Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Police Stations and Headquarters	• 911 Call Centre • Flight Operations Unit, Helicopter Storage Building	To be determined	To be determined
Non-Building Assets	Equipment for the following WPS Units: • Armory • Audio Logger Room • Bicycle Unit • Canine Unit • Clandestine Lab Unit • Crowd Control Unit • Dive Unit • Flight Operation (Does NOT include the helicopter) • Forensic Services Unit • Police Vehicle Operations • Polygraph Unit • Specialty units • Ground Search and Rescue • Tactical unit assets • Investigative Units • Public Information Officer Unit • River Patrol Unit • Technical Surveillance • Vehicle Services Unit Fit-up Equipment Division 31 Evidence Control Unit assets	To be determined	To be determined
Non-Building Assets	Equipment for the following Staff Support Services: • Data Centre Equipment • Fitness equipment • Information Technology Solutions Division assets and mobile equipment • Lockers • Shooting range • Security systems for video management and access control	To be determined	To be determined

The WPS is in the process of evaluating the excluded items and will provide data for future iterations of the AMP.

3.12 Fire and Paramedic Services

3.12.1 Service Overview and Performance

Winnipeg Fire Paramedic Service (WFPS) provides Fire and Emergency Medical Service (EMS) to the City of Winnipeg. It operates from 30 fire stations, an ambulance depot and one training academy. WFPS has two equally important divisions: The Winnipeg Fire Department (WFD) and Winnipeg Emergency Medical Services (WEMS), using a centralized dispatch system.

The WFPS has 310 vehicles in use to provide emergency service coverage and management. The heavy fire equipment consists of 29 fire engines, six rescues, five aerial ladders, three squads, four District Chief units, and one Platoon Chief operates on four 24-hour platoons; all units are operational and staffed full-time. WFD also has two heavy rescue units for trench rescue, as well as two jet boats and several zodiacs for water rescue and water-based fire suppression. WEMS has 25 ambulances, one Major Incident Response Vehicle (MIRV), one (1) bariatric ambulance, four District Medical Supervisors and one Superintendent of EMS operations. District Medical Supervisors use chase vehicles to assist paramedics on ambulance with pediatric and high acuity calls.

A great deal of specialized equipment is required to provide emergency services including rescue and hazardous material handling equipment, emergency medical tools, and patient transportation devices. Additional specialized equipment is needed to support and maintain assets at the stations and at the Academy. WFPS is responsible for the maintenance of all heavy equipment.

The WFPS Communication Centre is responsible for receiving emergency calls and dispatching all ambulance and fire apparatus for the City of Winnipeg. The WFPS Communication Operators are responsible for triaging all EMS and Fire calls received at the centre and dispatching all emergency, non-emergency, and pre-booked interfacility transfer calls. They dispatch both EMS and Fire calls. The Fire and Paramedic Academy is responsible for training new recruits and on-going professional development. It also provides paramedic training of outside agencies.

3.12.2 Asset Metrics Summary

Fire and Paramedic Services – All Assets

The overall condition, value and age relating to all assets that are required to deliver Fire and Paramedic Services is depicted below.

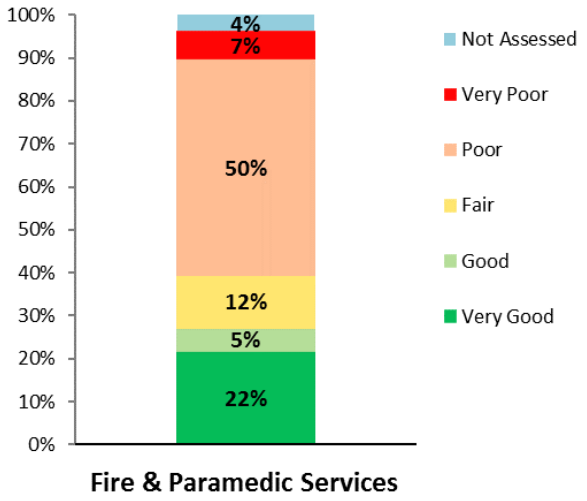


Figure 3.12-1. Fire & Paramedic Services - Condition

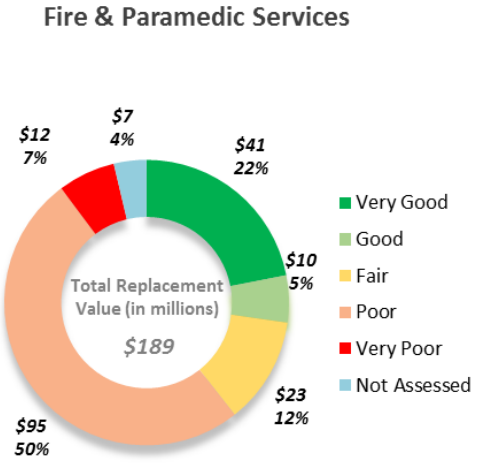


Figure 3.12-2. Fire & Paramedic Services – Condition and Value

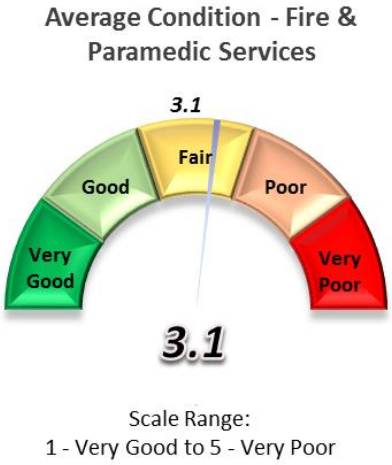


Figure 3.12-3. Fire & Paramedic Services – Average Condition

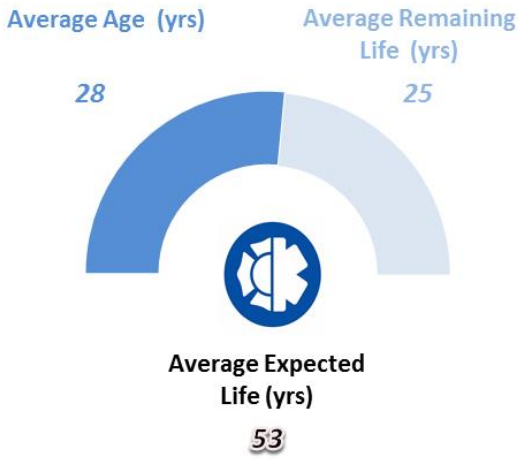


Figure 3.12-4. Fire & Paramedic Services - Age Profile

3.12.3 Asset Condition, Value, and Inventory

Fire and Paramedic Services - Stations and Training Academy

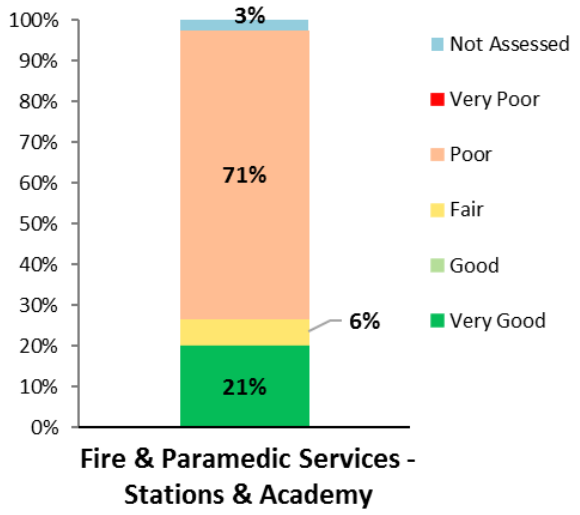


Figure 3.12-5. Stations and Training Academy - Condition



Figure 3.12-6. Stations and Training Academy – Average Condition

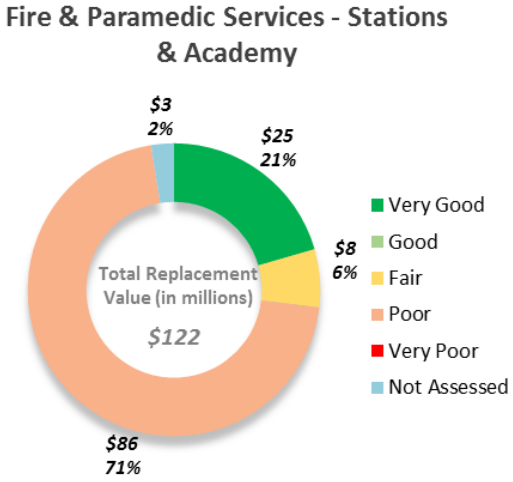


Figure 3.12-7. Stations and Training Academy – Condition and Value

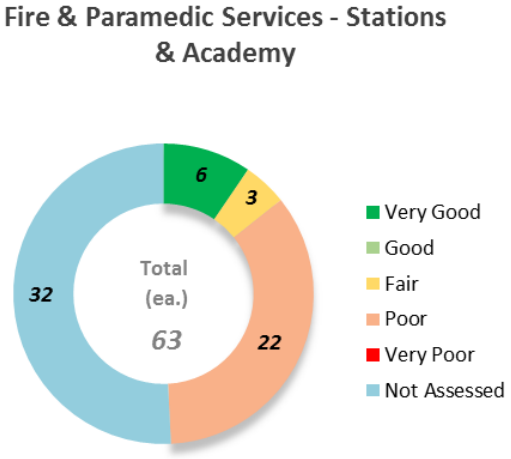


Figure 3.12-8. Stations and Training Academy – Condition and Inventory

The City network of functioning stations are a key asset in the provision of timely fire and paramedic services. The total inventory consists of 30 stations, one training academy, an ambulance depot and storage units. The assets that have not been assessed for condition are the storage units.

Fire and Paramedic Services - Communication and Technology

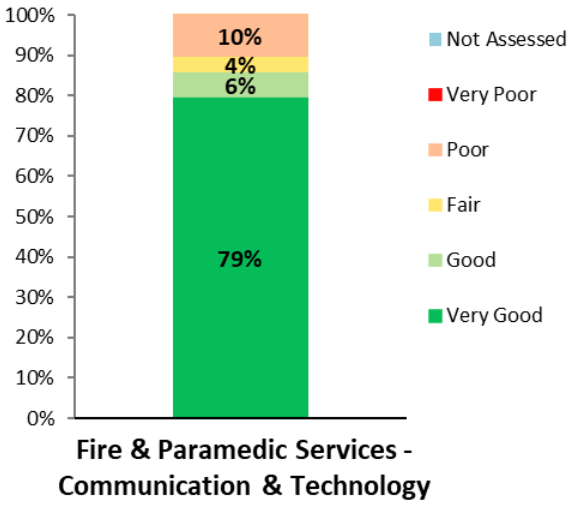


Figure 3.12-9. Communication and Technology - Condition



Figure 3.12-10. Communication and Technology – Average Condition

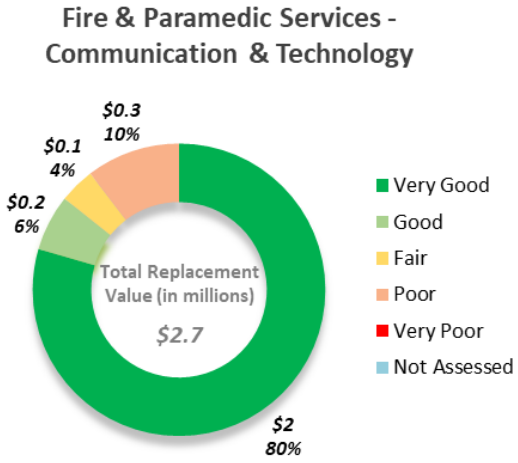


Figure 3.12-11. Communication and Technology – Condition and Value

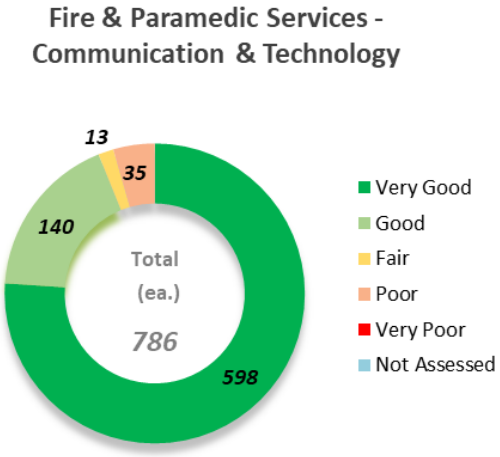


Figure 3.12-12. Communication and Technology – Condition and Inventory

Communication and technology equipment reflected in the above graphs only represent recently replaced radios and audio-visual equipment. The majority of communication and technology assets used by WFPS are being reported under the Information Technology infrastructure element at this time. There is a deficit in information technology associated to 911 call-taking and dispatching software, as well as incident reporting and prevention.

Fire and Paramedic Services - Specialized Equipment

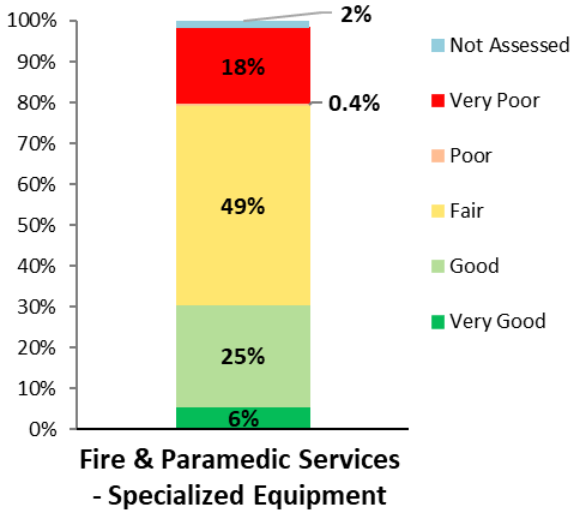


Figure 3.12-13. Specialized Equipment - Condition



Figure 3.12-14. Specialized Equipment – Average Condition

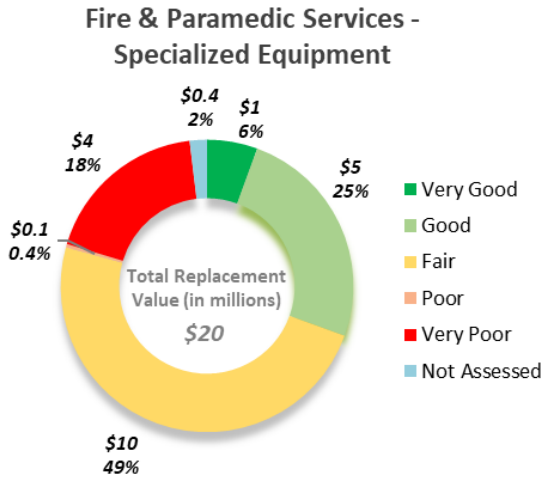


Figure 3.12-15. Specialized Equipment – Condition and Value

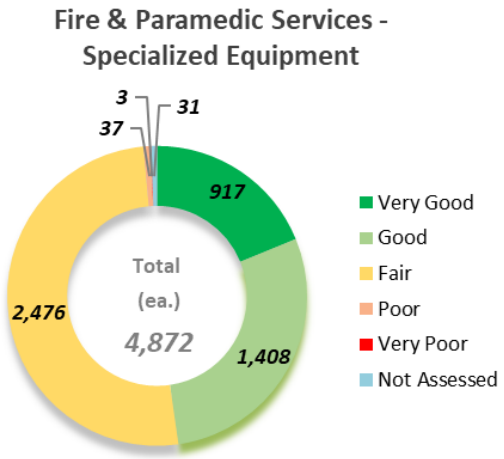


Figure 3.12-16. Specialized Equipment – Condition and Inventory

Specialized equipment encompasses all hardware used in fire response and paramedic services, as well as equipment used for training.

Fire and Paramedic Services - Fleet

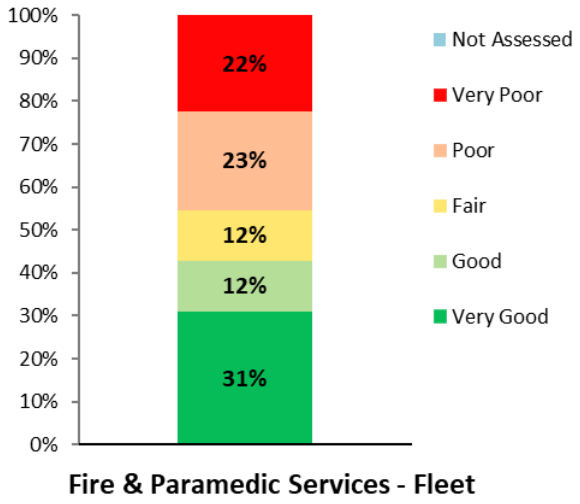


Figure 3.12-17. Fleet - Condition

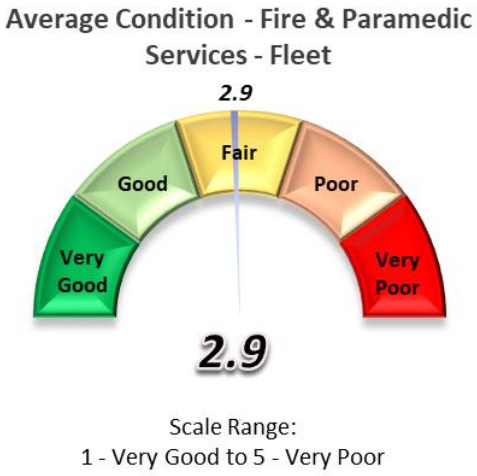


Figure 3.12-18. Fleet – Average Condition

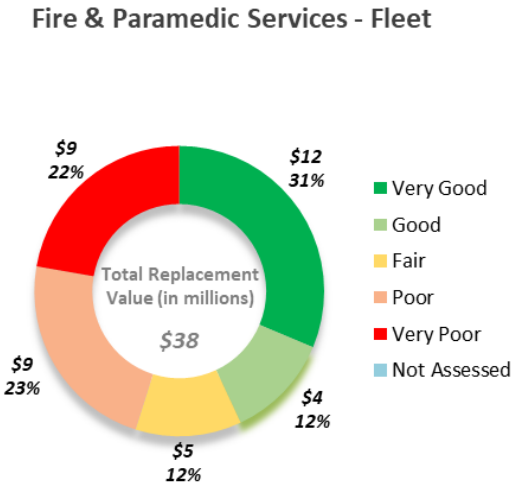


Figure 3.12-19. Fleet – Condition and Value

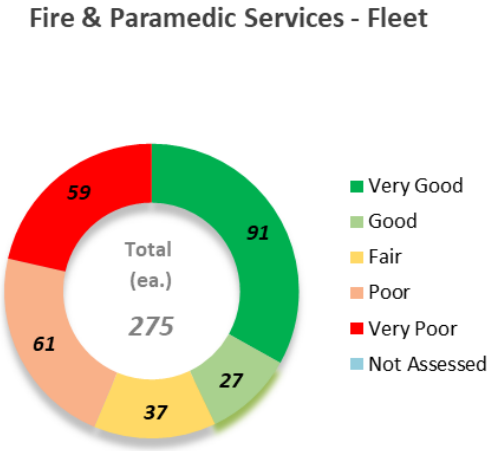


Figure 3.12-20. Fleet – Condition and Inventory

Fire and Paramedic Services - Other

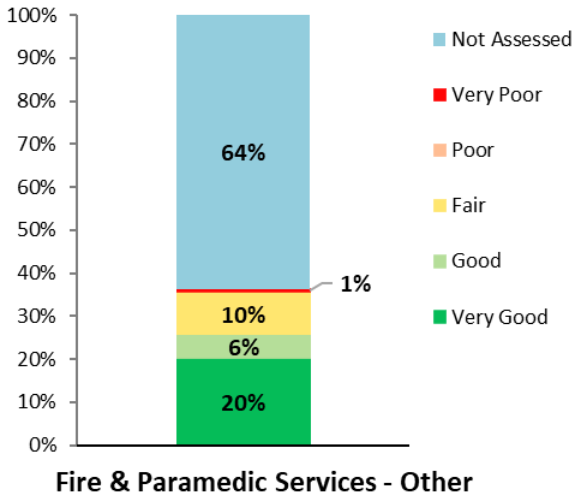


Figure 3.12-21. Other – Condition

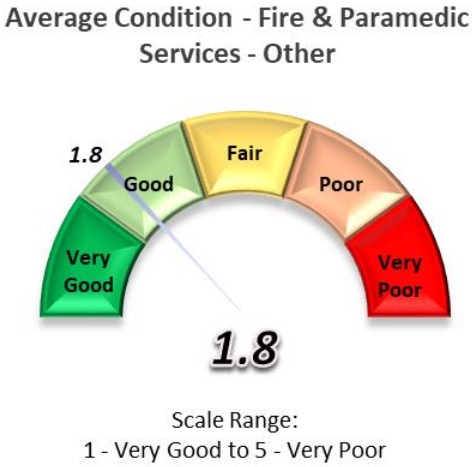


Figure 3.12-22. Other – Average Condition

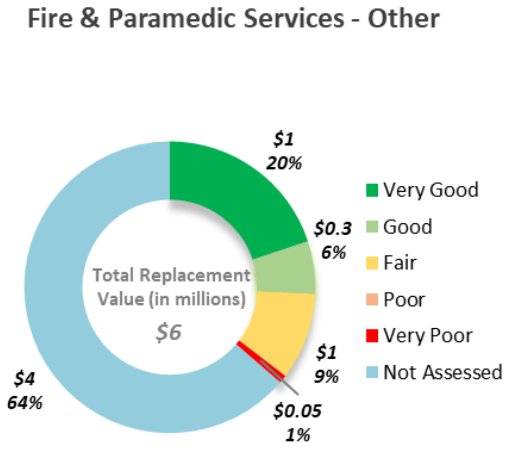


Figure 3.12-23. Other – Condition and Value

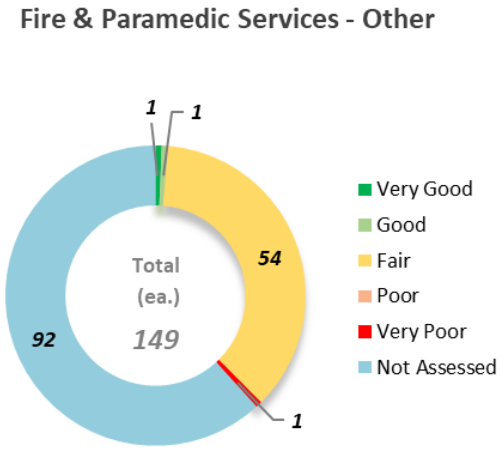


Figure 3.12-24. Other – Condition and Inventory

Other assets include maintenance equipment, fitness equipment, appliances, furniture, and stores.

3.12.4 Age Profile

Fire and Paramedic Services - Stations and Training Academy

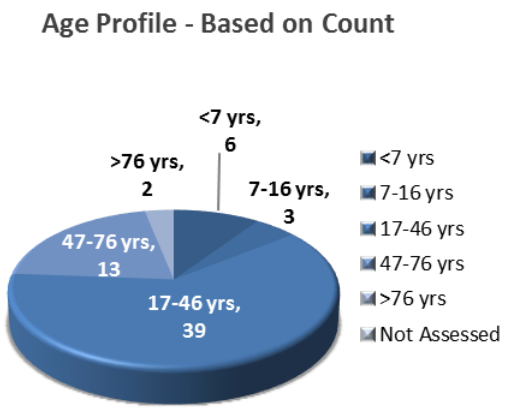


Figure 3.12-25. Stations and Training Academy – Age Profile Based on Count

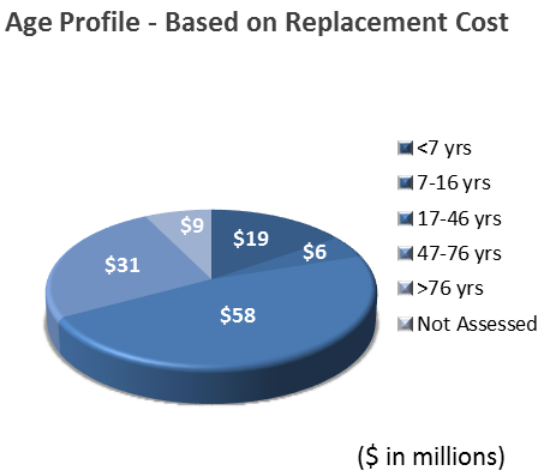


Figure 3.12-26. Stations and Training Academy – Age Profile Based on Replacement Cost

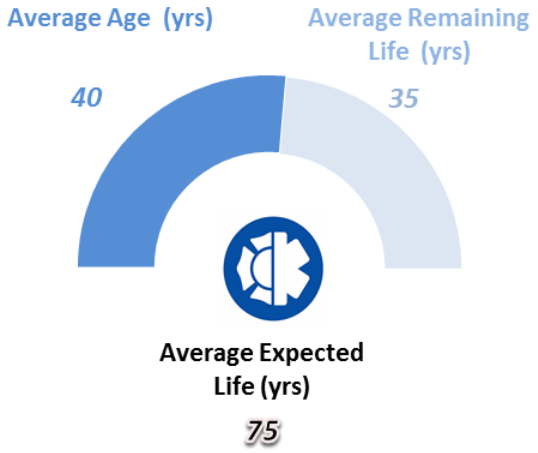


Figure 3.12-27. Stations and Training Academy – Average Age and Remaining Life

Many stations no longer fulfill the needs of current firefighting equipment and crew needs. Apparatus bays do not accommodate the size of new engines and improvements could be made to both health and safety precautions for storage of hazardous equipment and gear as well living arrangements for male and female staff. The stations that have repair costs to address consume the bulk of the funding for day-to-day maintenance of all stations, resulting in less overall preventative maintenance being performed. Less preventative maintenance results in increased rates of building deterioration.

Fire and Paramedic Services - Communication and Technology

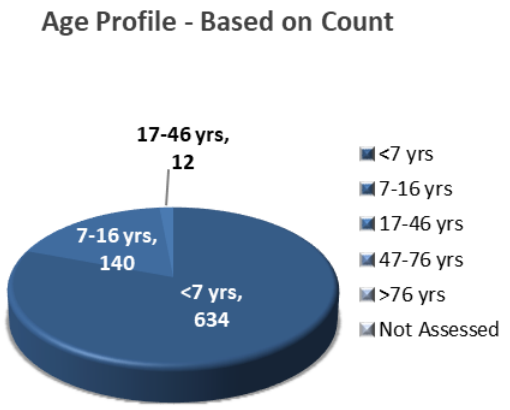


Figure 3.12-28. Communication and Technology – Age Profile Based on Count

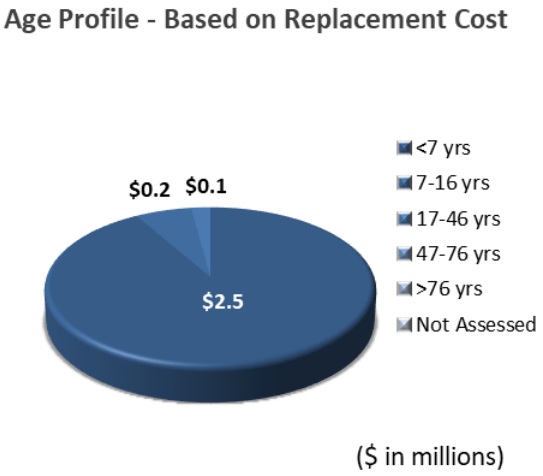


Figure 3.12-29. Communication and Technology – Age Profile Based on Replacement Cost

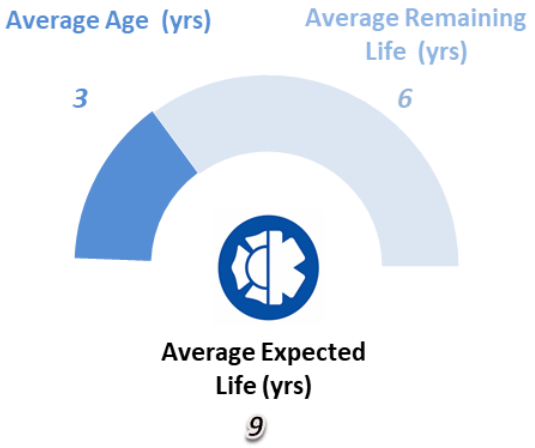


Figure 3.12-30. Communication and Technology – Average Age and Remaining Life

Fire and Paramedic Services - Specialized Equipment

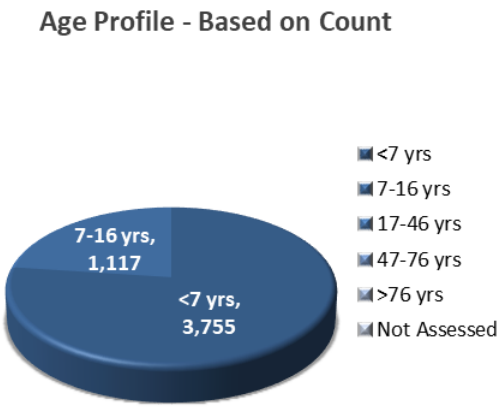


Figure 3.12-31. Specialized Equipment – Age Profile Based on Count

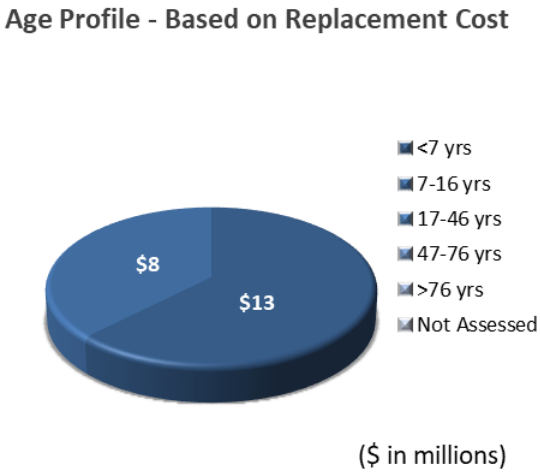


Figure 3.12-32. Specialized Equipment – Age Profile Based on Replacement Cost

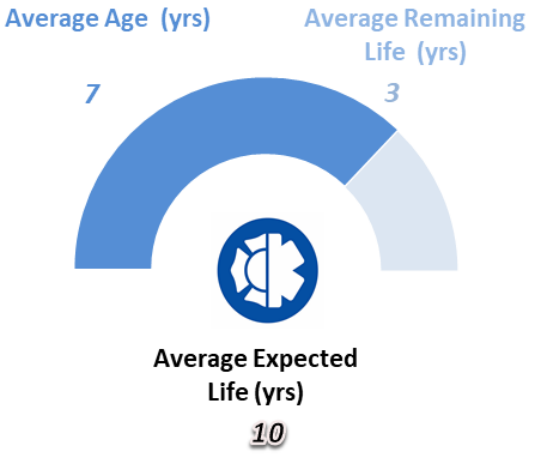


Figure 3.12-33. Specialized Equipment – Average Age and Remaining Life

Fire and Paramedic Services - Fleet

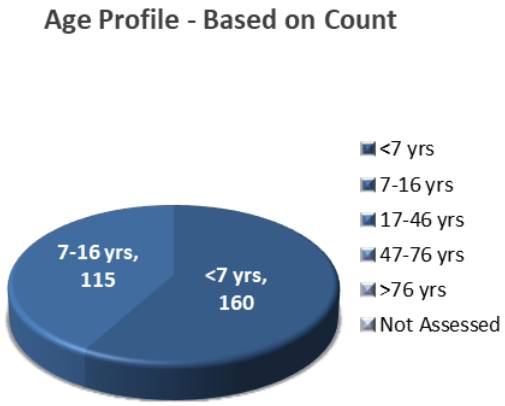


Figure 3.12-34. Fleet – Age Profile Based on Count

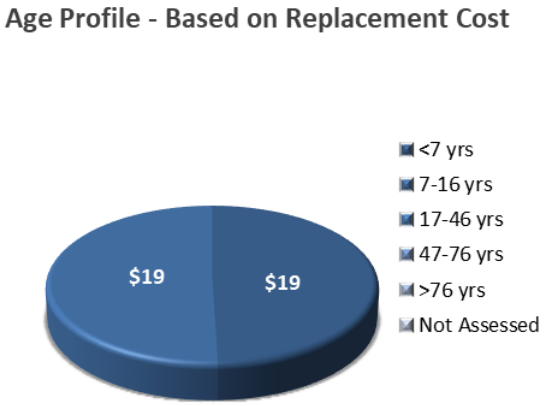


Figure 3.12-35. Fleet – Age Profile Based on Replacement Cost

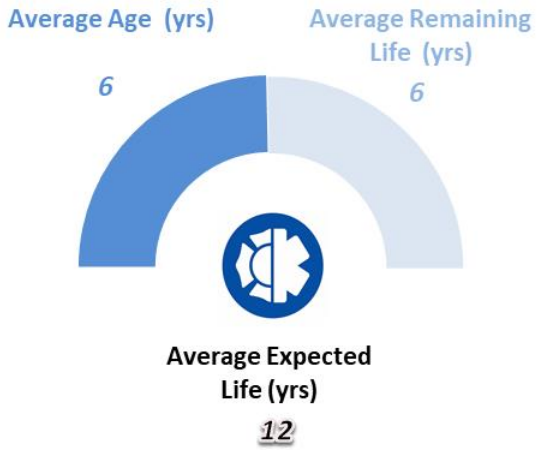


Figure 3.12-36. Fleet – Average Age and Remaining Life

Fire and Paramedic Services - Other

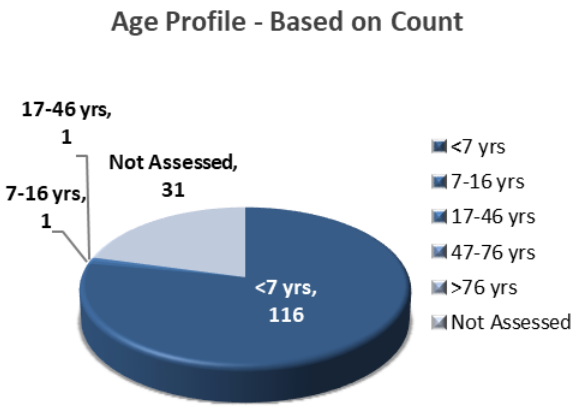


Figure 3.12-37. Other – Age Profile Based on Count

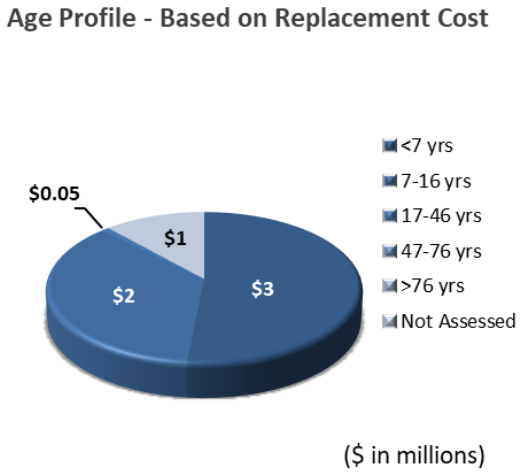


Figure 3.12-38. Other – Age Profile Based on Replacement Cost

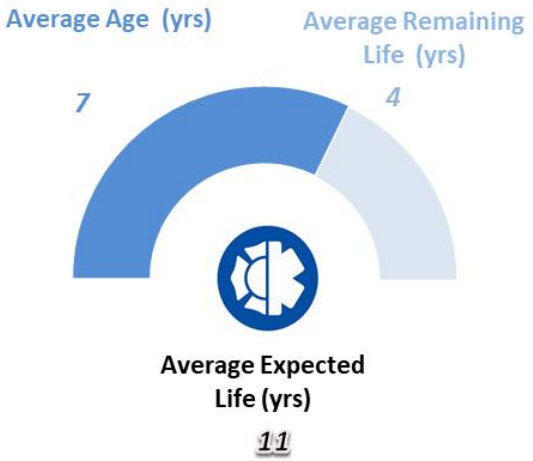


Figure 3.12-39. Other – Average Age and Remaining Life

3.12.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Fire and Paramedic Services infrastructure element, by asset type, is shown in Figure 3.12-40.

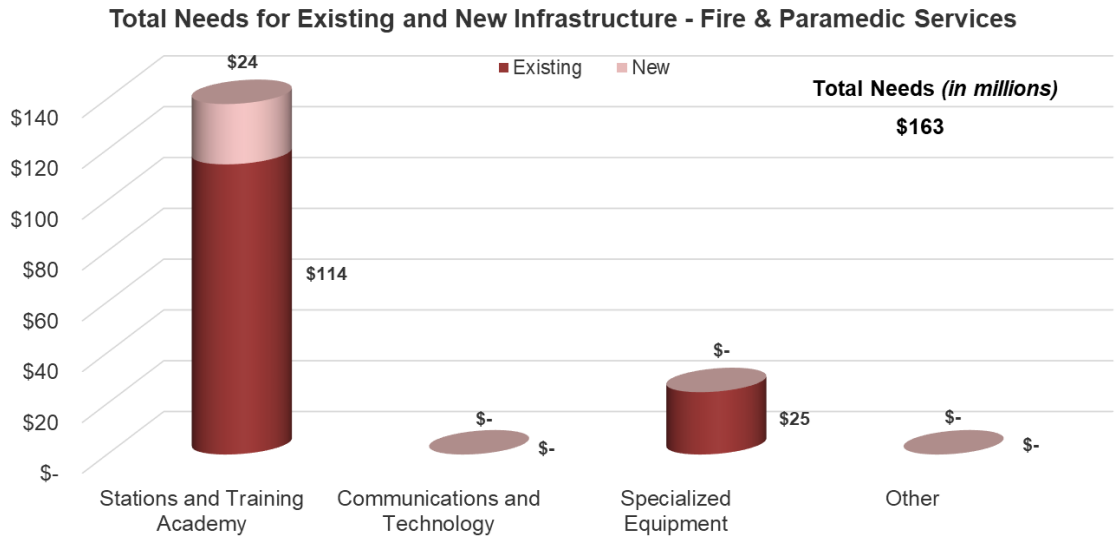


Figure 3.12-40. Fire & Paramedic Services – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Fire and Paramedic Services infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.12-41.

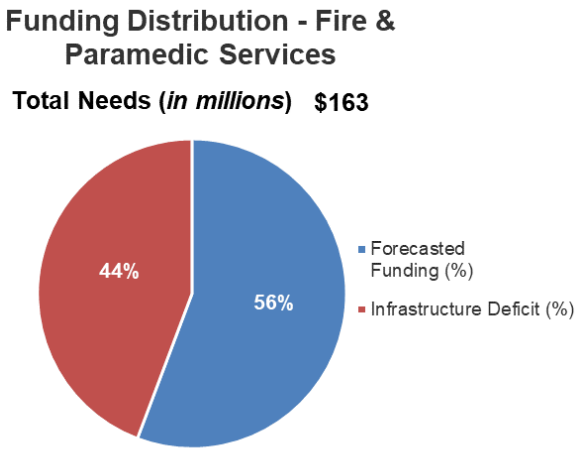


Figure 3.12-41. Funding Distribution – Fire & Paramedic Services

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years	-	10 Year Capital Plan	=	Infrastructure Deficit

A breakdown of the capital funding deficit for the Fire and Paramedic Services infrastructure element, by asset type, is shown in Figures 3.12-42 and 3.12-43.

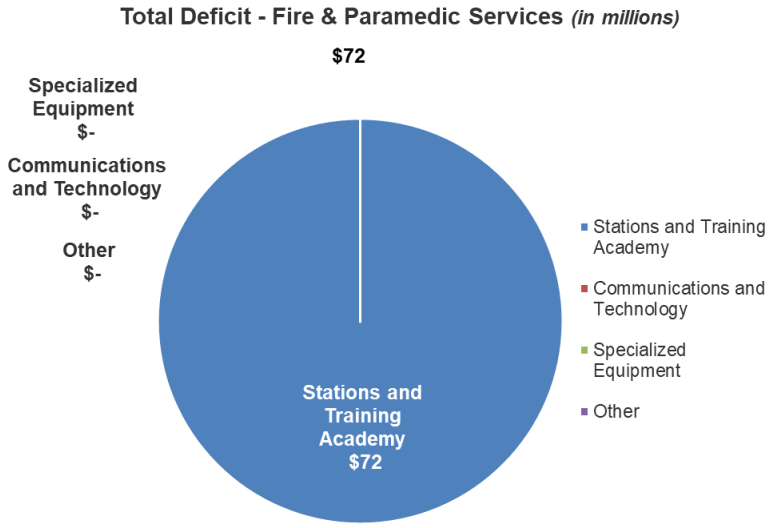


Figure 3.12-42. Total Deficit – Fire & Paramedic Services
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

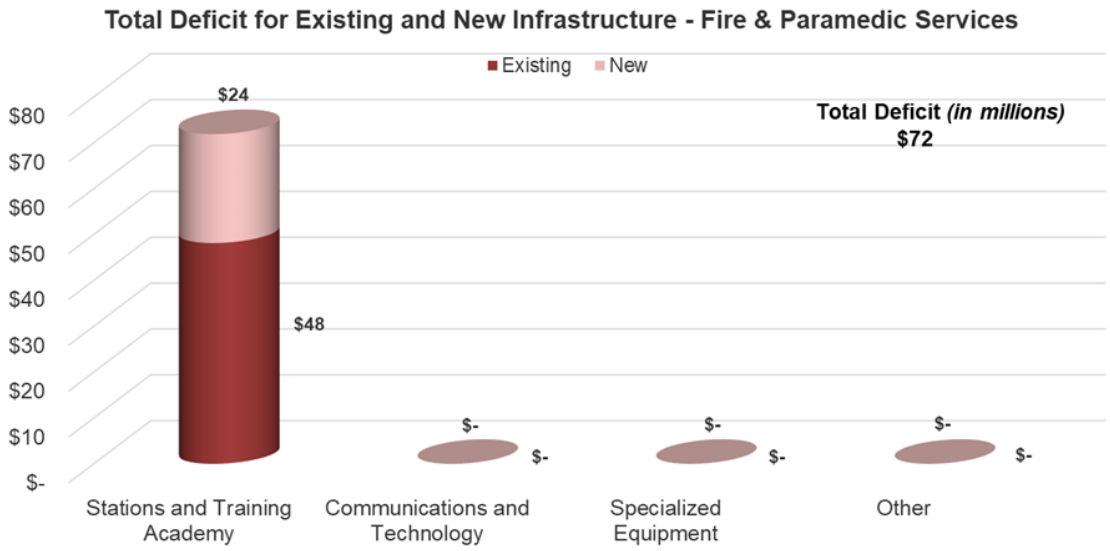


Figure 3.12-43. Fire & Paramedic Services – Total Deficit for Existing and New Infrastructure
**Percentage and figures in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

The estimated capital plan allocates funds to address deterioration in some of the fire stations, while others remain unfunded. A strategy is currently being developed by WFPS for Council consideration

which is aimed at reducing the overall number of existing stations and replacing them with stations in new optimal locations. Business cases will be prepared for the related strategy prior to proceeding.

3.12.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

Table 3.12-1. Fire and Paramedic Services– Assets Not Included

Level 1	Level 2	Level 3	Approximate Replacement Value (if available)
Infrastructure Element	**Asset Type**	**Asset Sub-type**	
Fire and Paramedic Services	Communication & Technology	Software and software customizations The IT systems that support fire and paramedic operations are not included in this asset list. They are considered a major departmental asset. Some of these assets are being reported under the Information Technology infrastructure element.	$7,000,000
Fire and Paramedic Services	Communication & Technology	Telephony system The communications centre has an integrated redundant telephony system that is being upgraded to meet NG911 standards. This system was not reported as an asset.	To be determined
Fire and Paramedic Services	Other	Disaster preparedness Assets associated to disaster preparedness were not identified.	To be determined

3.13 Information Technology

3.13.1 Service Overview and Performance

Information Technology (IT) assets are significant enablers of all City services provided to citizens. From the public safety services offered by WPS and WFPS, to the products and services offered by Water and Waste, Transit, Public Works, and many others.

The asset types of hardware and software and asset sub-types of infrastructure, data centre, network, communication systems, print, information security, desktop, and business applications have been part of the City's overall asset mix for many decades.

Although the asset categories have remained relatively constant, the technology advances have been significant. With expected lives ranging from just over 20 years down to 5 years, the IT asset landscape changes quickly compared with many other City assets.

3.13.2 Asset Metrics Summary

Information Technology – All Assets

The overall condition, value and age relating to all assets that are required to deliver IT services is depicted below.

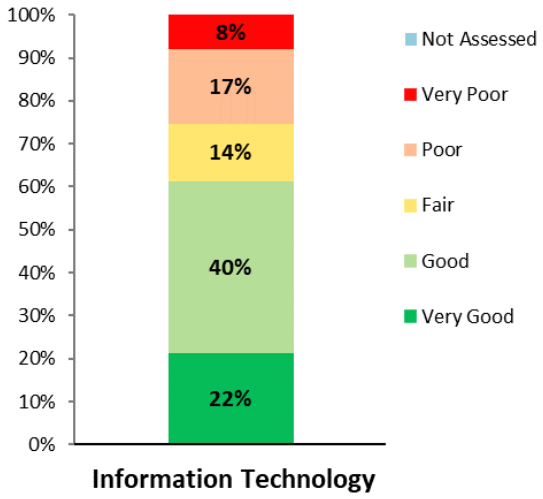


Figure 3.13-1. Information Technology- Condition

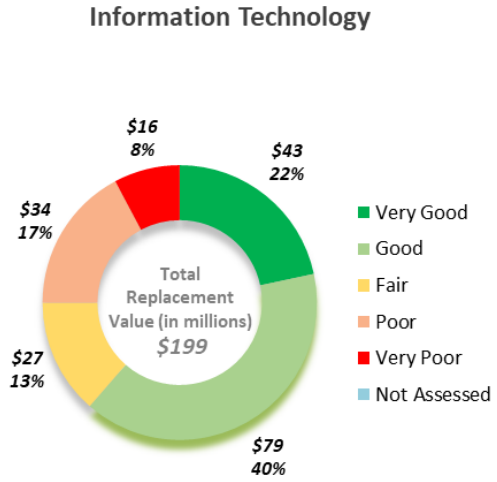


Figure 3.13-2. Information Technology – Condition and Value

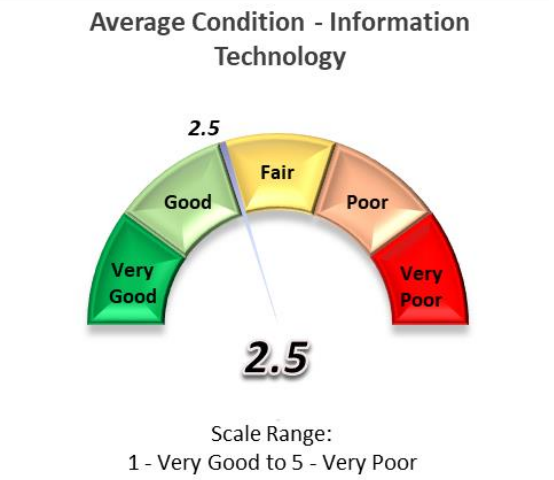


Figure 3.13-3. Information Technology – Average Condition

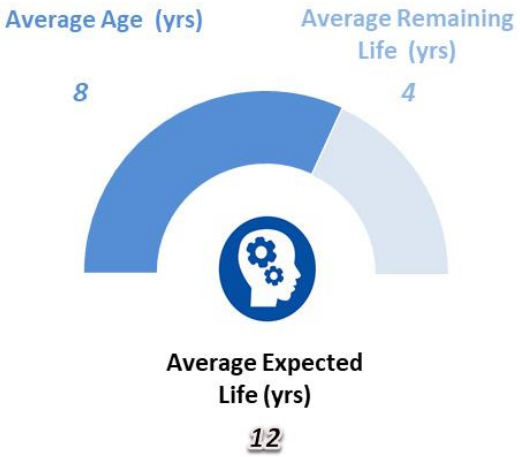


Figure 3.13-4. Information Technology - Age Profile

IT assets across the City have recently been quantified in terms of their unit amounts, replacement value, condition, age, and remaining life. The metrics provided in the figures above show the combined amounts for both hardware and software assets for Corporate Support Services (CSS), as well as all other departments and SOAs. It must be noted, however, that the City has many "hybrid" IT assets, which we define as operational assets that are enabled by technology, and these have not been included in the figures above. Examples of "hybrid" IT assets would include Transit buses, traffic signals, and wastewater and water treatment plants, which are addressed under other infrastructure elements in this AMP.

3.13.3 Asset Condition, Value, and Inventory

Information Technology - Hardware

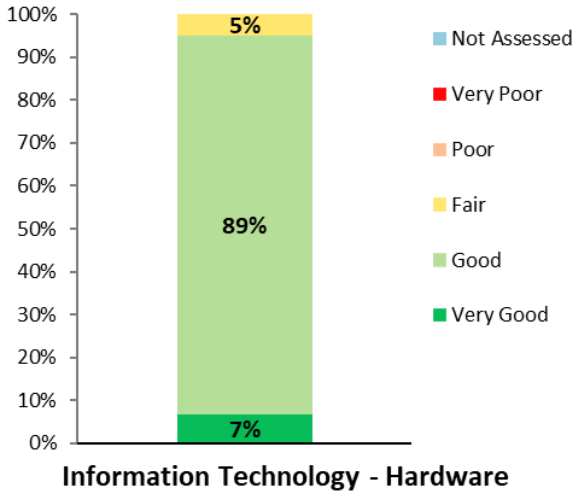


Figure 3.13-5. Hardware - Condition

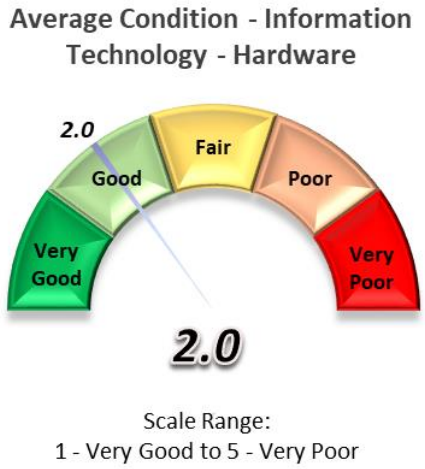


Figure 3.13-6. Hardware – Average Condition

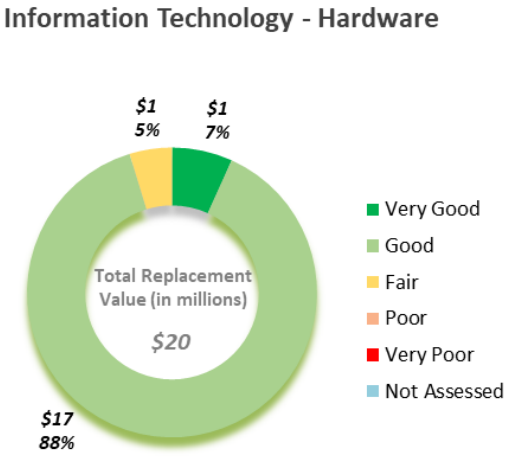


Figure 3.13-7. Hardware – Condition and Value

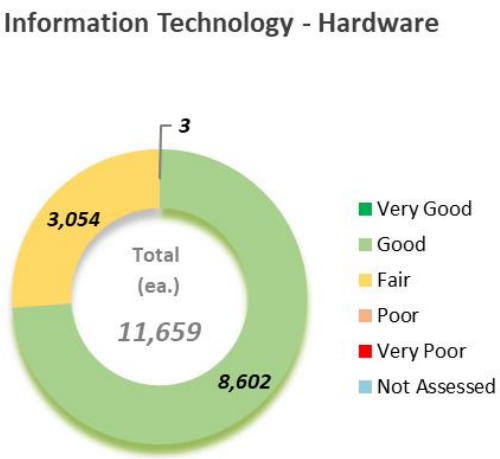


Figure 3.13-8. Hardware – Condition and Inventory

Figures 3.13-5 through 3.13-8 showing hardware asset condition, value, and inventory marks the first ever accumulation and presentation of this data. The majority of hardware assets are in *Good* condition, this validates investment planning efforts, while at the same time acknowledging that achieving a *Very Good* rating and eliminating *Fair* ratings may require incremental funding levels.

Information Technology - Software

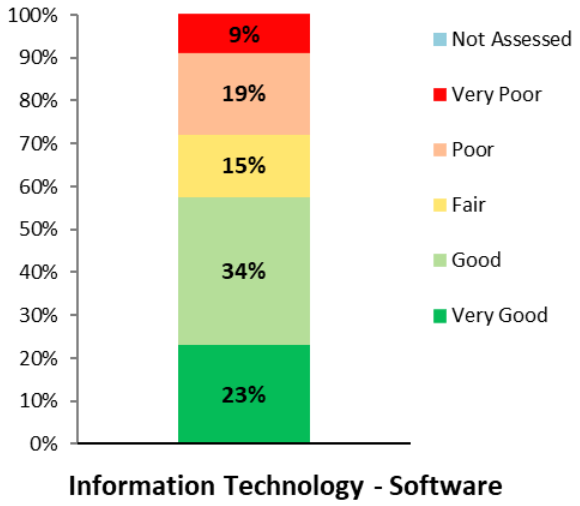


Figure 3.13-9. Software - Condition

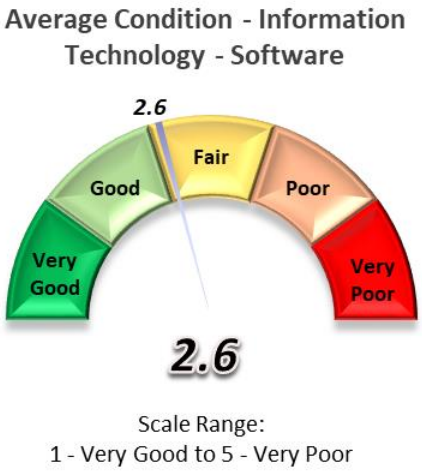


Figure 3.13-10. Software – Average Condition

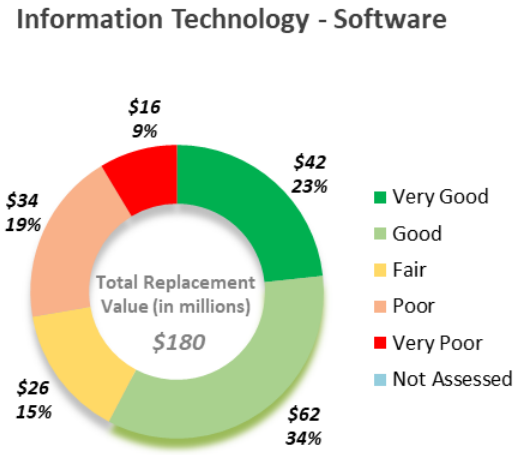


Figure 3.13-11. Software – Condition and Value

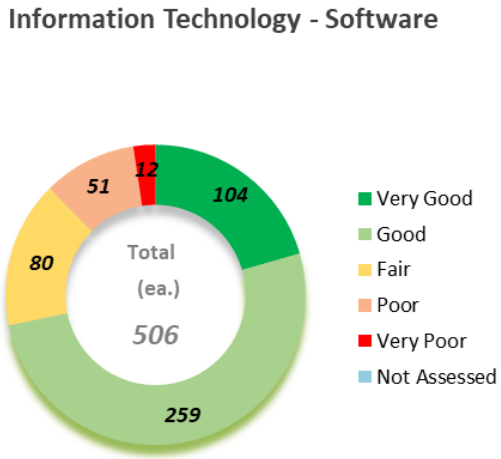


Figure 3.13-12. Software – Condition and Inventory

Figures 3.13-9 through 3.13-12 showing software asset condition, value, and inventory marks the first ever accumulation and presentation of this data. Software has a wider range of condition assessment than hardware. Overall, software is in *Fair to Good* condition, with over 40% of software assets rated at *Fair*, *Poor*, and *Very Poor*. With a valuation of $180 million, or nine times that of hardware, this information gives us cause to improve the investment planning practices for software and align them with those used for hardware, although this will be challenging considering the deficit for IT.

3.13.4 Age Profile

Information Technology - Hardware

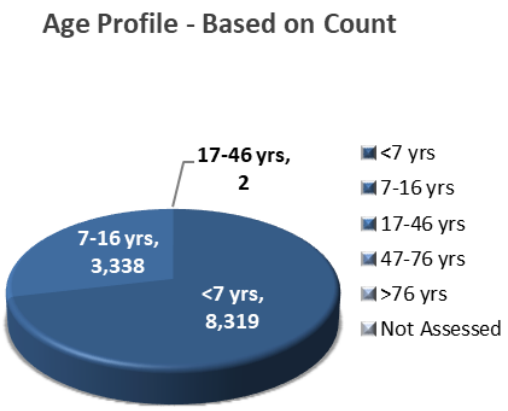


Figure 3.13-13. Hardware – Age Profile Based on Count

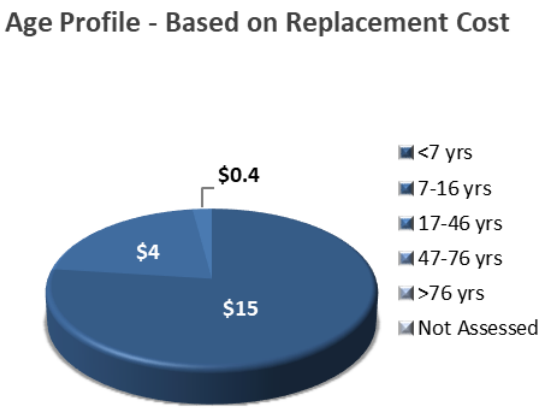


Figure 3.13-14. Hardware – Age Profile Based on Replacement Cost

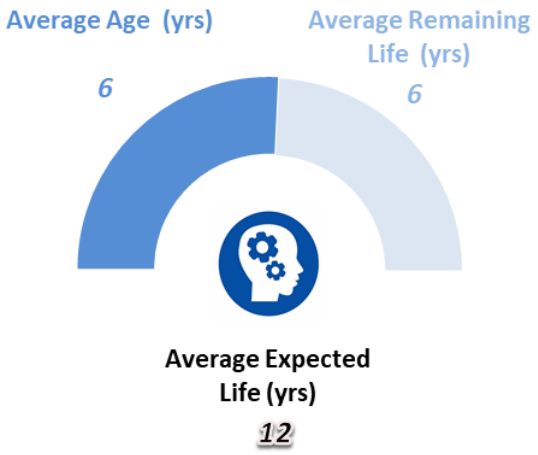


Figure 3.13-15. Hardware – Average Age and Remaining Life

The age profile shows that over 70% of our hardware assets are less than 7 years old, which correlates well with the rapid pace of technology and a short cycle of obsolescence. The large span of time in the greater than 7 years old group up to 16 years is a little misleading, as many higher value assets in this group are much nearer to 7 years old than 16. Where assets are approaching the 16-year stage and beyond, their lives have been extended by vigilant monitoring provided by monitoring tools and staff actions. With respect to the average expected life, it is noted that this is calculated across the spectrum of hardware assets on a weighted average driven by replacement values.

Information Technology - Software

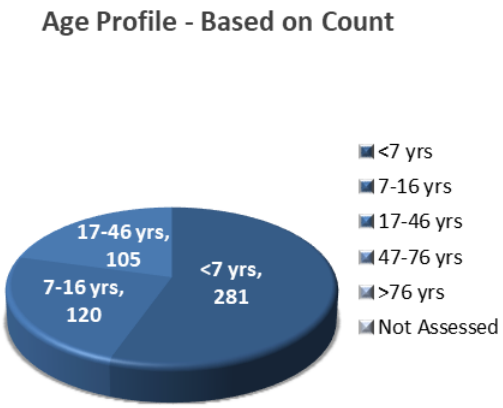


Figure 3.13-16. Software – Age Profile Based on Count

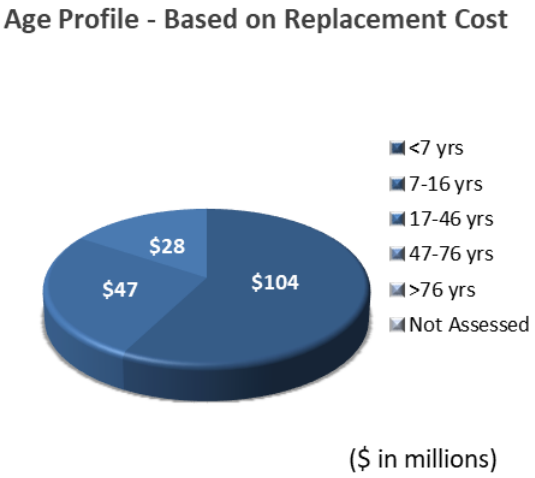


Figure 3.13-17. Software – Age Profile Based on Replacement Cost

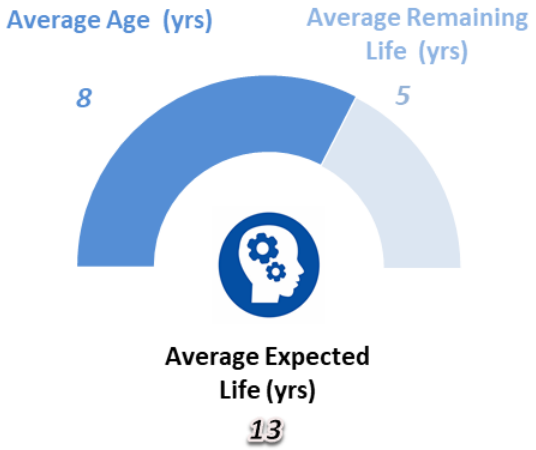


Figure 3.13-18. Software – Average Age and Remaining Life

The age profile shows that 55% of our software assets are less than 7 years old, which is 15% lower than the profile for hardware. The replacement value of software based on age correlates very closely with the number of software assets across the three age classes indicating that the amount of replacement cost for older and newer software assets are similar when considering reinvestment. Average expected life for software is noted as being the same as hardware, however, the rate of software reinvestment is considered 33% lower than hardware, as hardware has an average remaining life of 6 years compared to software at 5 years.

3.13.5 Infrastructure Deficit

A breakdown of the total capital funding needs for the Information Technology infrastructure element, by asset type, is shown in Figure 3.13-19.

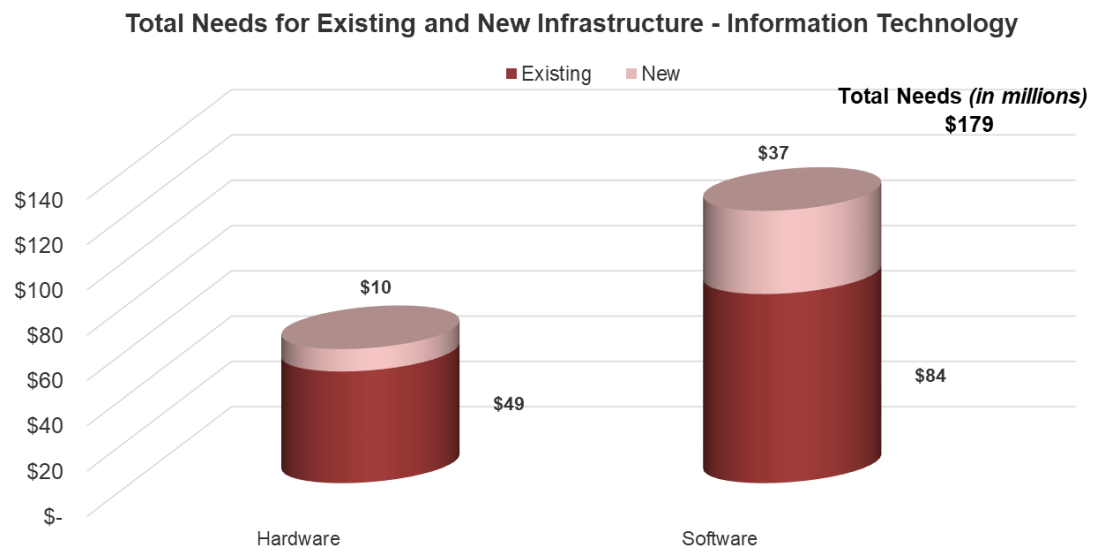


Figure 3.13-19. Information Technology – Total Needs for Existing and New Infrastructure

**Percentage and figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

A breakdown of the total capital funding needs for the Information Technology infrastructure element, into forecasted funded and unfunded (deficit) categories, is shown in Figure 3.13-20.

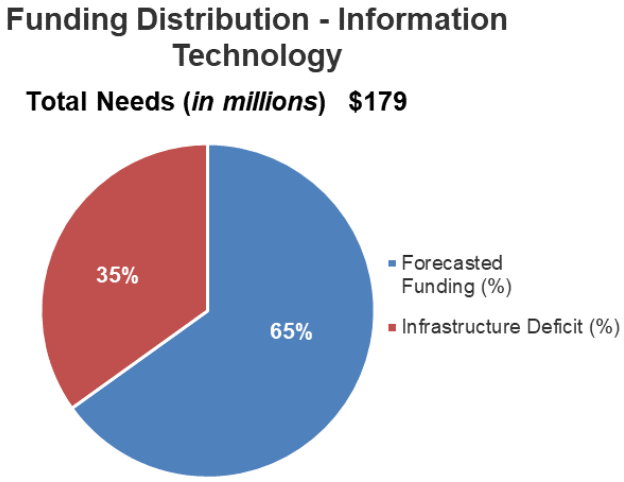


Figure 3.13-20. Funding Distribution - Information Technology

The forecasted capital funding in the above figure represents estimated levels of capital funding from 2018-2027 (10-Year Capital Plan), which is based on the City's 2018 preliminary capital budget and the capital long term plan as detailed in table 6.0-1. The infrastructure deficit in the above figure represents the amount of capital that remains unfunded relative to the overall needs identified from 2018-2027 once the estimated capital funding is taken into consideration. Refer to Section 6 for further details.

Total Needed Infrastructure Over Next 10 Years	-	10 Year Capital Plan	=	Infrastructure Deficit

A breakdown of the capital funding deficit for the Information Technology infrastructure element, by asset type, is shown in Figures 3.13-21 and 3.13-22.

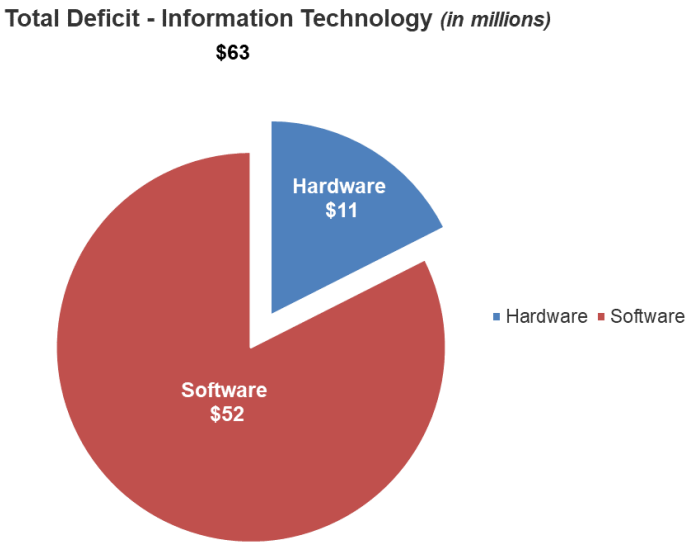


Figure 3.13-21. Total Deficit – Information Technology
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

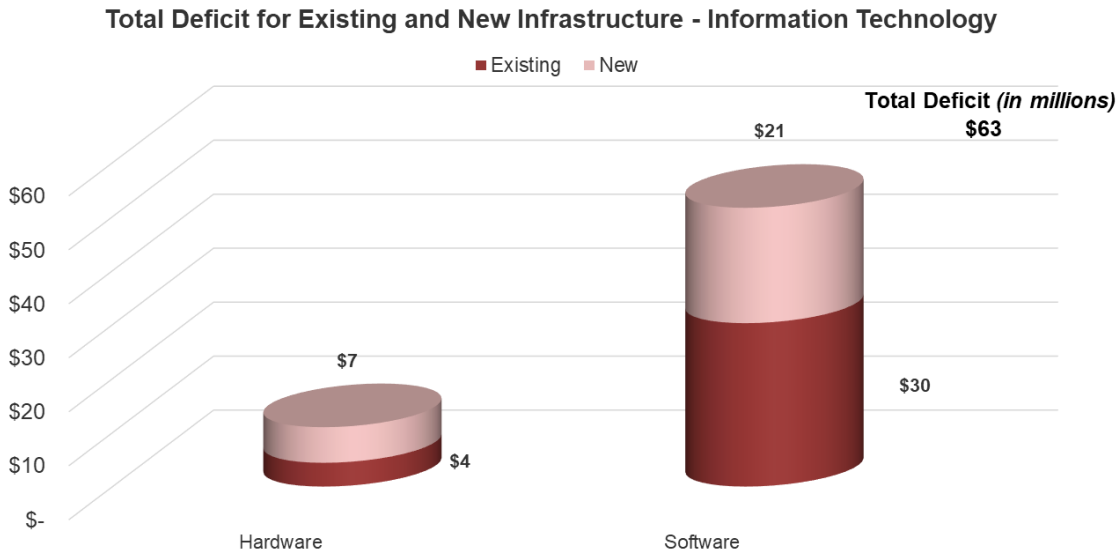


Figure 3.13-22. Information Technology – Total Deficit for Existing and New Infrastructure
*Percentage and figures in this chart have been rounded
**$- represents a deficit that is still being evaluated

The unfunded capital comparison between hardware and software is noted as 17% and 83%, respectively. This is significantly different than the current replacement value mix for hardware at 10%

and software at 90%. This difference could be indicative of many things. It could indicate hardware needs will be greater in the future than software, or the future planning for software needs is not as complete as the hardware aspect. The plans for improvement (see Section 7) include more longer-term planning work, which will assist with the explanation.

3.13.6 Assets Not Included

It is important for departments to indicate which assets will not be included in their asset management plans to ensure reporting and overall messaging is accurate. This section is typically reserved for assets that have not been recently assessed or to which there is not readily available and reliable data with respect to replacement value.

However, it is still critical to highlight these assets as they play a significant role in the department's strategy in delivering quality levels of service.

As mentioned previously, there are a number of assets that are enabled by IT but have not been included under the IT infrastructure element, as their primary function is not to provide technology services. With more discussion and a methodology that can be applied to consistently quantify these "hybrid" IT assets or secondary technology assets within a non-technical primary asset type, the number of IT assets will grow. At present, there is no approximate value that can be placed on the assets excluded. It was determined that the risk of double counting assets with more than one infrastructure element attribute with the current methodology was too great. Other metrics such as condition, age, and remaining life could be derived but this would also be challenging, as often the technical component within these primarily non-technical assets has a shorter life.

Section 4

Expected Levels of Service

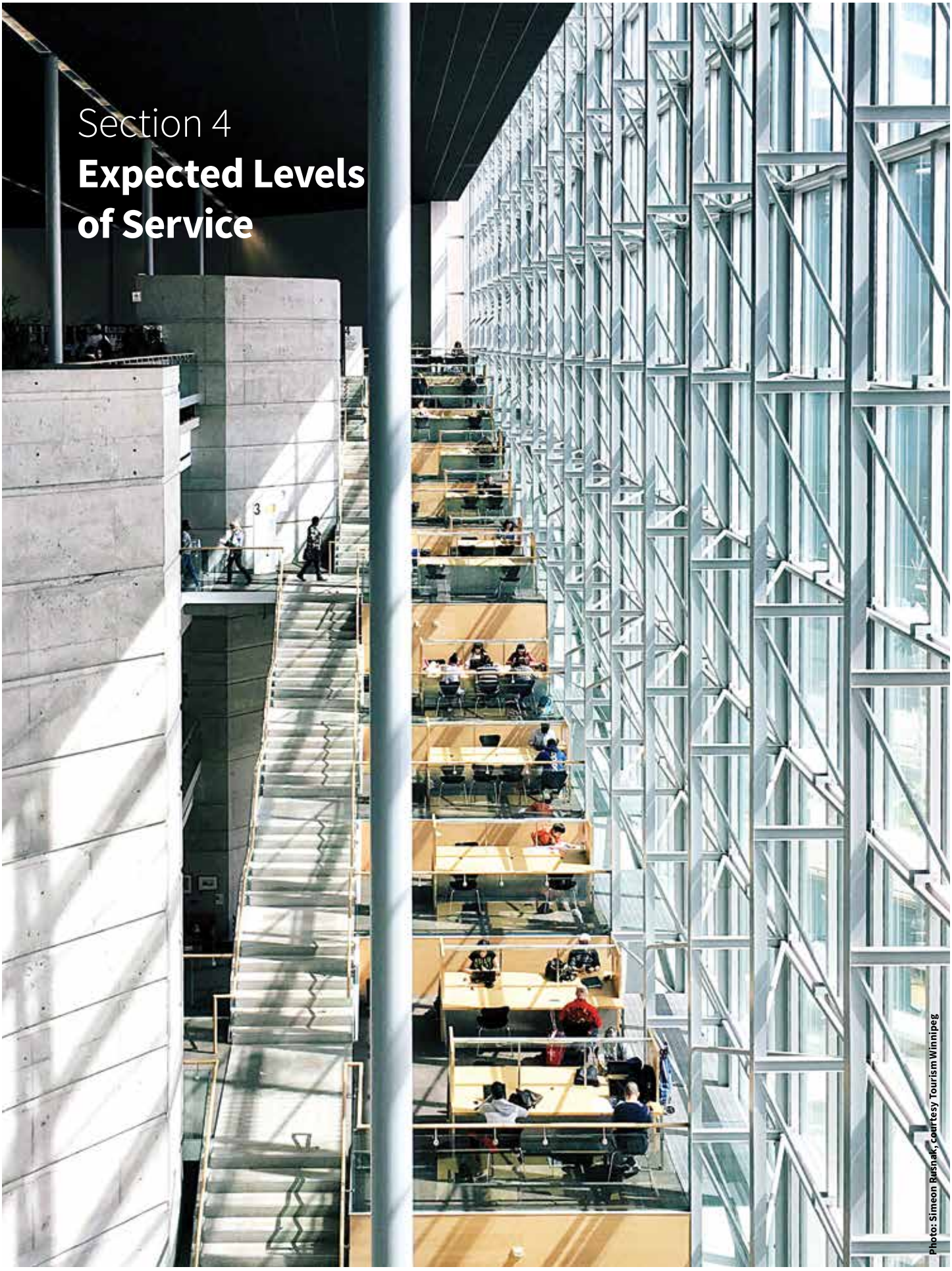


Photo: Simeon Rusnak, courtesy Tourism Winnipeg

SECTION 4

Expected Levels of Service

4.1 The Purpose of Levels of Service

The management of the City's assets needs to consider their affordability while balancing customer needs and expectations. LOS is the means to measure this aspect of asset management. Through LOS, decisions are made based on their impact on customers, the community, and the environment and this enables a clear line of sight to be put in place, from the strategic goals of the City through to day-to-day asset management decision making.

LOS are linked at three levels within the City – Corporate, Customer and Asset (or Technical) and the setting of these LOS measures needs to define reasonable expectations taking into consideration present and future needs over the lifecycle of the assets, affordability and risk.

There are three types of LOS that can be measured as depicted in Figure 4.1-1.

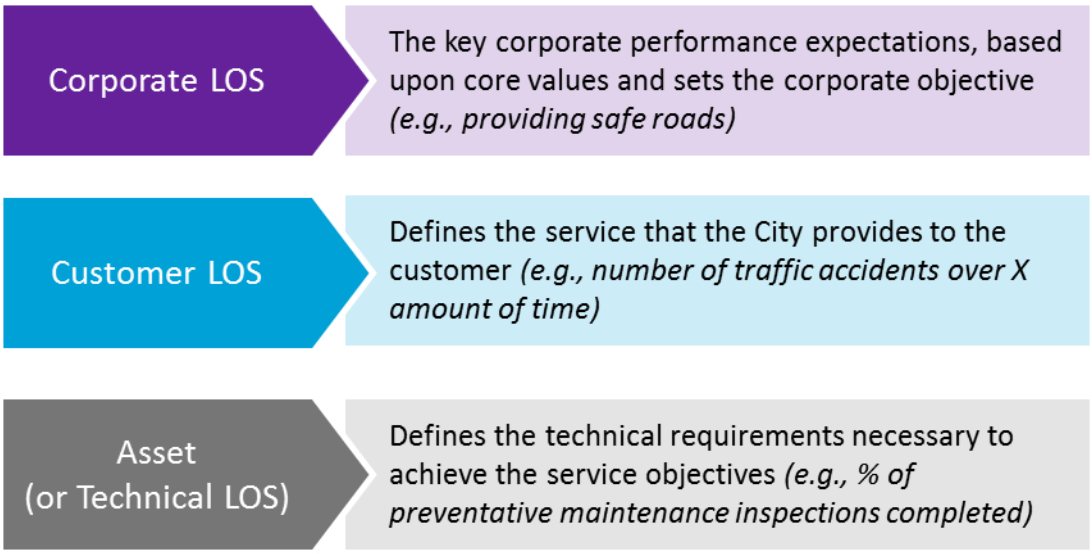


Figure 4.1-1. Three Types of LOS

Currently the vast majority of performance indicators used to measure and track performance are asset/technical indicators. This traditional view of "asset stewardship" drives asset interventions based on age and condition rather than customer or stakeholder outcomes.

The City currently performs a hybrid approach to managing its assets, but aims to transition more fully into a serviceability approach that fosters a more customer centric view of asset management that will help to put the customer at the heart of decision making (see Figure 4.1-2).

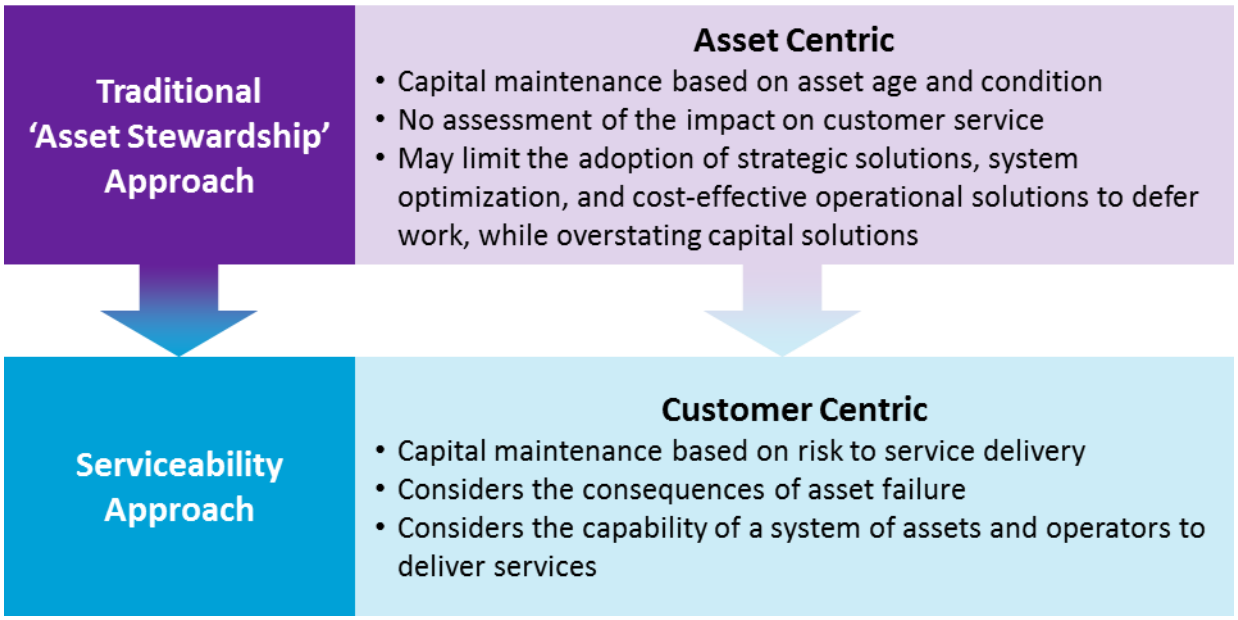


Figure 4.1-2. Transition from Traditional Approach to Serviceability Approach

A LOS framework and associated measures can have a number of uses within an Asset Management Program including:

- As a basis to inform customers of the proposed LOS to be offered
- As a way to identify the costs and associated benefits of the services offered – linking investment to customer outcomes
- As an assessment of the suitability, affordability and equity of the services offered
- As a measure of the effectiveness of the AMP
- As a focus for the asset management strategies developed to deliver the agreed LOS

4.2 Explanation of Existing Performance Measures

The City has published performance measures since 2010. The City's performance measurement framework uses three types of measures including historical data for trending purposes:

- Service Level Statistics
- Effectiveness Measures
- Efficiency Measures

The Community Trends and Performance Report is produced and released annually by the City and contains a range of statistics and measures across all municipal programs and services.

4.3 Explanation of Current and Future Levels of Service Trends

As part of the development of this AMP, the City has started developing a formal suite of LOS measures. The measures are at an early stage of development and will be refined in future iterations of the AMP. The LOS have not been quantified yet, as such, they are expressed in terms of general trends upwards,

downwards, or stable, assuming that budgets remain roughly at current levels over the next 10 years. Table 4.3-1 shows descriptions of the trends used in this AMP.

Table 4.3-1. Legend of Trend Descriptions

Symbol	Trend	Description
	Negative Upward	An upward trend represents a negative outcome for the City and a deterioration in service delivery performance.
	Positive Upward	An upward trend represents a positive outcome for the City and an improvement in service delivery performance.
	Negative Downward	A downward trend represents a negative outcome for the City and a deterioration in service delivery performance.
	Positive Downward	A downward trend represents a positive outcome for the City and an improvement in service delivery performance.
	Stable	A stable trend represents no change in service delivery performance.

Potential LOS measures have been developed for seven key customer values:

1. Accessibility
2. Reliability/Availability
3. Quality
4. Customer Service
5. Safety
6. Sustainability
7. Legislative (Requirements)

4.4 Roads and Bridges

4.4.1 Existing Performance Measures

This category includes performance measurement for: construction and maintenance of bridges, regional streets, local streets, regional sidewalks, and local sidewalks; snow removal and ice control; transportation planning and design; and traffic/right-of-way management.

Table 4.4-1 shows service level statistics from the City's 2017 Community Trends and Performance Report that are relevant to the measurement of customer LOS for roads, bridges, and signals.

Table 4.4-1. Relevant Service Level Statistics for Roads, Bridges, and Signals

Description	Service Level Statistic				
	2012	2013	2014	2015	2016
Meters of new pedestrian/cycle pathways	2,270	6,735	7,969	1,716	1,483
Number of signalized intersections	637	638	649	651	657
Number of accessible pedestrian signals	267	293	398	436	484
Number of pedestrian corridors	157	166	169	173	181
Kilometers of active transportation (AT)[1] facilities	392	394	396	406	410
Kilometers of multi-use paths	195	197	197	199	201
Kilometers of bike lanes	35	35	37	45	49
Kilometers of sharrows	37	37	37	37	37
Kilometers of bike boulevards	56	56	56	56	56

Note:

1 . AT refers to any human-powered mode of transportation, which mainly includes walking, cycling and rollerblading.

Table 4.4-2 shows effectiveness measures for roads and bridges based on citizen satisfaction surveys as presented in the City's 2017 Community Trends and Performance Report.

Table 4.4-2. Effectiveness Measures for Roads, Bridges, and Signals

Measure	Survey Year (% Satisfied)[1]						
	2011	2012	2013	2014	2015	2016	2017
Citizen satisfaction with condition of major streets (e.g., Portage Ave. or Pembina Hwy.)	64.0	37.7	51.9	65.5	42.5	44.6	48.3
Citizen satisfaction with condition of residential streets in neighbourhood	71.8	40.2	46.1	53.6	52.7	44.0	48.6
Citizen satisfaction with the management of rush hour traffic flow	80.3	43.0	71.7	60.9	46.5	47.2	51.4
Citizen satisfaction with snow removal	87.3	78.1	89.9	74.7	70.5	72.9	72.5

Note:

1 . % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

4.4.2 Current and Future Levels of Service Trends

Table 4.4-3 shows the potential customer LOS and trends for roads and bridges.

Table 4.4-3. Potential Customer LOS and Trends – Roads and Bridges

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			All collectors and regional streets get ramps and tactile pads, wayfinding tools during renewals and for new developments. Priorities are linked to bus routes. Similar for bridges.
	Provide adequate AT network – sidewalks			Sidewalks are added to residential streets and collector industrial streets during renewals and for new developments. Slow and gradual improvement in walking network.
	Provide adequate AT network – cycle paths			Pedestrian and Cycling Strategy sets out future planned network and funding has increased fourfold recently. Implementation is mostly linked to street renewal but there is a small separate program for high priority segments. Similar for bridges.
Reliability/ Availability	Meet snow clearance policies			There is a high degree of compliance with policies. There have been recent changes to prioritize high-density residential areas/schools and include the AT network.
	Reduce congestion			There has been growth in population and associated growth in traffic, particularly in the periphery of the City, leading to increased congestion. Major projects are planned to stop congestion worsening. Further mode shift to public transit and the Traffic Management System Project will help to manage congestion. There are 2 major grade separation projects planned to eliminate rail crossings and provide both congestion and safety benefits. A rail rationalization study led by the Province is underway.
	Reduce traffic disruption			There are a handful of road and bridge closures each year. Many major bridges have been improved and there are only two bridges that are in poor condition and are closed annually for a weekend for maintenance (Arlington St. Bridge and Louise Bridge).

Table 4.4-3. Potential Customer LOS and Trends – Roads and Bridges

Value	Objective	Current Trend	Future Trend	Comments
Quality	Provide adequate pavement quality			The overall pavement quality has been in gradual decline over previous years due to a shortfall in funding. The impact has been on the local streets rather than regional streets. New developments have somewhat masked the overall decline and have added to the future maintenance requirement. The recent 2% annual property tax increase in funding for roads is expected to gradually achieve a stable performance over the next 10-20 years.
Quality (continued)	Provide adequate quality cycle paths			Increases in funding have improved cycle paths.
	Provide adequate quality road markings			Road markings are generally poor and expected to decline. There has been an increase in demand through addition of AT network but no increase in resources/ funding.
	Reduce noise			The current noise bylaw and associated studies were developed in 1983 and are out-of-date. There are complaints from residents but it is not believed to be a major problem. New projects have sound barriers.
Customer Service	Good customer interaction with City staff			Response to 311 calls is good.
Safety	Reduce road hazards			There is gradual reduction in substandard geometries that pose driving hazards and this is linked to the Street Renewals Program. The City is creating a new Safety Performance Functions analysis to better identify outliers for collisions, primarily at intersections.
	Reduce sidewalk hazards			There is a small program to identify and repair sidewalk defects.
Sustainability	Improve environmental sustainability			Street renewals use a proportion of recycled material.
Legislative	*see Accessibility	-	-	--

Table 4.4-4 shows the potential customer LOS and trends for signals.

Table 4.4-4. Potential Customer LOS and Trends – Signals

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			Accessible pedestrian signals (APS) have a dedicated program and are approximately 80% complete. All intersection APS speakers have been standardized and are now consistent across the City in colour, format, and typical mounting locations.
Reliability/Availability	Reduce damages to assets			There have been improvements. For example, moving poles that have repeat damages.
	Reduce traffic disruption			Signal malfunctions have shown significant decline in recent years, down 65% since 2010, due to data-driven maintenance activities, related capital improvements, and changing to LEDs. This drop in calls has reduced reactionary overtime, increased opportunity for pro-active maintenance, and provides maintenance support for increasing ITS equipment such as cleaning/maintaining traffic monitoring cameras.
Quality	Improve traffic flow and information for road users and pedestrians			A range of initiatives are ongoing and delivering improvement including addressing reported timing concerns, detection of traffic backups and adjusting signal timing remotely, larger, more visible lenses for signal lights, countdown timers for pedestrians and real-time information for residents on lane closures, restrictions, and other traffic disruptions through the Traffic Management Centre. The City is actively monitoring the road network to identify unusual slowdowns or events, and is relaying this information to city services for the timely mitigation of issues.
Customer Service	Good customer interaction with City staff			The responsiveness of the Traffic Signals Branch has significantly improved with the investment in the Transportation Management Centre. The Centre is providing unprecedented tools to know, see, and act on traffic signal malfunctions, incidents and unusual slowdowns. The change from one person timing lights to now having five timing engineers has seen the significant backlog of customer reported timing concerns be reduced to a manageable level. The tools and timing engineers now available enables the City to provide special timing plans to help minimize the congestion effects caused by construction and other lane restriction events, and enables periodic reviews and updates to intersections and route timing plans.

Table 4.4-4. Potential Customer LOS and Trends – Signals

Value	Objective	Current Trend	Future Trend	Comments
Safety	--	-	-	--
Sustainability	Reduce energy use			Significant reduction in power consumption achieved through the switch to LEDs and the elimination of powered lighting at guide signs.
Legislative	*see Accessibility	-	-	--

4.4.3 Service Delivery Influencers

The external factors that may impact service delivery for Roads and Bridges include the following:

- Shared right-of-way – Delays to road and bridge renewal projects to coordinate with utilities
- Growth and development – Improvement projects often require long-term lane closures and associated traffic disruption
- City's commitment to Active Transportation (AT) – Public engagement over AT Network can extend project durations
- Land acquisition process – Delays to road renewal and construction projects resulting from the expropriation process and no designated funding to purchase property in advance of construction, or management of land that is designated for future use across the City
- Insufficient supply chain to meet demand – Delays to road and bridge renewals
- Limited knowledge of traffic congestion patterns – Continued and worsening traffic congestion problems; insufficient programming and IS&T resources to enable timely decision making, optimized workflows, and reporting

4.5 Parks and Open Space

4.5.1 Existing Performance Measures

This category includes performance measurement for: maintenance of park grass, park amenities, park pathways, boulevards, winter amenities, and athletic fields; management of natural areas and playgrounds; park planning and development; weed control; tree pruning and removal; tree planting; and Dutch elm disease control.

Table 4.5-1 shows service level statistics from the City's 2017 Community Trends and Performance Report that are relevant to the measurement of customer LOS for parks.

Table 4.5-1. Relevant Service Level Statistics for Parks

Description	Service Level Statistic				
	2012	2013	2014	2015	2016
Total hectares of parks and open spaces[1]	n/a[2]	n/a[2]	3,528	3,555	3,587
Kilometers of maintained park pathways/walkways[1,3]	217	231	231	254	266
Number of environmental program participants	8,456	9,633	4,181	5,064	4,522
Number of athletic fields	604	604	604	646	661
Number of boulevard and park trees	280,000	299,675	299,001	305,257	304,278
Number of playground equipment sites inspected and maintained (includes toboggan slide sites)	485	505	505	505	505

Notes:

1. Statistics do not include Assiniboine Park
2. n/a = data not available
3 . Only includes pathways contained within park sites, does not include 33 km of cross-country ski trails

Table 4.5-2 shows effectiveness measures for parks based on citizen satisfaction surveys as presented in the City's 2017 Community Trends and Performance Report.

Table 4.5-2. Effectiveness Measures for Parks

Measure	Survey Year (% Satisfied)[1]						
	2011	2012	2013	2014	2015	2016	2017
Citizen satisfaction with condition of major parks (e.g., St. Vital or Kildonan)	97.7	94.7	93.4	90.7	93.3	95.8	96.9
Citizen satisfaction with condition of local neighbourhood parks	90.5	79.7	91.7	79.5	91.6	87.9	86.5

Note:

1 . % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

The number of park hectares under management has steadily increased over the years primarily due to new developments within the City. Table 4.5-3 shows the trend in park hectares under management for the period 2012-2016.

Table 4.5-3. Number of Park Hectares Under Management

Description	Number of Hectares (ha)				
	2012	2013	2014	2015	2016
Parks[1]	2,904	2,922	2,924	2,946	2,971
Boulevards	n/a[2]	589	604	609	616

Notes:

1. Includes parks and open spaces
2 . n/a = data not available

Table 4.5-4 shows the trend in hectares of natural areas in parks for the period 2011-2016.

Table 4.5-4. Hectares of Natural Areas (in Parks)

Description	Number of Hectares (ha)					
	2011	2012	2013	2014	2015	2016
Natural areas (in parks)	1,065	1,038	1,054	1,062	1,074	1,058

4.5.2 Current and Future Levels of Service Trends

Table 4.5-5 shows the potential customer LOS and trends for parks.

Table 4.5-5. Potential Customer LOS and Trends – Parks

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			Accessibility is improved during all renewals and new developments.
	Provide an adequate amount of parks and green space			Parks are well used, about 60% of the population report using parks for leisure. A Parks Strategic Master Plan is underway to help guide park provision and development.
Reliability/ Availability	Parks are open during scheduled opening hours			Parks and amenities are subject to seasonal closures. There are occasional closures of sections of parks due to flooding.
Quality	Provide adequate quality of amenities			The City has acquired significant additional park space over the years but funding has not increased. This has led to a decline in the quality of amenities. Many other services have been reduced or discontinued such as shrub maintenance, boulevard repairs, ditch mowing, pathway maintenance, snow clearing, and edging. The City will continue to acquire further park space with new developments and, if funding remains at current levels, the next step will be to consider further reducing grass cutting frequencies. Provincial legislation on herbicide use has led to deterioration of pathways, boulevards and hard surfaces such as sport courts.
Customer Service	Good customer interaction with City staff			High performance; response times are met for customer queries.

Table 4.5-5. Potential Customer LOS and Trends – Parks

Value	Objective	Current Trend	Future Trend	Comments
Safety	Provide a safe environment			Generally, play structures are in fair to good condition and are inspected regularly according to the Canadian Standards Association. Higher risk tree removals have been prioritized. Insect Control Branch has committed to using bio-larvicides for mosquito control.
Safety (continued)	Provide a secure environment			Park patrol has been discontinued which may be contributing to increased vandalism in parks. There is poor lighting in some areas.
Sustainability	Encourage biodiversity			The elm tree population continues to be reduced by Dutch elm disease and a similar impact on ash trees is anticipated due to the invasive emerald ash borer beetle. To mitigate impacts, lost trees have been replaced with alternate tree species. Restoration of natural areas is ongoing.
Legislative	*see Accessibility	-	-	--

4.5.3 Service Delivery Influencers

The external factors that may impact service delivery for the Parks group include the following:

- Changing trends in leisure and recreation
- Limited and declining resources available for park maintenance and renewal
- Recent population growth and changing neighbourhoods and demographics
- Increased inventory due to new developments
- Ageing infrastructure
- Changes in provincial and federal regulations including the *Highway Traffic Act*
- Reduction in federal and provincial transfers
- Impending arrival of emerald ash borer beetle
- Insufficient IS&T resources
- Significant long-term capital and operating investments required for high-end amenities installed by developers

4.6 Water Utility

4.6.1 Existing Performance Measures

This category includes performance measurement for water supply, treatment, and distribution.

Table 4.6-1 shows service level statistics from the City's Community Trends and Performance Reports that are relevant to the measurement of customer LOS for water management.

Table 4.6-1. Relevant Service Level Statistics for Water

Description	Service Level Statistic					
	2011	2012	2013	2014	2015	2016
Number of complaints – taste and odour[1]	174	198	215	155	142	190
Average volume of water pumped daily per capita (litres)	316	328	285	297	271	260
Kilometres of water mains cleaned	442	306	344	647	1,104	755
Number of water main breaks	571	840	695	777	317	268
Number of water quality tests conducted	46,023	49,839	56,967	64,454	71,537	71,289
Number of water main breaks per 100 km	21.3	31.0	25.4	28.3	11.5	10.6[2]

Notes:

1. Reflects calls received through the City's 311 system.
2. Value provided by the Water and Waste Department.

Table 4.6-2 shows effectiveness measures for water based on citizen satisfaction surveys as presented in the City's Community Trends and Performance Reports.

Table 4.6-2. Effectiveness Measures for Water

Measure	Survey Year (% Satisfied)[1]						
	2011	2012	2013	2014	2015	2016	2017
Total satisfaction with quality of drinking water	94.8	89.0	92.9	87.9	76.3	77.8	83.8

Note:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

4.6.2 Current and Future Levels of Service Trends

Table 4.6-3 shows the potential customer LOS and trends for the Water Utility.

Table 4.6-3. Potential Customer LOS and Trends – Water Utility

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Provide potable water to all City residents for drinking and sanitation			Extensive City-wide coverage with only a small number of residents not on the mains supply, typically supplied by private wells. Mains supplies are augmented by two public water service outlets.

Table 4.6-3. Potential Customer LOS and Trends – Water Utility

Value	Objective	Current Trend	Future Trend	Comments
Reliability/Availability	Supply interruptions (water mains)			The number of main breaks varies from year to year from a maximum of 1,009 down to 300 breaks dependent on weather (e.g., soil movement in dry period, freeze-thaw in spring). The response to main breaks is consistent and water is typically restored within 24 hours. There is a decrease in funding for water main renewals as market costs are decreasing. Reduced break-related costs will allow funding to be increased for holistic right-of-way asset management to align with the Public Works Department roads program.
	Supply interruptions (service connections)			Frozen water services still occur, but the City has made process changes to reduce the overall number and improve response times.
	Supply restrictions			Water demand is below half the capacity of the water system; there are no supply restrictions in place.
	Minimum supply pressure provided			No low-pressure problems reported.
Quality	Water quality - Health parameters			Water quality exceeds licence conditions.
	Water quality - Aesthetic parameters			Discoloured water issues peaked in 2013 as a result of a change in coagulant supply. Measures are being put in place to reduce discoloured water occurrences including sourcing a different coagulant supply in 2018 and accelerating the water main cleaning program.
Customer Service	Good customer interaction with City staff			Good performance. Note: customer expectation about response times has increased (e.g., social media).
Safety	Maintain a safe working environment for staff, contractors and public			Good performance.

Table 4.6-3. Potential Customer LOS and Trends – Water Utility

Value	Objective	Current Trend	Future Trend	Comments
Sustainability	Water conservation; reduce water consumption			Offer a toilet replacement credit program for residential properties. The total water supplied to residential properties is at its lowest since the 1990s, despite population growth of over 100,000 people.
	Greenhouse gas/energy use reduction			No program in place.
	System water leakage reduction			Proactive leak detection program for the last three summers. Inspection programs have targeted key parts of the system.
	Meter water services			Domestic meters installed across the network; ad hoc testing and replacement only.
Legislative	Customer compliance			More resources allocated to proactive by-law enforcement monitoring theft from hydrants, cross-connections, etc.
	City compliance			Potential evolving changes in water quality regulation, increased testing, new water quality parameters, aesthetic target level for manganese, and more stringent operator certification is likely to place increasing pressure on meeting compliance targets.

4.6.3 Service Delivery Influencers

The external factors that may impact service delivery for the Water Utility include the following:

- Increasing demand for faster customer response times, particularly for information requests
- Recruiting and/or retaining experienced staff and the changing demographics of the workforce
- Increase in road reconstructions may require diversion of level of service related water main renewal funds to non-critical main replacements to enable holistic right-of-way asset management
- Reduced water consumption is resulting in reduced revenue although this also results in some long-term capital savings
- Water meter replacement program is unfunded resulting in reduced meter accuracy and potentially lower revenue
- Potential zebra mussel infestation at the Shoal Lake Aqueduct Intake Facility (SLAIF)
- Manganese impurity in Water Treatment Plant (WTP) coagulant causing aesthetic water quality issues
- Growth related densification and potential changes to fire protection requirements

- Cryptosporidium and giardia are a concern to all public water utilities that rely on surface water supplies for drinking water; these organisms are managed through a multi-barrier treatment approach at the WTP

4.7 Sewer Utility

4.7.1 Existing Performance Measures

This category includes performance measurement for wastewater collection and treatment.

Table 4.7-1 shows service level statistics from the City's Community Trends and Performance Reports that are relevant to the measurement of customer LOS for wastewater management.

Table 4.7-1. Relevant Service Level Statistics for Wastewater

Description	Service Level Statistic					
	2011	2012	2013	2014	2015	2016
Number of complaints – raw sewer backup[1]	589	748	1,017	1,313	854	752
Number of complaints – clean sewer backup[1]	428	495	772	1,099	717	595
Volume of wastewater processed (ML/D)	290	248	245	279	256	275
Kilometres of sewers inspected and cleaned	316	169	104	152	148	209

Note:

1. Reflects total calls received through the City's 311 system. After investigation, it has been determined that a high percentage of these are problems within customers' own systems (i.e., not the City system).

Table 4.7-2 shows effectiveness measures for wastewater based on citizen satisfaction surveys as presented in the City's Community Trends and Performance Reports.

Table 4.7-2. Effectiveness Measures for Wastewater

Measure	Survey Year (% Satisfied)[1]						
	2011	2012	2013	2014	2015	2016	2017
Total satisfied with protection from sewer back-up	95.1	77.7	87.6	90.1	86.0	82.0	85.2

Note:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

4.7.2 Current and Future Levels of Service Trends

Table 4.7-3 shows the potential customer LOS and trends for the Sewer Utility.

Table 4.7-3. Potential Customer LOS and Trends – Sewer Utility

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Properties have access to sewer services			A small number of properties are not on mains and serviced by septic tanks under Provincial law. These properties are required to connect to sewer mains when the sewers are installed.

Table 4.7-3. Potential Customer LOS and Trends – Sewer Utility

Value	Objective	Current Trend	Future Trend	Comments
Reliability/Availability	Reduce spills/overflows in combined sewers			Improvements have been made through more accurate and transparent reporting of overflows. Overflows have been prevented through better instrumentation and response processes, and there has been a gradual year by year improvement, operationally. There is a continuing program of sewer separation where justification is met. The City has submitted a CSO Master Plan to the Province with the service level target approved late 2017.
	Reduce spills/overflows in sanitary sewers			Dry weather overflows have a good performance record. There are few breakdowns, blockages and breaks, and good response times to minimize impacts. This includes wastewater pump station performance.
	Monitor private service connection blockages			Sewer main service connections are privately owned, however, the City has a program for repairs and renewals for private services under City property pursuant to the Sewer By-law.
	Reduce incidences of basement flooding			It is believed that backup issues are improving, mostly due to changing storm intensities and increased hydraulic capacity through progressive sewer separation. The sump pump and backwater valve subsidy program, which ended in 2017, also had an impact. The City is working to bring everyone up to protection from a 1-in-5 year storm event in combined sewer areas; models and studies are being used to drive sewer separation works.
Quality	Meet water quality standards for final effluent quality			Although standards are mostly met, there are some exceedances. New Manitoba regulations are more stringent than other provinces and include “never to exceed” requirements. Two STPs will be upgraded to include nutrient removal; the third STP has already been upgraded.
	Meet biosolids quality for disposal			A recent change in regulation on land application rates for agricultural reuse led to biosolids being 80% landfilled. Pilot in place to compost 20%; the pilot is ongoing until 2018 when it will be further evaluated. Plan to reintroduce land application within 5 years, then enhanced biosolids quality within 10 years. There is a Biosolids Master Plan in place. There is a market for land application.

Table 4.7-3. Potential Customer LOS and Trends – Sewer Utility

Value	Objective	Current Trend	Future Trend	Comments
Quality (continued)	Minimize odour complaints			Occasional complaints received but not a major problem. Odour control is part of STP design.
Customer Service	Good customer interaction with City staff			Good performance. Note: customer expectation about response times has increased (e.g., social media).
Safety	Maintain a safe working environment for staff, contractors and public			Good performance.
Sustainability	GHG/energy use reduction			Energy is currently recovered from digester gas. STP upgrades are investigating combined heat power engines. There are energy management programs delivering good performance and alternative energy processes that are being investigated.
	Treated wastewater re-use			Small amount of re-use at the STPs and lift stations but no grey water re-use.
	Biosolids beneficial use			Plan to reintroduce land application within 5 years, then enhanced biosolids quality within 10 years. There is a Biosolids Master Plan in place which has a multi-pronged approach to reuse including nutrient removal, composting, and land application.
	Reduce wastewater at the source			Primarily delivered through by-law enforcement, grease and grit traps, and pollution prevention plans from industrial customers.
Legislative	City compliance			CSO Master Plan submitted to the Province to provide compliance for river discharges. Major upgrades of the STPs to meet more stringent nutrient reduction targets.

4.7.3 Service Delivery Influencers

The external factors that may impact service delivery for the Sewer Utility include the following:

- Increasing demand for faster customer response times, particularly for information requests
- Recruiting and/or retaining experienced staff and the changing demographics of the workforce
- Combined Sewer Overflow (CSO) Master Plan service level target was approved by the Province in late 2017. The City is currently developing an implementation program.
- At risk funding from the Province for STP upgrades due to lack of finalized agreements
- International currency fluctuations can impact cost of some projects

- Densification resulting in increased loads on the sewer system and, in some areas, limiting growth and development
- WEWPCC is nearing capacity; the service area will be studied to evaluate future expansion requirements

4.8 Land Drainage Utility

4.8.1 Existing Performance Measures

This category includes performance measurement for land drainage and flood control.

Table 4.8-1 depicts the City trend for number of breaches on properties requiring diking outside of a primary dike, as presented in the City's Community Trends and Performance Reports.

Table 4.8-1. Relevant Service Level Statistics for Land Drainage and Flood Control

Winnipeg Trend	2011	2012	2013	2014	2015	2016
Number of properties requiring diking outside of a primary dike	59	0	4	1	1	1
Number of breaches	0	0	0	0	0	0

Table 4.8-2 shows effectiveness measures for land drainage and flood control based on citizen satisfaction surveys, as presented in the City's Community Trends and Performance Reports.

Table 4.8-2. Effectiveness Measures for Land Drainage and Flood Control

Measure	Survey Year (% Satisfied)[1]						
	2011	2012	2013	2014	2015	2016	
Total satisfied with protection from river flooding	96.3	84.5	80.5	91.2	92.2	91.2	92.7

Note:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

4.8.2 Current and Future Levels of Service Trends

Table 4.8-3 shows the potential customer LOS and trends for the Land Drainage Utility.

Table 4.8-3. Potential Customer LOS and Trends – Land Drainage Utility

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Provide land drainage to acceptable standards of flood prevention			All new areas have dedicated land drainage and flood control. There is a system of overland ditches, basins, drains, and regional ditches which manage flows.
Reliability/ Availability	Minimize the impact of river flooding			Extensive infrastructure and flood control practices in place and an updated flood manual governs the operational response. Flap gates are being added to gate chambers and increasing protection for at risk properties.

Table 4.8-3. Potential Customer LOS and Trends – Land Drainage Utility

Value	Objective	Current Trend	Future Trend	Comments
Reliability/Availability (continued)	Minimize the impact of rainfall events			Design standards have matured and generally provide a suitable level of protection to the community. Isolated flooding can occur during more intense rainfall events. There are ongoing separation works; flap gates are being added to gate chambers and brown-field redevelopment criteria in place.
Quality	Stormwater discharges meet water quality requirements			There is currently no regulation in place and no active water quality targets. Regulation is unlikely in the foreseeable future.
Customer Service	Good customer interaction with City staff			Good performance. Note: customer expectation about response times has increased (e.g., social media).
Safety	Maintain a safe working environment for staff, contractors and public			Good performance.
Sustainability	Develop sustainable infrastructure			Limited opportunities in developed areas due to small land areas and high costs. Many older areas have combined sewers, which limits options. Clay soils aren't suitable for construction of soakaways. Requirements for developers to provide sustainable infrastructure are minimal.
	Develop and maintain riparian areas			Outfall inspections are being undertaken. Regular program of outfall rehabilitation and riverbank stabilization is mostly reactive at this time. Maintenance is below requirements with significant outfall cleaning required.
	Maintain sustainable plant communities			A ban on pesticides has impacted available control options and affects ability to maintain pond vegetation and aesthetics. A number of complaints have been received from residents.
Legislative	City compliance			All legislative commitments are currently being met.

4.8.3 Service Delivery Influencers

The external factors that may impact service delivery for the Land Drainage Utility include the following:

- Increasing demand for faster customer response times, particularly for information requests
- Recruiting and/or retaining experienced staff and the changing demographics of the workforce

- Climate change impacts could affect level of service provided by existing assets and/or impact future changes to design standards in order to maintain existing performance levels
- Naturalization of SRBs is required due to changes in regulations and permitted use of pesticides to maintain pond vegetation and aesthetics

4.9 Solid Waste Utility

4.9.1 Existing Performance Measures

This category includes performance measurement for solid waste collection and disposal, as well as recycling and waste diversion.

Table 4.9-1 shows service level statistics from the City's Community Trends and Performance Reports that are relevant to the measurement of customer LOS for solid waste, recycling, and waste diversion.

Table 4.9-1. Relevant Service Level Statistics for Solid Waste, Recycling and Waste Diversion

Description	Service Level Statistic					
	2011	**2012**	**2013**	**2014**	**2015**	**2016**
Weight of residential garbage collected (tonnes)	209,741	201,741	173,897	176,011	177,845	174,280
Weight of garbage generated per capita (kilograms)	303	286	249	248	248	237
Service deficiencies per 10,000 garbage collections	2.8	8.3	14.9	13.1	10.8	10.0
Number of tonnes of solid waste disposed	428,152	432,653	397,924	392,996	395,828	363,664
Total number of small load vehicles[1]	96,661	93,585	93,506	91,968	93,220	80,439
Total number of commercial and contractor vehicles	61,409	62,537	67,485	65,691	61,890	65,336
Weight of residential recycling material collected (tonnes)	44,271	48,133	53,857	54,464	55,697	55,010
Average weight of recycling per household (kg)	157	170	187	188	191	186
Total yard waste composted (tonnes)[2]	7,778	11,327	23,223	29,754	33,474	34,123
Recycling service deficiencies per 10,000 collections	2.6	8.8	12.8	12.1	11.9	9.1
Percentage of solid waste diverted from landfills (%)	21.2	23.5	32.0	33.6	34.3	34.9%[3]
Weight of solid waste diverted per residential household (tonnes)	0.20	0.22	0.29	0.31	0.32	0.32[3]

Notes:

1. Number of vehicles hauling their own residential garbage to the BRRMF.
2. 2015 was restated in 2017 report to reflect a change in reporting methodology
3. Value provided by WWD

Table 4.9-2 shows effectiveness measures for solid waste, recycling, and waste diversion based on citizen satisfaction surveys as presented in the City's Community Trends and Performance Reports.

Table 4.9-2. Effectiveness Measures for Solid Waste, Recycling and Waste Diversion

Measure	Survey Year (% Satisfied)[1]						
	2011	2012	2013	2014	2015	2016	2017
Total satisfied with garbage collection	92.8	83.1	90.5	80.7	87.3	83.3	87.0
Total satisfied with recycling collection	89.5	76.7	88.7	88.9	87.7	81.2	86.4

Note:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

4.9.2 Current and Future Levels of Service Trends

Table 4.9-3 shows the potential customer LOS and trends for the Solid Waste Utility.

Table 4.9-3. Potential Customer LOS and Trends – Solid Waste Utility

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Provide curbside collection service for waste and recycled material			There is City-wide coverage and the service is contracted out to two service providers. A potential multi-family strategy will see an increase in diversion.
	Provide an adequate number of drop-off recycling centres			There are five basic depots being reported on in this DAMP and one 4R depot, as of 2016. The City plans to construct up to three more 4R depots to increase convenience to residents and improve diversion from landfill.
Reliability/Availability	Reduce the number of missed collections			The City is working to improve the collection service in collaboration with the contractor.
	Basic and 4R depots have adequate capacity			There are issues with illegal dumping that are overloading the recycling depots. The first 4R depot, which is supervised and does not have the same illegal dumping issues, has only been open since February 2016 and is receiving more material than anticipated.
	Landfill is open during scheduled hours			The landfill is open seven days a week.
Quality	4R depots are easy to use			The City is in the early stages of implementation of the 4R program and there has been significant uptake and positive feedback from customers.

Table 4.9-3. Potential Customer LOS and Trends – Solid Waste Utility

Value	Objective	Current Trend	Future Trend	Comments
Quality (continued)	Reduce odour and litter at landfill			Odour and litter has been an issue for local residents adjacent to the BRRMF site. There is a comprehensive management program in place including capping, biofilters on leachate manholes, berm on north and east face, planting of trees and shrubs, 30 mobile litter control fences and external litter collection. New landfill cells will be further away from the site perimeter and residential properties and smaller cells are being used to reduce exposed areas and reduce odour and litter.
Customer Service	Good customer interaction with City staff			Good performance. Note: customer expectation about response times has increased (e.g., social media).
Safety	Provide a safe environment			Good performance.
Sustainability	Reduce material to landfill and achieve 50% or higher diversion rates			A Council mandated review of the Comprehensive Integrated Waste Management Plan will establish Council's chosen diversion target.
	Reduce GHG emissions			In 2013, 50% of the gas collection system was installed and the remainder will be installed by the end of 2016. Biogas is currently flared.
	Reduce the risk of groundwater pollution			The operational landfill and the 33 closed landfills have comprehensive monitoring programs to detect leachate migration. There is no sign of leachate migration. Leachate is trucked to the North End Sewage Treatment Plant where it is treated.
Legislative	Maintain compliance with environmental licence			In 2014, BRRMF achieved its environmental licence recognizing comprehensive landfill management programs.

4.9.3 Service Delivery Influencers

The external factors that may impact service delivery for the Solid Waste Utility include the following:

- Increasing demand for faster customer response times, particularly for information requests
- Recruiting and/or retaining experienced staff and the changing demographics of the workforce

4.10 Municipal Properties

4.10.1 Existing Performance Measures

The portfolio of building assets included in the Municipal Properties infrastructure element are used by other City departments and agencies to provide frontline services to citizens, with building maintenance provided by the Municipal Accommodations division of the Planning, Property & Development department. The performance measures for those frontline services are reported under the other infrastructure elements in this AMP.

A significant number of facilities assigned to Municipal Properties provide office accommodation for City staff. Therefore, LOS in this AMP will focus on office accommodation for City staff. There are no existing performance measures related to office accommodation and there is no accommodation standard.

4.10.2 Current and Future Levels of Service Trends

Table 4.10-1 shows the potential customer LOS and trends for Municipal Properties office accommodations. LOS is expressed in terms of how well the assets serve the staff (internal customers) and are not a direct measure of service to citizens.

Table 4.10-1. Potential Customer LOS and Trends – Municipal Properties

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			Universal access is mandated for all new builds. Existing facilities are gradually improving. Upgrades are combined with general renovations with funding limitations. In addition, there are limitations imposed by the design of the old buildings.
	Provide adequate quantity of office accommodations at appropriate locations			The City has an excess of space and is in the process of rationalizing accommodations. A significant amount of rationalization has been achieved over the last 15 years in consultation with City departments and Council, but there are still vestiges of Unicity (the preceding 13 separate municipalities).
Availability/Reliability	Building systems are operational during core hours			There are occasional breakdowns due to aging equipment and buildings. As buildings age, components within the asset are aging and funding is required. There are competing funding requirements for the City-owned, MA occupied facilities and the City-owned leased out to third-party facilities.
	Sites and landscaping are maintained			Snow clearance and grass cutting services are provided by other City departments that are reducing services due to lack of funding.
Quality	Provide adequate working environment for staff			There is a wide range in quality of office accommodations; some facilities are good and many others are very poor. The City does not have space and furniture standards. Many buildings have been repurposed for office accommodations and this can contribute to a low quality environment.

Table 4.10-1. Potential Customer LOS and Trends – Municipal Properties

Value	Objective	Current Trend	Future Trend	Comments
Customer Service	Good customer interaction with City staff			Good performance. City staff has a range of channels to report problems including a building contact at each location and Central Control to phone-in work orders.
Safety	Provide a secure working environment			Physical security systems are installed, such as lights and cameras, and Central Control monitors 200 facilities. City staff plays a major role in building security through adherence to procedures and correct use of access cards. Improved adherence to procedures is the main area for improvement.
Sustainability	Improve energy management and reduce greenhouse gas emissions			Existing buildings, the bulk of the portfolio, have no strategy, staff, or funding for improvement other than occasional projects by individual departments. Most new buildings follow the City's environmental policy for green buildings but there are operational challenges to maintain compliance.
Legislative	*see Accessibility	-	-	--

4.10.3 Service Delivery Influencers

The external factors that may impact service delivery for Municipal Properties include the following:

- Changing regulatory requirements for asbestos
- Heritage buildings owned or leased by the City often have limited uses
- Lack of a teleworking strategy, which could reduce office accommodation requirements

4.11 Community Services

The existing performance measures and LOS trends for Community Services are presented in three main groups: recreation, aquatics, and libraries.

4.11.1 Existing Performance Measures

Recreation

Table 4.11-1 shows effectiveness measures for recreation based on citizen satisfaction surveys as presented in the City's 2017 Community Trends and Performance Report.

Table 4.11-1. Effectiveness Measures for Recreation

Measure	Survey Year				
	2012	2013	2014	2015	2016
% of prime time ice sold in the regular season[1]	91	92	87	85	81
Citizen satisfaction with condition of recreation facilities (% satisfied)[2,3]	71.2	85.5	89.1	82.3	82.1

Notes:

1. For each calendar year, the regular season consists of Jan. 1 to Feb. 28, and Oct. 1 to Dec. 31.
2. In 2014 and 2015, the survey was in reference to City-operated facilities *only* and, therefore, does not include community centre facilities.
3. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

According to 2010 statistics, the ratio of ice sheets to people was 1:17,500 in Winnipeg. The generally accepted Canadian standard for the provision of indoor ice is 1:20,000, or 1:22,000 for jurisdictions with a higher percent of older adults and seniors.

Aquatics

Table 4.11-2 shows service level statistics from the City's 2017 Community Trends and Performance Report that are relevant to the measurement of customer LOS for aquatics facilities.

Table 4.11-2. Relevant Service Level Statistics for Aquatics

Description	Service Level Statistic						
	2010	2011	2012	2013	2014	2015	2016
Number of registrants per 1,000 population – Aquatic Programs[1]	47.71	47.07	49.32	50.49	44.77	47.98	46.94
Attendance at indoor pools	1,611,348	1,555,077	1,582,075	1,834,380	1,768,932	1,560,539	1,781,262

Note:

1. The number of registrants for Aquatic Programs decreased in 2014 due to the closure of the Elmwood Kildonan Pool (May 8-December 31, 2014).

Libraries

Table 4.11-3 shows service level statistics from the City's 2017 Community Trends and Performance Report that are relevant to the measurement of customer LOS for libraries.

Table 4.11-3. Relevant Service Level Statistics for Libraries

Description	Service Level Statistic		
	2014	2015	2016
Number of items circulated	5,211,846	5,242,048	5,121,266
Number of information questions answered[1]	186,035	182,270	176,058
Number of library material holdings[2]	1,284,883	1,433,135	1,221,832
Number of library programs	3,803	4,320	4,266
Number of attendees at programs	91,145	98,035	106,221
Number of computer bookings	529,923	464,571	438,244
Number of visits to library website[3]	10,499,707	13,020,253	14,422,306

Table 4.11-3. Relevant Service Level Statistics for Libraries

Description	Service Level Statistic		
	2014	2015	2016
Number of annual in-person visits	2,861,674	2,958,826	2,990,003

Notes:

1. New tracking software was used in 2014. Results reflect true information questions.
2. There is an ongoing process of removal and replacement of outdated/worn material, where possible, with electronic resources. The City's e-book collection is no longer combined with the Provincial collection; therefore, data reflects only the City's collection.
3. The 2012 and 2013 data is restated to better reflect Municipal Benchmarking Network Canada (formerly OMBI) reporting. Data for all years now includes social media activity. Starting in 2013, online catalogue sessions are also included.

Table 4.11-4 shows effectiveness measures for libraries based on citizen satisfaction surveys as presented in the City's 2017 Community Trends and Performance Report.

Table 4.11-4. Effectiveness Measures for Libraries

Measure	Survey Year (% Satisfied)[1]				
	2013	2014	2015	2016	2017
Citizen satisfaction with libraries	83.7	91.5	97.1	94.5	95.0

Note:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

Over the last 10 years the library service has made significant strides in moving from the traditional model to the modern model. Features of the modern model include:

- Self-service check-in and check-out features
- Single storey facilities with a single service desk and all staff trained in customer service
- More open layout for study desks, technology access, leisure reading, meeting places, and community programming, such that the facility acts more as a community hub
- A strong focus on early childhood literacy
- Links to other social services particularly in inner City locations

This has led to a strong, measurable increase in the usage of new libraries compared to decades-old traditional facilities. This strategy has been strongly supported by City Council.

4.11.2 Current and Future Levels of Service Trends

The Recreation and Parks Strategic Master Plans will utilize extensive public engagement to further define levels of service for departmental asset types and programs.

Table 4.11-5 shows the potential customer LOS and trends for recreation.

Table 4.11-5. Potential Customer LOS and Trends – Recreation

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			All new builds are compliant with regulations. Existing facilities are grandfathered. Improvements are completed during any major renovation within the limits of funding and the limitations of the building design.
	Provide adequate access to community centres			There are 63 community centres owned by the City and managed by third parties within the General Council of Winnipeg Community Centres (GCWCC) management agreement. GCWCC Plan 2025 set a guideline of 1.88 sq. ft. of heated recreation space per capita and the City exceeds this guideline, when calculating access from a City-wide perspective. Individual neighbourhoods and community areas may sit below or above the 1.88 sq. ft. guideline.
	Provide adequate access to recreation/leisure centres			The current locations of recreation/leisure centres are such that the east and south areas of the City may be relatively under-served. These centres provide a point of access to City recreation programs.
	Provide adequate access to arena facilities			There is adequate arena capacity. The trend is away from stand-alone facilities towards multiplexes with more than one ice sheet. Three old arenas have recently been decommissioned and replaced by three new multiplexes at community centre sites.
Reliability/Availability	City operated arenas are open during scheduled opening times			There are roughly five short-term service interruptions a year due to infrastructure issues associated with the advanced age of the assets.
	Community centres are open during scheduled opening times	-	-	Dependent on staffing arrangement by third parties.
	Recreation/leisure centres are open during scheduled opening times	-	-	There are roughly five short-term service interruptions a year due to infrastructure issues associated with the advanced age of the assets.

Table 4.11-5. Potential Customer LOS and Trends – Recreation

Value	Objective	Current Trend	Future Trend	Comments
Quality	Provide adequate quality of City operated arenas			One of the most pressing issues as many facilities do not reflect the current needs of the community. The quality of existing City-owned and operated facilities is poor and declining – many are old, cold, have small changing rooms, and some ice sheets are not fullsize.
	Provide adequate quality community centres			Overall there is mixed quality. There have been renovations and expansions, and there is a small ongoing program of gradual improvement. The Province has contributed funds to improvement programs.
	Provide adequate quality recreation/leisure centres			Overall there is mixed quality. A few centres are poor quality.
Customer Service	Provide good customer service			--
Safety	Provide safe facilities			Recreation has an excellent safety record which is supported by reports, and proactive investigation and inspection.
Legislative	*see Accessibility	-	-	--

Table 4.11-6 shows the potential customer LOS and trends for aquatics.

Table 4.11-6. Potential Customer LOS and Trends – Aquatics

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			Universal access is mandated for all new builds. Existing facilities are gradually improving. Upgrades are combined with general renovations with funding limitations. In addition, there are limitations imposed by the design of the old buildings for items such as universal changing rooms and zero-grade access.
	Provide an adequate number of facilities (indoor pools)			Certain areas of the City tend to be under-served particularly the southwest and southeast. In certain areas, there is no public transportation to pools. As the City grows the situation tends to worsen.

Table 4.11-6. Potential Customer LOS and Trends – Aquatics

Value	Objective	Current Trend	Future Trend	Comments
Accessibility (continued)	Provide an adequate number of facilities (outdoor pools)			There are 10 outdoor pools, each with an 8-week period of operation. Pools tend to be located in the center of the City. There is an active program of renovation with the aim to provide one heated outdoor pool in each quadrant of the City.
	Provide an adequate number of facilities (splash pads/wading pools)			There are 84 wading pools, 48 of which are located in the center of the City. There is an active program to convert under-used wading pools to splash pads and thereby reduce operating costs. Stand-alone splash pads do not have access to washrooms, and this could become an issue for customers. Splash pads/wading pools projected performance is separate from outdoor pools, because even though investment continues, there are a large number of sites and investment is slow.
Reliability/Availability	Facilities are open during published hours			There have been prolonged closures of 4 indoor pools over the last few years due to infrastructure issues arising from inadequate maintenance funding. This trend is expected to continue. There are occasional short-term closures due to pool foulings or insufficient staff.
Quality	Provide adequate quality facilities			Customer satisfaction survey scores are high (82%). Existing facilities are clean and well kept. However existing facilities are an old design, not all have dive facilities and none contain modern facilities such as wave pools, slides, and splash pools.
Customer Service	Good customer interaction with City staff			Good overall performance, customer satisfaction survey lists high total satisfaction rate (82%).
Safety	Provide safe facilities			Excellent safety performance at all facilities. Regular audits and certified staff.
Sustainability	Water conservation	-	-	Stand-alone splash pads drain rather than recirculate and in the long-term this may need to be investigated, if water conservation becomes a major issue.
Legislative	*see Accessibility	-	-	--

Table 4.11-7 shows the potential customer LOS and trends for libraries.

Table 4.11-7. Potential Customer LOS and Trends – Libraries

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			All new facilities are single storey and fully compliant. Existing facilities are mostly two-storey. During renovations, accessibility improvements are delivered within the limitations of the funding and the building (e.g., addition of elevators).
	Provide an adequate amount of facilities for the population			There are 20 library branches, geographically spread and of varying sizes (neighbourhood, community, regional). The southwest and southeast quadrants of the City are under-served, and two new libraries are being considered in the long-term capital plan when the communities reach a population of 30,000. There is an outreach service through the mobile library.
	Meet customer demand for opening hours			Opening hours vary with type of branch. Where smaller branches are co-located with other facilities, there is customer demand for extended hours and the City is re-organizing resources to extend opening hours.
	Provide online and digital services			Online services have 10 million hits annually. The City provides a digital collection, access to technology and technology services, and staff are trained to help customers with mobile devices.
Reliability/ Availability	Facilities are open during published opening hours			There are occasional, unplanned closures, however, they are typically short in duration (e.g., a couple of hours).
Quality	Provide good quality modern services			The move towards the modern model of library services has been well-received by the public and the usage of facilities has grown. The Library Strategic Plan had extensive public engagement and there are mechanisms in place to obtain ongoing customer feedback and to communicate back to the public how their feedback has been acted on. Social media is used extensively to promote services and communicate to customers.
Customer Service	Good customer interaction with City staff			There is an ongoing training program including refresher training and there are staff certificates programs. There is a need to improve in certain areas (e.g., technology devices, online resources).

Table 4.11-7. Potential Customer LOS and Trends – Libraries

Value	Objective	Current Trend	Future Trend	Comments
Safety	Provide safe facilities			Excellent safety record. Participated in Safe Manitoba pilot program and scored high. There are appropriate security arrangements and staff training particularly for inner City facilities.
Legislative	*see Accessibility	-	-	--

4.11.3 Service Delivery Influencers

The external factors that may impact service delivery for Community Services - Recreation include the following:

- Alternative service provision and partnership with the private sector
- Choosing the right model for each new development including partial funding by the City; new developments will be pursued in partnerships rather than independently by the City
- Some community centres cannot attract the necessary funding and volunteer staff – in 2016, five centres were taken under direct control of GCWCC
- There is strong customer demand for newer facilities and multiplexes to fit a range of needs in a family
- There is demand for indoor court facilities (soccer, basketball etc.) and fitness centres
- The City has an aging demographic and an increasing demand for seniors' facilities is expected
- Recreation infrastructure has benefitted historically from provincial and federal funding. Moving forward recreation investment will continue to be dependent on priorities and funding availability from other levels of government
- The changing cultural make-up of the population has changed the demand for the types of facilities desired by families
- In the 2010 Arena Development Strategy, it was reported that many facilities do not reflect the current needs of the community. The desire for change is toward the provision of a more contemporary set of recreation and leisure facilities. There is an overall trend in arena development to build twin or multi-pad facilities in order to take advantage of economies of scale in both capital and operating costs (i.e., utilities, staffing, mechanical systems, equipment, etc.).

The external factors that may impact service delivery for Community Services - Aquatics include the following:

- Demand for gender neutral changing rooms which would accommodate transgender customers or a male parent with female child
- Recreation infrastructure has benefitted historically from provincial and federal funding. Moving forward recreation investment will continue to be dependent on priorities and funding availability from other levels of government
- There has been regular consideration of outsourcing or privatization of services – the City has considered pursuing alternative service delivery and partnership with third parties in order to expand or improve services
- An increased immigrant population within the City means having to meet specific needs such as segregated programming (e.g., women-only)
- There is strong public demand for a water park but it is currently unaffordable

- There is ongoing demand for 'leisure' water facilities versus the traditional lap/competition pools that are in the current inventory

The external factors that may impact service delivery for Community Services - Libraries include the following:

- Community expectations for the modern model for libraries
- Digital media and trends including digital rights management
- Demographics – the needs of indigenous and immigrant communities that make up the bulk of the growth in the City; libraries are one of the first services used by new immigrants
- Growth in the south of the City
- Higher demand for partnering by community organizations
- Keeping the collection complementary to academic and other collections, and avoiding duplication
- The increasing role of libraries in creating content and collaborating with the community to provide access to virtual content has the potential to impact library design

4.12 Transit

4.12.1 Existing Performance Measures

Table 4.12-1 shows service level statistics from the City's 2017 Community Trends and Performance Report that are relevant to the measurement of customer LOS for Transit.

Table 4.12-1. Relevant Service Level Statistics for Transit

Description	Service Level Statistic				
	2012	2013	2014	2015	2016
Bus hours operated	1,483,561	1,517,237	1,524,643	1,398,276	1,541,618
Bus kilometers operated	29,146,974	29,689,903	29,763,750	29,835,652	29,978,613
Number of passengers carried annually	48,930,272	49,553,997	49,867,683	48,232,025	48,521,820

Table 4.12-2 shows effectiveness measures for Transit based on information presented in the City's 2017 Community Trends and Performance Report.

Table 4.12-2. Effectiveness Measures for Transit

Measure	Survey Year						
	2010	2011	2012	2013	2014	2015	2016
Citizen satisfaction for users who used transit at least once per week (% satisfied[1])	n/a[2]	86.5	71.4	72.7	89.0	76.1	76.8
Regular transit passengers per capita, 2014 (number of passengers)	70	72	73	74	74	71	70
Weekday service reliability (% on-time)	82.8	82.2	80.7	80.3	79.0	79.5	80.3

Notes:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.
2. n/a = data not available

4.12.2 Current and Future Levels of Service Trends

Table 4.12-3 shows the potential customer LOS and trends for Transit.

Table 4.12-3. Potential Customer LOS and Trends – Transit

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			Conversion to low floor bus fleet was complete in 2016. Many stops are not accessible and are improved each year.
	Residents are in close proximity to transit stops			The City aims to provide a service whereby most dwellings and businesses are within a 5-minute walk of a transit stop and buses operate at 30-minute interval at all times of day. Newer communities in the periphery of the City can be significantly under-served and may experience very limited service for the first few years. As funding and resources become available, priority will be given to peak period service.
	Improve mode shift away from car journeys			Transit usage was increasing up until 2015 and has more recently seen a decline.
	Decrease travel times			The City has implemented the Bus Rapid Transit program and bus diamond lanes, and improved transit signal priority.
Reliability/Availability	Adhere to schedule			Adherence to schedule is good and mostly only affected by snowstorms, big public events, and construction. Schedule adherence will be improved through adjustment of schedules based on ongoing data analysis.
	Reduce crowding			There has been an increase in ridership on peak service routes. The City has assigned articulated buses, added additional buses, and made schedule changes on high-demand routes. The City is also examining other service models.
	Reduce in-service breakdowns			Through regular capital investment in bus replacements, the number of breakdowns impacting passengers is minimal.
Quality	Provide a clean and tidy environment for passengers			All new buses acquired since 2010 are more comfortable and quieter. There is a scheduled cleaning process for bus interiors that will be improved in the near future to improve the passenger experience.
Customer Service	Communicate alternatives during service disruption			Service advisories are communicated through a range of channels including the City's website and Twitter, and the City continues to develop better communication tools.

Table 4.12-3. Potential Customer LOS and Trends – Transit

Value	Objective	Current Trend	Future Trend	Comments
Customer Service (continued)	Good customer interaction with City staff			With the introduction of the new payment card system (peggo), there is an increase in customer inquiries. As the peggo system rollout phase is completed, customer inquiries are anticipated to decrease. Planned improvements to the Handi-Transit trip booking system will improve the customer experience.
Safety	Provide a safe environment			In early 2017, Transit had a critical incident and, in response, Transit is implementing a number of safety measures and has created a Transit Advisory Committee in collaboration with a number of partners, including union representatives to address rider and operator safety.
Sustainability	Reduce emissions			All new buses have significant emissions control systems and four of Transits buses are electric. The City is studying the use of alternative fuels as a means to reducing greenhouse gas emissions. Future maintenance facilities will be designed to accommodate different fuels.
Legislative	Add French language option to Transit website and other customer-facing interfaces			--

4.12.3 Service Delivery Influencers

The external factors that may impact service delivery for Transit include the following:

- Aging Infrastructure – The City has a number of older Transit facilities that have little or no expansion opportunities. The facilities' constraints in the areas of bus storage and mechanical repairs have a direct impact on the level of service provided to riders. The Public Transit Infrastructure Fund (PTIF) could provide opportunities for Transit to expand its facilities over the next few years.
- Accessible Service – Providing accessible infrastructure for Transit users has become a key deliverable for Transit. This includes integrating Active Transportation with existing Transit service. Transit is working on plans to ensure a fully barrier-free service for all riders by 2020.
- Socio-Political Expectation – Societal and political influences will continue to shape the City's strategy and priorities. The changing nature of socio-political concerns, expectations, and requirements will continue to influence the City's targets and priorities for service delivery. For example, developing sustainable cities will encourage growth in Rapid Transit Systems.
- Ride-Share Services – With the introduction of ride-share services, there may be impacts to current ridership levels and Transit planning.
- Population Growth – Population has steadily grown in Winnipeg for the past few years. To ensure the expected level of service is maintained in all areas, Transit will need to grow with it.

- Alternate Fuel Technologies – The ongoing development of sustainable, low carbon-producing fuels for buses has created an opportunity for Transit agencies to reduce greenhouse emissions and at the same time significantly reduce fuel and operating costs.
- Park and Rides – There is growing interest in providing Park-and-Ride parking lots for Transit users adjacent to the Rapid Transit Corridors.
- Development of a High Frequency Network – There is both public and some political interest in developing a High Frequency Service network on major transportation corridors.
- Capital Region Transit Plan – There is currently a committee studying the opportunities to provide transit service to riders that live outside of the City limits.

4.13 Police Services

4.13.1 Existing Performance Measures

In addition to the Community Trends and Performance Reports published by the City, the WPS compiles public feedback from a third-party executed phone survey, available online at: http://www.winnipeg.ca/police/survey/docs/2017survey_results.pdf

Table 4.13-1 shows the City's police response times by priority level for the period 2009-2016, which is the most current data available.

Table 4.13-1. Police Response Times by Priority Level

Priority Level	Description	Response Time in Minutes							
		2009	2010	2011	2012	2013	2014	2015	2016
0	Major disaster, officer in need of assistance	6.8	7.8	5.9	5.4	5.7	5.1	6.1	11.7
1	Danger to life or grievous bodily harm	8.2	8.0	5.4	7.3	11.9	7.4	5.5	7.6
2	Impending danger to life or grievous bodily harm	11.6	15.1	10.2	10.5	9.5	9.7	10.5	12.9
3	Urgent person incident	56.0	49.1	48.3	49.4	43.1	43.7	51.0	62.2
4	Urgent property incident	62.4	55.5	53.5	54.6	48.5	53.6	64.9	79.2
5	Non-urgent person incident	141.9	123.2	121.2	126.2	123.1	131.0	148.0	167.4
6	Non-urgent property incident	109.6	101.7	101.2	121.2	113.1	116.2	133.4	158.0
7	Low risk or threat	148.2	124.1	125.0	139.8	137.3	146.0	174.3	224.4
8	Telephone response	35.9	35.8	21.4	22.2	25.5	17.1	19.6	23.8
9	Planner response	171.0	153.9	154.4	181.0	168.7	178.4	183.8	182.9

Table 4.13-2 shows effectiveness measures for Police Services based on information presented in the City's Community Trends and Performance Report.

Table 4.13-2. Effectiveness Measures for Police Services

Measure	Survey Year							
	2009	2010	2011	2012	2013	2014	2015	2016
Citizen satisfaction with police services in crime control (% satisfied[1])	n/a[2]	74.9	87.1	71.1	93.1	86.5	n/a	n/a
Satisfaction of respondents who used 911 for police response (% satisfied[1])	n/a	87.9	80.4	82.4	79.0	88.0	86.7	n/a
Citizen satisfaction with sufficient enforcement of traffic laws (% satisfied[1])	n/a	78.3	91.1	58.1	59.1	64.7	62.1	n/a
Total number of violent Criminal Code violations[3]	11,272	10,451	9,820	9,189	7,968	7,897	8,981	9,711
Number of motor vehicle thefts per 1000 population	6.8	5.5	3.3	3.2	3.0	3.1	3.5	3.2
Number of assaults	5,903	5,740	5,170	4,993	4,504	4,453	5,065	5,293
Number of youth-committed violent crimes[4]	1,044	1,052	931	878	743	694	746	836
Number of youth-committed property crimes[4]	1,345	1,338	989	1,022	721	775	868	617
Number of impaired driving charges per 100,000 population	90	91	84	67	73	72	75	65

Notes:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.
2. n/a = data not available
3. Violent Criminal Code violations include: homicide, attempted murder, sexual assault and other sexual offences, assault, abduction, and robbery.
4. Includes youths charged and youths not charged.

The 2017 Business Plan is available for on-line viewing, as well as the 2015-2019 Strategic Plan, which describes the high-level strategic directions for the WPS.

In alignment with the Business and Strategic plans, the WPS has developed three categories of core business priorities, which include the following:

1. **Police Response:** To support emergency, urgent, and non-urgent responses to public calls for service. In addition, the Service undertakes criminal investigations, offender identification, arrest, or other resolution. The Service is also responsible for training all police and civilian members of the WPS. The Service must marshal its resources appropriately and efficiently to ensure that adequate response is always available to answer to public needs.
2. **Crime Prevention:** To provide citizens with crime prevention awareness and education; enhance relationships in targeted neighbourhoods and schools, as well as to conduct proactive policing to prevent crime and disorder.

3. **Traffic Safety and Enforcement:** To improve traffic safety through focusing efforts on enforcement and education.

These three elements, the Business Plan, Strategic Plan, and core business policies combined, complement the 7 key customer values for measuring LOS: (1) Accessibility; (2) Reliability/Availability; (3) Quality; (4) Customer Service; (5) Safety; (6) Sustainability; (7) Legislative (Requirements).

The management of the City's assets must take into consideration affordability, while balancing the needs and expectations of the citizens of Winnipeg. The four strategic goals of the Winnipeg Police Business Plan are:

- Goal 1: Less Crime and Victimization
- Goal 2: Engaged Communities
- Goal 3: Effective and Efficient Service
- Goal 4: Healthy Organization

The services that the Winnipeg Police provides to the citizens of Winnipeg can be measured in a number of ways, including police response times (by priority level), and the City of Winnipeg Community Trends and Performance Reports.

Table 4.13-3 shows the relationship of the seven key customer values for measuring LOS and WPS's strategic goals and performance measures.

Table 4.13-3. WPS Performance Measures Matrix

Value	Strategic Goal	Performance Measure (Serviceability Approach)
Accessibility Ease of public access to the Winnipeg Police Service	#2 Engaged communities	• Increase in the citizen trust of the Police Service • Call volume • Response time • Social media presence • Press release reach • Crime prevention initiatives (CPTED)
Availability/Reliability Reliability of the service	#1 Less crime & victimization	• Reduction in the prevalence of violent criminal victimization • Call answer times • Staffing ratios • Clearance rates • Crime prevention initiatives • Police response improvements
Quality Crime rates and prevention	#1 Less crime & victimization	• Reduction in the prevalence of violent criminal victimization • Crime severity index • Crime rates • Clearance Rates • Conviction Rates • Crime prevention initiatives
	#2 Engaged communities	• Increase in City-wide engagement • Citizen satisfaction surveys

Table 4.13-3. WPS Performance Measures Matrix

Value	Strategic Goal	Performance Measure (Serviceability Approach)
Quality (cont'd) Crime rates and prevention	#3 Efficient and effective service	• Implement innovative technologies • Tech projects completed • Measure impacts of tech projects • Police response improvements (Tech)
Customer Service Staff interacting with the public	#2 Engaged communities	• Increase in the citizen trust of the Police Service • Law Enforcement Review Agency (LERA) complaint #s • Professional Standards Unit (PSU) complaint #s • Public Information Office (PIO)
Customer Service Staff interacting with the public	#3 Efficient and effective service	• Implement innovative technologies • Tech projects completed • Police response improvements (Stations)
Safety Safety performance	#1 Less crime & victimization	• Increase in the citizen trust of the Police Service • Citizen satisfaction surveys • Motor vehicle collision rates • Violent crime index • Traffic safety/enforcement (Equipment)
Safety Safety performance	#4 Healthy organization	• Enhance employee safety, health and wellness • Officer injury rates • Suspect injury rates • Police response improvements
Sustainability/Operational Efficiency Environmental sustainability performance	#3 Efficient and effective service	• Maintain national average of major police services • Effectiveness of the project
Legislative Meeting legal requirements	#3 Efficient and effective service	• Yes/no – meet legal standards and regulations

Figure 4.13-1 shows the WPS Performance Dashboard current to the end of Q2, 2017.

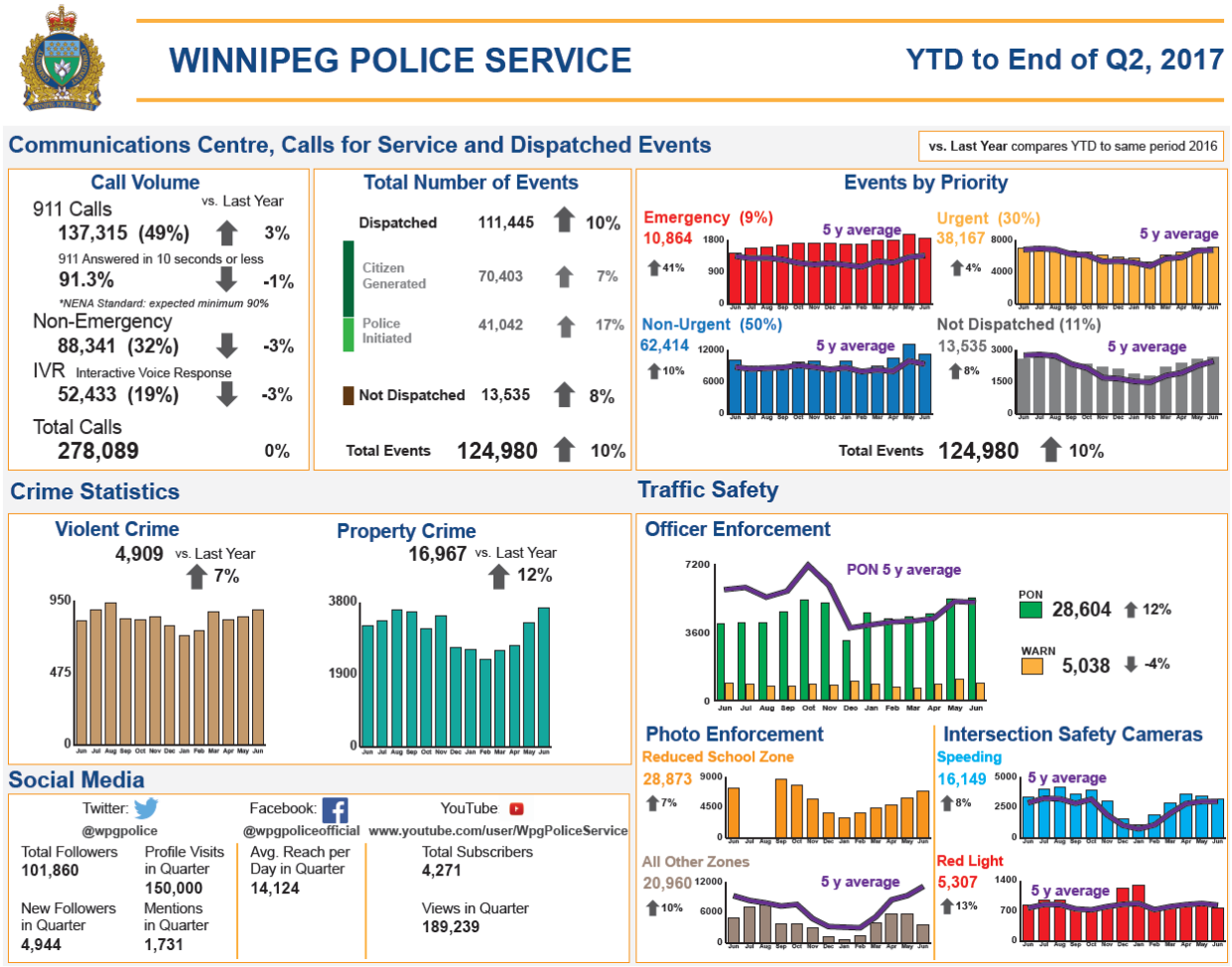


Figure 4.13-1. WPS Performance Dashboard – Current to End of Q2, 2017

4.13.2 Current and Future Levels of Service Trends

Table 4.13-4 shows the potential customer LOS and trends for Police Services. LOS is expressed in terms of how well the assets serve the staff (internal customers) and are not a direct measure of service to citizens.

Table 4.13-4. Potential Customer LOS and Trends – Police Services

Value	WPS Business Priority	Objective	Current Trend	Future Trend	Comments
Accessibility	Public Response	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			All new facilities are compliant. North District station is not compliant; however, funding is secured to provide necessary upgrades.
	Public Response	Adequate quantity and location of facilities			The City is completing the 4-district police model. The 4th phase, North Station, is in planning stage and may be completed in 2019.

Table 4.13-4. Potential Customer LOS and Trends – Police Services

Value	WPS Business Priority	Objective	Current Trend	Future Trend	Comments
Reliability/Availability	Public Response	Police Service Headquarters open 24 hours/7 days a week District Stations open 7 days/week 8:30 a.m. - 6:30 p.m.			Several stations have been replaced in the last few years and the renewals program is ongoing.
	Public Response Traffic Safety & Enforcement	Fleet is reliable			Fleet assets perform well with a robust renewals strategy. Vehicles are rotated to maximize useful life.
Quality	Public Response	Adequate quality facilities			Facilities are generally good. Main issues include: • Lack of indoor (all year) shooting range • Police Vehicle Operations driver training facility is poor • Need for an archive building • Existing North District Station is time expired and requires replacement.
Customer Service	Public Response	Good customer interaction with City staff			Alternate 'text' method available for members of the deaf and hard of hearing community who subscribe through their phone provider. New customer service at Police Headquarters is much improved; the general public areas are now totally separate from processing areas.
Safety	Public Response	Safe and secure work environment			Building security and functionality for policing work is generally good but a couple of locations need to be improved.
Sustainability	Public Response	Reduce emissions and energy usage			Newer vehicles are more fuel-efficient, however, average mileage has increased in the East and West Districts. New stations are LEED shadow or similar.
Legislative	--	*see Accessibility	-	-	--

4.13.3 Service Delivery Influencers

The external factors that may impact service delivery for Police Services include the following:

- Social issues, such as poverty and population demographics
- Globalization, such as terrorism and cybercrime
- Recent *Police Act* revisions have impacts on operations and support of the Independent Investigation Unit of Manitoba
- Changes to legislation around drug use have impacts on operations and materials
- Continually changing crime behaviour that is difficult to predict has impacts on operations and asset needs (e.g., fentanyl and related issues)
- Data storage and management processes for video such as body-worn cameras and cameras inside stations

The ability for the police to respond in an efficient and effective way and to keep response times relevant is dependent on the equipment being used to get them to the emergency. It is not only the vehicle that is used to get the officers on scene, but the communication equipment used to provide the details of the situation, and the equipment they are provided to do their jobs. Not only does the equipment provided add to the officer's level of confidence in being able to respond to any situation that may arise at a call, but it also enables the officers to protect themselves and victims, as the circumstances may develop. When communities see police arriving prepared and equipped, their satisfaction with police services in crime control remains at high levels. When officers are equipped with the proper and approved equipment, this leads to the knowledge that their organization is also taking care of them and their well-being, as they take care of the citizenry. This ultimately lends to an overall healthy organization.

Decisions being made in relation to asset management must consider the funding priorities of the Province. It must be noted that this formula does not take into account inflation, which adds operational pressures that will affect level of service measures in the future.

4.14 Fire and Paramedic Services

4.14.1 Existing Performance Measures

The City provides an integrated response service where paramedic-staffed fire trucks and/or ambulances are dispatched to medical emergencies, which provides faster response times. The service is supplemented by one community paramedic, funded by the Province, who provides a service to known regular callers.

The primary operational performance measure is appropriate response times for fire and EMS services. These services are directly impacted by the state and availability of the emergency response vehicles, station locations, and information technology systems used to manage 911 communications and dispatch. The quality of the response is directly impacted by availability of specialized equipment and investment in training.

Winnipeg's integrated service delivery model that dispatches paramedic-staffed fire trucks and/or ambulances to medical incidents continues to provide fast response times. In 2016, from the time of unit notification of an emergency call, a paramedic-staffed unit arrives at the scene in 7:53 or less (or 7.88 minutes), 90% of the time. From the time a station is notified of an emergency call, a fire unit arrives at the scene in 6:51 or less (or 6.85 minutes), 90% of the time.

Table 4.14-1 shows the City’s fire and paramedic response times as presented in the Community Trends and Performance Reports.

Table 4.14-1. Fire and Paramedic Response Times

Response Type	90th Percentile[1] Response Time in Minutes					
	2011	2012	2013	2014	2015	2016
Fire and Rescue	6.82	6.78	6.82	6.92	6.85	n/a[2]
Medical	7.97	7.90	7.80	7.90	7.67	7.88

Note:

1. "90th percentile" means that from the time of notification of an emergency call, a fire and paramedic-staffed unit arrives at the scene within the number of minutes indicated 90% of the time.
2. n/a = data not available

Table 4.14-2 shows effectiveness measures for Fire and Paramedic Services based on information presented in the City's Community Trends and Performance Report.

Table 4.14-2. Effectiveness Measures for Fire and Paramedic Services

Measure	Survey Year						
	2010	2011	2012	2013	2014	2015	2016
Citizen satisfaction with fire service response to fire incidents (% satisfied[1])	96.5	98.2	97.9	95.1	87.5	94.8	97.8
Citizen satisfaction with fire service efforts in fire and injury prevention (% satisfied[1])	97.1	98.5	93.9	86.9	91.1	82.5	87.4
Citizen satisfaction with emergency response (paramedics or ambulance) (% satisfied[1])	99.3	91.5	91.5	64.6	89.0	86.4	83.6

Note:

1. % Satisfied is total % of respondents who chose "Somewhat Satisfied" and "Very Satisfied" on the citizen satisfaction survey.

4.14.2 Current and Future Levels of Service Trends

Table 4.14-3 shows the potential customer LOS and trends for Fire and Paramedic Services. LOS is expressed in terms of how well the assets serve the staff (internal customers) and are not a direct measure of service to citizens.

Table 4.13-3. Potential Customer LOS and Trends – Fire and Paramedic Services

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Meet legislation and Winnipeg Accessibility Design Standards on universal accessibility			There is a small amount of public use of buildings and accessibility must be considered for office-based staff. The City is creating a plan to meet standards.
	Provide adequate stations and fleet in order to meet target response times			There has been growth in the southwest of the City and a study is underway to define standards of response coverage and this will be followed by a Stations Masterplan for the whole City in 2017.

Table 4.13-3. Potential Customer LOS and Trends – Fire and Paramedic Services

Value	Objective	Current Trend	Future Trend	Comments
Reliability/Availability	Stations are operational 24/7			There are five older stations in need of repair and future maintenance of existing facilities will be aligned with the outcome of the Stations Masterplan. New stations are designed for post-disaster preparedness (e.g., backup power).
	Reliable fleet and apparatus			There is sufficient fleet and there is committed funding for replacements.
Quality	Provide an adequate range of storage, training, and support facilities			There is insufficient storage, bays, and doors for fleet/apparatus and vehicles are parked back-to-back. This will not improve until the implementation of the Stations Masterplan. Many stations have poor quality living accommodation for staff.
Customer Service	--	-	-	--
Safety	Provide safe facilities for staff			There are regular safety inspections of stations and apparatus are maintained in accordance with regulations.
Sustainability	Improve environmental performance			New buildings are designed to higher environmental standards and are more energy efficient. New apparatus meet diesel emissions requirements and have auxiliary power units.
Legislative	*see Accessibility	-	-	--

4.14.3 Service Delivery Influencers

The external factors that may impact service delivery for Fire and Paramedic Services include the following:

- Aging Infrastructure – The increase in fire apparatus size makes many fire stations no longer usable. The increased expectation for privacy and a mixed gendered workforce means that many existing stations no longer are appropriately designed.
- Uncertain Funding – Changes within the provincial department of health may result in different service requirements and a realignment of paramedic management and funding.
- Growth Forecasts – Steady population increases combined with suburban sprawl has and will increase the geographic area that responders are covering. To maintain response times additional stations will be needed or moved.

- IT Enhancements – A requirement for more robust secure and integrated IT systems. Improved analytic capacity that supports business intelligence for decision making. Next generation 911 regulations will also require investments in the 911 call-taking technology.

4.15 Information Technology

4.15.1 Existing Performance Measures

In addition to the Community Trends and Performance Reports published by the City, CSS conducts customer satisfaction surveys amongst internal customers.

Comprehensive performance reporting for IT service delivery for all departments was established in 2014 with the issuance of the IT Annual Report, which illustrated current and planned IT investment activity and offered commentary on how customers' needs were being served. The report also featured the first year of customer feedback received via survey. The survey measured responses against expected level of service. Since 2014, the performance measure process has been enhanced to bring in a larger audience in the survey.

Performance is measured for 17 services that IT offers. Of these 17 services, 10 involve investment in IT assets, while seven are delivered through IT staff and contractors. Examples of the seven services delivered without assets appearing in the AMP include Strategic Planning, Project Management, and Business Analysis.

4.15.2 Current and Future Levels of Service Trends

CSS has a formal suite of LOS measures that have been in place since 2014. There are 17 services that are measured across a spectrum of ratings comprised of poor, fair, good, very good, and excellent. Service delivery ratings are quantified based on customer survey responses, which are collected on an annual basis in the fourth quarter of each year to provide input into investment planning decisions that start in earnest in the following year first quarter. The LOS quantification done to produce the ratings is noted in Table 4.15-1 (*Note: this LOS rating scale is separate and unrelated to the CIRC condition ratings used in Section 3*).

Table 4.15-1. LOS Rating Description

Rating	Trend	Description
Excellent	Positive upward or stable	An Excellent rating represents an overall customer survey response of 5 out of 5 and gets a green rating signalling that the LOS is being exceeded.
Very Good	Positive upward, stable, or negative downward	A Very Good rating represents an overall customer survey response of 4 or greater out of 5, which achieves a green rating signalling that the LOS is in a range of meeting to exceeding.
Good	Stable, positive upward or negative downward	A Good rating represents an overall customer survey response of 3 to 4 out of 5, which provides a yellow rating signalling that the LOS is in a range of meeting, however, with a yellow rating comes more scrutiny to see whether the trend is upward or downward in comparison to prior years. A downward trend represents a negative outcome for the City and a deterioration in service delivery performance which will bring the investment plan for that service into a higher priority for review and action if necessary. An upward trend will indicate that previous investment planning actions are providing the planned results.
Fair	Stable, positive upward or negative downward	A Fair rating represents an overall customer survey response of 2 to 3 out of 5, which provides a red rating signalling that the LOS is not being met. This rating is scrutinized to see whether the trend is upward or downward in comparison to prior years. A downward or stable trend represents a negative outcome for

Table 4.15-1. LOS Rating Description

Rating	Trend	Description
		the City and a deterioration in service delivery performance which will bring the investment plan for that service into a higher priority for review and action if necessary. An upward trend will indicate that previous investment planning actions are providing the planned results.
Poor	Negative downward or stable	A Poor rating represents an overall customer survey response less than 2 out of 5, which provides a red rating signalling that the LOS is not being met. This rating is scrutinized to see whether the trend is downward in comparison to prior years. A downward trend or stable represents a negative outcome for the City and a deterioration in service delivery performance which will bring the investment plan for that service into a higher priority for review and action if necessary.

Table 4.15-2 shows examples of customer LOS objectives at present and expected LOS trends for CSS. The comments section speaks to how the AMP will meet the future trend identified.

Table 4.15-2. Potential Customer LOS and Trends – Corporate Support Services

Value	Objective	Current Trend	Future Trend	Comments
Accessibility	Hardware – Meet or exceed server and storage requirements			The future trend of upward pressure on demand with funding levels remaining static will result in possible service deterioration in the future.
	Software – Meet or exceed business applications needs for support and development			The future trend of upward pressure on demand with funding levels remaining static will result in possible service deterioration in the future.
Reliability/Availability	Hardware – Hardware components, such as servers and network, are available during peak periods			The future trend of upward pressure on demand follows a long trend of growth for these services. Beyond the growth, the more pressing issue is the need to invest in improved information security features.
Reliability/Availability (continued)	Software - Software applications and support technology are available during peak periods			Like the demand trend for hardware, software needs continue to rise with new business applications, increasing amounts of data, need for analytics, reporting and integration. Requested funding for enterprise business applications, such as Enterprise Content Management and Project Portfolio Management has not been available to date but will be pursued in the future. These applications integrate and consolidate existing business applications operating at non-optimum levels. Updates to the original business case will be positioned for a future funding request to ensure LOS is met.
Quality	Hardware - Provide adequate performance to meet customer expectations as documented in LOS			The future trend of upward pressure on demand follows a long trend of growth for these services is anticipated without access to required funding.

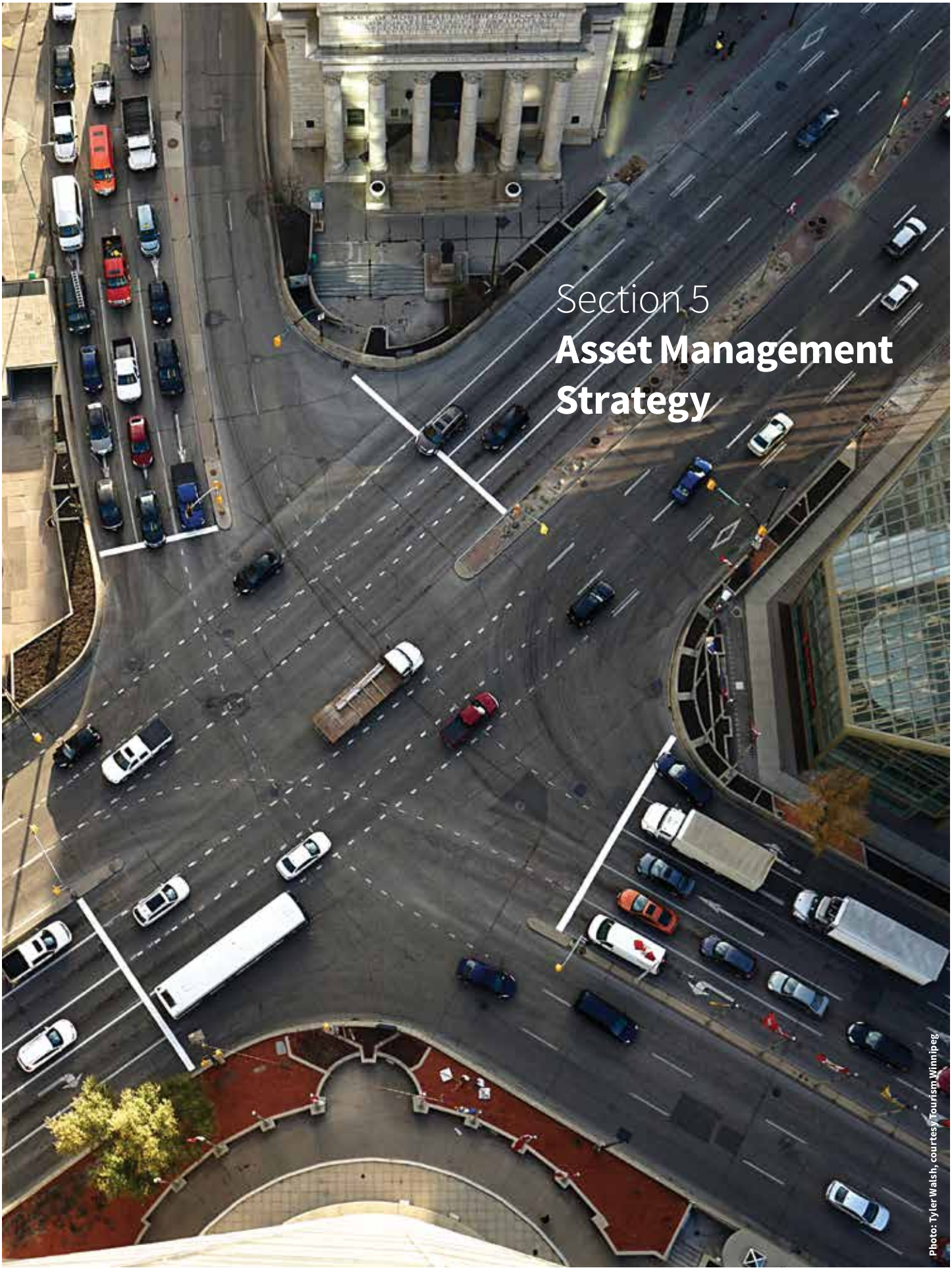
Table 4.15-2. Potential Customer LOS and Trends – Corporate Support Services

Value	Objective	Current Trend	Future Trend	Comments
	Software - Provide software development, support and integration to meet customer expectations as documented in LOS			The future trend of upward pressure on demand follows a long trend of growth for these services is anticipated without access to required funding.
Customer Service	Hardware – Meet service level agreements (SLAs) in response to support calls			Overall, good performance and highest rated amongst all information technology services which includes business applications support, desktop support and Service Desk with only 8% indicating expected LOS were not being met. Continued success in this area could be in jeopardy if the correct level of investment is not made in the asset types of Software and Hardware. In the longer run, customer service will suffer if staff are providing that service from less than optimum assets levels.
	Software – Meet SLAs in response to support calls			
Safety	Hardware – Meet SLAs in response to end user and industry standards for safety			Continued success in this area could be in jeopardy if the correct level of investment is not made in business application software and hardware. In the longer run, customer service will suffer if staff are providing that service from less than optimum assets levels.
	Software – Meet SLAs in response to end user and industry standards for safety			Continued success in this area could be in jeopardy if the correct level of investment is not made in business application software and hardware. In the longer run, customer service will suffer if staff are providing that service from less than optimum assets levels.
Sustainability	Hardware – a direct link between this value and quality, accessibility and availability			Lack of available funding in the last few years has resulted in less than optimal investment available to meet increasing demand. Should the trend continue, it is anticipated that will be less opportunity of meeting LOS obligations.
Sustainability (continued)	Software – a direct link between this value and quality, accessibility and availability			Lack of available funding in the last few years has resulted in less than optimal investment available to meet increasing demand. Should the trend continue, it is anticipated that will be less opportunity of meeting LOS obligations.
Legislative	Hardware – Meet data privacy legislation			The City does not use data centres in the United States (US) for regulated data due to the US Patriot Act.
	Software – Meet payment card industry (PCI) requirements			PCI compliance is trending upwards and is planned to be at 100% by the end of 2017. The strategy has been to divest ourselves of the software, hardware, and information security investment necessary by transferring this risk to certified vendors.

4.15.3 Service Delivery Influencers

The external factors that may impact service delivery for CSS include the following:

- Remaining up to date with security patches on commercial-off-the-shelf (COTS) software continues to consume greater numbers of support resources which removes capacity for customer focused work.
- The exponential growth in the use of rich media will place extra strain on the technology infrastructure and without the necessary matching rate of investment LOS degradation could occur.
- There are perceptions that data privacy legislation is a barrier to the adoption of cloud solutions.
- There is a trend in the industry to subscribe to services rather than acquire assets.
- Expectations of the public in terms of access to online services.
- The security risk is increasing and this is exacerbated by increasing levels of embedded technology (the internet of things) that is not traditionally part of the service provided by IT departments.
- Increasing demand from technology such as traffic signals and vehicle tracking applications.
- The continued enablement of traditionally non-Information Technology assets with technology which blurs the lines of service delivery accountability and asset ownership.



Section 5

Asset Management Strategy

Photo: Tyler Walsh, courtesy Tourism Winnipeg

SECTION 5

Asset Management Strategy

5.1 Objective

The City has a multitude of competing spending priorities and limited resources. As the City continues to grow, the need to make sustainable decisions is essential to ensure that the best actions are taken regarding the use of City assets. To that end, the City has embraced asset management as a core business function.

Having an asset management strategy helps the City to effectively invest limited resources into long-term capital plans by balancing risk, cost, and customer levels of service to ensure our assets are efficiently and properly managed. It allows the City to make the right investment, at the right time, the right way.

Through an effective asset management strategy, the City can:

- Establish and implement best practices;
- Prioritize projects based on measurable City-wide benefit criteria;
- Improve the knowledge of existing assets;
- Collect data and apply it to drive decision making;
- Lower overall cost of asset ownership; and,
- Make timely investments in key infrastructure to minimize the lifecycle cost of the asset.

Section 5 of this document will cover asset management strategies for the City from a renewal/replacement, operations and maintenance, non-infrastructure solutions, IT support, procurement and risk management perspective.

5.2 Asset Lifecycle Management Strategy

An asset lifecycle management strategy provides a comprehensive and effective approach to asset management and is illustrated in Figure 5.2-1. It manages and optimizes the cost and performance of an asset by considering the whole lifecycle.

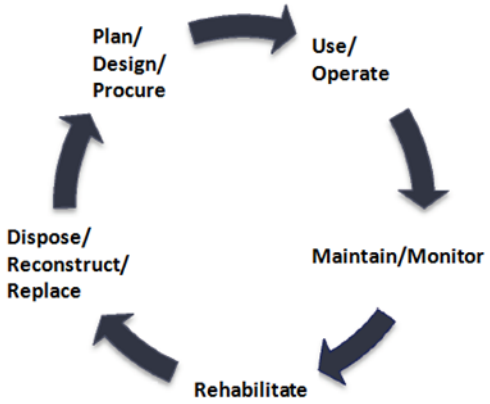


Figure 5.2-1. Asset Lifecycle

The asset lifecycle management strategy allows the City to focus on the entire lifecycle of the asset 'from cradle to grave' and make better-informed and optimized decisions that consider a wider spectrum of solutions. Key components of this strategy include:

1. **Operational Strategies**: These include non-infrastructure solutions to mitigating risks, deferring the need for upgrades/renewals, allowing for rehabilitation and renewals to be deferred without impacting on the risk to delivery of agreed LOS. These also include the consideration of asset utilization and demand management along with emergency response planning and shut-down, and outage management.
2. **Maintenance Strategies**: These include approaches for establishing the optimal combination of planned and unplanned maintenance, considering factors such as cost-effectiveness, time delays, coordination with other City departments and other municipalities, etc.
3. **Investment Planning**: This includes linking investment decisions to customer outcomes through the robust identification of needs, scoping of projects, and prioritizing projects. It focuses on base maintenance (renewal and rehabilitation), meeting agreed LOS, adhering to legislation, accommodating growth, and the reduction of operating costs ("*spend to save*").

5.2.1 Investment Planning

The Investment Planning Process (see Figure 5.2-2) supports the City's ability to provide agreed LOS and implement a robust, transparent and defendable delivery plan. This process focuses on linking investment decisions on the infrastructure to customer-oriented service delivery. Overall, the City follows the Investment Planning Process by identifying goals/objectives, establishing needs, evaluating a variety of feasible solutions, prioritizing the solutions, and developing investment plans based on the selected options.

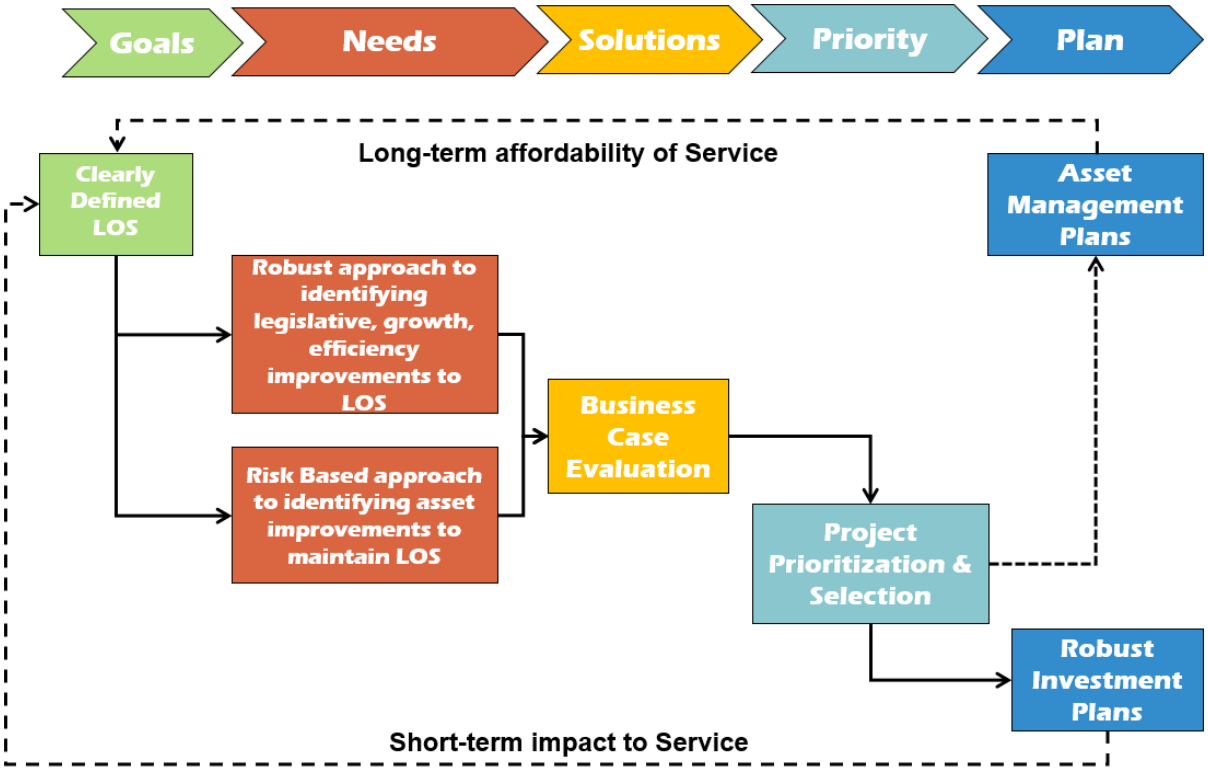


Figure 5.2-2. Investment Planning Process

5.2.2 Condition Assessment Programs

Accurate and comprehensive data on an asset's current condition is a fundamental aspect of good asset management practices. Having complete information regarding infrastructure mitigates premature replacement or failure of assets. Sound management decisions regarding capital expenditures,

operations, and maintenance activities can therefore be based on a clear understanding of an asset's condition and performance.

For entire asset classes, a more cost-effective cursory approach utilizing metrics such as *Very Good*, *Good*, *Fair*, *Poor*, and *Very Poor* has been used for this AMP. This approach allows for an overview of the assets and indicates which assets require more detailed inspections and assessments (e.g., those in *Poor* and *Very Poor* condition).

Integrating condition assessment programs into asset management practices provides many benefits. A better understanding of an asset's condition leads to more sound management practices and allows for the minimization of unnecessary expenditures. It also enables accurate asset reporting (e.g., accurate asset valuations and asset service life) contributing to the maintenance of agreed LOS enables better decision making. In combination with risk management frameworks, having a sound understanding of the current condition of the asset base allows for the identification of potential future failures, leading to the establishment and scheduling of repairs, preventative maintenance, and rehabilitation programs in a financially accountable and transparent manner.

5.3 Future Demand

Released on February 8, 2017, the census of population for the City of Winnipeg highlighted several key facts. First, the City of Winnipeg is home to 705,244 individuals, and that the 2011-2016 period saw the fastest growth since the 1960s. Over this period of time, the City of Winnipeg grew by 41,844 individuals, or 59% of the total provincial share of growth. This can be compared to the 6,844, or 10% of the Provincial share, outside the City but within the Winnipeg Census Metropolitan Area (CMA). In fact, the City of Winnipeg's growth was faster than cities such as Vancouver, Toronto, Montreal, and Ottawa. The 2016 City of Winnipeg's Population, Housing, and Economic Forecast indicates that this rate of growth is not expected to slow: that by 2040, the population of the City of Winnipeg will reach 922,600.

5.4 Procurement Methodologies

The City utilizes a range of procurement methodologies to ensure the best value when procuring goods and services and disposing of surplus assets. The following subsections describe the procurement methods of each infrastructure element.

5.4.1 Roads

For roads, alternative delivery is considered on all major capital projects.

The significant use of often highly specialized technology in traffic signals requires the continual need to understand the current state of infrastructure level of service and gaps in order to state needs, evaluate the benefits of adopting new technology, and prioritize investment. Since traffic signals are involved in almost all roadway capital projects, the timely delivery and adequate stock of quality materials and supplies are required to ensure projects are not delayed. Currently, procurement forecasting relies heavily on historical procurement quantities, as there is no readily accessible information to know what material quantity has been utilized by location or project. This information is only available through substantial manual effort, as time and material tracking still relies upon significant paperwork and an obsolete material and timekeeping information system that aggregates hand-calculated total material and time-cost inputs. The lack of quality information systems to gather this data also hinders timely reporting, and tracking of financial account status.

The City has assessed the option of outsourcing certain programs to contracted electricians but in-house staff has shown to be lower in cost. There has been a steady increase in traffic signal work due to increasing road renewal activities, traffic signal capital projects, and, now, dedicated funding for maintenance renewals. By continually searching for efficiencies and improvements to work activities

and processes, and embedding data-driven operations, the productivity has risen dramatically, enabling substantially more work to be completed with the same number of employees, while meeting increasing work demands.

5.4.2 Bridges

The Public Works Department routinely considers alternative delivery on major bridge projects and has delivered several bridge projects through Public-Private Partnerships.

5.4.3 Parks and Open Space

For parks, Service Level Agreements (SLAs) have proven successful, whereby third-party organizations share responsibility for maintaining certain sites.

5.4.4 Water Utility

Water supply, treatment and distribution has two primary functions: treatment plant and distribution system operation; and capital project delivery. Operation of the treatment plant and distribution system are currently managed using internal resources. Capital projects have typically been delivered using traditional construction contracts (Design-Bid-Build); however, the first Design-Build water project is currently underway. In the past, the City hasn't used alternative delivery methods for this asset category for either operational management or capital delivery. However, certain future projects, such as the Supervisory Control and Data Acquisition (SCADA) System upgrade, will be Design-Build.

5.4.5 Sewer Utility

Procurement of services in the wastewater area are predominantly internal resources for operational management, including the STPs, with the exception of an innovative agreement with Veolia Water North America Inc. (Veolia) called the 'Winnipeg Sewage Treatment Program'. It is a strategic partnership whereby Veolia provides ongoing strategic advice and guidance on design, construction, technology, and operational needs for the three STPs and the biosolids facilities to drive performance improvements and cost reductions on a risk share basis. Capital projects have typically been delivered using traditional construction contracts (Design-Bid-Build); however, the first Design-Build wastewater project is currently underway for the power supply upgrade as part of the NEWPCC Upgrade.

5.4.6 Land Drainage Utility

Operational costs for the land drainage and flood control program are lower than the other programs in the Water and Waste Department and, on this basis, innovative procurement options have not been explored as the benefits are lower. Operations are managed by City staff and capital projects use traditional procurement methods (Design-Bid-Build) when required. Capital investment costs are also lower compared to other areas within the Water and Waste Department.

5.4.7 Solid Waste Utility

Procurement of solid waste services, which primarily covers garbage, recycling, and yard waste collection and operation of the Materials Recycling Facility (MRF), is 99% contracted out. The BRRMF is currently managed by a combination of City staff and a contractor. Collections are outsourced and recent contracts have placed a greater emphasis on meeting LOS requirements.

5.4.8 Municipal Properties

Municipal Properties has used Design-Build in the delivery of capital projects. It works well for smaller projects but the lessons learned for larger projects is that certain items such building automation and the link into Central Control are probably best kept outside the Design-Build package.

5.4.9 Community Services

Procurement for most Community Services capital projects is provided by Municipal Accommodations.

In general, smaller projects that can be more readily defined (e.g., spray pads) have used a Design-Build approach to procurement to minimize financial risk. Larger, more complex projects utilize a construction management or Design-Bid-Build approach.

5.4.10 Transit

The City has used alternative delivery methods including Design-Build for the original Brandon Garage construction and the planned expansion of the Brandon Garage. The Southwest Rapid Transitway (Stage 2) and Pembina Highway Underpass Project is a Public-Private Partnership (P3) with a Design-Build-Finance-(Operate)-Maintain model.

5.4.11 Police Services

The East Station was constructed under a lease-to-own arrangement.

The City is exploring whether efficiencies can be achieved if the WFMA takes responsibility for all police vehicles.

5.4.12 Fire and Paramedic Services

The City has established a Fleet Committee to govern the procurement of heavy fleet. The Terms of Reference of the committee are being updated to ensure that it achieves a balance between specifying equipment that is fit-for-purpose and meeting affordability constraints.

The City is exploring opportunities for joint procurement with adjacent regional municipalities in order to achieve economies of scale.

5.4.13 Information Technology

The procurement model for Information Technology takes the City's standard process of Bid Opportunities for vendor engagement and incorporates significant pre-Bid Opportunity processes to ensure that CSS's limited resources are utilized in the most cost-effective and efficient manner possible.

CSS's current procurement planning state has many pieces with some featuring a coordinated effort, while others operate quite independently. Hardware investment planning is considered a coordinated effort, as the demand for investment is gathered with an annual demand management process and the resulting procurement effort is made from City-wide contracts. Software purchasing remains a more independent investment planning effort as needs are often unique to business lines.

A process that assists with providing more information about software investment, as well as hardware investment, is CSS's Expenditure Approval process for Information Technology. This process provides further visibility into purchasing plans, as it asks all departments to provide information for planned investments greater than $25,000 prior to receiving approval to purchase either through a Bid Opportunity or other means. While this process applies to both operating and capital expenditures, its greatest value is illuminating possible synergies between past and new capital investments.

The CSS Annual Reporting process also enables more insightful procurement. With all departments contributing past, current, and near-term future investment plans to the Annual Report, a complete picture emerges for the investment activity and the assets that have been created. An emerging process is the review of information technology business cases which also provides insight into future procurements.

The outcome of CSS's investment planning is several procurement models. Requests for Proposals are used extensively for purchasing goods and services with definitive per unit costs. These include one-time purchases of hardware or software, initial purchases with support agreements, standing offers to purchase information technology commodities over a contract period, and agreements for cloud, hosted, and subscription services. CSS also uses Request for Qualifications to purchase services from a list of vendors that have been pre-qualified to engage for software and hardware asset development in a timely manner. Single source purchasing is done where pre-procurement processes recommend not going through a Bid Opportunity process. This is often the case with assets where there is a significant prior investment and CSS is either maintaining or enhancing the asset.

5.5 Current Targets and Goals

Through *OurWinnipeg*, frontline City departments have a set of directions and enabling strategies directly tied to their assets and services. These directions and strategies are designed to establish a strong and responsive framework for actions that will send a positive signal for investment, promote prosperity, enhance quality of life, and help secure the City a competitive place on the global stage for decades to come.

The City's goals can be categorized under growth and enhancement or renewal practices and are outlined for the departments in the following subsections.

5.5.1 Roads and Bridges

The 2011 Winnipeg Transportation Master Plan (TMP) outlines goals and strategies (i.e., "Key Directions" and "Enabling Strategies") for the achievement and maintenance of a sustainable, safe and connective road network. These goals can be categorized under growth and enhancement or renewal practices. *OurWinnipeg* is currently being updated and a new version will be published in 2018. A new version of the TMP will follow to support the revision of *OurWinnipeg*.

5.5.1.1 Growth and Enhancement

As outlined in the 2011 TMP, key growth areas include strategic road network improvements, enhancement of the AT network (e.g., create a network of cycling spines), as well as projects to reduce traffic congestion and improve safety (e.g., road widening, roundabouts, and grade separation at railway crossings).

For signals, the recent opening of the Transportation Management Centre (TMC) in January of 2017, along with its unprecedented capabilities, is dramatically improving the management and performance of the traffic signal system, traffic management, and traffic information dissemination, and has a become a catalyst for cross-silo collaboration and data-driven decision making in areas related to transportation. At the core of the TMC's design is to ensure sustainable information on incidents, activities, and events that occur on the road network, understand travel flow information, and integrate operational digital workflows to enable informed and prioritized real-time decisions, but also provide sustainable level of service information to support the asset management serviceability approach, the asset management investment planning process, and align with, and support, the TMP goals and desired outcomes.

The TMC implementation has gained substantial international attention due the unprecedented capabilities and benefits that were realized in a very short time, with little cost, and limited resources. Due to the tight project timeframe, the TMC is now working to implement technology and information systems for the ongoing measurement and reporting of performance and benefits.

5.5.1.2 Renewal Practices

Roads

Roads are inspected during the period of May to October every year using a temporary workforce of trained technical students. All regional streets are inspected every year and roughly two-thirds of remaining streets are inspected each year. Road conditions are stored in a Pavement Management System (VEMAX) that is used to initiate both short-term and long-term renewals.

Regional streets are managed to maintain overall condition at existing levels. Every year, a program of renewals is developed using the following approach:

- The top 50 candidate segments from the Pavement Management System are risk-ranked
- Business cases are developed that consider renewal options and the whole life costs
- The investment program undergoes a structured prioritization using the City's Multi-Criteria Prioritization tool
- Formal coordination with other departments to accommodate opportunities and requirements for traffic management and safety hazards, AT network build, street-scaping, transit, and water and waste

Until recently, the overall condition of the road network has been in significant decline. A Regional Street Renewal Reserve was established in 2014 to increase investment in regional streets. A separate 1% property tax increase planned until 2022, and 0.30% thereafter, will continually fund this reserve each year to ensure a dedicated funding stream for regional streets.

The new funding stream will allow a gradual improvement in the condition of the road network and aims to vastly reduce the number of *Poor* and *Very Poor* condition streets over a 20-year period. The historic underfunding of the roads program is shown in Figure 5.5-1.

A Local Street Renewal Reserve was established in 2013 to increase investment in local streets. A separate 1% property tax increase is planned until 2023, which will then increase to 1.7% thereafter.

Renewals of local streets are managed under an annual program. Candidate road segments are taken from the Pavement Management System and discussed with City Councillors resulting in a weighted ward allocation of funding across the City, rather than strictly based on need.

Industrial/commercial streets have a long history of underfunding and approximately 50% of streets are in *Fair/Poor* or *Very Poor* condition. There is now an annual program of renewals based on need.

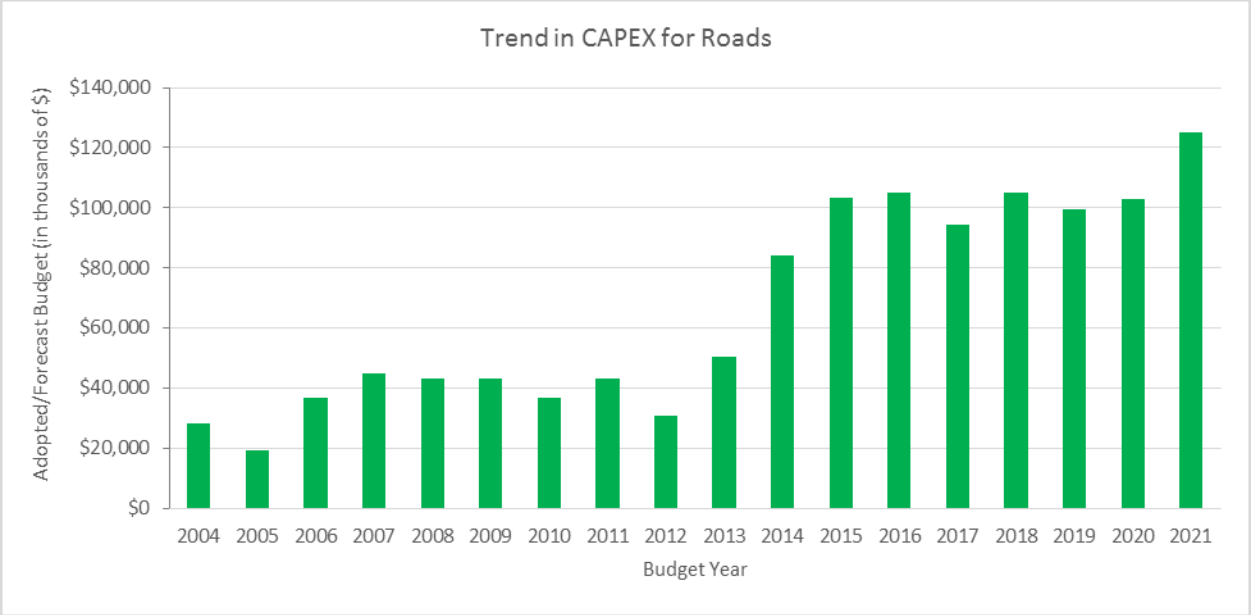


Figure 5.5-1. Trend in Capital Expenditure (CAPEX) for Roads

Over the past few years, the City has collected good quality data on the cost and effectiveness of the various road treatments (e.g., how many years a resurface lasts). The City is now in a position to use this data to improve the long-term lifecycle performance of the road network by using historical data to calibrate the probabilities and deterioration rates used in the pavement performance models.

Signals

Historically, due to the lack of a designated traffic signal maintenance budget, the renewal of signals assets was primarily conducted with related street renewal activities. Over the last 6 years, the Traffic Signals Branch is now actively submitting capital budget requests through the investment planning process and is able to state needs, risks, costs, and benefits for prioritization, along with other departmental funding requests.

A comprehensive and sustainable above-ground asset inventory and condition system, designed and implemented by the Traffic Signals Branch and Public Works IS&T division, is transforming how work is identified and prioritized. Traditionally, work was identified by reviewing individual intersections one at a time, but now, with this unprecedented information, work is now identified and prioritized on a system-wide basis in relation to technical service gaps and risks, and related geospatial data to maximize benefit of available resources.

The creation of the traffic signal malfunction reporting tool has enabled data-driven decision making that has contributed to a reduction in traffic signal malfunctions by 65% between 2010 and 2016. The City now has a better performing, modern traffic system due to investment in signals assets and operation.

The City is currently putting in place long-term planning processes and systems, and redistributing branch resources and positions through realized efficiencies, to further realize additional efficiencies and improved service. The anticipated position of “Transportation Assets Data Scientist” will be a critical resource that will enable improved data-driven decision making, including proactive and preventative maintenance planning. At the core of all signal activities is the embedding of data into all facets of operations and deriving improved understanding to make better, more informed decisions.

Traffic signage is in roughly the same situation as traffic signals was 8 years ago. There has been a relatively large renewals program over the last few years and now all signs have appropriate sheeting

material and power-illumination has been largely eliminated. There is, however, limited easily usable and sustainable information available to understand operational service levels, as well as where and what signs are in use for asset management, traffic management, and transportation planning activities.

Bridges

Bridges are formally inspected in accordance with statutory regulations (every 2 years for major bridges and every 3 years for minor bridges). Additional information is gathered through operational staff and 311 reports. Large-scale renewals (>$2 million) are managed as individual projects and smaller scale renewals are managed through an annual program. Renewals consider whole life costs particularly through the choice of low maintenance materials. As far as possible, renewals are planned to avoid repeat visits to assets and hence minimize traffic disruptions.

There is no long-term renewals plan for bridges other than knowledge of major defects through the inspection program. The City is in the process of moving to the Ontario inspection standard and intends to procure associated asset planning software to assist with long-term planning.

5.5.2 Parks and Open Space

A Parks Strategic Master Plan is currently under development and planned for completion in March 2019. A comprehensive GIS-based asset registry has been developed to record the condition and replacement value of parks and open spaces, and related amenities. The registry is continually being updated and enhanced.

5.5.2.1 Growth and Enhancement

Currently, there are no strategic plans in place for the growth and enhancement of parks. Strategies for regional parks, athletic fields, and off-leash dog areas are under development. There is a need to have a strategic outlook for other asset classes.

5.5.2.2 Renewal Practices

Parks has a small number of capital programs and funding levels are largely reactive and based on historic budgets. The Parks team identifies the major issues to identify needs. Under some programs, general practice is that funding is allocated evenly around the City, rather than strictly based on need.

Buildings and play structures have the largest capital renewals requirements and both sets of assets have long-term renewals forecasts. Park buildings are captured in VFA.

5.5.3 Water Utility

5.5.3.1 Growth and Enhancement

OurWinnipeg is supported by a direction strategy called ‘Sustainable Water and Waste’ (SWW). This strategy document promotes initiatives to protect public health, ensure the purity and reliability of drinking water supplies, and maintain or enhance the quality of built and natural environments.

These initiatives enable management of assets and prioritization and allocation of funding to ensure that the overall municipal plan is achieved. These initiatives can be categorized using the customer values from the LOS review and are detailed below for each of the service areas, along with more detailed breakdowns of what each initiative is aiming to achieve.

The SWW initiatives for 'Water' are shown in Figure 5.5-2.

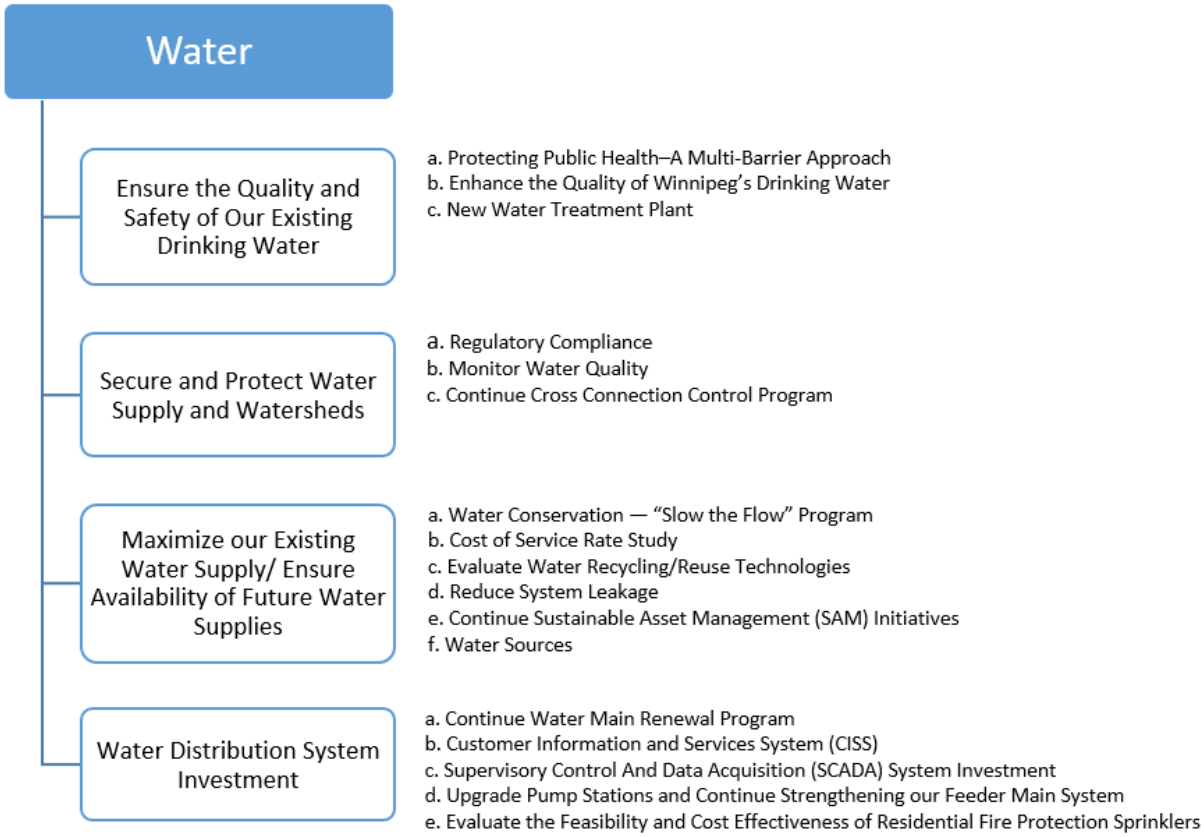


Figure 5.5-2. SWW– Water Initiatives

Accessibility

The accessibility of water services is influenced by the cost of the service. The City will conduct an updated Cost of Service Study to ensure rates are aligned with the current cost of delivering services to customer groups and will investigate demand management.

Reliability/Availability

The reliability and availability of water services is primarily a function of the performance of the water distribution network. To maintain existing LOS, the City will continue to invest in water main renewals and rehabilitations. As part of the renewal program and coordinating with the Public Works street renewal program, the Water and Waste Department will review opportunities for supporting growth. While not utilising City capital for construction, land development is gradually expanding the water main service area for existing residents. Occasional local improvement projects improve access to City water. There will also be investment in the SCADA system (which is used to provide automated control and visualization of the water network), the pump station power systems (to increase reliability), and strengthening of the feeder main networks to provide looped supplies to urban fringe locations.

Quality

There are a number of programs which will target improvement to water quality. These include strengthening the multi-barrier approach by developing a watershed protection plan, investigating alternate coagulants at the water treatment plant, monitoring water quality through an extensive water quality sampling regime, certifying operational staff, and delivering a cross-connection control program. These programs will be delivered in parallel with the ongoing operation of the new WTP.

Customer Service

Customer service enhancements include implementation of the remaining phases of the Customer Information and Services Project, which will enhance the customer care and billing system. This system will include web self-service, meter management, and inventory control and enhanced reporting.

Sustainability

There are a number of sustainability-related programs including reducing customer usage through the "Slow the Flow" program, a residential toilet replacement credit program and expansion of the City's leak detection program to reduce non-revenue water losses. The Water and Waste Department will be updating the Water Quality and Consumption Review to track short to medium-term supply and demand balance. The City has also committed to undertaking a long-term water supply and demand balance to assess water demands over the next 20 to 50 years.

Legislative

The City undertook a Regulatory Requirements Assessment in 2016; these are required every 5 years. The assessment considers the condition of the water systems infrastructure and its ability to meet regulatory requirements. The next regularly scheduled assessment is due to be completed in 2021.

5.5.3.2 Renewal Practices

Renewals for the water supply, treatment and distribution assets are based on both condition assessments and operational intelligence.

There is an ongoing program of asset renewals at the SLAIF, pumping stations, and reservoirs. These projects are identified through operational needs and site-specific studies which are undertaken on a planned basis.

The WTP was commissioned in 2009; as such, asset renewal requirements are currently very low. Some assets are experiencing a shorter than anticipated lifespan. To address this and other end-of-life replacements, an asset refurbishment and replacement program is being initiated in 2018. Assets will be renewed or rehabilitated on a risk-based priority to ensure the continued reliability of the treatment plant processes.

Distribution water mains are replaced based on risk, which is determined from the condition of the pipe and consequence of failure. Break history is used as a proxy for pipe condition; consequence is based on street priority, cost of repair, and critical customer rankings derived from land use information in the GIS. A program of condition assessment for high-risk pipe assets has recently been introduced. Currently little condition information is available on feeder mains and branch aqueducts.

5.5.4 Sewer Utility

5.5.4.1 Growth and Enhancement

The SWW initiatives for 'Wastewater System' are shown in Figure 5.5-3.

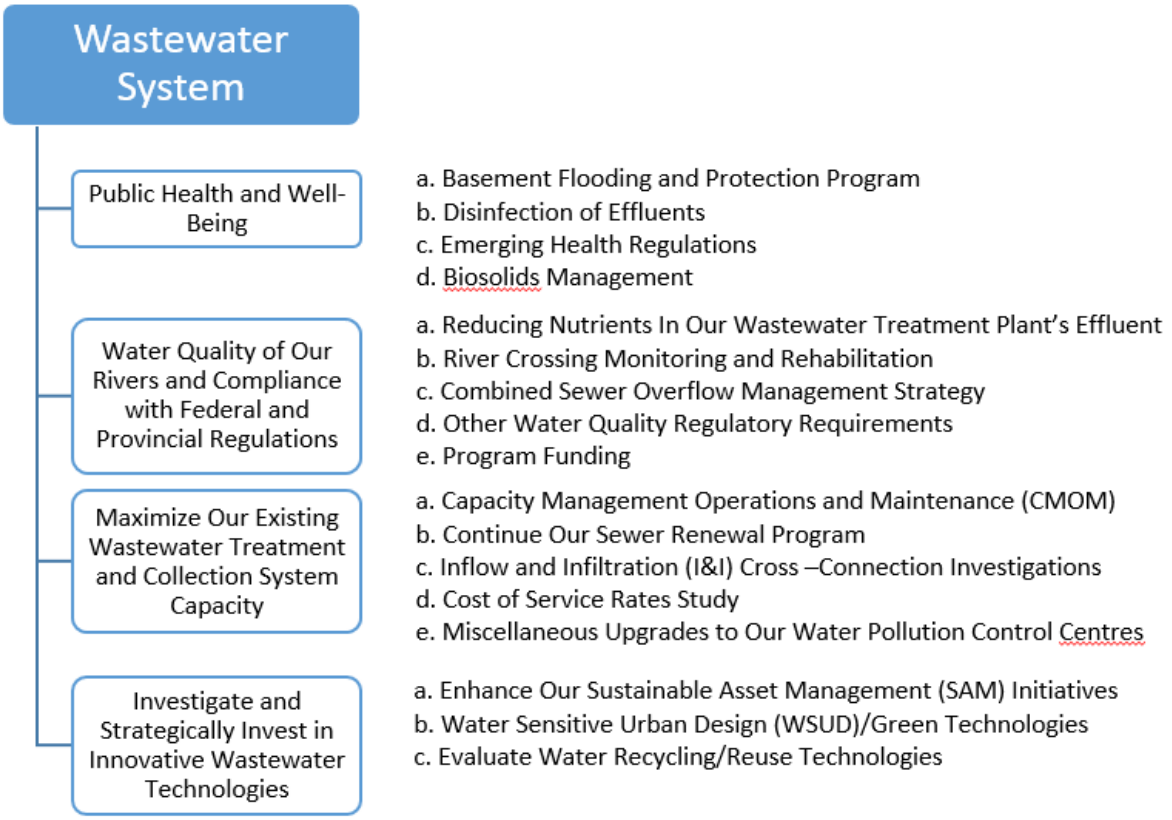


Figure 5.5-3. SWW – Wastewater System Initiatives

Accessibility

The accessibility of wastewater services is influenced by the cost of the service. The City plans to conduct an updated Cost of Service Study to ensure rates are aligned with the current cost of delivering services to customer groups and will investigate demand management.

Reliability/Availability

This area is a key focus for the City, with significant investment in programs that support the reliability of the collection system, as well as upgrades to improve the LOS. Key deliverables include renewal and rehabilitation of lift stations, expansion of sewer networks, sewer renewal and replacement, upgraded SCADA systems, inflow and infiltration reduction, and upgrades to the STPs. These programs work to reduce basement flooding and incidences of CSOs as well as nutrient removal to meet more stringent effluent limits at the STPs. The Water and Waste Department will consider growth as part of renewal works while coordinating with the Public Works Street Renewal Program. While not utilizing City capital for construction, land development is gradually expanding the wastewater service area for existing residents. Occasional local improvement projects provide access to City sewers.

Quality

The STP upgrades are primarily driven by legislative requirements but these programs will result in water quality improvements for discharges to the receiving water courses.

Safety

Safety and public health are a fundamental driver for the provision of wastewater collection services. On this basis, the City has prioritized a CSO and Basement Flood Management Strategy to minimize basement flooding and reduce health effects. The City is continuing projects to bring combined sewer districts up to a 1-in-5-year level of basement flood protection, primarily through sewer separation and new relief piping. In addition to this, the implementation of the CSO Master Plan will provide for 85% capture of wet weather flow for a representative year.

Sustainability

There are a number of sustainability initiatives being investigated by the City including biosolids management, water sensitive urban design, and water recycling and reuse. These initiatives will reduce the environmental impacts of operating the wastewater collection and treatment systems.

Management of biosolids is detailed in the Biosolids Master Plan 2014, which identifies initiatives to increase the beneficial reuse of biosolids. It includes a two-phase implementation program and costs.

Legislative

There are a number of significant regulatory drivers that are influencing investment in wastewater services and that are aimed at reducing CSOs as well as the level of nutrients in treated wastewater entering the receiving environment. The impact of these legislative requirements is considerable, with planned upgrades at two of the STPs (SEWPCC and NEWPCC). The upgrade of the NEWPCC is detailed in the NEWPCC Master Plan. The plan sets out the proposed effluent quality parameters, treatment process, design assumptions, and implementation plan for delivery of the upgraded STP, including cost estimates.

The City submitted a CSO Master Plan to the Province in 2015, which proposes a reduction in CSOs and would achieve 85% capture in a representative year. Delivery of this objective will require significant funding over a long investment horizon to achieve full implementation. The Province approved the recommended 85% capture target in late 2017. The City is currently developing an implementation program to achieve the outcomes; this will need to be funded by water billing revenues and multiple levels of government.

5.5.4.2 Renewal Practices

Renewal practices vary across the Sewer Utility assets.

The asset refurbishment and replacement program for the STPs is driven by operational reporting. The City is building a more robust approach to managing inspections and condition assessments under the Winnipeg Sewage Treatment Program. Veolia is assisting the City with data collection and condition assessment activities to progress management in this area. Renewals for the STPs are currently very low with the WEWPCC having been upgraded and the SEWPCC and NEWPCC upgrades progressing. Until the upgrades have been completed, the asset refurbishment and replacement program is addressing critical needs and areas that are not being upgraded.

Sewer lift stations are currently being rehabilitated at a rate of one per year. Prioritization of stations for renewal is predominantly based on a desktop risk assessment. As there are 74 lift stations, the current funding rate is insufficient to adequately rehabilitate the stations to maintain the required LOS.
To improve the investment approach, a program for lift station condition assessments will begin in 2018 (to date, four lift stations have had detailed condition assessments). This work will review the station by station renewal approach and may result in functional work packages covering multiple stations each year to better maintain LOS. Replacement of the motors and pumps is based on operational reports.

An annual closed-circuit television (CCTV) program assesses the condition of wastewater and combined sewers that are over 30 years of age; the program covers approximately 7% of the network each year. All

existing sewers over 30 years of age have been inspected. A program is ongoing to assess high-risk locations, such as river crossings, which are difficult to inspect and require more detailed approaches at a higher cost. In general, force mains have not been inspected due to the difficulty in obtaining access. The results from all the condition assessment programs set both the re-inspection plan and also prioritize capital investments required for asset renewal and rehabilitation. The ultimate goal is to maintain assets at a Sewer Performance Grade (SPG) of 3. Current funding levels enable all SPG 5, and more critical SPG 4 sewer mains, to be addressed. Mains that are not replaced are re-inspected. It is believed that the current level of replacements is keeping ahead of the deterioration curve. Historically 80% of the sewer renewal program was reactive repair and replacement work. Through implementation of the condition assessment program and evolving trenchless rehabilitation technologies, the sewer renewal program now involves 90% relining and 10% reactive repair work.

5.5.5 Land Drainage Utility

5.5.5.1 Growth and Enhancement

The SWW initiatives for 'Stormwater Management and Flood Protection' are shown in Figure 5.5-4.

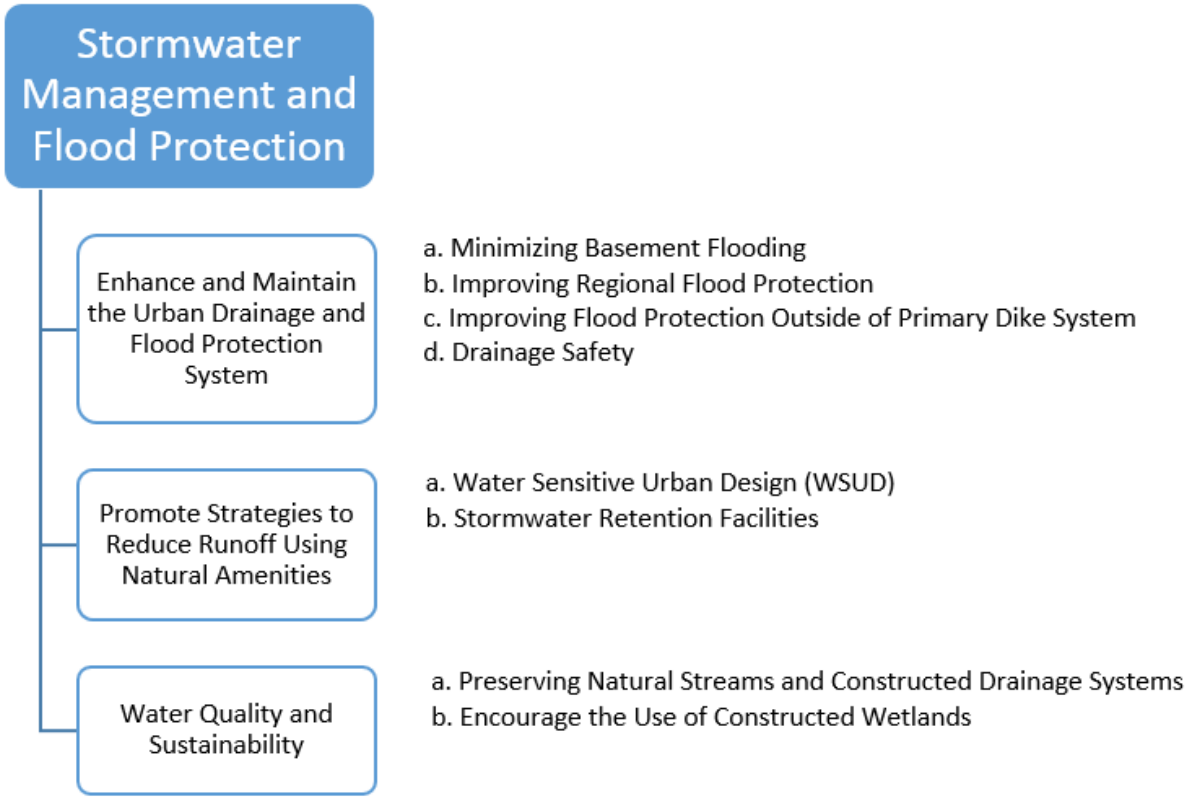


Figure 5.5-4. SWW– Stormwater Management and Flood Protection Initiatives

Accessibility

A number of residential properties are outside the City's primary dike system. The City has a program to assist residents to raise their level of flood protection. All new developments are provided with separated sewers and land drainage systems to current standards.

Reliability/Availability

This is the primary improvement area for land drainage and flood control. Programs under this customer value are aimed at improving the level of protection of properties already being provided a service. The

key programs include minimizing the occurrence of basement flooding, improving regional flood protection, and promoting water sensitive urban design and stormwater retention facilities. While not utilizing City capital for construction, land development is gradually converting overland drainage to piped land drainage servicing for existing residents. Similarly, so do local improvement projects, although less frequently.

The City has a CSO and Basement Flood Management Strategy to provide combined sewer districts with a 1-in-5-year level of basement flood protection. This includes opportunistic combined sewer separation; further improvement will occur as part of the implementation of the CSO Master Plan.

Quality

The City has seen a number of benefits from the development of constructed wetlands in urban developments such as increased biodiversity, improved water quality, and reduced maintenance. The City will continue to encourage the development of these facilities.

Safety

The City will continue to monitor and maintain inlet grates to prevent uncontrolled access into the closed stormwater systems.

Sustainability

The City is committed to preserving natural waterways and constructed drainage systems throughout the City. The City has runoff criteria for redevelopment areas to ensure that post-development runoff is not higher than pre-development runoff.

5.5.5.2 Renewal Practices

Land drainage and flood control assets have very long lives, particularly drainage channels and dikes. This results in a smaller renewal program compared to the water and wastewater assets. The renewals are primarily focused on outfalls which are often submerged and subject to more challenging environments than the remainder of the buried network. The outfalls are ranked in priority order using data on structural condition, geotechnical condition, and hydraulic condition. The condition of the outfalls is in the process of being reassessed to ensure the priority list is up to date. The City is currently planning to invest $2 million per year to address outfall condition.

Limited CCTV inspection of land drainage sewers has shown that, generally, the pipes are in very good condition and a dedicated renewal program is not required. Capital delivery of projects to renew or rehabilitate land drainage sewers are managed under the sewer renewal program.

The underpass pumping stations are maintained by the Water and Waste Department on behalf of the Public Works Department. It is understood that a number of the stations are aging and require rehabilitation. As these assets are not owned by the Water and Waste Department, identification of renewal priorities is not a current responsibility; however, lack of rehabilitation will result in additional maintenance efforts. An agreement needs to be established between both departments on responsibilities for maintenance and renewals.

There are currently no dike upgrades planned.

The Water and Waste Department is aware that a pilot study on the naturalization of existing traditional SRBs would be beneficial. The SRBs are not planned to have any major renewal works; revetment upgrades will be undertaken until a plan for naturalization is in place.

The City is currently undertaking a program to replace aging sluice gates with flap gates on stormwater outfalls. It is anticipated that this program will be completed within 4 years.

5.5.6 Solid Waste Utility

5.5.6.1 Growth and Enhancement

The SWW initiatives for 'Solid Waste Management' are shown in Figure 5.5-5.

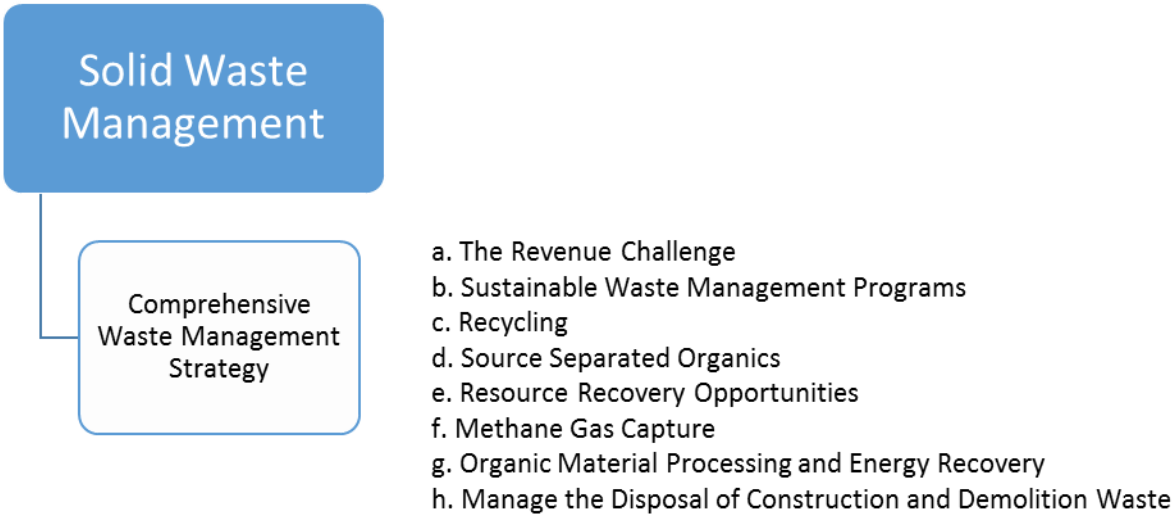


Figure 5.5-5. SWW– Solid Waste Management Initiatives

In addition to *OurWinnipeg* and the SWW Direction Strategy, the Solid Waste Division has a Garbage and Recycling Master Plan (2011). This Comprehensive Integrated Waste Management Strategy (CIWMS) sets out how solid waste management initiatives will be delivered including budgets, capital investment priorities, changes to LOS, supporting the community consultation strategy, and timing and staffing requirements. The CIWMS has recommendations and budgets for the period 2012-2016. As mandated by Council, a 5-year review is underway and an updated plan will be brought forward for Council consideration.

Accessibility

The BRRMF is the only active landfill in the City and has sufficient capacity for the next 100 years based on current waste disposal rates. Waste diversion is a more sustainable option than landfilling waste. As diversion programs expand, new revenue sources are required to fund these services. The City will strive to balance accessibility and the cost of providing a sustainable service.

Reliability/Availability

Waste diversion services to the community have improved significantly. The construction of 4R Depots will improve diversion rates by allowing free drop-off of a wide range of recyclables from leaf and yard waste to large appliances to tires and household hazardous waste. The City is also looking at a strategy to improve waste diversion from multi-family dwellings.

Recent and future contracts for collection have placed a greater emphasis on LOS.

Safety

The replacement of site trailers with the construction of a new administration building at the BRRMF will result in safety improvements. Contractors (99% of the operational work) are held to Provincial and City safety standards. The separation of the commercial tipping face from residential waste drop off has also improved safety.

Sustainability

Sustainability is the key focus of the SWW Direction Strategy. A number of programs have been identified including:

- Increase recycling
- Consider options for recovering energy from solid waste
- Consider capture reuse of methane gas from BRRMF
- Encourage building contractors to meet Green Building Standards for waste minimization from the construction and demolition industry

5.5.6.2 Renewal Practices

Key assets in the solid waste recycling and waste diversion portfolio include both open and closed landfills, 4R Depots, recycling centers, and garbage and recycling carts.

The buildings, plant, and machinery at the landfills and recycling centres require upgrades from time to time. As there is a small number of assets, this is managed on an ad-hoc basis through inspections and operational feedback from staff. Construction of lined landfill cells, including gas collection systems, is the most significant investment required for landfill operation.

The condition and age of garbage and recycling carts is monitored on an ongoing basis and complete replacement is programmed based on the expected life of the carts. Replacement of the carts is a significant investment. Full implementation of the cart asset management system will enable better reporting on asset inventory and condition, and programmed replacement.

It is acknowledged that foreign exchange rates and oil prices can impact investment in landfill cell liners as well as garbage and recycling carts.

5.5.7 Municipal Properties

5.5.7.1 Growth and Enhancement

Through *OurWinnipeg*, frontline City departments have a set of directions and enabling strategies directly tied to their assets and services. These directions and strategies are designed to establish a strong and responsive framework for actions that will send a positive signal for investment, promote prosperity, enhance quality of life, and help secure a competitive place for the City on the global stage for decades to come.

Each department that provides frontline services to citizens (e.g., Community Services) has a master plan, into which Municipal Accommodations provides input with respect to building assets. Enhancements to facilities are funded through the capital budgets of the relevant departments or from third party lessees.

The Special Operating Agency's submit an annual business plan to Council outlining their strategic plans, including growth and enhancement strategies.

5.5.7.2 Renewal Practices

This section describes the overall approach to renewals and maintenance for the Municipal Accommodations asset portfolio. Day-to-day operational maintenance and capital renewals are key factors in the asset lifecycle. Other assets included in the Municipal Properties infrastructure element are not addressed in this section.

Short-Term Renewals

Municipal Accommodations is the City's centralized service provider for building maintenance of City buildings, except those managed by Transit and Water and Waste. Over the years, the inventory

managed by Municipal Accommodations has increased without a corresponding increase in funding to conduct required maintenance. As such, there is currently a reactive approach to building maintenance, where critical repairs are prioritized. This approach extends the operational life of individual items of equipment and delays the point of replacement. However, it is not the lowest lifecycle cost approach and can result in a relatively large amount of major failures and subsequent impact on services to citizens. Plans are underway to further expand the use and capabilities of VFA, the building asset management database, to improve coordinated building maintenance planning with all City departments.

Long-Term Renewals

The City acquired VFA, a building asset management database, and conduct inspections on a large portion (by square foot) of the Municipal Accommodations asset portfolio in order to understand the long-term renewal funding requirements. This is a significant achievement and it provides a good platform for further development of asset management practices.

VFA provides long-term projections of capital investment required to maintain the asset portfolio. It is a statistical model based on the typical behavior of building systems, and so there is more confidence in the output when it is aggregated across many buildings. VFA cannot predict the replacement of individual items of equipment within a facility however it provides a guideline for replacement that should be verified by up-to-date condition and performance data.

The key performance indicator being used for evaluating the condition of building and facility assets managed by the Planning, Property & Development Department is the Facility Condition Index (FCI). Using the FCI is a recognized industry standard and is typically derived by dividing the current backlog of work by the current replacement value of the asset:

FCI = Backlog + Current Year / (Current Year Replacement Value)

Based on internal data management and reporting formats, the FCI was calculated using a slight variation that took the backlog of work plus 5 years of projected maintenance divided by the current replacement cost of the asset. This did not have a significant effect on the overall ratings, as the value of backlogged work was similar to the value of repair work forecasted over 5 years.

For the purposes of calculating a deficit over 10 years for City buildings managed by the Planning, Property & Development Department, the long-term renewal funding needs for existing assets has been estimated by setting a target FCI of 20% within 10 years. An FCI of 20% corresponds with a *Fair* condition rating. This means that over the next 10 years, if the appropriate funding for maintenance/repair work is allocated to the assets, the majority of buildings will be in *Fair* condition.

Future FCI analysis will consider:

- Using a 1-year methodology along with the potential of using a more realistic or “true” replacement value that considers other project costs such as land acquisition, demolition, design, etc.
- Adjusting the LOS to more accurately reflect the unique needs of building and facility assets. For example, if the risk of having a critical asset fail or underperform is high, the FCI may be updated to 10% (“*Good*”) rather than 20% (“*Fair*”) as a targeted LOS.
- Formalizing a systematic approach to integrate structural assessments into the overall condition ratings.

5.5.8 Community Services

The *Recreation, Leisure, and Library Facilities Policy* contains the City’s approach to the growth and enhancement of the Community Services assets included in this AMP.

In 2018-19, the department will develop a Recreation and Parks Strategic Master Plan which will further shape the vision and strategies for growth and enhancement of services and lead to a renewed Policy document.

5.5.8.1 Growth and Enhancement

Recreation

No new stand-alone senior, recreation, and leisure centres will be added to the City's inventory. Where possible, the inventory of existing facilities will be incorporated into community recreation and leisure centres (whether these are governed by the GCWCC or run directly by the City) and rationalized over time, in keeping with facility to population ratios.

The City will review the provision of arenas with the intent to eliminate or reduce its role as a direct provider over time, while ensuring that the number of arenas remains within the facility to population ratio.

In 2010, City Council formally adopted the recommendations of the Winnipeg Public Service to move forward with soliciting expressions of interest from the private sector and community organizations for:

- The construction and operation of new multi-pad public-use arenas; with prime consideration being given to strategic geographic location(s) so as to maximize accessibility for citizens; and,
- The management and operation of existing City-owned and operated public use arenas.

Aquatics

The inventory of wading pools will be rationalized over time in keeping with the facility to population ratio. Facilitating this rationalization will be the introduction of a better wading pool or splash pad in the vicinity, or the development of a Water Park Splash Pad or Urban Oasis in the community. The City will proceed slowly in introducing splash pads so as to fully assess community acceptance and the impact on operating costs. As Urban Oases and Spray Parks are developed in communities, outdoor pools will be closed.

The existing inventory of indoor pools will either be converted into Urban Oases or rationalized in coordination with development of new Urban Oases and in keeping with facility to population ratios.

Libraries

There will be no net increase in the number of libraries unless there is substantial population growth. Where possible, a new library will be co-located within a community recreation and leisure centre in order to take full advantage of joint programming opportunities. However, in doing so, the new library should replace at least one existing facility. Where it may not be possible to incorporate a new library within a community recreation and leisure centre, a new stand-alone library will be developed, only if it results in a consolidation of two or more branches or if there is a positive business case supporting the replacement of an existing facility.

In 2012, the *Library Redevelopment Strategy* was released by the Winnipeg Public Service, recommending capital funding of $20,964,000 from 2013-2020. The report recommended a redevelopment strategy for eight existing City library facilities that had been identified as being in greatest need of replacement. The principles considered with each library branch redevelopment were:

- Maximize investment and revenue (tax base) potential relative to the redevelopment of existing City of Winnipeg-owned lands where stand-alone library facilities currently exist.
- Maximize community benefit in terms of exploring mixed-use development opportunities, which may include residential, community spaces, library facility space; as well as other partnership possibilities.

- Recognize the increasing influence of technology and provide for the most efficient and effective facility space options in delivering contemporary public library services.
- Issue an RFQ/RFP for projects where a potential development opportunity exists.

In 2014, the Winnipeg Public Library initiated the consultation process for the *Winnipeg Public Library Strategic Plan 2015-2020*. The consultation process was designed to gather input and ideas from citizens, library staff, and stakeholders to help the Winnipeg Public Library set the direction for a new 5-year strategic plan. As a result of the consultation process, the following strategic goals were set forth:

- Provide excellent customer service as public needs evolve through continued investment in staff development and training
- Enhance strategic partnerships with organizations to better meet the unique needs of the community
- Invest in more programs and services that advance digital literacy so that customers use technology to enrich their lives
- Support the development of early literacy skills in young children through increased investment in materials, services, and programs for families, childcare providers, and educators
- Ensure all library branches are welcoming and accessible destinations to serve as vibrant community spaces for all residents
- Adjust open hours of library branches to encourage new library users to visit and to be more convenient for existing customers
- Select material that reflects the diverse needs of the community so that relevant print, digital, and special collections are freely available
- Increase awareness of the library and its benefits through expanded promotion of programs and services
- Develop stronger relationships with newcomers and Indigenous peoples by providing responsive programs and services
- Provide opportunities for older adults to meet, learn, and contribute so that we build strong connections within the community
- Expand the impact of the library beyond physical branches through community outreach and digital services

5.5.8.2 Renewal Practices

Renewals for recreation, aquatics, and libraries are planned and delivered through Municipal Accommodations.

5.5.9 Transit

The 2011 TMP outlines goals and strategies (i.e., “Key Directions” and “Enabling Strategies”) to improve the perception, comfort, reliability, and convenience of taking transit. These goals can be categorized under growth and enhancement or renewal practices. *OurWinnipeg* is currently being updated and a new version of the TMP will be published in 2018.

5.5.9.1 Growth and Enhancement

The guiding principle behind the TMP Transit Strategy is the creation of a high-quality transit experience in the base transit network as well as growth and enhancement of the City’s rapid transit system. In the

TMP, four “corridors” are proposed to be in place for rapid transit within the City by 2031, with an additional two corridors to be incorporated beyond 2031.

In addition, the City aims to create fully accessible and barrier-free transit services by 2020, including accessible fleet, stops, and stations.

The City also intends to enhance the transit system and promote ridership by expanding route coverage, continuing the bus stop and shelter upgrade program, providing more bicycle parking, improving pedestrian connections, adding bicycle racks on more buses, and developing safe and convenient pedestrian and cycling routes to and from transit stops and stations.

5.5.9.2 Renewal Practices

The City’s buses undergo mid-life refurbishment after 10-12 years and this extends the life of the buses to approximately 18 years. There is a rolling annual program to purchase new buses, with the exact number varying from year-to-year. The majority of bus purchases go toward replacing retired buses.

There is no renewal program for auxiliary vehicles. There are many different types of vehicles and they are maintained as long as possible and replacement is deferred as late as possible. This may not be the most effective lifecycle approach.

The garages are significantly undersized for the size of the bus fleet, two of which are aging buildings that have been historically underfunded. There is a small program with a fixed funding limit that funds small, urgent, essential maintenance projects. The acquisition of longer, articulated buses has exacerbated the space problem. The lack of capacity and deteriorating assets is leading towards major operational issues. For example, many hoists require major repairs to the concrete bases; however, all hoists are required to operate all the time in order to keep the fleet on the road. The lack of capacity also increases operational costs through additional bus movements and overtime wages.

An expansion is underway for the Fort Rouge Garage to increase capacity. The North Garage needs to be entirely replaced. Currently, no suitable site has been identified and no funding is available to replace the North Garage. A business case will be prepared to prioritize the North Garage investment for future consideration.

5.5.10 Police Services

5.5.10.1 Growth and Enhancement

The WPS’s plan of upgrading the district stations is almost complete. The North District Station, which will replace the District 3 Station at 260 Hartford Avenue has funding in place. It is the last station required for the upgrade of major operations and is a necessary step towards ensuring that the WPS is operating in a functional facility that is safe for officers and accessible to the public.

5.5.10.2 Renewal Practices

There is robust renewals planning in place for fleet and communication technology (e.g., radios).

WPS has a scoring system for vehicles based on age and repair history and, when vehicles reach a certain threshold, they are candidates for replacement or change of duty. Replacement is not solely based on age and this helps to maximize the economic life of the vehicles.

Stations and other building maintenance are managed in partnership with Municipal Accommodations.

5.5.11 Fire and Paramedic Services

5.5.11.1 Growth and Enhancement

There has been growth in the City and a new departmental masterplan is required. There are three steps to producing a masterplan. The City has produced a Fire Underwriters Survey. A study is now underway to determine the standards of response coverage across the City (i.e., target response times) and this will be followed by a Stations Masterplan that will determine the number and locations of stations to meet the response standards.

During future renewals and enhancements of stations, all staff will be co-located and there will be no dedicated ambulance stations.

5.5.11.2 Renewal Practices

The City follows the US National Fire Protection Association standards for fleet with a 20-year lifecycle for frontline apparatus and a long-term plan is in place for routine replacement of fleet. A recent audit recommended that the City evaluate the lifecycle performance of fire apparatus due to the high usage for medical incidents.

All fire and paramedic fleet and apparatus is managed by WFMA. In 2012, the responsibility for managing stations was moved to Municipal Accommodations. All stations have been inspected and long-term renewals are managed within VFA. There is a capital renewals forecast to manage the backlog of renewals and bring stations to a level where the condition is considered to be *Fair* (i.e., FCI = 20%) over a 10-year period. There are short-term plans to deal with immediate issues such as overhead doors, roofs, and living accommodations. The renewals plan will be finalized and activated when the Stations Masterplan is complete to avoid short-term expenditures on stations that may not be part of the long-term Stations Masterplan.

5.5.12 Information Technology

The CSS Department and the City's targets and goals for the Information Technology asset management strategy remains committed to supporting the information technology needs of the City's services to citizens and being aligned with *OurWinnipeg,* which directs and guides the strategic directions and priorities of all City departments and agencies. CSS strives to ensure that the City of Winnipeg is able to support the delivery of service through Information Technology in the most innovative and cost-effective manner.

CSS targets consider the following:

- Optimal levels of reliability, security, and standards
- Valued partnerships with our customers
- A governance structure that is both strong and flexible
- A holistic organization-wide IT orientation
- Cross organizational IT architectures
- Widespread understanding of how IT helps achieve goals and objectives
- Operationally integrated IT systems that share data seamlessly
- Optimized systems with minimized duplication of functionality and data
- Balanced use of internal and external resources
- Capability and capacity to provide current and future IT services

CSS AMP goals are the same as their strategic goals found in the CSS Annual Report. These goals have been developed to ensure CSS can measure and report against indicators that are meaningful, commonly understood, and reflective of the drivers and indicators of successful public service delivery.

These goals are:

- Optimize service delivery
- Enhance citizen access to services through the use of technology
- Faster, more accurate and meaningful information

The measuring of success against goals when provisioning IT services through assets resident in CSS and across all City departments and SOAs has been achieved through the annual Performance Measures Survey of customers. The survey information is broken down into key performance indicators and operational performance indicators. Results of 2016 activities as compared to 2015 provide a clear line of sight between asset investments made, services delivered, and outcomes achieved.

Key Performance Indicators (KPIs)

From the CSS 2016 Annual Report, there are eight KPIs of which five have measurable data from 2015 and 2016 showing year over year changes. The other three KPIs are either beginning to be measured in 2017 or are related to future planned investments in IT assets. Results from the five KPIs with 2 years of measurable data are as follows:

- Quality of service delivery – the satisfaction rating dropped from 63% in 2015 to 53% in 2016.
- Timeliness of service delivery – requests for service resolved by first level support rose one percent from 12% in 2015 to 13%.
- Client satisfaction with IT service delivery – the satisfaction rating dropped from 23% in 2015 to 18% in 2016.
- Achievement of standards in service level agreements – the satisfaction rating remained stable at 97%.
- Use and satisfaction with Open Data – the City of Winnipeg moved up one rank from 11th ranked out of 32 cities to 10th ranked out of 66 cities.

Operational Performance Indicators (OPIs)

From the CSS 2016 Annual Report there are 10 OPIs, of which eight have measurable data from 2015 and 2016 showing year over year changes. The other two OPIs have just one year of data. Results from the eight OPIs with 2 years of data are as follows:

- Prevalence of technology enabled transactions – in 2015 the online rate for winter swim registrations was 77% which climbed to 81% in 2016.
- Service requests received – in 2015 33,800 were received and in 2016 the number rose to 37,203.
- Criticality of service requests received – in 2015 there were 1,237 high and 3,115 medium requests, while in 2016 the numbers rose in both categories to 1,714 and 3,450, respectively.
- Online transactions – website visits – 26.8 million in 2015 and 22.7 million in 2016.
- System uptime – for both 2015 and 2016, uptime was at 96%.
- Number of open data sets, open data portal page views, and data set views loaded – in 2015, there were 79 open data sets, 579,824 portal page views and 33,108 data set views loaded; in 2016, the numbers rose across the board to 103 open data sets, 926,173 portal page views and 62,024 data set views loaded.

5.5.12.1 Growth and Enhancement

Planning for growth and enhancement is driven by the departmental IT teams creating IT programs to serve their respective departments. The CSS Department is consulted during the planning of these programs and there is a demand management process in place.

The Hardware asset type is comprised of seven asset sub-types which include Data Centre, Infrastructure, Network, Communication Systems, Print, Information Security, and Desktop. Where possible, the investment in the Hardware asset type has been consolidated by bringing departmental installations into the CSS area to optimize value for money of the asset and provision service in a more

consistent manner. Considerable effort has been spent over the last several years to bring what was once a scattered investment strategy to one that is now coordinated to provide maximum returns from a financial perspective but also to ensure expected levels of service are met. The Investment Planning Process (see Figure 5.2-2) that supports the City's ability to provide agreed LOS and implement a robust, transparent and defendable delivery plan is in use for Hardware assets. This process focuses on linking investment decisions on the infrastructure to customer-oriented service delivery. Overall, the City follows the Investment Planning Process by identifying goals/objectives, establishing needs, evaluating a variety of feasible solutions, prioritizing the solutions, and developing investment plans based on the selected options.

The Software asset type is comprised of one asset sub-type, Business Applications. The Software asset type has a much different asset management profile than the Hardware asset type. Software investment is a much more decentralized process at present. With the exception of some enterprise-class software, the majority of the asset type is held in departments within the City with each investment often serving a singular business purpose. The current software investment process is inherently less efficient from a financial perspective than hardware investment because the ability to stretch a software investment over multiple purposes is limited. With that condition, the need to purchase many types of software to serve diverse business needs and achieve adequate LOS has been the historical practice. Looking forward, the City aims to be more efficient in its software acquisition and renewal practices. Accurate and comprehensive data on an asset's current condition is a fundamental aspect of good asset management practices. Having complete information regarding infrastructure mitigates premature replacement or failure of assets. Sound management decisions regarding capital expenditures, operations and maintenance activities can, therefore, be based on a clear understanding of an asset's condition and performance.

5.5.12.2 Renewal Practices

At present, renewal practices are planned and delivered by subject matter experts in the various hardware and software disciplines. Plans and actions are visible through the processes described in Section 5.4.13, however, the accountability lies with departmental IT managers and their staff. Vendor and industry analyst partners also provide information to complement City knowledge.

5.6 Current Operational Maintenance Practices

5.6.1 Roads

The City has a fairly comprehensive planned maintenance regime for roads to apply low cost treatments such as joint sealing and Thin Bituminous Overlays (TBOs) based on the street condition assessment data in VEMAX. Operational maintenance is cost-effective in deferring high-cost capital projects. To supplement the annual street condition assessment program the regional streets undergo visual inspections roughly once a week.

There is a significant reactive maintenance program to fill potholes and do patch repairs and respond to 311 reports. Regional and local streets are prioritized and repaired in the construction season and are scheduled by areas having the highest need.

The planned maintenance regime for signals is currently under development.

5.6.2 Bridges

The City has a fairly comprehensive planned maintenance regime for bridges that is delivered through both in-house staff and external contractors. There is an opportunity to expand the deck-testing.

5.6.3 Parks and Open Space

Parks works within a fixed operational budget with grass-cutting being the largest operational cost. Based on current funding levels, some parks in the City may not receive necessary maintenance and there is a significant element of reactive maintenance through 311 calls. There are SLAs in place at a number of sites where third parties take responsibility for a variety of maintenance tasks.

There are a set of planned maintenance policies covering items such as grass cutting, shrub and tree pruning, weeding, maintenance of recreation areas, and pest control. Planned maintenance activities for forestry include mainly nursery operations, pruning, planting, and removal of dead/dying trees. The majority of pest control activities are related to mosquitoes including larviciding and fogging, however, operational maintenance also includes management of canker worms, gophers, bed bugs, wasps, and forest tent caterpillars.

While efficiencies have been accomplished in the past to manage the increase in hectares under management related to growth, current funding levels and the growing inventory is trending toward service levels that are decreasing and quality of parks that are declining.

Parks has an in-house time management system called TKMMS for recording maintenance activities. It is focused on collecting timesheet information and is not well-suited to managing maintenance. Capital funding has been secured to investigate the acquisition of a robust, COTS (commercial-off-the-shelf) work management system.

5.6.4 Water Utility

5.6.4.1 SLAIF and Aqueduct

The aqueduct had a comprehensive inspection and major rehabilitation in the late 1980s/early 1990s and receives annual targeted re-inspections with rehabilitation undertaken as required. Another comprehensive reinspection is anticipated in the next 10 years. A detailed SLAIF inspection was undertaken in 2012 and is being used as the basis for current upgrades.

5.6.4.2 Railway

The City uses a combination of staff and consultants/contractors to undertake inspections of railway assets to identify deficiencies and rehabilitation needs. Inspection frequency, which is determined by asset type, ranges from periodic/as-needed to annual.

5.6.4.3 Water Treatment Plant

All WTP maintenance is managed by City staff which includes work orders and preventative maintenance. Typical activities include annual cleaning and inspection of the ozone system with scheduled substantial maintenance and filter maintenance.

5.6.4.4 Pumping Stations and Reservoirs

Pumping stations are inspected regularly. A detailed condition assessment at Wilkes Reservoir identified significant rehabilitation requirements; rehabilitation began in 2016 and is anticipated to be complete in 2017. Similar condition assessments will be undertaken at the other reservoirs over the next 5 years.

5.6.4.5 Distribution Network

There are a number of maintenance tasks associated with the distribution network. These include the following:

- Hydrant inspection and operation, two to three times a year.
- Valve chamber inspections and pump outs on a regular basis.

- An annual water main cleaning program systematically cleans all water mains in the city on a 6-year cycle. The program includes operation of approximately one third of all network valves in the system per cycle. The program was recently accelerated due to discoloured water issues and the whole network was cleaned in 3 years.
- A leak detection program.
- A feeder main valve condition assessment was undertaken a few years ago; valves are rehabilitated on a priority basis.

5.6.5 Sewer Utility

Until recently, maintenance of the STPs has been predominantly reactive; however, through the Winnipeg Sewage Treatment Program, significant progress is being made to move to a planned maintenance regime. New maintenance planner roles are being filled and there is a 2-year plan to improve practices to an acceptable level. This will result in significantly more planned work and reduce more costly reactive work. Given the upgrades on the STPs, this timeframe is considered appropriate and will leverage new maintenance schedules as part of the upgraded facilities.

Lift stations are currently maintained on a predominantly reactive basis. Although maintenance crews do undertake regular inspections, there is still a high volume of callouts. Despite this, a very high level of reliability is achieved. Regular tracking and assessment of callouts has recently begun in order to identify hot spots and develop analysis of lift station performance. This data could be used to develop and review programmed maintenance tasks in an effort to reduce callouts and reactive work and potentially reduce costs.

Maintenance of the sewer collection system consists of reactive and planned maintenance tasks. Reactive tasks include responding to blockages and sinkholes identified by customers. Planned tasks include sewer degreasing and regular inspection of locations identified as trouble spots, as well as inspections of river crossings and other higher risk locations as part of the Water and Waste Department's regulatory compliance. Some sewer cleaning is undertaken for the purpose of sewer condition assessment; however, there is no standalone cleaning program at present. The list of cleaning locations is a recent initiative and will require further development but has the potential to reduce blockages and improve customer LOS. There is an opportunity for the City to use a work order management system to track and prioritize cleaning locations. Blockages as a result of tree roots could also be a target for tree root foaming.

5.6.6 Land Drainage Utility

Maintenance tasks for the land drainage and flood control system consist of the following key activities, which are scheduled in the work management system:

- Cleaning catch basins and catch basin lead pipes. Catch basin and lead ownership, operation, and maintenance is split between the Water and Waste and Public Works Departments; clear definition of responsibilities through a SLA will enhance LOS between the two departments.
- Cleaning drains in spring after the snow melt.
- Repairing grates, pipes, and culverts.
- Managing vegetation on the SRBs, including applying herbicide and pesticide and managing algal blooms.

5.6.7 Solid Waste Utility

Operational and maintenance practices are significantly influenced by the fact that 99% of the solid waste operations are contracted out. This includes the collection of the garbage and recycling carts and operation of the MRF. Renewal of the services contract for garbage and recycling collection was completed in 2017; this was a significant activity for the Solid Waste Division.

Maintenance plans are in place for the BRRMF, including the plant and equipment used on the site. The plans are generally followed and assets are generally healthy and reliable.

5.6.8 Municipal Properties

Municipal Accommodations has developed a comprehensive planned maintenance regime, however, there is insufficient staff to deliver the workload. Municipal Accommodations has about one third to one half of the workforce required for the size of its asset portfolio (in square feet) compared to the recommended International Facility Management Association (IFMA) standard. As a result, only critical services are delivered and there is a significant amount of backlog and reactive maintenance. The City is exploring options for outsourcing a portion of the planned maintenance tasks where there are insufficient in-house staff to deliver.

The maintenance budget is pooled across the entire Municipal Accommodations asset portfolio, which allows for more flexibility in organizing resources.

The transfer of a building to Municipal Accommodations can happen at short notice and, as a result, the focus is to set up the critical planned maintenance for safety and regulatory inspections only.

The City has a Central Control function that monitors the operation and security of approximately 200 buildings. This system acts as a central channel for reporting issues and works very well. The maintenance workload is managed using the Maximo Maintenance Management System.

There are a lot of small buildings in the Municipal Accommodations asset portfolio with marginal use that consume a significant amount of resources. Implementation of a rationalization strategy could help to channel resources into the areas of highest need.

Many buildings within the Municipal Accommodations portfolio have suffered a prolonged period of underfunding, both in operating expenditure and capital expenditure.

5.6.9 Community Services

Unique to the City of Winnipeg is the Community Centre Model, which dictates that community centres are not staffed by the municipality but governed and operated by a group of volunteers, with the Board of Directors being elected by the local community they serve. The GCWCC was established in 1971 to promote and encourage cooperation and communication among the community centres and City administration, and to provide a central council for the exchange of ideas and consideration of solutions to common problems. In April 2008, GCWCC entered into a Management Agreement with the City related to community centres with the purpose of facilitating a stronger, more sustainable community centre model in the City. Community centres receive an annual facility operating grant and second-line maintenance support from the City, who own and insure the facilities. The community centres are responsible for first-line maintenance and administration costs, including provision of programming and staffing (paid and/or volunteer).

Operational maintenance of all other Community Services assets for recreation, aquatics, and libraries is managed by Municipal Accommodations.

5.6.10 Transit

Transit operates the bus fleet with only an 11% spares ratio (additional buses to allow for maintenance) when it is common practice to have a spares ratio of 20-30%. This reduces costs to the City; however, it makes the service more vulnerable when issues arise. There is a comprehensive planned maintenance regime for the bus fleet but the City has struggled to deliver the planned and reactive maintenance over the past few years. All new buses acquired since 2010 have technology for reducing diesel emissions and this new technology has significantly increased the maintenance load. New buses also have new technology on board, such as the electronic farebox, communication and video systems, air

conditioning, and auxiliary heaters. In addition to the lack of asset capacity, there is insufficient maintenance staff for the current fleet size and the City incurs significant overtime. The increasing maintenance workload and lack of garage capacity have culminated in major impacts on Transit's operational service, which had high media attention in the fall of 2015.

All maintenance work is managed through a maintenance management system that was developed and is maintained in-house. The maintenance of Transit buildings is primarily reactive.

5.6.11 Police Services

The operational strategy to consolidate to East and West Police Districts and balance the workload across the stations has led to officers in the East and West Districts patrolling far larger areas. This has led to a higher than anticipated increase in mileage and fuel usage of vehicles. A more quantitative analysis of the impact on the fleet assets is required.

5.6.12 Fire and Paramedic Services

Operational maintenance for the fire and paramedic stations is provided by Municipal Accommodations. WFPS is currently re-allocating one job role to act as a maintenance coordinator with Municipal Accommodations in order to help improve coordination and prioritization of maintenance. Overhead doors are critical assets for WFPS in order to meet response times and recently these have been upgraded to a high priority for maintenance work.

5.6.13 Information Technology

Current operational maintenance practices for hardware, with the proviso that past funding levels and necessary increases will continue into the future, are deemed successful as evidenced by all asset sub-types in this asset type being condition-graded at *Fair* ratings and above. Using replacement values as the benchmark, 7% of hardware assets are in *Very Good* condition, 88% are in *Good* condition, and 5% are in *Fair* condition. Maintenance funding is sourced from both operating and capital budgets with spending to vendors for support contracts, as well as spending on internal staff for maintenance work, investment lifecycle planning, and contract administration. Lifecycle planning for the Hardware asset type is considered robust with several practices that provide input into the decision making process.

Investment planning practices that ensure the hardware asset type remains optimized are noted below in the chronological order they are normally conducted during the annual cycle:

- Annual Performance Measure survey whereby over 500 customers are asked whether or not their expected levels of service are being achieved.
- Annual Demand Management process whereby all asset users are asked about their next year quantity of service requirements. This information is factored into investment planning and recovery rate setting to ensure adequate renewal funds are available.
- Annual Investment Planning process whereby business cases are created for each new or renewal of hardware and vetted through a series of departmental steps and then prioritized before entering the capital budget process.

Current operational maintenance practices for software have a more variable rate of success, as evidenced by the range of condition ratings. Using replacement values as the benchmark, 23% of the business application assets are in *Very Good* condition, 34% are in *Good* condition, 15% are in *Fair* condition, 19% are in *Poor* condition, and 9% are in *Very Poor* condition. Maintenance funding is sourced from both operating and capital budgets with spending to vendors for support contracts, as well as spending on internal staff for maintenance work, investment lifecycle planning, and contract administration. Lifecycle planning for the software asset type is considered less robust than the

Hardware process. This variation in practice stems from the more local, departmental focus for software asset investment.

Investment planning practices that assist with optimizing the investment for the software asset type are noted below in the chronological order they are normally conducted during the annual cycle:

- Annual Performance Measure survey whereby over 500 customers are asked whether or not their expected levels of service are being achieved.
- Annual Investment Planning process whereby business cases are created for each new or renewal of Software and vetted through a series of departmental steps and then prioritized before entering the capital budget process.

5.7 Risks to the Asset Management Strategy

5.7.1 Roads

Risks to the asset management strategy for Roads include:

- Delays to the delivery of the roads program due to property acquisition policies that minimize acquisition risk.
- Delays to the AT network (cycle and sidewalk) due to insufficient planning staff in the City to conduct public consultation.
- Delays to the AT network (cycle) – the implementation of the AT network requires public consultation and longer-term planning but it is linked to the renewals of local streets. Local streets tend to be planned and agreed with City Councillors only 1 year in advance, particularly when City Council is coming towards the end of a term.
- Signals is heavily dependent on somewhat specialist IS&T skills and there is limited availability of skilled resources in the City.
- At the core of the Asset Management Strategy is a reliance on quality data to make informed decisions. The limited resources and investment to capture ongoing, sustainable up-to-date information then requires significant manual effort that is inefficient, prone to inconsistencies and delays, and risks continuity of the strategy and its substantial benefits.

5.7.2 Bridges

The Ontario Structure Inspection Manual is more detailed than current inspection methods and will require one additional inspector.

5.7.3 Parks and Open Space

Limited resources combined with increased inventory promote a reactive approach to park maintenance and renewals. Insufficient IS&T capacity prevents automation and efficiencies in data collection and analysis.

The majority of new parks are developer-driven and, in many cases, higher end amenities installed by developers require ongoing capital and operating investments in the long-term.

5.7.4 Water Utility

The key risks to the asset management strategy for the Water Utility include the following:

- Increases in road reconstruction budgets may divert level of service-related water main renewal funds to lower priority renewals to ensure coordinated right-of-way asset management work with Public Works Department.
- Reduced water consumption resulting in reduced revenue with potential benefits to long-term capital spending.
- Water meter replacement program is currently unfunded, resulting in reduced meter accuracy and lower billing.
- Potential zebra mussel infestation at the SLAIF.
- Manganese impurity in water treatment plant coagulant causing aesthetic water quality issues.
- Cryptosporidium and giardia are a concern to all public water utilities that rely on surface water supplies for drinking water. These organisms are managed through a multi-barrier treatment approach at the WTP.

5.7.5 Sewer Utility

The key risks to the asset management strategy for the Sewer Utility include the following:

- The CSO Master Plan target was approved by the Province in late 2017. Implementation of the Master Plan will require significant funding over a long investment horizon. The costs and timeframe to achieve the outcomes are being assessed and will need to be funded by water billing revenues and multiple levels of government.
- The mostly-reactive maintenance approach for lift stations and STPs is resulting in additional risk to maintaining LOS.
- STP upgrades do not meet the stringent nutrient reduction targets and subsequent augmentation works are required.
- Some of the provincial funding for the NEWPCC upgrade is at risk. There is no Federal funding for the upgrades.
- Force main condition is largely unknown; failures could cause significant and costly repairs.
- Growth and densification can have a significant impact on sewer loading; existing sewer infrastructure, particularly in combined sewer areas, may limit growth and densification.

5.7.6 Land Drainage Utility

The key risks to the asset management strategy for the Land Drainage Utility include the following:

- Tighter controls being placed on the use and number of herbicides and pesticides available to manage aesthetics of SRBs. Conversion of SRBs to all naturalized ponds is expensive and vegetation establishment is time consuming.
- There are currently no water quality targets for discharge of stormwater to watercourses. There could be a significant cost impact to upgrade or retrofit systems to improve stormwater quality, if this was required in the future.
- Significant resources are required to maintain catch basin leads and underpass pumping stations.

5.7.7 Solid Waste Utility

The key risks to the asset management strategy for the Solid Waste Utility include the following:

- Foreign exchange rates and oil prices can impact investment in garbage and recycling carts, as well as landfill cell liners.
- Recruiting and/or retaining experienced staff and the changing demographics of the workforce.

It is noted that a number of the major improvement initiatives being delivered by the Solid Waste Division, particularly focusing on customer service and accessibility, are not reflected in *OurWinnipeg* or the SWW Direction Strategy.

5.7.8 Municipal Properties

The key risks to the asset management strategy for Municipal Properties, for assets that fall under the portfolio of the Municipal Accommodations division include the following:

- The management of the portfolio of facilities is heavily reliant on staff knowledge and 46% of staff are within 5 years of retirement.
- Critical reductions in the operating budget could result in reduced maintenance of the facilities and operational components.

5.7.9 Community Services

The key risks to the asset management strategy for Community Services include the following:

- Lack of capital resources provided to address the infrastructure deficit outlined in this plan.
- Ongoing lack of additional operating dollars whenever facilities are developed or expanded, leading to existing resources being further extended.

5.7.10 Transit Department

The key risks to the asset management strategy for Transit include the following:

- Insufficient capital funding allocated to address the infrastructure deficit outlined in this plan.
- Loss of staff with specialized knowledge of out-dated software to maintain in-house software systems.
- Changes in technology in newer buses, driven by US Environmental Protection Agency emission regulations, which impact the Transit Department's maintenance resources.
- Difficulties attracting and retaining certified mechanics. Currently, 30% of on-staff mechanics are apprentices (4-year training program). Apprentices are far less productive compared to certified mechanics, due to lack of experience.

5.7.11 Police Services

The key risk to the asset management strategy for Police Services include the following:

- Insufficient capital funding allocated to address the infrastructure deficit outlined in this plan.

5.7.12 Fire and Paramedic Services

The key risks to the asset management strategy for Fire and Paramedic Services include the following:

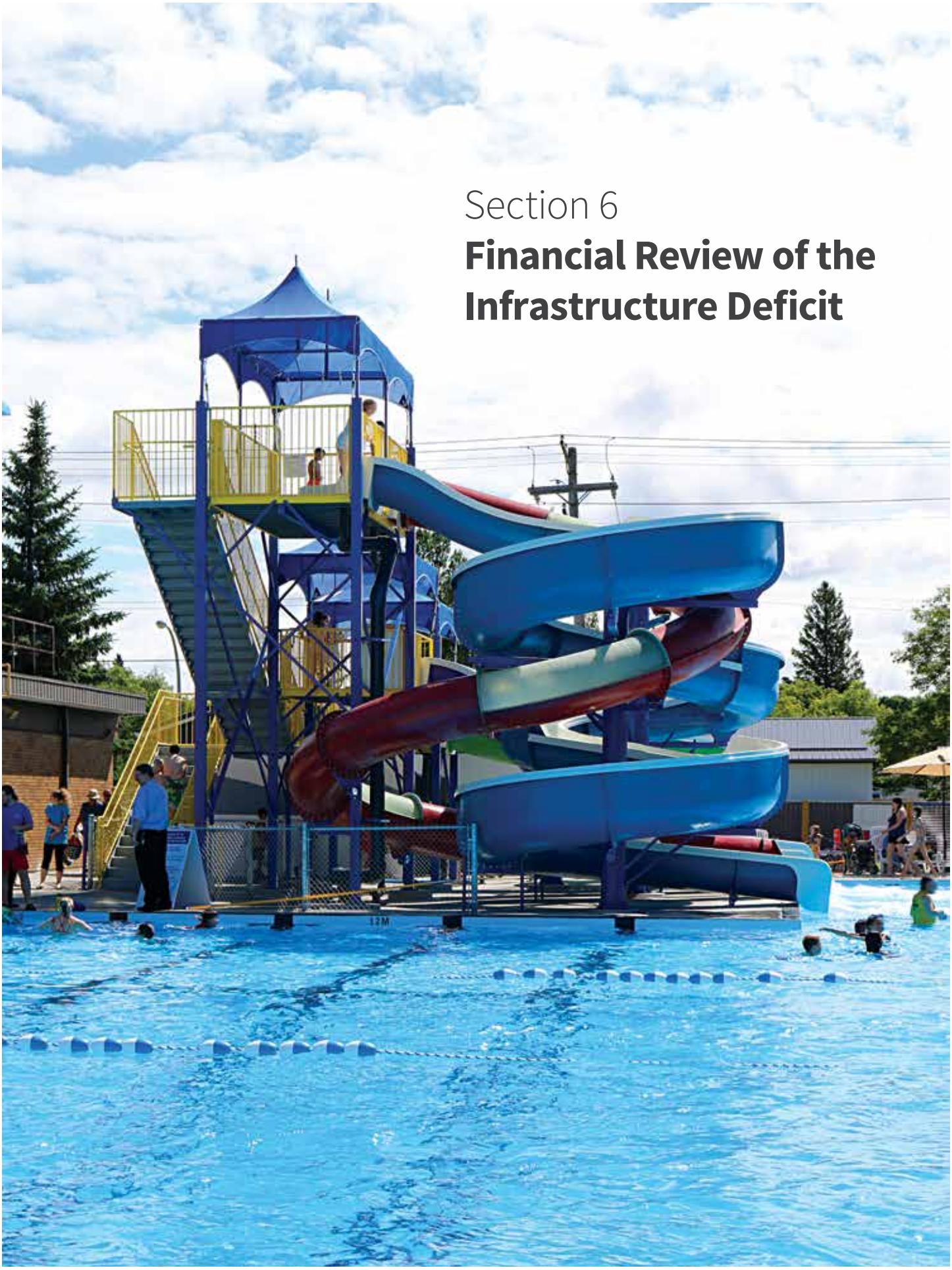
- The ability to fund and implement the Stations Masterplan and associated renewals once it is submitted to Council for consideration.
- Renewals of existing stations (rather than complete replacement on another site) may have an impact on 24/7 operation.

- Provincial legislators may reduce ambulance fees and this may lead to reduction in funding.
- Finding and training staff is a long process (approximately 3 years) and there is concern that hiring and training may not keep up with service demand.

5.7.13 Information Technology

Current funding levels for both operating and capital sources may not be adequate to purchase and maintain assets used to deliver the expected service levels. Other risks include:

- Ability to hire into positions that are related to asset stewardship either from a procurement, maintenance, or contract administrator role.
- Reduced ability to attract and retain new staff to provide a source of innovation and application of new technologies.
- The level of technology service that employees and citizens receive outside of the City of Winnipeg experience and the ability to stream large amounts of data, and a seemingly endless choice of business applications coming online, the City's ability to meet expectations will face significant challenges.



Section 6

Financial Review of the Infrastructure Deficit

SECTION 6

Financial Review of the Infrastructure Deficit

Capital expenditures are defined as expenditures that are of sufficient monetary value to warrant capitalization and the resulting assets have a useful economic life of more than 1 year. The City's accounting guidelines are that a purchase will be considered a capital expenditure if it meets the following criteria:

- is held for use in the production or supply of goods and services, for rental to others, for administrative purposes or for the development, construction, maintenance, or repair of other capital assets
- has been acquired, constructed or developed to be used on a continuing basis
- has a useful economic life extending beyond 1 year
- is not intended for sale in the ordinary course of business
- it is of sufficient monetary value to warrant capitalization

Of note, budget information, rather than expenditure information, is presented in this section to align with other financial reports.

This section provides information on historical levels of funding allocated to capital infrastructure represented by previously adopted capital budgets from 2009-2017, in addition to material in year adjustments. Estimated levels of future capital funding from 2018-2027 and the infrastructure deficit for the same period are also presented in this section. The infrastructure deficit represents the amount of capital funding currently unavailable to achieve the assumed levels of service for existing infrastructure, as well as to support future development/growth. The deficit was determined over a 10-year timeframe from 2018-2027 for capital requirements only. All dollar values reported for the deficit represent the full infrastructure cost assuming no incremental contributions from other levels of government, as no such commitments have been made. All dollar values reported in the estimated capital plan include provincial and federal funding consistent with forecasted amounts in the 2018 preliminary budget and five year forecast. Years 2024-2027 assume federal and provincial funding levels consistent with the five year forecast.

Operating funding requirements are not captured in this version of the deficit calculation, but will be in future versions.

Total Needed Infrastructure Over Next 10 Years **-** **10 Year Capital Plan** **=** **Infrastructure Deficit**

Financial documents used to identify the total needs and estimated capital plan are noted in Table 6.0-1.

Table 6.0-1. Financial Documents Used to Identify Total Needs and Estimated Capital Plan

Document Type and Description	Total Needs	Estimated Capital Plan
2018-2023 Preliminary Capital Budget This budget and five year capital forecast is published for Council review. The 2018 preliminary budget and five-year forecast was used for the purposes of this CAMP.	✓	✓
2024-2027 Capital Long-Term Plan This is an internal document prepared by the Public Service for planning purposes. It allows for a 10-year view of capital budget requirements.	✓	✓

Table 6.0-1. Financial Documents Used to Identify Total Needs and Estimated Capital Plan

Document Type and Description	Total Needs	Estimated Capital Plan
2018-2023 Capital Unfunded Projects This is a list of unfunded capital requests considered during the budget process for potential inclusion based on risk and needs assessment.	✓	
2024-2027 Capital Unfunded Projects This is an internal document prepared by the Public Service for planning purposes. It allows for a 10-year view of capital requirements.	✓	

As the City moves toward defining level of service models for each asset type, there may be additional investment needs identified in the future, over and above what has been identified in this plan. Until level of service models are defined, the needs identified in this plan ensure existing infrastructure is maintained at an appropriate condition that sustains current service levels, and ensures new infrastructure funding is provided. This allows for implementation of departmental and City-wide strategic planning efforts supporting growth, enhancement, and regulatory requirements.

For the purposes of this AMP, and the deficit calculations, existing and new infrastructure are defined as follows:

- *Existing Infrastructure* – This typically refers to renewals of existing City infrastructure, where the investment driver is to maintain or enhance the current level of service provided. In some instances, there are also investments within existing infrastructure that are intended to address new regulatory requirements or to support growth. In scenarios where an existing asset is at the end of its useful life or it no longer meets its intended use, the replacement of that asset is considered existing infrastructure if there is no net new asset being added to the City's inventory.
- *New Infrastructure*- This is related to the creation of net new assets required by the City to support new regulatory requirements, support growth, or to enhance a level of service not currently provided by an existing infrastructure asset. In this scenario, the City's asset inventory count would increase.

Comparisons between deficits reported in 2009 and 2018 are made in this section and demonstrate that progress has been made to reduce the deficit. However, ongoing departmental and City-wide strategies are needed in order to address the remaining deficit.

6.1 Historically Approved Capital: 2009-2017

The last evaluation of the infrastructure deficit, captured in 2009, reported a capital deficit of $7.0 billion across the City, as shown in Figure 6.1-1. Using compounded construction inflation, $7.0 billion in 2009 dollars equates to $9.9 billion in 2018 dollars.

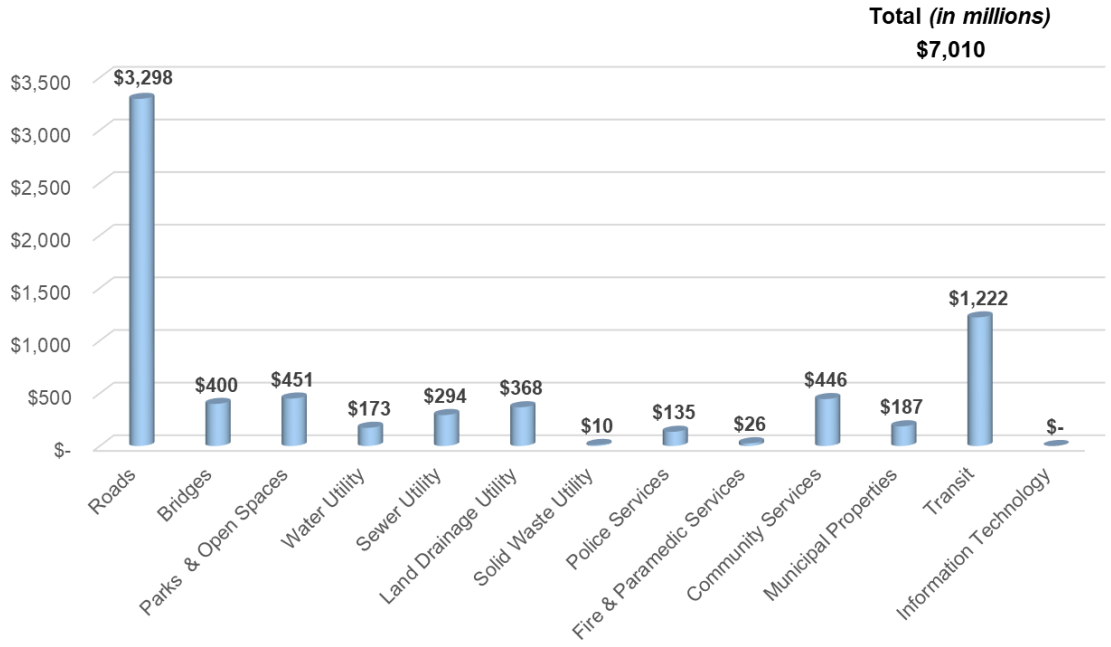


Figure 6.1-1. Infrastructure Deficit Reported in 2009

**Figures in this chart have been rounded*

***$- represents a deficit that is still being evaluated*

The 2009 deficit was comprised of funding required to address capital investments for both existing and new infrastructure and included a small portion of operating funds. The 2009 portion relating to operating funds has been removed from this AMP to ensure consistency in comparing the 2009 to 2018 deficit, as the 2018 deficit relates to capital funding only. In 2009, the requirements for both existing and new infrastructure were nearly equal, with $3.6 billion required to address existing infrastructure and $3.5 billion to address new strategic infrastructure.

Since 2009, $5.3 billion has been allocated through capital budget approvals (all funding sources) to address ongoing capital needs for the City with efforts to address the infrastructure deficit identified in 2009, as shown in Figure 6.1-2. This was $2.1 billion more allocated to capital investments than originally planned in 2009 capital forecast.

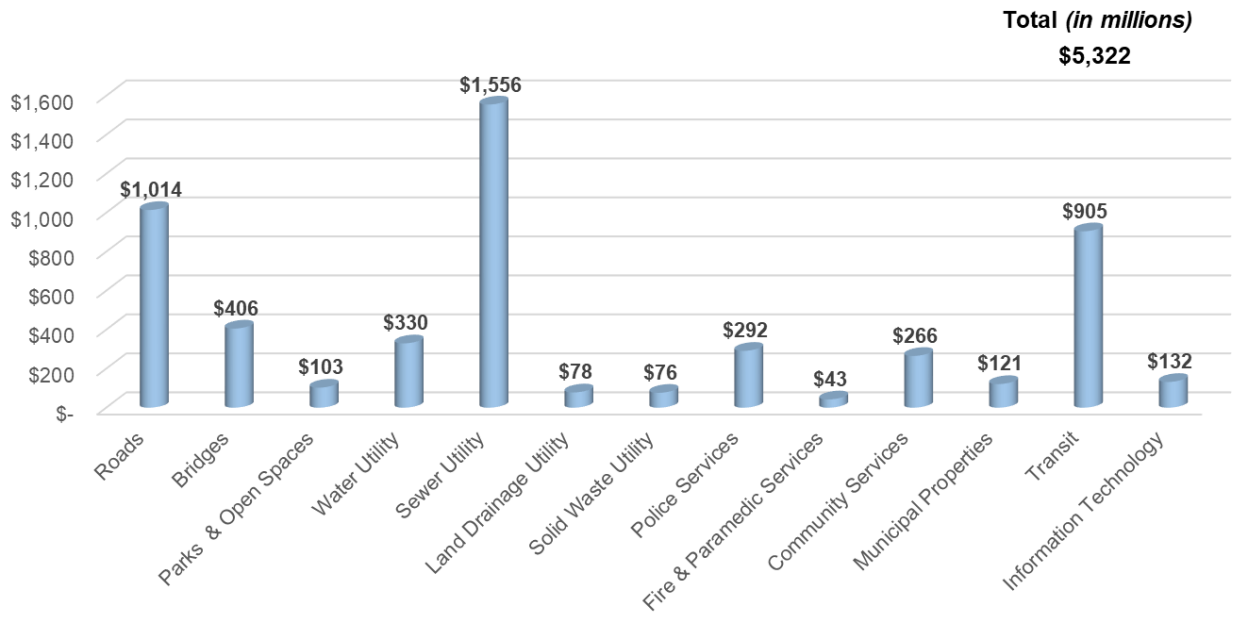


Figure 6.1-2. Adopted Capital Budget Summation: 2009-2017

The allocation of adopted capital between 2009 to 2017 was fairly equally distributed between investments in existing and new strategic infrastructure, with $2.4 billion (45%) invested in existing infrastructure and $3.0 billion (55%) invested in new strategic infrastructure. This is consistent with the investment needs that were identified in the 2009 deficit report.

6.2 Estimated Future Capital Spending: 2018-2027

Long-range financial planning is an important exercise for ensuring funds are available in the future as required to meet anticipated needs. Annually, City staff prepare a 1-year draft capital budget and 9-year capital plan and a 1-year operating budget and 2-year projections. This AMP has been prepared on the basis of the preliminary 2018-2023 capital budget and 2024-2027 long-term capital plan as detailed in table 6.0-1. The City of Winnipeg Charter requires the completion of a one-year capital budget and five-year capital forecast. Longer-term capital projections (another 4 years) are prepared by the Public Service for planning purposes. Council approves the current year capital and also approves, in principle, the following 5-year forecast.

The City's 2018 preliminary capital budget and the following 9-year capital plan are provided in Figure 6.2-1 by infrastructure element.

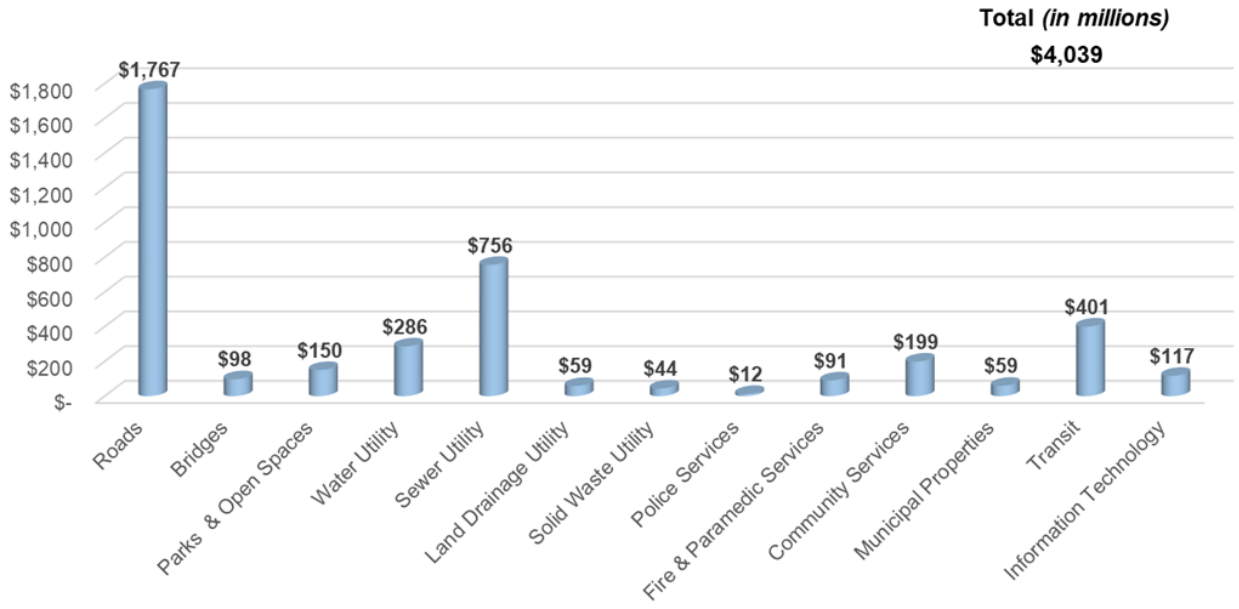


Figure 6.2-1. Ten Year Capital Plan: 2018-2027

The general assumption made in preparation of the AMP is that future capital funding levels will be consistent with the preliminary 2018 capital budget and five-year forecast, and the long- term capital plan as defined in table 6.0-1.

Over the next 10 years, 2018 to 2027, the estimated capital plan of $4 billion allocates significantly higher amounts into existing infrastructure (i.e., $3.5 billion) than new infrastructure (i.e., $539 million). In part, this is because many of the larger scale capital projects that support new infrastructure are captured in the deficit, as they are currently unfunded. The City's current funding levels are not sufficient to address the deficit of $6.9 billion and address capital infrastructure requirements over the next 10 years, as shown in Figure 6.2-2.

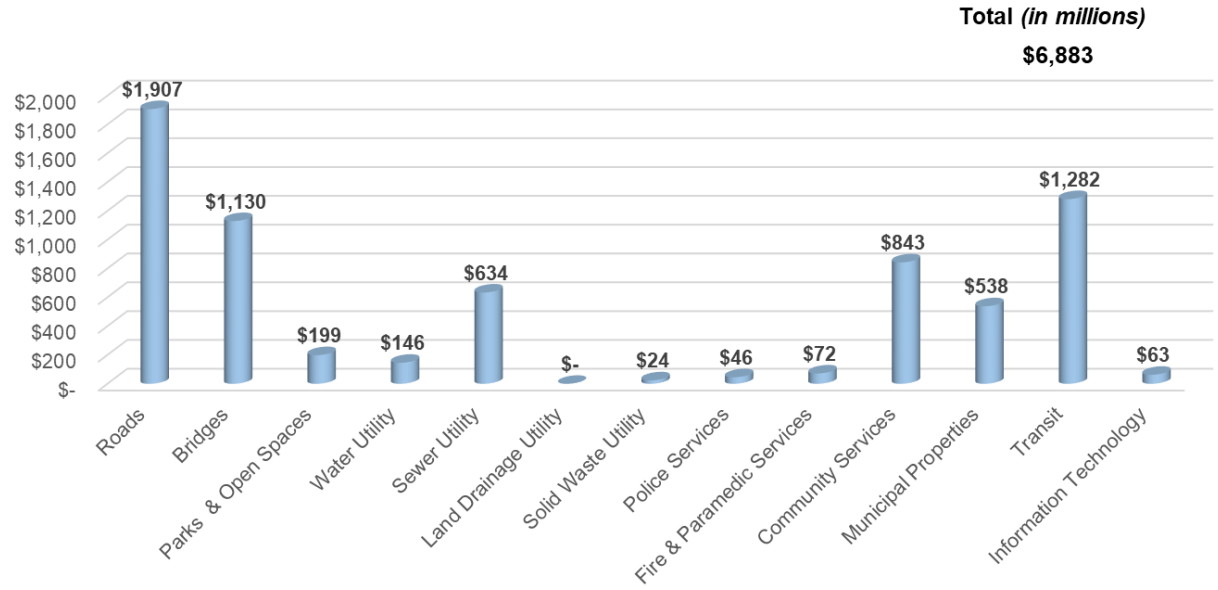


Figure 6.2-2. Infrastructure Deficit 2018

**Figures in this chart have been rounded*

***$- represents a deficit that is still being evaluated*

A significant portion of the deficit, $4.5 billion, relates to investment in major capital projects, such as those represented in the TMP, mandated by new regulations such as the NEWPCC, and investments that support future growth such as Rapid Transit. For the purposes of the deficit calculations, the 2018 deficit includes a construction escalation of 5% per year, based on the year the project is estimated to be implemented. Should all of the projects be deferred from the year they are estimated to start, the overall deficit would increase by 5% per year due to construction inflation. For perspective, the cost to defer all major capital projects by one year from the year they are currently estimated to start, increases the overall deficit by $220 million.

As shown in Figure 6.2-3, a higher amount of spending is identified in the deficit to support existing infrastructure ($4 billion) rather than new infrastructure ($3 billion), with a varied distribution of funding gaps for both existing and new infrastructure across service areas. Over the next 10-year period, approximately 13% of estimated capital funding is anticipated to be allocated to new infrastructure. This is in response to the need to focus investments in existing infrastructure where maintaining levels of service has become increasingly difficult. However, as the City continues to grow, more demands will be put on existing infrastructure and a balanced strategy for providing new infrastructure to an expanding population will be necessary.

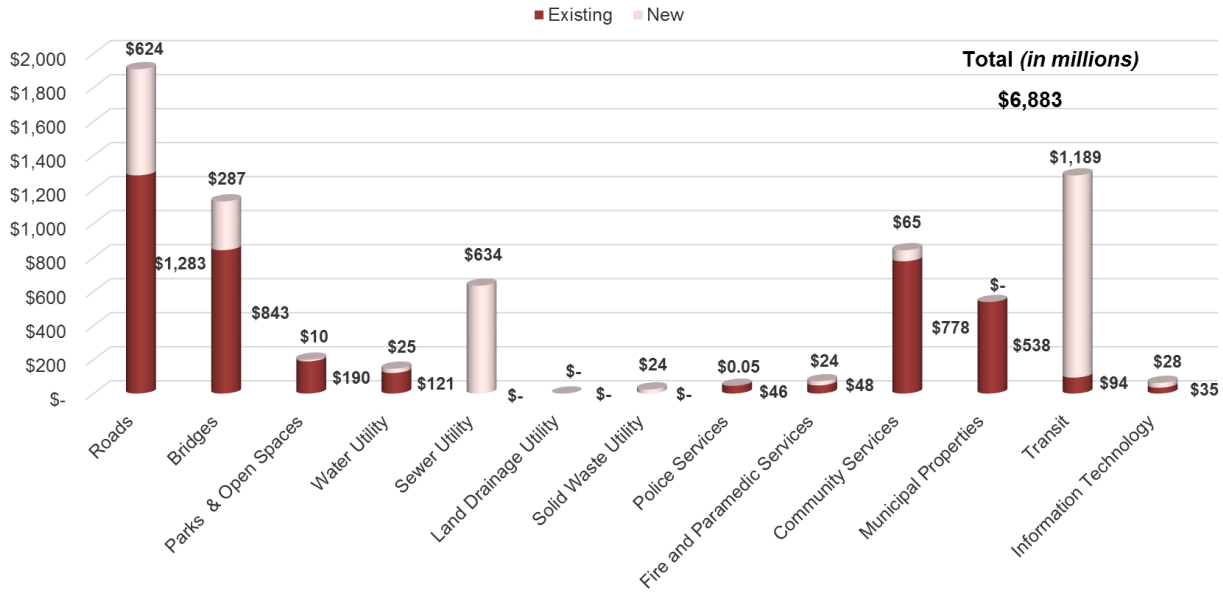


Figure 6.2-3. Total Deficit for Existing and New Infrastructure

**Figures in this chart have been rounded*

***$- represents a deficit that is still being evaluated*

A breakdown of the total capital needs for each infrastructure element is shown in Figure 6.2-4 and Figure 6.2-5, with figure 6.2-4 identifying needs that are estimated to be funded in the 10-year capital plan compared to those which are estimated to be unfunded.

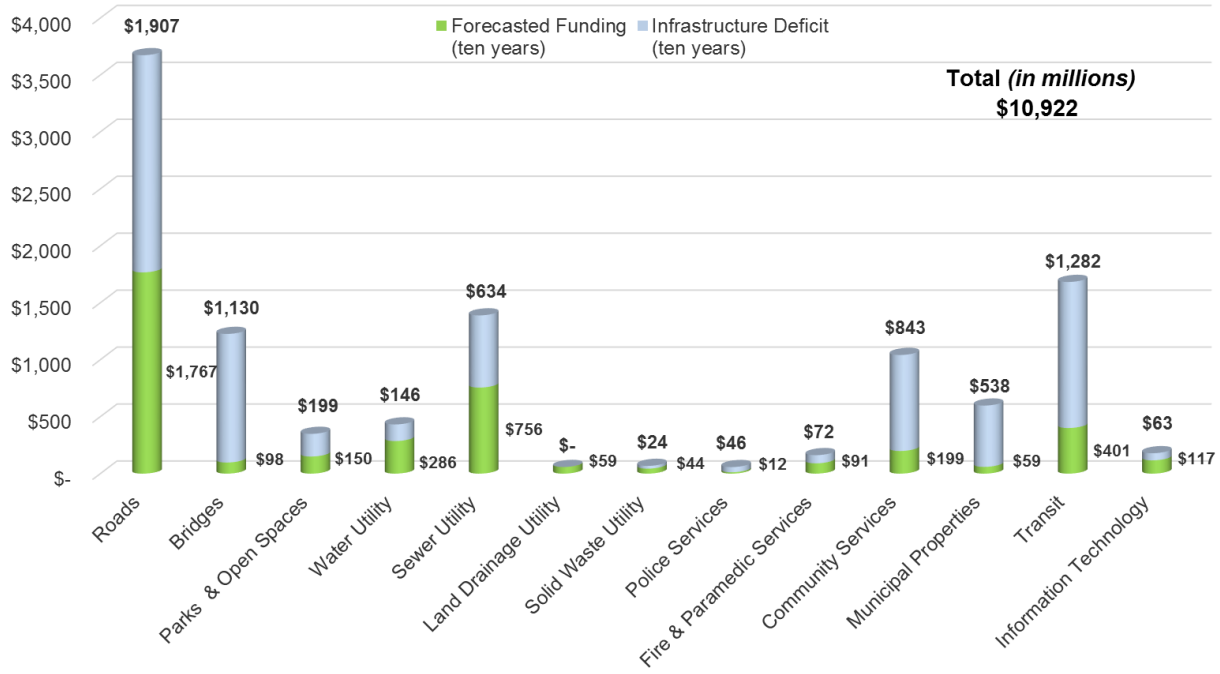


Figure 6.2-4. Total Funding Needs- Comparing Estimated Funded vs. Unfunded (Deficits) Needs

**Figures in this chart have been rounded*

***$- represents a need that is still being evaluated*

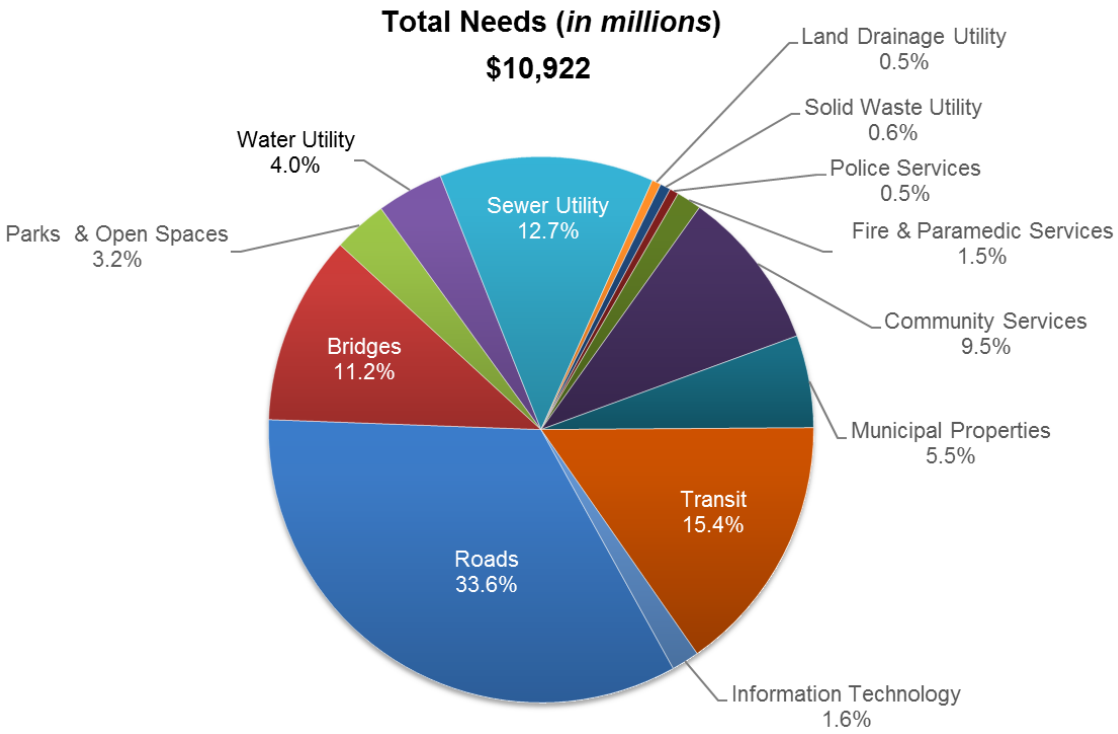


Figure 6.2-5. Percent of Total Capital Needs by Infrastructure Element

**Percentage and figures in this chart have been rounded*

The total capital plan and deficit distribution is also shown for each infrastructure element in Figures 6.2-6 to 6.2-8. For the most part, the distribution seems reasonable based on each infrastructure element's total needs, asset condition, and replacement value of all assets.

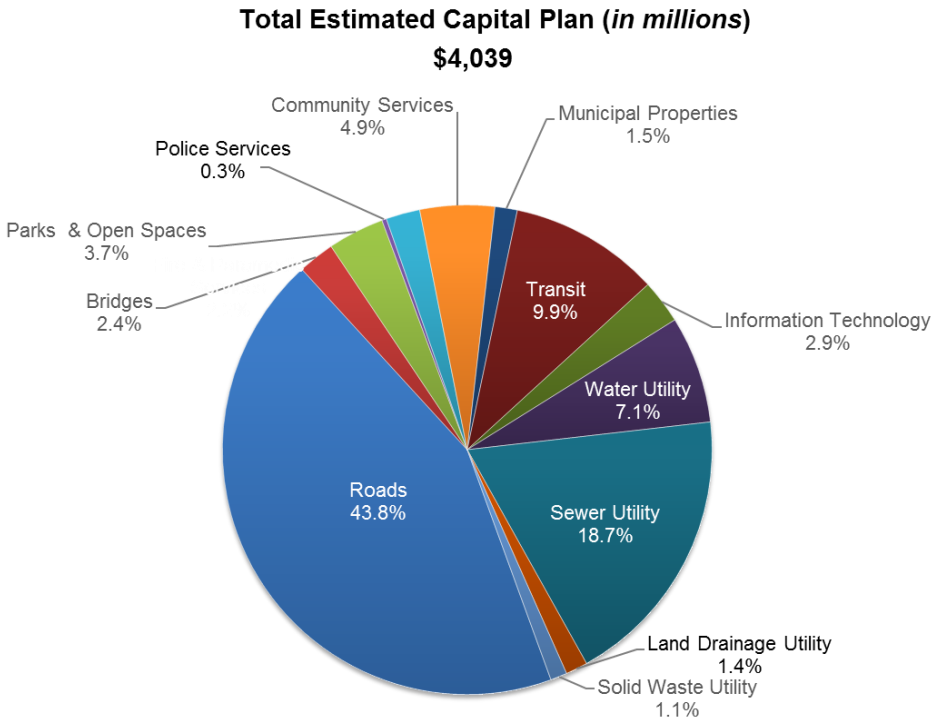


Figure 6.2-6. Percent of Total Estimated Capital Plan per Infrastructure Element
Percentage in this chart have been rounded

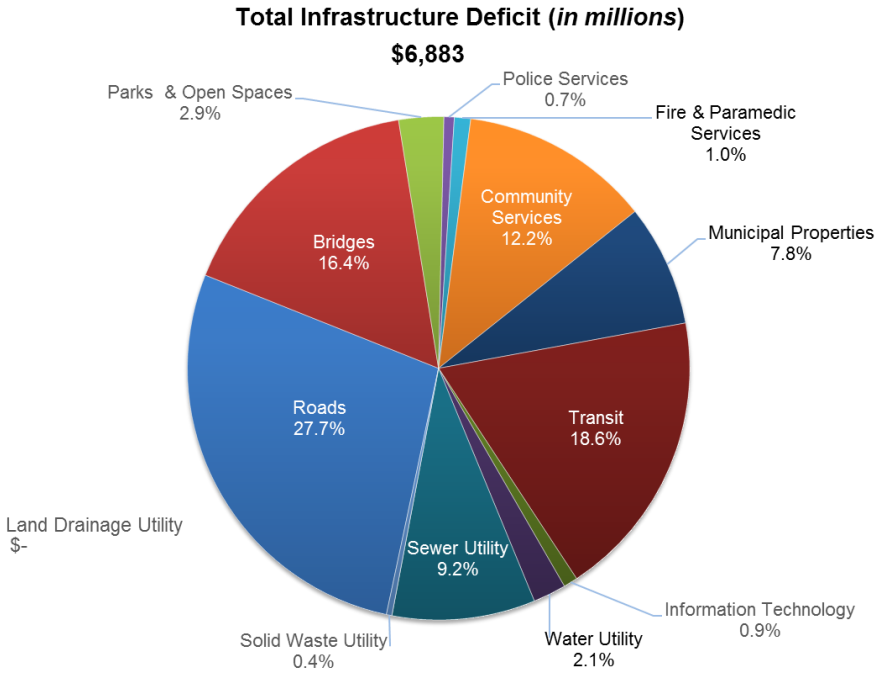


Figure 6.2-7. Percent of Total City Deficit per Infrastructure Element
**Percentage in this chart have been rounded*
***$- represents a deficit that is still being evaluated*

The Water and Sewer Utilities have a lower contribution to the overall deficit; however, their needs are primarily driven by revised provincial regulatory requirements that must be adhered to for compliance with environmental and health standards. Roads may appear to have a disproportionate balance by having 44% of the overall estimated capital plan funding, and only 28% of the City's overall deficit, however, due to the sheer size and value of road assets, adequate funding levels are required to maintain acceptable conditions of the road network, documented as the top priority for citizens.

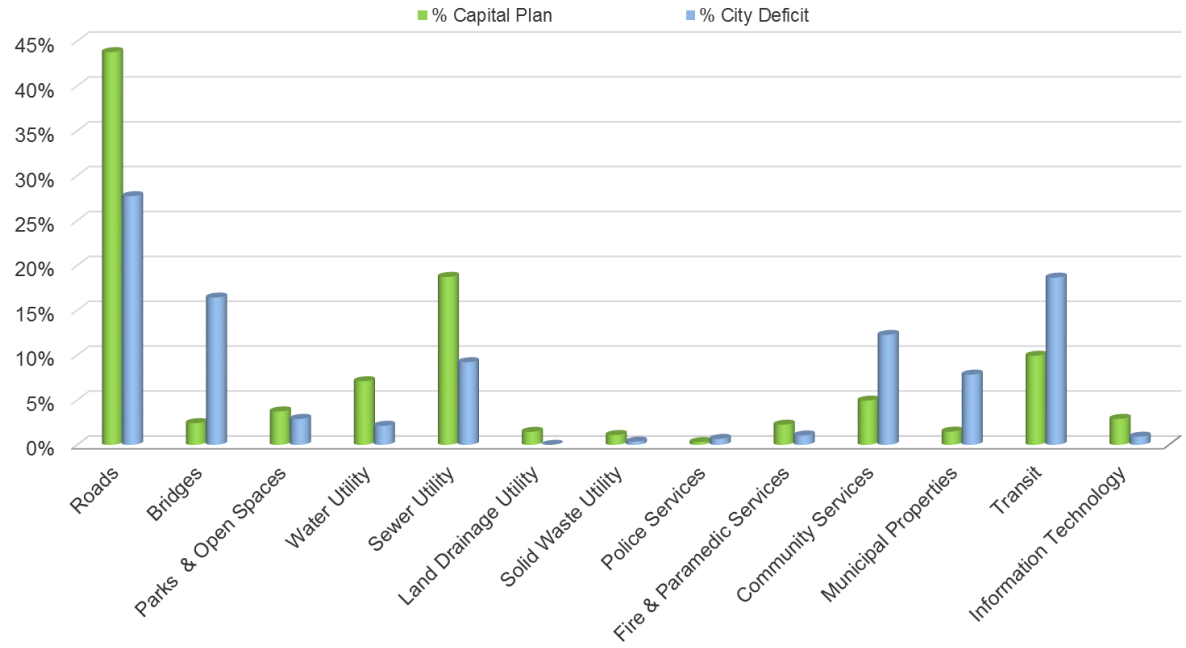


Figure 6.2-8. Estimated Capital Funding to Deficit Distribution per Service Area 2018-2027

Infrastructure elements that appear to have an imbalance of estimated capital plan funding proportionate to the contribution of the deficit include the following:

- Bridges: There appears to be an imbalance in the amount of estimated funds distributed to this infrastructure element. Having 16% of the total deficit with only 2% of the estimated capital funding may be a shortfall, considering that these engineered structures cannot lapse into *Very Poor* condition. If they do, there could be a major impact to levels of service, as a bridge could be closed or have weight restrictions imposed for a number of years.
- Community Services: Community Services has 5% of the estimated capital funding distribution and 12% of the deficit. Even though assets are in overall *Fair* condition, they are trending to *Poor* and require funding to improve their condition.
- Transit Services: Transit is facing an imbalance of estimated funding, primarily due to the $1 billion in the deficit associated with future Bus Rapid Transit development; otherwise, the distribution of estimated funding and contribution to the deficit would be well balanced.
- Municipal Properties: Municipal Properties have 2% of the estimated capital funding distribution, 8% of the deficit, with assets in *Poor*, trending to *Very Poor* condition that may require additional funding to improve the condition of assets that will remain within the portfolio after surplus properties are divested.

6.3 Comparison of Historical and Future Capital Planning

On an overall basis, allocation of capital investments from 2009 to 2017 has helped to partially address the infrastructure deficit, however, there remains a significant deficit of $6.9 billion related to capital infrastructure investments.

The overall trend in both the 2009 reported deficit and the 2009-2017 allocation of capital funds focused on equally splitting investments between existing and new infrastructure. There is a shift in estimated future capital investment planning, where a higher proportion of needs have been identified to fund existing infrastructure over new infrastructure, while still addressing funding needs of new infrastructure.

On a City-wide basis, the annual average estimated capital funding planned for each infrastructure element historically allocated to capital investments from 2009-2017 is compared to estimated future capital investments from 2018-2027 in Table 6.3-1 and 6.3-2.

Table 6.3-1. Tax-Supported and Transit: Comparison of Annual Average Historical Capital Funding to Estimated Future Capital Plan

Infrastructure Element	Adopted Capital Budget 2009-2017 (annual average, in millions)	10 Year Capital Plan 2018-2027 (annual average, in millions)	2009-2017 (%)	2018-2027 (%)
Roads	$113	$177	31%	61%
Bridges	$45	$10	12%	3%
Parks & Open Spaces	$11	$15	3%	5%
Police Services	$32	$1	9%	0.4%
Fire & Paramedic Services	$5	$9	1%	3%
Community Services	$30	$20	8%	7%
Municipal Properties	$13	$6	4%	2%
Transit	$101	$40	28%	14%
Information Technology	$15	$12	4%	4%
Total	**$365**	**$289**		

Table 6.3-2. Water and Waste Department Utilities: Comparison of Annual Average Historical Capital Funding to Estimated Future Capital Plan

Infrastructure Element	Adopted Capital Budget 2009-2017 (annual average, in millions)	10 Year Capital Plan 2018-2027 (annual average, in millions)	2009-2017 (%)	2018-2027 (%)
Water Utility	$37	$29	16%	25%
Sewer Utility	$173	$76	76%	66%
Land Drainage Utility	$9	$6	4%	5%
Solid Waste Utility	$8	$4	4%	4%
Total	**$227**	**$115**		

A comparison of the 2009 and 2018 infrastructure deficit is depicted in Figure 6.3-1.

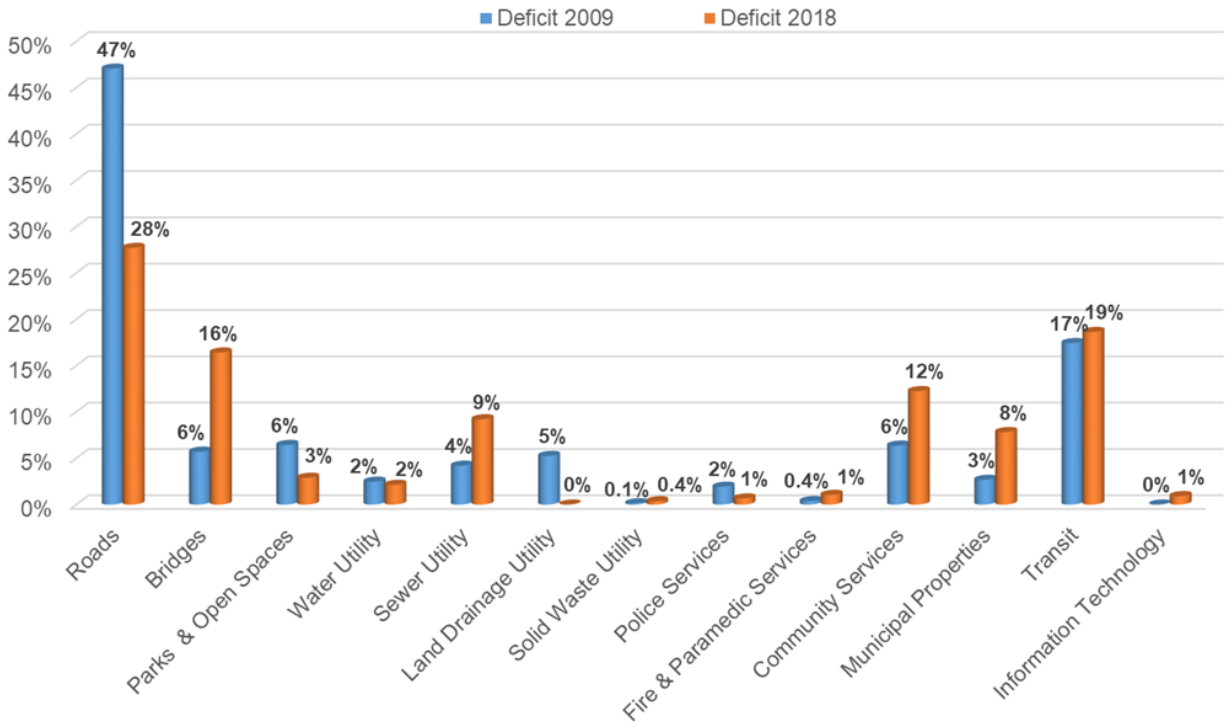


Figure 6.3-1. Comparison of 2009 Deficit to 2018 Deficit by Percent of Total City Deficit

Observations specific to the 13 infrastructure elements are noted below and can be used to drive future investment planning efforts. Appendix C provides detail comparing the adopted capital 2009-2027, estimated capital plan 2018-2027, and capital infrastructure deficits reported in 2009 and 2018.

6.3.1 Roads

In 2009, there was a considerable deficit for the roads network identified at $3.3 billion. This represented 47% of the City's overall deficit in 2009. Since that time, there has been dedicated allocation of an annual 2% property tax revenue increase allocated to the regional and local street renewals, which has contributed to increased investments of over $1 billion to the roads network. As a result, the 2018 deficit has been considerably reduced to $1.9 billion, or 28% of the City's overall deficit. Notwithstanding the reduction in the deficit from 2009 to 2018, Roads are forecasted to have 30% more of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations. Part of this increase assumes that the dedicated annual 2% property tax increase allocation would continue to be dedicated to roads renewals.

6.3.2 Bridges

In 2009, there was a deficit for Bridges identified at $400 million. This represented 6% of the City's overall deficit in 2009. Since that time, $406 million of investments have been allocated to Bridges. Notwithstanding these investments, the deficit in 2018 is more than double than what it was reported in 2009. The 2018 deficit for Bridges is $1 billion, or 16% of the City's overall deficit. Bridges are forecasted to have 9% less of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations. Investments to upgrade existing bridge infrastructure or construction of new bridges represent large capital investments. In part, the reason for the large increase in the deficit for bridges, and the currently lower amount forecasted to be spent on capital investment in bridges is due to the fact that these large bridge capital projects are unfunded. Funding for these expensive bridge

projects are usually funded by the three levels of government. If the City were to fund the project entirely on its own, the City's debt would increase significantly.

6.3.3 Parks and Open Spaces

In 2009, there was a deficit of $451 million identified for Parks and Open Spaces, which represented 6% of the City's overall deficit in 2009. Since that time, $103 million of investments have been allocated to Parks and Open Spaces, which has contributed to the deficit in 2018 being reduced to $199 million, or 3% of the City's overall deficit. The variance can also be partially attributed to the transfer of Assiniboine Park assets to the Community Services Department for reporting purposes, excluding park roads. Furthermore, the development of a comprehensive asset registry has allowed for improved valuations more reflective of current state. Notwithstanding this reduction in the deficit from 2009 to 2018, Parks and Open Spaces are forecasted to have 2% more of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations.

It is important to note that the existing deficit has been largely based on a more traditional approach to asset management based on asset condition and age. Currently, a Parks Strategic Master Plan is under development which will help inform deficit calculations using a more customer-centric asset management approach based on established level of services.

6.3.4 Water Utility

In 2009, there was a deficit of $173 million, which represented 2% of the City's total deficit. Since then, $330 million has been allocated to capital investments to support the Water Utility. As a result, the 2018 deficit has been reduced to $146 million, still remaining at 2% of the City's total deficit.

The Water Utility is forecasted to have 9% more of the overall utilities capital plan dedicated to its infrastructure needs compared to historical allocations.

6.3.5 Sewer Utility

In 2009, there was a deficit of $294 million, which represented 4% of the City's total deficit. Since then, $1.6 billion has been allocated to capital investments to support the Sewer Utility. From 2009-2017, there has been considerable capital investments made in the Sewer Utility to support new regulatory requirements. The South End Sewage Treatment Plant (SEWPCC) regulatory-related upgrades are fully funded and underway. The North End Sewage Treatment Plant (NEWPCC) upgrade is currently being studied with budget for the work having been partially approved. The 2018 deficit of $634 million is primarily comprised of additional spending that may be required, based on conceptual design, to complete the upgrade works at NEWPCC, but has not yet been approved. The current cost estimate of $1.4 billion is a class-5 estimate.

Overall, the Sewer Utility deficit has increased from a representative 4% in 2009 to 9% of the total City deficit in 2018. The Sewer Utility is forecasted to have 10% less of the overall utilities capital plan dedicated to its infrastructure needs compared to historical allocations. This is, in large part, related to the Winnipeg Sewage Treatment Program capital funding that was approved in 2016 but will be spent over the next few decades. Further, at the time of writing this AMP, it is assumed that the CSO Master Plan mitigation works are fully funded. In late 2017, the Province accepted the CSO Master Plan which included the 85% capture target by 2045; the City is currently developing an implementation plan that will be submitted by Aug 31, 2019. Once this plan is known, additional funds may be required.

6.3.6 Land Drainage Utility

In 2009, there was a deficit identified of $368 million, which represented 5% of the City's total deficit. Since that time, $78 million has been allocated to capital investments to support the Land Drainage Utility. There is currently no deficit identified for the Land Drainage Utility, which is mainly due to the

fact that construction (non-development related), renewal, and rehabilitation of the linear infrastructure (land drainage sewers) are included in programs funded by the Sewer Utility (CSO and Basement Flood Management Strategy and Sewer Renewals) and costs associated with land drainage requirements for servicing new developments are often captured through development agreements and paid for by the developers.

The Land Drainage Utility is forecasted to have 1% more of the overall utilities capital plan dedicated to its infrastructure needs compared to historical allocations.

6.3.7 Solid Waste Utility

In 2009, the identified deficit of $10 million represented less than one percent of the City's total deficit. Since then, $76 million has been allocated to capital investments to support the Solid Waste Utility. While the $24 million deficit identified for the Solid Waste Utility today represents a higher deficit than in 2009, it still comprises less than one percent of the City's total deficit.

The Solid Waste Utility is forecasted to have a relatively similar amount of the overall utilities capital plan dedicated to its infrastructure needs compared to historical allocations despite the increased deficit.

6.3.8 Municipal Properties

In 2009, there was a deficit of $187 million identified for Municipal Properties. The 2009 deficit primarily consisted of deficits identified for riverbank stabilization and administrative buildings utilized by the City. This represented 3% of the City's overall deficit in 2009. Since then, the deficit for Municipal Properties has significantly increased to $538 million, or 8% of the City's overall deficit. Notwithstanding the substantial increase in deficit from 2009 to 2018, Municipal Properties are forecasted to have 2% less of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations, which is not sufficient to address the growing deficit. There are plans to divest of surplus properties in the future, which will reduce the overall funding required for this portfolio.

6.3.9 Community Services

In 2009, there was a deficit of $446 million identified for Community Services. This represented 6% of the City's overall deficit in 2009. Since then, the deficit has increased substantially and is now $843 million, representing 12% of the City's overall deficit. Notwithstanding this increase in the deficit from 2009 to 2018, Community Services are forecasted to have 1% less of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations, which is not sufficient to address the growing deficit.

6.3.10 Transit

In 2009, there was a considerable deficit of $1.2 billion identified for Transit capital investments. This represented 17% of the City's overall deficit in 2009. In addition to other capital requirements, the most significant portion of the 2009 deficit was the inclusion of estimated costs to construct two rapid transit corridors. Since then, there have been two stages of the Southwest Rapid Transit Corridor funded and reflected in the $900 million of capital investments that have been allocated to Transit from 2009-2017. The 2018 deficit remains at a consistent level to the 2009 deficit, mostly, because there is an allocation of $1 billion for future rapid transit corridors in the overall 2018 deficit amount of $1.3 billion. Transit is forecasted to have 14% less of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations, largely due to the high dollar value amounts allocated from 2009-2017 on the Rapid Transit Corridor that are not being captured in any currently approved Transit budgets.

6.3.11 Police Services

In 2009, there was a deficit identified for Police Services capital requirements of $135 million, representing 2% of the City's overall deficit. Since then, there has been construction of two new police district stations (East and West) and the downtown Police Headquarters, which have contributed to most of the overall capital investments of $292 million allocated to Police Services from 2009-2017. As a result, the 2018 deficit has decreased $46 million, or 1% of the City's overall deficit. Police Services are forecasted to have 8% less of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations.

6.3.12 Fire and Paramedic Services

In 2009, there was a deficit for Fire and Paramedic Services capital requirements of $26 million, representing 0.4% of the City's overall deficit in 2009. Since then, there has been $43 million allocated to capital requirements, relating to construction of five fire and paramedic stations, as well as budget allocation relating to capital projects of other fire and paramedic stations and other planned capital requirements. Notwithstanding these capital investments, there is a larger deficit reported in 2018 compared to 2009. The 2018 deficit is $72 million, representing 1% of the City's overall deficit. Fire and Paramedic Services are forecasted to have 2% more of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations.

6.3.13 Information Technology

In 2009, the Information Technology service area did not undertake an exercise to identify a deficit. However, investment in Information Technology has been ongoing in the City since that time, with $132 million of capital investment allocated to Information Technology from 2009-2017. The 2018 deficit identified for Information Technology is $63 million, or 1% of the overall City deficit. Information Technology is forecasted to have the same amount of the overall tax-supported capital plan dedicated to its infrastructure needs compared to historical allocations.

6.4 Strategies for Addressing the Infrastructure Deficit

A combination of financial strategies that are City-wide, as well as department-specific, are needed to effectively address the infrastructure deficit. This section provides a broad listing of financial strategies that will be considered at both the department and City-wide levels.

6.4.1 City-Wide Financial Strategies to Address the Infrastructure Deficit

In general, and drawing on information from this AMP, the City will consider pursuit of the following City-wide strategies to reduce the infrastructure deficit:

1. Increase Access to Revenue

The majority of City revenue comes from property taxes, utility fees, user fees, and government grants. As noted in the City's 2018 Community Trends Report, other prairie cities in Canada collect on average 44% more revenue per capita compared to Winnipeg with Winnipeg collecting the least from property taxes, utility taxes, and user fees among the prairie cities. In addition, since 1998, the Canadian cities shown in Figure 6.4-1 have roughly doubled their property taxes, equivalent to a 98% increase, while Winnipeg has increased property taxes by only 9%.

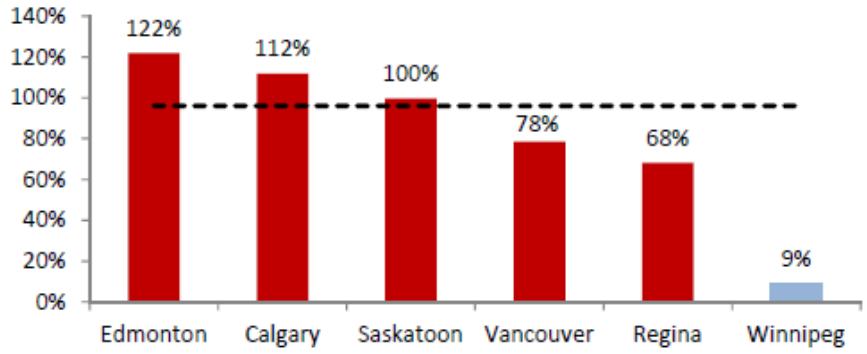


Figure 6.4-1. Residential Property Tax Change (%) 1998 to 2016
Source: City of Winnipeg, 2018 Community Trends Report

The current City funding model is unsustainable. As the City nears its maximum borrowing limit set out in the debt strategy, the ability to borrow further debt to finance infrastructure investments is more restrictive now than in the past and requires access to additional revenue in order to borrow more debt. Revenue can be attained by maximizing existing revenue sources, accessing new sources of revenue, and maximizing available capital grants from federal and provincial governments.

Maximize Existing Revenue Sources

Consideration should be given to increasing property taxes and frontage levies to help fund tax-supported and transit infrastructure. Council has supported dedicated property taxes towards specific use, such as Road renewals. Dedicating any additional increases in revenues to fund other infrastructure elements can be an option to address the deficit, however this should not be considered in isolation of operating budget tax increases. Utility rate increases may be required in the future to support a variety of regulatory upgrades such as the NEWPCC. The NEWPCC estimated at $1.4 billion would be the highest value capital project the City has ever undertaken. If the City is not successful in obtaining funding from other levels of government to help fund these upgrades, additional increases to the sewer utility rate will be required.

Access New Sources of Revenue

Exploring new sources of revenue available to other municipalities throughout North America will help the City to identify opportunities for new, sustainable sources of revenue. Council has recently approved the introduction of an impact fee related to residential development. This new fee will be dedicated to partially offset some growth-related infrastructure costs. Expanding the impact fee should be considered for new commercial development. The City requires access to other new revenue sources to address the infrastructure deficit of $6.9 billion and will continue to explore other new revenue sources that other municipalities inside and outside of Canada have access to, some of which may require changes to provincial legislation as they are not currently permissible under the current City of Winnipeg Charter. Some examples are:

- Sales Tax
- Fuel Tax
- Vehicle Registration Fee
- Tolls
- Carbon Tax (electricity tax and natural gas tax)

Maximize Available Federal and Provincial Capital Funding

In the past, the City has been successful in accessing funding from other levels of government, particularly for major capital projects, and will continue to apply for all available funding. While these funding sources may be time-limited and are not long-term reliable funding sources, they represent a

significant mechanism for the City to implement major capital projects, which form 66% of the City's total infrastructure deficit. Enhancements to Rapid Transit alone are estimated at $1 billion. Without the support of other levels of government to implement these projects, the city will be financially challenged to proceed with the project on its own.

2. Develop Levels of Service

The management of the City's assets needs to consider their affordability, while balancing customer needs and expectations. Levels of service is the means to measure this aspect of asset management. The City would like to develop levels of service models for all service areas. With the current fiscal restraints facing the City, and the $6.9 billion deficit, the development of levels of service models will be realistic and practical within budgetary, timing, and external constraints under which the business unit operates.

In some cases, this may require innovative approaches to maintain or enhance existing levels of service, as well as challenging decision making for areas that may need to see a reduction in the levels of service currently provided offered based on affordability. For example, the strategy under consideration to divest of surplus building properties owned by the City would result in a reduced level of service currently offered to some community groups utilizing these buildings. There needs to be a balance in expectations from citizens aligned with the amount of funding available to deliver infrastructure related services. The long-term strategy is to have one document, that is approved by Council and that outlines the expected levels of service for each infrastructure element/service area that will be used when prioritizing investments during the capital budget process. Metrics will be developed to monitor the performance to achieving levels of service expectations.

3. Apply an Affordability Lens to Policy Development and Long-Term Strategic Plans

Policy development and departmental strategic plans are pivotal instruments used to guide the City towards providing the expected quality of life, service level satisfaction, and value for tax dollars. Balancing policy and strategic visions with an affordability lens is an important undertaking that the City will need to explore in the near future.

With the current *OurWinnipeg* review underway, there is an opportunity to ensure the updated 25-year blueprint for the City's growth and development considers the current climate of affordability. This will allow for innovative and vibrant policy considerations to be pursued at a level that the City can afford. Long-term strategic plans should be developed for service areas and include an affordability analysis as part of their pursuit.

4. Review Assets in Poor to Very Poor Condition

The development of this AMP identified that there are $4.6 billion worth of City assets considered to be in *Poor* to *Very Poor* condition. As part of the preparation of the 2019 capital budget, departments will continue to apply asset management principles to prioritize all required investments, but will utilize information gathered in this AMP as it relates to *Poor* and *Very Poor* condition assets to ensure they are considered in the budget process. Departments with lower dollar value assets in their overall portfolio, such as Fire and Paramedic Services, receive less overall capital funding annually than departments with a large asset base, such as Roads. This makes it difficult for departments with lower dollar value assets in their portfolio to address assets in *Poor* to *Very Poor* condition in a timely manner. Reviewing an annual redistribution of funding, as a short-term measure to address the underperforming assets, is one mechanism that could be explored to avoid any potential disruptions to service delivery resulting from an asset failure, which is more common amongst assets in this condition category. Additionally, departments will review if existing preventative maintenance programs relating to their assets exist and whether they are positioned to ensure assets that have adequate funding levels do not reach a condition of *Poor* to *Very Poor*. This review will help ensure assets are maintained throughout their

lifecycle to avoid critical and expensive failures in the future, and prevent assets from falling into the *Poor* or *Very Poor* condition category.

5. Better Alignment between the Budget Process and Asset Management

The asset management program and budget process operate as a system that offer the greatest benefit if processes between each are fully integrated. Ongoing alignments between the asset management program and the budget process will allow for improved decision making related to capital infrastructure requirements and associated operational budget impacts through implementation of short term and near term actions including:

Immediate Actions (2019 budget forward):

- Continue the current process whereby Departments prioritize capital investments over a six-year period based on capital forecasts and any necessary changes using asset management tools, such as the multi-criteria prioritization tool, so that critical investments are pursued within existing affordability parameters. The criteria tool has been successful to position investments with the greatest cost benefit to be pursued, while balancing an acceptable level of risk.
- Continue the practice in the capital budget process that allows for unfunded projects not currently in the capital forecast to be included in the budget based on a risk assessment. In 2019, unfunded capital requests should include categorization of levels of risk into high, medium or low risk using the existing asset management program 'Residual Risk Matrix' as a guideline to identify the level of risk. This tool should be used to categorize risk in the unfunded capital requests until a standardized risk-modeling tool is developed.
- On internal capital budget documents, begin tracking capital funding allocated to the thirteen infrastructure elements captured in this CAMP. This will allow for information to be readily available and analyzed in future reporting years to identify funding trends as well measuring progress toward addressing the infrastructure deficit across all infrastructure elements.

Near Term Actions:

- Building upon existing asset management risk modeling tools currently in use, develop a standardized risk methodology to be applied consistently across the organization when prioritizing investments. This will allow for total capital investment needs over a six-year period to be prioritized using both cost benefit scores, as well as defined risk scores in the future.
- Departments to prepare a 10-year asset management investment plan, which captures total capital investment needs in one document. On an annual basis, the plan will be updated, and for budgetary purposes all investments over a six-year timeframe will be prioritized, using asset management tools such as the multi-criteria prioritization tool, and standardized risk modeling tools.
- When developing 6-year budget submissions for consideration in the budget process, both the cost benefit scores, as well as risk scores will be identified. This will allow for the ability to prioritization within a department, but also across the organization, particularly as it relates to the level of risk associated with investments.
- When presenting unfunded capital requests (projects not currently in the capital forecast), capture both the cost benefit scores, as well as level of risk using a standardized risk methodology so that, when combined with the budget submission, this will create a prioritized list of all capital needs across the organization.
- Once Departments have developed 10-year investment plans, consideration will be given to the benefit of publishing a 10-year capital budget as well as the 10-year investment plan.

6.4.2 Department-Specific Financial Strategies to Address the Infrastructure Deficit

Department-specific financial strategies that can be considered to address the deficit are captured in Table 6.4-1. These strategies will be used as a starting point for the development of 10-year investment plans being prepared by all City departments for assets under their management.

Table 6.4-1 Departmental Financial Strategies to Address the Infrastructure Deficit

Department	Financial Strategies
Public Works	***Roads*** • Continued use of the renewal reserves, annual programs, and 2% property tax increase per year to fund the regional and local street network. • Continue to apply for federal funding programs to address road-related projects. • Continue to consider use of alternative delivery such as Public-Private Partnerships. • Develop a Pedestrian and Cycling Report Card (currently underway) to identify active transportation needs and ensure funding requests align with identified needs. • Utilize information provided through the Transportation Management Centre to improve the management and performance of traffic signals, traffic management, and other related services. Further understanding and optimization of the roadway infrastructure and flow system will help enable improved roadway investment prioritization and support optimization of other related service expenditures, such as the location and quantity of emergency response stations and apparatus. ***Bridges*** • Continue to apply for federal funding programs to address bridge-related projects. • Investigate new asset management software (currently underway) that will help identify gaps in levels of service, to better define infrastructure deficit for bridge assets. ***Parks and Open Spaces*** • Develop a Park Strategic Master Plan to establish clearly defined service levels based customer need, while recognizing fiscal constraints. • Continue to improve asset inventories and develop whole life costing estimates to support the transition from a reactive to proactive approach to asset maintenance and renewals. • Find a better way to assign value to natural assets, such as trees and wetlands, which provide services that would otherwise require the costly equivalent of engineered infrastructure. By identifying natural assets and prioritizing them, infrastructure deficits may be reduced and services delivered more efficiently.

Table 6.4-1 Departmental Financial Strategies to Address the Infrastructure Deficit

Department	Financial Strategies
Water and Waste	***Common strategies across all four utilities (Water, Sewer, Land Drainage, and Solid Waste)*** • Continue to apply to other levels of government funding for major projects, such as the mandated sewage treatment upgrades and the implementation of the Combined Sewer Overflow Master Plan. Continue to seek other government grants and revenue streams that are available to fund various projects and programs within the department. • Evaluate funding opportunities with external third parties for major projects with shared benefits. • Assess partnership opportunities with other utilities. • Evaluate alternative delivery options for major capital projects. • Develop formal customer level of service targets for various assets to help guide future investment decisions and to clearly distinguish between base service provision, enhancement, and growth. This level of information can also be used to aid in setting rates for Council consideration. ***Water Utility*** • Continue to review the business case for a meter replacement program to ensure it is implemented in an affordable and efficient manner. ***Sewer Utility*** • Continue working with other government funding partners to ensure that committed money is confirmed in agreements relating to Sewage Treatment Programs. ***Land Drainage Utility*** • Undertake the planned future study of a land drainage utility to determine the feasibility of implementing a cost-of-service-based land drainage utility rate.
Property Planning and Development and SOAs	• Develop a rationalization strategy for municipal buildings and facilities, as well as buildings leased out by the City to other third-party organizations. The current condition of this portfolio is in *Poor* to *Very Poor* condition. The strategy being considered would reduce the size of the portfolio by 3% per year for 5 years. Reinvesting the proceeds from the sale into other property assets will also be a consideration of the strategy. • Implement retro-commissioning in existing buildings to provide both financial and environmental benefits. Retro-commissioning is a systematic process to improve an existing building's performance. Using a whole-building systems approach, retro-commissioning identifies operational improvements that increase occupant comfort, save energy, and consider sustainability. A systematic review of select building assets within the portfolio will be undertaken to assess energy use improvements, as well as increased life span and lifecycle benefits for a wide range of building types and building components.
Community Services	• The Community Services Department is currently developing a long-term strategic plan for recreational services which will help to drive investment decisions related to recreational assets. The plan will establish clearly defined service levels based on customer need. All Community Services assets, with the exception of libraries which already have a Council-approved strategy, are within the scope of the strategy. The strategy will also include Parks and Open Space assets, which provide synergistic benefits to the community at large. The plan will provide a strategic framework that can help guide long-term investment plan for recreational assets.

Table 6.4-1 Departmental Financial Strategies to Address the Infrastructure Deficit

Department	Financial Strategies
Transit	• Create a Rapid Transit Master Plan to carry out initial planning and conceptual design work, prioritize future corridors, develop Class 4 estimates, and develop a long-term funding plan. • Create a Strategic Service Plan that examines transit route optimization, that examines the development of a frequent service network and that develops a 25-year plan outlining service, funding, and infrastructure needs at 5-year intervals. • Continue to apply for federal and provincial funding programs to related Rapid Transit projects. • Considering use of alternative delivery such as Public-Private Partnerships and bundling of projects.
Police Services	• Current strategies related to Police Services asset management are operational in nature. Capital l financing strategies will be considered during the development of the 10-year investment plan.
Fire and Paramedic Services	• Implement a strategy to consolidate fire and paramedic stations. The need to upgrade stations coincides with an opportunity to re-evaluate optimal station location, given the expansion of residential and industrial neighborhoods. The strategy development is underway and is aimed at reducing the number of existing stations by constructing stations in new optimal locations and to support growth areas of the City that maintain or improve service levels, including response times. • Continue to refine vehicle requirement and maintenance planning with the objective of minimizing downtime, costs and the need for spare vehicles. • Develop an equipment obsolesce program to improve maintenance and reduce costs of commonly purchased equipment. Purchases will be standardized and ordered in volume contracts to achieve economies of scale.
Information Technology	• Develop a 10-year renewals plan for Hardware and Software assets. The current process for the hardware component is relatively mature while the software component will require focus within a governance structure to provide greater visibility into software investment practices. • Fully capture all IT needs across City departments in order to capture the full IT infrastructure deficit. The current deficit captures the financial needs relating to standard City-wide hardware and software requirements (with exception of Police Services), and will be broadened to include an assessment of all IT needs, including 'hybrid IT' systems. Developing a LOS strategy to match departmental needs for new infrastructure and specialized IT systems, not currently represented in the deficit amounts, will ensure a consistent investment plan for all City technology requirements and more accurately reflect the financial funding levels needed to sustain innovative IT platforms for the City.

Section 7

Plan Improvement and Monitoring



SECTION 7

Plan Improvement & Monitoring

7.1 Corporate Improvement Plan

This section outlines the improvement and monitoring program to enhance future revisions of this AMP. The recommended improvements move the City towards a more sustainable management of their assets. The following improvement plan recognizes that management of the City's assets is a continual and ongoing process. Implemented on an annual basis, improvement projects are essential for the continual improvement of the City's asset management practice.

Using the initiatives listed below, the City will develop detailed project plans that will help ensure an effective integration of improvement opportunities within their asset management processes. It will be essential to identify key resources and to establish implementation timelines.

7.1.1 Continual Improvement Initiatives

The proposed asset management improvement initiatives are shown in Table 7.1-1.

Each task has been categorized into one of four main components identified in the City's Asset Management Policy:

1. People
2. Process/Data
3. Assets
4. Tools/Technology

Table 7.1-1. Improvement Initiatives

Category	Area for Improvement	Strategy
People	Enhance knowledge transfer and competency within the City's asset management community	Continue to develop training materials and administer internal courses to staff in both Investment Planning and Project Management. Staff to consider obtaining external certification in Change Management (ADKAR), Quality Management, Project Management (PMP) and Asset Management (IAM). Look for cross-training opportunities where staff can learn to view asset management principals from a variety of functional perspectives within the City and minimize silos (Finance, IT, Operations, Maintenance). Reassess asset management maturity using the Comprehensive Asset Management Review and Assessment (CAMRA) tool (previous results date back to 2016).
	Senior leaders and departmental asset management managers to enhance mentorship opportunities and promote the asset management policy/standards with support staff working within the asset management environment	Develop team strategy sessions or reoccurring network meetings within each department to address strengths, weaknesses, opportunities and threats within the business unit. Ensure departmental and corporate strategies are communicated to all team members (top-down).

Table 7.1-1. Improvement Initiatives

Category	Area for Improvement	Strategy
People (continued)	Focus on the consistent application of the Asset Management Governance Model when outlining reporting structure and defining job-specific roles and responsibilities	Use the model when filling vacancies, establishing lines of authority, and conducting competency-based performance evaluations.
	Departmental capacity planning	Identify annual workload and the resources necessary to effectively deliver quality output. A time-tracking system is essential for planning accurate allocation of resources and to help balance or level load effort between project management, strategic initiatives, process improvements, and professional development.
Process/Data	Develop detailed Customer and Technical LOS models in each department to establish performance baselines for City assets	Work with departmental asset management offices to help define the specific attributes of the model and to conduct public engagement workshops. LOS performance metrics/KPIs need to balance citizen expectations and quality service deliverables with cost. Develop detailed RFP with input from departmental Asset Management Offices.
	Integrate LOS metrics into the Benefits Matrix outlined in the City's Investment Planning Manual	The narrative within each measure listed under the 10 Benefit Criteria should be specific and measurable. Data must be presented to substantiate and validate the targeted LOS during project evaluation.
	Quantify and track LOS trends	Establish routine benchmarking analysis to identify and report on how asset performance changes over time (positive, stable or negative trends).
	Consistent business case development by departments	Prioritized projects/programs must be accompanied by a business case with Class 3 estimates prior to being reviewed/approved during the budget submission process. They must demonstrate options to address critical needs and highlight the benefits to service delivery. It is also recommended that preliminary investigations or functional studies be presented as separate budget requests during the planning phases of a project.
	Create a benefits realization procedure to measure project success and verify if project needs have been met and risk levels minimized	During control and monitoring and prior to project close-out, outputs should be compared and measured against the benefits outlined in the original business case. Project status reports should highlight the appropriate actions needed to confirm benefits realization.
	Prioritize all investment needs	Use a zero-based budgeting methodology to capture the actual, prioritized needs identified by the departments regardless of historic funding amounts. Track actual expenditures against identified needs and minimize reallocation to unidentified projects. Shift from reactive maintenance to pro-active planning.

Table 7.1-1. Improvement Initiatives

Category	Area for Improvement	Strategy
Process/Data (continued)	Align asset management process templates with financial templates	Work with Financial Planning and Review to standardize and update budgeting templates in an effort to capture relevant asset/project information. Appropriate information must be documented prior to being reviewed/approved during the budget submission process.
	Develop a Standard Operating Procedure (SOP) outlining the process for asset data collection, analysis and management (corporate and departmental)	Formalize documentation to improve efficiency and consistency in generating future iterations of the AMPs. The SOP will serve as a guide when departmental asset management managers lead their teams' efforts to update the AMPs.
	Develop a SOP outlining the process for calculating the City's infrastructure deficit (Corporate)	Formalize documentation to improve efficiency and consistency in generating future State of Infrastructure Reports.
	Include operational costs when calculating the total infrastructure deficit	Determine the best source of operational data from each department and strategically consolidate the information so it can be efficiently analyzed and included in the infrastructure deficit calculations. Data should be categorized using the City's Detailed Asset Inventory structure and Infrastructure Deficit template.
	DAMP format	Independent DAMPs will be created to align with specific infrastructure elements (service areas) and use corporate communications formatting/layout to maintain branding. Recommend that data be tailored to facilitate the City's responses to Canada's Core Infrastructure Survey.
Assets	Review all assets that have been noted as "Not Included" in the DAMPs	Outline/categorize the specific reason(s) why certain assets were not included in the plans and determine if they could be included during future iterations, should justifiable information be provided. If included, updates to technical data and deficit calculations would need to be performed.
	Review all assets that have been noted as "Not Assessed" in the DAMPs	Review data metrics and focus on service areas where assets have been identified as not being assessed. Information pertaining to condition, age, quantity or replacement value could be missing. Develop a formal assessment strategy and timeline to collect all relevant data should the exercise prove to be value-added and cost-feasible (in some cases the cost of an assessment could be greater than the asset's value).
	Develop robust lifecycle models	Detailed deterioration models are necessary for determining optimal intervention and investment strategies over the whole lifecycle of an asset. However, these cannot be fully implemented until specific LOS have been established. Preventative maintenance workflows would also be developed in support of the repair or replacement strategies.

Table 7.1-1. Improvement Initiatives

Category	Area for Improvement	Strategy
Assets (continued)	Formalize Service Level Agreements (SLAs)	Use the SLA form to document roles, responsibilities and key expectations between internal service providers and customers. Once completed, assets belonging to Control and Use Owners will be reported in their AMPs.
	Consolidate structural assessments with other building/facility data housed in the City's VFA platform	Determine how structural information can be reconciled with all other data on a particular asset to improve FCI accuracy. Review platform ownership and the associated processes to upload building information and maintain data integrity.
	Explore options on how assets related to Information Technology are defined and reported	To be consistent with the City's Administrative Standard, consideration will be given on redistributing IT assets under the Control and Use Owners rather than an independent infrastructure element. These assets are not recognized as typical infrastructure assets and thus, additional research will be conducted to develop a reasonable approach to managing and monitoring the performance of these assets within each department.
Tools/Technology	Evaluate VFA performance and functionality	Review service agreement with Accruent (VFA facility Capital Planning Software). • Is current scope of services adequate to align with the City's Asset Management Program? • Is current functionality being used to its fullest potential? Can additional VFA modules enhance service delivery? Document the process for effective inputting and management of data. Schedule routine quality checks on building/facility assessment reports and data for reliability and accuracy. Cross reference data with other sources (TCA Inventory, Insurance and Risk, RSMeans, etc.) such that data reconciles across the organization.
	Renew investigations into a city wide Project Management Portfolio Solution	Bid Opportunity RFQ 205-2016 resulted in two shortlisted vendors to address all the unique aspects of the City's Asset Management Program, with a focus on managing documentation related to the investment planning process through to the project delivery process. The Corporate Asset Management Office will look to update the current business case with support from the Corporate Support/IT team and the AMO network to identify ongoing requirements for this software platform.

Table 7.1-1. Improvement Initiatives

Category	Area for Improvement	Strategy
	Investigate a comprehensive Asset Inventory/Analytics Software Solution	Preparation of the AMP identified a gap that exists whereby there is not a single database or software platform that captures asset metrics such as inventory counts, condition, age and replacement values across the organization. Currently, there is a mixture of databases or spreadsheets used to track asset information. Although there is no one singular solution that addresses all the unique aspects of the City's asset registry, on-going research with suppliers, industry experts and municipal partners will aid in identifying the most optimal platform to improve the reliability and visibility of asset data allowing for improved decision making. Interim solutions will continue to leverage SharePoint sites, Geospatial data, Excel/Pivot/Access tools, Info BI, etc.
Tools/Technology (continued)	Multi-Criteria Prioritization (MCP) process review and calibration	Investigate improvement items with municipal partners, industry experts and senior leadership team. In particular: • Review benefits criteria and weight distribution • Potential need to categorize investments using financial thresholds in order to fairly prioritize projects of varying complexity and cost • Consider incorporating debt capacity and funding sources into the prioritization process (affordability)

7.2 Plan Review and Monitoring

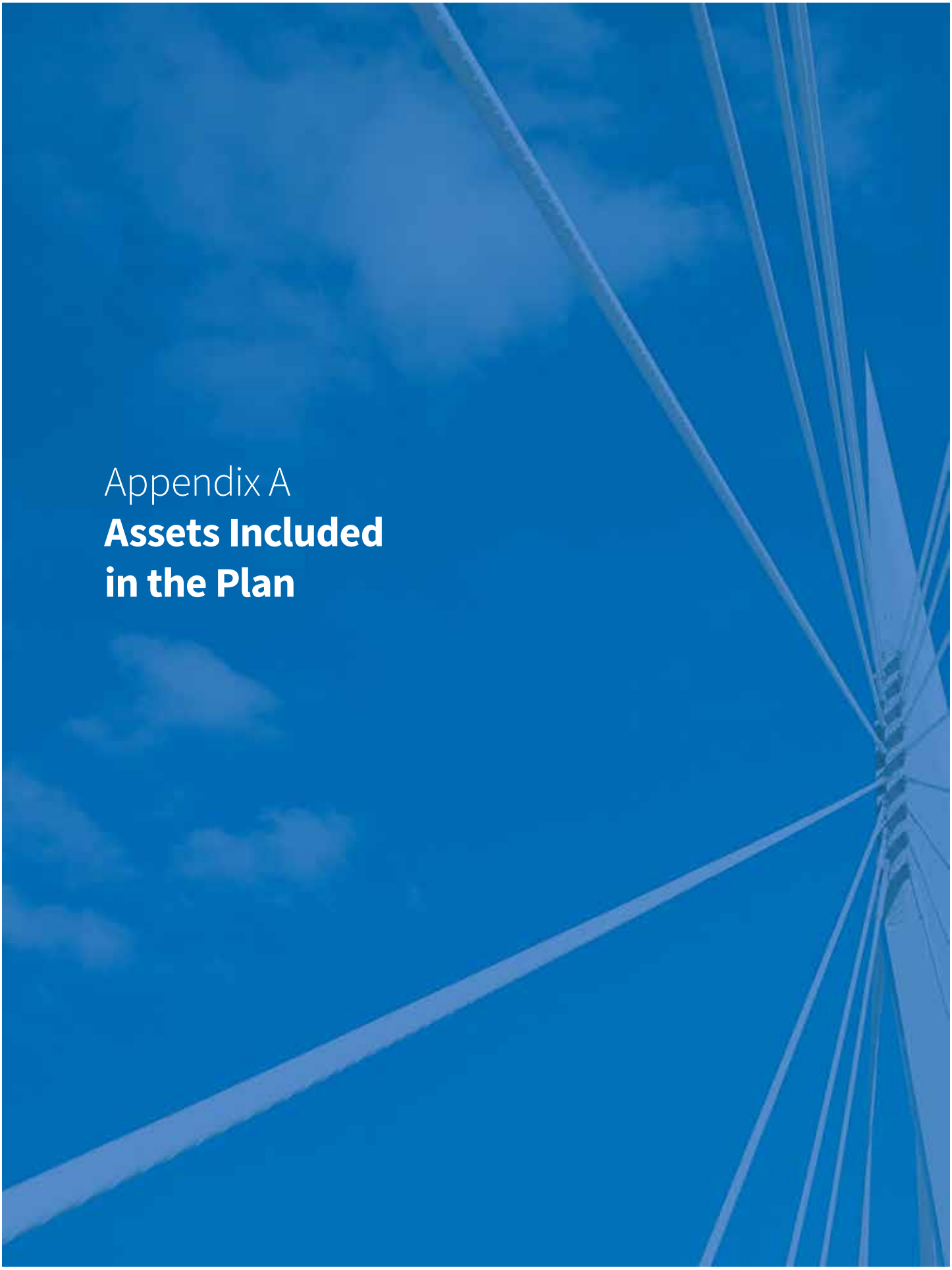
Once approved, this AMP will become the City's plan for the effective and efficient management of its assets. This AMP will remain current until replaced by an updated plan.

This AMP is a living document which is relevant and integral to the daily asset management activities within the City. To ensure the plan remains useful and relevant, the following process of monitoring and review activities will be undertaken:

- Formal adoption of the AMP by the City
- Review and formally adopt LOS models, as they become available
- Revise AMP every 2-4 years to incorporate and document changes to work programs, outcomes of service level reviews, and new knowledge resulting from the Asset Management Improvement Program (some sections, such as Section 3 – State of the Infrastructure or Section 4 – Expected Levels of Service, may require updating more frequently)
- Quality assurance audits of asset management information to ensure the integrity and cost effectiveness of data collected (ongoing)

The following are examples of potential indicators that can be used to determine the effectiveness of this AMP:

- Compliance with legislative requirements
- Quality of service delivery – alignment with service targets
- Operational and maintenance budgets met (or better)
- Quality of risk management — no events occurring outside the risk profile
- Enhanced data reliability, accuracy, and management
- Benchmarking with comparable departments in other municipalities



Appendix A
Assets Included in the Plan

APPENDIX A

Assets Included in the Plan

INFRASTRUCTURE ELEMENT LEVEL 1	ASSET TYPE LEVEL 2	ASSET SUB-TYPE LEVEL 3
ROADS	Regional Streets	--
	Local Streets	Industrial/Commercial Streets
		Collector Streets
		Residential Streets
		Lanes/Alleys
	Active Transportation	Bike Paths
		Sidewalks
	Signals	Cabinets
		Pole and Cabinet Bases
		Controllers
		Pedestrian Corridor Boxes
		Hardware
		Pedestrian, Bike, and Vehicle Display Heads
		Pole and Arms
		Individual Pedestrian, Bike, Vehicle Displays
	Buildings	--
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
BRIDGES	Vehicular Bridges	--
	Pedestrian Bridges	--
	Underpasses	Rail
		Non-rail
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment

INFRASTRUCTURE ELEMENT LEVEL 1	ASSET TYPE LEVEL 2	ASSET SUB-TYPE LEVEL 3
PARKS AND OPEN SPACE	Active Transportation	Park Pathways & Trails
	Park Amenities	Aesthetics
		Athletic Fields
		Boat Docks and Launches
		Floral Displays
		Furniture & Fixtures
		Play Equipment
		Skateparks
		Sport Courts
		Track & Fitness Equipment
		Winter Amenities
		Monuments
		Fountains
	Park Bridges & Retaining Walls	--
	Park Roads	--
	Trees	--
	Natural Areas	--
	Park Buildings	--
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
WATER UTILITY	Water Supply and Treatment	SLAIF, Railway and Ancillary Structures
		Aqueduct
		Water Treatment Plant
		Branch Aqueducts
		In-town Pumping Stations (excludes Shoal Lake)
		Reservoirs, Tanks, Surge Towers
		Feeder Mains
	Water Distribution	Distribution Mains
		Hydrants
		Water Meters

INFRASTRUCTURE ELEMENT LEVEL 1	ASSET TYPE LEVEL 2	ASSET SUB-TYPE LEVEL 3
WATER UTILITY (cont'd)	Water Distribution (cont'd)	Water Services
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
	Buildings	Other
SEWER UTILITY	Wastewater Treatment	Sewage Treatment Plants
	Wastewater Collection	Lift & Diversion Stations
		Pipes (Collector, Interceptor and Force Main)
		Manholes (Collector, Interceptor and Force Main)
		CSOs
		Chambers & Ancillary Structures
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
	Buildings	Other
LAND DRAINAGE UTILITY	Land Drainage	Pipes (Collector and Trunk Sewer)
		Manholes (Collector)
		Storage Tanks
		Outfalls
		Stormwater Retention Basins (SRBs)
		Underpass Pumping Stations
		Drains & Major Ditches
	Flood Control	Flood Pumping Stations
		Dikes
SOLID WASTE UTILITY	Collection and Disposal	Brady Road Resource Management Facility (BRRMF) & Ancillary Structures
		Garbage and Recycling Carts
		Closed Landfills (narrative only)
	Recycling and Waste Diversion	4R Winnipeg Depot
		Recycling Depots

INFRASTRUCTURE ELEMENT LEVEL 1	ASSET TYPE LEVEL 2	ASSET SUB-TYPE LEVEL 3
SOLID WASTE UTILITY (cont'd)	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
MUNICIPAL PROPERTIES	Municipal Office Buildings & Facilities	Department Offices and Civic Use, Cemeteries, Historic Buildings
		Concourse
	Leased Out Buildings	--
	SOA Buildings, Facilities and Fleet	Fleet Buildings
		Fleet Storage Containers
		Fleet Management Agency Fuel Sites
		Fleet Management Agency Fleet
		Golf Buildings
		Golf Fleet
		Parking Authority Parking Structures
		Parking Authority Surface Parking Lots
		Parking Authority On-Street Parking Meters
		Parking Authority Fleet
		Animal Services Building
		Animal Services Fleet
	Other Non-Building Assets	Entrance Gates
		Overhead Walkways
		Surface Lots
		Planning, Property & Development Fleet
COMMUNITY SERVICES	Community Centres	Outdoor Rinks
	Recreation & Leisure Centres	--
	Arenas	--
	Indoor Pools	--
	Outdoor Pools	--
	Wading Pools	--
	Spray Pads	--
	Library Buildings	--
	Assiniboine Park Conservancy Buildings	--

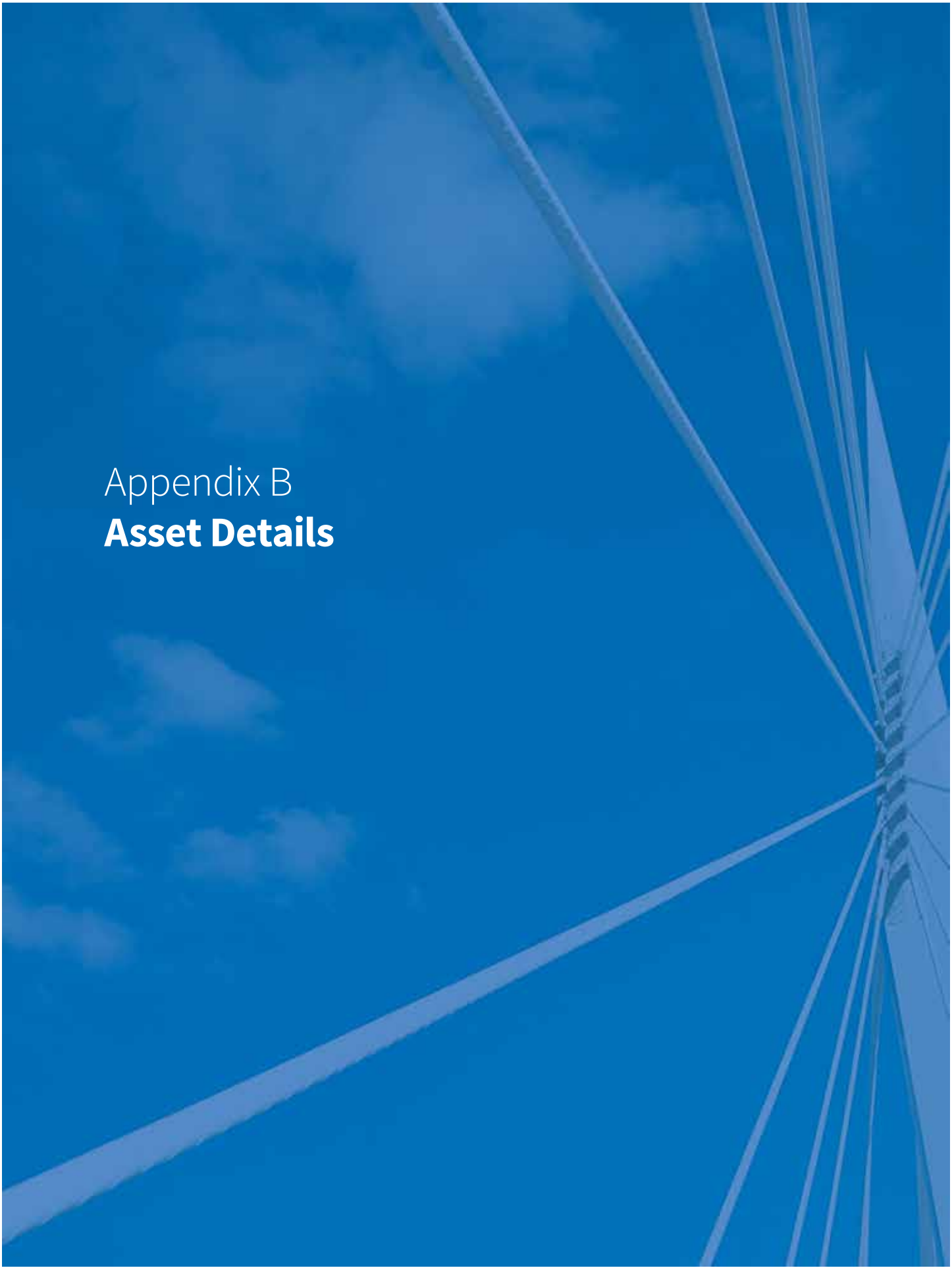
INFRASTRUCTURE ELEMENT LEVEL 1	ASSET TYPE LEVEL 2	ASSET SUB-TYPE LEVEL 3
COMMUNITY SERVICES (cont'd)	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
TRANSIT	Fleet (Rolling Stock Assets)	Bus - Diesel
		Bus-Articulating
		Tow truck
		Forklift
		Bobcat
		Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
	Fixed Assets	Passenger Stations/Terminals
		Transit shelters/Stops
		Comfort Stations
		Exclusive Rights-of-Ways
	Passenger Focused Facilities	Bike Racks and Shelters
		Drop Off Facilities "kiss and rides"
	Transit Exclusive Bridges and Tunnels	Bridges
		Tunnels
	Facilities	Storage
		Maintenance
		Office
		Equipment (Hoists)
POLICE SERVICES	Police Stations & Headquarters	--
	Non-Building Assets	--
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
		Helicopter
		Helicopter-FLIR

INFRASTRUCTURE ELEMENT LEVEL 1	ASSET TYPE LEVEL 2	ASSET SUB-TYPE LEVEL 3
POLICE SERVICES (cont'd)	Specialized Equipment	--
FIRE AND PARAMEDIC SERVICES	Stations & Training Academy	--
	Fleet	Light Duty
		Super & Heavy Duty
		Specialty Equipment
		Construction Equipment
	Communications & Technology	Radio
		Audio Visual
	Specialized Equipment	Vehicle Upkeep
		Medical Equipment
		Rescue Equipment
		Turnout Gear
		SCBA
		Medical Simulators
		Fire & Rescue Simulators
	Other	Stores
		Sewing Equipment
		Furniture
		Appliances
		Fitness Equipment
		Station Tools
INFORMATION TECHNOLOGY	Hardware	Data Centre
		Infrastructure
		Network
		Communications Systems
		Print
		Information Security
		Desktop
	Software	Business

INFRASTRUCTURE ELEMENT LEVEL 1	ASSET TYPE LEVEL 2	ASSET SUB-TYPE LEVEL 3

Notes:

- Fleet: Condition, age and replacement values are captured for all Fleet assets denoted in the table above. However, the plan only captures the historical and estimated future capital funding, as well as infrastructure deficit for specialized Police Services and Transit fleet only. The Transit fleet captures the full complement of the bus fleet, in addition to other specialized fleet equipment.
- Buildings: All office building and facilities are captured in the Municipal Properties infrastructure element, and non-office buildings are captured in other Infrastructure elements data sets.
- Information Technology: All information related to hardware and software utilized by various service areas, is captured with the exception of “hybrid IT assets” which are those with significant technology enablement features for other infrastructure elements such as Water Treatment Plants and Buses. Winnipeg Police Service hardware and software are also not included in the Information Technology infrastructure element.



Appendix B
Asset Details

Asset Details

Detailed Inventory Summary – Roads

Detailed Inventory Summary - Roads							
Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Fleet							
Light Duty	Fair	$4,837,147	120	ea.	7.00	3.07	3.93
Super & Heavy Duty	Fair	$11,658,039	139	ea.	8.97	4.41	4.56
Specialty Equipment	Fair	$18,375,617	268	ea.	10.22	4.13	6.10
Construction Equipment	Fair	$21,338,575	270	ea.	8.83	3.70	5.12
Summary	***Fair***	***$56,209,378***				***3.9***	***5.2***
Buildings							
Buildings	Fair	$150,424,224	30	ea.	50.00	25.81	24.19
Summary	***Fair***	***$150,424,224***				***25.8***	***24.2***
Storage Containers							
Storage Containers	-	$37,565	10	ea.	50.00	17.00	33.00
Summary	***-***	***$37,565***				***17.0***	***33.0***
Regional Streets							
Regional Streets	Good	$4,246,848,000	1,939	Km (lane)	70.00	54.42	15.58
Summary	***Good***	***$4,246,848,000***				***54.4***	***15.6***
Local Streets							
Industrial / Commercial Streets	Fair	$621,062,232	407	Km (lane)	75.00	48.93	26.07
Collector Streets	Good	$1,884,942,996	1,363	Km (lane)	75.00	42.74	32.26
Residential Streets	Fair	$4,641,596,196	3,626	Km (lane)	75.00	45.16	29.84
Lanes/Alleys	Fair	$1,594,097,957	928	Km (linear)	-	-	-
Summary	***Fair***	***$8,741,699,381***				***44.8***	***30.2***
Active Transportation							
Bike Paths	Good	$46,824,750	208	Km (linear)	-	-	-
Sidewalks	-	$668,530,800	2,786	km (linear)	-	-	-
Summary	***Good***	***$715,355,550***				***-***	***-***
Signals							
Pole and Cabinet Bases	Fair	$17,493,335	6,858	ea.	-	-	-
Cabinets	Good	$6,225,811	33,207	ea.	-	-	-
Controllers	Good	$876,313	650	ea.	-	-	-
Pedestrian Corridor Boxes	Good	$1,167,660	468	ea.	-	-	-
Hardware	Good	$827,264	9,154	ea.	-	-	-
Pedestrian, Bike, and Vehicle Display Heads	Good	$4,014,912	10,147	ea.	-	-	-
Poles and Arms	Good	$5,524,826	10,280	ea.	-	-	-
Individual Pedestrian, Bike, Vehicle Displays	Good	$1,435,503	25,013	ea.	-	-	-
Summary	***Good***	***$37,565,624***				***-***	***-***
TOTAL	**Fair**	**$13,948,139,723**				***47.8***	***24.8***

Detailed Inventory Summary – Bridges

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Detailed Inventory Summary - Bridges							
Fleet							
Light Duty	Good	$166,795	4	ea.	7.00	2.60	4.40
Super & Heavy Duty	Poor	$323,093	3	ea.	9.00	6.79	2.21
Specialty Equipment	Very Poor	$912,859	8	ea.	12.81	11.41	1.40
Construction Equipment	-	$0	0	ea.	-	-	-
Summary	***Poor***	***$1,402,747***				***9.3***	***1.9***
Vehicular Bridges							
Vehicular Bridges	Good	$1,464,115,488	65	ea.	75.00	40.21	34.79
Summary	***Good***	***$1,464,115,488***				***40.2***	***34.8***
Pedestrian Bridges							
Pedestrian Bridges	Good	$119,660,983	48	ea.	75.00	32.17	42.83
Summary	***Good***	***$119,660,983***				***32.2***	***42.8***
Light Rail Bridges							
Light Rail Bridges	Fair	$99,125	1	ea.	75.00	49.00	26.00
Summary	***Fair***	***$99,125***				***49.0***	***26.0***
Utility Bridges							
Utility Bridges	Good	$5,502,725	1	ea.	75.00	59.00	16.00
Summary	***Good***	***$5,502,725***				***59.0***	***16.0***
Underpasses							
Rail	Good	$134,656,358	24	ea.	75.00	18.57	56.43
Non-Rail	Fair	$16,560,000	6	ea.	75.00	36.85	38.15
Summary	***Good***	***$151,216,358***				***20.6***	***54.4***
TOTAL	**Good**	**$1,741,997,426**				***38.0***	***37.0***

Detailed Inventory Summary – Parks and Open Space

Detailed Inventory Summary - Parks & Open Space							
Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Fleet							
Light Duty	Fair	$6,194,751	132	ea.	7.00	2.47	4.53
Super & Heavy Duty	Good	$5,100,667	65	ea.	9.09	2.86	6.24
Specialty Equipment	Good	$15,568,826	433	ea.	9.97	3.50	6.47
Construction Equipment	Fair	$8,889,951	382	ea.	10.44	4.36	6.07
Summary	***Fair***	***$35,754,195***				***3.4***	***6.0***
Park Buildings							
Park Buildings	Poor	$87,983,855	257	ea.	50.00	46.82	3.18
Summary	***Poor***	***$87,983,855***				***46.8***	***3.2***
Park Roads							
Park Roads	Fair	$60,220,900	59	Km (lane)	-	-	-
Summary	***Fair***	***$60,220,900***				***-***	***-***
Trees							
Trees	-	$225,890,180	305257	ea.	-	-	-
Summary	***-***	***$225,890,180***				***-***	***-***
Active Transportation							
Pathways & Trails	Good	$57,593,897	290712	m	-	-	-
Summary	***Good***	***$57,593,897***				***-***	***-***
Park Amenities							
Aesthetics	Good	$2,524,245	1508	ea.	-	-	-
Atheltic Fields	Fair	$87,432,361	3290	ea.	-	-	-
Floral Displays	Good	$8,889,458	2523	ea.	-	-	-
Furniture & Fixtures	Good	$70,301,456	25315	ea.	-	-	-
Play Equipment	Good	$56,583,829	4528	ea.	-	-	-
Skateparks	Fair	$2,867,627	14	ea.	-	-	-
Sports Courts	Good	$12,414,513	910	ea.	-	-	-
Track & Fitness Equipment	Good	$669,695	83	ea.	-	-	-
Winter Amenitites	Good	$13,000,132	1031	ea.	-	-	-
Summary	***Good***	***$254,683,317***				***-***	***-***
TOTAL	**Fair**	**$722,126,343**				***34.3***	***4.0***

*The inventory of primary athletic fields is 661. The inventory count of 3,290 represents all amenities such as storage sheds at the fields.

Detailed Inventory Summary – Water Utility

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Water Supply & Treatment: Linear							
Aqueduct	Good	$811,740,000	136,520	m	100.0	97.0	3.0
Branch Aqueducts	Poor	$621,679,999	45,234	m	100.0	74.8	25.2
Feeder Mains	Good	$250,556,890	151,869	m	100.0	45.0	55.0
Water Supply & Treatment: Non-Linear							
SLAIF, Railway, Ancillary Structures	Good	$16,480,000	15	ea.	75.0	36.8	38.2
Water Treatment Plant	Very Good	$338,214,330	1	ea.	80.0	7.0	73.0
In-town Pumping Stations	Good	$105,798,541	11	ea.	75.0	43.7	31.3
Reservoirs, Tanks, Surge Towers	Good	$206,315,878	17	ea.	75.0	36.8	38.2
Summary	***Good***	***$2,350,785,638***				***64.9***	***28.6***
Water Distribution: Linear							
Distribution Mains	Good	$1,425,543,840	2,637,121	m	75.0	39.6	35.4
Water Services	Good	$544,438,808	1,944,424	m	75.0	39.6	35.4
Water Distribution: Non-Linear							
Hydrants	Good	$218,906,850	22,045	ea.	75.0	31.8	43.2
Water Meters	Fair	$29,119,890	206,066	ea.	15.0	17.0	0.0
Summary	***Good***	***$2,218,009,388***				***38.5***	***35.6***
Buildings							
Other	Good	$809,238	4	ea.	75.0	59.2	15.8
Summary	***Good***	***$809,238***				***59.2***	***15.8***
Fleet							
Light Duty	Good	$2,950,957	49	ea.	7.2	1.3	5.9
Super & Heavy Duty	Fair	$2,453,414	30	ea.	7.2	4.0	3.2
Specialty Equipment	Poor	$13,008,405	88	ea.	10.9	8.0	2.9
Construction Equipment	Good	$2,040,120	21	ea.	12.3	3.2	9.1
Summary	***Fair***	***$20,452,896***				***6.1***	***4.0***
TOTAL	**Good**	**$4,590,057,160**				***52.0***	***31.8***

Detailed Inventory Summary – Sewer Utility

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Wastewater Treatment							
Sewage Treatment Plants	-	$2,197,498,847	3	ea.	100.0	-	-
Summary	***-***	***$2,197,498,847***				***-***	***-***
Wastewater Collection: Linear							
Pipes (Collector, Interceptor and Force Main)	Good	$3,640,941,417	2,681,532	m	75.0	46.0	29.0
CSOs	Fair	$194,285,490	11,614	m	75.0	46.3	28.7
Wastewater Collection: Non-Linear							
Manholes (Collector, Interceptor and Force Main)	Good	$353,540,640	31,908	ea.	75.0	45.7	29.3
Lift & Diversion Stations	Poor	$118,195,200	89	ea.	75.0	49.1	25.9
Chambers & Ancillary Structures	Good	$154,168,260	198	ea.	75.0	30.6	44.4
Summary	***Good***	***$4,461,131,007***				***45.6***	***29.4***
Buildings							
Other	Good	$24,918,667	15	ea.	75.0	44.7	30.3
Summary	***Good***	***$24,918,667***				***44.7***	***30.3***
Fleet							
Light Duty	Fair	$2,846,558	65	ea.	7.6	3.1	4.6
Super & Heavy Duty	Good	$2,153,173	26	ea.	7.8	1.8	6.0
Specialty Equipment	Good	$4,474,786	68	ea.	11.6	3.6	8.0
Construction Equipment	Fair	$664,502	14	ea.	7.1	3.6	3.5
Summary	***Good***	***$10,139,019***				***3.1***	***6.3***
TOTAL	**Good**	**$6,693,687,540**				***45.5***	***29.3***

Detailed Inventory Summary – Land Drainage Utility

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Land Drainage: Linear							
Pipes (Collector and Trunk Sewer)	Good	$2,772,563,588	1,403,352	m	75.0	33.3	41.7
Drains & Major Ditches	Good	$14,878,500	38,150	m	100.0	62.7	37.3
Outfalls	Good	$147,693,820	37,111	m	75.0	29.7	45.3
Land Drainage: Non-Linear							
Manholes (Collector)	Good	$199,262,720	17,984	ea.	75.0	32.6	42.4
Storage Tanks	Very Good	$1,606,339	1	ea.	100.0	5.0	95.0
SRBs	Good	$72,373,197	87	ea.	100.0	30.7	69.3
Underpass Pumping Stations	Fair	$35,241,313	10	ea.	75.0	32.7	42.3
Summary	***Good***	***$3,243,619,477***				***33.2***	***42.5***
Flood Control: Linear							
Dikes	Fair	$45,160,000	118,181	m	100.0	64.4	35.6
Flood Control: Non-Linear							
Flood Pumping Stations	Fair	$79,777,594	34	ea.	75.0	47.9	27.1
Summary	***Fair***	***$124,937,594***				***54.1***	***30.3***
TOTAL	**Good**	**$3,368,557,071**				***34.0***	***42.1***

Detailed Inventory Summary – Solid Waste Utility

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Collection and Disposal							
BRRMF & Ancillary Structures	Good	$26,573,711	1	ea.	-	-	-
Garbage and Recycling Carts	Good	$19,762,714	400,638	ea.	15.0	4.0	11.0
Summary	***Good***	***$46,336,425***				***4.0***	***11.0***
Recycling and Waste Diversion							
4R Winnipeg Depots	Very Good	$4,229,360	1	ea.	50.0	1.0	49.0
Recycling Depots	Very Good	$229,946	5	ea.	50.0	17.7	32.3
Summary	***Very Good***	***$4,459,306***				***1.9***	***48.1***
Fleet							
Light Duty	Good	$683,683	16	ea.	7.4	1.9	5.5
Super & Heavy Duty	Good	$554,040	5	ea.	6.6	2.4	4.2
Specialty Equipment	Very Good	$1,729,685	11	ea.	9.0	1.8	7.2
Construction Equipment	Fair	$1,549,822	15	ea.	4.6	2.5	2.1
Summary	***Good***	***$4,517,230***				***2.1***	***4.8***
TOTAL	**Good**	**$55,312,961**					

Detailed Inventory Summary – Municipal Properties

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Detailed Inventory Summary - Municipal Properties							
Storage Containers							
Storage Containers	-	$49,467	14	ea.	50.00	13.84	36.16
Summary	***-***	***$49,467***				***13.8***	***36.2***
Leased Out Buildings							
Leased Out Buildings	Very Poor	$201,665,262	129	ea.	50.00	53.79	-3.79
Summary	***Very Poor***	***$201,665,262***				***53.8***	***-3.8***
Other Non-Building Assets							
Planning, Property & Development Fleet	Fair	$5,544,591	119	ea.	8.51	4.43	4.08
Entrance Gates	Poor	$8,760,668	71	ea.	50.00	38.10	11.90
Surface Lots	Fair	$53,911,909	282	ea.	50.00	32.96	17.04
Overhead Walkways	-	$27,090,991	12	ea.	50.00	36.42	13.58
Summary	***Fair***	***$95,308,159***				***32.8***	***14.8***
Municipal Office Buildings & Facilities							
Department Offices and Civic Use, Cemeteries, and Historic Buildings	Poor	$185,725,589	41	ea.	50.00	77.55	-27.55
Concourse	Poor	$13,243,913	1	ea.	50.00	41.00	9.00
Summary	***Poor***	***$198,969,502***				***75.1***	***-25.1***
SOA Buildings, Facilities and Fleet							
Fleet Buildings	-	$18,434,719	5	ea.	50.00	51.00	-1.00
Fleet Storage Containers	-	$13,975	5	ea.	50.00	17.00	33.00
Fleet Fuel Sites	Fair	$4,074,004	7	ea.	30.00	8.00	22.00
Fleet Management Agency Fleet	Good	$2,790,071	56	ea.	9.39	2.61	6.78
Golf Buildings	Very Poor	$11,275,959	32	ea.	50.00	56.51	-6.51
Golf Fleet	Fair	$962,885	28	ea.	8.19	3.34	4.85
Parking Authority Parking Structures	Poor	$38,000,000	1	ea.	50.00	44.00	6.00
Parking Authority Surface Parking lots	Poor	$624,909	3	ea.	50.00	47.00	3.00
Parking Authority On-Street Parking Meters	Fair	$9,000,000	600	ea.	10.00	12.00	-2.00
Parking Authority Fleet	Good	$564,538	14	ea.	3.42	0.42	3.00
Animal Services Building	Poor	$5,012,972	1	ea.	50.00	21.00	29.00
Animal Services Fleet	Poor	$209,952	6	ea.	7.00	5.00	2.00
Summary	***Poor***	***$90,963,984***				***38.9***	***4.2***
TOTAL	**Poor**	**$586,956,374**				**-**	**-**

Detailed Inventory Summary – Community Services

Detailed Inventory Summary - Community Services							
Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Fleet							
Light Duty	Good	$110,808	3	ea.	7.0	3.0	4.0
Summary	***Good***	***$110,808***				***3.0***	***4.0***
Arenas							
Arenas	Poor	$185,517,654	18	ea.	50.0	48.3	1.7
Summary	***Poor***	***$185,517,654***				***48.3***	***1.7***
Community Centres							
Community Centres	Fair	$575,957,125	202	ea.	50.0	36.6	13.4
Summary	***Fair***	***$575,957,125***				***36.6***	***13.4***
Recreation and Leisure Centres							
Recreation and Leisure Centres	Poor	$23,053,299	7	ea.	50.0	60.4	-10.4
Summary	***Poor***	***$23,053,299***				***60.4***	***-10.4***
Indoor Pools							
Indoor Pools	Poor	$338,944,917	15	ea.	50.0	30.7	19.3
Summary	***Poor***	***$338,944,917***				***30.7***	***19.3***
Outdoor Pools							
Outdoor Pools	Fair	$24,638,122	13	ea.	50.0	48.2	1.8
Summary	***Fair***	***$24,638,122***				***48.2***	***1.8***
Wading Pools							
Wading Pools	Very Poor	$53,441,703	160	ea.	50.0	51.4	-1.4
Summary	***Very Poor***	***$53,441,703***				***51.4***	***-1.4***
Spray Pads							
Spray Pads	-	$9,048,760	19	ea.	50.0	5.4	44.6
Summary	***-***	***$9,048,760***				***5.4***	***44.6***
Library Buildings							
Library Buildings	Fair	$177,646,574	14	ea.	50.0	39.0	11.0
Summary	***Fair***	***$177,646,574***				***39.0***	***11.0***
Assiniboine Park Conservancy Buildings							
Assiniboine Park Conservancy Buildings	Poor	$56,568,889	131	ea.	50.0	40.3	9.7
Summary	***Poor***	***$56,568,889***				***40.3***	***9.7***
TOTAL	**Fair**	**$1,444,927,851**				***38.1***	***11.9***

*The inventory counts for asset sub-types includes the primary inventory category, as well as related amenities such as storage containers and small support buildings. Chapter 3 of this AMP provides the breakdown of all inventory counts.

Detailed Inventory Summary – Transit

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Detailed Inventory Summary - Transit							
Facilities							
Storage	Fair	$44,969,000	21,646	m2	75.0	34.3	40.7
Storage	Fair	$53,075,000	25,548	m2	75.0	49.0	26.0
Maintenance	Fair	$99,400,000	13,006	m2	90.0	49.0	41.0
Office	Good	$29,250,000	6,039	m2	90.0	49.0	41.0
Equipment (Hoists)	Very Poor	$15,624,000	42	ea.	20.0	47.0	-27.0
Summary	***Fair***	***$242,318,000***				***46.1***	***33.3***
Transit Exclusive Bridges and Tunnels							
Bridges	Very Good	$29,261,384	1	ea.	80.0	4.0	76.0
Tunnels	Very Good	$73,737,049	1	ea.	80.0	4.0	76.0
Summary	***Very Good***	***$102,998,433***				***4.0***	***76.0***
Fixed Assets							
Passenger Stations/Terminals	Very Good	$27,000,000	6	ea.	30.0	4.0	26.0
Transit shelters/Stops	Good	$20,808,221	6,037	ea.	40.0	10.7	29.3
Comfort Stations	Very Poor	$700,000	20	ea.	20.0	50.0	-30.0
Exclusive Right-of-Ways	Very Good	$38,535,643	7	Km (lane)	60.0	4.0	56.0
Summary	***Very Good***	***$87,043,864***				***6.0***	***39.6***
Passenger Focused Facilities							
Bike Racks and Shelters	Very Good	$28,500	17	ea.	30.0	4.0	26.0
Drop Off Facilities "kiss and rides"	Very Good	$704,996	2,821	m2	60.0	4.0	56.0
Summary	***Very Good***	***$733,496***				***4.0***	***54.8***
Fleet (Rolling Stock Assets)							
Construction Equipment	Very Poor	$348,111	4	ea.	10.0	17.1	-7.1
Light Duty	Poor	$1,586,564	41	ea.	5.0	6.4	-1.4
Specialty Equipment	Very Poor	$903,819	16	ea.	15.0	18.5	-3.5
Super & Heavy Duty	Poor	$599,477	11	ea.	10.0	12.6	-2.6
Bus - Diesel	Fair	$309,485,194	596	ea.	18.0	10.1	7.9
Bus - Articulating	Very Good	$13,775,000	19	ea.	18.0	1.8	16.2
Towtruck	Poor	$1,016,056	3	ea.	10.0	9.3	0.7
Forklift	Fair	$419,904	8	ea.	20.0	15.9	4.1
Bobcat	Very Good	$64,152	1	ea.	10.0	1.0	9.0
Summary	***Fair***	***$328,198,278***				***9.7***	***8.1***
TOTAL	**Fair**	**$761,292,070**				***20.1***	***29.0***

Detailed Inventory Summary – Police Services

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Detailed Inventory Summary - Police Services							
Fleet							
Light Duty	Good	$11,834,986	284	ea.	4.7	0.8	3.9
Super & Heavy Duty	Very Good	$183,600	2	ea.	15.0	0.0	15.0
Speciality Equipment	Fair	$1,285,416	25	ea.	11.6	7.6	4.0
Helicopter	Good	$3,070,000	1	ea.	30.0	8.0	22.0
Helicopter - FLIR	Good	$520,000	1	ea.	8.0	1.0	7.0
Summary	***Good***	***$16,894,002***				***2.6***	***7.4***
Non-Building Assets							
Non-Building Assets	Good	$500,000	1	ea.	-	-	-
Summary	***Good***	***$500,000***				***-***	***-***
Storage Containers							
Storage Containers	-	$5,795	1	ea.	50.0	17.0	33.0
Summary	***-***	***$5,795***				***17.0***	***33.0***
Police Stations & Headquarters							
Police Stations & Headquarters	Good	$242,802,013	17	ea.	75.0	23.4	51.6
Summary	***Good***	***$242,802,013***				***23.4***	***51.6***
Specialized Equipment							
Specialized Equipment	Good	$15,730,420				3.2	6.5
Summary	***Good***	***$15,730,420***				***3.2***	***6.5***
TOTAL	**Good**	**$275,932,230**				***21.0***	***46.3***

Detailed Inventory Summary – Fire and Paramedic Services

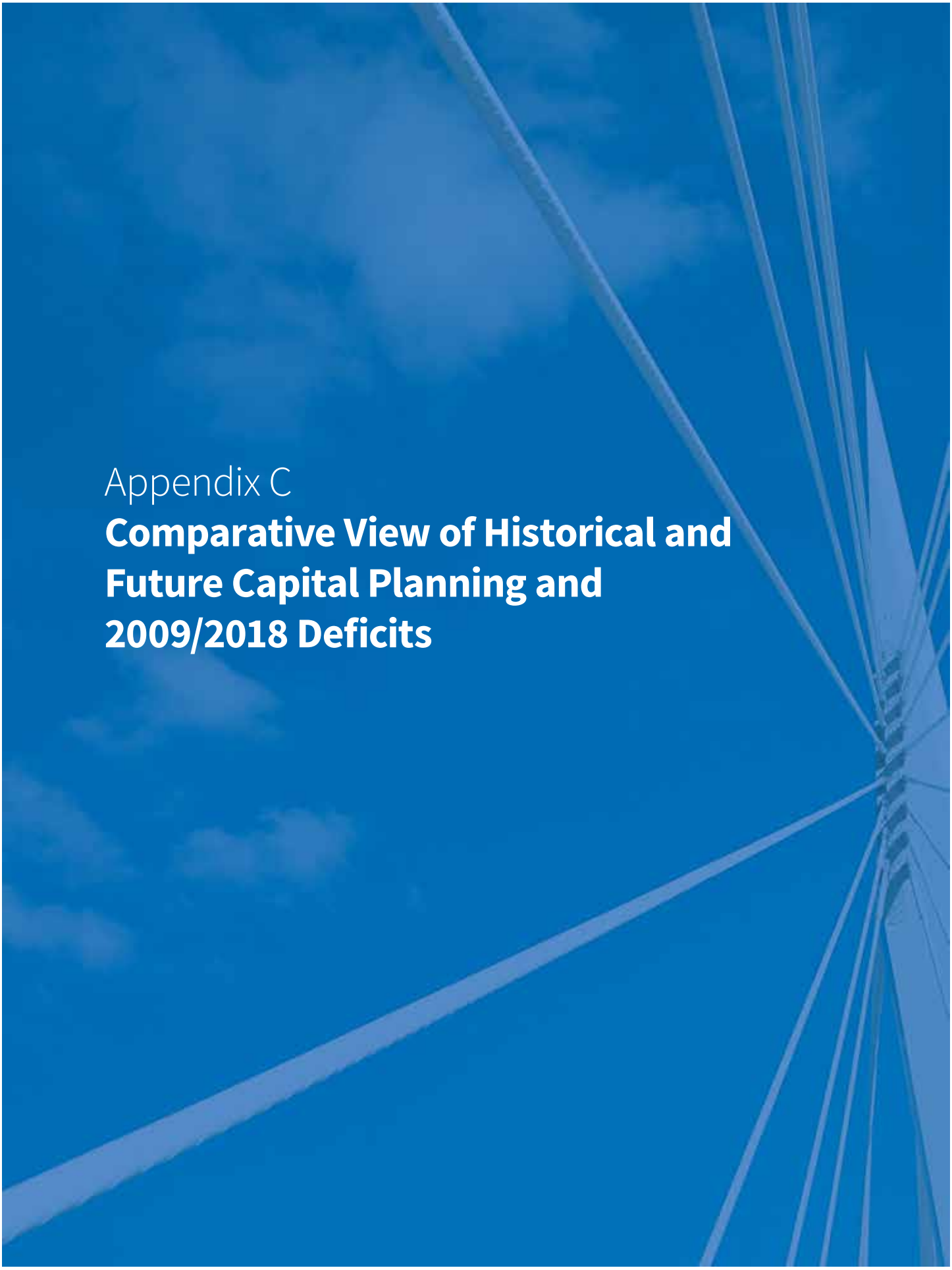
Detailed Inventory Summary - Fire & Paramedic Services							
Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Fleet							
Light Duty	Good	$3,340,570	72	ea.	7.00	1.79	5.21
Super & Heavy Duty	Fair	$102,643	2	ea.	12.07	3.91	8.16
Specialty Equipment	Fair	$34,600,738	199	ea.	12.59	6.36	6.23
Construction Equipment	Poor	$225,698	2	ea.	14.74	9.78	4.96
Summary	***Fair***	***$38,269,649***				***6.0***	***6.1***
Storage Containers							
Storage Containers	-	$4,500	1	ea.	50.00	47.00	3.00
Summary	***-***	***$4,500***				***47.0***	***3.0***
Stations & Academy							
Stations & Academy	Fair	$122,142,202	63	ea.	75.00	39.56	35.44
Summary	***Fair***	***$122,142,202***				***39.6***	***35.4***
Other							
Stores	Very Good	$1,933,342	3	ea.	5.00	2.00	3.00
Sewing Equipment	Very Poor	$49,700	1	ea.	20.00	40.00	-20.00
Furniture	-	$2,000,000	1	ea.	15.00	10.00	5.00
Appliances	-	$600,000	30	ea.	15.00	10.00	5.00
Fitness Equipment	-	$300,000	30	ea.	15.00	10.00	5.00
Station Tools	Fair	$690,000	84	ea.	15.00	10.00	5.00
Summary	***Good***	***$5,573,042***				***7.2***	***4.0***
Communication & Technology							
Radio	Very Good	$2,343,024	749	ea.	9.52	2.35	6.92
Audio Visual	Poor	$358,340	37	ea.	5.00	3.85	1.15
Summary	***Very Good***	***$2,701,364***				***2.5***	***6.2***
Specialized Equipment							
Vehicle Upkeep	Good	$879,700	19	ea.	9.73	6.93	2.80
Medical Equipment	Good	$4,293,920	257	ea.	10.00	10.00	0.00
Rescue Equipment	Good	$876,400	62	ea.	9.95	4.70	5.25
Turnout Gear	Fair	$5,600,000	1600	ea.	10.00	7.00	3.00
SCBA	Fair	$4,653,000	2929	ea.	10.00	6.65	3.35
Medical Simulators	Fair	$653,683	1	ea.	10.00	5.00	5.00
Fire & Rescue Simulators	Very Poor	$3,385,000	4	ea.	10.00	10.00	0.00
Summary	***Fair***	***$20,341,703***				***7.4***	***2.6***
TOTAL	**Fair**	**$189,032,460**				***28.3***	***25.1***

*The inventory counts for asset sub-types includes the primary inventory category, as well as related amenities such as storage containers and small support buildings. Chapter 3 of this AMP provides the breakdown of all inventory counts.

Detailed Inventory Summary – Information Technology

Detailed Inventory Summary - Information Technology

Asset Sub-Type	Condition	Total Replacement Value	Quantity	Unit of Measure	Expected Life	Age (yrs)	Remaining Life
Software							
Business	Fair	$179,758,664	506	ea.	12.5	8.1	4.4
Summary	***Fair***	***$179,758,664***				***8.1***	***4.4***
Hardware							
Data Centre	Good	$685,000	20	ea.	15.0	7.0	8.0
Infrastructure	Good	$4,887,355	88	ea.	5.0	3.0	2.0
Network	Good	$1,800,000	1,060	ea.	10.0	6.0	4.0
Communication Systems	Good	$7,495,588	3,327	ea.	20.8	9.9	10.9
Print	Good	$745,000	17	ea.	10.0	6.0	4.0
Information Security	Fair	$688,124	62	ea.	5.0	4.0	1.0
Desktop	Good	$3,284,285	7,085	ea.	7.0	4.0	3.0
Summary	***Good***	***$19,585,352***				***6.4***	***6.0***
TOTAL	**Good**	**$199,344,016**				***8.0***	***4.5***



Appendix C

Comparative View of Historical and Future Capital Planning and 2009/2018 Deficits

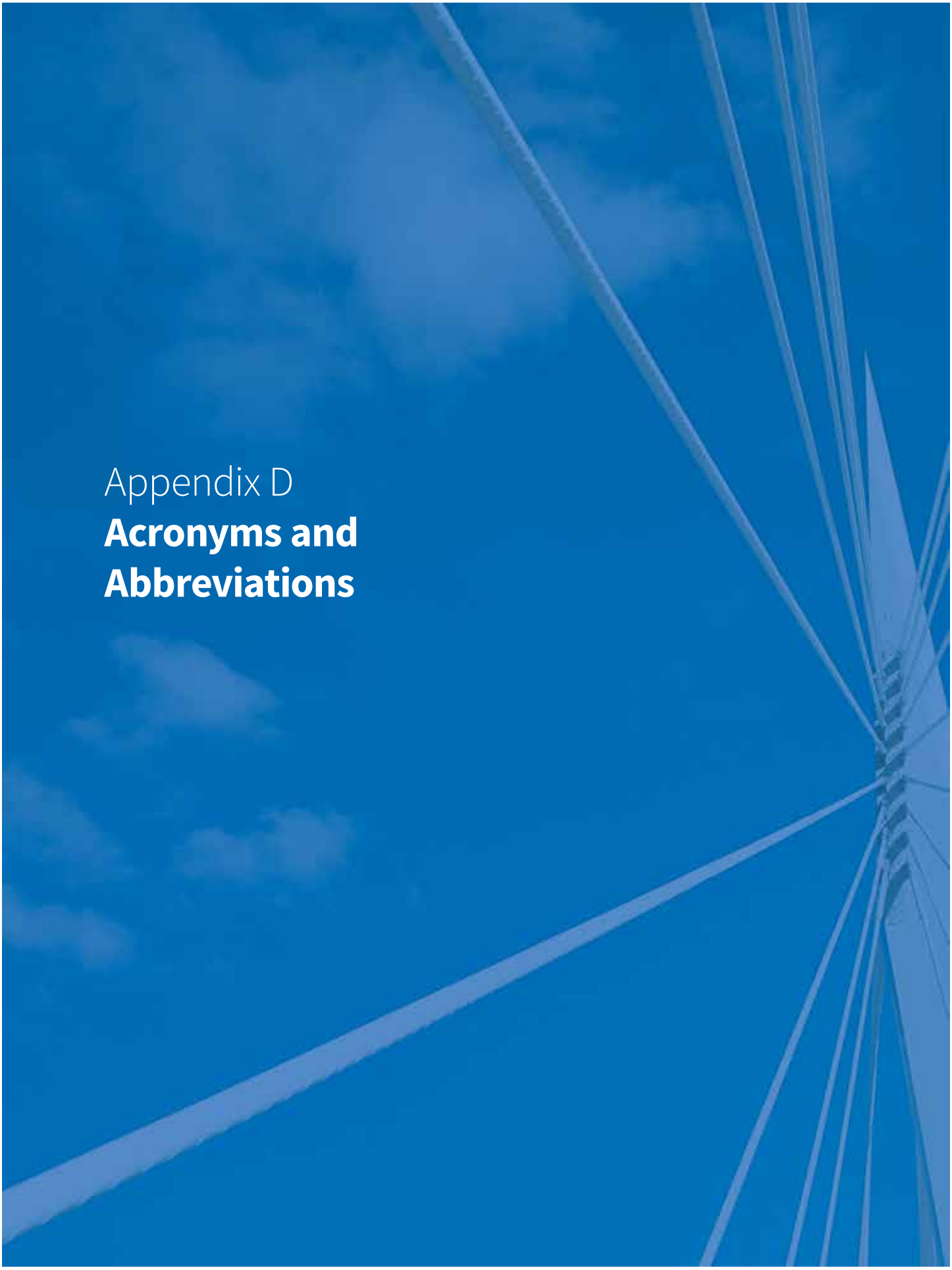
APPENDIX C

Comparative View of Historical and Estimated Future Capital Planning and 2009/2018 Deficits

Existing Infrastructure								
Infrastructure Element	**Adopted Capital 2009-2017** (nine years)	**Capital Plan 2018-2027** (ten years)	**Adopted Capital 2009-2017 %**	**Capital Plan 2018-2027 %**	**Infrastructure Deficit 2009**	**Infrastructure Deficit 2018**	**Deficit 2009 %**	**Deficit 2018 %**
Roads	$ 748	$ 1,631	31%	47%	$ 1,681	$ 1,283	47%	32%
Bridges	$ 157	$ 98	7%	3%	$ 200	$ 843	6%	21%
Parks & Open Spaces	$ 84	$ 148	4%	4%	$ 284	$ 190	8%	5%
Water Utility	$ 305	$ 278	13%	8%	$ 158	$ 121	4%	3%
Sewer Utility	$ 334	$ 465	14%	13%	$ 170	$ -	5%	0%
Land Drainage Utility	$ 56	$ 45	2%	1%	$ 368	$ -	10%	0%
Solid Waste Utility	$ 10	$ 7	0.4%	0.2%	$ 10	$ -	0.3%	0%
Police Services	$ 72	$ 11	3%	0.3%	$ 120	$ 46	3%	1%
Fire and Paramedic Services	$ 23	$ 91	1%	3%	$ 23	$ 48	1%	1%
Community Services	$ 212	$ 173	9%	5%	$ 296	$ 778	8%	20%
Municipal Properties	$ 65	$ 59	3%	2%	$ 172	$ 538	5%	14%
Transit	$ 236	$ 394	10%	11%	$ 75	$ 94	2%	2%
Information Technology	$ 103	$ 98	4%	3%	$ -	$ 35	0%	1%
Total	**$ 2,404**	**$ 3,499**			**$ 3,557**	**$ 3,975**		

New Strategic Infrastructure								
Infrastructure Element	**Adopted Capital 2009-2017** (nine years)	**Capital Plan 2018-2027** (ten years)	**Adopted Capital 2009-2017 %**	**Capital Plan 2018-2027 %**	**Infrastructure Deficit 2009**	**Infrastructure Deficit 2018**	**Deficit 2009 %**	**Deficit 2018 %**
Roads	$ 267	$ 136	9%	25%	$ 1,617	$ 624	47%	21%
Bridges	$ 249	$ -	9%	0%	$ 200	$ 287	6%	10%
Parks & Open Spaces	$ 18	$ 2	1%	0.4%	$ 167	$ 10	5%	0.3%
Water Utility	$ 25	$ 8	1%	2%	$ 15	$ 25	0.4%	1%
Sewer Utility	$ 1,222	$ 291	42%	54%	$ 124	$ 634	4%	22%
Land Drainage Utility	$ 22	$ 13	1%	2%	$ -	$ -	0%	0%
Solid Waste Utility	$ 66	$ 38	2%	7%	$ -	$ 24	0%	1%
Police Services	$ 220	$ 1	8%	0.2%	$ 15	$ 0	0.4%	0%
Fire and Paramedic Services	$ 20	$ -	1%	0%	$ 3	$ 24	0.1%	1%
Community Services	$ 53	$ 26	2%	5%	$ 150	$ 65	4%	2%
Municipal Properties	$ 57	$ -	1.9%	0%	$ 15	$ -	0.4%	0%
Transit	$ 669	$ 6	23%	1%	$ 1,147	$ 1,189	33%	41%
Information Technology	$ 29	$ 19	1%	3%	$ -	$ 28	0%	1%
New	**$ 2,918**	**$ 539**			**$ 3,453**	**$ 2,909**		

Total Infrastructure								
Infrastructure Element	**Adopted Capital 2009-2017** (nine years)	**Capital Plan 2018-2027** (ten years)	**Adopted Capital 2009-2017 %**	**Capital Plan 2018-2027 %**	**Infrastructure Deficit 2009**	**Infrastructure Deficit 2018**	**Deficit 2009 %**	**Deficit 2018 %**
Roads	$ 1,014	$ 1,767	19%	44%	$ 3,298	$ 1,907	47%	28%
Bridges	$ 406	$ 98	8%	2%	$ 400	$ 1,130	6%	16%
Parks & Open Spaces	$ 103	$ 150	2%	4%	$ 451	$ 199	6%	3%
Water Utility	$ 330	$ 286	6%	7%	$ 173	$ 146	2%	2%
Sewer Utility	$ 1,556	$ 756	29%	19%	$ 294	$ 634	4%	9%
Land Drainage Utility	$ 78	$ 59	1%	1%	$ 368	$ -	5%	0%
Solid Waste Utility	$ 76	$ 44	1%	1%	$ 10	$ 24	0.1%	0.4%
Police Services	$ 292	$ 12	5%	0.3%	$ 135	$ 46	2%	1%
Fire & Paramedic Services	$ 43	$ 91	1%	2%	$ 26	$ 72	0.4%	1%
Community Services	$ 266	$ 199	5%	5%	$ 446	$ 843	6%	12%
Municipal Properties	$ 121	$ 59	2%	1%	$ 187	$ 538	3%	8%
Transit	$ 905	$ 401	17%	10%	$ 1,222	$ 1,282	17%	19%
Information Technology	$ 132	$ 117	2%	3%	$ -	$ 63	0%	1%
Total	**$ 5,322**	**$ 4,039**			**$ 7,010**	**$ 6,883**		

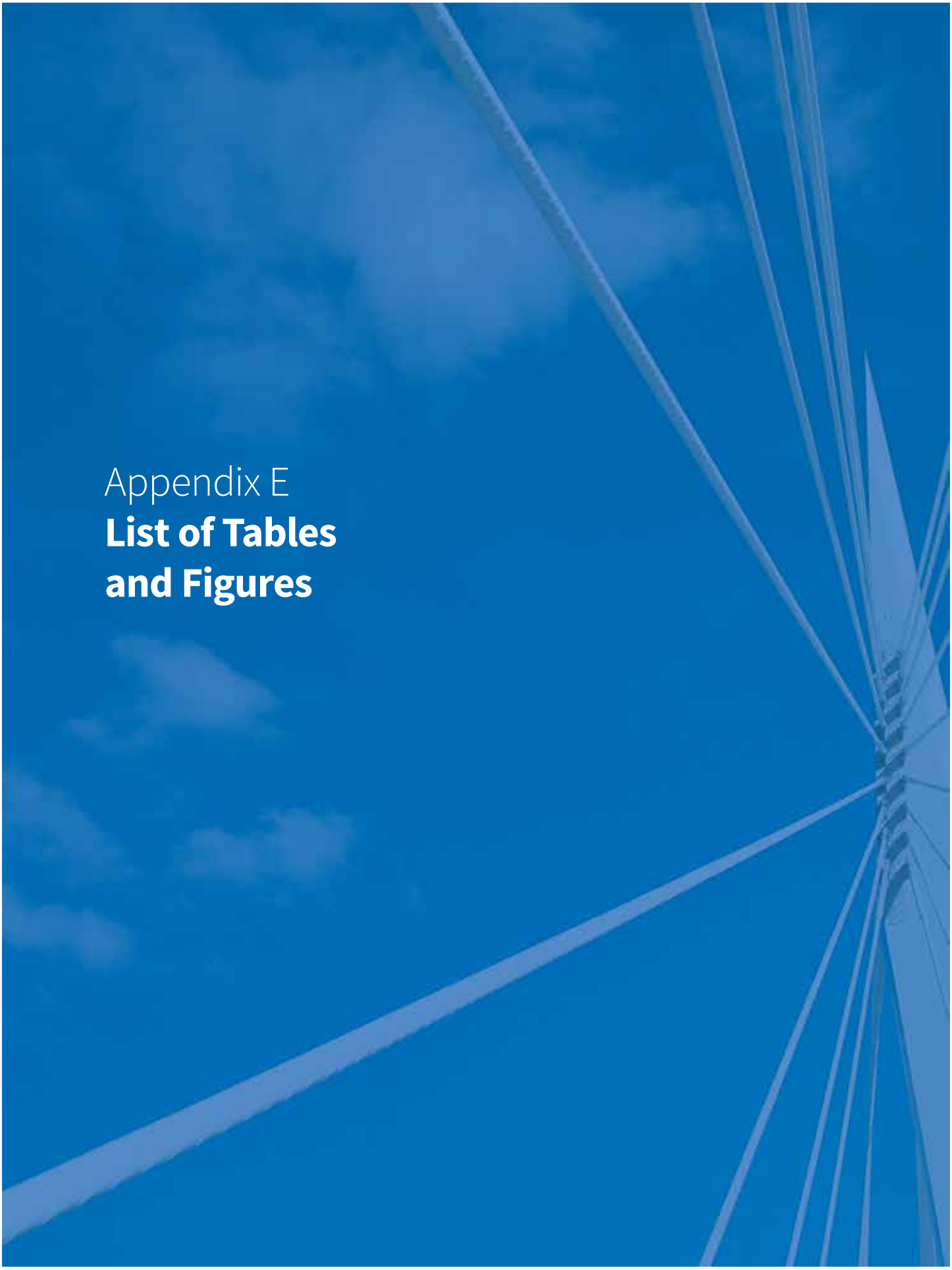


Appendix D
Acronyms and Abbreviations

APPENDIX D

Acronyms and Abbreviations

AMP	Asset Management Plan
APC	Assiniboine Park Conservancy
AT	Active Transportation
BOMA	Building Owners and Managers Association
BRRMF	Brady Road Resource Management Facility
BTS	Business Technology Services
CIRC	Canadian Infrastructure Report Card
CAMO	Corporate Asset Management Office
CAMP	City Asset Management Plan
CAO	Chief Administrative Officer
CAPEX	Capital Expenditure
CAV	Connected and Autonomous Vehicles
CCTV	Closed-Circuit Television
CIO	Chief Innovation Officer
CIWMS	Comprehensive Integrated Waste Management Strategy
CMA	Census Metropolitan Area
COTS	Commercial-off-the-Shelf
CPTED	Crime Prevention Through Environmental Design
CSO	Combined Sewer Overflow
CSS	Corporate Support Services
DAMP	Departmental Asset Management Plan
EMS	Emergency Medical Service
FCI	Facility Condition Index
FCM	Federation of Canadian Municipalities
GCWCC	General Council of Winnipeg Community Centres
GHG	Greenhouse Gas
IFMA	International Facility Management Association
IS&T	Information Systems & Technology
ISLG	Information Services Leadership Group
IT	Information Technology
ITS	Intelligent Transportation Systems
KPI	Key Performance Indicator
LEED	Leadership in Energy and Environmental Design
LERA	Law Enforcement Review Agency
LOS	Levels of Service
MBNC	Municipal Benchmarking Network Canada
MCP	Multi-Criteria Prioritization
MIRV	Major Incident Response Vehicle
MRF	Materials Recycling Facility
MVC	Motor Vehicle Collision
NEWPCC	North End Sewage Treatment Plant
OMBI	Ontario Municipal Benchmarking Initiative
OPI	Operational Performance Indicator
PCI	Payment Card Industry
PIO	Public Information Office
PMO	Project Management Office
PSU	Professional Standards Unit
PTIF	Public Transit Infrastructure Fund
PVO	Police Vehicle Operations
RAMS	Riverbanks Asset Management System
SCADA	Supervisory Control and Data Acquisition
SEWPCC	South End Sewage Treatment Plant
SLAIF	Shoal Lake Aqueduct Intake Facility
SOA	Special Operating Agency
SOP	Standard Operating Procedure
SLA	Service Level Agreement
SPG	Sewer Performance Grade
SRB	Stormwater Retention Basin
STP	Sewage Treatment Plant
SWW	Sustainable Water and Waste
TBL	Triple Bottom Line
TBO	Thin Bituminous Overlay
the City	City of Winnipeg
TKMMS	Time Keeping Maintenance Management System
TMC	Transportation Management Centre
TMP	Transportation Master Plan
VEMAX	Pavement Management System
VFA	Vanderweil Facility Advisors Capital Planning Software
WEMS	Winnipeg Emergency Medical Services
WEWPCC	West End Sewage Treatment Plant
WFD	Winnipeg Fire Department
WFMA	Winnipeg Fleet Management Agency
WFPS	Winnipeg Fire Paramedic Service
WPS	Winnipeg Police Service
WTP	Water Treatment Plant



Appendix E

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