STAFF REPORT #T2022-02
Standing Committee 5/2/2022
Council 5/16/2022
Amendments: no

Submitted to:	Strategic Initiatives Standing Committee | Council
Submitted by:	Dennis Sloan, Manager, Capital and Financial Planning Monica Quinlan, Treasurer
Subject:	Asset Management Plan Core Assets

PURPOSE

The purpose of this report is to introduce the Core Asset Management Plan report with respect to the requirements of Ontario Regulation 588/17.

RECOMMENDATION

THAT Staff Report T2022-02, Asset Management Plan Core assets be endorsed by members of Council.

AMENDMENTS

None.

1. BACKGROUND

In October 2021 staff brought forward a report (T2021-17 – Asset Management Plan – Update Part 2 (Attached as Appendix D)), where the funding gap for asset management was identified and provided recommendations to assist in closing that gap. This was an important step to meeting the guidelines of Ontario Regulation 588/17, which states that an Asset Management Plan must be in place and endorsed by Council for core assets by July 1, 2022. As members of Council may be aware this was delayed from a previous deadline set of July 1, 2021 due to the global pandemic.

The total core assets annual lifecycle amount (in 2021$) presented at that time was as follows:

Asset Group	Annual Lifecycle Amount - 2021$
Roads	$ 2,716,082
Bridges	864,150
Water - Linear/Vertical	2,398,166
Wastewater - Linear/Vertical	2,853,479
Stormwater	1,114,235
Grand Total	**$ 9,946,112**

While, the funding gap for both Tax-Supported and User Fee Supported Assets was presented at that time and is detailed in the tables below.

Roads/Bridges/Stormwater	Amount
Annual Lifecycle Amount - 2021$	$ 4,694,467
Less:	
Reserve Contribution per year	2,200,000
OCIF Funding	900,000
CCBF (FGT) (50%)	315,000
Amounts in Operational Budget	356,785
Financing Gap	**$ 922,682**

Water/Sanitary Assets	Amount
Annual Lifecycle Amount - 2021$	$ 5,251,645
Less:	
Reserve Contribution per year	4,184,682
CCBF (FGT) (50%)	315,000
Financing Gap	**$ 751,963**

Following this analysis several options were put forward to assist in reducing the funding gap:

1) Add small increased to the Special Capital Levy over the next 5 – 10 years (initiated as part of the 2022 budget);

2) As old debt expires use the tax levy component to create a future Debt Reserve (to assist in Asset Management). More details will come forward as the Debt Policy is reviewed.

3) Slowly raise the contribution to Reserve Funds over time. Today 1% point increase of the tax rate equates to approximately $350K, if we exclude growth and we increase the reserve contribution by 5% over the next 6 years this would mean a total tax rate impact of approximately 2%.

Finally, staff laid out what the next steps would be towards the completion of the Asset Management Plan:

1) Continued refinement of Water/Wastewater Treatment Plant facilities inventory;
2) Defining Levels of Service (LOS) for each category of asset:
   a) current state;
   b) set targets; and
   c) review costs to maintain these targets.
3) Ensure timing of replacement for corresponding assets aligns;
4) Understand the deterioration and degradation of assets with respect to maintenance; and
5) Develop a financing strategy.

2. INPUT FROM OTHER SOURCES

- The information included in this report was discussed at Department Heads on April 20, 2022 and recommended to proceed to Council
- Building together Guide – Province of Ontario
- The AMP Team – cross-functional group that meets on a bi-weekly basis to update, review and complete the data for the AMP

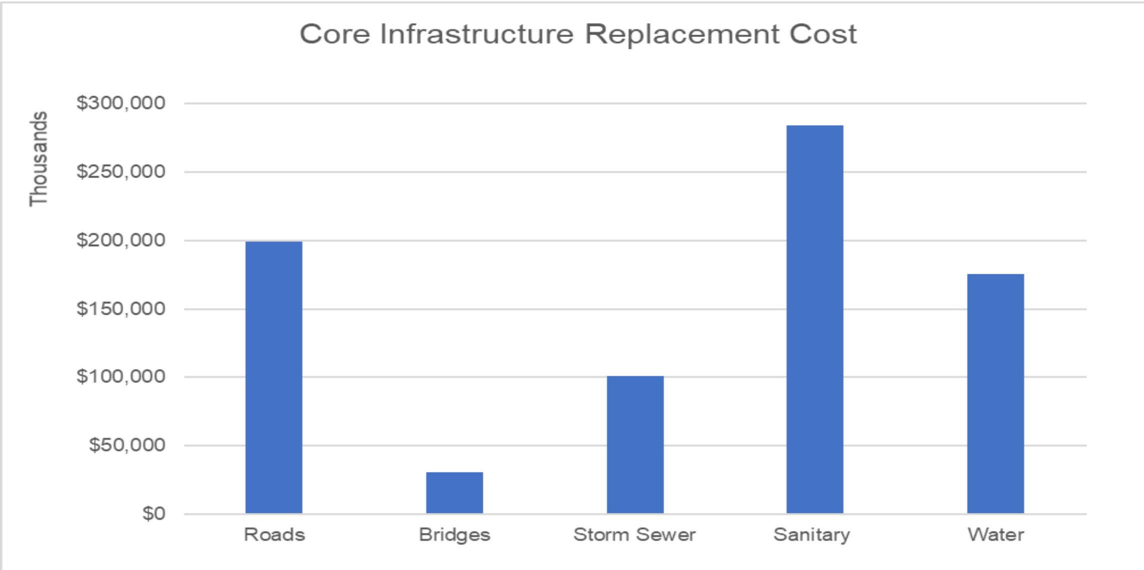
3. APPLICABLE POLICY OR LEGISLATION

Ontario Regulation 588/17

4. ANALYSIS

Over the last several months staff have been working through the steps as described above to build the Asset Management Plan document. This included updating and refining asset inventories, awaiting results of the facility condition assessments, realigning projects to match timing cross-functionally and continuing discussions around the levels of service. Staff at this point are continuing to polish and refine the Levels of Service section for the AMP and will provide that update at the next meeting of Council.

The updated results of this detailed work were that the total replacement costs for the Town's assets were $667.3 Million.



Moreover, the tax supported assets funding gap decreased by nearly $550k. This is a result of the annual lifecycle amount reducing most notably in roads (due mainly to refinements) and a slight increase in OCIF funding (Ontario Community Infrastructure Fund).

Tax-Supported (Roads/Bridges/Stormwater)	Amount Oct-2021	Amount Mar-2022	Difference
Annual Lifecycle Amount - 2021$	$ 4,694,467	$ 4,198,558	-$ 495,909
Less:			
Reserve Contribution per year	2,200,000	2,200,000	-
OCIF Funding	900,000	952,007	52,007
CCBF (FGT) (50%)	315,000	315,000	-
Amounts in Operational Budget	356,785	356,785	-
Financing Gap	**$ 922,682**	**$ 374,766**	**-$ 547,916**

Additionally, the user-fee supported assets funding gap decreased by nearly $320k. This is largely due to the updated funding received from OCIF. Late in 2021, the Province announced that OCIF would be doubled over the next five years.

Water/Sanitary Assets	Amount Oct-2021	Amount Mar-2022	Difference
Annual Lifecycle Amount - 2021$	$ 5,251,645	$ 5,884,536	$ 632,891
Less:			
Reserve Contribution per year	4,184,682	4,184,682	-
OCIF Funding*	-	952,007	952,007
CCBF (FGT) (50%)	315,000	315,000	-
Financing Gap	**$ 751,963**	**$ 432,847**	**-$ 319,116**

The town is fortunate that there have been sound financial decisions over the last several years and have been able to build a balance in the reserve funds to begin the AMP program, however, these amounts can become quickly depleted if we do not increase the contributions in thoughtful and reasonable ways. Additionally, there is some element of risk as grants are not guaranteed and may at some time either go away altogether or decrease significantly.

Given all the information and the understanding of how vitally important it is that we continue to invest today to protect the future sustainability of the town. It is also important to understand that there are ways to assist in closing the gap of $808K going forward to ensure that it is not overly burdensome to the taxpayer/user rates for example:

1) Add small increases to the Special Capital Levy over the next 5 – 10 years (benefits tax-supported only):

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Rate as % of Tax Rate	0.75%	0.79%	0.83%	0.87%	0.91%	0.96%	1.01%	
Amount $	$ 264,000	$ 277,200	$ 291,060	$ 305,613	$ 320,894	$ 336,938	$ 353,785	
Estimated Change Amount $	$ -	$ 13,200	$ 13,860	$ 14,553	$ 15,281	$ 16,045	$ 16,847	$ 89,786
Estimated Change %		**5.00%**	**5.00%**	**5.00%**	**5.00%**	**5.00%**	**5.00%**	**34.01%**

2) As old debt expires use the tax levy component to create a future Debt Reserve (to assist in Asset Management). More details will come forward as the Debt Policy is reviewed however to provide some context – the current debt levy requirement is approximately $1.5M over time this will deteriorate by about 15% per year which would mean the following:

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount $	$1,500,000	$1,275,000	$1,083,750	$ 921,188	$ 783,009	$ 665,558	$ 565,724	
Estimated Change Amount $		**($225,000)**	**($191,250)**	**($162,563)**	**($138,178)**	**($117,451)**	**($99,834)**	**($934,276)**

This assumes that no new debt is issued however, even if 50% was available it would bring the Town to approximately $500K available for Asset Management. Moreover, given that the internal debt requirements have been completed through the Asset Sale Proceeds this frees up an additional $150K per year previously included in the tax levy.

3) Slowly raise the contribution to Reserve Funds over time. Today 1% point increase of the tax rate equates to approximately $350K, if we exclude growth and we increase the reserve contribution by 5% over the next 6 years this would mean a total tax rate impact of approximately 2%. However, if we include growth as part of the contribution, it is possible that the tax rate is not impacted. Note that for User-Fee supported assets this would mean an increase to their rate. The example below is based on tax-supported assets.

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount $	$ 2,000,000	$ 2,100,000	$ 2,205,000	$ 2,315,250	$ 2,431,013	$ 2,552,563	$ 2,680,191	
Change Amount $	$ -	$ 100,000	$ 105,000	$ 110,250	$ 115,763	$ 121,551	$ 127,628	$ 680,191
Est. Impact on Tax Rate (excl. Growth)		0.28%	0.30%	0.31%	0.33%	0.35%	0.36%	1.94%

These examples demonstrate that small changes each year can accumulate to large payoffs in the future and make meaningful change.

Much work and care has gone into building this updated Asset Management Plan, across the organization and beyond. Staff feel that it is a thoughtful and reasonable first step towards completely fulfilling the O.Reg. 588/17 and are well positioned to carry on this work into the future.

5. EFFECT ON TOWN FINANCES

There are no immediate financial implications related to this report however, the Town is required to have a Strategic Asset Management Policy published on its website by July 1, 2022. Compliance with the regulation is an important aspect of receiving continued Federal and provincial funding.

6. CONSIDERATIONS

Community Based Strategic Plan:	☐ N/A or ☒ Explain: Progresses towards achieving CBSP Goal
Climate Change / Sustainability:	☒ N/A or ☐ Explain: Choose an item.
Accessibility:	☒ N/A or ☐ Explain: Choose an item.
Communication / Engagement:	☒ N/A or ☐ Explain: Choose an item.
Accountability / Transparency:	☒ N/A or ☒ Explain: Enhances Accountability and Transparency

7. APPENDICES & OTHER RESOURCES

Appendix A	Draft Asset Management Plan – Core Assets
Appendix B	Strategic Asset Management Policy
Appendix C	MFOA Asset Management Framework
Appendix D	T2021-17 Asset Management Plan Part 2

SIGNATURES

Prepared by:		Department Head:
Dennis Sloan, *Manager, Capital and Financial Planning*		*Monica Quinlan,* *Treasurer*
Town of Collingwood		Town of Collingwood

T2022-02
Appendix A

ASSET MANAGEMENT PLAN
TOWN OF COLLINGWOOD - CORE ASSETS
2022

DRAFT

Contents

DRAFT

Executive Summary

The performance of a community's infrastructure provides the foundation for its economic development, competitiveness, prosperity, reputation, and the overall quality of life for its residents. Infrastructure assets that are reliable and in good condition are essential for the delivery of critical core services for the citizens of the municipality.

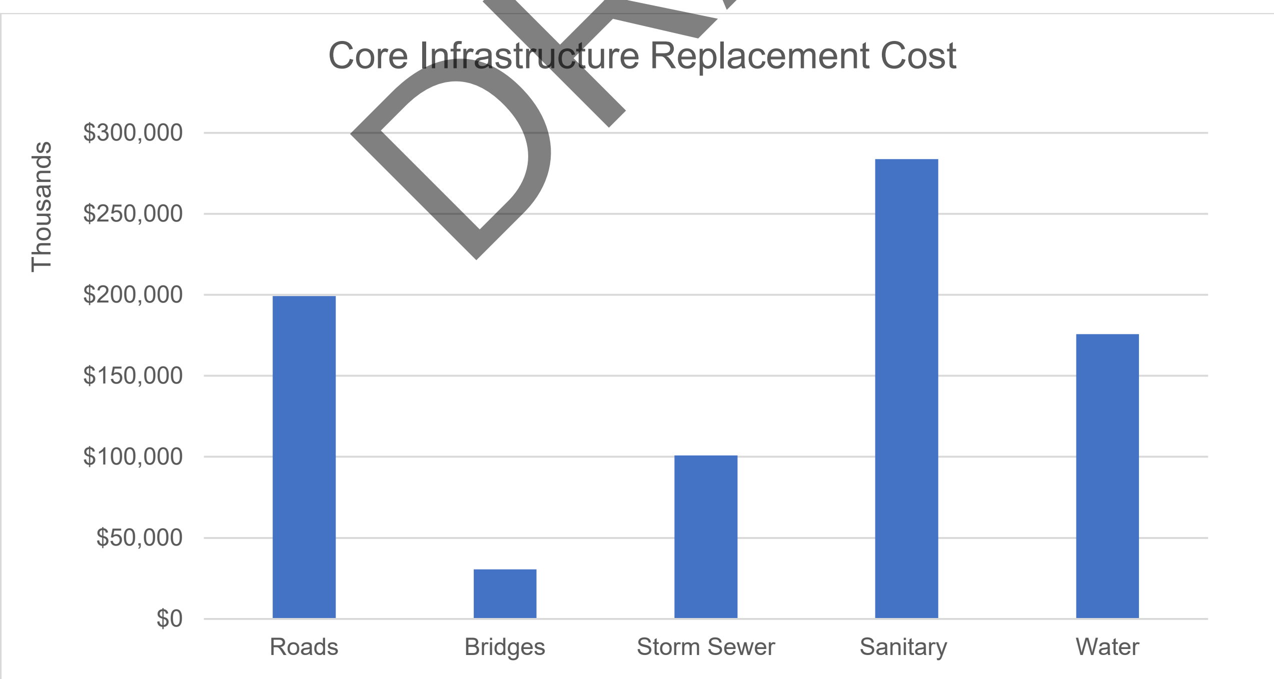
A technically precise and financially rigorous asset management plan diligently implemented will mean that sufficient investments are made to ensure delivery of sustainable infrastructure to current and future residents. The plan will also indicate the respective financial obligations required to maintain this delivery at established levels of service.

This Asset Management Plan (AMP) for the Town of Collingwood complies with the requirements as outlined in the provincial document Building Together Guide for Municipal Asset Management Plans. It will serve as a strategic, tactical, and financial document, ensuring the management of the municipal infrastructure follows sound asset management practices and principles, while optimizing available resources and establishing desired levels of service.

Total Core Assets Infrastructure Investment

This Asset Management Plan has been prepared for the following asset categories, which are considered the "core" assets in provincial direction to municipalities: road, storm sewer, water and wastewater networks and bridges/culverts. Measured in 2021 dollars, the replacement value of the five major asset categories reported on total $667.3 Million.

Figure 1 - Total Core Assets Infrastructure Replacement Cost



DRAFT

Financing Strategy

From a financing perspective, it is estimated that an overall annual investment of $10.1 Million is required to fully fund these assets in a sustainable manner. Relative to that amount and our current funding mechanisms, there is approximately an annual funding gap of approximately $380,000 for tax supported assets (Roads, Bridges, Stormwater) and $430,000 for user supported assets (Water, Wastewater). We have proposed this funding gap be addressed via three financial mechanisms outlined below. It is important to recognize that the time value of investments is a very powerful tool and that relatively small changes in funding now can have a significant impact to reserve balances over extended periods of time. This is critical to understand when forecasting asset sustainability over lifecycle timelines of 50 and 75 years (or more). See section 10.0 for full Financing Strategy details.

1. Small increases to current .75% Special Capital Levy over 5 years to 1% - note that the first phase was included in the 2022 Capital Budget.
2. Retirement of debt: Redirect interest/principal expense savings to Lifecycle reserve fund contributions.
3. Increase lifecycle reserve fund contributions over 5 years. Note that a 5% increase to reserve funds over 5 years would have a tax rate impact of 2%.
4. Update and adopt a more strategic investment policy by directing funds to earn higher interest rates with longer terms. Note that a 2% increase in investment earning on the Lifecycle reserves equates to approximately $0.5M of additional interest earned.

Cost per household

While the Town is responsible for the strategic direction of the municipality, it is the ratepayer that ultimately bears the financial burden. As such a “cost per household" analysis was completed for each of the asset categories to determine the financial obligation of each household in sharing the replacement cost of the Town's assets. For example, based on 13,181 households in 2021, the cost per household for replacement of the Town’s road network is $15,124. A similar analysis was conducted for the other four asset categories. The customer base for water and sewer of 11,343 are used instead of the household count.

Figure 2 - Core Asset Infrastructure Investment by household

	Replacement Cost	Households	Cost/Household
Roads	$199,350,045	13,181	$15,124
Bridges	$30,482,500	13,181	$2,313
Storms	$100,815,048	13,181	$7,649
Sanitary	$199,191,743	11,343	$17,561
Water	$137,451,858	11,343	$12,118
Total	$667,291,194	12,446	$53,616

DRAFT

Overview

This Asset Management Plan meets all provincial requirements as outlined within the Ontario Building Together Guide for Municipal Asset Management Plans. As such, the following key sections and content are included:

1. Executive Summary and Introduction
2. State of the Current Infrastructure
3. Desired Levels of Service
4. Asset Management Strategy
5. Financial Strategy

The following asset classes are addressed:

1. Road Network: Asphalt, surface treatment, paved road bases, streetlights and traffic signals;
2. Bridges & Culverts: Bridges and large culverts with a span greater than 3 meters.
3. Water: linear network (water mains, hydrants,) and water facilities (treatment plant, booster stations, reservoirs, and water towers);
4. Sanitary Sewer Network: linear network (sanitary sewer mains, ponds, and lagoons) and sanitary facilities (treatment plant, pumping stations, lagoons);
5. Storm: Storm sewer mains and catch basins.

Municipalities are encouraged to cover all asset classes in future iterations of the AMP and the Town of Collingwood is working towards this goal by the end of 2022.

This asset management plan will serve as a strategic, tactical, and financial document ensuring the management of the municipal infrastructure follows sound asset management practices and principles, while optimizing available resources and establishing desired levels of service.

At a strategic level, within the State of the Current Infrastructure section, it will identify current and future challenges that should be addressed, in order to maintain sustainable infrastructure services on a long-term, lifecycle basis.

It will outline a Desired Level of Service (LOS) for each asset category to assist the development and tracking of LOS through performance measures across strategic, financial, tactical, operational, and maintenance activities within the organization.

At a tactical level, within the Asset Management Strategy section, it will develop an implementation process to be applied to the needs-identification and prioritization of renewal, and rehabilitation resulting in a 10-year plan that will include growth projections.

At a financial level, within the Financial Strategy section, a strategy will be developed that fully integrates with other sections of this asset management plan, to ensure an adequate 10-year infrastructure budget.

Through the development of this plan, all data, analysis, life cycle projections, and budget models were provided through the Worktech software product in conjunction with the Town's Geographical Interface software (GIS), Great Plains Diamond Financial software and Questica Budgeting software. The software and plan were synchronized and evolved together, and therefore, will allow for ease of updates, and reporting of performance measure results.

This will allow for improvements of the plan and its projections. It is required that the plan be revisited and updated every 5 years while the details of the inventory, Levels of Service, and potential treatments are continually updated and reviewed annually as part of the budget process. Additionally, there is a requirement that every year on or before July 1 there be a review of the progress and trajectory of the plan.

DRAFT

Ontario Regulation 588/17

One of the main resources of this document is Ontario Regulation 588/17. Additional information can be obtained on the MFOA website at https://www.ontario.ca/laws/regulation/r17588 on e-laws Ontario. The regulation requires all municipalities to prepare an asset management plan (AMP). An AMP will also be a requirement for the Canada Community-Building Fund (CCBF, formerly known as Federal Gas Tax) which is administered through the Association of Municipalities of Ontario (AMO).

This document on its own will not result in full compliance with the regulation. This is one part of the many activities to be undertaken by the Town.

A summary of key requirements of the Regulation are provided below:

1) Key Dates

   a) July 1, 2019: Strategic Asset Management Policy (Complete for Collingwood)
      i) Outline commitments to best practices and continuous improvement.

   b) July 1, 2022: Asset Management Plan – Phase 1 (this report and supporting materials)
      i) For core assets (roads, bridges & culverts, water, wastewater, and stormwater):
         (1) Inventory of Assets.
         (2) Current levels of service; and
         (3) Costs to maintain levels of service.

   c) July 1, 2023: Asset Management Plan – Phase 2
      i) Builds out the Phase 1 plan to include all assets (facilities, equipment, traffic signals, County forests, and trails).

   d) July 1, 2024: Asset Management Plan – Phase 3
      i) Builds on Phase 1 and 2 by adding:
         (1) Proposed levels of service; and
         (2) Lifecycle management & Financial strategy.

2) Service Levels

   The regulation makes frequent mention of service levels. In phase 1 of the regulation the focus is on describing current levels of service and plans to maintain those levels of service.
   In Phase 3 municipalities will have more latitude to describe the proposed levels of service. For the purpose of this document and the analysis there are two types of indicators for service levels:

   - Physical Condition – or the capacity, defined as the ability for the asset to meet usage demands; and

   - Statistical Information - municipalities must be able to report on key statistics. Those statistics include replacement costs, age, condition, quantities and other service metrics.

3) Plan Requirements

   a) Municipalities must first determine the work (treatments) necessary to maintain current service levels in the most cost-effective manner. This plan must be at an activity level.
   b) Should a municipality be unable to deliver the recommended plan the municipality must define the activities it can fund and how risks associated with unfunded activities will be managed.

DRAFT

4) Endorsement and Approval

Every AMP must be:

a) endorsed by the executive lead of the Municipality; and
b) approved by a resolution passed by Council.

5) Updates and Annual Reviews

a) The AMP is to be updated at least every 5 years after the year the plan is completed.
b) Every year on or before July 1 starting the year after the AMP is completed there should be a review of the progress and trajectory.

6) Communication

a) The Town is to post its Strategic Asset Management Policy and Asset Management Plan on a website available to the public and provide a copy to any person who requests it.

Importance of Infrastructure

Municipalities throughout Ontario, large and small, own a diverse portfolio of infrastructure assets that in turn provide a varied number of services to their citizens. The infrastructure, in essence, is a conduit for the various public services the municipality provides, e.g., the roads supply a transportation network service; the water infrastructure supplies a clean drinking water service. A community's prosperity, economic development, competitiveness, image, and overall quality of life are inherently and explicitly tied to the performance of its infrastructure.

Asset Management Plan – Relationship to Strategic Plan

The major benefit of strategic planning is the promotion of strategic thought and action. A strategic plan spells out its Vision of where an organization wants to go, how it's going to get there, and helps decide how and where to allocate resources, ensuring alignment to the strategic priorities and objectives. It will help identify priorities and guide how municipal tax dollars and revenues are spent into the future.

The strategic plan usually includes a vision and mission statement, and key organizational priorities with alignment to objectives and action plans. Given the growing economic and political significance of infrastructure, the asset management plan can be a component of the municipal strategic plan, influencing corporate priorities, objectives, and actions.

The Town of Collingwood's Current Community Based Strategic Plan was approved by Council June 15, 2020. The Vision in the Town of Collingwood's Strategic Plan is "People Thrive Here – Live more Now".

The 5 pillars of the plan are:

1. Transparent and Accountable Local Government
2. Public Connections to a Revitalized Waterfront
3. Support and Manage Growth and Prosperity
4. Enhance Community well Being and Sustainability
5. Encourage Diverse Culture and Arts Offerings

DRAFT

Within the first pillar of the plan: Transparent and Accountable Local Government is the following relative to Asset Management Planning

1. Asset management planning for facilities is complete and the Capital Asset Management Plan for all assets is updated. Timeline: 1 to 3 years.

2. The financial components of all Master Plans (e.g. Transportation, Cycling, Waterfront) and the Capital Asset Management Plan are incorporated into a projection of longer-term capital and operating fund's needs. Timeline: 1 to 3 years. As much of this component relates to the expansion or enhancement of assets, it is not part of the Asset Management Plan, yet forms an expansion plan that will impact future Asset Management plans.

Relationship to Other Plans

An asset management plan is a key component of the municipality's planning process. This planning process links the asset management plan with multiple other corporate plans and documents. For example:

- The Official Plan – The AMP should both utilize and conversely influence the land use policy directions for long-term growth and development as provided through the Official Plan;
- The Long-Term Financial Plan – The AMP should both utilize and conversely influence the financial forecasts with the long-term financial plan.
- Capital Budget – The decision framework and infrastructure needs identified in the AMP forms a large portion of the basis on which future capital budgets are prepared.
- Infrastructure Master Plans – The AMP will utilize goals and projections from infrastructure master plans and in turn will influence future master plan recommendations.
- By-laws, standards, and policies – The AMP will influence standards, policies and by-laws related to infrastructure management practices and standards, such as the Levels of Service delivered by the Municipality.
- Regulations – The AMP must recognize and abide by industry and senior government regulations; and
- Business Plans – The service levels, policies, processes, and budgets defined in the AMP are incorporated into business plans as activity budgets, management strategies, and performance measures.

DRAFT

Plan Elements

The approach and methodology consist of the following key components. These components are linked together to form the asset management plan.

Overarching Municipality Strategic Plan and Directions

- Strategic plan goals
- Community expectations
- Legislated requirements

State of the Current Infrastructure Reports

- Asset inventory
- Valuations
- Current condition and current performance

Expected Levels of Service

- Key Performance Indicators
- Performance Measures
- Public Engagement

Asset Management Strategy

- Lifecycle Analysis
- Growth Requirements
- Risk Management
- Project Prioritization Methodologies

Financing Strategy

- Available Revenue Analysis
- Developing Optional Scenarios
- Define Optimal Budget
- Financial Plan

AMP Performance Reporting

- Project Implementation
- Key Performance Measures Tracked
- Progress Reported to Senior Management & Council

A municipality's infrastructure planning starts at the corporate level where it ties to the strategic plan, is aligned to the community's expectations, and complies with industry and government regulations.

Then through the State of the Infrastructure analysis that is completed, the overall asset inventory, asset valuation, asset condition and asset performance are reported.

A life cycle analysis of needs for each infrastructure class will be conducted, over a duration of at least one full life cycle for that asset type. This analysis will yield the sustainable funding level and compare that to actual current funding levels. This analysis will determine whether there is a funding surplus or deficit for each infrastructure type.

From the lifecycle analysis above, the municipality gains an understanding of the current condition-based levels of service provided today for each infrastructure class and the projected level of service for the future (these typically deteriorate over time, and not in a straight line). The next section of the AMP requires a municipality to develop a Desired Level of Service (or target service level) and develops performance measures to track the year-to-year progress towards this established target level of service.

Prior to using the software to analyze potentially millions of options for action on every asset segment in the municipality, for each asset type the potential interventions or treatments that can be used and the costs and potential LOS outcomes of each are set, leveraging best practices and methodologies for each asset type. Depending upon the condition of that asset segment, the typical deterioration curve, and other factors, the interventions which yield the best return on the Town's investments are selected and result in the first draft of the Asset Management Plan. This Plan identifies which asset segments should be addressed when and with what treatment to best apply the municipality's budget to achieve the Levels of Service set by Council.

The Financing Strategy then considers the annual costs of the asset management plan (within and across all the asset types) and staff consider peaks and valleys in funding, integration of work (e.g. aligning under-road pipe work with road surface renewal), and the availability of resources to propose the 10-year infrastructure

DRAFT

budget, and the specific projects anticipated in the first five years or so. All revenue sources available are reviewed, such as tax levy, debt allocation, user fees, reserves, grants, development charges, etc. and necessary budget allocations are analyzed to deliver infrastructure projects.

Finally, in subsequent updates to this AMP, actual project implementation will be reviewed and measured through the established performance metrics to quantify whether the desired level of service is achieved or achievable for each infrastructure type. If shortfalls in performance are observed, these will be discussed, and alternate financial models or service level target adjustments or treatment/intervention options will be presented.

Worktech, GIS and Software Alignment with AMP

Collingwood's first Asset Management Plan in 2014 was developed in Microsoft Excel initially and while Excel is an extremely useful tool it does have its drawbacks such as potential data integrity and the process of updating is manual and time consuming. For Collingwood's updated 2022 Asset Management Plan initial objectives were:

1) Migrate from Excel model and use software designed specifically for Asset Management
    a) Integrated with other Town software such as:
        i) Great Plains Diamond Financial; and
        ii) ESRI Geographical Information System (GIS).
    b) Integrated data modelling capability, including:
        i) Multi scenarios ("what-ifs"); and
        ii) Project planning optimization.
2) Master inventory is in one database for all assets linked to Worktech:
    a) For Linear asset classes this database is (GIS) which is linked to Worktech; and
    b) For nonlinear asset classes, they are housed directly in Worktech.
3) Database is live:
    a) Data is "live" and up to date. Always reflects the most current data available.
    b) Accessible to multiple users;
    c) Linear assets updated in GIS with construction "As Builts" and synced to Worktech;
    d) Changes are tracked; and
    e) Data sets can be imported from other sources or software.
4) Database is multi use:
    a) Leverages same database for work orders, inspections, budget estimates etc.

DRAFT

State of the Infrastructure

The Town has a detailed inventory listing of the core assets housed in the Worktech and GIS ESRI software systems and this inventory has been continually refined and enhanced since the Town began Asset Management in 2013. In addition, these same inventories are also used in Water and Wastewater Rate Studies and the Towns Development Charges (DC) studies with the most recent being completed in 2019. Much of this same information is also available in the Town's GIS system (linear). In the past 2 years, in addition to reviewing and updating these inventories, a strategy of centralizing these inventories in one system to have one common source of data and avoid duplication and conflicting data has been pursued. It has been a central accountability of the new Town GIS coordinator role (2017) to be the keeper and overseer of all town linear asset data and extensive effort was expended to review and rationalize the various data sets within GIS.

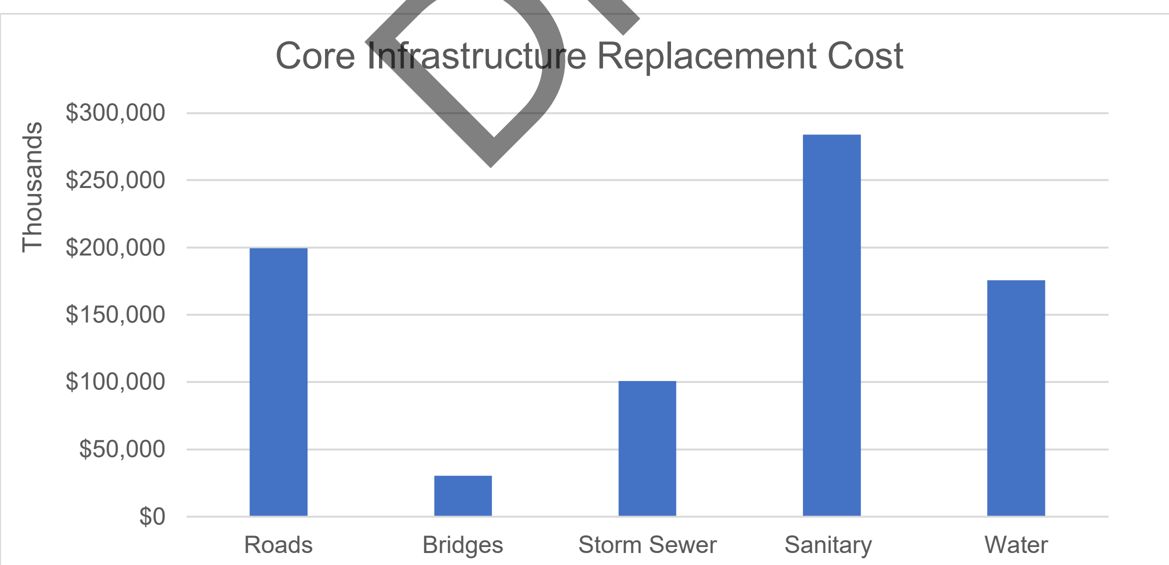
Most recently, these inventories and replacement costs were extensively reviewed and updated through the development and maintenance of many other Town initiated, studies such as:

1) the 2019 DC and Rate study;
2) the Master Servicing studies (all services; Water, Sanitary and Storms)
3) the water department developed internal processes to continually review and update the inventories based on field work inspections and work order history data;
4) during 2020 the GHD Group was engaged to inventory all Wastewater vertical assets[1] as well as review the existing Water vertical assets inventory;
5) Accent Building sciences were engaged in 2021 to inventory all existing Town facility assets[2].
6) bi-annual Bridge (OSIM) mandatory studies (2016, 2018, 2020); and
7) Road Condition Assessment studies completed through Ainley Engineering Group.

Capital Asset Overview

The Town presently owns and manages tax supported "core" capital assets with a 2021 replacement value of approximately $667.3 Million.

Figure 3 - 2022 Core Infrastructure Assets



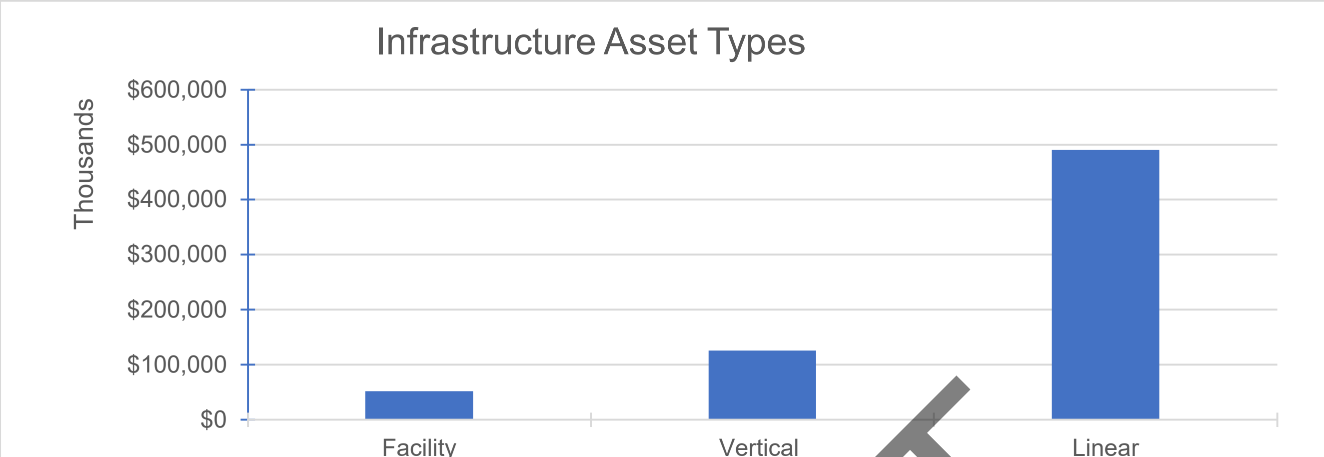
DRAFT

[1] Vertical Asset means an asset within a building or facility often comprised of multiple components, also known as an above-ground asset. In the context of the water industry, this typically refers to assets within pump stations, treatment plants, and may include other facilities, such as storage facilities

[2] Assets related to just the building and structures. Does not include vertical assets in the case of Environmental services.

Linear in-ground and road assets make up the bulk of the core asset value at $491 Million, whereas facility assets and vertical assets make up the remainder at $51.4 Million and $125 Million respectively.

Figure 4 - Asset Types Replacement Cost



Asset Condition / Age

An asset's condition is a critical element in understanding its potential impact to the Town's near- and long-term capital plans and in turn the potential resulting financial liability. The quickest and easiest indicator of an assets condition is its current age relative to it's expected useful life. However, assets can sometimes exceed their useful life or inversely assets may require replacement earlier then expected as a result of a variety of factors such as volume of usage (i.e. traffic counts in the case of roads), maintenance history (has proper periodic maintenance occurred?), or even environmental considerations such as unusually cold winters or different types of soil conditions which can impact the useful life of underground linear assets. As such, where possible asset condition assessments and inspections are the best indicator of an asset's current status relative to its expected useful life and replacement / rehabilitation time date.

The Town's roads, bridges and facilities data all reflect actual condition assessments whereas linear underground Sanitary, Storm and Water data is largely based on age estimates[3]. The shorter-lived equipment vertical works assets are evaluated based on age primarily due to their shorter lifespan which makes condition assessments less effective and relevant.

DRAFT

Figure 5 - Asset Class Condition Summary

Asset Type	Asset Replacement Cost	Asset Count	Average Condition	Condition Method	Avg Year Built	Quantity	Unit
Bridge	$30,482,500	24	76.67	OSIM	1980	4,879	Meters
Road Linear	$193,163,470	810	81.90	PCI	1971	147	Kms
Sanitary Sewer	$62,716,265	1,495	75.35	Age	1986	117,080	Meters
Storm Sewer	$100,815,048	2,121	66.73	Age	1967	79,323	Meters
Watermain	$103,420,629	1,786	59.33	Age/ Break history	1989	170,578	Meters
	$490,597,912	**6,236**	**68.65**		**1979**	**372,007**	

[3] The water department augments the age assessment of water distribution assets with known breaks and freeze related issues.

Figure 6 - Facility Summary

Dept	List Description	Asset Replacement Cost	Sq Ft	Average Condition	Year Built	Age
Roads	Public Works Building	$5,353,375	18,675	85.61	1989	33
	Public Works Salt Shed	$116,648	1,400	27.20	1990	32
	Public Works Sand Dome	$674,892	8,100	99.50	2006	16
	Public Works Storage Shed	$41,660	500	84.76	1990	32
Water	Carmichael Reservoir Building	$2,412,325	4,920	0.00	1991	31
	Davey Reservoir Building	$1,397,384	2,850	95.90	2010	12
	Elevated Tower	$6,000,000	400	95.00	1950	72
	Elevated Tower Building	$400,000	490	86.50	1998	24
	Environmental Services Administration	$7,372,374	28,290	90.75	1989	33
	Georgian Meadows Booster Stn	$0	200	0.00	0	2022
	Osler Booster Station	$213,000	130	0.00	2000	22
	R.A.B. Water Filtration Plant	$3,930,609	12,875	87.60	1999	23
	RAB Generator Building	$1,250,000	1,000	98.40	1999	23
	RAB Industrial Raw Water Building	$1,320,000	3,560	76.40	1950	72
Wastewater	Black Ash Sewage Pumping Station	$1,480,550	1,536	97.80	2020	2
	Boiler and COGEN Building	$330,450	550	72.80	1979	43
	Cranberry Sewage Pumping Station	$260,820	324	87.10	2002	20
	Digester 1&2 Building	$1,845,478	6,045	87.40	1979	43
	Digester 3&4 Building	$1,338,696	4,385	89.10	1979	43
	Minnesota Sewage Pumping Station	$633,800	1,540	0.00	1958	64
	Paterson St. Sewage Pumping Station	$140,443	460	0.00	1993	29
	Pretty River Sewage Pumping Station	$150,000	100	0.00	2010	12
	Silver Glen Sewage Pumping Station	$160,850	0	99.10	2006	16
	St. Clair Sewage Pumping Station	$755,950	1,350	0.00	2003	19
	Tenth Line Sewage Pumping Station	$0	0	0.00	0	2022
	Wastewater Treatment Plant (WWTP01)	$0	0	0.00	0	2022
	Wastewater Treatment Plant Admin Building	$4,823,582	2,800	92.10	1958	64
	Wastewater Treatment Plant Control Room	$2,162,980	7,085	93.10	1968	54
	Wastewater Treatment Plant Effluent Building	$337,750	600	93.50	1979	43

DRAFT

Dept	List Description	Asset Replacement Cost	Sq Ft	Average Condition	Year Built	Age
	Wastewater Treatment Plant Generator Building	$970,000	770	97.10	1999	23
	Wastewater Treatment Plant Headworks Building	$3,700,735	8,535	82.00	1998	24
	Wastewater Treatment Plant Raw Sludge Pump Building	$535,710	720	94.20	1968	54
	Wastewater Treatment Plant Sludge Thickening Building	$1,282,218	4,200	93.30	1979	43
		$51,392,279	124,390	63.82	59639	-57617

Figure 7 - Environmental Treatment Plant Vertical Equipment Assets

Dept	Asset	Replacement Cost$	Average of age	Count of Equipment	Average of Year	Average of use life
Water	Carmichael Reservoir Building	$7,144,504	28	64	1994	28
	Davey Reservoir Building	$1,728,039	12	98	2010	23
	Elevated Tower	$205,777	14	21	2008	46
	Georgian Meadows Booster Stn	$393,342	17	29	2005	21
	Osler Booster Station	$228,559	3	10	2020	11
	Environmental Services Administration	$13,145	4	8	2018	10
	R.A.B. Water Filtration Plant	$38,268,730	19	805	2003	20
Wastewater	Black Ash Water Pumping Station	$2,511,730	6	109	2016	20
	Cranberry Sewage Pumping Station	$343,487	19	22	2003	32
	Minnesota Water Pumping Station	$2,613,283	4	60	2017	33
	Paterson St. Water Pumping Station	$1,117,822	23	74	1995	28
	Pretty River Water Pumping Station	$1,561,809	12	38	2008	23
	Silver Glen Sewage Pumping Station	$268,394	14	55	2007	41
	St. Clair Water Pumping Station	$3,045,138	17	44	2005	24
	Tenth Line Sewage Pumping Station	$97,830	15	11	2001	29
	Wastewater Treatment Plant (WWTP01)	$18,367,255	24	380	1997	23
	OSLER BLUFF LAGOON	$684,710	37	1	1985	NA
	Wastewater Treatment Plant (WWTP01)	$46,706,941	40	35	1982	NA
Grand Total		$125,311,891	18	1873	2003	22

DRAFT

In general, the Town's linear assets reflect a younger well-maintained system with lower near term replacement and rehabilitation requirements, conversely the long-term costs where assets begin to reach the end of their expected life, funding increases significantly. The Town has benefited from a consistent annual Sanitary replacement program (which also replaces roads and water assets at the same time), an annual road resurfacing program, one time infrastructure grant funding (Hume St, Cogen, SPS) and annual OCIF infrastructure funding. Lastly, it is a growing community where many older assets have been upgraded or replaced through development charge funding.

Facilities in general are unique as they generally have extremely long life spans (with proper maintenance), and they are complicated structures compromised of many different asset types (HVAC systems, roofs, walls, electrical/plumbing and etc.), which also have varying life spans and maintenance needs. So, while we have provided a replacement cost (the cost to completely rebuild a structure of the same specifications) we look to the 10-year work plan as the more relevant indicator of financial liability. Most often, a building is not likely to be replaced if it can still function appropriately and support the programs and services housed within it and in the case of the Town, generally growth drives most facility major rehabilitations. This is the way the Town has approached the level of service for managing facilities as it is felt to be the most cost-effective.

Level of Service (LOS) – note to be updated for next meeting of Council

Levels of Service (LOS) are specific parameters that describe the extent and quality of services that the municipality provides to users. Levels of Services link an asset's performance to target performance goals and can be broken down into the following categories:

1. Legal Requirements: Statutory, Regulatory, and contractual requirements are the minimum levels of service that must be provided.

2. Community (Customer) Levels of Service: Community Levels of Service define how a service is perceived by the user, often with non-technical measures for service goals.

3. Asset (Technical) Levels of Service: Asset Levels of Service are specific and quantifiable measures for service targets.

Decisions about LOS are important as they establish policies for Work Plans and asset condition responses that ultimately impact the level of funding required.

It is not uncommon that a municipalities current and historical level of service is largely the result of reactive responses to asset conditions and performance levels (i.e., break/fix approach). This can be driven by financial and budget process pressures whereby seemingly minor reductions in maintenance budgets can unknowingly have significant impacts on the total lifecycle cost of an asset. For example, minor cutbacks in an annual asset maintenance can lead to shorter asset life spans and hence the extensive and expensive rehabilitation or replacement decades earlier then expected. Therefore, as an overall strategy for all core assets, staff have established the Technical Levels of Service whereby we do "the right things at the right time" as a priority with the objective also being the lowest overall lifecycle cost of the asset. This in turns produces the most effective and efficient use of tax dollars.

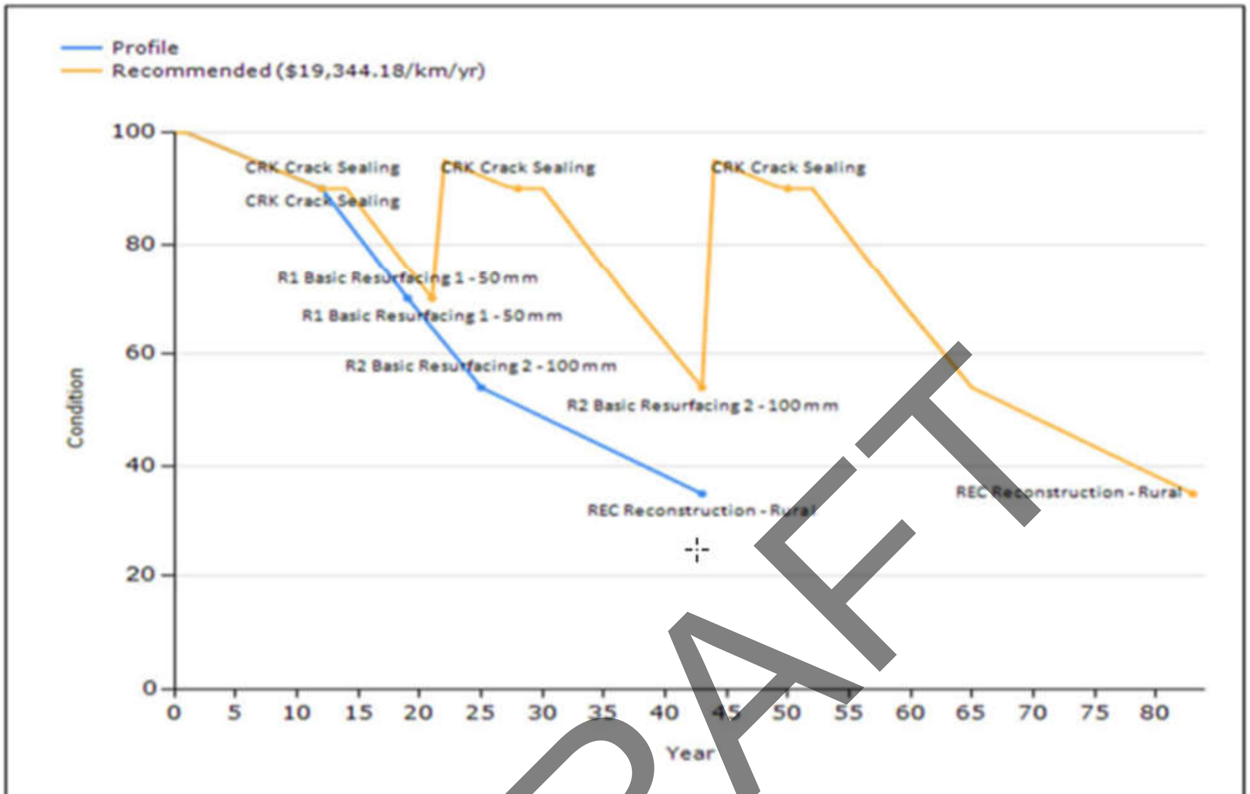
This can appear at times to conflict with the Community or Customer Level of Service whereby responding to the technical elements of an asset outweighs community concern regarding an asset such as a road that is in poor condition may be a lower priority then proper maintenance on newer roads[4] . Again, the overall driver is the most efficient use of funds towards lifecycle requirements of an asset while still maintaining its Level of Service condition. In such cases, there is also a communication and education role for the Asset Management

DRAFT

[4] Paradoxically, poor condition roads don't degrade as quickly as newer roads that are not maintained. Therefore, the return on investment favours prioritizing maintenance on newer roads.

Plan (and process) to further educate and communicate the priorities of the long-term capital and maintenance plans to the community. For example, in the following graph for Roads, a program of crack sealing and periodic resurfacing can almost double the asset lifespan (yellow line vs blue).

Figure 8 – Deterioration Curve - Roads



DRAFT

The financial projections provided in this plan reflect a continuing shift started with the 2014 AMP from a reactive level of service towards a proactive level of service whereby we are "doing the right things and the right time" which is the most cost-effective approach over the life of the asset. While these objectives of level of service are still valid, we now have the advantage of the Worktech software which allows us track and monitor the history of interventions as well as monitor the cost and return on investment of those actions. The model data is also "live" and update date (with help of GIS software) so decisions can be made using latest information. More details on individual class LOS are provided in the Asset class sections to follow.

Another critical consideration common to all core assets is the coordination of the different asset work plans (or project optimization) such as when repairing underground linear assets (sanitary, water or storm) will also require rebuilding of road assets. This doesn't just apply to linear assets however as repair and maintenance programs can be managed uniformly and not just by individual asset class. For example, a HVAC maintenance contact would most effectively be applied to all town assets or when considering a roof repair for one asset, it would likely be most effective to evaluate all town roofs for repair at the same time. The timing of the need to build new assets or expand existing assets also plays a role into the workplans of asset rehabilitation and replacement. While the AMP is often thought of as primarily a financial planning tool and focuses on predicting financial liabilities, it is also a long-term work planning tool that will coordinate workplans across asset classes. The infrastructure projects in the 10-year capital budget reflect the beginning of this coordination across core asset classes.

Climate Change

As written in the Strategic Asset Management Policy:

"The Town will leverage new and existing opportunities for reducing greenhouse gas emissions (mitigation) and building resiliency to projected climate change impacts (adaptation) into corporate asset management practices. Applying climate change mitigation and adaptation lenses will be achieved by strategically embedding tactical, operational and reflexive considerations related to climate change into lifecycle management practices. This will reduce vulnerabilities and promote adaptation and resiliency to climate change impacts, incrementally over time." Further details will be incorporated in the Town's Climate Change Action Plan which is currently underway.

Roads Linear Assets

Collingwood's roads on average are in good to very good condition which has been demonstrated consistently in the completed road condition assessment studies; the Town has conducted 4 assessments in the last 8 years, with the most recent being completed in 2020.

DRAFT

Figure 10 - Road PCI by Asset Class

Class Name	Asset Replacement Cost	Quantity in Kms	Average Condition (PCI)	Average of Year Built	Average Age
HCB low volume - rural/semi-urban	$ 34,285,260	28.65	83.40	1990	32.0
HCB high volume – urban	48,809,979	20.79	87.96	1998	24.0
HCB low volume - rural/semi-urban	66,572,732	65.33	78.74	1991	31.0
HCB low volume – urban	37,717,704	25.69	87.64	1997	25.0
	$187,385,675	**140.46**	**83.06**	**1993**	**29.0**

Road Condition assessment studies look at many different variables when assessing a road's condition, however, the overall condition of a road segment is summarized with one number known as the Pavement Condition Index (PCI). This overall rating is a useful tool for tracking road conditions over time and so this is the primary metric that staff are using for a roads level of service policy. However, not all roads are the same and staff propose that in addition, tracking PCI condition by road asset class be adopted as a LOS metric. In other words, a PCI of 60 (out of 100) for an Urban arterial road would have a different response in terms of refurbishment or renewal then the same score on a non-Urban local road. This is because additional factors such as road volume and financial return on investment would differ greatly by these asset classes. This concept has been applied to the strategy being reviewed. The roads have been maintained in good to very good condition on average due primarily to the following factors:

1) Growth:
   a) Older roads have been reconstructed/rehabilitated (earlier) when they were expanded to accommodate growth.
2) Grant Funding:
   a) Collingwood has been successful over the past 5 years in securing grant funding.

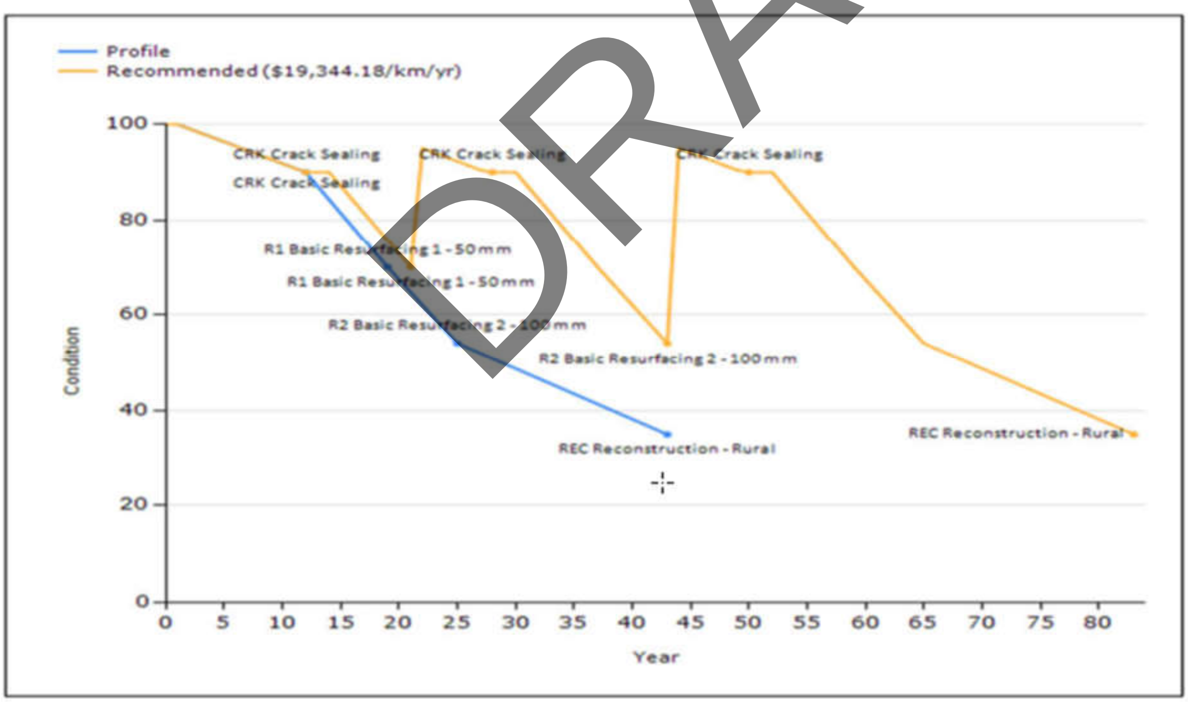
b) Consistent Federal Gas Tax and OCIF grant funding programs have contributed towards road resurfacing and reconstruction. This is a key factor in the overall funding model for asset management.

3) Lifecycle Capital Reserve Fund:
   a) Beginning in 2014 with a contribution of $1.6M (now > $2M in 2021 Budget), Collingwood has consistently increased contributions to this reserve fund each year.
4) Ongoing Capital Budget programs:
   a) Sanitary Reconstruction Program:
      i) While this ongoing annual program is intended to address ageing linear sanitary infrastructure, it has also contributed to road reconstruction
   b) Annual asphalt resurfacing program:
      i) The town has consistently conducted a resurfacing program of critical roads as part of the annual capital budget.

The LOS strategy staff have developed for roads focuses on the Asset or Technical Level of Service or more candidly “Doing the Right Things at the Right Time” which more or less equates to periodic but consistent maintenance and rehabilitation interventions. This approach also equates to the lowest lifecycle cost of the asset while maintaining its optimal condition relative to its age. Based on the staff developed plan there are 3 types of treatment applied at optimal times to maintain the condition of the road, they are as follows:

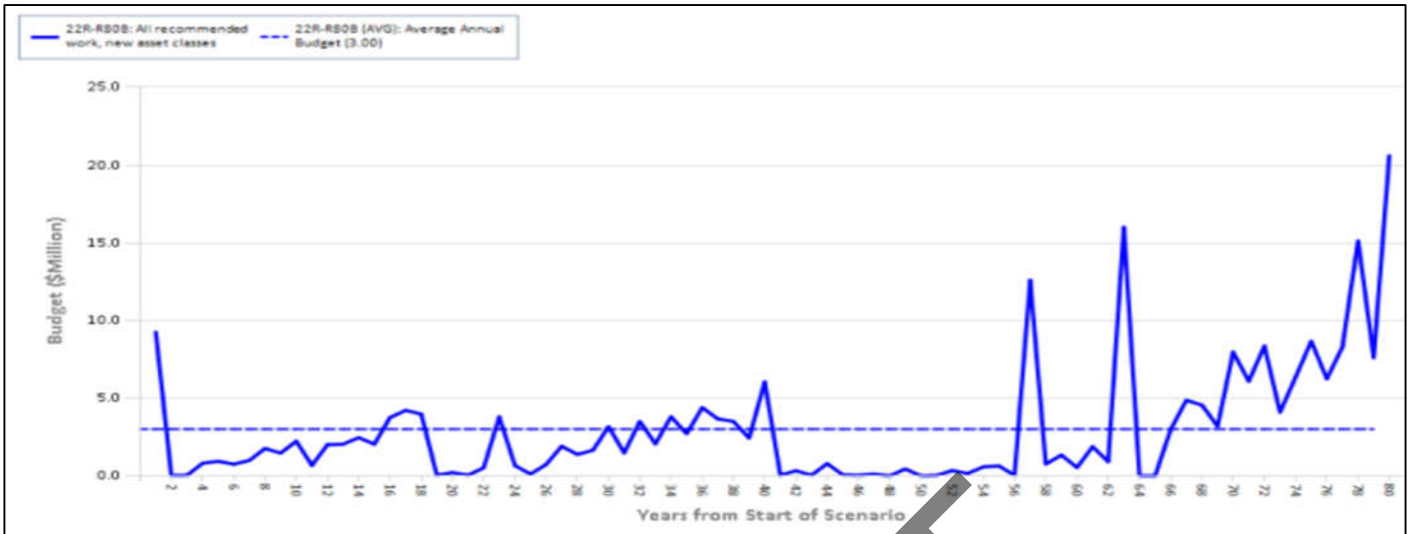
1) Crack Sealing; 2) Resurfacing – 50 mm; and 3) Resurfacing – 100 mm.
This equates to roads lasting approximately 80 years and provides for a deterioration curve as follows:

Figure 11 – Deterioration Curve - Roads



DRAFT

Figure 12 - Full Road Lifecycle Annual investment



You will note that the average investment over 80 years equates to $2.72M per year and is broken down in the table below.

Figure 13 - Annual Roads investment by Improvement

Improvement	Lifespan Average
Crack Sealing	$ 40,032
R1 - 50MM	421,004
R2- 100MM	831,261
Reconstruction	4,123,786
Grand Total	**$ 5,416,083**

DRAFT

You can see that there is a significant backlog showing in 2022 based on the current results, this however will be spread over the next several years to ensure the Town is achieving its' asset management goals while planning for an appropriate average spend. Additionally, some projects that are identified within 2022 can and will be delayed due to other development occurring that will directly affect timing of the rehabilitation.

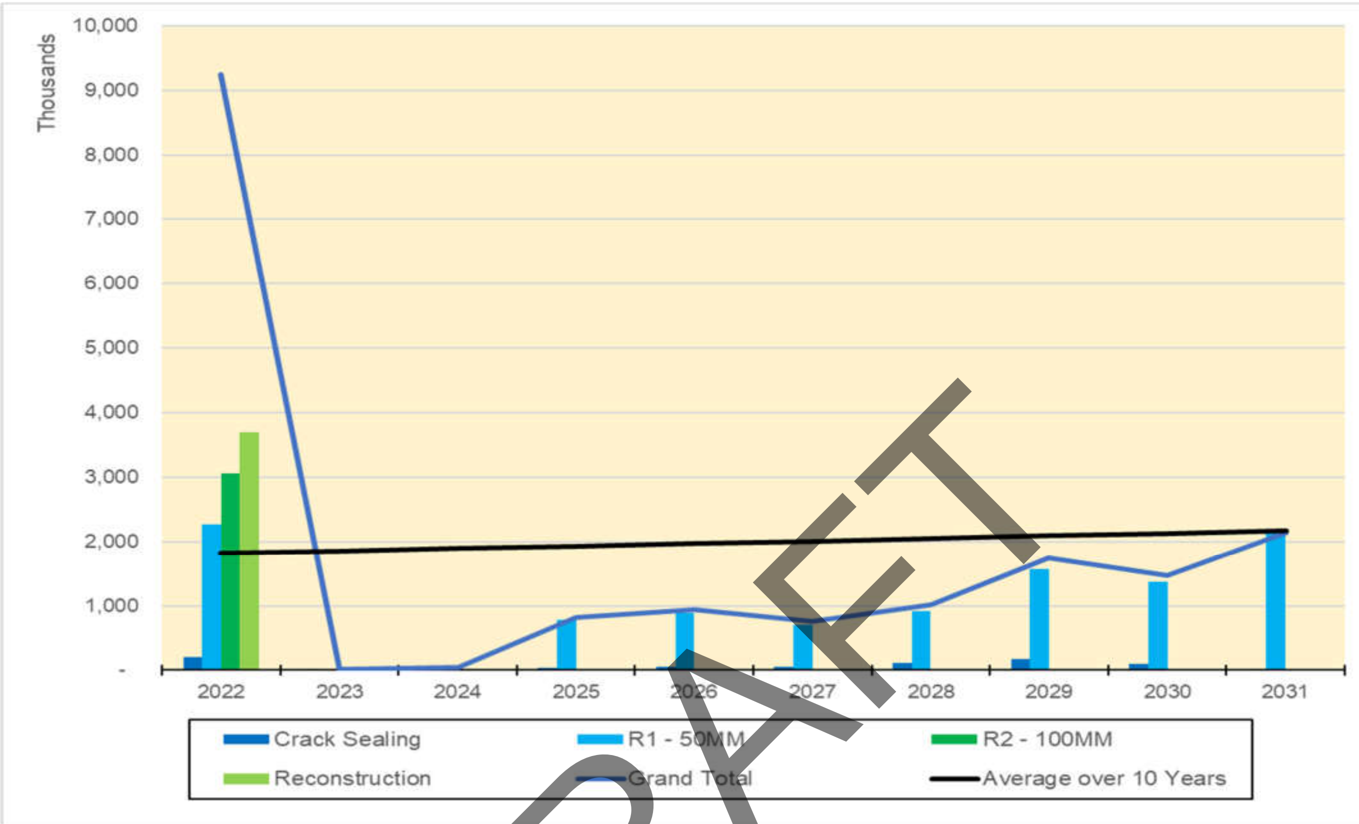
It is important to note that this amount is presented using today's dollars with no inflationary measure, if we add inflationary amounts at 2.0% per year over the next 10-years the results are as follows:

Figure 14 - 10-year Roads Improvement Plan

Improvement	Lifespan Average	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Crack Sealing	$ 40,032	$ 40,833	$ 41,649	$ 42,482	$ 43,332	$ 44,199	$ 45,083	$ 45,984	$ 46,904	$ 47,842	$ 48,799
R1 - 50MM	421,004	429,424	438,013	446,773	455,708	464,822	474,119	483,601	493,273	503,139	513,202
R2- 100MM	831,261	847,886	864,844	882,141	899,784	917,779	936,135	954,858	973,955	993,434	1,013,303
Reconstruction	4,123,786	4,206,262	4,290,387	4,376,195	4,463,719	4,552,993	4,644,053	4,736,934	4,831,673	4,928,306	5,026,872
Grand Total	**$ 5,416,083**	**$ 5,524,405**	**$ 5,634,893**	**$ 5,747,591**	**$ 5,862,542**	**$ 5,979,793**	**$ 6,099,389**	**$ 6,221,377**	**$ 6,345,804**	**$ 6,472,721**	**$ 6,602,175**

The initial $2.7M is a great start, however we still have to be concerned with inflationary increases. These may be partly offset by appropriate investments with respect to the reserve funds, new treatments and gained efficiencies, however staff want to stress the importance of inflation. As new infrastructure is added due to growth, over time it will also be added to the portfolio being renewed and its lifecycle costs will also affect the annual totals.

Figure 15 - 10-year Work Plan



DRAFT

While the 10-year Plan costs are reasonable (at ~ $2.0M/year) as shown above and within the means of our current reserves and funding model, it is key that we do start now to ensure our reserves are sufficient for future needs. With a good investment policy and program, the financial impact of **consistent contributions now will ensure financial sustainability is achieved for the full lifecycle of the road assets in the future**.

The modelling results have stayed consistent with an estimated annual investment requirement of just under $2M annually over the next 10-year (see 10-year Work Plan Graph). This is also consistent with staff's expectations and is in-line with current average spending on road refurbishment and reconstruction in the Town's operating and 10-year capital budgets.

Finally, note that the average amount over 10-years has been **inflated by 2% per year, which means that by the end of 2031 the average value has increased to $2.2M.**

Road Facilities

There are 4 Public Works Road Facilities with a combined replacement cost of $6.2M and all in good condition with the exception of the Salt Shed which is in poor condition (the salt shed is in the 2022 Capital Budget for replacement).

Figure 16 - Roads Facilities - Condition Assessment

List Description	Asset Replacement Cost	Sq Ft	Average Condition	Year Built	Age
Public Works Building	$5,353,375	18,675	85.61	1989	33
Public Works Salt Shed	116,648	1,400	27.20	1990	32
Public Works Sand Dome	674,892	8,100	99.50	2006	16
Public Works Storage Shed	41,660	500	84.76	1990	32
	$6,186,575	**28,675**	**74.27**	7975	**28.25**

Facilities in general are unique with respect to assets in that they can have extremely long life spans (for example Town Hall built 1860). They are also complicated structures compromised of many different asset types (HVAC, Roof, walls, electrical etc.) with varying life spans and maintenance needs. So, while we have provided a replacement cost (the cost to completing rebuild a structure of same specifications) we look to the 10-year work plan as the more relevant indicator of financial liability. Often, a building is not replaced if it can still function appropriately and support the programs and services it houses. This would be the most cost-efficient level of service approach to managing a facility. The 10-year average cost for the 10-year work plan is $0.127M annually and $1.27 M in total with significant immediate needs ($0.7M; primarily Public Works Head quarters) which would be spread out of several years in order to “catch up “while maintaining and even annual spending amount as much as possible.

Figure 17 - Road Facilities - 10-year workplan

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Public Works Admin Bldg.	$631,500	$7,500	$ -	$31,675	$28,300	$1,250	$25,500	$81,650	$132,310	$15,000
Public Works Salt Shed	84,900	-	-	-	-	-	-	1,500	-	103,200
Public Works Sand Dome	-	-	3,000	-	-	-	-	57,600	-	-
Public Works Storage	6,350	-	-	-	-	-	-	-	-	61,100
Total	**$722,750**	**$7,500**	**$3,000**	**$31,675**	**$28,300**	**$1,250**	**$25,500**	**$140,750**	**$132,310**	**$179,300**

Bridges

The Town owns and maintains 25 bridges and has a legislative requirement to conduct bridge studies every 2 years to assess the condition and renewal or rehabilitation needs. Bridges are complex multi faceted structures with different elements requiring maintenance and renewal programs (deck, concrete, beams) and are assessed according to their own assessment criteria under the Ontario Structure Inspection Manual (OSIM). The level of service for bridges is defined by the results of the town’s OSIM reports which also produces a 10-year plan for rehabilitation and renewal.

According to the 2020 OSIM report the town’s bridges will require $8.6M in improvements over the next 10-years. This equates to $860K /year. The town has relied heavily on grant funding in the past as the costs exceed the means of our lifecycle reserve funding. One replacement is identified (Ontario Street) and staff are endeavoring to secure grant funding for this. The chart following provides the details of the work plan.

DRAFT

Additional analysis indicated that the full life cycle costs for all structures would result in a similar amount of funding per year being required over the entire life cycle.

Figure 18 - Bridge Study Capital Works Plan

Name	Replacement Cost	Average Condition	Average Age	10 Year Capital Plan
Pretty River Bridge - Bridge 1	$ 3,030,500	72	50	$ 456,000
Hume Street Bridge	2,122,500	84	61	-
Highway 26 Bridge	947,500	100	61	-
Ontario Street Bridge	4,772,500	36	81	4,772,500
Huron Street Bridge over Station Creek	812,500	73	91	-
Hurontario Street Bridge	1,067,500	75	15	-
First Street Bridge over Oak Street Canal	5,869,500	70	51	415,000
Second Street Bridge over Oak Street Canal	576,500	67	55	202,000
Third Street Bridge over Oak Street Canal	981,500	67	61	247,000
Fourth Street Bridge over Oak Street Canal	962,500	97	7	-
Fifth Street Bridge over Oak Street Canal	1,022,500	97	6	-
Sixth Street Bridge over Oak Street Canal	801,500	72	50	219,000
First Street Bridge over Hickory Street	766,500	88	12	-
Mountain Road Bridge over Black Ash Creek	1,818,500	72	43	1,106,500
Highway 26 Bridge over Black Ash Creek	3,196,500	75	25	-
Sixth Street Bridge over Underwood Creek	1,326,500	73	21	238,500
Mountain Road Bridge over Silver Creek	1,088,500	66	38	342,000
Highway 26 West Bridge over Silver Creek	1,806,500	70	37	229,000
Highway 26 West Bridge over Silver Creek Ext.	1,268,500	74	31	284,000
Hwy 26 Cranberry - bridge 23	906,500	74	61	130,000
Hume St at Minnesota - bridge 25	597,500	98	6	-
Grand Total	$ 35,742,500	76	41	$ 8,641,500

DRAFT

Environmental Services

Water Linear

With underground linear infrastructure it can be challenging to properly assess the condition and thus AMP plans are often based on the age of the assets. However, there are more factors that can help with the assessment of mains, such as material types, soil conditions or depth of installation, as well as the number of breaks experienced. Taking these additional factors into consideration the water department has developed a water priority weighting tool which assigns a weighted value score to asset segments based on age, number of breaks per 100 meters, main depth, and pressure issues in order to identify the most critical renewal requirements. Using this tool helps to address the level of service we are trying to achieve. The table below illustrates the conditions as well as the age and replacement costs of each asset class. Over 70% of the town’s inventory is 28 years or less and has an average condition rating of between 65/100 and 81/100 (fair to very good).

Figure 19 - Water Linear Asset Condition by Asset Class

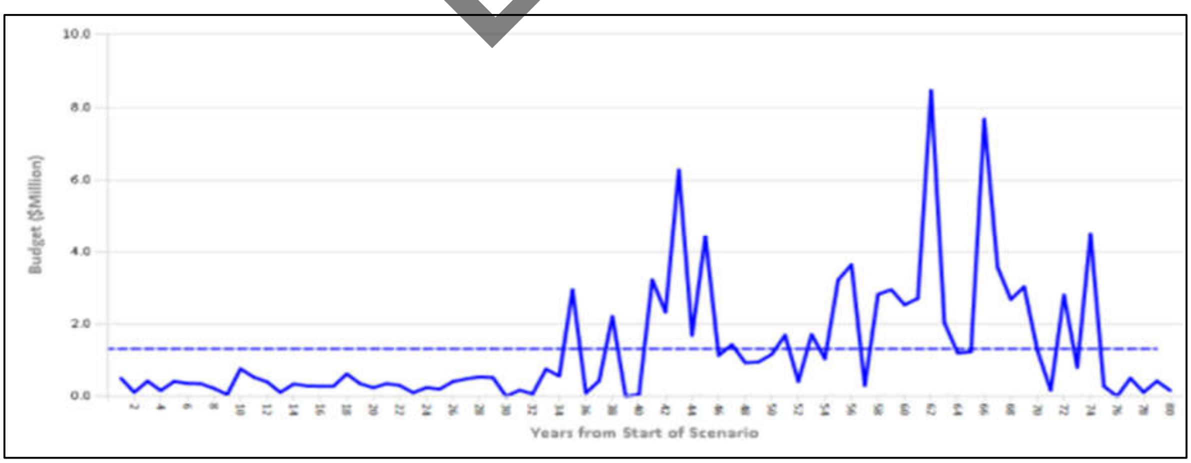
Asset ID	Length in Meters	Average Condition	Replacement Cost	Average of age
WM-CI-250	2,942	14.6	$ 1,672,672	65.5
WM-CI-400	604	26.0	481,694	59.2
WM-CI-150	25,522	24.9	12,464,731	56.9
WM-CI-300	11,531	27.0	7,106,929	56.0
WM-CI-200	4,357	26.3	2,190,980	55.7
WM-CON-400	3,040	31.0	3,967,753	54.2
WM-CON-450	893	33.8	1,502,044	53.0
WM-PVC-300	107	64.6	48,986	28.3
WM-DI-300	25,241	66.0	15,624,211	26.9
WM-DI-250	2,393	67.3	1,385,654	25.8
WM-CON-600	4,885	68.8	9,279,545	25.0
WM-DI-150	56,986	69.4	27,821,901	24.3
WM-DI-200	19,739	72.7	9,865,244	21.4
WM-DI-400	7,064	74.5	5,667,405	20.4
WM-CU-50	531	70.9	9,920	19.3
WM-PVC-150	1,453	77.6	709,515	17.9
WM-DI-500	3,290	81.6	3,621,445	14.8
Grand Total	170,578	59.3	$ 103,420,629	31.7

*WM = Watermain, CON = concrete, CU copper, DI ductile iron, PVC Plastic

In addition, the water department coordinates with the public works sanitary program to match main replacements that correspond with sanitary priorities.

Over a full lifecycle view, the annual investment requirements have also been consistent with further revisions and refinement of the AMP at approximately $1.34M/year as illustrated in the graph below, in 2021 dollars.

Figure 20 - Water Linear full lifecycle annual investment



The same concerns for inflationary factors apply here as discussed under the roads section. Adding a 2% inflationary factor over the next 10-years results in the following:

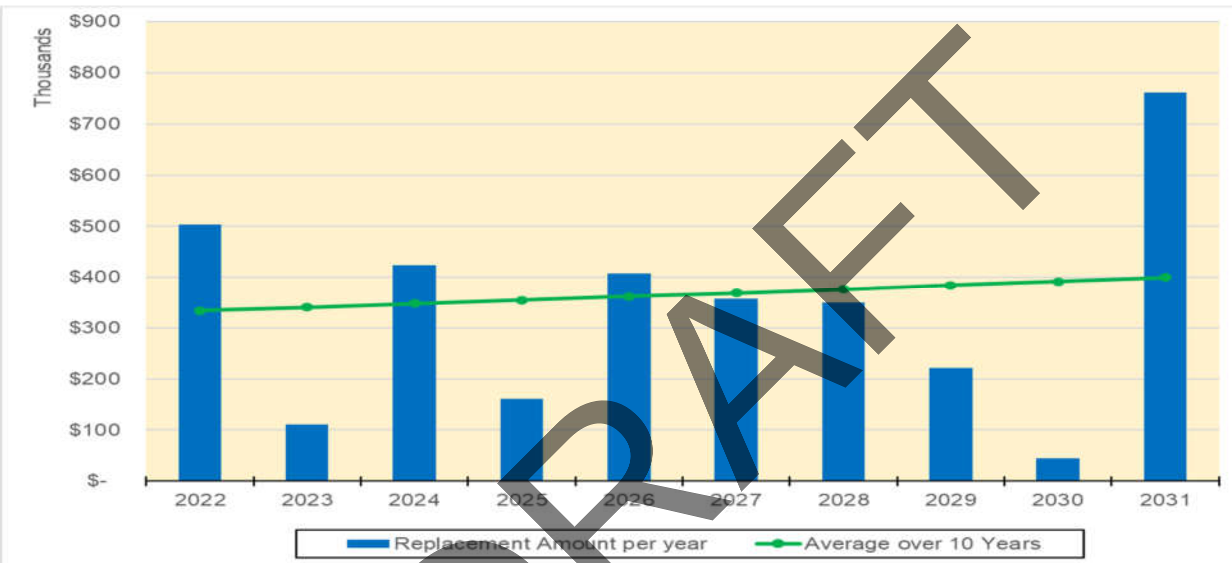
DRAFT

Figure 21 - Water Linear 10-year average investment with inflation ($000s)

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
10 Yr AVG	$ 1,342	$ 1,368	$ 1,396	$ 1,424	$ 1,452	$ 1,481	$ 1,511	$ 1,541	$ 1,572	$ 1,603

However, in spite of known specific issues break tracking, (again based on depth, break and pressure history) the watermain system has a relatively lower short term (10-years) annual investment need of approximately $370K annually which is a significant change from previous AMP update reports. As mentioned above, this is also due to water staff being able to assess some older mains thought to be due for replacement and found them to be in good condition. The 10-year Work plan is illustrated below and includes an inflationary factor each year in the amount of 2%.

Figure 22 - Water Linear Assets - 10-year workplan investment



DRAFT

As mentioned previously in the roads financing strategy, it is critical that the Town start making consistent contributions to the reserve funds for the future growing liability as assets reach their end of useful life. As early as the next update of this AMP, ongoing amounts should be considered for the significant needs emerging in the longer term (30 years or more).

Water Vertical Assets

The Water Treatment Plant, as well as associated reservoirs and booster stations has a current estimated replacement cost of $72.3M which consists of facility assets at $27.5M and equipment assets at $47.9M. Water vertical assets are comprised primarily of the processing equipment but also include the facility buildings themselves that house the equipment.

Equipment assets, because of there shorter lifespans, are primarily assessed based upon their age as variations in lifespan either shorter or longer tend to not have a significant impact in terms of required investment. There are 1,037 pieces of equipment, the bulk of which are in the Water Filtration Plant building. Overall, the average age relative to useful life is 80% indicating the majority of the assets only have 20% of their useful life remaining. However, this number is skewed due to the impact of the water filtration plant where on average 10% of useful life remains. In the case of the Water Filtration Plant, planning work has already commenced to replace the ageing equipment however the overriding driver of this project will be growth and expansion due to population growth in Collingwood and other communities served by the plant.

In general equipment assets are replaced when they fail or the cost benefit of repairing or maintaining them justifies replacement. There can also be instances where older equipment is less efficient, and the efficiency of newer equipment could justify replacement. Equipment vertical items require frequent inspection and maintenance by town staff with the history of these interventions captured in the work order system. The overriding policy of replacing only as required also equates to the lowest cost approach to managing these vertical assets which is consistent with the Level of Service approach of the other core asset classes. Water vertical assets are also highly regulated in which case regulatory or legislative requires become the primary factor in rehabilitation and replacement decisions.

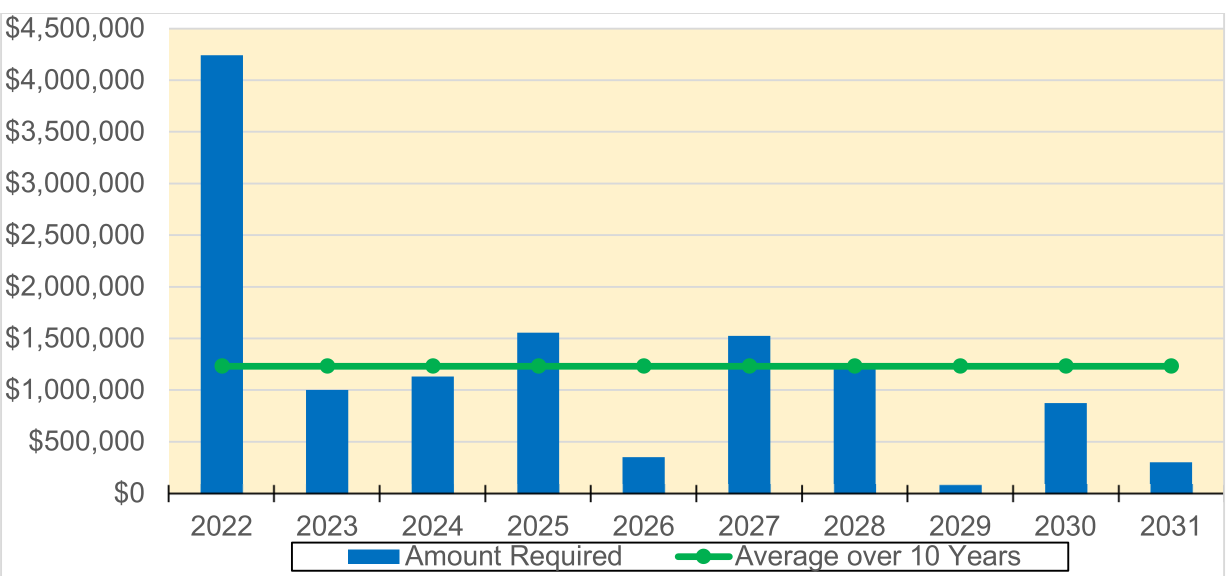
Figure 23 - Water Equipment Age & Condition

Asset	Asset Name	Replace Cost$	Avg age	Pieces Equip't	Avg Year	% Life Consumed	Avg use life
WDCAR01	Carmichael Reservoir Building	$7,121,198	29	60	1993	121.0%	29
WDDAV01	Davey Reservoir Building	$1,728,039	12	98	2010	51.5%	23
WDELV01	Elevated Tower	$198,947	16	18	1894	40.7%	49
WDGMP01	Georgian Meadows Booster Stn	$393,342	17	29	2005	91.2%	21
WDOSL01	Osler Booster Station	$228,559	3	10	2020	15.3%	11
WDSRA01	Environmental Services Administrarion	$13,145	4	8	2018	43.3%	10
WTRAB01	R.A.B. Water Filtration Plant	$29,000	1	4	2021	11.7%	11
WDCAR01	Carmichael Reservoir Building	$23,306	4	4	2018	-85.8%	6
WDELV01	Elevated Tower	$10,888	4	4	2019	16.3%	21
WDOSL01	Osler Booster Station	$7,337	4	1	2018	0.0%	0
WTRAB01	R.A.B. Water Filtration Plant	$38,239,730	19	801	2003	91.1%	20
		$47,993,492	**18**	**1037**	**2002**	**85.7%**	**21**

DRAFT

Water vertical assets are also highly regulated in which case regulatory or legislative requires become the primary factor in rehabilitation and replacement decisions. The 10-year work plan has an average expenditure of $1.23M annually ($1.25M with 2% increase for inflation by 2030) with significant immediate needs similar to other assets classes which would be mitigated over several years.

Figure 24 - Water Vertical Equipment 10-year Work Plan



The Water facility assets that house the vertical equipment, are on average in relatively good condition (+90 condition rating) despite the age of some of the facilities. With proper maintenance and upkeep, in general a building can be maintained in good condition and rather than a full rebuild being necessary elements of the building can be replaced over the years (roof, windows, brick repointing etc). Typically, the overriding factor in replacing a facility would be that it is unable to provide the intended programs or service or there is a requirement for expansion due to growth. This again is the lowest cost Level of Service approach.

Figure 25 - Water Facility assets condition

Name	Asset	Asset Replacement Cost	Average Condition	Sq Ft	Year Built	Age
Carmichael Reservoir Building	WDCAR01	2,412,325	0.00	4,920	1991	30
Davey Reservoir Building	WDDAV01	1,397,384	95.90	2,850	2010	11
Elevated Tower	WDELV01	6,000,000	95.00	400	1950	71
Elevated Tower Building	WDELVBL	400,000	86.50	490	1998	23
Environmental Services - Admin Bldg	WDSRA01	7,372,374	90.75	28,290	1989	32
Georgian Meadows Booster Stn	WDGMP01	0	0.00	200	0	
Osler Booster Station	WDOSL01	213,000	0.00	130	2000	21
R.A.B. Water Filtration Plant	WTRAB01	3,930,609	87.60	12,875	1999	22
RAB Generator Building	RABGEN	1,250,000	98.40	1,000	1999	22
RAB Industrial Raw Water Building	RABRWB	1,320,000	76.40	3,560	1950	71
		24,295,692	**90.08**	**54,715**		**33.67**

*Georgian Meadow Booster station has no actual facility elements (all underground equipment)

There are Water facility assets that were built as far back as 1950 and some of these assets are included in the Water 10-year capital budget for replacement such as the Elevated Water Tower, Osler pumping station and the actual Water Plant facility itself. However, the primary driver for these replacements is growth as the Water Tower will double its capacity and is funded 50% by development charges which again highlights the point that facilities are unique assets that can hold their value for extended periods (decades). Similarly, the Water Plant expansion is growth driven with only 32% of the estimated $121M budget coming from reserves (in the case of Water, these reserves are funded by Water User Fess with user rates set by the Rate Study). As was discussed previously with Public Works facilities, the more relevant estimate of liability is the 10-year work plan for facilities which in the case of Water is $460K annually or $4.6M over 10-years.

Figure 26 - Water Facilities 10-year Work Plan

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
RAB Generator Bldg.	$ 5,000	$ 2,400	$ 250	$ 11,950	$ -	$ -	$ -	$ -	$ 30,394	$ -
RAB Industrial Raw Water Bldg.	-	138,650	10,500	57,000	-	160,000	-	21,000	153	-
Carmichael Reservoir Bldg.	2,251	342,350	3,000	-	-	20,000	-	21,600	-	-
Davey Reservoir Bldg.	-	45,750	2,000	-	9,000	16,200	28,500	11,000	6,000	8,250
Elevated Tower	-	-	25,000	-	-	-	-	25,000	95	5,000
Elevated Tower Bldg.	-	43,875	-	-	-	10,000	-	10,700	-	7,500
Osler Booster Station	-	-	-	-	45,000	-	-	-	-	-
Environmental Services Administration	-	451,750	62,500	2,000	72,750	47,550	115,050	643,225	-	11,400
R.A.B. Water Filtration Plant	1,500	234,200	78,000	134,300	29,500	6,400	-	78,950	1,414,100	136,400
	$ 8,751	**$1,258,975**	**$181,250**	**$205,250**	**$156,250**	**$260,150**	**$143,550**	**$ 811,475**	**$ 1,450,742**	**$168,550**

DRAFT

DRAFT

Sanitary Linear Assets

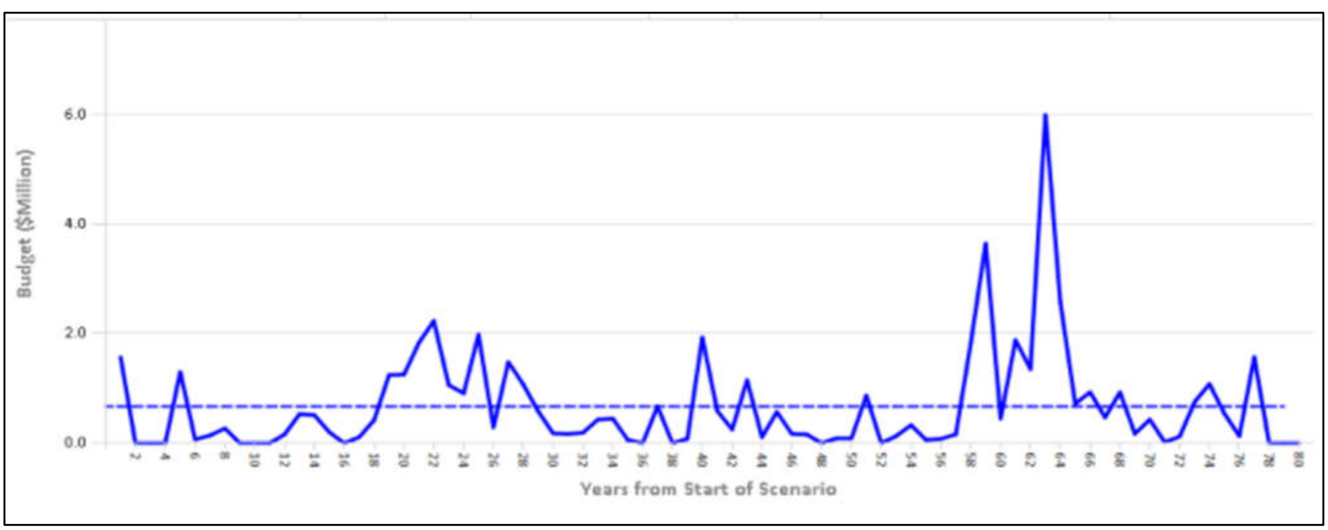
Consistent with other linear assets classes, the linear sanitary network is in relatively young network (average 34 years) and in good condition which again reflects the impacts of rehabilitation and replacement due to growth and having benefited from recent significant grant funding programs. The good condition is also a reflection of a proactive Level of Service approach begun in the last 10-year when it became apparent some sections of the sanitary network were in critical need of repair as breaks and backups were occurring. A video condition assessment in 2009 identified the most critical areas and a consistent annual sanitary replacement program was launched which continues to this day. This program is also coordinated with roads and water linear asset management programs as well as growth expansion requirements. Main breaks per 100 km and sewer backups are tracked as well as bypass events at the treatment facilities with targets established for intervention. This proactive Level of Service approach avoids costly unplanned repairs which can be inconvenient to the taxpayer and may not be optimally coordinated with other linear asset requirements and therefore ultimately be more costly as per the total Lifecycle of the assets.

Figure 27 – Sanitary Linear Assets - Condition by Asset class

Asset Class	Asset Replacement Cost	Count of Asset	Length Meters	Average Condition	Average of Year Built	Age
SAN-150	$507,158	8	1,151	88.92	2000	22
SAN-200	$14,133,914	534	37,442	80.42	1992	29
SAN-250	$15,479,200	411	30,669	69.22	1979	42
SAN-300	$6,077,214	144	11,384	74.27	1985	36
SAN-375	$5,501,710	122	9,912	76.14	1988	33
SAN-450	$10,686,027	146	16,440	77.04	1988	33
SAN-525	$2,658,134	53	3,556	67.71	1975	46
SAN-600	$687,082	10	783	75.62	1984	37
SAN-675	$561,338	9	540	88.36	2002	19
SAN-750	$6,424,488	58	5,202	72.01	1980	41
	$62,716,265	**1495**	**117,080**	**75.35**	**1986**	**34**

The average annual cost to maintain the system in 2021 dollars is just under $700K. The graph below illustrates over the lifecycle of these assets (80 years) the amounts required.

Figure 28 – Sanitary Linear Assets - Full lifecycle annual investment



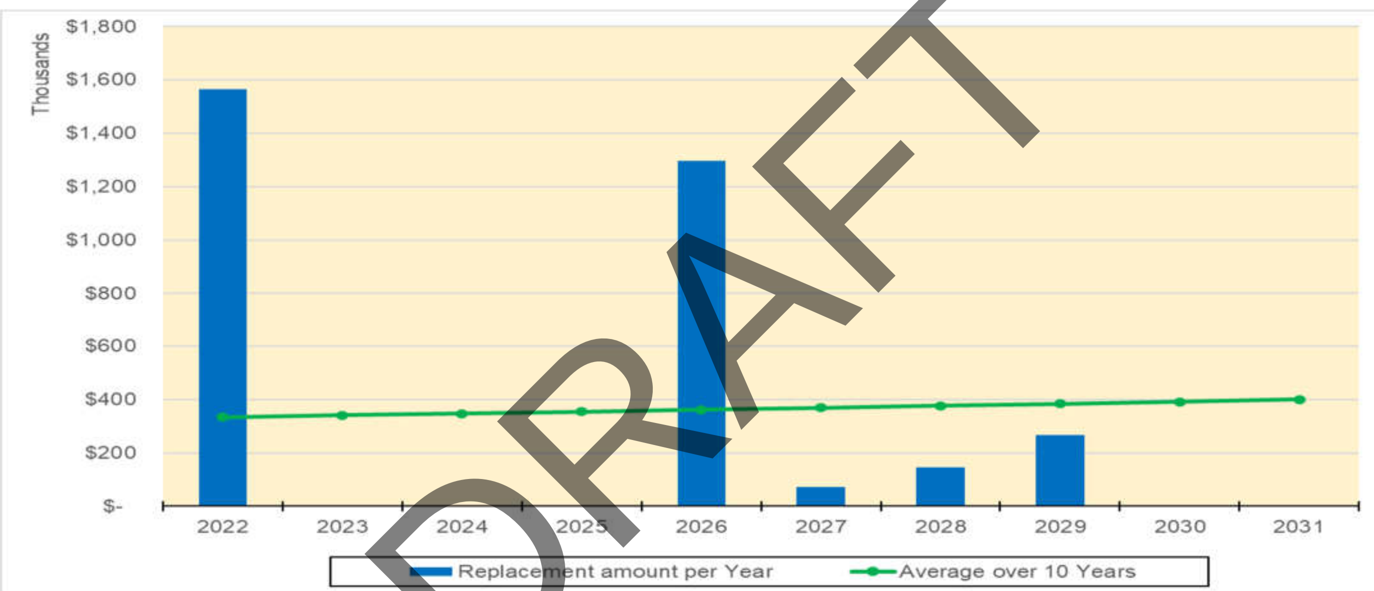
The same concerns for inflationary factors apply here and adding a 2% inflationary factor over the next 10-years results in the following:

Figure 29 – Sanitary Linear 10-year average investment with inflation (in '000's)

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
10 Year AVG	$671.8	$685.2	$698.9	$712.9	$727.2	$741.7	$756.5	$771.7	$787.1	$802.8

As discussed previously a concerted effort has been placed on reviewing and understanding the projects over the next 10-years and will continue to be the focus for planning of projects, to ensure optimal capital expenditures. The chart below details the work required over the next 10-years and provides an average amount of $335K/year.

Figure 30 – Sanitary Linear Assets 10-year work plan



DRAFT

Vertical Sanitary Assets

The updated data (2021) for Sanitary vertical works are like the Water vertical assets in that the treatment plant is very much at the end of its life, while much of the other assets, such as pumping stations are relatively young in comparison. The wastewater treatment facility however is being impacted by growth as well, with a major expansion project already being planned to start in 2026. In addition, a program is already underway to replace the ageing pumping stations. Additionally, a proactive Level of Service approach to managing the equipment using a Work Order system for maintenance and repair ensures equipment will reach its optimal expected life and interventions can occur before they become too costly.

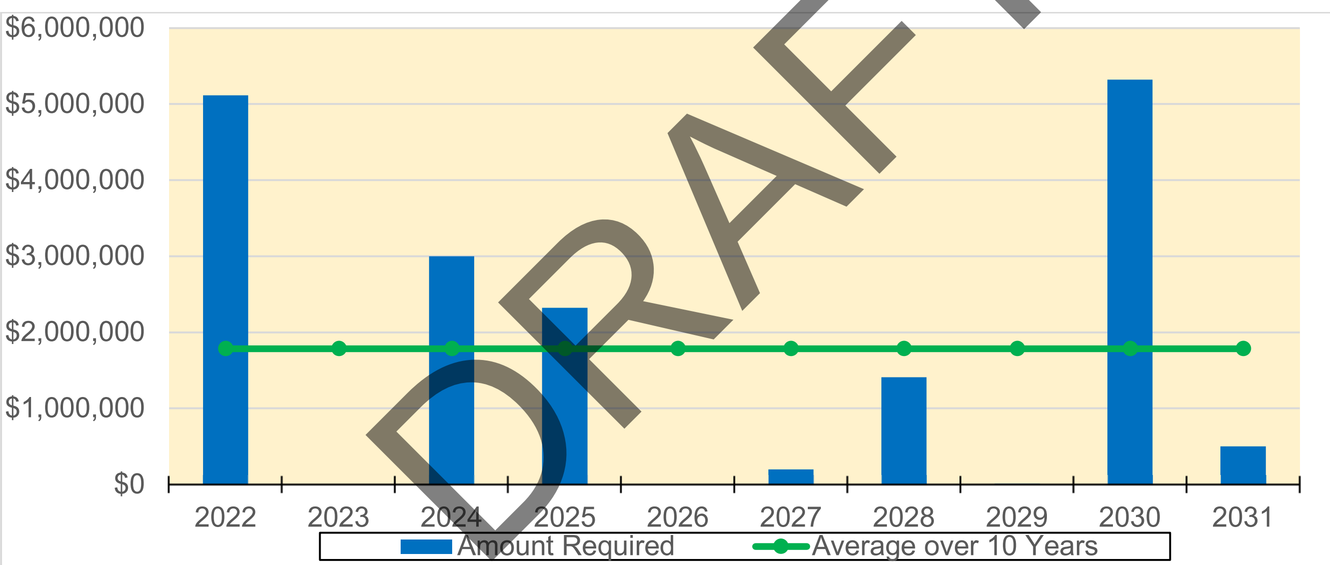
Figure 31 - Sanitary equipment condition age

	Asset	Replacement Cost	Count Equipment	Avg of age	% Life Consumed	Avg of use life
BLACSPS	Black Ash Water Pumping Station	1,243,133	84	2.35	9.0%	11.43
CRANSPS	Cranberry Sewage Pumping Station	166,665	23	12.91	38.0%	11.09

	Asset	Replacement Cost	Count Equipment	Avg of age	% Life Consumed	Avg of use life
MINNSPS	Minnesota Water Pumping Station	1,282,115	48	4.31	8.0%	14.48
PATTSPS	Paterson St. Water Pumping Station	557,830	64	22.53	86.0%	20.78
PRRVSPS	Pretty River Water Pumping Station	780,632	34	11.94	45.0%	17.06
SLGLWPS	Silver Glen Sewage Pumping Station	129,868	31	12.48	43.0%	15.16
STCLSPS	St. Clair Water Pumping Station	1,507,168	42	17.00	66.0%	21.43
THLNSPS	Tenth Line Sewage Pumping Station	48,915	8	8.25	17.0%	11.88
WWTP	Wastewater Treatment Plant (WWTP01)	8,985,321	378	24.42	97.0%	22.99
		14,701,649	**712**	**18.18**	**0.70**	**19.63**

Based on the current replacement costs and useful life of the equipment as shown above the average amount that will need to be maintained is $890K/year and when a 2% inflationary factor is included this amount grows to $1.07M/year by 2031.

Figure 32 - 10-year Sanitary Equipment replacement program



Sanitary Facilities

The Sanitary facilities are in relatively good condition reflecting the fact that buildings can last quite a long time with proper maintenance, and are often more likely to be replaced due to loss of functionality then age. The recent facility assessment data will be leveraged in a proactive manner to most cost effectively manage maintenance and repairs.

Figure 33 - Sanitary Facilities Age & Condition

Name	Asset	Asset Replacement Cost	Average Condition	Sq Ft	Year Built	Age
Black Ash Water Pumping Station	BLACSPS	1,480,550	97.80	1,536	2020	1
Boiler and COGEN Building	BOILSFB	330,450	72.80	550	1979	42
Cranberry Sewage Pumping Station	CRANSPS	260,820	87.10	324	2002	19
Digester 1&2 Building	DI12SFB	1,845,478	87.40	6,045	1979	42
Digester 3&4 Building	DI34SFB	1,338,696	89.10	4,385	1979	42
Minnesota Water Pumping Station	MINNSPS	633,800	0.00	1,540	1958	63
Paterson St. Water Pumping Station	PATTSPS	140,443	0.00	460	1993	28
Pretty River Water Pumping Station	PRRVSPS	150,000	0.00	100	2010	11
Silver Glen Sewage Pumping Station	SLGLWPS	160,850	99.10	0	2006	15
St. Clair Water Pumping Station	STCLSPS	755,950	0.00	1,350	2003	18
Tenth Line Sewage Pumping Station	THLNSPS	0	0.00	0	0	0
Wastewater Treatment Plant Admin Building	WWTPBLD	4,823,582	92.10	2,800	1958	63
Wastewater Treatment Plant Control Room	WWTPCTL	2,162,980	93.10	7,085	1968	53
Wastewater Treatment Plant Effluent Building	WWTPEFF	337,750	93.50	600	1979	42
Wastewater Treatment Plant Generator Building	WWTPGEN	970,000	97.10	770	1999	22
Wastewater Treatment Plant Headworks Building	WWTPHDW	3,700,735	82.00	8,535	1998	23
Wastewater Treatment Plant Raw Sludge Pump Building	WWTPRSP	535,710	94.20	720	1968	53
Wastewater Treatment Plant Sludge Thickening Building	WWTPSLT	1,282,218	93.30	4,200	1979	42
		20,910,012	**62.03**	**41,000**	**1986**	**34**

As is the case with the Roads and Water facility assets, we look to the 10-year work plan as the best indicator of financial liability over the immediate outlook. The average annual expenditure for Sanitary Sewer facility assets is $2.2M.

DRAFT

Figure 34 - Sanitary Facilities 10-year work plan

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Black Ash Sew. Pump Stn.	$ 11,550	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,250
Boiler and COGEN	-	10,500	-	22,150	67,000	350	-	-	200	11,000
Cranberry Sewage Pump Stn.	3,900	750	-	-	-	3,750	-	4,000	-	-
Digester 1&2 Building	-	44,500	-	178,200	-	49,550	-	-	13,190	4,500
Digester 3&4 Building	-	80,360	-	57,500	-	8,500	-	-	8,114	-
Minnesota Sew. Pump Stn.	-	7,750	8,000	-	-	7,500	-	24,050	-	-
Paterson St. Sew. Pump Stn.	-	1,700	1,500	1,650	-	3,000	-	8,700	-	500
Pretty River Sew. Pump Stn.	-	1,400	-	-	600	1,500	-	-	-	2,750
Silver Glen Sew. Pump Stn.	-	-	-	1,500	-	-	-	-	-	-
St. Clair Sew. Pump Stn.	-	-	8,750	9,750	4,000	1,000	-	3,600	-	-
WWTP Admin Building	-	219,001	24,700	87,000	7,500	43,100	-	20,500	5,750	-
WWTP Control Room	-	63,400	-	14,000	1,500	79,850	-	23,100	-	-
WWTP Effluent Building	-	9,000	-	10,000	-	-	-	-	-	-
WWTP Generator Bldg.	-	5,000	22,750	-	-	-	-	25,000	-	-
WWTP Headworks Building	-	112,390	520,170	9,000	19,500	7,750	-	52,000	-	-
WWTP Raw Sludge Pump	-	30,950	-	-	-	-	-	16,250	-	-
WWTP Sludge Thickening	-	11,100	-	68,850	1,000	5,250	-	3,500	1,000	18,750
	$ 15,450	**$ 597,801**	**$585,870**	**$459,600**	**$101,100**	**$211,100**	**$ -**	**$180,700**	**$ 28,254**	**$ 38,750**

DRAFT

Stormwater

In addition to the facilities and vertical environmental equipment assets, the linear stormwater system has benefited significantly from relatively recent efforts to update and reassess the system inventory which was done as part of the Master Serving Plan currently underway. With fewer regulatory requirements in comparison to environmental services and road assets, stormwater assets has the lowest average condition rating and will benefit from the more proactive Technical Level of Service approach as taken with the other core assets classes. As is demonstrated, timely maintenance and repair is typically a minor expense relative to the return on investment and savings from maximizing the asset life span and hence is the lowest lifecycle cost approach.

Figure 35 - Stormwater Asset Condition by class

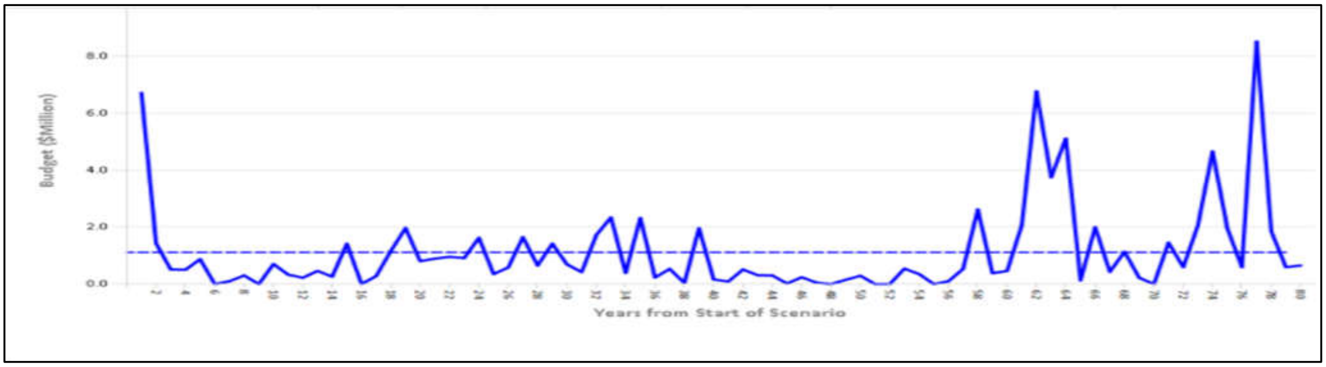
Asset Class	Asset Replacement Cost	Count of Asset	Length Meters	Average Condition	Average of Year Built	Age
STS-1050	$5,556,368	38	2,727.62	74.83	1983	38
STS-1050-CSP	$208,880	3	102.53	1.00	1964	57
STS-1200	$2,174,094	12	861.60	84.86	2000	22
STS-1350	$5,981,137	32	2,102.78	81.23	1993	28
STS-1500	$2,199,899	7	672.05	51.56	1964	57
STS-1500-CSP	$1,995,841	4	609.72	24.24	1982	40
STS-300	$12,359,987	619	13,054.58	85.67	1988	33
STS-300-CSP	$4,252,063	239	4,885.13	16.93	1925	96
STS-375	$6,502,750	168	6,323.86	87.79	2000	21
STS-375-CSP	$4,943,091	109	4,905.99	15.68	1956	65
STS-450	$7,809,078	159	7,334.64	88.67	2002	19
STS-450-CSP	$6,857,865	165	6,519.82	19.87	1881	140
STS-525	$6,922,913	127	6,294.73	82.67	1993	28
STS-525-CSP	$356,392	10	324.07	5.65	1380	641
STS-600	$10,986,719	161	8,519.55	85.15	1997	24
STS-600-CSP	$1,356,942	27	1,052.21	27.49	1765	256
STS-750	$10,862,638	134	7,222.11	79.35	1992	29
STS-750-CSP	$824,852	11	548.42	49.67	1816	205
STS-900	$7,196,676	79	4,390.71	82.08	1970	51
STS-900-CSP	$1,059,309	11	643.14	43.06	1992	29
STS-975	$407,554	6	228.17	92.16	2006	16
	$100,815,048	**2121**	**79,323.43**	**66.73**	**1967**	**54**

DRAFT

<u>Financing Strategy</u>

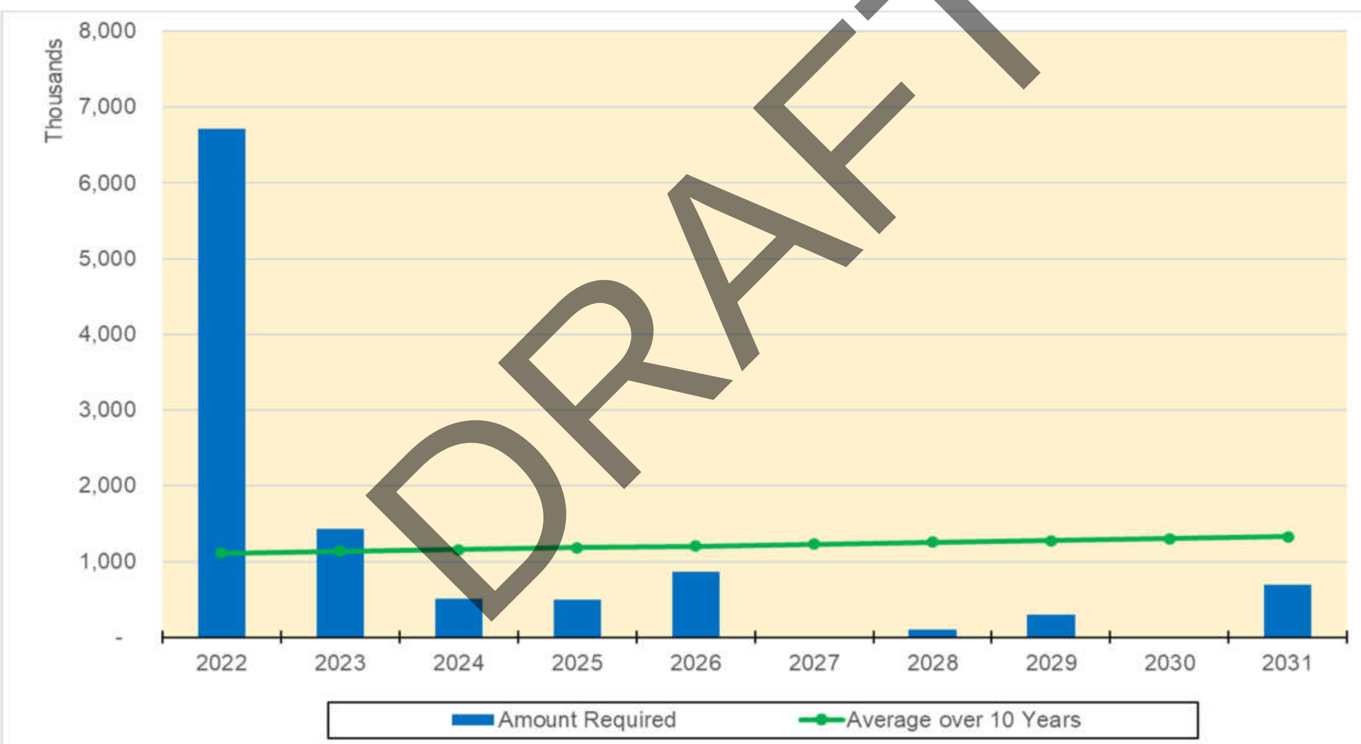
The stormwater network has the highest annual average estimated cost of any of the underground linear systems at $1.1M. The graph below illustrates the average amount as well as the high contributory years. You will note that the 2022 amount is quite high and reflects a backlog of works, however the projects will continue to be monitored and the focus will be on the total lifecycle of works, rather than a particular year.

Figure 36 - Stormwater full lifecycle annual investment



Once again inflationary factors apply by adding a 2% inflationary factor resulting in the10-year Work Plan provided below, note again that because of the backlog showing in 2022 there is not a great difference between the required amounts here versus the 80-year full lifecycle.

Figure 37 - Stormwater 10-year Work plan



DRAFT

Overall Financing Strategy

For an Asset Management Plan to be effectively put into action, it must be integrated with financial planning and long-term budgeting. The development of a comprehensive financial plan will allow the Town of Collingwood to identify the financial resources required for sustainable asset management based on the existing asset inventories, desired levels of service and projected growth requirements.

As we have reviewed each individual asset category on its own the final step of understanding the needs of the AMP is to combine the information and review the different available financing options. The chart below summarizes the discussions held above, and totals nearly $10.1M.

Figure 38 - Total funding requirement

Asset Group	Annual Lifecycle Amount - 2021$
Roads	$2,118,347
Bridges	864,150
Water - Linear/ Vertical	3,339,285
Wastewater - Linear Vertical	2,545,251
Stormwater	1,216,061
Total	**$10,083,094**

DRAFT

Although $10.1M is a large amount of funds to manage and comprehend, it is crucial that we recognize the multiple sources of funding and then clearly define the gap between what is needed and what we currently spend/generate each year. There are multiple sources of funding and they include:

- Reserves/Reserve Funds
- Grants
- Debt Financing – both internal and external
- Tax Levy
- User Fees
- Operational Sources (maintenance budgets)

Tax-Supported Assets (Roads/Bridges and Stormwater)

The town has primarily used contributions to reserves, grants, debt financing and the tax levy to fund or support capital projects. The total required amount for these assets equates to $4.2M. The current reserve funds that are applicable to this include: the Special Capital Levy and Lifecycle Replacement Reserve Fund. On an annual basis the amounts that are added to both of these funds (on average over the last 2 years) is $2.2M, additionally the town has used both the Ontario Community Infrastructure Fund (OCIF) and the Canada Community-Building Fund (CCBF, formerly known as the Federal Gas Tax) to supplement projects. Additionally, the Town has used funds within the operational budget such as paving and asphalt spray and patch that contribute as well. The chart below details the net funding gap for these assets, note however this is based on the $2.2M continuing for reserve funding each year:

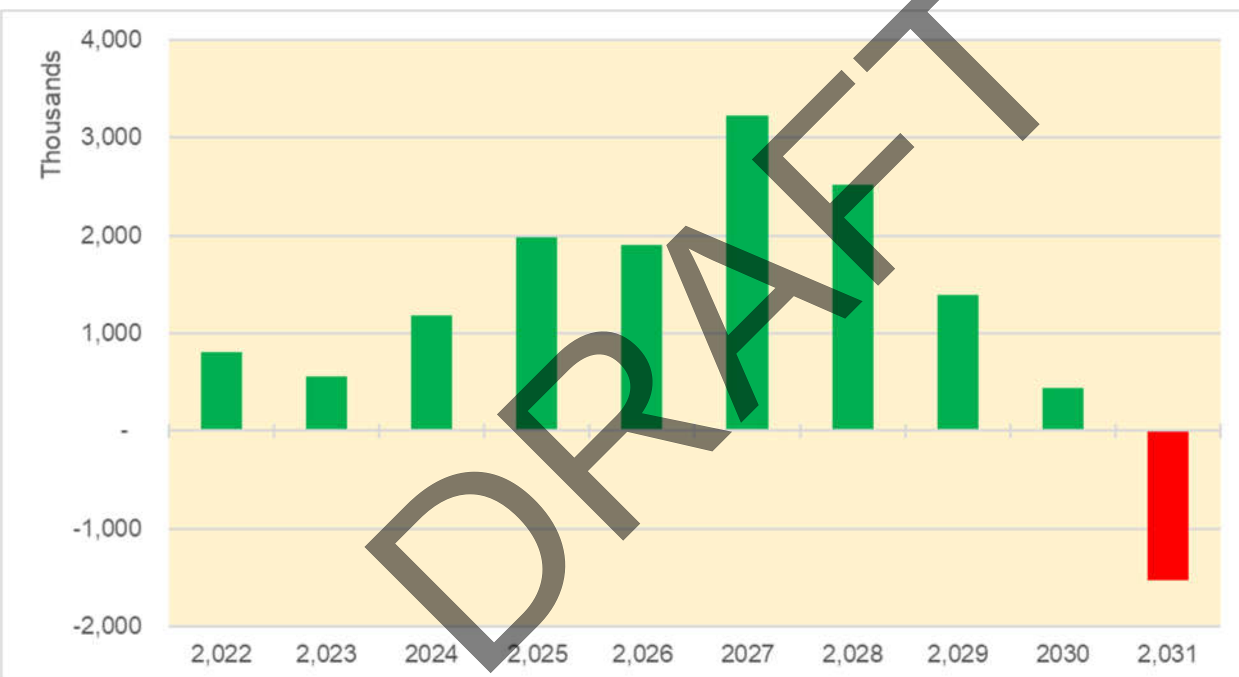
Figure 39 - Tax Supported Annual Funding gap

Roads/Bridges/Stormwater	Amount
Annual Lifecycle Amount-2022$	$4,198,558
Less:	
Reserve Contributions	2,200,000
OCIF Funding *	952,007
Federal Gas Tax (50%)	315,000
Amounts in Operational Budget	356,785
Financing Gap	**$374,767**

*OCIF Funding $1.9M (100% increase Sept 2021) split 50/50 with User Supported

This amount is excluding inflation and is reported in 2021 dollars. Using this information and holding the current contributions as detailed above, a graphical presentation of the reserve funds balance is shown below.

Figure 40 - 10-year Reserve Forecast



You will note that beginning in year 2030 if we do not increase the contributions (and exclude debt) we begin to see a deficit in the reserves.

The town is fortunate that there have been sound financial decisions over the last several years and have been able to build a balance in the reserve funds to begin the AMP program, however, as can be seen these amounts can become quickly depleted if we do not increase the contributions. Additionally, there is some element of risk as grants are not guaranteed and may at some time either go away altogether or decrease significantly. Note again that this does not include any debt being issued, however for simplicity purposes they have been excluded.

Given all the information and the understanding of how vitally important it is that we continue to invest today to protect the future sustainability of the town. It is also important to understand that there are ways to assist in closing the gap of $374K going forward to ensure that it is not overly burdensome to the taxpayer for example:

1) Add small increases to the Special Capital Levy over the next 5 – 10-years:

Figure 41 - Estimated Reserve increase with increase to Special Capital Levy

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Rate as % of Tax Rate	0.75%	0.79%	0.83%	0.87%	0.91%	0.96%	1.01%	
Amount $	$ 264,000	$ 277,200	$ 291,060	$ 305,613	$ 320,894	$ 336,938	$ 353,785	
Estimated Change Amount $	$ -	$ 13,200	$ 13,860	$ 14,553	$ 15,281	$ 16,045	$ 16,847	$ 89,786
Estimated Change %		**5.00%**	**5.00%**	**5.00%**	**5.00%**	**5.00%**	**5.00%**	**34.01%**

2) As old debt expires use the tax levy component to create a future Debt Reserve (to assist in Asset Management). More details will come forward as the Debt Policy is reviewed however to provide some context – the current debt levy requirement is approximately $1.5M over time this will deteriorate by about 15% per year which would mean the following:

Figure 42 - Decreasing Debt Levy Requirement

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount $	$1,500,000	$1,275,000	$1,083,750	$ 921,188	$ 783,009	$ 665,558	$ 565,724	
Estimated Change Amount $		**($225,000)**	**($191,250)**	**($162,563)**	**($138,178)**	**($117,451)**	**($99,834)**	**($934,276)**

This assumes that no new debt is issued however, even if 50% was available it would bring the Town to approximately $500K available for Asset Management. Moreover, given that the internal debt requirements have been completed through the Asset Sale Proceeds this frees up an additional $150K per year previously included in the tax levy.

3) Slowly raise the contribution to Reserve Funds over time. Today 1% point increase of the tax rate equates to approximately $350K, if we exclude growth and we increase the reserve contribution by 5% over the next 6 years this would mean a total tax rate impact of approximately 2%. However, if we include growth as part of the contribution, it is possible that the tax rate is not impacted. Figure 39, below shows the values of the contribution over time.

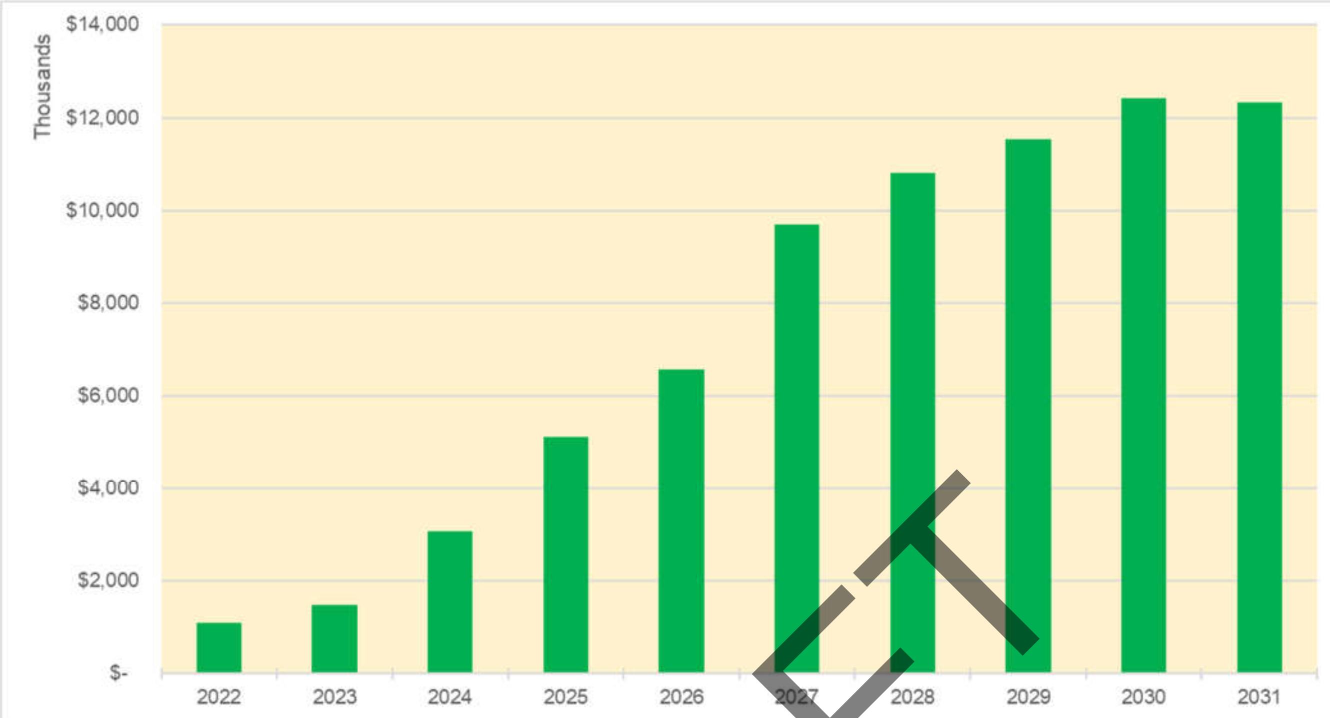
Figure 43 - Increasing Annual contributions to Reserve Funds

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount $	$ 2,000,000	$ 2,100,000	$ 2,205,000	$ 2,315,250	$ 2,431,013	$ 2,552,563	$ 2,680,191	
Change Amount $	$ -	$ 100,000	$ 105,000	$ 110,250	$ 115,763	$ 121,551	$ 127,628	$ 680,191
Est. Impact on Tax Rate (excl. Growth)		**0.28%**	**0.30%**	**0.31%**	**0.33%**	**0.35%**	**0.36%**	**1.94%**

These examples demonstrate that small changes each year can accumulate to large payoffs in the future. Using all three methods described above would have an enormous impact as illustrated in the graph below.

DRAFT

Figure 44 - Increase to Reserves with combined 3 approaches



User Fee supported assets (Water/Sanitary)

Similar to tax-supported assets the town has used a combination of contributions to reserves (through user-fees), grants and debt financing to fund or support capital projects. The total required for these assets equates to $5.9M, the current reserve funds that are applicable to this include: the Water and Sanitary Reserve Funds. On an annual basis the amounts that are added to both of these funds (on average over the last 2 years) is $4.1 M, additionally the town has used grant funding to support this as well. The chart below details the net funding gap for these assets, note however this is based on the $4.1M continuing for reserve funding each year:

Figure 45 - User Supported Assets Annual Funding gap

Water / Wastewater	Amount
Annual Lifecycle Amount-2022$	$5,884,536
Less:	
Reserve Contributions	4,184,682
OCIF Funding *	952,007
Federal Gas Tax (50%)	315,000
Financing Gap	**$ 432,848**

*OCIF Funding $1.9M (100% increase Dec 2021) split 50/50 with User Supported

You will note that the reserves continue to build over the next 10-years which is positive, since spending for these areas really builds in the next 20 – 30 years where amounts required increase dramatically. However, again given that the average gap is $433K, it is in the later years (2050 and beyond) where financial sustainability would be difficult to maintain. Increasing the total amount contributed slightly over the next 5-10-years through user fee increases will help establish financial stability greatly in the future.

DRAFT

Conclusion and Recommendation

The following recommendations have been provided for consideration:

- That the Town of Collingwood Asset Management Plan be received and approved by Council;
- That consideration of this Asset Management Plan (including the financing options) be made as part of the annual budgeting process to ensure sufficient capital funds are available to fund capital requirements;
- That this Asset Management plan be updated on an annual basis to reflect the current assets held by the Town; and
- The Asset Management plan report be updated every five years and presented to Council for endorsement.

As described in the financing strategy section, the current level of funding for asset replacement and renewal at the Town will not sufficiently fund capital needs or close the infrastructure funding gap. However, the gaps as described for Tax Supported ($375k) and User Supported Assets ($432k) are not insurmountable and in fact are likely achievable through the mechanisms described in the financing section. Therefore, it is recommended that as part of the annual budget process, the AMP and its funding requirements be updated, and consideration be made to increase funding of the applicable reserve funds. The status of the funding gap and reserve balances will potentially fluctuate annually because of changes in investment earnings, inflationary impacts of project costs, changing project work plans and priorities and even unplanned and unexpected capital projects (emergency). However, in terms of the budget process, the AMP funding requirements need to be given priority consideration.

As part of this updated AMP, staff now manage the Asset Plan using the Worktech software model into which amendments and revisions will be made in real time as changes occur. This improvement is important as staff and Council will be able to rely on current and up to date data for the annual budget process and at any time that the status of the Towns assets needs to be considered for decision making.

DRAFT

ASSET MANAGEMENT PLAN

TOWN OF COLLINGWOOD - CORE ASSETS

TECHNICAL APPENDICES

2022

DRAFT

Appendix A – Facility Inventory/Condition/Age

Dept	List Description	Asset Replacement Cost	Sq Ft	Average Condition	Year Built	Age
Roads	Public Works Building	$5,353,375	18,675	85.61	1989	33
	Public Works Salt Shed	$116,648	1,400	27.20	1990	32
	Public Works Sand Dome	$674,892	8,100	99.50	2006	16
	Public Works Storage Shed	$41,660	500	84.76	1990	32
Water	Carmichael Reservoir Building	$2,412,325	4,920	0.00	1991	28.25
	Davey Reservoir Building	$1,397,384	2,850	95.90	2010	12
	Elevated Tower	$6,000,000	400	95.00	1950	72
	Elevated Tower Building	$400,000	490	86.50	1998	24
	Environmental Services Administration	$7,372,374	28,290	90.75	1989	33
	Georgian Meadows Booster Stn	$0	200	0.00	0	0
	Osler Booster Station	$213,000	130	0.00	2000	22
	R.A.B. Water Filtration Plant	$3,930,609	12,875	87.60	1999	23
	RAB Generator Building	$1,250,000	1,000	98.40	1999	23
	RAB Industrial Raw Water Building	$1,320,000	3,560	76.40	1950	72
Wastewater	Black Ash Sewage Pumping Station	$1,480,550	1,536	97.80	2020	2
	Boiler and COGEN Building	$330,450	550	72.80	1979	43
	Cranberry Sewage Pumping Station	$260,820	324	87.10	2002	20
	Digester 1&2 Building	$1,845,478	6,045	87.40	1979	43
	Digester 3&4 Building	$1,338,696	4,385	89.10	1979	43
	Minnesota Sewage Pumping Station	$633,800	1,540	0.00	1958	64
	Paterson St. Sewage Pumping Station	$140,443	460	0.00	1993	29
	Pretty River Sewage Pumping Station	$150,000	100	0.00	2010	12
	Silver Glen Sewage Pumping Station	$160,850	0	99.10	2006	16
	St. Clair Sewage Pumping Station	$755,950	1,350	0.00	2003	19
	Tenth Line Sewage Pumping Station	$0	0	0.00	0	0
	Wastewater Treatment Plant (WWTP01)	$0	0	0.00	0	0
	Wastewater Treatment Plant Admin Building	$4,823,582	2,800	92.10	1958	64
	Wastewater Treatment Plant Control Room	$2,162,980	7,085	93.10	1968	54
	Wastewater Treatment Plant Effluent Building	$337,750	600	93.50	1979	43
	Wastewater Treatment Plant Generator Building	$970,000	770	97.10	1999	23
	Wastewater Treatment Plant Headworks Building	$3,700,735	8,535	82.00	1998	24
	Wastewater Treatment Plant Raw Sludge Pump Building	$535,710	720	94.20	1968	54
	Wastewater Treatment Plant Sludge Thickening Building	$1,282,218	4,200	93.30	1979	43
		$51,392,279	124,390	84.25		

DRAFT

Appendix B – Road Condition

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
ALBERT STREET	ONTARIO STREET From: ALBERT STREET To: NIAGARA STREET	RD0807	_HCB-H-U	0.12	83.59	1075	1996	$192,316
	PRETTY RIVER PARKWAY From: ALBERT STREET To: ONTARIO STREET	RD0848	_HCB-H-U	0.44	89.72	975	2001	$1,362,411
	SIMCOE STREET From: ALBERT STREET To: NIAGARA STREET	RD0048	_HCB-L-R	0.12	97.28	230	2015	$89,953
ALICE STREET	BELL BOULEVARD From: ALICE STREET To: BELL BOULEVARD	RD0256	_HCB-L-U	0.18	52.82	364	1976	$266,033
	COLLINS STREET From: ALICE STREET To: SPROULE AVENUE	RD0749	_HCB-H-U	0.23	38.37	917	1986	$358,265
	MANNING AVENUE From: ALICE STREET To: KATHERINE STREET	RD0797	_HCB-H-R	0.12	96.65	924	2016	$88,491
ALMA STREET	ALBERT STREET From: ALMA STREET To: ONTARIO STREET	RD0891	_HCB-L-R	0.11	81.79	1095	1969	$80,446
ALPINE COURT	FOREST DRIVE From: ALPINE COURT To: CRAIGLEITH COURT	RD0120	_HCB-L-R	0.32	90	169	1989	$236,950
ALYSSA DRIVE	BROOKE AVENUE From: ALYSSA DRIVE To: CONNER AVENUE	RD0590	_HCB-L-U	0.26	96.38	861	2006	$386,275
		RD0871	_HCB-L-U	0.19	97.28	1030	2006	$284,070
	CONNER AVENUE From: ALYSSA DRIVE To: BROOKE AVENUE	RD0738	_HCB-L-U	0.27	96.02	860	2002	$398,299
	KAYLA CRESCENT From: ALYSSA DRIVE To: ALYSSA DRIVE	RD0937	_HCB-L-U	0.49	96.38	1127	2010	$734,974
	SHERWOOD STREET From: ALYSSA DRIVE To: BROOKE AVENUE	RD0939	_HCB-L-U	0.18	96.02	1129	2009	$266,033
	SIXTH STREET From: ALYSSA DRIVE To: STEWART ROAD	RD0056	_HCB-H-R	0.5	97.28	183	2011	$730,852
BAKER BOULEVARD	CRANBERRY TRAIL WEST From: BAKER BOULEVARD To: GREENBRIER DRIVE	RD0384	_HCB-H-R	0.21	96.65	717	1998	$153,579
BAKER STREET	KATHERINE STREET From: BAKER STREET To: COLLINS STREET	RD0223	_HCB-L-R	0.1	84.85	515	2016	$76,058
	PATERSON STREET From: BAKER STREET To: COLLINS STREET	RD0301	_HCB-L-R	0.1	83.59	571	1976	$74,596
BARKER BOULEVARD	CRANBERRY TRAIL WEST From: BARKER BOULEVARD To: ELLEN LANE	RD0385	_HCB-H-R	0.1	96.65	718	1998	$71,670
BARR STREET	CHAMBERLAIN CRESCENT From: BARR STREET To: HIGH STREET	RD0833	_HCB-L-U	0.07	88.64	954	2007	$66,251
		RD0916	_HCB-L-U	0.07	90.53	1104	2007	$66,251
	CHAMBERLAIN CRESCENT From: BARR STREET To: HOLDEN STREET	RD0870	_HCB-L-U	0.19	82.97	1029	2007	$190,843
	PATTON STREET From: BARR STREET To: CHAMBERLAIN CRESCENT	RD0148	_HCB-L-U	0.31	88.82	430	2007	$305,547
BARRINGTON TRAIL	HURONIA PATHWAY From: BARRINGTON TRAIL To: GEORGIAN MANOR DRIVE	RD0173	_HCB-L-R	0.15	87.12	212	2009	$115,172
	SILVER CRESCENT From: BARRINGTON TRAIL To: BARRINGTON TRAIL	RD0234	_HCB-L-U	0.47	96.02	338	2010	$709,423
BARTLETT BOULEVARD	PRINCETON SHORES BOULEVARD From: BARTLETT BOULEVARD To: PRINCETON SHORES BOULEVARD	RD0220	_HCB-L-R	0.58	75.31	440	1982	$426,365
Beachwood Road	CHURCHILL COURT From: BEACHWOOD ROAD To: END	RD1006	_HCB-L-U	0.08	0	1179	(blank)	$35,912

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
BEECH STREET	FIFTH STREET From: BEECH STREET To: BIRCH STREET	RD0362	_HCB-H-R	0.12	52.01	470	1973	$83,655
	FIFTH STREET From: BEECH STREET To: MAPLE STREET	RD0341	_HCB-H-U	0.12	94.95	527	1973	$187,663
	FIRST STREET From: BEECH STREET To: MAPLE STREET	RD0292	_HCB-H-U	0.12	92.51	600	2010	$436,688
	FOURTH STREET From: BEECH STREET To: BIRCH STREET	RD0360	_HCB-L-R	0.12	97.28	468	1973	$88,491
	SECOND STREET From: BEECH STREET To: BIRCH STREET	RD0356	_HCB-H-U	0.12	88.47	464	1978	$181,865
	THIRD STREET From: BEECH STREET To: MAPLE STREET	RD0037	_HCB-H-U	0.12	94.05	605	1987	$187,663
BEGINNING OF TURNING LANE	HIGHWAY 26 WEST From: BEGINNING OF TURNING LANE To: VACATION INN DRIVE	RD0912	_HCB-H-R	0.04	91.25	1091	2016	$66,621
	MOUNTAIN ROAD From: BEGINNING OF TURNING LANE To: KELLS CRESCENT	RD0913	_HCB-H-R	0.08	97.1	1092	2009	$138,793
BELL BOULEVARD	SPROULE AVENUE From: BELL BOULEVARD To: COLLINS STREET	RD0748	_HCB-L-U	0.11	86.04	916	2007	$159,319
BIRCH STREET	CAMERON STREET From: BIRCH STREET To: DICKSON ROAD	RD0876	_HCB-H-R	0.04	89.44	1036	1978	$37,486
	EIGHTH STREET From: BIRCH STREET To: OAK STREET	RD0417	_HCB-L-R	0.12	73.62	545	1976	$89,222
	FIRST STREET From: BIRCH STREET To: BEECH STREET	RD0355	_HCB-H-U	0.12	92.96	463	2010	$433,079
	FOURTH STREET From: BIRCH STREET To: OAK STREET	RD0440	_HCB-L-R	0.12	97.28	537	1973	$87,759
	NINTH STREET From: BIRCH STREET To: MAPLE STREET	RD0084	_HCB-L-R	0.24	94.95	151	2007	$198,308
	SECOND STREET From: BIRCH STREET To: OAK STREET	RD0437	_HCB-H-U	0.12	75.76	534	1978	$181,865
	SEVENTH STREET From: BIRCH STREET To: MAPLE STREET	RD0366	_HCB-L-R	0.24	97.28	474	1975	$176,250
	SIXTH STREET From: BIRCH STREET To: OAK STREET	RD0413	_HCB-H-U	0.12	83.14	541	1997	$187,663
	TENTH STREET From: BIRCH STREET To: OAK STREET	RD0449	_HCB-H-R	0.12	95.57	619	1999	$88,491
	THIRD STREET From: BIRCH STREET To: BEECH STREET	RD0358	_HCB-H-U	0.12	89.73	466	1987	$189,214
BOARDWALK AVENUE	BALSAM STREET From: BOARDWALK AVENUE To: CRANBERRY QUAY	RD1026	_HCB-H-R	0.07	90	2011	1988	$59,574
BRANIFF COURT	SPRUCE STREET From: BRANIFF COURT To: WATTS CRESCENT	RD0476	_HCB-H-U	0.08	88.02	647	1975	$124,750
BROADVIEW STREET	BROADVIEW CRESCENT From: BROADVIEW STREET To: END	RD0920	_HCB-L-R	0.08	58.23	1108	1999	$170,732
BROCK CRESCENT	LOCKHART ROAD From: BROCK CRESCENT To: KATHERINE STREET	RD0854	_HCB-H-U	0.06	93.87	996	2012	$96,193
BROOKE AVENUE	ALYSSA DRIVE From: BROOKE AVENUE To: CONNER AVNEUE	RD0184	_HCB-L-U	0.09	97.28	222	2002	$130,762
	CONNER AVENUE From: BROOKE AVENUE To: ALYSSA DRIVE	RD0684	_HCB-L-U	0.18	97.28	863	2002	$264,530
	SHERWOOD STREET From: BROOKE AVENUE To: END	RD0940	_HCB-L-U	0.11	97.28	1130	2009	$108,771
BRYAN DRIVE	KATHERINE STREET From: BRYAN DRIVE To: COLLINS STREET	RD0179	_HCB-L-R	0.27	43.32	286	1993	$204,241
	LOCKHART ROAD From: BRYAN DRIVE To: BROCK CRESCENT	RD0815	_HCB-H-U	0.05	74.7	933	1984	$81,163
		RD0816	_HCB-H-U	0.24	67.77	934	1984	$354,711
BURNSIDE COURT	CARMICHEAL CRESCENT From: BURNSIDE COURT To: LOCKHART ROAD	RD0777	_HCB-L-U	0.1	84.85	901	1987	$151,804
BUSH STREET	BUSH STREET From: BUSH STREET To: RIVER RUN	RD0076	_HCB-L-U	0.28	89.1	228	1988	$425,353

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	PEEL STREET From: BUSH STREET To: GODDEN STREET	RD0780	_HCB-H-U	0.09	81.61	910	1994	$134,931
	PEEL STREET From: BUSH STREET To: HARBEN COURT	RD0644	_HCB-H-R	0.17	68.85	909	1994	$148,318
CALLARY CRESCENT	ST PAUL STREET From: CALLARY CRESCENT To: CALLARY CRESCENT	RD0672	_HCB-L-U	0.12	97.28	834	1998	$175,853
	ST PAUL STREET From: CALLARY CRESCENT To: LANEWAY	RD0427	_HCB-L-U	0.04	97.28	509	1998	$66,133
CAMERON STREET	DICKSON ROAD From: CAMERON STREET To: MASON AND DICKSON ROAD	RD0434	_HCB-L-R	0.29	90.45	531	2012	$209,160
	HURONTARIO STREET From: CAMERON STREET To: CAMPBELL STREET	RD0880	_HCB-H-U	0.31	89.37	1046	2013	$644,647
	MAPLE STREET From: CAMERON STREET To: CAMPBELL STREET	RD0114	_HCB-L-U	0.31	96.02	167	2008	$458,419
	MASON ROAD From: CAMERON STREET To: RHONDA ROAD	RD0433	_HCB-L-R	0.11	93.69	530	1977	$79,715
	OAK STREET From: CAMERON STREET To: FERGUSON ROAD	RD0448	_HCB-L-R	0.09	94.95	618	1978	$62,894
	PARK ROAD From: CAMERON STREET To: FERGUSON ROAD	RD0388	_HCB-L-R	0.33	94.95	612	1974	$235,599
CAMPBELL STREET	FERGUSON ROAD From: CAMPBELL STREET To: PARK ROAD	RD0576	_HCB-L-R	0.06	80.71	843	1974	$40,224
	HERRINGTON COURT From: CAMPBELL STREET To: END	RD0111	_HCB-L-U	0.11	63	164	1976	$160,823
	HIGH STREET From: CAMPBELL STREET To: ROUNDABOUT	RD0054	_HCB-H-R	0.69	96.83	184	1997	$1,001,646
	HURONTARIO STREET From: CAMPBELL STREET To: GOLFVIEW DRIVE	RD0817	_HCB-H-U	0.19	91.53	935	2007	$504,128
	MAPLE STREET From: CAMPBELL STREET To: END	RD0291	_HCB-L-U	0.15	88.36	599	1973	$219,440
	MASON ROAD and DICKSON ROAD From: CAMPBELL STREET To: MASON ROAD	RD0191	_HCB-L-R	0.05	88.47	238	1972	$38,029
	OAK STREET From: CAMPBELL STREET To: FERGUSON ROAD	RD0040	_HCB-L-R	0.22	39.86	155	1989	$160,892
	OSLER COURT From: CAMPBELL STREET To: END	RD0112	_HCB-L-U	0.11	97.28	165	1972	$162,326
	SMART COURT From: CAMPBELL STREET To: END	RD0109	_HCB-L-U	0.1	66.96	162	1987	$145,792
	TESKEY COURT From: CAMPBELL STREET To: END	RD0110	_HCB-L-U	0.11	64.35	163	1988	$160,823
CARMICHAEL CRESCENT	LOCKHART ROAD From: CARMICHAEL CRESCENT To: DEY DRIVE	RD0712	_HCB-H-U	0.15	66.24	896	1984	$229,961
	LOCKHART ROAD From: CARMICHAEL CRESCENT To: KRISTA COURT	RD0776	_HCB-H-U	0.1	76.21	900	1984	$153,307
CARPENTER STREET	CRANBERRY TRAIL EAST From: CARPENTER STREET To: DEVONSHIRE STREET	RD0963	HCB4-U	0.17	-1	2005	0	$171,067
CEDAR STREET	FIFTH STREET From: CEDAR STREET To: OAK STREET	RD0491	_HCB-H-R	0.12	52.64	624	1973	$90,857
	FIRST STREET From: CEDAR STREET To: OAK STREET	RD0493	_HCB-H-U	0.12	93.41	626	2010	$443,906
	FOURTH STREET From: CEDAR STREET To: WALNUT STREET	RD0471	_HCB-L-R	0.12	84.15	636	1973	$87,759
	SECOND STREET From: CEDAR STREET To: WALNUT STREET	RD0732	_HCB-H-R	0.12	97.28	1059	1992	$86,297
	THIRD STREET From: CEDAR STREET To: OAK STREET	RD0453	_HCB-H-R	0.12	78.82	630	2008	$111,544
CHAMBERLAIN CRESCENT	BARR STREET From: CHAMBERLAIN CRESCENT To: PATTON STREET	RD0828	_HCB-L-U	0.11	94.67	1024	2007	$111,737
	DAVIS STREET From: CHAMBERLAIN CRESCENT To: CHAMBERLAIN CRESCENT	RD0161	_HCB-L-U	0.29	91.7	432	2007	$284,782
	HIGH STREET From: CHAMBERLAIN CRESCENT To: GRIFFEN ROAD	RD0370	_HCB-H-U	0.05	91.89	484	2007	$164,858

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	HIGH STREET From: CHAMBERLAIN CRESCENT To: TELFER ROAD	RD0580	_HCB-H-R	0.21	97.28	847	2014	$298,456
	HOLDEN STREET From: CHAMBERLAIN CRESCENT To: CHAMBERLAIN CRESCENT	RD0160	_HCB-L-U	0.3	85.86	431	2007	$293,681
CHERRY STREET	KING STREET From: CHERRY STREET To: COOK STREET	RD0346	_HCB-L-R	0.05	83.14	495	1998	$109,606
CLARK STREET	FINDLAY DRIVE From: CLARK STREET To: DANCE STREET	RD0935	_HCB-L-U	0.09	97.28	1124	2010	$90,972
CLARKSON CRESCENT	CAMERON STREET From: CLARKSON CRESCENT To: OAK STREET	RD0447	_HCB-H-R	0.12	97.28	617	1976	$113,373
	CAMERON STREET From: CLARKSON CRESCENT To: PARK ROAD	RD0446	_HCB-H-R	0.04	97.28	616	1976	$39,315
	CLARKSON CRESCENT From: CLARKSON CRESCENT To: CAMERON STREET	RD0085	_HCB-L-R	0.09	82.69	152	1978	$64,357
	TENTH STREET From: CLARKSON CRESCENT To: CLARKSON CRESCENT	RD0736	_HCB-H-R	0.08	8.28	858	1974	$59,238
	TENTH STREET From: CLARKSON CRESCENT To: WALNUT STREET	RD0735	_HCB-H-R	0.08	52.19	857	1974	$55,581
COLLINS STREET	ALICE STREET From: COLLINS STREET To: BELL BOULEVARD	RD0750	_HCB-L-U	0.13	71.46	918	1967	$195,392
	LOCKHART ROAD From: COLLINS STREET To: CARMICHAEL CRESCENT	RD0192	_HCB-H-U	0.21	55.7	239	1984	$308,118
	PEEL STREET From: COLLINS STREET To: BUSH STREET	RD0725	_HCB-H-U	0.21	91.89	911	2007	$331,899
	ST MARIE STREET From: COLLINS STREET To: VICTORY DRIVE	RD0635	_HCB-H-R	0.15	96.02	1043	2007	$124,860
	WILLIAMS STREET From: COLLINS STREET To: LYNDEN STREET	RD0098	_HCB-L-U	0.4	95.12	324	2007	$604,212
COLLSHIP LANE	NORTH MAPLE STREET From: COLLSHIP LANE To: WHEELHOUSE CRESCENT	RD0993	_HCB-L-U	0.14	0	1166	(blank)	$61,564
	NORTH PINE STREET From: COLLSHIP LANE To: WHEELHOUSE CRESCENT	RD1001	_HCB-L-U	0.14	0	1174	(blank)	$60,709
CONNEL STREET	RAGLAN STREET From: CONNEL STREET To: POPLAR SIDEROAD	RD0164	_HCB-H-R	0.79	96.38	435	2011	$1,669,382
		RD1037	_HCB-H-R	0.79	91.89	2008	2011	$1,665,166
CONNER AVENUE	ALYSSA DRIVE From: CONNER AVENUE To: CULLEN COURT	RD0276	_HCB-L-U	0.09	96.38	449	2002	$133,768
	BROOKE AVENUE From: CONNER AVENUE To: CONNER AVENUE	RD0938	_HCB-L-U	0.09	97.28	1128	2009	$130,762
	GEORGIAN MEADOWS DRIVE From: CONNER AVENUE To: TENTH LINE	RD0468	_HCB-L-U	0.06	96.02	856	2002	$87,175
COOK STREET	KING STREET From: COOK STREET To: HIGHWAY 26 EAST	RD0345	_HCB-L-R	0.15	83.14	494	1998	$311,955
COOPER STREET	ROBERTSON STREET From: COOPER STREET To: PORTLAND STREET	RD0924	_HCB-L-U	0.32	97.28	1114	2011	$315,435
COURTICE CRESCENT	GRIFFEN ROAD From: COURTICE CRESCENT To: COURTICE CRESCENT	RD0014	_HCB-L-R	0.09	97.28	188	1967	$65,327
	GRIFFEN ROAD From: COURTICE CRESCENT To: SPRUCE STREET	RD0535	_HCB-L-R	0.09	97.28	662	1967	$65,327
CRANBERRY SHORES	BALSAM STREET From: CRANBERRY SHORES To: CRANBERRY SURF	RD1027	_HCB-H-R	0.03	90	2009	1988	$24,482
CRANBERRY TRAIL EAST	DAWSON DRIVE From: CRANBERRY TRAIL EAST To: FAIRWAY DRIVE	RD0645	_HCB-L-R	0.1	91.15	729	2014	$75,327
	HIGHWAY 26 WEST From: CRANBERRY TRAIL EAST To: WHITE STREET	RD0948	_HCB-H-R	0.25	97.28	1089	2016	$455,242
CRANBERRY TRAIL WEST	HIGHWAY 26 WEST From: CRANBERRY TRAIL WEST To: PRINCETON SHORES BOULEVARD	RD0424	_HCB-H-R	0.36	97.28	725	1990	$529,941

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
CURRIE AVENUE	(to) CURRIE AVENUE-to-END	RD0095	_HCB-L-R	0.09	63.89	315	1999	$85,913
	EDGAR ROAD From: CURRIE AVENUE To: GLEN ROAD	RD0070	_HCB-L-R	0.17	57.4	290	2000	$360,435
CURRIE STREET	(to) CURRIE STREET-to-END	RD0571	_HCB-L-R	0.12	28.06	760	2000	$96,499
DANCE STREET	CLARK STREET From: DANCE STREET To: FINDLAY DRIVE	RD0936	_HCB-L-U	0.12	96.38	1125	2009	$178,859
	CLARK STREET From: DANCE STREET To: POPLAR SIDEROAD	RD0934	_HCB-L-U	0.22	95.57	1123	2010	$327,657
	FINDLAY DRIVE From: DANCE STREET To: SAUNDERS STREET	RD0932	_HCB-L-U	0.26	96.02	568	2006	$396,796
	GARBUTT CRESCENT From: DANCE STREET To: GARBUTT CRESCENT	RD1035	_HCB-L-U	0.61	97.28	1126	2012	$605,161
DAVIS STREET	CHAMBERLAIN CRESCENT From: DAVIS STREET To: DAVIS STREET	RD0221	_HCB-L-U	0.45	86.03	441	2007	$446,949
DAWSON DRIVE	CRANBERRY TRAIL EAST From: DAWSON DRIVE To: WOODLAND COURT	RD0137	_HCB-H-R	0.08	81.79	319	2009	$64,470
	HARBOUR STREET WEST From: DAWSON DRIVE To: HIGHWAY 26 WEST	RD0649	_HCB-H-R	0.29	96.38	733	1970	$209,891
DELLPARR AVENUE	GLENLAKE BOULEVARD From: DELLPARR AVENUE To: HIGHWAY 26 EAST	RD0081	_HCB-L-R	0.25	53.26	199	1998	$172,109
DEY DRIVE	KRISTA COURT From: DEY DRIVE To: LOCKHART ROAD	RD0775	_HCB-L-U	0.26	59.3	899	1985	$386,275
	LOCKHART ROAD From: DEY DRIVE To: KRISTA COURT	RD0774	_HCB-H-U	0.12	77.92	898	1984	$186,374
DICKSON ROAD	CAMERON STREET From: DICKSON ROAD To: OAK STREET	RD0877	_HCB-H-R	0.08	97.28	1037	1978	$73,144
DILLON DRIVE	GODDEN STREET From: DILLON DRIVE To: PEEL STREET	RD0267	_HCB-L-U	0.09	91.08	377	1988	$138,277
DOCKSIDE DRIVE	HIGHWAY 26 WEST From: DOCKSIDE DRIVE To: SewageFALLS LANE	RD0166	_HCB-H-R	0.51	97.28	203	2016	$934,541
DUNCAN STREET	HAMILTON STREET From: DUNCAN STREET To: PATTERSON STREET	RD0428	_HCB-L-U	0.1	96.83	510	2004	$227,092
EAST STREET	ONTARIO STREET From: EAST STREET To: PEEL STREET	RD0588	_HCB-H-U	0.07	86.56	802	1994	$114,769
	SIMCOE STREET From: EAST STREET To: PEEL STREET	RD0693	_HCB-L-R	0.07	96.83	815	2015	$51,193
EDGAR ROAD	GLEN ROAD From: EDGAR ROAD To: CURRIE STREET	RD0572	_HCB-L-R	0.12	58.68	761	1999	$250,829
EIGHTH STREET	BIRCH STREET From: EIGHTH STREET To: NINTH STREET	RD0024	_HCB-L-R	0.12	94.05	156	2006	$89,222
	HURONTARIO STREET From: EIGHTH STREET To: NINTH STREET	RD0881	_HCB-H-U	0.12	72.7	1047	1984	$262,086
	MAPLE STREET From: EIGHTH STREET To: NINTH STREET	RD0518	_HCB-L-U	0.12	59.57	593	1973	$184,871
	OAK STREET From: EIGHTH STREET To: NINTH STREET	RD0034	_HCB-L-R	0.12	87.01	608	1978	$109,005
	WALNUT STREET From: EIGHTH STREET To: TENTH STREET	RD0451	_HCB-L-R	0.24	79.65	621	1983	$165,938
ELEVENTH LINE	MOUNTAIN ROAD From: ELEVENTH LINE To: EVERGREEN ROAD	RD0373	_HCB-H-R	1.11	95.12	487	2009	$1,621,851
ELGIN STREET	ONTARIO STREET From: ELGIN STREET To: ST. PAUL STREET	RD0406	_HCB-H-U	0.12	87.01	506	1994	$183,010
	ST MARIE STREET From: ELGIN STREET To: ONTARIO STREET	RD0195	_HCB-H-U	0.16	89.73	260	2007	$309,484
	ST MARIE STREET From: ELGIN STREET To: SECOND STREET	RD0761	_HCB-H-U	0.06	89.73	884	2007	$126,084
ELLEN LANE	CRANBERRY TRAIL WEST From: ELLEN LANE To: VALLYMEDE COURT	RD0386	_HCB-H-R	0.07	96.65	719	1998	$53,387
ELLIOT AVENUE	HIGHWAY 26 EAST From: ELLIOT AVENUE To: ROBERT AVENUE	RD0397	_HCB-H-R	0.12	98.99	785	1955	$179,073

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	ST. CLAIR STREET From: ELLIOT AVENUE To: ELLIOT AVENUE	RD0480	_HCB-L-R	0.2	83.95	549	1979	$140,067
ELM STREET	FIRST STREET From: ELM STREET To: SPRUCE STREET	RD0546	_HCB-H-U	0.12	89.73	673	2010	$436,688
	SECOND STREET From: ELM STREET To: HIGH STREET	RD0526	_HCB-H-R	0.15	67.13	641	1977	$107,505
	Sewage STREET From: ELM STREET To: FIRST STREET	RD0029	_HCB-L-R	0.36	66.67	278	1987	$260,353
END	(to) END-to-GEORGIAN MANOR DRIVE	RD0739	_HCB-L-R	0.06	83	867	1997	$40,300
	(to) END-to-HIGHWAY 26 EAST	RD0199	_HCB-L-R	0.19	38.78	267	1993	$137,465
	(to) END-to-HIGHWAY 26 WEST	RD0177	_HCB-L-R	0.13	99	284	1975	$115,355
	(to) END-to-INDIAN TRAIL	RD0061	_HCB-L-R	0.03	84.5	251	1998	$16,891
	(to) END-to-OLIVER CRESCENT	RD0200	_HCB-L-R	0.07	85.5	268	1979	$46,781
	(to) END-to-RUSSEL STREET	RD0846	_HCB-L-R	0.05	81	973	1978	$53,139
	4TH LINE From: END To: SANDELL STREET	RD0618	_HCB-L-R	0.06	72.34	751	1998	$124,361
	ALMA STREET From: END To: ALBERT STREET	RD0172	_HCB-L-R	0.17	63.89	211	1969	$129,153
	ALPINE COURT From: END To: FOREST DRIVE	RD0121	_HCB-L-R	0.09	94.04	170	1989	$65,820
	ARTHUR STREET From: END To: INDIAN TRAIL	RD0666	_HCB-L-R	0.04	80.53	772	1999	$88,528
	BEECH STREET From: END To: FIRST STREET	RD0523	_HCB-L-R	0.11	77.13	601	1978	$84,616
	BIRCH STREET From: END To: FIRST STREET	RD0354	_HCB-L-R	0.32	97.28	462	2006	$235,488
	BRAESIDE STREET From: END To: HIGHWAY 26 EAST	RD0083	_HCB-L-R	0.42	48.96	201	1999	$310,083
	BRANIFF COURT From: END To: SPRUCE STREET	RD0050	_HCB-L-U	0.08	75.15	181	1974	$114,229
	BROADVIEW STREET From: END To: HIGHWAY 26 EAST	RD0082	_HCB-L-R	0.76	44.45	200	1999	$557,272
	BURNSIDE COURT From: END To: CARMICHAEL CRESCENT	RD0011	_HCB-L-U	0.12	74.05	258	1987	$184,871
	CAMBRIDGE STREET From: END To: MOUNTAIN ROAD	RD0077	_HCB-L-U	0.19	91.89	256	2005	$331,247
	CEDAR STREET From: END To: FIRST STREET	RD0494	_HCB-L-R	0.13	93.24	627	2008	$95,804
	CHERRY STREET From: END To: KING STREET	RD0032	_HCB-L-R	0.13	82.24	264	1998	$282,446
	CRAIGLEITH COURT From: END To: FOREST DRIVE	RD0012	_HCB-L-R	0.19	88.37	142	1989	$140,415
	CULLEN COURT From: END To: ALYSSA DRIVE	RD0242	_HCB-L-U	0.06	97.28	346	2002	$90,181
	DEY DRIVE From: END To: KRISTA COURT	RD0194	_HCB-L-U	0.16	87.48	259	1985	$246,494
	DUNCAN STREET From: END To: HAMILTON STREET	RD0074	_HCB-L-R	0.1	64.53	226	1986	$69,674
	ELEVENTH LINE From: END To: MOUNTAIN ROAD	RD0066	_HCB-L-R	0.74	93.42	193	1995	$1,553,452
	ELM STREET From: END To: Sewage STREET	RD0545	_HCB-L-R	0.03	81.62	672	1974	$19,015
	EVERGREEN ROAD From: END To: LAUREL BOULEVARD	RD0452	_HCB-L-R	0.15	94.04	685	1999	$111,882
	FOURTH STREET EAST From: END To: ST. PETER STREET	RD0766	_HCB-L-R	0.05	94.95	889	2009	$44,945
	GEORGIAN COURT From: END To: FOREST DRIVE	RD0598	_HCB-L-R	0.2	87.39	692	1989	$146,997
	GEORGIAN MANOR DRIVE From: END To: GEORGIAN MANOR LANE	RD0298	_HCB-L-R	0.2	37.88	497	1984	$142,609
	GEORGIAN MANOR LANE From: END To: GEORGIAN MANOR DRIVE	RD0174	_HCB-L-R	0.08	40.04	213	1984	$170,732
	GLENLAKE BOULEVARD From: END To: MACALLISTER STREET SOUTH	RD0907	_HCB-L-R	0.31	41.84	1068	1998	$651,312
	GUN CLUB ROAD From: END To: RAMBLINGS WAY	RD0728	_HCB-L-R	0.05	83.32	967	1955	$94,851
	HARBEN COURT From: END To: PEEL STREET	RD0269	_HCB-L-U	0.18	81.16	379	1973	$418,700

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	HARBOUR STREET EAST From: END To: BALSAM STREET	RD0658	_HCB-L-R	0.27	53.28	743	1989	$184,451
	HARBOUR STREET WEST From: END To: DAWSON SDRIVE	RD1038	_HCB-L-R	0.11	96.65	301	1970	$76,790
	HERITAGE DRIVE From: END To: SewageSIDE LANE	RD0203	_HCB-L-R	1.07	23.85	271	1940	$785,447
	HICKORY STREET From: END To: FIRST STREET	RD0328	_HCB-L-R	0.21	91.53	518	1976	$151,385
	HOLLY COURT From: END To: OSLER BLUFF ROAD	RD0165	_HCB-L-R	0.33	98.54	202	2002	$418,634
	HURONIA PATHWAY From: END To: GEORGIAN MANOR DRIVE	RD0350	_HCB-L-R	0.1	94.95	501	2009	$74,431
	INDIAN TRAIL From: END To: BELLHOLME LANE	RD0338	_HCB-L-R	0.07	87.48	524	1998	$139,115
		RD0418	_HCB-L-R	0.21	76.32	546	1998	$442,639
	JANE STREET From: END To: BELLHOLME LANE	RD0062	_HCB-L-R	0.09	68.39	252	1955	$198,134
	JUNIPER COURT From: END To: LAUREL BOULEVARD	RD0079	_HCB-L-R	0.17	96.02	197	1999	$125,789
	LESLIE DRIVE From: END To: COLLINS STREET	RD0159	_HCB-L-R	0.21	16.11	559	1974	$156,504
	LONG POINT ROAD From: END To: MADELINE DRIVE	RD0487	_HCB-L-R	0.21	94.5	686	1990	$432,100
	LORNE STREET From: END To: ALICE STREET	RD0813	_HCB-L-R	0.07	61.73	929	1993	$48,684
	MACDONALD ROAD From: END To: CONNEL STREET	RD0606	_HCB-L-U	0.18	52.02	703	1990	$264,530
	MADELINE DRIVE From: END To: LINDSAY LANE	RD0488	_HCB-L-R	0.25	83.59	687	1990	$526,951
	MCINTOSH GATE From: END To: TROTT BOULEVARD	RD0215	_HCB-L-U	0.12	90	303	1988	$177,356
	MINNESOTA STREET From: END To: HURON STREET	RD0182	HCB4-U	0.06	95.57	556	2007	$60,318
	MOUNT VIEW COURT From: END To: GREY ROAD 19	RD0067	_HCB-L-R	0.21	97.28	194	2017	$142,624
	NETTLETON COURT From: END To: TROTT BOULEVARD	RD0656	_HCB-L-U	0.1	81.61	741	1988	$154,810
	NIAGARA STREET From: END To: ERIE STREET	RD0685	_HCB-L-R	0.11	60.66	807	1998	$74,055
	NINTH STREET From: END To: OAK STREET	RD0033	_HCB-L-U	0.12	80.1	607	1990	$183,368
	NOTTAWA SIDEROAD From: END To: FAIRGROUNDS ROAD	RD0006	_HCB-L-R	0.75	93.87	206	1995	$1,576,638
	OAK STREET From: END To: FIRST STREET	RD0330	_HCB-L-R	0.09	69.3	520	1984	$80,924
	PARKSIDE DRIVE From: END To: GEORGIAN MANOR DRIVE	RD0087	_HCB-L-R	0.18	90.88	214	1984	$383,621
	PEEL STREET From: END To: LYNDEN STREET	RD0467	_HCB-L-U	0.06	92.97	914	2007	$85,672
	PORTLAND STREET From: END To: HUGHES STREET	RD0927	_HCB-L-U	0.04	97.28	1117	2011	$43,508
	PRINCETON SHORES BOULEVARD From: END To: PRINCETON SHORES BOULEVARD	RD0614	_HCB-L-R	0.13	81.54	723	1987	$97,267
	RIVER RUN From: END To: RIVER RUN	RD0268	_HCB-L-U	0.2	96.02	378	2003	$300,603
	SANDFORD FLEMING DRIVE From: END To: SIXTH LINE	RD0420	_HCB-L-R	0.78	87.12	548	1990	$710,408
		RD1036	_HCB-L-R	0.29	96.02	2007	1990	$264,232
	SELKIRK ROAD From: END To: GLEN ROAD	RD0337	_HCB-L-R	0.07	75.13	523	2000	$137,007
	SHANNON COURT From: END To: ERIE STREET	RD0163	_HCB-L-U	0.11	94.95	434	1997	$165,332
		RD0805	_HCB-L-U	0.05	93.69	1073	1997	$72,145
	SHEFFIELD CRESCENT From: END To: TROTT BOULEVARD	RD0655	_HCB-L-U	0.09	91.89	740	1988	$129,259
	SIMCOE STREET From: END To: ALBERT STREET	RD0047	_HCB-L-R	0.14	96.38	229	2015	$102,386
	SPRUCE STREET From: END To: TELFER ROAD	RD0730	_HCB-L-U	0.04	92.34	1057	1990	$63,127

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	SPRUCE STREET From: END To: TENTH STREET	RD0532	_HCB-L-R	0.09	66.24	659	1989	$64,357
	ST MARIE STREET From: END To: COLLINS STREET	RD0770	_HCB-L-U	0.15	84.85	893	2007	$343,003
	STEWART ROAD From: END To: STEWART ROAD	RD0003	_HCB-L-R	0.05	90.63	186	1990	$38,295
	SUMMER VIEW AVENUE From: END To: LAKEVIEW AVENUE	RD0784	_HCB-L-R	0.17	86.76	980	1998	$356,219
	SUNNYVIEW AVENUE From: END To: DELLPARR AVENUE	RD0209	_HCB-L-R	0.08	64.33	294	1999	$59,238
	SUNSET COURT From: END To: HURON STREET	RD0211	_HCB-L-R	0.2	93.24	299	1990	$148,460
	TENTH LINE From: END To: MOUNTAIN ROAD	RD0150	_HCB-L-R	0.61	27.08	274	1991	$1,289,977
	THIRD STREET From: END To: HIGH STREET	RD0091	_HCB-L-R	0.12	58.22	311	1975	$87,103
	THOMAS DRIVE From: END To: KELLS CRESCENT	RD0090	_HCB-L-U	0.38	96.83	310	2007	$569,642
	TRAILS END From: END To: SLALOM GATE ROAD	RD0562	_HCB-L-R	0.15	97.28	683	2017	$103,540
	WHIPPS CRESCENT From: END To: GIBBARD CRESCENT	RD0009	_HCB-L-R	0.07	97.28	178	1974	$50,462
	WILLIAMS STREET From: END To: LYNDEN STREET	RD0801	_HCB-L-U	0.06	91.71	995	2007	$85,672
ERIE STREET	NAPIER STREET From: ERIE STREET To: HUME STREET	RD0688	_HCB-L-R	0.33	97.28	810	1982	$242,801
	NIAGARA STREET From: ERIE STREET To: ST. VINCENT STREET	RD0638	_HCB-L-R	0.09	92.34	806	1998	$61,027
	RAGLAN STREET From: ERIE STREET To: MATTHEW WAY	RD0170	_HCB-H-R	0.32	84.96	209	1992	$220,107
	RAGLAN STREET From: ERIE STREET To: ONTARIO STREET	RD0804	_HCB-H-R	0.21	75.76	1072	1995	$143,995
	ST VINCENT STREET From: ERIE STREET To: NIAGARA STREET	RD0318	_HCB-L-R	0.18	91.26	420	1976	$132,370
ESCARPMENT DRIVE	DAWSON DRIVE From: ESCARPMENT DRIVE To: HARBOUR STREET WEST	RD0650	_HCB-L-R	0.1	97.28	734	2014	$70,939
	DAWSON DRIVE From: ESCARPMENT DRIVE To: KEITH AVENUE	RD0910	_HCB-L-R	0.06	97.28	1088	1973	$40,223
EVERGREEN BOULEVARD	LAUREL BOULEVARD From: EVERGREEN BOULEVARD To: JUNIPER COURT	RD0023	_HCB-L-R	0.36	95.12	196	1999	$261,084
EVERGREEN ROAD	MOUNTAIN ROAD From: EVERGREEN ROAD To: OSLER BLUFF ROAD	RD0175	_HCB-H-R	0.35	96.83	220	1992	$502,279
FAIR STREET	HURONTARIO STREET From: FAIR STREET To: CAMERON STREET	RD0879	_HCB-H-U	0.11	97.28	1045	1984	$228,269
	MAPLE STREET From: FAIR STREET To: CAMERON STREET	RD0521	_HCB-L-U	0.11	48.77	596	1973	$168,338
FAIRWAY DRIVE	DAWSON DRIVE From: FAIRWAY DRIVE To: FAIRWAY DRIVE	RD0646	_HCB-L-R	0.14	92.79	730	1988	$103,117
	DAWSON DRIVE From: FAIRWAY DRIVE To: OXBOW CRESCENT	RD0647	_HCB-L-R	0.15	85.93	731	1988	$107,505
FERGUSON ROAD	CAMPBELL STREET From: FERGUSON ROAD To: OAK STREET	RD0630	_HCB-H-R	0.08	85.75	1038	1973	$59,969
FIFTH STREET	BIRCH STREET From: FIFTH STREET To: SIXTH STREET	RD0365	_HCB-L-R	0.12	97.28	473	2006	$86,297
	HIGH STREET From: FIFTH STREET To: SIXTH STREET	RD0129	_HCB-H-U	0.12	88.92	483	2007	$422,252
	HURONTARIO STREET From: FIFTH STREET To: SIXTH STREET	RD0886	_HCB-H-U	0.12	88.54	1050	1984	$378,062
	MAPLE STREET From: FIFTH STREET To: SIXTH STREET	RD0512	_HCB-L-U	0.12	83.25	587	2008	$180,362
	OAK STREET From: FIFTH STREET To: SIXTH STREET	RD0414	_HCB-L-R	0.12	96.83	542	1973	$104,537
	SPRUCE STREET From: FIFTH STREET To: SIXTH STREET	RD0479	_HCB-H-R	0.12	86.56	650	1975	$84,103

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	WALNUT STREET From: FIFTH STREET To: SIXTH STREET	RD0492	_HCB-L-R	0.12	74.52	625	1973	$84,103
FINDLAY DRIVE	HURONTARIO STREET From: FINDLAY DRIVE To: TRACEY LANE	RD0380	_HCB-H-R	0.01	97.28	561	2007	$20,356
	NEWBORNE STREET From: FINDLAY DRIVE To: STANLEY STREET	RD0863	_HCB-L-R	0.12	96.38	1019	2007	$92,359
	SAUNDERS STREET From: FINDLAY DRIVE To: STANLEY STREET	RD0498	_HCB-L-U	0.12	97.28	569	2007	$186,374
FIRST STREET	BEECH STREET From: FIRST STREET To: SECOND STREET	RD0524	_HCB-L-R	0.22	77.13	602	2006	$163,818
	BIRCH STREET From: FIRST STREET To: SECOND STREET	RD0357	_HCB-L-U	0.23	97.28	465	2006	$338,178
	CEDAR STREET From: FIRST STREET To: SECOND STREET	RD0495	_HCB-H-R	0.23	67.59	628	2008	$165,280
	ELM STREET From: FIRST STREET To: SECOND STREET	RD0547	_HCB-L-R	0.23	68.4	674	1976	$167,474
	HICKORY STREET From: FIRST STREET To: SECOND STREET	RD0538	_HCB-L-R	0.23	56.51	665	1982	$164,488
	HIGH STREET From: FIRST STREET To: MURRAY COURT	RD0125	_HCB-H-U	0.12	93.69	479	1984	$433,079
	HURONTARIO STREET From: FIRST STREET To: SECOND STREET	RD0706	_HCB-H-U	0.22	96.2	828	2010	$708,469
	MAPLE STREET From: FIRST STREET To: SECOND STREET	RD0506	_HCB-L-U	0.22	62.82	581	2008	$336,675
	NORTH MAPLE STREET From: FIRST STREET To: SIDE LAUNCH WAY	RD0505	_HCB-L-U	0.09	97.28	580	2008	$139,780
	OAK STREET From: FIRST STREET To: SECOND STREET	RD0439	_HCB-L-U	0.23	91.08	536	1983	$350,511
	PINE STREET From: FIRST STREET To: SECOND STREET	RD0302	_HCB-H-U	0.22	82.06	572	2008	$433,278
	SPRUCE STREET From: FIRST STREET To: SECOND STREET	RD0527	_HCB-H-R	0.23	72.81	642	1983	$167,474
	WALNUT STREET From: FIRST STREET To: SECOND STREET	RD0086	_HCB-L-R	0.23	43.77	153	1976	$166,743
FOREST DRIVE	SILVER CREEK DRIVE From: FOREST DRIVE To: HIGHWAY 26 WEST	RD0566	_HCB-L-R	0.4	97.28	690	1989	$288,753
FOURTH STREET	BEECH STREET From: FOURTH STREET To: FIFTH STREET	RD0340	_HCB-L-R	0.22	96.83	526	2010	$162,355
	BIRCH STREET From: FOURTH STREET To: FIFTH STREET	RD0363	_HCB-L-R	0.22	94.95	471	2006	$163,086
	CEDAR STREET From: FOURTH STREET To: FIFTH STREET	RD0456	_HCB-H-R	0.22	91.78	633	2008	$162,355
	HICKORY STREET From: FOURTH STREET To: FIFTH STREET	RD0543	_HCB-L-R	0.22	61.92	670	1981	$159,460
	HURONTARIO STREET From: FOURTH STREET To: HUME STREET	RD0767	_HCB-H-U	0.16	96.02	890	1980	$517,849
	MAPLE STREET From: FOURTH STREET To: FIFTH STREET	RD0510	_HCB-L-U	0.22	97.28	585	2008	$332,166
	OAK STREET From: FOURTH STREET To: FIFTH STREET	RD0412	_HCB-L-R	0.22	97.28	540	1973	$199,246
	PINE STREET From: FOURTH STREET To: FIFTH STREET	RD0063	_HCB-H-U	0.22	96.83	253	2008	$344,307
	SPRUCE STREET From: FOURTH STREET To: BRANIFF COURT	RD0475	_HCB-H-R	0.03	94.77	646	1975	$21,209
	WALNUT STREET From: FOURTH STREET To: FIFTH STREET	RD0470	_HCB-L-R	0.22	62.37	635	1975	$162,355
FOURTH STREET EAST	MARKET STREET From: FOURTH STREET EAST To: HUME STREET	RD0763	_HCB-L-R	0.17	95.75	886	2014	$120,669
	ST PAUL STREET From: FOURTH STREET EAST To: HUME STREET	RD0765	_HCB-L-R	0.16	97.28	888	2009	$119,938
	ST PETER STREET From: FOURTH STREET EAST To: HUME STREET	RD0151	_HCB-L-U	0.17	92.51	275	2009	$249,500
FRANCES STREET	KELLS CRESCENT From: FRANCES STREET To: LONG LANE	RD0551	_HCB-L-U	0.12	98.99	678	2006	$177,356

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
FUTURE KIRBY AVENUE	FUTURE ALBANY STREET From: FUTURE BARFOOT STREET To: FUTURE TRACEY LANE	RD0953	_HCB-L-U	0.14	0	1133	(blank)	$60,709
	FUTURE BAILEY STREET From: FUTURE BARFOOT STREET To: FUTURE TRACEY LANE	RD0952	_HCB-L-U	0.14	0	1132	(blank)	$60,709
	FUTURE BARFOOT STREET From: FUTURE BARFOOT STREET To: FUTURE TRACEY LANE	RD0951	_HCB-L-U	0.14	0	1131	(blank)	$60,709
GARBUTT CRESCENT	DANCE STREET From: GARBUTT CRESCENT To: FINDLAY DRIVE	RD0931	_HCB-L-U	0.21	96.83	1121	2011	$209,631
	GARBUTT CRESCENT From: GARBUTT CRESCENT To: CLARK STREET	RD0933	_HCB-L-U	0.09	96.83	1122	2011	$92,950
GEORGE STREET	ROBINSON STREET From: GEORGE STREET To: MANNING AVENUE	RD0222	_HCB-L-R	0.04	94.95	514	1974	$25,597
GEORGIAN MANOR DIRVE	LAKEVIEW AVENUE From: GEORGIAN MANOR DIRVE To: HIGHWAY 26 EAST	RD0629	_HCB-L-R	0.1	64.8	866	1998	$210,781
GEORGIAN MANOR LANE	GEORGIAN MANOR DRIVE From: GEORGIAN MANOR LANE To: LAKEVIEW AVENUE	RD0299	_HCB-L-R	0.41	36.62	498	1984	$299,845
GEORGIAN MEADOWS DRIVE	CONNER AVENUE From: GEORGIAN MEADOWS DRIVE To: BROOKE AVENUE	RD0591	_HCB-L-U	0.27	97.28	862	2002	$398,299
	HIGHLANDS CRESCENT From: GEORGIAN MEADOWS DRIVE To: GEORGIAN MEADOWS DRIVE	RD0065	_HCB-L-U	0.4	93.86	192	2002	$602,709
	MARINA CRESCENT From: GEORGIAN MEADOWS DRIVE To: GEORGIAN MEADWOS DRIVE	RD0277	_HCB-L-U	0.49	93.41	450	2002	$736,477
	SIXTH STREET From: GEORGIAN MEADOWS DRIVE To: ALYSSA DRIVE	RD0583	_HCB-H-R	0.13	97.73	850	2011	$195,088
	TENTH LINE From: GEORGIAN MEADOWS DRIVE To: MOUNTAIN ROAD	RD0375	_HCB-L-R	0.81	82.26	489	1984	$708,961
GIBBARD CRESCENT	SPRUCE STREET From: GIBBARD CRESCENT To: GRIFFEN ROAD	RD0528	_HCB-H-R	0.1	79.65	655	1989	$70,939
	SPRUCE STREET From: GIBBARD CRESCENT To: TENTH STREET	RD0124	_HCB-H-R	0.09	71.91	177	1989	$65,088
GLEN ROAD	GLEN ROAD From: GLEN ROAD To: CURRIE AVENUE	RD0336	_HCB-L-R	0.12	16.5	522	1999	$255,044
GLEN ROGERS ROAD	GLEN ROGERS ROAD From: GLEN ROGERS ROAD To: ST. CLAIR STREET	RD0153	_HCB-L-R	0.19	47.42	280	1979	$406,806
	ST. CLAIR STREET From: GLEN ROGERS ROAD To: GLEN ROGERS ROAD	RD0483	_HCB-L-R	0.1	84.85	550	1979	$73,984
GODDEN STREET	DILLON DRIVE From: GODDEN STREET To: NAPIER STREET	RD0678	_HCB-L-U	0.16	75.33	795	1988	$240,482
	PEEL STREET From: GODDEN STREET To: BUSH STREET	RD0075	_HCB-H-U	0.13	90.18	227	1988	$196,968
GOLFVIEW DRIVE	HURONTARIO STREET From: GOLFVIEW DRIVE To: FINDLAY DRIVE	RD0379	_HCB-H-U	0.09	97.28	560	2007	$224,637
GRIFFEN ROAD	COURTICE CRESCENT From: GRIFFEN ROAD To: GRIFFEN ROAD	RD0534	_HCB-L-R	0.47	97.28	661	1977	$353,668
	HIGH STREET From: GRIFFEN ROAD To: TENTH STREET	RD0371	_HCB-H-U	0.12	97.28	485	2007	$382,595
	SPRUCE STREET From: GRIFFEN ROAD To: GIBBARD CRESCENT	RD0530	_HCB-H-R	0.09	87.01	657	1989	$68,745
HAMILTON STREET	PATERSON STREET From: HAMILTON STREET To: HUME STREET	RD0261	_HCB-L-R	0.21	96.38	371	2004	$151,385
	PATERSON STREET From: HAMILTON STREET To: LORNE STREET	RD0772	_HCB-L-R	0.11	94.49	930	2004	$83,371
	ROBINSON STREET From: HAMILTON STREET To: GEORGE STREET	RD0431	_HCB-L-R	0.22	91.08	513	1974	$160,161

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	ROBINSON STREET From: HAMILTON STREET To: HUME STREET	RD0430	_HCB-L-R	0.21	81.45	512	1994	$152,116
	ST MARIE STREET From: HAMILTON STREET To: GEORGE STREET	RD0178	_HCB-H-R	0.24	93.87	285	2007	$192,595
	ST MARIE STREET From: HAMILTON STREET To: HUME STREET	RD0400	_HCB-H-R	0.19	95.3	788	2007	$157,504
HARBOUR STREET	HIGHWAY 26 WEST From: HARBOUR STREET To: MARINERS HAVEN	RD0746	_HCB-H-U	0.18	79.27	1085	2005	$569,227
HARBOURSIDE DRIVE	BALSAM STREET From: HARBOURSIDE DRIVE To: NETTLETON COURT	RD0942	_HCB-H-R	0.13	90	2013	1988	$109,355
HERITAGE DRIVE	HURON STREET From: HERITAGE DRIVE To: MINNESOTA STREET	RD0702	_HCB-H-U	0.12	91.53	824	2003	$418,643
HERRINGTON COURT	CAMPBELL STREET From: HERRINGTON COURT To: OSLER COURT	RD0723	_HCB-H-R	0.1	76.84	842	1973	$75,327
HICKORY STREET	FIFTH STREET From: HICKORY STREET To: WALNUT STREET	RD0407	_HCB-H-R	0.12	65.88	651	1975	$93,110
	FIRST STREET From: HICKORY STREET To: WALNUT STREET	RD0115	_HCB-H-U	0.13	92.96	172	2010	$465,560
	SECOND STREET From: HICKORY STREET To: SPRUCE STREET	RD0539	_HCB-H-R	0.12	83.95	666	2000	$89,222
	THIRD STREET From: HICKORY STREET To: WALNUT STREET	RD0442	_HCB-H-R	0.12	90.63	643	1973	$112,458
HIGH STREET	FIFTH STREET From: HIGH STREET To: WATTS CRESCENT	RD0055	_HCB-H-R	0.13	71.89	182	1975	$100,619
	FIRST STREET From: HIGH STREET To: ELM STREET	RD0280	_HCB-H-U	0.15	89.73	453	2010	$555,785
	GRIFFEN ROAD From: HIGH STREET To: COURTICE CRESCENT	RD0536	_HCB-L-R	0.07	97.28	663	1967	$50,309
	HIGH STREET From: HIGH STREET To: ROUNDABOUT	RD1021	_HCB-L-R	0.06	80.53	1192	2011	$18,621
	STEWART ROAD From: HIGH STREET To: STEWART COURT	RD0013	_HCB-L-R	0.38	46.97	187	1990	$284,586
	TELFER ROAD From: HIGH STREET To: SPRUCE STREET	RD0049	_HCB-L-U	0.34	94.95	147	2004	$509,522
	THIRD STREET From: HIGH STREET To: SPRUCE STREET	RD0117	_HCB-H-R	0.26	45.9	174	1983	$240,460
HIGHLANDS CRESCENT	GEORGIAN MEADOWS DRIVE From: HIGHLANDS CRESCENT To: CONNER AVENUE	RD0005	_HCB-L-U	0.14	93.86	191	2002	$204,410
	GEORGIAN MEADOWS DRIVE From: HIGHLANDS CRESCENT To: HIGHLANDS CRESCENT	RD0724	_HCB-L-U	0.13	93.86	855	2002	$199,901
HIGHWAY 26 EAST	(to) HIGHWAY 26 EAST-to-END	RD0057	_HCB-L-R	0.18	57.6	247	2000	$368,866
	(to) HIGHWAY 26 EAST-to-INDIAN TRAIL	RD0093	_HCB-L-R	0.11	93	313	1998	$68,637
	4TH LINE From: HIGHWAY 26 EAST To: STALKER STREET	RD0616	_HCB-L-R	0.11	69.73	749	1998	$233,966
	ARTHUR STREET From: HIGHWAY 26 EAST To: INDIAN TRAIL	RD0058	_HCB-L-R	0.12	90.88	248	1999	$242,398
	BELCHER STREET From: HIGHWAY 26 EAST To: END	RD0188	_HCB-L-R	0.3	52.45	235	2000	$636,557
	BELLHOLME LANE From: HIGHWAY 26 EAST To: JANE STREET	RD0458	_HCB-L-R	0.07	65.43	775	1998	$141,223
	COOK STREET From: HIGHWAY 26 EAST To: KING STREET	RD0092	_HCB-L-R	0.14	87.12	312	1998	$292,985
	CURRIE AVENUE From: HIGHWAY 26 EAST To: END	RD0189	_HCB-L-R	0.2	58.95	236	1998	$425,777
	DELLPARR AVENUE From: HIGHWAY 26 EAST To: SUNNYVIEW AVENUE	RD0575	_HCB-L-R	0.08	70.18	764	1953	$160,193
	DOWNER STREET From: HIGHWAY 26 EAST To: END	RD0143	_HCB-L-R	0.29	70.18	234	2000	$600,724
	EDGAR ROAD From: HIGHWAY 26 EAST To: CURRIE STREET	RD0570	_HCB-L-R	0.05	67.57	759	2000	$107,498

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	ELIOTT AVENUE From: HIGHWAY 26 EAST To: ST. CALIR STREET	RD0198	_HCB-L-R	0.16	71.26	266	1979	$108,339
	FAIRGROUNDS ROAD From: HIGHWAY 26 EAST To: NOTTAWA SIDEROAD	RD0663	_HCB-L-R	0.04	97.28	748	1995	$28,522
	HURONIA PATHWAY From: HIGHWAY 26 EAST To: BARRINGTON TRAIL	RD0462	_HCB-L-R	0.07	94.95	779	2009	$52,493
	KOHL STREET From: HIGHWAY 26 EAST To: END	RD0131	_HCB-L-R	0.23	54.99	233	2000	$154,967
	LANE C From: HIGHWAY 26 EAST To: END	RD0020	_HCB-L-R	0.19	82.24	246	2000	$396,267
	LANE D From: HIGHWAY 26 EAST To: END	RD0094	_HCB-L-R	0.23	59.74	314	2000	$478,472
	MACALLISTER STREET NORTH From: HIGHWAY 26 EAST To: END	RD0019	_HCB-L-R	0.17	58.95	245	1998	$360,435
	MACALLISTER STREET SOUTH From: HIGHWAY 26 EAST To: WOODCREST AVENUE	RD0906	_HCB-L-R	0.08	69.3	1067	1998	$164,409
	POPLAR SIDEROAD From: HIGHWAY 26 EAST To: SUMMER VIEW AVENUE	RD0905	_HCB-L-R	0.23	84.6	1066	1995	$480,580
	ROBERT AVENUE From: HIGHWAY 26 EAST To: ST. CLAIR STREET	RD0197	_HCB-L-R	0.16	44.01	265	1980	$117,013
	SANDELL STREET From: HIGHWAY 26 EAST To: 4TH LINE	RD0130	_HCB-L-R	0.19	70.81	232	2000	$408,914
	SELKIRK ROAD From: HIGHWAY 26 EAST To: GLEN ROAD	RD0071	_HCB-L-R	0.23	57.6	291	2000	$491,119
	SIXTH LINE From: HIGHWAY 26 EAST To: SANFORD FLEMING DRIVE	RD0783	_HCB-L-R	0.25	97.28	979	2009	$225,157
	ST. CLAIR STREET From: HIGHWAY 26 EAST To: GLEN ROGERS ROAD	RD0393	_HCB-L-R	0.08	71.44	697	1979	$53,872
	STALKER STREET From: HIGHWAY 26 EAST To: 4TH LINE	RD0007	_HCB-L-R	0.1	61.45	207	2000	$210,781
	SYVAIN ROAD From: HIGHWAY 26 EAST To: WOODCREST AVENUE	RD0422	_HCB-L-R	0.08	80.71	768	1998	$162,301
	THERESA STREET From: HIGHWAY 26 EAST To: END	RD0072	_HCB-L-R	0.26	49.23	292	1999	$548,029
	WELLINGTON STREET From: HIGHWAY 26 EAST To: JAMES STREET	RD0031	_HCB-L-R	0.14	62.82	263	1998	$284,554
	YORK STREET From: HIGHWAY 26 EAST To: GLEN ROAD	RD0016	_HCB-L-R	0.23	57.6	242	2000	$480,580
HIGHWAY 26 WEST	CRANBERRY TRAIL EAST From: HIGHWAY 26 WEST To: ROYALTON LANE	RD0626	_HCB-H-R	0.08	79.63	727	1988	$56,312
	CRANBERRY TRAIL WEST From: HIGHWAY 26 WEST To: BARKER BOULEVARD	RD0601	_HCB-H-R	0.21	96.65	695	1998	$149,922
	FIRST STREET EXTENSION From: HIGHWAY 26 WEST To: OLD MOUNTAIN ROAD	RD0064	_HCB-H-U	0.26	90.63	254	2005	$945,556
	HARBOUR STREET EAST From: HIGHWAY 26 WEST To: HARBOURSIDE DRIVE	RD0653	_HCB-H-U	0.1	53.28	737	1989	$142,786
	KEITH AVENUE From: HIGHWAY 26 WEST To: DAWSON DRIVE	RD0224	_HCB-L-R	0.16	86.56	304	1982	$118,475
	OLD MOUNTAIN ROAD From: HIGHWAY 26 WEST To: MOUNTAIN ROAD	RD0073	_HCB-L-U	0.38	91.53	255	2003	$680,398
	TROTT BOULEVARD From: HIGHWAY 26 WEST To: SHEFFIELD CRESCENT	RD0654	_HCB-L-U	0.21	79.9	739	1988	$321,645
HILL STREET	MAIR MILLS DRIVE From: HILL STREET To: FRANCES STREET	RD0226	_HCB-L-U	0.22	95.12	306	2006	$330,663
	MAIR MILLS DRVIE From: HILL STREET To: END	RD1044	_HCB-L-U	0.06	96.02	2023	(blank)	$43,220
	MOUNTAIN ROAD From: HILL STREET To: ELEVENTH LINE	RD0554	_HCB-H-R	0.08	97.28	681	2009	$119,382
HOLDEN STREET	CHAMBERLAIN CRESCENT From: HOLDEN STREET To: DAVIS STREET	RD0868	_HCB-L-U	0.09	90.53	1027	2007	$87,017
		RD0869	_HCB-L-U	0.09	87.74	1028	2007	$88,005

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	CHAMBERLAIN CRESCENT From: HOLDEN STREET To: PATTON STREET	RD0867	_HCB-L-U	0.09	90.53	1026	2007	$87,017
HUGHES STREET	PORTLAND STREET From: HUGHES STREET To: ROBERTSON STREET	RD1023	_HCB-L-U	0.08	97.28	2012	2011	$83,061
	ROBERTSON STREET From: HUGHES STREET To: COOPER STREET	RD0923	_HCB-L-U	0.08	97.28	1113	2011	$82,072
HUME STREET	HURONTARIO STREET From: HUME STREET To: FIFTH STREET	RD0887	_HCB-H-U	0.06	92.79	1051	1984	$184,265
	MINNESOTA STREET From: HUME STREET To: MANNING AVENUE	RD0266	_HCB-H-R	0.44	84.78	376	2007	$318,128
	MOBERLY STREET From: HUME STREET To: PEEL STREET	RD0162	_HCB-L-R	0.39	70.74	433	1979	$282,293
	NAPIER STREET From: HUME STREET To: DILLON DRIVE	RD0677	_HCB-L-R	0.4	97.28	794	1987	$297,351
	PEEL STREET From: HUME STREET To: HARBEN COURT	RD0643	_HCB-H-R	0.19	68.03	908	1994	$169,761
	PEEL STREET From: HUME STREET To: MOBERLY STREET	RD0682	_HCB-H-R	0.3	70.38	799	1986	$270,725
	RAGLAN STREET From: HUME STREET To: CONNEL STREET	RD0639	_HCB-H-R	0.24	96.02	904	2011	$211,755
	ST MARIE STREET From: HUME STREET To: FOURTH STREET EAST	RD0351	_HCB-H-U	0.16	88.2	502	2007	$315,287
HURON STREET	HERITAGE DRIVE From: HURON STREET To: SIDELAUNCH WAY	RD0703	_HCB-L-R	0.09	94.95	825	1979	$65,088
	NIAGARA STREET From: HURON STREET To: SIMCOE STREET	RD0690	_HCB-L-R	0.2	97.28	812	2016	$145,534
	NIAGARA STREET From: HURON STREET To: ST. LAWRENCE STREET	RD0378	_HCB-L-R	0.24	78.19	555	2007	$175,519
	NORTH ALBERT LANE From: HURON STREET To: ST. LAWRENCE STREET	RD0138	_HCB-L-R	0.25	69.3	320	1990	$136,605
	ST MARIE STREET From: HURON STREET To: SECOND STREET	RD0759	_HCB-H-U	0.22	89.73	882	2010	$471,729
	ST PAUL STREET From: HURON STREET To: VETERANS CRESCENT	RD0758	_HCB-L-U	0.03	97.28	881	1979	$42,084
	ST. LAWRENCE STREET From: HURON STREET To: RUSSEL STREET	RD0903	_HCB-L-R	0.17	95.3	1064	1991	$159,007
HURONIA PATHWAY	BARRINGTON TRAIL From: HURONIA PATHWAY To: SILVER CRESCENT	RD0786	_HCB-L-U	0.11	97.28	982	2007	$157,816
	HIGHWAY 26 EAST From: HURONIA PATHWAY To: MARINE VIEW DRIVE	RD0674	_HCB-H-R	0.29	94.67	782	1955	$770,870
HURONTARIO STREET	(to) HURONTARIO STREET-to-END	RD0941	_HCB-L-R	0.19	100	282	2007	$146,603
		RD1042	_HCB-L-U	0.09	100	2021	2007	$78,624
	COLLINS STREET From: HURONTARIO STREET To: ST. MARIE STREET	RD0771	_HCB-H-U	0.13	93.69	894	2015	$195,417
	EIGHTH STREET From: HURONTARIO STREET To: MAPLE STREET	RD0517	_HCB-L-R	0.25	97.28	592	1974	$179,907
	FAIR STREET From: HURONTARIO STREET To: MAPLE STREET	RD0104	_HCB-L-R	0.25	41.84	217	1974	$178,136
	FINDLAY DRIVE From: HURONTARIO STREET To: NEWBOURNE STREET	RD0300	_HCB-L-R	0.29	90.52	570	2006	$218,508
	FIRST STREET From: HURONTARIO STREET To: ST. MARIE STREET	RD0760	_HCB-H-U	0.13	94.49	883	2010	$454,733
	FOURTH STREET From: HURONTARIO STREET To: PINE STREET	RD0502	_HCB-L-U	0.13	78.82	577	1979	$193,867
	FOURTH STREET EAST From: HURONTARIO STREET To: ST. MARIE STREET	RD0352	_HCB-L-U	0.15	84.4	503	1940	$231,089

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	GEORGE STREET From: HURONTARIO STREET To: ST. MARIE STREET	RD0263	_HCB-L-R	0.13	45.71	373	1974	$91,223
	GOLFVIEW DRIVE From: HURONTARIO STREET To: END	RD0132	_HCB-L-R	0.16	92.34	218	2007	$110,397
	HAMILTON STREET From: HURONTARIO STREET To: ST. MARIE STREET	RD0260	_HCB-L-R	0.13	97.28	370	1976	$159,055
	HUME STREET From: HURONTARIO STREET To: ST. MARIE STREET	RD0888	_HCB-H-U	0.13	97.28	1052	2015	$329,120
	LOCKHART ROAD From: HURONTARIO STREET To: BROCK CRESCENT	RD0814	_HCB-H-U	0.08	97.28	932	1984	$117,235
	SECOND STREET From: HURONTARIO STREET To: PINE STREET	RD0303	_HCB-H-U	0.13	90.63	573	2010	$245,653
	SECOND STREET From: HURONTARIO STREET To: ST. MARIE STREET	RD0671	_HCB-L-U	0.13	96.02	837	2010	$243,719
	SIDE LAUNCH WAY From: HURONTARIO STREET To: HERITAGE DRIVE	RD0898	_HCB-L-U	0.21	97.28	1102	0	$203,698
	SIXTH STREET From: HURONTARIO STREET To: MAPLE STREET	RD0513	_HCB-H-U	0.25	76.66	588	1997	$383,080
	STANLEY STREET From: HURONTARIO STREET To: NEWBOURNE STREET	RD0862	_HCB-L-R	0.28	94.95	1018	2007	$210,248
	THIRD STREET From: HURONTARIO STREET To: ST.MARIE STREET	RD0500	_HCB-H-U	0.13	82.71	575	2010	$196,968
	VICTORY DRIVE From: HURONTARIO STREET To: ST. MARIE STREET	RD0133	_HCB-L-R	0.13	50.03	219	1979	$92,879
JAMES STREET	KING STREET From: JAMES STREET To: CHERRY STREET	RD0030	_HCB-L-R	0.1	73.62	262	1998	$219,212
JANE STREET	BELLHOLME LANE From: JANE STREET To: INDIAN TRAIL	RD0060	_HCB-L-R	0.08	36.62	250	1998	$162,301
JOSEPH TRAIL	CRANBERRY TRAIL EAST From: JOSEPH TRAIL To: JOSEPH TRAIL	RD0961	HCB4-U	0.15	91.08	2001	0	$150,301
	CRANBERRY TRAIL EAST From: JOSEPH TRAIL To: ROBBIE WAY	RD1025	HCB4-U	0.12	75.33	2002	0	$119,648
JUNIPER COURT	LAUREL BOULEVARD From: JUNIPER COURT To: OSLER BLUFF ROAD	RD0563	_HCB-L-R	0.12	95.12	684	1999	$85,565
KARI CRESCENT	HARBOUR STREET WEST From: KARI CRESCENT To: END	RD0213	_HCB-L-R	0.29	96.65	2017	1970	$212,085
KATHERINE STREET	COLLINS STREET From: KATHERINE STREET To: ALICE STREET	RD0326	_HCB-H-U	0.09	53.76	516	1968	$144,237
	LOCKHART ROAD From: KATHERINE STREET To: CARMICHAEL CRESCENT	RD0711	_HCB-H-U	0.23	71.01	895	1984	$347,196
	LORNE STREET From: KATHERINE STREET To: ALICE STREET	RD0069	_HCB-L-R	0.12	73.62	289	1993	$83,655
KAYLA CRESCENT	ALYSSA DRIVE From: KAYLA CRESCENT To: KAYLA CRESCENT	RD0204	_HCB-L-U	0.15	96.83	2020	2002	$217,937
	ALYSSA DRIVE From: KAYLA CRESCENT To: SHERWOOD STREET	RD1040	_HCB-L-U	0.09	97.28	2019	2002	$127,756
	ALYSSA DRIVE From: KAYLA CRESCENT To: SIXTH STREET	RD1041	_HCB-L-U	0.13	95.75	272	2002	$199,901
KEITH AVENUE	DAWSON DRIVE From: KEITH AVENUE To: ESCARPMENT DRIVE	RD0651	_HCB-L-R	0.1	97.28	735	2014	$72,402
	HIGHWAY 26 WEST From: KEITH AVENUE To: HARBOUR STREET EAST	RD0659	_HCB-H-U	0.3	91.89	744	2016	$773,171
KELLS CRESCENT	LONG LANE From: KELLS CRESCENT To: KELLS CRESCENT	RD0089	_HCB-L-U	0.17	95.57	309	2007	$251,003
	MAIR MILLS DRIVE From: KELLS CRESCENT To: FRANCES STREET	RD0552	_HCB-L-U	0.08	96.02	679	2006	$123,247
	MOUNTAIN ROAD From: KELLS CRESCENT To: HILL STREET	RD0553	_HCB-H-R	0.29	93.59	680	2009	$414,926

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
LAKEVIEW AVENUE	SUMMER VIEW AVENUE From: LAKEVIEW AVENUE To: POPLAR SIDEROAD	RD0088	_HCB-L-R	0.27	74.05	215	1998	$193,802
LANEWAY	ONTARIO STREET From: LANEWAY To: MINNESOTA STREET	RD0743	_HCB-H-U	0.09	87.46	1082	1994	$138,033
	ST PAUL STREET From: LANEWAY To: ONTARIO STREET	RD0426	_HCB-L-U	0.04	97.28	508	1998	$66,133
LESLIE DRIVE	COLLINS STREET From: LESLIE DRIVE To: KATHERINE STREET	RD0602	_HCB-H-R	0.07	87.12	696	1976	$64,331
LINDSAY LANE	LONG POINT ROAD From: LINDSAY LANE To: HIGHWAY 26 WEST	RD0149	_HCB-L-R	0.74	68.13	273	1990	$1,549,237
	MADELINE DRIVE From: LINDSAY LANE To: LONG POINT ROAD	RD0169	_HCB-L-R	0.38	90.18	208	1990	$796,750
LOCKHARD ROAD	CARMICHEAL CRESCENT From: LOCKHARD ROAD To: BURNSIDE COURT	RD0778	_HCB-L-U	0.31	83.95	902	1987	$468,940
LOCKHART ROAD	BROCK CRESCENT From: LOCKHART ROAD To: LOCKHART ROAD	RD0158	_HCB-L-R	0.45	36.03	558	1972	$334,145
	BRYAN DRIVE From: LOCKHART ROAD To: KATHERINE STREET	RD0078	_HCB-L-R	0.35	58.04	257	1968	$265,063
	DEY DRIVE From: LOCKHART ROAD To: KRISTA COURT	RD0773	_HCB-L-U	0.05	85.77	897	1985	$73,648
	KATHERINE STREET From: LOCKHART ROAD To: BRYAN DRIVE	RD0710	_HCB-L-R	0.09	90.52	931	2012	$70,583
LONG LANE	KELLS CRESCENT From: LONG LANE To: FRANCES STREET	RD0550	_HCB-L-U	0.12	96.2	677	2006	$177,356
	KELLS CRESCENT From: LONG LANE To: LONG LANE	RD0227	_HCB-L-U	0.4	95.57	307	2006	$605,715
LONG POINT ROAD	HIGHWAY 26 WEST From: LONG POINT ROAD To: SILVER CREEK DRIVE	RD0565	_HCB-H-R	1.13	65.07	689	1990	$1,646,601
LORNE STREET	KATHERINE STREET From: LORNE STREET To: MANNING AVENUE	RD0795	_HCB-L-R	0.14	77.31	922	2016	$99,461
LYNDEN CRESCENT	PEEL STREET From: LYNDEN CRESCENT To: MCKEAN CRESCENT	RD0205	_HCB-H-U	0.1	95.12	281	2006	$151,804
MACALLISTER STREET NORTH	WOODCREST AVENUE From: MACALLISTER STREET NORTH To: SYVAIN ROAD	RD0208	_HCB-L-R	0.12	65.59	293	1998	$89,222
MACALLISTER STREET SOUTH	GLENLAKE BOULEVARD From: MACALLISTER STREET SOUTH To: SYVAIN ROAD	RD0908	_HCB-L-R	0.12	73.6	1069	1998	$257,152
MACKAY COURT	RHONDA ROAD From: MACKAY COURT To: END	RD0289	_HCB-L-U	0.05	73.62	528	1973	$70,642
MACKINAW LANE	NORTH MAPLE STREET From: MACKINAW LANE To: COLLSHIP LANE	RD0994	_HCB-L-U	0.03	0	1167	(blank)	$14,536
	NORTH PINE STREET From: MACKINAW LANE To: COLLSHIP LANE	RD1002	_HCB-L-U	0.04	0	1175	(blank)	$14,963
MADELINE DRIVE	LINDSAY LANE From: MADELINE DRIVE To: LONG POINT ROAD	RD0122	_HCB-L-R	0.3	91.25	171	1990	$621,803
	LONG POINT ROAD From: MADELINE DRIVE To: LINDSAY LANE	RD0564	_HCB-L-R	0.16	96.02	688	1990	$330,925
MAIR MILLS DRIVE	FRANCES STREET From: MAIR MILLS DRIVE To: KELLS CRESCENT	RD0026	_HCB-L-U	0.24	96.83	308	2006	$362,226
	KELLS CRESCENT From: MAIR MILLS DRIVE To: FRANCES STREET	RD0549	_HCB-L-U	0.34	96.83	676	2006	$508,019
MANNING AVENUE	ALICE STREET From: MANNING AVENUE To: BELL BOULEVARD	RD0255	_HCB-L-R	0.19	93.24	363	2016	$138,221
	ALICE STREET From: MANNING AVENUE To: LORNE STREET	RD0794	_HCB-L-R	0.14	97.28	921	2016	$98,729
	KATHERINE STREET From: MANNING AVENUE To: BAKER STREET	RD0796	_HCB-L-R	0.21	94.95	923	2016	$149,922
	MINNESOTA STREET From: MANNING AVENUE To: GODDEN STREET	RD0680	_HCB-H-U	0.11	78.39	797	1989	$165,332

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	PATERSON STREET From: MANNING AVENUE To: BAKER STREET	RD0254	_HCB-L-R	0.21	58.23	362	1976	$149,922
	PATERSON STREET From: MANNING AVENUE To: LORNE STREET	RD0798	_HCB-L-R	0.15	76.05	925	1976	$107,505
	ROBINSON STREET From: MANNING AVENUE To: COLLINS STREET	RD0262	_HCB-L-R	0.31	97.28	372	1974	$225,249
	SPROULE AVENUE From: MANNING AVENUE To: BELL BOULEVARD	RD0265	_HCB-L-U	0.22	94.49	375	2007	$324,651
MAPLE STREET	CAMERON STREET From: MAPLE STREET To: HURONTARIO STREET	RD0522	_HCB-H-R	0.25	83.14	597	2015	$222,477
	CAMERON STREET From: MAPLE STREET To: MASON ROAD	RD0106	_HCB-H-R	0.21	82.24	159	1978	$319,000
	CAMPBELL STREET From: MAPLE STREET To: HURONTARIO STREET	RD0290	_HCB-H-R	0.25	96.38	598	1973	$179,572
	EIGHTH STREET From: MAPLE STREET To: BIRCH STREET	RD0369	_HCB-L-R	0.24	97.28	477	1976	$176,982
	FIFTH STREET From: MAPLE STREET To: PINE STREET	RD0511	_HCB-H-U	0.12	94.95	586	1979	$187,663
	FIRST STREET From: MAPLE STREET To: PINE STREET	RD0504	_HCB-H-U	0.12	91.88	579	2010	$436,688
	FOURTH STREET From: MAPLE STREET To: BEECH STREET	RD0339	_HCB-L-R	0.12	93.41	525	1973	$88,491
	NINTH STREET From: MAPLE STREET To: HURONTARIO STREET	RD0519	_HCB-L-U	0.25	33.15	594	1974	$368,238
	SECOND STREET From: MAPLE STREET To: BEECH STREET	RD0744	_HCB-H-U	0.12	80.08	1083	1978	$181,865
	SEVENTH STREET From: MAPLE STREET To: HURONTARIO STREET	RD0515	_HCB-L-R	0.25	97.28	590	1974	$180,638
	SIXTH STREET From: MAPLE STREET To: BIRCH STREET	RD0364	_HCB-H-U	0.24	74.07	472	1997	$375,326
	THIRD STREET From: MAPLE STREET To: PINE STREET	RD0507	_HCB-H-U	0.12	88.54	582	1987	$187,663
MARINA CRESCENT	GEORGIAN MEADOWS DRIVE From: MARINA CRESCENT To: HIGHLANDS CRESCENT	RD0596	_HCB-L-U	0.09	96.38	854	2002	$132,265
	GEORGIAN MEADOWS DRIVE From: MARINA CRESCENT To: MARINA CRESCENT	RD0586	_HCB-L-U	0.09	95.75	853	2002	$132,265
MARINE VIEW DRIVE	BARRINGTON TRAIL From: MARINE VIEW DRIVE To: SILVER CRESCENT	RD0235	_HCB-L-U	0.08	96.02	339	2007	$123,247
	HIGHWAY 26 EAST From: MARINE VIEW DRIVE To: NEWPORT BOULEVARD	RD0395	_HCB-H-R	0.31	98.99	783	1955	$448,411
MARINERS HAVEN	HIGHWAY 26 WEST From: MARINERS HAVEN To: OLD MOUNTAIN ROAD	RD0343	_HCB-H-U	0.45	84.4	460	2005	$1,432,823
MARKET LANE	MARKET STREET From: MARKET LANE To: FOURTH STREET EAST	RD0181	_HCB-L-R	0.18	96.38	367	2014	$127,983
	ST MARIE STREET From: MARKET LANE To: FOURTH STREET EAST	RD0669	_HCB-H-U	0.16	85.03	833	2007	$313,353
	ST MARIE STREET From: MARKET LANE To: ONTARIO STREET	RD0668	_HCB-H-U	0.05	97.28	832	2007	$92,845
	ST PAUL STREET From: MARKET LANE To: FOURTH STREET EAST	RD0404	_HCB-L-R	0.2	39.45	504	1998	$147,728
MARKET STREET	FOURTH STREET EAST From: MARKET STREET To: ST.PAUL STREET	RD0764	_HCB-L-U	0.12	75.33	887	2011	$172,847
	HUME STREET From: MARKET STREET To: PATTERSON STREET	RD0399	_HCB-H-U	0.08	98.99	787	2015	$208,965
	MARKET LANE From: MARKET STREET To: ST. MARIE STREET	RD0258	_HCB-L-R	0.12	96.02	368	2014	$78,855
MARY STREET	SAUNDERS STREET From: MARY STREET To: STEPHENS STREET	RD0052	_HCB-L-U	0.12	97.28	144	2007	$183,368

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
MASON AND DICKSON ROAD	CAMPBELL STREET From: MASON AND DICKSON ROAD To: MAPLE STREET	RD0335	_HCB-H-R	0.25	84.85	610	1973	$179,176
	MASON ROAD From: MASON AND DICKSON ROAD To: RHONDA ROAD	RD0432	_HCB-L-R	0.18	92.34	529	1977	$132,370
MASON ROAD	CAMERON STREET From: MASON ROAD To: BIRCH STREET	RD0875	_HCB-H-R	0.04	89.44	1035	1978	$35,658
	RHONDA ROAD From: MASON ROAD To: MACKAY COURT	RD0107	_HCB-L-R	0.08	64.53	160	1976	$60,071
MATTHEW WAY	RAGLAN STREET From: MATTHEW WAY To: HUME STREET	RD0803	_HCB-H-R	0.25	71.82	1071	1992	$180,638
MCDONALD STREET	CONNELL STREET From: MCDONALD STREET To: PRETTY RIVER PARKWAY SOUTH	RD0325	_HCB-L-U	0.23	96.83	437	1982	$348,699
MCINTOSH GATE	TROTT BOULEVARD From: MCINTOSH GATE To: NETTLETON COURT	RD0657	_HCB-L-U	0.15	88.54	742	1988	$231,464
MCKEAN CRESCENT	PEEL STREET From: MCKEAN CRESCENT To: COLLINS STREET	RD0726	_HCB-H-U	0.19	92.34	912	2007	$290,082
MCKEAN STREET	PEEL STREET From: MCKEAN STREET To: MCKEAN STREET	RD0466	_HCB-H-U	0.1	96.65	913	2007	$154,810
MCPHERSON LANE	(to) MCPHERSON LANE-to-ARTHUR STREET	RD0059	_HCB-L-R	0.11	91	249	1998	$67,377
MINNESOTA STREET	DILLON DRIVE From: MINNESOTA STREET To: GODDEN STREET	RD0186	_HCB-L-U	0.33	78.55	224	1988	$497,498
	DILLON DRIVE From: MINNESOTA STREET To: NAPIER STREET	RD0679	_HCB-L-U	0.13	84.24	796	1988	$195,392
	GODDEN STREET From: MINNESOTA STREET To: DILLON DRIVE	RD0271	_HCB-L-U	0.18	57.9	383	1988	$269,040
	HUME STREET From: MINNESOTA STREET To: NAPIER STREET	RD0676	_HCB-H-U	0.13	98.99	793	2015	$331,732
	HURON STREET From: MINNESOTA STREET To: RODNEY STREET	RD0700	_HCB-H-U	0.06	92.97	822	2003	$205,713
	SIMCOE STREET From: MINNESOTA STREET To: NAPIER STREET	RD0193	_HCB-L-R	0.13	96.02	240	2006	$91,416
MOBERLY STREET	PEEL STREET From: MOBERLY STREET To: ERIE STREET	RD0683	_HCB-H-R	0.07	88.92	800	1976	$65,224
MONTCLAIR MEWS	SIDE LAUNCH WAY From: MONTCLAIR MEWS To: NORTH PINE STREET	RD0915	_HCB-L-U	0.06	-1	2010	0	$62,296
MORBAY STREET	HUME STREET From: MORBAY STREET To: RAGLAN STREET	RD0641	_HCB-H-U	0.29	97.28	906	2015	$747,050
MOUNTAIN ROAD	EVERGREEN ROAD From: MOUNTAIN ROAD To: LAUREL BOULEVARD	RD0080	_HCB-L-R	0.22	93.86	198	1999	$165,195
	GRECO COURT From: MOUNTAIN ROAD To: END	RD1054	_HCB-L-U	0	0	2033	2018	$0
	HILL STREET From: MOUNTAIN ROAD To: MAIR MILLS DRIVE	RD0135	_HCB-L-U	0.16	95.12	317	2006	$232,967
	KELLS CRESCENT From: MOUNTAIN ROAD To: THOMAS DRIVE	RD0403	_HCB-L-U	0.09	96.38	492	2006	$129,259
	SLALOM GATE ROAD From: MOUNTAIN ROAD To: TRAILS END	RD0561	_HCB-L-R	0.35	96.02	682	2017	$241,364
MURRAY COURT	HIGH STREET From: MURRAY COURT To: SECOND STREET	RD0126	_HCB-H-U	0.11	80.73	480	1984	$389,771
NAPIER STREET	ERIE STREET From: NAPIER STREET To: PEEL STREET	RD0377	_HCB-L-R	0.18	36.03	554	1972	$131,639
	HUME STREET From: NAPIER STREET To: PEEL STREET	RD0207	_HCB-H-U	0.19	98.99	288	2015	$488,456
	ONTARIO STREET From: NAPIER STREET To: MINNESOTA STREET	RD0742	_HCB-H-U	0.13	78.82	1081	1994	$193,867
	RODNEY STREET From: NAPIER STREET To: HURON STREET	RD0699	_HCB-L-U	0.15	97.28	821	2015	$225,452
	RODNEY STREET From: NAPIER STREET To: SIMCOE STREET	RD0272	_HCB-L-U	0.15	97.28	384	2015	$231,464

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	SIMCOE STREET From: NAPIER STREET To: WEST STREET	RD0696	_HCB-L-R	0.07	97.28	818	1999	$52,656
	ST VINCENT STREET From: NAPIER STREET To: PEEL STREET	RD0687	_HCB-L-R	0.18	91.08	809	1976	$131,639
NETTLETON COURT	BALSAM STREET From: CRANBERRY SHORES To: END	RD0943	_HCB-L-R	0.07	90	2015	1988	$54,677
	BALSAM STREET From: NETTLETON COURT To: BOARDWALK AVENUE	RD0987	_HCB-H-R	0.05	90	2014	1988	$44,068
NEWBOURNE STREET	FINDLAY DRIVE From: NEWBOURNE STREET To: SAUNDERS STREET	RD0041	_HCB-L-U	0.44	91.89	145	2006	$655,314
	MARY STREET From: NEWBOURNE STREET To: END	RD0861	_HCB-L-R	0.15	93.24	1017	2007	$111,131
	MARY STREET From: NEWBOURNE STREET To: SAUNDERS STREET	RD0305	_HCB-L-R	0.44	92.97	401	2007	$345,517
	STANLEY STREET From: NEWBOURNE STREET To: SAUNDERS STREET	RD0306	_HCB-L-R	0.44	94.05	402	2007	$331,141
NEWPORT BOULEVARD	HIGHWAY 26 EAST From: NEWPORT BOULEVARD To: ELLIOT AVENUE	RD0396	_HCB-H-R	0.16	98.99	784	1955	$231,485
NIAGARA STREET	ERIE STREET From: NIAGARA STREET To: RAGLAN STREET	RD0319	_HCB-L-R	0.38	77.29	421	1975	$277,174
	HURON STREET From: NIAGARA STREET To: NORTH ALBERT LANE	RD0733	_HCB-H-U	0.06	97.28	1060	2003	$199,074
	ONTARIO STREET From: NIAGARA STREET To: EAST STREET	RD0636	_HCB-H-U	0.11	83.95	804	1994	$164,399
	SIMCOE STREET From: NIAGARA STREET To: EAST STREET	RD0692	_HCB-L-R	0.11	96.83	814	2015	$81,177
	ST. LAWRENCE STREET From: NIAGARA STREET To: NORTH ALBERT LANE	RD0465	_HCB-L-R	0.07	72.81	1062	1991	$63,414
NINTH STREET	BIRCH STREET From: NINTH STREET To: TENTH STREET	RD0632	_HCB-L-R	0.12	88.47	1040	2006	$88,491
	HURONTARIO STREET From: NINTH STREET To: VICORY DRIVE	RD0634	_HCB-H-U	0.07	73.15	1042	1984	$145,838
	MAPLE STREET From: NINTH STREET To: FAIR STREET	RD0520	_HCB-L-U	0.15	63.72	595	1973	$219,440
	OAK STREET From: NINTH STREET To: TENTH STREET	RD0334	_HCB-L-R	0.12	77.92	609	1978	$108,111
NORTH ALBERT LANE	HURON STREET From: NORTH ALBERT LANE To: ALBERT STREET	RD0734	_HCB-H-U	0.11	92.33	1061	2003	$389,771
	ST. LAWRENCE STREET From: NORTH ALBERT LANE To: HURON STREET	RD0485	_HCB-L-R	0.36	72.7	552	1991	$340,729
NORTH MAPLE STREET	SIDE LAUNCH WAY From: NORTH MAPLE STREET To: MONCLAIR MEWS	RD1022	_HCB-L-U	0.06	-1	1103	0	$59,330
	WHEELHOUSE CRESCENT From: NORTH MAPLE STREET To: WESTMOUNT MEWS	RD1004	_HCB-L-U	0.05	97.28	1177	(blank)	$21,804
NOTTAWA SIDEROAD	FAIRGROUNDS ROAD From: NOTTAWA SIDEROAD To: END	RD0028	_HCB-L-R	0.78	93.24	277	1995	$568,974
OAK STREET	CAMPBELL STREET From: OAK STREET To: MASON AND DICKSON ROAD	RD0577	_HCB-H-R	0.12	80.71	844	1973	$87,028
	EIGHTH STREET From: OAK STREET To: WALNUT STREET	RD0046	_HCB-L-R	0.24	44.18	150	1990	$175,519
	FIFTH STREET From: OAK STREET To: BIRCH STREET	RD0411	_HCB-H-R	0.12	96.38	539	1973	$82,283
	FIRST STREET From: OAK STREET To: BIRCH STREET	RD0435	_HCB-H-U	0.12	90.8	532	2010	$433,079
	FOURTH STREET From: OAK STREET To: CEDAR STREET	RD0455	_HCB-L-R	0.12	91.53	632	1973	$88,491
	NINTH STREET From: OAK STREET To: BIRCH STREET	RD0633	_HCB-L-R	0.12	38.96	1041	1978	$98,746
	SECOND STREET From: OAK STREET To: CEDAR STREET	RD0496	_HCB-H-R	0.12	79.27	629	1992	$89,222
	SEVENTH STREET From: OAK STREET To: BIRCH STREET	RD0415	_HCB-L-R	0.12	82.51	543	1978	$88,491

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	SIXTH STREET From: OAK STREET To: WALNUT STREET	RD0489	_HCB-H-U	0.24	82.69	622	1997	$369,122
	TENTH STREET From: OAK STREET To: CLARKSON CRESCENT	RD0872	_HCB-H-R	0.08	67.59	1032	1974	$60,700
	THIRD STREET From: OAK STREET To: BIRCH STREET	RD0436	_HCB-H-R	0.12	23.88	533	1977	$107,218
	WILLOW STREET From: OAK STREET To: BIRCH STREET	RD0190	_HCB-L-R	0.12	73.62	237	1976	$82,969
OLD MOUNTAIN ROAD	HIGHWAY 26 WEST From: OLD MOUNTAIN ROAD To: FIRST STREET	RD0660	_HCB-H-U	0.21	83.95	745	1990	$743,453
	MOUNTAIN ROAD From: OLD MOUNTAIN ROAD To: TENTH LINE	RD0374	_HCB-H-R	1.08	49.41	488	2015	$1,567,983
OLIVER CRESCENT	RAGLAN STREET From: OLIVER CRESCENT To: PRETTY RIVER PARKWAY	RD0849	_HCB-H-R	0.04	75.32	976	1987	$29,984
ONTARIO STREET	EAST STREET From: ONTARIO STREET To: SIMCOE STREET	RD0315	_HCB-L-R	0.2	97.28	417	1976	$139,881
	LANEWAY From: ONTARIO STREET To: ST. PAUL STREET	RD0627	_HCB-L-U	0.16	97.28	864	2002	$232,967
	MINNESOTA STREET From: ONTARIO STREET To: HUME STREET	RD0216	_HCB-H-R	0.48	88.02	381	2007	$349,575
	NAPIER STREET From: ONTARIO STREET To: ST. VINCENT STREET	RD0809	_HCB-L-R	0.09	93.42	1077	2000	$67,282
	NIAGARA STREET From: ONTARIO STREET To: SIMCOE STREET	RD0317	_HCB-L-R	0.2	74.95	419	1998	$139,881
	PEEL STREET From: ONTARIO STREET To: SIMCOE STREET	RD0270	_HCB-H-R	0.2	57.15	380	2016	$149,191
	PEEL STREET From: ONTARIO STREET To: ST. VINCENT STREET	RD0587	_HCB-H-R	0.09	87.46	801	1976	$82,200
	PRETTY RIVER PARKWAY From: ONTARIO STREET To: RONNELL CRESCENT	RD0321	_HCB-H-U	0.47	92.78	423	2001	$1,452,617
	ST PAUL STREET From: ONTARIO STREET To: MARKET LANE	RD0425	_HCB-L-R	0.06	88.09	507	1998	$43,880
	WEST STREET From: ONTARIO STREET To: SIMCOE STREET	RD0316	_HCB-L-R	0.2	97.28	418	2016	$149,191
OSLER BLUFF ROAD	FOREST DRIVE From: OSLER BLUFF ROAD To: ALPINE COURT	RD0599	_HCB-L-R	0.25	88.19	693	1989	$185,026
	TRAILS END From: OSLER BLUFF ROAD To: SLALOM GATE ROAD	RD0068	_HCB-L-R	0.4	98.99	195	2017	$277,020
OSLER COURT	CAMPBELL STREET From: OSLER COURT To: FERGUSON ROAD	RD0042	_HCB-H-R	0.11	76.68	146	1973	$81,177
OXBOW CRESCENET	DAWSON DRIVE From: OXBOW CRESCENET To: ESCARPMENT DRIVE	RD0225	_HCB-L-R	0.21	96.2	305	2014	$153,579
OXBOW CRESCENT	DAWSON DRIVE From: OXBOW CRESCENT To: OXBOW CRESCENT	RD0648	_HCB-L-R	0.16	96.65	732	2014	$117,013
PARK ROAD	CAMERON STREET From: PARK ROAD To: END	RD0332	_HCB-L-R	0.05	97.28	613	1976	$76,249
	FERGUSON ROAD From: PARK ROAD To: OAK STREET	RD0025	_HCB-L-R	0.24	97.28	157	1974	$174,544
PARKSIDE DRIVE	GEORGIAN MANOR DRIVE From: PARKSIDE DRIVE To: HURONIA PATHWAY	RD0461	_HCB-L-R	0.33	58.23	778	1984	$250,796
	GEORGIAN MANOR DRIVE From: PARKSIDE DRIVE To: LAKEVIEW AVENUE	RD0419	_HCB-L-R	0.51	62.53	547	1984	$373,709
PATERSON STREET	BAKER STREET From: PATERSON STREET To: END	RD0989	_HCB-L-R	0.07	86.83	1162	1970	$12,399
	BAKER STREET From: PATERSON STREET To: KATHERINE STREET	RD0988	_HCB-L-R	0.12	63.3	1161	1970	$22,128
	COLLINS STREET From: PATERSON STREET To: LESLIE STREET	RD0900	_HCB-H-R	0.04	73.17	1055	1976	$38,420
	LORNE STREET From: PATERSON STREET To: PATERSON STREET	RD0811	_HCB-L-R	0.03	82.98	927	1993	$20,571

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	MANNING AVENUE From: PATERSON STREET To: KATHERINE STREET	RD0810	_HCB-H-R	0.12	97.28	926	1967	$87,028
PATTERSON STREET	HUME STREET From: PATTERSON STREET To: ST. PAUL STREET	RD0481	_HCB-H-U	0.04	98.99	790	2015	$91,422
	LORNE STREET From: PATTERSON STREET To: KATHERINE STREET	RD0812	_HCB-L-R	0.08	83.32	928	1993	$52,113
PATTON STREET	BARR STREET From: PATTON STREET To: CHAMBERLAIN CRESCENT	RD0323	_HCB-L-U	0.23	96.83	429	2007	$222,486
	CHAMBERLAIN CRESCENT From: PATTON STREET To: BARR STREET	RD0829	_HCB-L-U	0.09	90.53	1025	2007	$87,017
PEEL STREET	ERIE STREET From: ERIE STREET To: NIAGARA STREET	RD0376	_HCB-L-R	0.18	45.75	553	1973	$132,370
	HUME STREET From: PEEL STREET To: MORBAY STREET	RD0642	_HCB-H-U	0.09	97.28	907	2015	$240,310
	MCKEAN CRESCENT From: PEEL STREET To: PEEL STREET	RD0099	_HCB-L-U	0.32	96.38	325	2007	$482,468
	ONTARIO STREET From: PEEL STREET To: WEST STREET	RD0717	_HCB-H-U	0.11	84.85	1079	1994	$170,603
PINE STREET	FIFTH STREET From: PINE STREET To: HURONTARIO STREET	RD0503	_HCB-H-U	0.13	92.34	578	2008	$195,417
	FIRST STREET From: PINE STREET To: HURONTARIO STREET	RD0329	_HCB-H-U	0.13	91.43	519	2010	$458,342
	FOURTH STREET From: PINE STREET To: MAPLE STREET	RD0509	_HCB-L-U	0.12	77.31	584	1979	$181,865
	SECOND STREET From: PINE STREET To: MAPLE STREET	RD0035	_HCB-H-U	0.12	86.49	603	1974	$181,865
	SIDE LAUNCH WAY From: PINE STREET To: HURONTARIO STREET	RD0293	_HCB-L-U	0.13	97.28	442	0	$127,558
	THIRD STREET From: PINE STREET To: HURONTARIO STREET	RD0708	_HCB-H-U	0.13	83.14	830	2010	$243,719
POPLAR SIDEROAD	CLARK STREET From: POPLAR SIDEROAD To: LOCKERBIE CRESCENT	RD1039	_HCB-L-U	0.07	96.38	2018	2010	$102,205
	HUGHES STREET From: POPLAR SIDEROAD To: ROBERTSON STREET	RD0928	_HCB-L-U	0.06	97.28	1118	2011	$62,296
	PORTLAND STREET From: POPLAR SIDEROAD To: ROBERTSON STREET	RD0926	_HCB-L-U	0.06	97.28	1116	2011	$63,285
	SIXTH LINE From: POPLAR SIDEROAD To: SANFORD FLEMING DRIVE	RD0324	_HCB-L-R	0.68	92.06	436	2009	$1,439,631
PORTLAND STREET	HUGHES STREET From: PORTLAND STREET To: ROBERTSON STREET	RD0925	_HCB-L-U	0.56	97.28	1115	2011	$549,787
PRETTY RIVER PARKWAY	HIGHWAY 26 EAST From: PRETTY RIVER PARKWAY To: EVA CRESCENT	RD0053	_HCB-H-U	0.24	98.99	231	1955	$626,895
	HURON STREET From: PRETTY RIVER PARKWAY To: SUNSET COURT	RD0902	_HCB-H-U	0.03	97.28	1063	1973	$64,419
	RONELL CRESCENT From: PRETTY RIVER PARKWAY To: PRETTY RIVER PARKWAY	RD0322	_HCB-L-R	0.47	85.03	424	1999	$343,724
PRETTY RIVER PARKWAY SOUTH	CONNELL STREET From: PRETTY RIVER PARKWAY SOUTH To: RAGLAN STREET	RD0607	_HCB-L-U	0.23	96.83	704	1982	$348,699
	SOUTH SERVICE ROAD From: PRETTY RIVER PARKWAY SOUTH To: MC DONALD STREET	RD0285	_HCB-L-U	0.25	45.89	389	1990	$372,747
PRINCETON SHORES BOULEVARD	BARTLETT BOULEVARD From: PRINCETON SHORES BOULEVARD To: END	RD0219	_HCB-L-R	0.41	79.27	439	1988	$296,188
		RD0615	_HCB-L-R	0.17	86.04	724	1989	$122,132
	HIGHWAY 26 WEST From: PRINCETON SHORES BOULEVARD To: BEGINNING OF TURNING LANE	RD0625	_HCB-H-R	0.06	97.28	726	2016	$105,483
	PRINCETON SHORES BOULEVARD From: PRINCETON SHORES BOULEVARD To: HIGHWAY 26 WEST	RD0119	_HCB-L-R	0.37	82.69	168	1998	$269,860

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
RAGLAN STREET	ONTARIO STREET From: RAGLAN STREET To: ALBERT STREET	RD0589	_HCB-H-U	0.27	76.39	803	1996	$410,997
	ONTARIO STREET From: RAGLAN STREET To: PRETTY RIVER PARKWAY	RD0691	_HCB-H-U	0.04	97.28	813	1996	$62,037
	ST. LAWRENCE STREET From: RAGLAN STREET To: RUSSEL STREET	RD0484	_HCB-L-R	0.13	96.38	551	1991	$126,827
RAGLAN STREET N	HUME STREET From: RAGLAN STREET N To: RAGLAN STREET S	RD0640	_HCB-H-U	0.13	97.28	905	2015	$329,120
RAGLAN STREET S	HUME STREET From: RAGLAN STREET S To: PRETTY RIVER PARKWAY	RD0779	_HCB-H-U	0.23	98.99	903	2015	$603,387
RAMBLINGS WAY	GUN CLUB ROAD From: RAMBLINGS WAY To: HIGHWAY 26 WEST	RD0251	_HCB-L-R	0.07	94.67	359	1960	$50,462
REID CRESCENT	CAMPBELL STREET From: REID CRESCENT To: HIGH STREET	RD0821	_HCB-H-R	0.17	69.91	939	1973	$123,595
	SPRUCE STREET From: REID CRESCENT To: CAMPBELL STREET	RD0720	_HCB-H-U	0.1	94.05	839	1990	$145,792
RHONDA ROAD	MACKAY COURT From: RHONDA ROAD To: END	RD0108	_HCB-L-U	0.11	59.12	161	1977	$160,823
RIVER RUN	BUSH STREET From: RIVER RUN To: PEEL STREET	RD0681	_HCB-L-U	0.13	95.12	798	1988	$189,380
ROBBIE WAY	CRANBERRY TRAIL EAST From: ROBBIE WAY To: ROBBIE WAY	RD0962	HCB4-U	0.11	80.35	2003	0	$103,827
	CRANBERRY TRAIL EAST From: ROBBIE WAY To: DEVONSHIRE STREET	RD0964	HCB4-U	0.13	-1	2004	0	$124,592
ROBERT AVENUE	ST. CLAIR STREET From: ROBERT AVENUE To: ELLIOT AVENUE	RD0603	_HCB-L-R	0.14	71.46	700	1979	$99,124
	ST. CLAIR STREET From: ROBERT AVENUE To: GLEN ROGERS ROAD	RD0604	_HCB-L-R	0.1	71.46	701	1979	$68,956
ROBERTSON STREET	COOPER STREET From: ROBERTSON STREET To: PORTLAND STREET	RD0930	_HCB-L-U	0.4	97.28	1120	2011	$398,496
	PORTLAND STREET From: ROBERTSON STREET To: COOPER STREET	RD0929	_HCB-L-U	0.09	97.28	1119	2011	$84,050
ROBINSON STREET	COLLINS STREET From: ROBINSON STREET To: PATERSON STREET	RD0327	_HCB-H-R	0.11	93.24	517	2007	$98,283
	HAMILTON STREET From: ROBINSON STREET To: DUNCAN STREET	RD0429	_HCB-L-R	0.05	94.95	511	2004	$63,622
	HUME STREET From: ROBINSON STREET To: MARKET STREET	RD0398	_HCB-H-U	0.04	98.99	786	2015	$101,870
	MANNING AVENUE From: ROBINSON STREET To: PATERSON STREET	RD0264	_HCB-H-R	0.12	97.28	374	1968	$87,759
RODNEY STREET	HURON STREET From: RODNEY STREET To: NIAGARA STREET	RD0320	_HCB-H-U	0.43	92.06	422	2003	$1,537,431
	NAPIER STREET From: RODNEY STREET To: END	RD0697	_HCB-L-R	0.1	54.21	819	1987	$73,864
	SIMCOE STREET From: RODNEY STREET To: PEEL STREET	RD0694	_HCB-L-R	0.03	94.77	816	2015	$24,865
	SIMCOE STREET From: RODNEY STREET To: WEST STREET	RD0695	_HCB-L-R	0.08	97.28	817	2015	$54,850
RONNEL CRESCENT	PRETTY RIVER PARKWAY From: RONNEL CRESCENT To: RONNELL CRESCENT	RD0850	_HCB-H-U	0.11	92.51	977	2001	$348,379
RONNELL CRESCENT	PRETTY RIVER PARKWAY From: RONNELL CRESCENT To: HUME STREET	RD0782	_HCB-H-U	0.21	97.28	978	2001	$659,432
ROUNDABOUT	HIGH STREET From: ROUNDABOUT To: HIGH STREET	RD1020	_HCB-L-R	0.07	76.84	1191	1985	$139,115
	POPLAR SIDEROAD From: ROUNDABOUT To: SUMMERVIEW AVENUE	RD1012	_HCB-L-R	0.14	89.09	2016	1995	$288,769
ROYALTON LANE	CRANBERRY TRAIL EAST From: ROYALTON LANE To: DAWSON DRIVE	RD0965	_HCB-H-R	0.05	79.63	728	1988	$38,029

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
RUSSEL STREET	SIMCOE STREET From: RUSSEL STREET To: RAGLAN STREET	RD0015	_HCB-L-R	0.13	51.57	241	1978	$92,879
SANDELL STREET	4TH LINE From: SANDELL STREET To: STALKER STREET	RD0027	_HCB-L-R	0.1	74.97	276	1998	$208,673
SANFORD FLEMING DRIVE	RON EMO ROAD From: SANFORD FLEMING DRIVE To: RAGLAN STREET	RD0922	_HCB-L-R	0.51	78.37	1112	2009	$1,066,549
SAUNDERS STREET	STEPHENS STREET From: SAUNDERS STREET To: END	RD0919	_HCB-L-R	0.22	95.57	1107	2007	$165,946
SECOND STREET	BEECH STREET From: SECOND STREET To: THIRD STREET	RD0036	_HCB-L-R	0.22	96.83	604	2010	$163,086
	BIRCH STREET From: SECOND STREET To: THIRD STREET	RD0359	_HCB-L-R	0.22	90.18	467	2006	$152,909
	CALLARY CRESCENT From: SECOND STREET To: ST. PAUL STREET	RD0257	_HCB-L-U	0.25	96.83	365	1998	$371,244
	CEDAR STREET From: SECOND STREET To: THIRD STREET	RD0454	_HCB-H-R	0.22	94.95	631	2008	$163,086
	HICKORY STREET From: SECOND STREET To: THIRD STREET	RD0540	_HCB-L-R	0.22	50.67	667	1981	$160,179
	HIGH STREET From: SECOND STREET To: THIRD STREET	RD0127	_HCB-H-U	0.22	80.73	481	1984	$693,648
	HURONTARIO STREET From: SECOND STREET To: THIRD STREET	RD0707	_HCB-H-U	0.22	96.2	829	2010	$702,115
	MAPLE STREET From: SECOND STREET To: THIRD STREET	RD0745	_HCB-L-U	0.22	63.89	1084	2008	$333,669
	OAK STREET From: SECOND STREET To: THIRD STREET	RD0438	_HCB-L-R	0.22	93.42	535	2000	$199,246
	PINE STREET From: SECOND STREET To: THIRD STREET	RD0499	_HCB-H-U	0.22	88.47	574	2008	$429,409
	SPRUCE STREET From: SECOND STREET To: THIRD STREET	RD0443	_HCB-H-R	0.22	31.26	644	1977	$163,086
	ST MARIE STREET From: SECOND STREET To: SIMCOE STREET	RD0670	_HCB-H-U	0	97.28	836	2007	$7,737
	TREMONT LANE From: SECOND STREET To: THIRD STREET	RD0884	_HCB-L-R	0.21	94.95	1110	2008	$127,202
	WALNUT STREET From: SECOND STREET To: THIRD STREET	RD0731	_HCB-L-R	0.22	51.56	1058	1975	$162,355
SELKIRK ROAD	GLEN ROAD From: SELKIRK ROAD To: YORK STREET	RD0896	_HCB-L-R	0.12	57.15	1100	1999	$250,829
SEVENTH STREET	BIRCH STREET From: SEVENTH STREET To: EIGHTH STREET	RD0368	_HCB-L-R	0.13	94.05	476	2006	$93,610
	HURONTARIO STREET From: SEVENTH STREET To: EIGHTH STREET	RD0882	_HCB-H-U	0.13	72.34	1048	1984	$270,541
	MAPLE STREET From: SEVENTH STREET To: EIGHTH STREET	RD0516	_HCB-L-U	0.13	93.87	591	2008	$190,883
	OAK STREET From: SEVENTH STREET To: TERRACE COURT	RD1043	_HCB-L-R	0.06	94.95	606	1989	$57,183
	SPRUCE STREET From: SEVENTH STREET To: GIBBARD CRESCENT	RD0410	_HCB-H-R	0.09	73.62	654	1989	$68,014
	WALNUT STREET From: SEVENTH STREET To: EIGHTH STREET	RD0631	_HCB-L-R	0.13	81	1039	1983	$89,826
SHANNON COURT	ERIE STREET From: SHANNON COURT To: RAGLAN STREET	RD0806	_HCB-L-U	0.08	97.28	1074	2004	$123,247
SHEFFIELD CRESCENT	TROTT BOULEVARD From: SHEFFIELD CRESCENT To: MCINTOSH GATE	RD0747	_HCB-L-U	0.15	81.18	1086	1988	$226,955
SHIPYARD LANE	NORTH PINE STREET From: SHIPYARD LANE To: MACKINAW LANE	RD0997	_HCB-L-U	0.02	0	1170	(blank)	$9,406
SIDE LAUNCH WAY	NORTH MAPLE STREET From: SIDE LAUNCH WAY To: MACKINAW LANE	RD0992	_HCB-L-U	0.14	0	1165	(blank)	$57,716
	NORTH PINE STREET From: SIDE LAUNCH WAY To: FIRST STREET	RD0705	_HCB-L-U	0.09	86.56	827	2008	$139,780
	NORTH PINE STREET From: SIDE LAUNCH WAY To: SHIPYARD LANE	RD0996	_HCB-L-U	0.11	91.78	1169	(blank)	$48,310

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
SIDELAUNCH WAY	HERITAGE DRIVE From: SIDELAUNCH WAY To: SewageSIDE LANE	RD0704	_HCB-L-R	0.04	81.79	826	1979	$27,059
	HURONTARIO STREET From: SIDELAUNCH WAY To: FIRST STREET	RD0183	_HCB-H-U	0.09	94.95	557	2015	$229,915
SILVER CREEK DRIVE	FOREST DRIVE From: SILVER CREEK DRIVE To: CRAGLEITH COURT	RD0597	_HCB-L-R	0.33	88.2	691	1989	$240,607
	HIGHWAY 26 WEST From: SILVER CREEK DRIVE To: SILVER GLEN BOULEVARD	RD0391	_HCB-H-R	0.56	81.99	722	1990	$812,381
	SILVER CREEK DRIVE From: SILVER CREEK DRIVE To: FOREST DRIVE	RD0167	_HCB-L-R	0.81	97.28	204	1989	$579,660
SILVER CRESCENT	BARRINGTON TRAIL From: SILVER CRESCENT To: SILVER CRESCENT	RD0233	_HCB-L-U	0.11	96.02	337	2007	$162,326
SILVER GLEN BOULEVARD	HIGHWAY 26 WEST From: SILVER GLEN BOULEVARD To: CRANBERRY TRAIL WEST	RD0390	_HCB-H-R	0.13	87.57	721	1990	$195,088
SIMCOE STREET	ALBERT STREET From: SIMCOE STREET To: ALMA STREET	RD0689	_HCB-L-R	0.09	93.69	811	1971	$68,745
	ALBERT STREET From: SIMCOE STREET To: PRETTY RIVER PARKWAY	RD0892	_HCB-L-R	0.18	90.18	1096	1971	$130,908
	MINNESOTA STREET From: SIMCOE STREET To: HURON STREET	RD0890	_HCB-H-R	0.2	90.63	1094	2007	$142,609
	MINNESOTA STREET From: SIMCOE STREET To: ONTARIO STREET	RD0718	_HCB-H-R	0.21	90.63	1080	2007	$151,385
	NAPIER STREET From: SIMCOE STREET To: ONTARIO STREET	RD0217	_HCB-L-R	0.21	69.3	382	1973	$149,922
	NAPIER STREET From: SIMCOE STREET To: RODNEY STREET	RD0698	_HCB-L-R	0.11	71.91	820	1998	$79,715
	RAGLAN STREET From: SIMCOE STREET To: OLIVER CRESCENT	RD0171	_HCB-H-R	0.08	54.62	210	1974	$58,506
SIXTH LINE	TENTH LINE From: SIXTH LINE To: GEORGIAN MEADOWS DRIVE	RD0392	_HCB-L-R	0.42	79.65	490	1984	$366,795
SIXTH STREET	BIRCH STREET From: SIXTH STREET To: SEVENTH STREET	RD0367	_HCB-L-R	0.12	97.28	475	2006	$89,953
	GEORGIAN MEADOWS DRIVE From: SIXTH STREET To: MARINA CRESCENT	RD0585	_HCB-L-U	0.06	96.02	852	2002	$93,187
	HIGH STREET From: SIXTH STREET To: CHAMBERLAIN CRESCENT	RD0279	_HCB-H-U	0.26	91.89	452	2007	$796,295
	HURONTARIO STREET From: SIXTH STREET To: SEVENTH STREET	RD0883	_HCB-H-U	0.12	78.82	1049	1984	$259,973
	MAPLE STREET From: SIXTH STREET To: SEVENTH STREET	RD0514	_HCB-L-U	0.12	94.95	589	2008	$186,374
	OAK STREET From: SIXTH STREET To: SEVENTH STREET	RD0416	_HCB-L-R	0.12	67.31	544	1978	$109,898
	SPRUCE STREET From: SIXTH STREET To: SEVENTH STREET	RD0408	_HCB-H-R	0.12	72.99	652	1989	$89,222
	WALNUT STREET From: SIXTH STREET To: SEVENTH STREET	RD0490	_HCB-L-R	0.12	58.22	623	1984	$83,655
SMART COURT	CAMPBELL STREET From: SMART COURT To: REID CRESCENT	RD0719	_HCB-H-R	0.08	69.73	838	1973	$60,700
SOUTH SERVICE ROAD	MACDONALD ROAD From: SOUTH SERVICE ROAD To: CONNELL STREET	RD0168	_HCB-L-U	0.19	53.28	205	1990	$279,561
	PRETTY RIVER PARKWAY SOUTH From: SOUTH SERVICE ROAD To: CONNEL STREET	RD0218	_HCB-L-R	0.19	70.36	438	2001	$131,653
	PRETTY RIVER PARKWAY SOUTH From: SOUTH SERVICE ROAD To: HUME STREET	RD0605	_HCB-L-U	0.05	97.28	702	2001	$69,139
SPROULE AVENUE	COLLINS STREET From: SPROULE AVENUE To: WILLIAMS STREET	RD0781	_HCB-H-U	0.17	95.57	915	2007	$269,862
	MANNING AVENUE From: SPROULE AVENUE To: ALICE STREET	RD0793	_HCB-H-U	0.08	96.83	920	2016	$126,253

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	MANNING AVENUE From: SPROULE AVENUE To: MINNESOTA STREET	RD0751	_HCB-H-U	0.09	92.79	919	1967	$127,756
SPRUCE STREET	CAMPBELL STREET From: SPRUCE STREET To: HERRINGTON COURT	RD0722	_HCB-H-R	0.09	72.34	841	1973	$63,626
	FIFTH STREET From: SPRUCE STREET To: HICKORY STREET	RD0544	_HCB-H-R	0.12	50.93	671	1975	$92,359
	FIRST STREET From: SPRUCE STREET To: HICKORY STREET	RD0525	_HCB-H-U	0.12	92.06	640	2010	$425,861
	FOURTH STREET From: SPRUCE STREET To: HICKORY STREET	RD0010	_HCB-L-R	0.12	78.12	179	1973	$89,953
	GIBBARD CRESCENT From: SPRUCE STREET To: WHIPPS CRESCENT	RD0409	_HCB-L-R	0.24	97.28	653	1975	$175,519
	REID CRESCENT From: SPRUCE STREET To: CAMPBELL STREET	RD0820	_HCB-L-U	0.29	82.06	938	1989	$429,862
	SECOND STREET From: SPRUCE STREET To: ELM STREET	RD0548	_HCB-H-R	0.12	66.96	675	1977	$87,759
	SEVENTH STREET From: SPRUCE STREET To: WALNUT STREET	RD0045	_HCB-L-R	0.25	62.54	149	1974	$179,907
	SIXTH STREET From: SPRUCE STREET To: HIGH STREET	RD0002	_HCB-H-U	0.25	73.15	185	1997	$392,386
	TELFER ROAD From: SPRUCE STREET To: CAMPBELL STREET	RD0901	_HCB-L-U	0.28	90.07	1056	1988	$422,347
	TENTH STREET From: SPRUCE STREET To: HIGH STREET	RD0533	_HCB-H-U	0.26	97.28	660	1973	$384,772
	THIRD STREET From: SPRUCE STREET To: HICKORY STREET	RD0541	_HCB-H-R	0.12	89.55	668	1972	$111,544
	WATTS CRESCENT From: SPRUCE STREET To: FIFTH STREET	RD0008	_HCB-L-U	0.22	65.6	180	1977	$332,166
ST. CALIR STREET	HIGHWAY 26 EAST From: ST. CALIR STREET To: EVA CRESCENT	RD0950	_HCB-H-R	0.14	98.99	699	1955	$205,279
ST. CLAIR STREET	GLEN ROGERS ROAD From: ST. CLAIR STREET To: GLEN ROGERS ROAD	RD0152	_HCB-L-R	0.18	50.93	279	1979	$385,728
	HIGHWAY 26 EAST From: ST. CLAIR STREET To: ROBERT AVENUE	RD0394	_HCB-H-R	0.15	98.99	698	1955	$224,206
ST. LAWRENCE STREET	HURON STREET From: ST. LAWRENCE STREET To: SUNSET COURT	RD0212	_HCB-H-U	0.14	62.99	300	1940	$280,534
	RAGLAN STREET From: ST. LAWRENCE STREET To: SIMCOE STREET	RD0847	_HCB-H-R	0.12	62.36	974	1974	$87,759
	RUSSEL STREET From: ST. LAWRENCE STREET To: SIMCOE STREET	RD0210	_HCB-L-R	0.15	61.28	298	1978	$111,162
ST. MARIE STREET	COLLINS STREET From: ST. MARIE STREET To: ROBINSON STREET	RD0105	_HCB-H-R	0.14	92.34	158	2007	$133,780
	ELGIN STREET From: ST. MARIE STREET To: ONTARIO STREET	RD0202	_HCB-L-U	0.16	82.44	270	1973	$240,482
	FOURTH STREET EAST From: ST. MARIE STREET To: MARKET STREET	RD0762	_HCB-L-U	0.12	72.52	885	2011	$174,350
	GEORGE STREET From: ST. MARIE STREET To: ROBINSON STREET	RD0768	_HCB-L-R	0.12	97.28	891	1974	$86,913
	HAMILTON STREET From: ST. MARIE STREET To: ROBINSON STREET	RD0401	_HCB-L-R	0.12	66.96	789	1976	$156,510
	HURON STREET From: ST. MARIE STREET To: ST. PAUL STREET	RD0949	_HCB-H-U	0.03	94.05	880	2010	$122,706
	ONTARIO STREET From: ST. MARIE STREET To: ELGIN STREET	RD0709	_HCB-H-U	0.08	97.19	831	1994	$128,727
	SIMCOE STREET From: ST. MARIE STREET To: ST. PAUL STREET	RD0201	_HCB-L-U	0.12	95.12	269	1974	$200,399
ST. MARIE STREET N	HUME STREET From: ST. MARIE STREET N To: ROBINSON STREET	RD0899	_HCB-H-U	0.08	98.99	1054	2015	$201,129

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
ST. MARIE STREET S	HUME STREET From: ST. MARIE STREET S To: ST. MARIE STREET N	RD0889	_HCB-H-U	0.05	98.99	1053	2015	$117,543
ST. PAUL STREET	FOURTH STREET EAST From: ST. PAUL STREET To: ST. PETER STREET	RD0206	_HCB-L-R	0.07	96.83	287	2009	$60,808
	HUME STREET From: ST. PAUL STREET To: ST. PETER STREET	RD0482	_HCB-H-U	0.07	98.99	791	2015	$182,844
	HURON STREET From: ST. PAUL STREET To: HERITAGE WAY	RD0701	_HCB-H-U	0.08	92.33	823	2010	$281,501
	MARKET LANE From: ST. PAUL STREET To: MARKET STREET	RD0405	_HCB-L-R	0.11	95.75	505	2014	$72,683
	ONTARIO STREET From: ST. PAUL STREET To: LANEWAY	RD0259	_HCB-H-U	0.11	83.14	369	1994	$162,848
	VETERANS CRESCENT From: ST. PAUL STREET To: ST. PAUL STREET	RD0752	_HCB-L-U	0.2	74.05	870	2002	$297,597
ST. PETER STREET	HUME STREET From: ST. PETER STREET To: MINNESOTA STREET	RD0675	_HCB-H-U	0.13	98.99	792	2015	$347,404
ST. VINCENT STREET	NAPIER STREET From: ST. VINCENT STREET To: ERIE STREET	RD0808	_HCB-L-R	0.09	82.51	1076	2000	$63,626
	NIAGARA STREET From: ST. VINCENT STREET To: ONTARIO STREET	RD0637	_HCB-L-R	0.09	93.24	805	1998	$63,084
	PEEL STREET From: ST. VINCENT STREET To: ERIE STREET	RD0686	_HCB-H-R	0.09	84.15	808	1976	$80,413
STANLEY STREET	HURONTARIO STREET From: STANLEY STREET To: POPLAR SIDEROAD	RD0381	_HCB-H-R	0.37	94.67	562	2007	$677,311
	NEWBORNE STREET From: STANLEY STREET To: MARY STREET	RD0307	_HCB-L-R	0.12	93.69	403	2007	$93,110
	SAUNDERS STREET From: STANLEY STREET To: MARY STREET	RD0818	_HCB-L-U	0.12	97.28	936	2007	$183,368
STEPHENS STREET	SAUNDERS STREET From: STEPHENS STREET To: POPLAR SIDEROAD	RD0914	_HCB-L-U	0.12	97.28	1093	2007	$181,865
STEWART COURT	STEWART ROAD From: STEWART COURT To: SIXTH STREET	RD0582	_HCB-L-R	0.32	69.92	849	1990	$236,529
STEWART ROAD	HIGH STREET From: STEWART ROAD To: FIFTH STREET	RD0278	_HCB-H-U	0.19	80.01	451	1981	$587,890
	SIXTH STREET From: STEWART ROAD To: HIGH STREET	RD0581	_HCB-H-R	0.4	95.57	848	2011	$745,782
SUMMER VIEW AVENUE	LAKEVIEW AVENUE From: SUMMER VIEW AVENUE To: HIGHWAY 26 EAST	RD0103	_HCB-L-R	0.18	55.42	216	1995	$129,445
SUNNYVIEW AVENUE	DELLPARR AVENUE From: SUNNYVIEW AVENUE To: GLENLAKE AVENUE	RD0001	_HCB-L-R	0.08	67.57	295	1999	$166,517
SYVAIN ROAD	GLENLAKE BOULEVARD From: SYVAIN ROAD To: DELLPARR AVENUE	RD0802	_HCB-L-R	0.24	53.71	1070	1998	$503,765
TELFER ROAD	HIGH STREET From: TELFER ROAD To: FUTURE CAMERON ST. EXTENSION	RD0578	_HCB-H-R	0.09	97.28	845	2014	$234,957
	SPRUCE STREET From: TELFER ROAD To: REID CRESCENT	RD0044	_HCB-H-U	0.1	85.41	148	1990	$153,307
TELFER STREET	HIGH STREET From: TELFER STREET To: CAMPBELL STREET	RD0579	_HCB-H-R	0.19	89.27	846	2014	$280,985
TENTH LINE	MOUNTAIN ROAD From: TENTH LINE To: BEGINNING OF TURNING LANE	RD0402	_HCB-H-R	0.91	85.86	491	2007	$1,326,307
	SIXTH STREET From: TENTH LINE To: GEORGIAN MEADOWS DRIVE	RD0584	_HCB-H-R	0.28	96.38	851	2011	$404,735
TENTH STREET	BIRCH STREET From: TENTH STREET To: WILLOW STREET	RD0873	_HCB-L-R	0.08	51.12	1033	2006	$60,700
	CLARKSON CRESCENT From: TENTH STREET To: CLARKSON CRESCENT	RD0333	_HCB-L-R	0.14	82.24	614	1978	$104,580
		RD0445	_HCB-L-R	0.15	89.8	615	1978	$110,431
	HIGH STREET From: TENTH STREET To: CHAMBERLAIN CRESCENT	RD0372	_HCB-H-U	0.16	90.63	486	2007	$420,542
	OAK STREET From: TENTH STREET To: WILLOW STREET	RD0737	_HCB-L-R	0.1	97.28	859	1978	$84,881

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
TERRACE COURT	OAK STREET From: TERRACE COURT To: EIGHTH STREET	RD0038	_HCB-L-R	0.07	88.92	2022	1989	$58,970
TESKEY COURT	CAMPBELL STREET From: TESKEY COURT To: SMART COURT	RD0721	_HCB-H-R	0.09	68.83	840	1973	$66,551
THERESA STREET	GLEN ROAD From: THERESA STREET To: SELKIRK ROAD	RD0895	_HCB-L-R	0.13	30.36	1099	1999	$265,583
THIRD STREET	BEECH STREET From: THIRD STREET To: FOURTH STREET	RD0113	_HCB-L-R	0.22	97.28	166	2010	$163,086
	BIRCH STREET From: THIRD STREET To: FOURTH STREET	RD0361	_HCB-L-R	0.22	96.02	469	2006	$162,355
	CEDAR STREET From: THIRD STREET To: FOURTH STREET	RD0039	_HCB-H-R	0.22	94.95	154	2008	$163,086
	HICKORY STREET From: THIRD STREET To: FOURTH STREET	RD0123	_HCB-L-U	0.22	62.18	176	1981	$336,675
	HIGH STREET From: THIRD STREET To: STEWART ROAD	RD0128	_HCB-H-U	0.26	66.13	482	1981	$802,516
	HURONTARIO STREET From: THIRD STREET To: FOURTH STREET	RD0051	_HCB-H-U	0.22	95.75	143	2010	$545,437
	MAPLE STREET From: THIRD STREET To: FOURTH STREET	RD0508	_HCB-L-U	0.22	97.28	583	2008	$335,172
	OAK STREET From: THIRD STREET To: FOURTH STREET	RD0441	_HCB-L-R	0.22	81.79	538	2000	$198,353
	PINE STREET From: THIRD STREET To: FOURTH STREET	RD0501	_HCB-H-U	0.22	90.63	576	2008	$342,756
	SPRUCE STREET From: THIRD STREET To: FOURTH STREET	RD0444	_HCB-H-R	0.23	79	645	1972	$165,280
	WALNUT STREET From: THIRD STREET To: FOURTH STREET	RD0473	_HCB-L-R	0.22	54.17	638	1973	$163,818
THOMAS DRIVE	KELLS CRESCENT From: THOMAS DRIVE To: MAIR MILLS DRIVE	RD0344	_HCB-L-U	0.04	96.83	493	2006	$66,133
TRACEY LANE	HURONTARIO STREET From: TRACEY LANE To: STANLEY STREET	RD0382	_HCB-H-R	0.11	97.28	563	2007	$209,115
TRAILS END	SLALOM GATE ROAD From: TRAILS END To: OSLER BLUFF ROAD	RD0176	_HCB-L-R	0.39	97.28	221	2017	$266,734
TROTT BOULEVARD	HIGHWAY 26 WEST From: TROTT BOULEVARD To: KEITH AVENUE	RD0909	_HCB-H-R	0.31	97.28	1087	2016	$571,828
TROTTT BOULEVARD	NETTLETON COURT From: TROTTT BOULEVARD To: BALSAM STREET	RD0214	_HCB-L-U	0.17	88.02	302	1988	$255,512
VACATION INN DRIVE	HIGHWAY 26 WEST From: VACATION INN DRIVE To: DOCKSIDE DRIVE	RD0911	_HCB-H-R	0.36	96.38	1090	2016	$524,117
VALLEYMEDE COURT	CRANBERRY TRAIL WEST From: VALLEYMEDE COURT To: BAKER BOULEVARD	RD0600	_HCB-H-R	0.09	96.65	694	1998	$68,014
VETERANS CRESCENT	ST PAUL STREET From: VETERANS CRESCENT To: CALLARY CRESCENT	RD0673	_HCB-L-U	0.05	97.28	835	1979	$69,139
	ST PAUL STREET From: VETERANS CRESCENT To: VETERANS CRESCENT	RD0180	_HCB-L-U	0.12	90.18	366	1979	$184,871
VICTORY DRIVE	HURONTARIO STREET From: VICTORY DRIVE To: FAIR STREET	RD0878	_HCB-H-U	0.05	91.08	1044	1984	$95,112
	ST MARIE STREET From: VICTORY DRIVE To: GEORGE STREET	RD0769	_HCB-H-R	0.19	94.5	892	2007	$156,688
WALKER STREET	OLIVER CRESCENT From: WALKER STREET To: END	RD0893	_HCB-L-R	0.48	46.2	1097	1984	$342,624
	OLIVER CRESCENT From: WALKER STREET To: RAGLAN STREET	RD0187	_HCB-L-R	0.35	31.85	225	1984	$249,247
WALNUT STREET	FIFTH STREET From: WALNUT STREET To: CEDAR STREET	RD0469	_HCB-H-R	0.12	61.46	634	1973	$89,356
	FIRST STREET From: WALNUT STREET To: CEDAR STREET	RD0474	_HCB-H-U	0.12	92.51	639	2010	$422,252
	FOURTH STREET From: WALNUT STREET To: HICKORY STREET	RD0542	_HCB-L-R	0.12	82.69	669	1973	$88,491

DRAFT

Name	List Description	Asset	Asset Class	Kms	Condition	GIS ID	Year Built	Replacement Cost
	SECOND STREET From: WALNUT STREET To: HICKORY STREET	RD0118	_HCB-H-R	0.12	70.81	175	1990	$90,685
	SEVENTH STREET From: WALNUT STREET To: OAK STREET	RD0450	_HCB-L-R	0.24	44	620	1978	$176,250
	SIXTH STREET From: WALNUT STREET To: SPRUCE STREET	RD0477	_HCB-H-U	0.25	64.98	648	1997	$383,080
	TENTH STREET From: WALNUT STREET To: SPRUCE STREET	RD0531	_HCB-H-R	0.25	56.33	658	1991	$179,176
	THIRD STREET From: WALNUT STREET To: CEDAR STREET	RD0472	_HCB-H-R	0.12	93.69	637	1973	$107,887
WATER STREET	ELM STREET From: Sewage STREET To: FIRST STREET	RD0116	_HCB-L-R	0.23	69.12	173	1976	$170,400
WATERFALLS LANE	HIGHWAY 26 WEST From: SewageFALLS LANE To: GUN CLUB ROAD	RD0353	_HCB-H-R	0.46	96.38	461	2016	$666,793
WATTS CRESCENT	FIFTH STREET From: WATTS CRESCENT To: SPRUCE STREET	RD0537	_HCB-H-R	0.12	50.93	664	1975	$88,605
	SPRUCE STREET From: WATTS CRESCENT To: FIFTH STREET	RD0478	_HCB-H-R	0.11	93.87	649	1975	$78,252
WELLINGTON STREET	JAMES STREET From: WELLINGTON STREET To: KING STREET	RD0196	_HCB-L-R	0.18	74.05	261	1998	$373,082
WEST STREET	ONTARIO STREET From: WEST STREET To: NAPIER STREET	RD0716	_HCB-H-U	0.07	85.3	1078	1994	$108,565
WESTMOUNT MEWS	WHEELHOUSE CRESCENT From: WESTMOUNT MEWS To: NORTH PINE STREET	RD1003	_HCB-L-U	0.05	97.28	1176	(blank)	$22,659
WHIPPS CRESCENT	GIBBARD CRESCENT From: WHIPPS CRESCENT To: SPRUCE STREET	RD0529	_HCB-L-R	0.25	97.28	656	1975	$179,907
WHITE STREET	HIGHWAY 26 WEST From: WHITE STREET To: TROTT BOULEVARD	RD0652	_HCB-H-R	0.27	96.38	736	2016	$398,911
WILLIAMS STREET	COLLINS STREET From: WILLIAMS STREET To: PEEL STREET	RD0136	_HCB-H-U	0.23	100	318	2007	$348,960
	LYNDEN STREET From: WILLIAMS STREET To: PEEL STREET	RD0236	_HCB-L-U	0.16	95.12	340	2007	$243,488
WILLOW STREET	BIRCH STREET From: WILLOW STREET To: CAMERON STREET	RD0874	_HCB-L-R	0.09	48.32	1034	2006	$62,894
	OAK STREET From: WILLOW STREET To: CAMERON STREET	RD0387	_HCB-L-R	0.09	97.28	611	1978	$81,307
WOODCREST AVENUE	MACALLISTER STREET SOUTH From: WOODCREST AVENUE To: GLENLAKE BOULEVARD	RD0018	_HCB-L-R	0.08	56.34	244	1998	$164,409
	SYVAIN ROAD From: WOODCREST AVENUE To: GLENLAKE BOULEVARD	RD0017	_HCB-L-R	0.08	82.51	243	1998	$164,409
WOODLAND COURT	CRANBERRY TRAIL EAST From: WOODLAND COURT To: JOSEPH TRAIL	RD0946	_HCB-H-R	0.3	79.38	458	2009	$282,048
Grand Total								$193,163,470

DRAFT

Appendix C – Water linear

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10001	PEEL STREET-to-PEEL STREET	WM-CI-150	150	93.75	2016	94.9	46,315
WTRMN10002	NIAGARA STREET	WM-DI-150	150	38.75	1972	44.0	21,486
WTRMN10003	ERIE STREET-to-NIAGARA STREET	WM-DI-150	150	38.75	1972	61.9	30,217
WTRMN10004	ERIE STREET	WM-DI-150	150	38.75	1972	24.3	11,854
WTRMN10005	RIVER RUN-to-RIVER RUN	WM-DI-150	150	77.5	2003	95.7	46,721
WTRMN10006	GODDEN STREET-to-DILLON DRIVE	WM-DI-150	150	58.75	1988	91.5	44,691
WTRMN10007	DILLON DRIVE-to-DILLON DRIVE	WM-DI-150	150	58.75	1988	178.7	87,266
WTRMN10008	GODDEN STREET-to-DILLON DRIVE	WM-DI-150	150	58.75	1988	60.2	29,400
WTRMN10009	GODDEN STREET-to-GODDEN STREET	WM-DI-150	150	58.75	1988	81.0	39,523
WTRMN10010	GODDEN STREET-to-DILLON DRIVE	WM-DI-150	150	58.75	1988	48.4	23,641
WTRMN10011	MINNESOTA STREET-to-DILLON DRIVE	WM-DI-150	150	58.75	1988	52.3	25,513
WTRMN10012	PEEL STREET-to-HARBEN COURT	WM-DI-150	150	46.25	1978	99.8	48,735
WTRMN10013	RAGLAN STREET-to-SHANNON COURT	WM-DI-150	150	70	1997	73.8	36,034
WTRMN10014	CARMICHEAL CRESCENT-to-LOCKHART ROAD	WM-DI-150	150	57.5	1987	101.4	49,503
WTRMN10015	CARMICHEAL CRESCENT-to-BURNSIDE COURT	WM-DI-150	150	57.5	1987	69.5	33,909
WTRMN10016	CARMICHEAL CRESCENT-to-BURNSIDE COURT	WM-DI-150	150	57.5	1987	72.7	35,506
WTRMN10017	CARMICHEAL CRESCENT-to-CARMICHEAL CRESCENT	WM-DI-150	150	57.5	1987	43.1	21,037
WTRMN10018	CARMICHEAL CRESCENT-to-CARMICHEAL CRESCENT	WM-DI-150	150	57.5	1987	61.3	29,909
WTRMN10019	SPROULE AVENUE-to-BELL BOULEVARD	WM-DI-150	150	41.25	1974	126.8	61,923
WTRMN10020	CARMICHEAL CRESCENT-to-CARMICHEAL CRESCENT	WM-DI-150	150	57.5	1987	78.2	38,182
WTRMN10021	LOCKHART ROAD-to-CARMICHEAL CRESCENT	WM-DI-150	150	57.5	1987	55.1	26,878
WTRMN10022	SIMCOE STREET-to-ONTARIO STREET	WM-CI-150	150	1	1967	186.8	91,199
WTRMN10023	NAPIER STREET	WM-DI-150	150	58.75	1988	77.0	37,610
WTRMN10024	NAPIER STREET-to-HURON STREET	WM-DI-150	150	58.75	1988	19.2	9,372
WTRMN10025	NAPIER STREET-to-NAPIER STREET	WM-DI-150	150	58.75	1988	16.9	8,237
WTRMN10026	RODNEY STREET-to-NAPIER STREET	WM-DI-150	150	67.5	1995	61.1	29,819
WTRMN10027	HURON STREET-to-SIMCOE STREET	WM-CI-150	150	11.25	1950	182.5	89,086
WTRMN10028	SIMCOE STREET	WM-CI-150	150	11.25	1950	43.2	21,072
WTRMN10029	CALLARY CRESCENT-to-ST PAUL STREET	WM-DI-150	150	71.25	1998	125.8	61,415
WTRMN10030	CALLARY CRESCENT-to-CALLARY CRESCENT	WM-DI-150	150	71.25	1998	119.2	58,187
WTRMN10031	ST PAUL STREET-to-CALLARY CRESCENT	WM-DI-150	150	71.25	1998	86.1	42,033
WTRMN10032	ST PAUL STREET-to-SIMCOE STREET	WM-DI-150	150	42.5	1975	65.0	31,728
WTRMN10033	ONTARIO STREET-to-ST VINCENT STREET	WM-CI-150	150	8.75	1950	91.4	44,603
WTRMN10034	ST VINCENT STREET-to-NAPIER STREET	WM-CI-150	150	33.75	1968	104.2	50,852
WTRMN10035	ST VINCENT STREET-to-PEEL STREET	WM-DI-150	150	61.25	1990	76.9	37,548
WTRMN10036	SIMCOE STREET-to-STE MARIE STREET	WM-DI-150	150	42.5	1975	38.3	18,687
WTRMN10037	SIMCOE STREET-to-SIMCOE STREET	WM-DI-150	150	42.5	1975	12.6	6,142
WTRMN10038	SIMCOE STREET-to-STE MARIE STREET	WM-DI-150	150	41.25	1974	64.0	31,255
WTRMN10039	ONTARIO STREET	WM-DI-150	150	72.5	1999	63.0	30,771
WTRMN10040	ONTARIO STREET-to-MARKET STREET	WM-DI-150	100	35	1973	56.0	27,355
WTRMN10041	MARKET STREET-to-ST PAUL STREET	WM-DI-150	150	40	1973	104.4	50,971
WTRMN10042	FOURTH STREET-to-MARKET LANE	WM-DI-150	150	40	1973	169.4	82,695
WTRMN10043	MARKET LANE	WM-DI-150	150	82.5	2009	57.5	28,057
WTRMN10044	(blank)	WM-CI-150	100	1	1960	91.9	44,885
WTRMN10045	FOURTH STREET EAST-to-MARKET STREET	WM-DI-150	150	43.75	1976	116.0	56,637
WTRMN10046	FOURTH STREET EAST-to-STE MARIE STREET	WM-DI-150	150	43.75	1976	110.6	54,015

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10047	FOURTH STREET EAST-to-HURONTARIO STREET	WM-DI-150	150	46.25	1978	142.2	69,442
WTRMN10048	(blank)	WM-DI-150	100	41.25	1978	90.9	44,358
WTRMN10049	PATERSON STREET-to-PATERSON STREET	WM-CI-150	150	12.5	1967	39.6	19,319
WTRMN10050	LORNE STREET-to-ALICE STREET	WM-DI-150	150	47.5	1979	64.3	31,411
WTRMN10051	LORNE STREET-to-MANNING AVENUE	WM-CI-150	150	32.5	1967	125.9	61,474
WTRMN10052	MANNING AVENUE-to-BAKER STREET	WM-CI-150	150	1	1967	203.4	99,306
WTRMN10053	BAKER STREET-to-COLLINS STREET	WM-CI-150	150	1	1967	107.7	52,606
WTRMN10054	LORNE STREET-to-MANNING AVENUE	WM-CI-150	150	32.5	1967	131.7	64,294
WTRMN10055	PATERSON STREET-to-KATHERINE STREET	WM-DI-150	150	66.25	1994	122.1	59,624
WTRMN10056	ROBINSON STREET	WM-CI-150	150	33.75	1968	122.3	59,724
WTRMN10057	MANNING AVENUE-to-PATERSON STREET	WM-CI-150	150	32.5	1967	6.8	3,294
WTRMN10058	GEORGE STREET-to-MANNING AVENUE	WM-CI-150	150	33.75	1968	39.6	19,330
WTRMN10059	MANNING AVENUE	WM-DI-150	150	38.75	1974	150.4	73,435
WTRMN10060	ROBINSON STREET-to-ROBINSON STREET	WM-DI-150	150	41.25	1974	41.4	20,210
WTRMN10061	ROBINSON STREET-to-COLLINS STREET	WM-DI-150	150	41.25	1974	111.0	54,195
WTRMN10062	ALICE STREET-to-COLLINS STREET	WM-DI-150	150	41.25	1974	74.0	36,148
WTRMN10063	ALICE STREET-to-BELL BOULEVARD	WM-DI-150	150	41.25	1974	54.7	26,705
WTRMN10064	ALICE STREET-to-BELL BOULEVARD	WM-DI-150	150	41.25	1974	50.9	24,826
WTRMN10065	ALICE STREET-to-BELL BOULEVARD	WM-DI-150	150	41.25	1974	37.8	18,449
WTRMN10066	KATHERINE STREET-to-ALICE STREET	WM-DI-150	150	43.75	1976	121.0	59,058
WTRMN10067	ST CLAIR STREET-to-ST CLAIR STREET	WM-CI-150	100	30	1969	42.7	20,836
WTRMN10068	ST CLAIR STREET-to-ST CLAIR STREET	WM-CI-150	100	30	1969	28.3	13,805
WTRMN10069	ST CLAIR STREET-to-ST CLAIR STREET	WM-CI-150	100	30	1969	20.7	10,110
WTRMN10070	NIAGARA STREET-to-SUNSET COURT	WM-CI-150	100	1	1950	124.0	60,539
WTRMN10071	ONTARIO STREET-to-ST VINCENT STREET	WM-CI-150	100	6.25	1950	91.9	44,853
WTRMN10072	ST VINCENT STREET-to-ERIE STREET	WM-CI-150	100	6.25	1950	89.7	43,812
WTRMN10073	HAMILTON STREET-to-GEORGE STREET	WM-CI-150	100	6.25	1950	217.6	106,242
WTRMN10074	ERIE STREET	WM-DI-150	100	65	1997	164.4	80,284
WTRMN10075	HURON STREET-to-SIMCOE STREET	WM-CI-150	150	1	1950	185.6	90,621
WTRMN10076	SIMCOE STREET-to-ONTARIO STREET	WM-CI-150	100	3.75	1950	206.3	100,725
WTRMN10077	STE MARIE STREET-to-ROBINSON STREET	WM-CI-150	100	1	1942	110.3	53,829
WTRMN10078	HURONTARIO STREET-to-STE MARIE STREET	WM-CI-150	100	1	1942	131.9	64,419
WTRMN10079	HURONTARIO STREET-to-STE MARIE STREET	WM-CI-150	100	1	1942	127.1	62,054
WTRMN10080	SIMCOE STREET	WM-CI-150	100	1	1945	47.6	23,224
WTRMN10081	HURON STREET-to-SIMCOE STREET	WM-CI-150	100	1	1945	220.8	107,781
WTRMN10082	SIXTH STREET-to-SEVENTH STREET	WM-CI-150	100	12.5	1955	135.0	65,901
WTRMN10083	OAK STREET-to-BIRCH STREET	WM-CI-150	100	10	1955	125.7	61,375
WTRMN10084	BIRCH STREET-to-MAPLE STREET	WM-CI-150	100	10	1955	238.5	116,459
WTRMN10085	WALNUT STREET-to-OAK STREET	WM-CI-150	100	1	1955	237.5	115,979
WTRMN10086	(blank)	WM-DI-150	150	83.75	2008	203.3	99,276
WTRMN10087	DAWSON DRIVE-to-FAIRWAY CRESCENT	WM-DI-150	100	46.25	1982	6.5	3,177
WTRMN10088	(blank)	WM-CI-150	100	33.75	1972	50.4	24,593
WTRMN10089	(blank)	WM-CI-150	100	33.75	1972	77.8	37,969
WTRMN10090	(blank)	WM-CI-150	100	33.75	1972	25.1	12,246
WTRMN10091	MACDONALD ROAD	WM-DI-150	100	38.75	1976	23.9	11,669
WTRMN10093	FOREST DRIVE-to-ALPINE COURT	WM-DI-150	150	60	1989	65.2	31,836
WTRMN10094	ALPINE COURT	WM-DI-150	150	60	1989	19.5	9,527
WTRMN10095	FOREST DRIVE-to-GEORGIAN COURT	WM-DI-150	150	60	1989	72.2	35,249

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10096	GEORGIAN COURT	WM-DI-150	150	60	1989	136.9	66,838
WTRMN10097	FOREST DRIVE-to-CRAIGLEITH COURT	WM-DI-150	150	60	1989	53.9	26,295
WTRMN10098	CRAIGLEITH COURT-to-CRAIGLEITH COURT	WM-DI-150	150	60	1989	28.1	13,711
WTRMN10099	CRAIGLEITH COURT-to-CRAIGLEITH COURT	WM-DI-150	150	60	1989	47.9	23,375
WTRMN10100	CRAIGLEITH COURT-to-CRAIGLEITH COURT	WM-DI-150	150	60	1989	25.4	12,387
WTRMN10101	Beachwood Road-to-STALKER STREET	WM-DI-150	150	65	1993	9.7	4,716
WTRMN10102	4TH LINE-to-STALKER STREET	WM-DI-150	150	65	1993	80.7	39,379
WTRMN10103	SANDELL STREET-to-STALKER STREET	WM-DI-150	150	65	1993	103.2	50,362
WTRMN10104	Beachwood Road-to-4TH LINE	WM-DI-150	150	65	1993	182.6	89,151
WTRMN10105	Beachwood Road-to-SANDELL STREET	WM-DI-150	150	65	1993	3.2	1,545
WTRMN10106	Beachwood Road-to-KOHL STREET	WM-DI-150	150	65	1993	0.9	449
WTRMN10107	Beachwood Road	WM-DI-150	150	43.69	1993	187.7	91,664
WTRMN10108	KOHL STREET	WM-DI-150	150	65	1993	21.8	10,649
WTRMN10109	Beachwood Road	WM-DI-150	150	65	1993	264.2	129,000
WTRMN10110	Beachwood Road-to-DOWNER STREET	WM-DI-150	150	65	1993	4.3	2,111
WTRMN10111	Beachwood Road-to-DOWNER STREET	WM-DI-150	150	65	1993	229.6	112,085
WTRMN10112	DOWNER STREET	WM-DI-150	150	65	1993	23.2	11,321
WTRMN10113	BROADVIEW STREET	WM-DI-200	200	70	1997	41.7	20,987
WTRMN10114	Beachwood Road-to-BROADVIEW STREET	WM-DI-150	150	70	1997	39.8	19,450
WTRMN10115	Beachwood Road-to-CURRIE AVENUE	WM-DI-150	150	66.25	1994	56.7	27,699
WTRMN10116	EDGAR ROAD-to-CURRIE AVENUE	WM-DI-150	150	66.25	1994	133.1	64,995
WTRMN10117	CURRIE AVENUE	WM-DI-150	150	70	1997	66.9	32,665
WTRMN10118	GLEN ROAD-to-CURRIE AVENUE	WM-DI-150	150	70	1997	139.8	68,274
WTRMN10119	GLEN ROAD-to-EDGAR ROAD	WM-DI-150	150	66.25	1994	16.8	8,187
WTRMN10120	GLEN ROAD-to-YORK STREET	WM-DI-150	150	70	1997	192.7	94,065
WTRMN10121	Beachwood Road-to-YORK STREET	WM-DI-150	150	65	1993	13.5	6,569
WTRMN10122	YORK STREET-to-GLEN ROAD	WM-DI-150	150	66.25	1994	15.0	7,337
WTRMN10123	YORK STREET-to-EDGAR ROAD	WM-DI-150	150	66.25	1994	118.5	57,859
WTRMN10124	Beachwood Road	WM-DI-150	150	65	1993	32.0	15,624
WTRMN10125	Beachwood Road-to-SUNNYVIEW AVENUE	WM-DI-150	150	66.25	1994	82.6	40,342
WTRMN10126	DELLPARR AVENUE	WM-DI-150	150	66.25	1994	77.2	37,693
WTRMN10127	SUNNYVIEW AVENUE-to-GLENLAKE BOULEVARD	WM-DI-150	150	66.25	1994	79.4	38,782
WTRMN10128	SYLVIAN ROAD-to-GLENLAKE BOULEVARD	WM-DI-150	150	70	1997	234.5	114,488
WTRMN10129	WOODCREST AVENUE-to-GLENLAKE BOULEVARD	WM-DI-150	150	70	1997	76.4	37,319
WTRMN10130	GLEN ROAD-to-GLEN ROAD	WM-DI-150	150	66.25	1994	19.3	9,398
WTRMN10131	YORK STREET-to-GLEN ROAD	WM-DI-150	150	66.25	1994	94.9	46,352
WTRMN10132	Beachwood Road-to-GLEN ROAD	WM-DI-150	150	66.25	1994	187.3	91,429
WTRMN10133	THERESA STREET-to-SELKIRK ROAD	WM-DI-150	150	66.25	1994	141.9	69,260
WTRMN10134	Beachwood Road	WM-DI-150	150	70	1997	110.7	54,029
WTRMN10135	Beachwood Road	WM-DI-150	150	70	1997	137.5	67,151
WTRMN10136	Beachwood Road	WM-DI-150	150	70	1997	160.2	78,198
WTRMN10137	WOODCREST AVENUE-to-Beachwood Road	WM-DI-150	150	70	1997	85.2	41,578
WTRMN10138	GLENLAKE BOULEVARD-to-WOODCREST AVENUE	WM-DI-150	150	66.25	1994	76.2	37,193
WTRMN10139	WOODCREST AVENUE-to-Beachwood Road	WM-DI-150	150	66.25	1994	84.1	41,050
WTRMN10140	MACALLISTER STREET SOUTH-to-SYLVIAN ROAD	WM-DI-150	150	70	1997	123.1	60,097
WTRMN10141	Beachwood Road	WM-DI-150	150	70	1997	125.0	61,035
WTRMN10142	Beachwood Road-to-INDIAN TRAIL	WM-DI-150	150	70	1997	149.1	72,780
WTRMN10143	ARTHUR STREET	WM-DI-150	150	70	1997	120.8	58,983

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10144	Beachwood Road-to-JANE STREET	WM-DI-150	150	66.25	1994	58.8	28,701
WTRMN10145	BELLHOLME LANE-to-JANE STREET	WM-DI-150	150	66.25	1994	39.9	19,485
WTRMN10146	JANE STREET	WM-DI-150	150	66.25	1994	45.6	22,238
WTRMN10147	BELLHOLME LANE-to-INDIAN TRAIL	WM-DI-150	150	66.25	1994	77.9	38,039
WTRMN10148	INDIAN TRAIL-to-INDIAN TRAIL	WM-DI-150	150	66.25	1994	89.2	43,530
WTRMN10149	BELLHOLME LANE-to-INDIAN TRAIL	WM-DI-150	150	66.25	1994	10.3	5,044
WTRMN10150	KING STREET-to-KING STREET	WM-DI-150	150	65	1993	22.3	10,880
WTRMN10151	Beachwood Road-to-KING STREET	WM-DI-150	150	65	1993	2.2	1,081
WTRMN10152	Beachwood Road-to-KING STREET	WM-DI-150	150	66.25	1994	118.1	57,659
WTRMN10153	Beachwood Road	WM-DI-150	150	66.25	1994	87.9	42,899
WTRMN10154	KING STREET	WM-DI-150	150	66.25	1994	105.1	51,300
WTRMN10155	KING STREET-to-CHERRY STREET	WM-DI-150	150	66.25	1994	21.4	10,430
WTRMN10156	COOK STREET-to-CHERRY STREET	WM-DI-150	150	66.25	1994	52.3	25,527
WTRMN10157	COOK STREET-to-KING STREET	WM-DI-150	150	66.25	1994	138.8	67,771
WTRMN10158	Beachwood Road-to-JAMES STREET	WM-DI-150	150	66.25	1994	154.9	75,648
WTRMN10159	KING STREET-to-WELLINGTON STREET	WM-DI-150	150	66.25	1994	137.7	67,205
WTRMN10160	KING STREET-to-CHERRY STREET	WM-DI-150	150	66.25	1994	119.2	58,198
WTRMN10161	GEORGIAN MANOR LANE	WM-DI-150	150	66.25	1994	184.1	89,901
WTRMN10162	GEORGIAN MANOR DRIVE	WM-DI-150	150	66.25	1994	88.0	42,969
WTRMN10163	LAKEVIEW AVENUE	WM-DI-150	150	66.25	1994	151.5	73,963
WTRMN10164	LAKEVIEW AVENUE	WM-DI-150	150	66.25	1994	265.9	129,833
WTRMN10165	Beachwood Road-to-SUMMER VIEW AVENUE	WM-DI-150	150	66.25	1994	182.5	89,095
WTRMN10166	GEORGIAN MEADOWS DRIVE-to-PARKSIDE DRIVE	WM-DI-150	150	56.25	1986	9.4	4,585
WTRMN10167	GEORGIAN MANOR DRIVE	WM-DI-150	150	56.25	1986	69.7	34,008
WTRMN10168	ST CLAIR STREET-to-ELIOTT AVENUE	WM-CI-150	150	37.5	1971	139.0	67,870
WTRMN10169	GLEN ROGERS ROAD-to-ROBERT AVENUE	WM-CI-150	150	17.5	1971	77.1	37,626
WTRMN10170	GLEN ROGERS ROAD-to-ST CLAIR STREET	WM-DI-150	150	40	1973	130.0	63,482
WTRMN10171	GLEN ROGERS ROAD-to-ST CLAIR STREET	WM-DI-150	150	41.25	1974	88.4	43,171
WTRMN10172	GLEN ROGERS ROAD-to-GLEN ROGERS ROAD	WM-DI-150	150	41.25	1974	89.5	43,697
WTRMN10173	GLEN ROGERS ROAD-to-GLEN ROGERS ROAD	WM-DI-150	150	41.25	1974	77.4	37,803
WTRMN10174	GLEN ROGERS ROAD-to-ST CLAIR STREET	WM-DI-150	150	41.25	1974	114.0	55,665
WTRMN10175	ST CLAIR STREET-to-ST CLAIR STREET	WM-DI-150	150	71.25	1998	43.4	21,204
WTRMN10176	EVA CRESCENT-to-ST CLAIR STREET	WM-DI-150	150	42.5	1975	85.6	41,770
WTRMN10177	EVA CRESCENT-to-EVA CRESCENT	WM-DI-150	150	42.5	1975	86.0	41,963
WTRMN10178	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	WM-CI-150	150	36.25	1970	178.0	86,892
WTRMN10179	RONELL CRESCENT-to-RONELL CRESCENT	WM-CI-150	150	36.25	1970	54.7	26,685
WTRMN10180	RONELL CRESCENT-to-RONELL CRESCENT	WM-CI-150	150	36.25	1970	71.2	34,763
WTRMN10181	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	WM-CI-150	150	36.25	1970	156.0	76,154
WTRMN10182	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	WM-CI-150	150	36.25	1970	9.9	4,833
WTRMN10183	OLIVER CRESCENT-to-OLIVER CRESCENT	WM-DI-150	150	56.25	1986	11.3	5,502
WTRMN10184	OLIVER CRESCENT-to-OLIVER CRESCENT	WM-DI-150	150	56.25	1986	10.2	4,954
WTRMN10185	OLIVER CRESCENT-to-OLIVER CRESCENT	WM-DI-150	150	56.25	1986	94.1	45,958
WTRMN10186	OLIVER CRESCENT	WM-DI-150	100	51.25	1986	45.8	22,369
WTRMN10187	(blank)	WM-DI-150	150	56.25	1986	151.5	73,968
WTRMN10188	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-CI-150	150	33.75	1968	21.5	10,509
WTRMN10189	PRETTY RIVER PARKWAY-to-OLIVER CRESCENT	WM-CI-150	150	33.75	1968	25.7	12,555
WTRMN10190	SANDFORD FLEMING DRIVE-to-SANDFORD FLEMING DRIVE	WM-DI-150	150	76.25	2002	12.9	6,284

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10191	KRISTA COURT-to-KRISTA COURT	WM-DI-150	150	55	1985	54.3	26,532
WTRMN10192	LOCKHART ROAD-to-KRISTA COURT	WM-DI-150	150	46.25	1978	15.6	7,619
WTRMN10193	KRISTA COURT-to-KRISTA COURT	WM-DI-150	150	55	1985	53.2	25,995
WTRMN10194	KRISTA COURT-to-DEY DRIVE	WM-DI-150	150	55	1985	132.7	64,780
WTRMN10196	ERIE STREET	WM-DI-150	150	76.25	2002	55.7	27,188
WTRMN10197	SIMCOE STREET-to-ST LAWRENCE STREET	WM-DI-150	150	62.5	1991	141.4	69,021
WTRMN10198	RUSSEL STREET-to-ST LAWRENCE STREET	WM-DI-150	150	62.5	1991	173.2	84,559
WTRMN10199	HURON STREET-to-ST LAWRENCE STREET	WM-DI-150	150	61.25	1990	141.5	69,082
WTRMN10200	SUNSET COURT-to-NIAGARA STREET	WM-DI-150	150	60	1989	114.4	55,839
WTRMN10201	SUNSET COURT-to-ST LAWRENCE STREET	WM-DI-150	150	61.25	1990	69.4	33,866
WTRMN10202	ST LAWRENCE STREET-to-SUNCREST CIRCLE	WM-DI-150	150	60	1989	74.4	36,329
WTRMN10203	(blank)	WM-DI-150	150	25.03	1973	133.6	65,232
WTRMN10204	ST LAWRENCE STREET-to-NIAGARA STREET	WM-DI-150	150	60	1989	27.6	13,476
WTRMN10205	(blank)	WM-CI-150	150	11.25	1950	14.0	6,837
WTRMN10206	ALMA STREET-to-ONTARIO STREET	WM-DI-150	150	41.25	1974	46.8	22,851
WTRMN10207	HURON STREET	WM-CI-150	150	1	1949	24.3	11,864
WTRMN10208	ST LAWRENCE STREET-to-ST LAWRENCE STREET	WM-DI-150	150	61.25	1990	67.5	32,951
WTRMN10209	ST LAWRENCE STREET-to-HURON STREET	WM-DI-150	150	61.25	1990	40.5	19,792
WTRMN10210	ONTARIO STREET-to-ST VINCENT STREET	WM-CI-150	150	7.5	1963	92.5	45,143
WTRMN10211	ST VINCENT STREET-to-ERIE STREET	WM-CI-150	150	27.5	1963	87.1	42,518
WTRMN10212	ERIE STREET-to-NIAGARA STREET	WM-DI-150	150	40	1973	108.8	53,112
WTRMN10213	MANNING AVENUE-to-BAKER STREET	WM-DI-150	150	43.75	1976	202.9	99,061
WTRMN10214	PATERSON STREET-to-Dead End	WM-CI-150	100	27.5	1967	49.6	24,225
WTRMN10215	PATERSON STREET-to-KATHERINE STREET	WM-CI-150	100	10.37	1967	116.7	56,992
WTRMN10216	BAKER STREET-to-COLLINS STREET	WM-CI-150	150	33.75	1968	103.0	50,304
WTRMN10217	COLLINS STREET-to-LESLIE DRIVE	WM-DI-150	150	38.75	1972	78.1	38,116
WTRMN10218	LESLIE DRIVE-to-LESLIE DRIVE	WM-DI-150	150	38.75	1972	35.3	17,209
WTRMN10219	(blank)	WM-DI-150	150	38.75	1972	101.6	49,599
WTRMN10220	COLLINS STREET-to-STE MARIE STREET	WM-DI-150	150	61.25	1990	100.0	48,808
WTRMN10221	COLLINS STREET	WM-CI-150	150	36.25	1970	137.3	67,024
WTRMN10222	VICTORY DRIVE-to-COLLINS STREET	WM-DI-150	150	38.75	1972	160.3	78,260
WTRMN10223	MAPLE STREET-to-HURONTARIO STREET	WM-DI-150	150	96.25	2018	239.8	117,076
WTRMN10224	MAPLE STREET-to-HURONTARIO STREET	WM-CI-150	150	1.25	1942	240.5	117,431
WTRMN10225	MAPLE STREET-to-HURONTARIO STREET	WM-DI-150	150	96.25	2018	240.7	117,542
WTRMN10226	MAPLE STREET-to-HURONTARIO STREET	WM-CI-150	150	1	1955	240.4	117,386
WTRMN10227	PINE STREET-to-HURONTARIO STREET	WM-DI-150	150	45	1977	116.0	56,647
WTRMN10228	FOURTH STREET-to-FIFTH STREET	WM-CI-150	150	11.25	1950	224.0	109,370
WTRMN10229	ALICE STREET-to-SPROULE AVENUE	WM-DI-150	150	43.75	1976	82.2	40,111
WTRMN10230	(blank)	WM-CI-150	150	11.25	1950	93.8	45,800
WTRMN10231	MAPLE STREET-to-HURONTARIO STREET	WM-CI-150	150	1	1952	245.2	119,740
WTRMN10232	MAPLE STREET-to-HURONTARIO STREET	WM-CI-150	150	5	1945	244.7	119,481
WTRMN10233	BRYAN COURT-to-KATHERINE STREET	WM-CI-150	150	16.25	1970	94.6	46,189
WTRMN10234	BRYAN DRIVE-to-LOCKHART ROAD	WM-DI-150	150	38.75	1972	94.0	45,876
WTRMN10235	(blank)	WM-CI-150	150	38.75	1972	84.7	41,372
WTRMN10236	PRINCETON SHORES BOULEVARD	WM-CI-150	150	38.75	1972	13.3	6,480
WTRMN10237	CRANBERRY TRAIL WEST-to-VALLEYMEDE COURT	WM-DI-150	150	68.75	1996	11.8	5,761
WTRMN10239	EDGAR ROAD-to-GLEN ROAD	WM-DI-150	150	66.25	1994	215.5	105,231
WTRMN10240	HIGHWAY 26-to-Valve	WM-DI-200	200	42.5	1975	2.2	1,091

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10241	MACDONALD ROAD-to-EVA CRESCENT	WM-DI-200	200	40	1973	17.8	8,959
WTRMN10243	DEY DRIVE-to-KRISTA COURT	WM-DI-150	150	76.25	2002	38.0	18,574
WTRMN10244	DEY DRIVE-to-KRISTA COURT	WM-DI-150	150	76.25	2002	52.0	25,364
WTRMN10245	SIMCOE STREET-to-ONTARIO STREET	WM-DI-200	200	71.25	1998	205.1	103,335
WTRMN10246	HARBEN COURT	WM-DI-200	200	40	1973	120.1	60,491
WTRMN10247	(blank)	WM-DI-200	200	60	1989	40.6	20,441
WTRMN10248	(blank)	WM-DI-200	200	60	1989	31.0	15,635
WTRMN10249	DILLON DRIVE-to-PEEL STREET	WM-DI-200	200	58.75	1988	93.1	46,878
WTRMN10250	MINNESOTA STREET-to-GODDEN STREET	WM-DI-200	200	58.75	1988	46.4	23,353
WTRMN10251	DILLON DRIVE-to-GODDEN STREET	WM-DI-200	200	58.75	1988	73.9	37,229
WTRMN10252	NAPIER STREET-to-DILLON DRIVE	WM-DI-200	200	58.75	1988	89.3	44,990
WTRMN10253	NAPIER STREET-to-DILLON DRIVE	WM-DI-200	200	58.75	1988	50.2	25,308
WTRMN10254	RAGLAN STREET	WM-DI-200	200	58.75	1988	17.1	8,628
WTRMN10255	MINNESOTA STREET-to-MINNESOTA STREET	WM-DI-200	200	46.25	1978	132.3	66,654
WTRMN10256	MINNESOTA STREET-to-MINNESOTA STREET	WM-DI-200	200	58.75	1988	107.7	54,254
WTRMN10257	DILLON DRIVE-to-MINNESOTA STREET	WM-DI-200	200	58.75	1988	74.9	37,740
WTRMN10258	DILLON DRIVE-to-DILLON DRIVE	WM-DI-200	200	58.75	1988	55.7	28,042
WTRMN10259	DILLON DRIVE-to-MINNESOTA STREET	WM-DI-200	200	58.75	1988	13.5	6,795
WTRMN10260	MINNESOTA STREET-to-MANNING AVENUE	WM-DI-200	200	68.75	1996	44.1	22,210
WTRMN10261	SOUTH SERVICE ROAD-to-SOUTH SERVICE ROAD	WM-CON-400	400	33.75	1968	83.7	109,202
WTRMN10262	HUME STREET	WM-CON-400	400	13.75	1968	38.2	49,846
WTRMN10263	SOUTH SERVICE ROAD-to-CONNELL STREET	WM-CON-400	400	33.75	1968	289.8	378,133
WTRMN10264	SIXTH STREET-to-SIXTH STREET	WM-DI-400	400	75	2001	306.8	244,695
WTRMN10265	GEORGIAN MEADOWS DRIVE-to-GEORGIAN MEADOWS DRIVE	WM-DI-400	400	75	2001	30.5	24,341
WTRMN10266	(blank)	WM-CI-400	400	35	1969	30.2	24,066
WTRMN10267	ONTARIO STREET	WM-CON-400	400	30	1965	151.7	198,028
WTRMN10268	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	WM-CON-450	450	33.75	1968	24.9	41,949
WTRMN10269	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	WM-CON-450	450	33.75	1968	249.5	419,699
WTRMN10270	ONTARIO STREET-to-ONTARIO STREET	WM-CON-450	450	33.75	1968	46.5	78,178
WTRMN10271	(blank)	WM-CON-450	450	33.75	1968	33.3	55,937
WTRMN10272	(blank)	WM-CON-450	450	33.75	1968	28.1	47,180
WTRMN10273	ONTARIO STREET-to-ONTARIO STREET	WM-CON-450	450	33.75	1968	46.9	78,830
WTRMN10274	PEEL STREET-to-MCKEAN CRESCENT	WM-DI-150	150	81.25	2006	8.4	4,087
WTRMN10275	MCKEAN CRESCENT	WM-DI-150	150	81.25	2006	5.9	2,868
WTRMN10276	COLLINS STREET-to-COLLINS STREET	WM-DI-250	250	81.25	2006	15.2	8,860
WTRMN10277	COLLINS STREET-to-COLLINS STREET	WM-DI-250	250	81.25	2006	5.1	2,939
WTRMN10278	COLLINS STREET-to-COLLINS STREET	WM-DI-250	250	81.25	2006	5.2	2,995
WTRMN10279	SPRUCE STREET	WM-DI-250	250	81.25	2006	68.9	40,059
WTRMN10280	WILLIAMS STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	10.3	5,999
WTRMN10281	COLLINS STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	56.3	32,698
WTRMN10282	LOCKHART ROAD-to-BROCK CRESCENT	WM-CI-150	150	36.25	1970	94.3	46,055
WTRMN10283	BROCK CRESCENT-to-BROCK CRESCENT	WM-DI-150	150	38.75	1972	258.8	126,332
WTRMN10284	LOCKHART ROAD-to-BROCK CRESCENT	WM-CI-150	150	36.25	1970	91.6	44,742
WTRMN10285	BRYAN DRIVE	WM-CI-150	150	36.25	1970	16.6	8,101
WTRMN10286	CAMPBELL STREET	WM-DI-150	150	38.75	1972	100.6	49,137
WTRMN10287	CAMPBELL STREET	WM-DI-150	150	55	1985	105.3	51,408
WTRMN10288	CAMPBELL STREET-to-HERRINGTON COURT	WM-DI-150	150	56.25	1986	161.7	78,938

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10289	SPRUCE STREET-to-REID CRESCENT	WM-DI-150	150	58.75	1988	37.5	18,304
WTRMN10290	REID CRESCENT-to-CAMPBELL STREET	WM-DI-150	150	58.75	1988	102.6	50,099
WTRMN10291	REID CRESCENT-to-CAMPBELL STREET	WM-DI-150	150	60	1989	111.9	54,638
WTRMN10292	SPRUCE STREET-to-REID CRESCENT	WM-DI-150	150	60	1989	181.7	88,711
WTRMN10293	CAMPBELL STREET	WM-DI-150	150	55	1985	92.0	44,898
WTRMN10294	RHONDA ROAD	WM-DI-150	150	42.5	1975	112.3	54,831
WTRMN10295	MACKAY COURT	WM-DI-150	150	42.5	1975	49.5	24,168
WTRMN10296	CAMERON STREET-to-DICKSON ROAD	WM-DI-150	150	38.75	1972	252.0	123,018
WTRMN10297	CAMPBELL STREET-to-OAK STREET	WM-CI-150	150	32.5	1967	114.7	55,985
WTRMN10298	FERGUSON ROAD	WM-CI-150	150	5.42	1960	109.1	53,283
WTRMN10299	(blank)	WM-CI-150	150	11.25	1966	88.8	43,353
WTRMN10300	(blank)	WM-CI-150	150	5.94	1966	158.1	77,172
WTRMN10301	CAMPBELL STREET-to-PARK ROAD	WM-CI-150	150	31.25	1966	65.9	32,187
WTRMN10302	(blank)	WM-CI-150	150	11.25	1966	82.6	40,311
WTRMN10303	CAMERON STREET	WM-CI-150	150	23.21	1966	248.9	121,523
WTRMN10304	WALNUT STREET-to-PARK ROAD	WM-CI-150	150	31.25	1966	44.9	21,913
WTRMN10305	PARK ROAD	WM-CI-150	150	31.25	1966	48.4	23,616
WTRMN10306	(blank)	WM-CI-150	150	31.25	1966	125.0	61,036
WTRMN10307	CAMERON STREET-to-FERGUSON ROAD	WM-CI-150	150	1	1960	84.7	41,359
WTRMN10308	OAK STREET-to-WILLOW STREET	WM-CI-150	150	30	1965	64.4	31,439
WTRMN10309	CAMERON STREET-to-WILLOW STREET	WM-CI-150	150	23.75	1960	85.5	41,742
WTRMN10310	CAMERON STREET-to-CLARKSON CRESCENT	WM-CI-150	150	31.25	1966	90.6	44,252
WTRMN10311	CLARKSON CRESCENT-to-CLARKSON CRESCENT	WM-CI-150	150	31.25	1966	35.4	17,267
WTRMN10312	TENTH LINE-to-CLARKSON CRESCENT	WM-CI-150	150	31.25	1966	106.1	51,816
WTRMN10313	CLARKSON CRESCENT-to-CLARKSON CRESCENT	WM-CI-150	150	31.25	1966	45.7	22,288
WTRMN10314	TENTH STREET-to-CLARKSON CRESCENT	WM-CI-150	150	31.25	1966	117.8	57,503
WTRMN10315	TENTH STREET-to-WILLOW STREET	WM-CI-150	150	23.75	1960	99.9	48,777
WTRMN10316	NINTH STREET-to-FAIR STREET	WM-CI-150	150	23.75	1960	136.7	66,749
WTRMN10317	FAIR STREET-to-CAMERON STREET	WM-CI-150	150	5	1945	105.5	51,524
WTRMN10319	OAK STREET-to-BIRCH STREET	WM-DI-150	150	56.25	1986	112.3	54,831
WTRMN10320	NINTH STREET-to-TENTH STREET	WM-DI-150	150	55	1985	117.1	57,161
WTRMN10321	CLARKSON CRESCENT-to-OAK STREET	WM-CI-150	150	31.25	1966	88.6	43,268
WTRMN10322	CLARKSON CRESCENT-to-CLARKSON CRESCENT	WM-CI-150	150	31.25	1966	78.0	38,073
WTRMN10323	NINTH STREET-to-BIRCH STREET	WM-DI-150	150	55	1985	4.5	2,205
WTRMN10324	EIGHTH STREET-to-NINTH STREET	WM-DI-150	150	55	1985	128.2	62,592
WTRMN10325	EIGHTH STREET-to-NINTH STREET	WM-CI-150	150	1	1942	134.7	65,785
WTRMN10326	BIRCH STREET-to-MAPLE STREET	WM-DI-150	150	96.25	2018	241.5	117,899
WTRMN10327	WALNUT STREET-to-CLARKSON CRESCENT	WM-CI-150	150	11.25	1966	78.5	38,333
WTRMN10328	WALNUT STREET-to-OAK STREET	WM-CI-150	150	12.04	1964	239.4	116,882
WTRMN10329	BIRCH STREET-to-MAPLE STREET	WM-DI-150	150	96.25	2018	240.2	117,293
WTRMN10330	SEVENTH STREET-to-EIGHTH STREET	WM-CI-150	150	23.75	1960	125.8	61,440
WTRMN10331	SIXTH STREET-to-SEVENTH STREET	WM-CI-150	150	23.75	1960	127.4	62,192
WTRMN10332	SEVENTH STREET-to-EIGHTH STREET	WM-CI-150	150	1	1942	126.5	61,763
WTRMN10333	SIXTH STREET-to-SEVENTH STREET	WM-CI-150	100	1	1942	126.4	61,706
WTRMN10334	FIFTH STREET-to-OAK STREET	WM-DI-150	150	55	1985	95.7	46,700
WTRMN10335	OAK STREET-to-SIXTH STREET	WM-DI-150	150	55	1985	15.5	7,561
WTRMN10336	FIFTH STREET-to-SIXTH STREET	WM-CI-150	150	23.75	1960	102.0	49,776
WTRMN10337	MAPLE STREET-to-PINE STREET	WM-DI-150	150	45	1977	125.1	61,077

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10338	FIFTH STREET-to-SIXTH STREET	WM-CI-150	150	5	1945	118.8	57,983
WTRMN10339	FOURTH STREET-to-FIFTH STREET	WM-CI-150	150	23.75	1960	220.6	107,699
WTRMN10340	FOURTH STREET-to-FIFTH STREET	WM-DI-150	150	55	1985	224.5	109,598
WTRMN10341	THIRD STREET-to-FOURTH STREET	WM-DI-150	150	53.75	1984	227.3	111,000
WTRMN10342	HURONTARIO STREET	WM-DI-150	150	47.5	1979	9.4	4,588
WTRMN10343	PINE STREET-to-HURONTARIO STREET	WM-DI-150	150	41.25	1974	123.9	60,511
WTRMN10344	MAPLE STREET-to-PINE STREET	WM-DI-150	150	43.75	1976	119.6	58,400
WTRMN10345	SECOND STREET-to-THIRD STREET	WM-DI-150	150	38.75	1972	224.2	109,472
WTRMN10346	SECOND STREET-to-THIRD STREET	WM-DI-150	150	55	1985	223.6	109,153
WTRMN10347	OAK STREET-to-BIRCH STREET	WM-CI-150	150	11.25	1950	121.8	59,490
WTRMN10348	SECOND STREET-to-THIRD STREET	WM-DI-150	150	46.25	1978	221.7	108,238
WTRMN10349	CEDAR STREET-to-OAK STREET	WM-CI-150	150	23.75	1960	116.8	57,006
WTRMN10350	OAK STREET-to-BIRCH STREET	WM-DI-150	150	62.5	1991	123.7	60,395
WTRMN10351	BIRCH STREET-to-BEECH STREET	WM-DI-150	150	62.5	1991	121.2	59,184
WTRMN10352	BEECH STREET-to-MAPLE STREET	WM-CI-150	150	17.5	1955	120.3	58,721
WTRMN10353	HURONTARIO STREET-to-SIMCOE STREET	WM-DI-150	150	41.25	1974	58.9	28,777
WTRMN10354	SIDE LAUNCH WAY	WM-CI-150	150	1	1945	65.5	32,000
WTRMN10355	HIGH STREET-to-SPRUCE STREET	WM-DI-150	150	75	2001	329.5	160,895
WTRMN10356	TELFER ROAD-to-SPRUCE STREET	WM-DI-150	150	75	2001	72.6	35,444
WTRMN10357	SPRUCE STREET-to-TELFER ROAD	WM-DI-150	150	75	2001	93.4	45,602
WTRMN10363	TELFER ROAD-to-TELFER ROAD	WM-DI-150	150	75	2001	40.9	19,947
WTRMN10364	GRIFFIN ROAD-to-COURTICE CRESCENT	WM-CI-150	150	32.5	1967	196.0	95,672
WTRMN10365	COURTICE CRESCENT-to-COURTICE CRESCENT	WM-CI-150	150	32.5	1967	88.8	43,371
WTRMN10366	COURTICE CRESCENT-to-GRIFFIN ROAD	WM-CI-150	150	32.5	1967	196.3	95,841
WTRMN10367	HIGH STREET-to-COURTICE CRESCENT	WM-CI-150	150	32.5	1967	51.3	25,024
WTRMN10368	GRIFFIN ROAD-to-COURTICE CRESCENT	WM-CI-150	150	32.5	1967	94.1	45,925
WTRMN10369	COURTICE CRESCENT-to-SPRUCE STREET	WM-CI-150	150	32.5	1967	89.0	43,447
WTRMN10370	SPRUCE STREET	WM-CI-150	150	19.82	1967	157.7	77,003
WTRMN10371	GIBBARD CRESCENT-to-WHIPPS COURT	WM-CI-150	150	37.5	1971	84.5	41,242
WTRMN10372	GIBBARD CRESCENT	WM-CI-150	150	37.5	1971	59.7	29,151
WTRMN10373	GIBBARD CRESCENT-to-WHIPPS COURT	WM-CI-150	150	37.5	1971	87.6	42,787
WTRMN10374	SPRUCE STREET-to-GIBBARD CRESCENT	WM-CI-150	150	37.5	1971	150.7	73,596
WTRMN10375	HIGH STREET-to-SPRUCE STREET	WM-CI-150	150	1	1968	239.2	116,791
WTRMN10376	SPRUCE STREET-to-WALNUT STREET	WM-CI-150	150	1	1968	245.4	119,817
WTRMN10377	FIFTH STREET-to-SIXTH STREET	WM-DI-150	150	52.5	1983	118.3	57,737
WTRMN10378	WATTS CRESCENT-to-FIFTH STREET	WM-DI-150	150	41.25	1974	112.3	54,819
WTRMN10379	SPRUCE STREET-to-WATTS CRESCENT	WM-DI-150	150	41.25	1974	136.7	66,726
WTRMN10380	WATTS CRESCENT-to-FIFTH STREET	WM-CI-150	150	36.25	1970	111.1	54,219
WTRMN10381	BRANIFF COURT-to-WATTS CRESCENT	WM-CI-150	150	36.25	1970	84.2	41,085
WTRMN10382	SPRUCE STREET-to-FOURTH STREET	WM-CI-150	150	36.25	1970	25.6	12,492
WTRMN10383	SPRUCE STREET-to-FOURTH STREET	WM-DI-150	150	18.99	1971	108.1	52,760
WTRMN10384	FOURTH STREET-to-FIFTH STREET	WM-DI-150	150	50	1981	223.4	109,084
WTRMN10385	HICKORY STREET-to-WALNUT STREET	WM-DI-150	150	42.5	1975	122.2	59,646
WTRMN10386	THIRD STREET-to-FOURTH STREET	WM-CI-150	150	6.61	1970	202.5	98,849
WTRMN10387	THIRD STREET-to-FOURTH STREET	WM-DI-150	150	50	1981	229.6	112,091
WTRMN10388	HIGH STREET-to-MURRAY COURT	WM-CI-150	150	35	1969	44.1	21,543
WTRMN10389	HIGH STREET-to-SECOND STREET	WM-CI-150	150	35	1969	108.9	53,155
WTRMN10390	HIGH STREET-to-ELM STREET	WM-CI-150	150	35	1969	137.4	67,101

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10391	FIRST STREET-to-SECOND STREET	WM-CI-150	150	25.2	1969	204.0	99,623
WTRMN10392	SPRUCE STREET-to-HICKORY STREET	WM-CI-150	150	30	1965	120.7	58,939
WTRMN10393	WALNUT STREET-to-CEDAR STREET	WM-CI-150	150	23.75	1960	118.6	57,917
WTRMN10394	HICKORY STREET-to-WALNUT STREET	WM-CI-150	150	23.75	1960	123.5	60,292
WTRMN10395	(blank)	WM-CI-150	150	5	1945	179.1	87,465
WTRMN10396	BALSAM STREET	WM-CI-150	150	5	1945	202.1	98,669
WTRMN10397	BALSAM STREET	WM-CI-150	150	5	1945	29.2	14,276
WTRMN10398	ELM STREET-to-SPRUCE STREET	WM-DI-150	150	42.5	1975	122.1	59,614
WTRMN10399	SIXTH STREET	WM-DI-150	150	75	2001	35.8	17,488
WTRMN10400	MARINA CRESCENT-to-GEORGIAN MEADOWS DRIVE	WM-DI-150	150	75	2001	206.8	100,956
WTRMN10401	MARINA CRESCENT-to-MARINA CRESCENT	WM-DI-150	150	75	2001	80.2	39,139
WTRMN10402	MARINA CRESCENT-to-GEORGIAN MEADOWS DRIVE	WM-DI-150	150	75	2001	193.1	94,292
WTRMN10403	MARINA CRESCENT-to-GEORGIAN MEADOWS DRIVE	WM-DI-150	150	75	2001	77.9	38,028
WTRMN10404	MARINA CRESCENT-to-SIXTH STREET	WM-DI-150	150	75	2001	63.7	31,121
WTRMN10405	HIGHLANDS CRESCENT-to-MARINA CRESCENT	WM-DI-150	150	75	2001	103.4	50,504
WTRMN10406	HIGHLANDS CRESCENT-to-GEORGIAN MEADOWS DRIVE	WM-DI-150	150	75	2001	194.7	95,063
WTRMN10407	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	WM-DI-150	150	75	2001	72.3	35,285
WTRMN10408	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	WM-DI-150	150	75	2001	93.5	45,637
WTRMN10409	HIGHLANDS CRESCENT-to-GEORGIAN MEADOWS DRIVE	WM-DI-150	150	75	2001	42.0	20,505
WTRMN10410	GEORGIAN MEADOWS DRIVE-to-HIGHLANDS CRESCENT	WM-DI-150	150	75	2001	96.8	47,254
WTRMN10411	GEORGIAN MEADOWS DRIVE-to-HIGHLANDS CRESCENT	WM-DI-150	150	75	2001	23.6	11,539
WTRMN10412	GEORGIAN MEADOWS DRIVE-to-HIGHLANDS CRESCENT	WM-DI-150	150	75	2001	100.2	48,940
WTRMN10413	(blank)	WM-DI-150	150	75	2001	95.6	46,669
WTRMN10414	GEORGIAN MEADOWS DRIVE-to-CONNOR AVENUE	WM-DI-150	150	75	2001	12.2	5,959
WTRMN10417	NETTLETON COURT-to-CRANBERRY QUAY	WM-DI-150	150	58.75	1988	124.2	60,617
WTRMN10418	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-150	150	58.75	1988	17.1	8,331
WTRMN10419	TROTT BOULEVARD-to-MCINTOSH GATE	WM-DI-150	150	58.75	1988	59.2	28,895
WTRMN10420	TROTT BOULEVARD-to-NETTLETON COURT	WM-DI-150	150	58.75	1988	22.6	11,042
WTRMN10421	TROTT BOULEVARD-to-SHEFFIELD TERRACE	WM-DI-150	150	58.75	1988	29.6	14,463
WTRMN10422	BALSAM STREET-to-CRANBERRY QUAY	WM-DI-150	150	58.75	1988	70.6	34,451
WTRMN10423	BALSAM STREET-to-CRANBERRY QUAY	WM-DI-150	150	58.75	1988	54.3	26,513
WTRMN10424	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-150	150	58.75	1988	16.7	8,137
WTRMN10425	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-150	150	58.75	1988	15.5	7,564
WTRMN10426	HARBOUR STREET WEST-to-HARBOUR STREET WEST	WM-DI-150	150	47.5	1979	6.1	2,991
WTRMN10427	HARBOUR STREET WEST-to-HARBOUR STREET WEST	WM-DI-150	150	47.5	1979	5.5	2,668
WTRMN10428	DAWSON DRIVE-to-ESCARPMENT CRESCENT	WM-DI-150	150	38.75	1972	14.6	7,149
WTRMN10429	DAWSON DRIVE-to-DAWSON DRIVE	WM-DI-150	150	51.25	1982	8.6	4,204
WTRMN10430	ESCARPMENT CRESCENT-to-DAWSON DRIVE	WM-DI-150	150	51.25	1982	13.8	6,723
WTRMN10431	OXBOW CRESCENT-to-DAWSON DRIVE	WM-DI-150	150	51.25	1982	11.9	5,797
WTRMN10432	DAWSON DRIVE-to-DAWSON DRIVE	WM-DI-150	150	51.25	1982	8.3	4,049
WTRMN10433	OXBOW CRESCENT-to-DAWSON DRIVE	WM-DI-150	150	51.25	1982	12.0	5,864
WTRMN10434	DAWSON DRIVE-to-DAWSON DRIVE	WM-DI-150	150	51.25	1982	10.6	5,195
WTRMN10435	DAWSON DRIVE-to-DANCE STREET	WM-DI-150	150	51.25	1982	8.2	4,025

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10436	WOODLAND COURT-to-CRANBERRY TRAIL EAST	WM-DI-150	150	73.75	2000	11.7	5,698
WTRMN10437	DAWSON DRIVE-to-FAIRWAY CRESCENT	WM-DI-150	150	51.25	1982	6.3	3,089
WTRMN10438	HIGHWAY 26-to-GUN CLUB ROAD	WM-PVC-150	150	56.25	1986	9.6	4,705
WTRMN10439	(blank)	WM-CI-150	150	38.75	1972	166.4	81,235
WTRMN10440	(blank)	WM-CI-150	150	38.75	1972	61.6	30,079
WTRMN10441	(blank)	WM-CI-150	150	38.75	1972	109.6	53,496
WTRMN10442	(blank)	WM-CI-150	150	38.75	1972	80.9	39,479
WTRMN10443	(blank)	WM-CI-150	150	38.75	1972	170.1	83,064
WTRMN10444	(blank)	WM-CI-150	150	38.75	1972	136.5	66,635
WTRMN10445	(blank)	WM-CI-150	150	38.75	1972	255.3	124,657
WTRMN10446	(blank)	WM-CI-150	150	38.75	1972	12.9	6,288
WTRMN10447	(blank)	WM-CI-150	150	38.75	1972	194.0	94,706
WTRMN10448	(blank)	WM-CI-150	150	38.75	1972	97.6	47,652
WTRMN10449	HIGHWAY 26-to-GUN CLUB ROAD	WM-DI-150	150	56.25	1986	2.1	1,014
WTRMN10452	Beachwood Road	WM-DI-150	150	65	1993	137.3	67,047
WTRMN10453	HIGHWAY 26	WM-CI-150	150	36.25	1970	16.1	7,867
WTRMN10454	PRETTY RIVER PARKWAY	WM-CI-150	150	36.25	1970	13.9	6,784
WTRMN10455	COLLINS STREET	WM-DI-150	150	47.5	1979	12.3	6,019
WTRMN10456	SIMCOE STREET-to-PEEL STREET	WM-CI-150	150	32.5	1967	20.2	9,880
WTRMN10457	(blank)	WM-DI-150	100	35	1973	11.8	5,757
WTRMN10458	DAWSON DRIVE	WM-DI-150	150	51.25	1982	4.4	2,131
WTRMN10459	MOUNTAIN ROAD	WM-DI-150	150	77.5	2003	15.8	7,697
WTRMN10460	MOUNTAIN ROAD	WM-DI-150	150	47.5	1979	21.7	10,571
WTRMN10461	HIGH STREET-to-HIGH STREET	WM-CI-150	150	35	1969	7.3	3,570
WTRMN10462	TENTH STREET	WM-DI-150	150	47.5	1979	12.8	6,224
WTRMN10463	WILLOW STREET-to-BIRCH STREET	WM-CI-150	150	30	1965	12.9	6,303
WTRMN10464	FIRST STREET-to-CAMBRIDGE STREET	WM-DI-200	200	80	2005	156.9	79,030
WTRMN10467	HURON STREET	WM-CI-150	150	10	1949	4.3	2,083
WTRMN10468	PINE STREET-to-HURONTARIO STREET	WM-CI-200	200	8.75	1950	123.6	62,237
WTRMN10469	SECOND STREET-to-THIRD STREET	WM-DI-200	200	38.75	1972	222.5	112,105
WTRMN10470	PINE STREET-to-PINE STREET	WM-DI-200	200	45	1977	28.5	14,334
WTRMN10471	THIRD STREET-to-PINE STREET	WM-DI-200	200	45	1977	13.4	6,739
WTRMN10472	SECOND STREET-to-THIRD STREET	WM-CI-200	200	11.25	1950	220.3	110,952
WTRMN10473	THIRD STREET-to-FOURTH STREET	WM-CI-150	150	11.25	1950	226.9	114,318
WTRMN10474	TELFER ROAD	WM-DI-200	200	52.5	1983	203.4	95,842
WTRMN10475	CHAMBERLAIN CRESCENT-to-TELFER ROAD	WM-DI-200	200	65	1993	329.6	155,323
WTRMN10476	TENTH STREET	WM-DI-200	200	41.25	1974	123.7	58,313
WTRMN10477	HIGH STREET	WM-DI-200	200	20	1973	66.9	33,713
WTRMN10478	(blank)	WM-DI-200	200	23.84	1973	123.8	62,364
WTRMN10479	SPRUCE STREET-to-TENTH STREET	WM-DI-200	200	40	1973	61.9	31,177
WTRMN10480	SPRUCE STREET-to-TENTH STREET	WM-CI-200	200	37.5	1971	86.7	43,664
WTRMN10481	TENTH STREET-to-GIBBARD CRESCENT	WM-CI-200	200	37.5	1971	88.4	44,544
WTRMN10482	GRIFFIN ROAD-to-GIBBARD CRESCENT	WM-CI-200	200	37.5	1971	91.0	45,820
WTRMN10483	SEVENTH STREET-to-GIBBARD CRESCENT	WM-CI-200	200	12.5	1967	82.5	41,572
WTRMN10484	SIXTH STREET-to-SEVENTH STREET	WM-CI-200	200	16.22	1967	122.8	61,875
WTRMN10485	SPRUCE STREET-to-WALNUT STREET	WM-CI-200	200	1	1967	244.4	123,102
WTRMN10486	FIFTH STREET-to-SIXTH STREET	WM-CI-200	200	36.25	1970	111.6	52,588
WTRMN10487	HIGH STREET-to-HIGH STREET	WM-DI-200	200	72.5	1999	24.6	12,387

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10488	SLALOM GATE ROAD-to-MOUNTAIN ROAD	WM-DI-400	400	80	2005	109.7	87,482
WTRMN10489	MOUNTAIN ROAD-to-MOUNTAIN ROAD	WM-DI-400	400	80	2005	49.8	39,741
WTRMN10490	MOUNTAIN ROAD-to-MOUNTAIN ROAD	WM-DI-400	400	80	2005	39.2	31,247
WTRMN10491	MOUNTAIN ROAD-to-MOUNTAIN ROAD	WM-DI-400	400	80	2005	304.7	242,986
WTRMN10492	MOUNTAIN ROAD-to-ELGIN STREET	WM-DI-400	400	80	2005	608.4	485,156
WTRMN10493	MOUNTAIN ROAD	WM-DI-150	150	80	2005	6.4	3,121
WTRMN10494	MOUNTAIN ROAD-to-HILL STREET	WM-DI-400	400	80	2005	86.0	68,587
WTRMN10495	MOUNTAIN ROAD	WM-DI-400	400	80	2005	14.1	11,277
WTRMN10496	MOUNTAIN ROAD-to-MAIR MILLS DRIVE	WM-DI-400	400	80	2005	139.4	111,179
WTRMN10530	BAYSIDE COURT	WM-PVC-150	150	71.25	1998	58.8	28,709
WTRMN10540	ONTARIO STREET-to-ELGIN STREET	WM-DI-150	150	47.5	1979	9.7	4,715
WTRMN10541	OSLER BLUFF ROAD-to-FOREST DRIVE	WM-DI-200	200	60	1989	104.9	49,414
WTRMN10542	FOREST DRIVE-to-ALPINE COURT	WM-DI-200	200	60	1989	136.7	64,395
WTRMN10543	FOREST DRIVE-to-ALPINE COURT	WM-DI-200	200	60	1989	74.5	35,085
WTRMN10544	FOREST DRIVE-to-FOREST DRIVE	WM-DI-200	200	60	1989	110.8	52,220
WTRMN10545	FOREST DRIVE-to-FOREST DRIVE	WM-DI-200	200	60	1989	29.8	14,017
WTRMN10546	FOREST DRIVE-to-FOREST DRIVE	WM-DI-200	200	60	1989	52.1	24,544
WTRMN10547	FOREST DRIVE-to-CRAIGLEITH COURT	WM-DI-200	200	60	1989	56.5	26,615
WTRMN10548	SILVER CREEK DRIVE-to-FOREST DRIVE	WM-DI-200	200	60	1989	143.6	67,692
WTRMN10549	FOREST DRIVE-to-GEORGIAN COURT	WM-DI-200	200	60	1989	128.4	60,484
WTRMN10550	FOREST DRIVE-to-FOREST DRIVE	WM-DI-200	200	60	1989	35.3	16,622
WTRMN10551	FOREST DRIVE-to-FOREST DRIVE	WM-DI-200	200	60	1989	18.7	8,821
WTRMN10552	BRAESIDE STREET-to-BRAESIDE STREET	WM-DI-150	150	70	1997	226.1	110,380
WTRMN10553	BEACHSIDE LANE-to-BEACHSIDE LANE	WM-DI-200	200	70	1997	28.4	14,285
WTRMN10554	GEORGIAN MANOR LANE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	66.25	1994	85.9	43,292
WTRMN10555	GEORGIAN MANOR DRIVE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	66.25	1994	62.1	31,295
WTRMN10556	LAKEVIEW AVENUE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	66.25	1994	278.6	140,321
WTRMN10557	GEORGIAN MANOR DRIVE	WM-DI-200	200	66.25	1994	98.9	49,843
WTRMN10558	LAKEVIEW AVENUE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	66.25	1994	138.8	69,920
WTRMN10559	GEORGIAN MANOR DRIVE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	56.25	1986	285.5	143,843
WTRMN10560	GEORGIAN MANOR DRIVE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	56.25	1986	83.6	42,093
WTRMN10561	HURONIA PATHWAY-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	56.25	1986	243.5	122,662
WTRMN10562	GEORGIAN MANOR DRIVE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	56.25	1986	49.8	25,070
WTRMN10563	GEORGIAN MANOR DRIVE-to-GEORGIAN MANOR DRIVE	WM-DI-200	200	66.25	1994	34.2	17,218
WTRMN10564	EVA CRESCENT-to-GLEN ROGERS ROAD	WM-DI-200	200	40	1973	155.7	78,417
WTRMN10565	MANNING AVENUE-to-BELL BOULEVARD	WM-DI-200	200	43.75	1976	213.8	107,720
WTRMN10566	BELL BOULEVARD-to-COLLINS STREET	WM-DI-200	200	22.25	1976	105.3	53,029
WTRMN10567	COLLINS STREET-to-LOCKHART ROAD	WM-DI-200	200	46.25	1978	119.6	60,235
WTRMN10568	CARMICHEAL CRESCENT-to-LOCKHART ROAD	WM-DI-200	200	46.25	1978	81.7	41,168
WTRMN10569	KRISTA COURT-to-DEY DRIVE	WM-DI-200	200	46.25	1978	133.7	67,360
WTRMN10570	LOCKHART ROAD-to-CARMICHEAL CRESCENT	WM-DI-200	200	46.25	1978	133.1	67,053
WTRMN10571	LOCKHART ROAD-to-CARMICHEAL CRESCENT	WM-DI-200	200	46.25	1978	113.1	56,974

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10572	KATHERINE STREET-to-KATHERINE STREET	WM-CI-200	200	36.25	1970	82.3	41,472
WTRMN10573	BRYAN COURT-to-KATHERINE STREET	WM-CI-200	200	36.25	1970	50.8	25,611
WTRMN10574	LOCKHART ROAD-to-KATHERINE STREET	WM-DI-200	200	38.75	1972	91.4	46,019
WTRMN10575	MANNING AVENUE-to-MANNING AVENUE	WM-DI-200	200	68.75	1996	31.2	15,730
WTRMN10576	SPROULE AVENUE-to-MANNING AVENUE	WM-DI-200	200	43.75	1976	13.3	6,688
WTRMN10577	HURONTARIO STREET-to-BROCK CRESCENT	WM-CI-200	200	38.75	1972	87.4	44,029
WTRMN10578	LOCKHART ROAD-to-BRYAN COURT	WM-CI-200	200	38.75	1972	44.3	22,313
WTRMN10579	LOCKHART ROAD-to-KATHERINE STREET	WM-CI-200	200	38.75	1972	62.3	31,400
WTRMN10580	SPRUCE STREET-to-HERRINGTON COURT	WM-DI-200	200	53.75	1984	89.6	45,146
WTRMN10581	CAMPBELL STREET-to-CAMPBELL STREET	WM-DI-200	200	53.75	1984	64.6	32,545
WTRMN10582	FERGUSON ROAD-to-OAK STREET	WM-DI-200	200	37.5	1971	92.0	46,322
WTRMN10583	FERGUSON ROAD-to-OAK STREET	WM-DI-200	200	23.9	1971	147.0	74,059
WTRMN10584	SPRUCE STREET-to-SMART COURT	WM-DI-200	200	53.75	1984	92.0	43,361
WTRMN10585	HIGH STREET-to-REID CRESCENT	WM-DI-200	200	53.75	1984	177.5	83,638
WTRMN10586	CAMERON STREET-to-RHONDA ROAD	WM-DI-200	200	38.75	1972	111.4	56,115
WTRMN10587	MASON ROAD-to-RHONDA ROAD	WM-DI-200	200	38.75	1972	141.8	71,451
WTRMN10588	CAMPBELL STREET-to-MASON ROAD	WM-DI-200	200	38.75	1972	54.0	27,213
WTRMN10589	MASON ROAD-to-DICKSON ROAD	WM-DI-200	200	38.75	1972	48.4	24,364
WTRMN10590	MASON ROAD-to-DICKSON ROAD	WM-DI-200	200	38.75	1972	30.9	15,558
WTRMN10591	WILLOW STREET-to-CAMERON STREET	WM-CI-200	200	30	1965	85.7	43,151
WTRMN10592	SPRUCE STREET-to-WALNUT STREET	WM-DI-200	200	37.5	1971	245.3	123,565
WTRMN10593	FOURTH STREET-to-FIFTH STREET	WM-DI-200	200	42.5	1977	214.6	108,088
WTRMN10594	(blank)	WM-DI-200	200	42.5	1977	191.0	96,234
WTRMN10595	MAPLE STREET-to-PINE STREET	WM-CI-200	200	8.75	1950	118.6	59,728
WTRMN10613	MACDONALD ROAD-to-MACDONALD ROAD	WM-DI-150	150	82.5	2007	3.8	1,716
WTRMN10614	(blank)	WM-CI-200	200	5	1945	141.0	71,035
WTRMN10615	MARINE VIEW DRIVE	WM-DI-200	200	73.75	2000	140.0	65,958
WTRMN10616	MARINERS HAVEN	WM-CI-200	200	36.25	1970	32.2	16,203
WTRMN10617	(blank)	WM-DI-200	200	57.5	2003	26.8	13,485
WTRMN10618	DAWSON DRIVE	WM-DI-200	200	38.75	1972	5.8	2,933
WTRMN10619	GREENBRIAR DRIVE-to-CRANBERRY QUAY	WM-DI-200	200	76.25	2002	13.1	6,580
WTRMN10620	RAGLAN STREET-to-ONTARIO STREET	WM-CI-250	250	11.25	1950	37.8	21,946
WTRMN10621	EAST STREET	WM-CI-250	250	11.25	1950	95.9	55,740
WTRMN10622	(blank)	WM-CI-250	250	11.25	1950	64.8	37,671
WTRMN10623	MINNESOTA STREET-to-NAPIER STREET	WM-CI-250	250	11.25	1950	118.8	69,044
WTRMN10624	(blank)	WM-CI-250	250	11.25	1950	26.1	15,166
WTRMN10625	(blank)	WM-CI-250	250	11.25	1950	32.4	18,815
WTRMN10626	(blank)	WM-CI-250	250	11.25	1950	5.6	3,225
WTRMN10627	ST PAUL STREET	WM-CI-250	250	11.25	1950	140.2	81,475
WTRMN10628	ELGIN STREET-to-ST PAUL STREET	WM-CI-250	250	8.75	1950	112.4	65,302
WTRMN10629	HURONTARIO STREET-to-STE MARIE STREET	WM-CI-250	250	11.25	1950	120.7	70,149
WTRMN10630	COLLINS STREET-to-LOCKHART ROAD	WM-DI-250	250	47.5	1979	209.0	121,467
WTRMN10631	HUME STREET-to-HAMILTON STREET	WM-DI-250	250	55	1985	201.3	117,028
WTRMN10632	ROBINSON STREET-to-PATERSON STREET	WM-CI-250	250	33.75	1968	105.3	61,204
WTRMN10633	PATERSON STREET-to-LESLIE DRIVE	WM-CI-250	250	33.75	1968	41.4	24,033
WTRMN10634	LESLIE DRIVE-to-KATHERINE STREET	WM-CI-250	250	1	1968	75.2	43,684
WTRMN10635	KATHERINE STREET-to-ALICE STREET	WM-DI-250	250	47.5	1979	90.4	52,571
WTRMN10636	STE MARIE STREET-to-ROBINSON STREET	WM-CI-250	250	19.44	1968	139.7	81,216

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10637	OAK STREET-to-DICKSON ROAD	WM-DI-250	250	38.75	1972	72.6	42,181
WTRMN10638	DICKSON ROAD-to-BIRCH STREET	WM-DI-250	250	38.75	1972	36.8	21,363
WTRMN10639	MASON ROAD-to-BIRCH STREET	WM-DI-250	250	38.75	1972	57.0	33,113
WTRMN10640	MASON ROAD-to-MAPLE STREET	WM-DI-250	250	63.75	1992	192.3	111,769
WTRMN10641	GRIFFIN ROAD-to-TENTH STREET	WM-DI-250	250	23.24	1973	119.3	64,879
WTRMN10642	(blank)	WM-CI-250	250	13.02	1960	372.6	202,624
WTRMN10643	BALSAM STREET	WM-CI-250	250	23.75	1960	97.9	53,212
WTRMN10644	BALSAM STREET-to-BALSAM STREET	WM-CI-250	250	23.75	1960	93.2	50,655
WTRMN10645	BALSAM STREET-to-MARINERS HAVEN	WM-CI-250	250	23.75	1960	61.5	33,454
WTRMN10646	MARINERS HAVEN-to-MARINERS HAVEN	WM-CI-250	250	23.75	1960	11.3	6,131
WTRMN10647	HIGHWAY 26-to-KEITH AVENUE	WM-DI-250	250	48.75	1980	51.4	29,858
WTRMN10648	KEITH AVENUE	WM-DI-250	250	48.75	1980	36.9	21,451
WTRMN10649	SIMCOE STREET-to-PRETTY RIVER PARKWAY	WM-CI-250	250	11.25	1950	109.9	63,854
WTRMN10652	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	52.8	32,524
WTRMN10653	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	139.6	86,039
WTRMN10654	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	57.2	35,272
WTRMN10655	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	140.9	86,856
WTRMN10656	OSLER BLUFF ROAD-to-HOLLY COURT	WM-DI-300	300	68.75	1996	361.4	222,704
WTRMN10657	OSLER BLUFF ROAD-to-LAUREL BOULEVARD	WM-DI-300	300	72.5	1999	275.6	169,854
WTRMN10658	OSLER BLUFF ROAD-to-OSLER BLUFF ROAD	WM-DI-300	300	76.25	2002	144.2	88,871
WTRMN10659	OSLER BLUFF ROAD-to-OSLER BLUFF ROAD	WM-DI-300	300	76.25	2002	11.4	6,994
WTRMN10660	OSLER BLUFF ROAD-to-MOUNT VIEW COURT	WM-DI-300	300	76.25	2002	35.4	21,791
WTRMN10661	SILVER CREEK DRIVE-to-FOREST DRIVE	WM-DI-300	300	60	1989	176.5	108,790
WTRMN10662	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	50.7	31,222
WTRMN10663	(blank)	WM-DI-300	300	35.5	1989	653.0	402,415
WTRMN10664	CRANBERRY TRAIL WEST-to-PRINCETON SHORES BOULEVARD	WM-DI-300	300	54.23	1989	346.5	213,508
WTRMN10665	Beachwood Road-to-LAKEVIEW AVENUE	WM-DI-300	300	65	1993	342.7	211,198
WTRMN10666	Beachwood Road-to-WELLINGTON STREET	WM-DI-300	300	65	1993	218.8	134,838
WTRMN10667	Beachwood Road-to-COOK STREET	WM-DI-300	300	65	1993	47.5	29,244
WTRMN10668	Beachwood Road-to-KING STREET	WM-DI-300	300	65	1993	175.5	108,154
WTRMN10669	KING STREET-to-BELLHOLME LANE	WM-DI-300	300	65	1993	265.9	163,870
WTRMN10670	BELLHOLME LANE-to-ARTHUR STREET	WM-DI-300	300	65	1993	212.3	130,848
WTRMN10671	ARTHUR STREET-to-LANE A	WM-DI-300	300	65	1993	64.0	39,409
WTRMN10672	LANE A-to-MACALLISTER STREET NORTH	WM-DI-300	300	65	1993	60.6	37,365
WTRMN10673	MACALLISTER STREET NORTH-to-MACALLISTER STREET NORTH	WM-DI-300	300	65	1993	5.6	3,428
WTRMN10674	MACALLISTER STREET SOUTH-to-LANE C	WM-DI-300	300	65	1993	55.6	34,247
WTRMN10675	LANE C-to-LANE D	WM-DI-300	300	65	1993	65.7	40,482
WTRMN10676	LANE D-to-LANE D	WM-DI-300	300	65	1993	3.0	1,862
WTRMN10677	SYLVIAN ROAD-to-THERESA STREET	WM-DI-300	300	65	1993	109.4	67,426
WTRMN10678	THERESA STREET-to-DELLPARR AVENUE	WM-DI-300	300	65	1993	124.2	76,563
WTRMN10679	DELLPARR AVENUE-to-SELKIRK ROAD	WM-DI-300	300	65	1993	34.8	21,416
WTRMN10680	SELKIRK ROAD-to-YORK STREET	WM-DI-300	300	65	1993	106.8	65,795
WTRMN10681	Beachwood Road-to-Beachwood Road	WM-DI-300	300	65	1993	3.5	2,182
WTRMN10682	Beachwood Road-to-GLENLAKE BOULEVARD	WM-DI-300	300	65	1993	117.2	72,252
WTRMN10683	EDGAR ROAD-to-BROADVIEW STREET	WM-DI-300	300	65	1993	86.7	53,430
WTRMN10684	Beachwood Road-to-BELCHER STREET	WM-DI-300	300	65	1993	30.8	19,002

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10685	BELCHER STREET-to-DOWNER STREET	WM-DI-300	300	65	1993	112.9	69,582
WTRMN10686	Beachwood Road-to-BRAESIDE STREET	WM-DI-300	300	65	1993	46.6	28,712
WTRMN10687	BRAESIDE STREET-to-KOHL STREET	WM-DI-300	300	65	1993	57.1	35,213
WTRMN10688	KOHL STREET-to-SANDELL STREET	WM-DI-300	300	65	1993	140.1	86,332
WTRMN10689	Beachwood Road-to-STALKER STREET	WM-DI-300	300	65	1993	121.6	74,945
WTRMN10690	STALKER STREET	WM-DI-300	300	65	1993	10.8	6,653
WTRMN10691	BARRINGTON TRAIL-to-GEORGIAN MANOR DRIVE	WM-DI-300	300	56.25	1986	201.1	123,918
WTRMN10692	HIGHWAY 26	WM-DI-300	300	60	1989	14.0	8,617
WTRMN10693	HURONIA PATHWAY-to-HIGHWAY 26	WM-DI-400	400	56.25	1986	156.5	124,779
WTRMN10694	HIGHWAY 26-to-HURONIA PATHWAY	WM-DI-300	300	56.25	1986	27.5	16,947
WTRMN10695	HIGHWAY 26-to-HIGHWAY 26	WM-CON-400	400	35	1969	9.8	12,723
WTRMN10696	RON EMO ROAD-to-SANDFORD FLEMING DRIVE	WM-DI-300	300	60	1989	242.4	149,352
WTRMN10697	MACDONALD ROAD-to-MACDONALD ROAD	WM-DI-300	300	60	1989	251.2	154,790
WTRMN10698	HUME STREET-to-MACDONALD ROAD	WM-CI-300	300	24.63	1968	219.4	135,192
WTRMN10699	MACDONALD ROAD-to-MACDONALD ROAD	WM-CI-300	300	33.75	1968	8.6	5,280
WTRMN10700	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	73.75	2000	302.5	186,429
WTRMN10702	RON EMO ROAD	WM-DI-300	300	73.75	2000	4.4	2,883
WTRMN10703	RUSSEL STREET-to-PRETTY RIVER PARKWAY	WM-CI-300	300	10	1949	88.8	54,722
WTRMN10704	HURON STREET-to-SIMCOE STREET	WM-CI-300	300	10	1949	345.9	213,181
WTRMN10705	MINNESOTA STREET	WM-CI-300	300	1	1949	24.4	15,015
WTRMN10706	RAGLAN STREET-to-RAGLAN STREET	WM-CI-300	300	23.75	1960	12.2	7,519
WTRMN10707	HUME STREET-to-FIFTH STREET	WM-CI-300	300	23.75	1960	53.2	32,773
WTRMN10708	FIFTH STREET	WM-CI-300	300	23.75	1960	49.6	30,591
WTRMN10709	(blank)	WM-CI-300	300	11.25	1966	19.5	12,001
WTRMN10710	(blank)	WM-CI-300	300	31.25	1966	51.7	31,838
WTRMN10711	SIXTH STREET	WM-CI-300	300	31.25	1966	15.8	9,740
WTRMN10712	SIXTH STREET-to-SEVENTH STREET	WM-CI-300	300	31.25	1966	106.6	65,685
WTRMN10713	SEVENTH STREET-to-EIGHTH STREET	WM-CI-300	300	31.25	1966	134.6	82,972
WTRMN10714	EIGHTH STREET-to-NINTH STREET	WM-CI-300	300	31.25	1966	114.8	70,770
WTRMN10715	NINTH STREET-to-VICTORY DRIVE	WM-CI-300	300	31.25	1966	93.1	57,379
WTRMN10716	(blank)	WM-CI-300	300	31.25	1966	28.7	17,685
WTRMN10717	ONTARIO STREET-to-FOURTH STREET	WM-CI-300	300	23.75	1960	222.9	137,383
WTRMN10718	MAPLE STREET-to-HURONTARIO STREET	WM-CI-300	300	32.5	1967	262.1	161,494
WTRMN10719	BEECH STREET-to-FIFTH STREET	WM-CI-300	300	32.5	1967	112.5	69,319
WTRMN10720	BIRCH STREET-to-BEECH STREET	WM-CI-300	300	32.5	1967	116.3	71,668
WTRMN10721	OAK STREET-to-FIFTH STREET	WM-CI-300	300	32.5	1967	113.2	69,727
WTRMN10722	COLLINS STREET	WM-CI-300	300	33.75	1968	40.7	25,102
WTRMN10723	(blank)	WM-CI-300	300	33.75	1968	252.8	155,767
WTRMN10724	SIXTH STREET-to-SEVENTH STREET	WM-DI-300	300	45	1977	126.3	77,828
WTRMN10725	SECOND STREET-to-ONTARIO STREET	WM-DI-300	300	48.75	1980	213.2	131,367
WTRMN10726	BIRCH STREET	WM-DI-300	300	51.25	1982	117.7	72,500
WTRMN10727	STEWART ROAD-to-HIGH STREET	WM-DI-300	300	71.25	1998	385.0	237,252
WTRMN10728	SIXTH STREET-to-HIGH STREET	WM-DI-300	300	71.25	1998	35.6	21,940
WTRMN10729	HIGH STREET-to-WATTS CRESCENT	WM-CI-300	300	37.5	1971	134.1	82,631
WTRMN10730	SPRUCE STREET-to-FIFTH STREET	WM-CI-300	300	37.5	1971	112.5	69,352
WTRMN10731	STEWART ROAD-to-FIFTH STREET	WM-CI-300	300	36.25	1970	191.4	117,958
WTRMN10732	STEWART ROAD-to-HIGH STREET	WM-DI-300	300	40	1973	374.4	230,728
WTRMN10733	(blank)	WM-CI-300	300	1	1970	119.9	73,914

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10734	(blank)	WM-CI-300	300	1	1966	90.0	55,483
WTRMN10735	(blank)	WM-CI-300	300	22.81	1966	237.0	146,038
WTRMN10736	FIRST STREET	WM-CI-300	300	1	1966	124.5	76,735
WTRMN10737	FIRST STREET-to-HIGH STREET	WM-DI-300	300	31.25	1966	11.2	6,924
WTRMN10738	SECOND STREET-to-THIRD STREET	WM-CI-300	300	30	1965	222.2	136,924
WTRMN10739	FIRST STREET-to-MOUNTAIN ROAD	WM-CI-300	300	32.5	1967	201.1	123,918
WTRMN10740	(blank)	WM-CI-300	300	20.04	1967	160.5	98,879
WTRMN10741	(blank)	WM-DI-300	300	37.5	1987	75.0	46,236
WTRMN10742	STEWART ROAD-to-STEWART ROAD	WM-DI-300	300	58.75	1988	42.9	26,457
WTRMN10743	STEWART ROAD-to-STEWART ROAD	WM-DI-300	300	58.75	1988	115.1	70,907
WTRMN10744	STEWART ROAD-to-SIXTH STREET	WM-DI-300	300	71.25	1998	22.6	13,917
WTRMN10745	(blank)	WM-DI-300	300	51.45	1987	330.5	203,668
WTRMN10746	MARINA CRESCENT-to-MARINA CRESCENT	WM-CI-300	300	36.25	1970	119.0	73,345
WTRMN10747	HARBOUR STREET EAST-to-MARINA CRESCENT	WM-CI-300	300	36.25	1970	37.2	22,894
WTRMN10748	HARBOUR STREET WEST-to-HARBOUR STREET WEST	WM-DI-300	300	47.5	1979	151.6	93,417
WTRMN10749	HARBOUR STREET WEST-to-HARBOUR STREET WEST	WM-DI-300	300	47.5	1979	11.3	6,957
WTRMN10750	HARBOUR STREET EAST-to-MARINERS HAVEN	WM-CI-300	300	36.25	1970	88.4	54,459
WTRMN10751	BALSAM STREET	WM-DI-300	300	58.75	1988	40.8	25,114
WTRMN10752	BALSAM STREET-to-BALSAM STREET	WM-DI-300	300	58.75	1988	36.4	22,450
WTRMN10753	(blank)	WM-DI-300	300	58.75	1988	17.5	10,767
WTRMN10754	NETTLETON COURT-to-BALSAM STREET	WM-DI-300	300	58.75	1988	68.1	41,968
WTRMN10757	NETTLETON COURT-to-BALSAM STREET	WM-DI-300	300	58.75	1988	63.9	39,398
WTRMN10758	NETTLETON COURT-to-NETTLETON COURT	WM-DI-300	300	58.75	1988	60.2	37,099
WTRMN10759	TROTT BOULEVARD-to-NETTLETON COURT	WM-DI-300	300	58.75	1988	29.6	18,223
WTRMN10760	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	58.75	1988	20.2	12,471
WTRMN10761	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	58.75	1988	46.2	28,478
WTRMN10762	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	58.75	1988	39.9	24,564
WTRMN10763	TROTT BOULEVARD-to-MCINTOSH GATE	WM-DI-300	300	58.75	1988	45.2	27,868
WTRMN10764	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	58.75	1988	28.7	17,666
WTRMN10765	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	58.75	1988	39.7	24,454
WTRMN10766	SHEFFIELD TERRACE-to-TROTT BOULEVARD	WM-DI-300	300	58.75	1988	48.9	30,127
WTRMN10767	SHEFFIELD TERRACE-to-SHEFFIELD TERRACE	WM-DI-300	300	58.75	1988	41.3	25,441
WTRMN10768	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	58.75	1988	49.3	30,395
WTRMN10769	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	57.5	1987	72.3	44,541
WTRMN10770	TROTT BOULEVARD-to-TROTT BOULEVARD	WM-DI-300	300	57.5	1987	51.3	31,619
WTRMN10771	TROTT BOULEVARD-to-BALSAM STREET	WM-CI-300	300	38.75	1972	601.8	370,861
WTRMN10772	HIGHWAY 26-to-HARBOUR STREET EAST	WM-CI-300	300	36.25	1970	40.6	24,993
WTRMN10773	HIGHWAY 26-to-HARBOUR STREET EAST	WM-CI-300	300	36.25	1970	67.3	41,492
WTRMN10774	HARBOUR STREET WEST-to-HARBOUR STREET WEST	WM-DI-300	300	47.5	1979	27.4	16,851
WTRMN10775	ESCARPMENT CRESCENT-to-HARBOUR STREET WEST	WM-DI-300	300	38.75	1972	88.4	54,492
WTRMN10776	DAWSON DRIVE-to-KEITH AVENUE	WM-DI-300	300	38.75	1972	101.4	62,485
WTRMN10777	KEITH AVENUE-to-KEITH AVENUE	WM-DI-300	300	40	1973	61.9	38,136
WTRMN10778	DAWSON DRIVE-to-KEITH AVENUE	WM-DI-300	300	40	1973	18.4	11,314
WTRMN10779	HARBOUR STREET WEST	WM-DI-300	300	57.5	1987	116.8	71,988
WTRMN10780	(blank)	WM-DI-300	300	57.5	1987	93.3	57,519
WTRMN10781	(blank)	WM-DI-300	300	57.5	1987	102.7	63,256
WTRMN10782	ESCARPMENT CRESCENT-to-KEITH AVENUE	WM-DI-300	300	51.25	1982	69.8	42,981
WTRMN10783	DAWSON DRIVE-to-DAWSON DRIVE	WM-DI-300	300	51.25	1982	141.7	87,328

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10784	OXBOW CRESCENT-to-DAWSON DRIVE	WM-DI-300	300	51.25	1982	52.8	32,552
WTRMN10785	DAWSON DRIVE-to-OXBOW CRESCENT	WM-DI-300	300	51.25	1982	10.9	6,731
WTRMN10786	OXBOW CRESCENT-to-DAWSON DRIVE	WM-DI-300	300	51.25	1982	85.2	52,517
WTRMN10787	DAWSON DRIVE-to-DAWSON DRIVE	WM-DI-300	300	51.25	1982	5.5	3,372
WTRMN10788	FAIRWAY CRESCENT-to-OXBOW CRESCENT	WM-DI-300	300	51.25	1982	134.0	82,567
WTRMN10789	DAWSON DRIVE-to-FAIRWAY CRESCENT	WM-DI-300	300	51.25	1982	193.5	119,243
WTRMN10790	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	51.25	1982	58.9	36,296
WTRMN10791	DAWSON DRIVE-to-HIGHWAY 26	WM-DI-300	300	51.25	1982	115.9	71,439
WTRMN10792	WOODLAND COURT-to-DAWSON DRIVE	WM-DI-300	300	73.75	2000	114.5	70,585
WTRMN10793	HIGHWAY 26-to-GUN CLUB ROAD	WM-DI-300	300	51.25	1982	27.0	16,638
WTRMN10794	(blank)	WM-CI-300	300	15.58	1972	172.7	106,406
WTRMN10795	CRANBERRY TRAIL EAST	WM-CI-300	300	32.92	1972	343.0	211,367
WTRMN10796	(blank)	WM-CI-300	300	38.75	1972	158.6	97,742
WTRMN10797	HIGHWAY 26	WM-DI-300	300	66.25	1994	56.0	34,528
WTRMN10798	CRANBERRY TRAIL WEST-to-BARKER BOULEVARD	WM-DI-300	300	66.25	1994	67.1	41,356
WTRMN10799	CRANBERRY TRAIL WEST-to-SUNDIAL COURT	WM-DI-300	300	66.25	1994	87.4	53,832
WTRMN10800	CRANBERRY TRAIL WEST-to-VALLEYMEDE COURT	WM-DI-300	300	68.75	1996	52.3	32,205
WTRMN10801	BARKER BOULEVARD-to-CRANBERRY TRAIL WEST	WM-DI-300	300	68.75	1996	94.3	58,097
WTRMN10802	CRANBERRY TRAIL-to-CRANBERRY TRAIL	WM-DI-300	300	76.25	2002	152.1	93,730
WTRMN10803	CRANBERRY TRAIL WEST-to-BARKER BOULEVARD	WM-DI-150	150	66.25	1994	20.7	9,465
WTRMN10804	CRANBERRY TRAIL WEST-to-ELLEN LANE	WM-DI-300	300	66.25	1994	12.6	7,768
WTRMN10805	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	61.7	38,000
WTRMN10806	(blank)	WM-DI-300	300	71.25	1998	6.3	3,875
WTRMN10807	(blank)	WM-DI-300	300	71.25	1998	4.6	2,829
WTRMN10808	RUSSEL STREET-to-RAGLAN STREET	WM-CI-300	300	10	1949	145.7	89,801
WTRMN10809	TENTH LINE-to-MOUNTAIN ROAD	WM-DI-300	300	57.5	1987	46.7	28,754
WTRMN10810	ONTARIO STREET-to-ONTARIO STREET	WM-DI-300	300	73.75	2000	24.2	14,894
WTRMN10811	OSLER BLUFF ROAD-to-MOUNTAIN ROAD	WM-DI-400	350	76.25	2002	8.5	6,780
WTRMN10812	GREY ROAD 19	WM-PVC-300	350	76.25	2002	44.0	20,072
WTRMN10813	HIGHWAY 26-to-HIGHWAY 26	WM-CON-400	400	35	1969	316.2	412,648
WTRMN10814	HIGHWAY 26-to-HIGHWAY 26	WM-CON-400	400	33.75	1968	195.0	254,526
WTRMN10815	ONTARIO STREET-to-ONTARIO STREET	WM-CON-450	450	33.75	1968	12.4	20,927
WTRMN10816	BELLHOLME LANE	WM-CU-50	50	65	1997	42.1	620
WTRMN10817	STE MARIE STREET-to-STE MARIE STREET	WM-CU-50	50	42.5	1979	43.3	620
WTRMN10818	ONTARIO STREET-to-ELGIN STREET	WM-CU-50	50	42.5	1979	134.5	620
WTRMN10819	SPRUCE STREET-to-HICKORY STREET	WM-CU-50	50	65	1997	102.2	620
WTRMN10820	SPRUCE STREET-to-Spruce	WM-CU-50	50	47.5	1983	48.0	620
WTRMN10821	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-CON-600	600	72.5	1999	88.7	168,431
WTRMN10822	MINNESOTA STREET-to-MINNESOTA STREET	WM-CON-600	600	72.5	1999	41.6	78,951
WTRMN10824	SIMCOE STREET-to-RAGLAN STREET	WM-CON-600	600	72.5	1999	141.3	268,306
WTRMN10825	SIMCOE STREET-to-RAGLAN STREET	WM-CON-600	600	72.5	1999	60.2	114,255
WTRMN10826	(blank)	WM-CON-600	600	72.5	1999	268.0	509,117
WTRMN10827	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	4.4	2,144
WTRMN10828	THOMAS DRIVE	WM-DI-400	400	80	2005	85.0	67,750
WTRMN10829	KELLS CRESCENT-to-THOMAS DRIVE	WM-DI-400	400	80	2005	272.4	217,255
WTRMN10830	THOMAS DRIVE-to-THOMAS DRIVE	WM-DI-400	400	80	2005	36.5	29,144
WTRMN10831	HIGHWAY 26-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	65.6	32,016

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10832	SILVER GLEN BOULEVARD-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	10.0	4,883
WTRMN10833	SILVER GLEN BOULEVARD-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	27.7	13,505
WTRMN10834	SILVER GLEN BOULEVARD-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	33.7	16,437
WTRMN10835	SILVER GLEN BOULEVARD-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	51.1	24,929
WTRMN10836	SILVER GLEN BOULEVARD-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	39.5	19,278
WTRMN10837	SILVER GLEN BOULEVARD-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	8.1	3,939
WTRMN10838	SILVER GLEN BOULEVARD-to-CONSERVATION WAY	WM-DI-150	150	81.25	2006	34.6	16,907
WTRMN10839	CONSERVATION WAY-to-SILVER GLEN BOULEVARD	WM-DI-150	150	85	2009	64.2	31,362
WTRMN10840	SILVER GLEN BOULEVARD-to-SILVER GLEN BOULEVARD	WM-DI-150	150	81.25	2006	23.0	11,241
WTRMN10841	SILVER GLEN BOULEVARD-to-CONSERVATION WAY	WM-DI-150	150	81.25	2006	118.5	57,879
WTRMN10842	CONSERVATION WAY-to-GREENBRIAR DRIVE	WM-DI-150	150	85	2009	78.1	38,132
WTRMN10843	CONSERVATION WAY-to-GREENBRIAR DRIVE	WM-DI-150	150	85	2009	48.7	23,790
WTRMN10844	GREENBRIAR DRIVE-to-GREENBRIAR DRIVE	WM-DI-150	150	85	2009	17.6	8,606
WTRMN10845	MOUNTAIN ROAD-to-MOUNTAIN ROAD	WM-DI-400	400	77.5	2003	4.4	3,515
WTRMN10846	(blank)	WM-DI-400	400	77.5	2003	22.1	17,649
WTRMN10847	SLALOM GATE ROAD	WM-DI-150	150	77.5	2003	6.0	2,930
WTRMN10848	HILL STREET-to-FRANCES DRIVE	WM-DI-400	400	80	2005	221.6	176,751
WTRMN10849	MAIR MILLS DRIVE-to-KELLS CRESCENT	WM-DI-150	150	78.75	2004	98.1	47,889
WTRMN10850	MAIR MILLS DRIVE-to-FRANCES DRIVE	WM-DI-400	400	80	2005	48.7	38,798
WTRMN10851	MAIR MILLS DRIVE-to-KELLS CRESCENT	WM-DI-400	400	80	2005	32.3	25,719
WTRMN10852	THOMAS DRIVE	WM-DI-400	400	80	2005	11.9	9,464
WTRMN10853	THOMAS DRIVE-to-KELLS CRESCENT	WM-DI-400	400	80	2005	26.4	21,045
WTRMN10887	MAIR MILLS DRIVE-to-MAIR MILLS DRIVE	WM-DI-150	150	78.75	2004	34.7	16,929
WTRMN10889	KELLS CRESCENT-to-KELLS CRESCENT	WM-DI-150	150	78.75	2004	8.2	4,008
WTRMN10890	LONG LANE-to-FRANCES DRIVE	WM-DI-150	150	78.75	2004	117.3	57,279
WTRMN10891	KELLS CRESCENT-to-LONG LANE	WM-DI-150	150	78.75	2004	110.6	53,978
WTRMN10892	LONG LANE-to-FRANCES DRIVE	WM-DI-150	150	78.75	2004	116.9	57,079
WTRMN10893	KELLS CRESCENT-to-KELLS CRESCENT	WM-DI-150	150	78.75	2004	24.7	12,056
WTRMN10894	KELLS CRESCENT-to-KELLS CRESCENT	WM-PVC-150	150	78.75	2004	6.4	3,105
WTRMN10895	CONNOR AVENUE-to-CONNOR AVENUE	WM-PVC-150	150	78.75	2004	6.8	3,334
WTRMN10896	CONNOR AVENUE-to-CONNOR AVENUE	WM-PVC-150	150	78.75	2004	40.9	19,959
WTRMN10897	CONNOR AVENUE-to-CONNOR AVENUE	WM-PVC-150	150	78.75	2004	124.8	60,926
WTRMN10898	CONNOR AVENUE-to-CONNOR AVENUE	WM-PVC-150	150	78.75	2004	16.4	8,013
WTRMN10899	CONNOR AVENUE-to-CONNOR AVENUE	WM-PVC-150	150	78.75	2004	54.8	26,730
WTRMN10900	CONNOR AVENUE-to-CONNOR AVENUE	WM-PVC-150	150	78.75	2004	14.1	6,881
WTRMN10901	CONNOR AVENUE-to-BROOKE AVENUE	WM-PVC-150	150	78.75	2004	22.1	10,766
WTRMN10902	BROOKE AVENUE-to-CONNOR AVENUE	WM-PVC-150	150	78.75	2004	46.6	22,767
WTRMN10903	CONNOR AVENUE-to-ALYSSA DRIVE	WM-DI-150	150	81.25	2006	190.2	92,858
WTRMN10904	CONNOR AVENUE-to-ALYSSA DRIVE	WM-PVC-150	150	78.75	2004	168.8	82,421
WTRMN10905	BROOKE AVENUE-to-CONNOR AVENUE	WM-DI-150	150	81.25	2006	87.0	42,470
WTRMN10906	CONNOR AVENUE-to-SHERWOOD STREET	WM-PVC-150	150	78.75	2004	87.0	42,477

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10907	ALYSSA DRIVE-to-CULLEN COURT	WM-DI-150	150	78.75	2004	41.7	20,338
WTRMN10908	CULLEN COURT	WM-DI-150	150	78.75	2004	17.3	8,466
WTRMN10909	BROOKE AVENUE-to-BROOKE AVENUE	WM-DI-150	150	81.25	2006	8.0	3,881
WTRMN10910	BROOKE AVENUE-to-ALYSSA DRIVE	WM-DI-150	150	81.25	2006	170.7	83,361
WTRMN10911	BROOKE AVENUE-to-CONNOR AVENUE	WM-DI-150	150	81.25	2006	81.4	39,734
WTRMN10912	BROOKE AVENUE-to-SHERWOOD STREET	WM-DI-150	150	83.75	2008	43.9	21,446
WTRMN10913	BROOKE AVENUE-to-SHERWOOD STREET	WM-DI-150	150	83.75	2008	155.9	76,091
WTRMN10914	SHERWOOD STREET-to-SHERWOOD STREET	WM-DI-150	150	83.75	2008	7.5	3,659
WTRMN10915	SHERWOOD STREET	WM-DI-150	150	83.75	2008	10.0	4,868
WTRMN10916	SHERWOOD STREET-to-SHERWOOD STREET	WM-DI-150	150	83.75	2008	33.6	16,405
WTRMN10917	SHERWOOD STREET-to-SHERWOOD STREET	WM-DI-150	150	83.75	2008	30.0	14,624
WTRMN10918	BROOKE AVENUE-to-SHERWOOD STREET	WM-DI-150	150	83.75	2008	53.5	26,134
WTRMN10919	ALYSSA DRIVE-to-KAYLA CRESCENT	WM-DI-150	150	78.75	2004	19.4	9,483
WTRMN10920	ALYSSA DRIVE-to-ALYSSA DRIVE	WM-DI-150	150	78.75	2004	62.4	30,488
WTRMN10921	KAYLA CRESCENT-to-ALYSSA DRIVE	WM-DI-150	150	78.75	2004	37.5	18,317
WTRMN10922	ALYSSA DRIVE-to-KAYLA CRESCENT	WM-DI-150	150	78.75	2004	99.8	48,739
WTRMN10923	SIXTH STREET-to-CHAMBERLAIN CRESCENT	WM-DI-200	200	81.25	2006	256.6	120,919
WTRMN10924	HIGH STREET-to-HIGH STREET	WM-DI-200	200	81.25	2006	24.0	11,308
WTRMN10925	CHAMBERLAIN CRESCENT-to-GRIFFIN ROAD	WM-DI-200	200	81.25	2006	55.7	26,223
WTRMN10926	BARR STREET-to-HIGH STREET	WM-DI-150	150	81.25	2006	77.5	37,839
WTRMN10927	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	40.3	19,676
WTRMN10929	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	32.1	15,653
WTRMN10930	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	73.1	35,678
WTRMN10931	CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	38.2	18,637
WTRMN10932	HOLDEN STREET-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	50.4	24,608
WTRMN10933	DAVIS STREET-to-HOLDEN STREET	WM-DI-150	150	81.25	2006	90.0	43,950
WTRMN10934	DAVIS STREET-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	80.5	39,324
WTRMN10935	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	272.4	132,975
WTRMN10936	CHAMBERLAIN CRESCENT-to-DAVIS STREET	WM-DI-150	150	81.25	2006	253.5	123,791
WTRMN10937	DAVIS STREET-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	34.0	16,602
WTRMN10938	CHAMBERLAIN CRESCENT-to-HOLDEN STREET	WM-DI-150	150	81.25	2006	109.2	53,292
WTRMN10939	CHAMBERLAIN CRESCENT-to-HOLDEN STREET	WM-DI-150	150	81.25	2006	269.7	131,696
WTRMN10940	DAVIS STREET-to-HOLDEN STREET	WM-DI-150	150	81.25	2006	87.5	42,742
WTRMN10941	CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	53.7	26,234
WTRMN10942	HOLDEN STREET-to-PATTON STREET	WM-DI-150	150	81.25	2006	88.7	43,304
WTRMN10943	PATTON STREET-to-BARR STREET	WM-DI-150	150	81.25	2006	87.4	42,668
WTRMN10944	CHAMBERLAIN CRESCENT-to-PATTON STREET	WM-DI-150	150	81.25	2006	231.0	112,800
WTRMN10945	PATTON STREET-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	110.6	54,000
WTRMN10946	PATTON STREET-to-BARR STREET	WM-DI-150	150	81.25	2006	33.3	16,278
WTRMN10947	PATTON STREET-to-PATTON STREET	WM-DI-150	150	81.25	2006	31.9	15,579
WTRMN10948	PATTON STREET-to-PATTON STREET	WM-DI-150	150	81.25	2006	29.9	14,604
WTRMN10949	CHAMBERLAIN CRESCENT-to-PATTON STREET	WM-DI-150	150	81.25	2006	214.8	104,876
WTRMN10950	COLLINS STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	120.0	69,727
WTRMN10951	COLLINS STREET-to-PEEL STREET	WM-DI-200	200	81.25	2006	105.9	53,322

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN10952	WILLIAMS STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	146.2	84,950
WTRMN10953	WILLIAMS STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	52.4	30,469
WTRMN10954	PEEL STREET-to-PEEL STREET	WM-DI-200	200	81.25	2006	43.3	21,831
WTRMN10955	PEEL STREET-to-MCKEAN CRESCENT	WM-DI-200	200	81.25	2006	59.6	30,039
WTRMN10956	PEEL STREET-to-PEEL STREET	WM-DI-200	200	81.25	2006	42.9	21,610
WTRMN10957	PEEL STREET-to-GEORGE ZUBEK DRIVE	WM-DI-200	200	81.25	2006	125.8	63,382
WTRMN10958	PEEL STREET-to-PEEL STREET	WM-DI-200	200	81.25	2006	11.7	5,915
WTRMN10959	COLLINS STREET-to-PEEL STREET	WM-DI-200	200	81.25	2006	11.4	5,746
WTRMN10960	LYNDEN STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	75.5	43,889
WTRMN10961	WILLIAMS STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	44.0	25,544
WTRMN10962	WILLIAMS STREET-to-WILLIAMS STREET	WM-DI-250	250	81.25	2006	12.2	7,087
WTRMN10963	GEORGE ZUBEK DRIVE	WM-DI-150	150	81.25	2006	28.9	14,108
WTRMN10964	MCKEAN CRESCENT-to-PEEL STREET	WM-DI-150	150	81.25	2006	2.4	1,152
WTRMN10965	COLLINS STREET-to-COLLINS STREET	WM-DI-150	150	81.25	2006	16.7	8,150
WTRMN10966	COLLINS STREET-to-COLLINS STREET	WM-DI-150	150	81.25	2006	16.7	8,142
WTRMN10967	HIGHWAY 26-to-HIGHWAY 26	WM-DI-200	200	82.5	2007	24.5	12,350
WTRMN10968	HIGHWAY 26-to-HIGHWAY 26	WM-DI-200	200	82.5	2007	33.0	16,601
WTRMN10969	HIGHWAY 26-to-BARRINGTON TRAIL	WM-DI-200	200	82.5	2007	47.5	23,906
WTRMN10970	BARTLETT BOULEVARD-to-MARINE VIEW DRIVE	WM-DI-200	200	82.5	2007	13.9	7,002
WTRMN10971	BARRINGTON TRAIL-to-BARRINGTON TRAIL	WM-DI-150	150	82.5	2007	16.7	8,127
WTRMN10972	BARRINGTON TRAIL-to-BARTLETT BOULEVARD	WM-DI-150	150	82.5	2007	21.5	10,507
WTRMN10973	BARRINGTON TRAIL-to-CLUBHOUSE DRIVE	WM-PVC-150	150	82.5	2007	17.9	8,713
WTRMN10975	PEEL STREET-to-PEEL STREET	WM-DI-200	200	81.25	2006	24.5	12,337
WTRMN10976	GEORGE ZUBEK DRIVE-to-PEEL STREET	WM-DI-150	150	81.25	2006	7.4	3,623
WTRMN10977	PEEL STREET	WM-DI-150	150	81.25	2006	3.7	1,802
WTRMN10978	PEEL STREET-to-PEEL STREET	WM-DI-150	150	81.25	2006	21.1	10,314
WTRMN10979	MCKEAN CRESCENT-to-LYNDEN STREET	WM-DI-200	200	81.25	2006	154.4	77,757
WTRMN10980	COLLINS STREET-to-COLLINS STREET	WM-DI-250	250	81.25	2006	4.4	2,539
WTRMN10981	COLLINS STREET-to-SPROULE AVENUE	WM-DI-250	250	81.25	2006	7.0	4,064
WTRMN10982	COLLINS STREET-to-COLLINS STREET	WM-DI-250	250	81.25	2006	12.4	7,179
WTRMN11010	CONNELL STREET-to-CONNELL STREET	WM-DI-300	300	68.75	1996	16.4	10,132
WTRMN11011	(blank)	WM-DI-400	400	68.75	1996	56.9	45,413
WTRMN11012	RAGLAN STREET-to-ONTARIO STREET	WM-DI-400	400	68.75	1996	88.8	70,777
WTRMN11013	ONTARIO STREET-to-ONTARIO STREET	WM-DI-400	400	68.75	1996	35.8	28,544
WTRMN11014	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-DI-400	400	68.75	1996	104.4	83,266
WTRMN11015	RONELL CRESCENT-to-PRETTY RIVER PARKWAY	WM-DI-400	400	68.75	1996	311.0	248,023
WTRMN11016	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	WM-DI-400	400	68.75	1996	62.2	49,601
WTRMN11017	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	WM-DI-400	400	68.75	1996	89.4	71,327
WTRMN11018	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-DI-400	400	68.75	1996	22.0	17,542
WTRMN11019	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-DI-400	400	68.75	1996	148.3	118,275
WTRMN11020	MACDONALD ROAD-to-MACDONALD ROAD	WM-DI-300	300	68.75	1996	15.6	9,631
WTRMN11021	MACDONALD ROAD-to-CONNELL STREET	WM-DI-400	400	68.75	1996	42.3	33,702
WTRMN11022	MACDONALD ROAD-to-MACDONALD ROAD	WM-DI-400	400	68.75	1996	12.8	10,231
WTRMN11023	HIGHWAY 26-to-HIGHWAY 26	WM-DI-300	300	68.75	1996	55.1	33,925
WTRMN11024	HIGHWAY 26-to-HIGHWAY 26	WM-DI-400	400	68.75	1996	260.2	207,499
WTRMN11025	HIGHWAY 26-to-HIGHWAY 26	WM-DI-400	400	68.75	1996	25.0	19,969
WTRMN11026	HIGHWAY 26-to-MACDONALD ROAD	WM-DI-400	400	68.75	1996	60.5	48,220
WTRMN11027	MACDONALD ROAD-to-MACDONALD ROAD	WM-DI-400	400	68.75	1996	99.1	79,030

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11031	(blank)	WM-DI-400	400	68.75	1996	38.4	30,624
WTRMN11032	(blank)	WM-CON-600	600	71.25	1998	31.3	59,397
WTRMN11033	(blank)	WM-CON-600	600	71.25	1998	6.8	12,869
WTRMN11034	(blank)	WM-CON-600	600	71.25	1998	74.1	140,679
WTRMN11035	(blank)	WM-DI-400	400	35	1969	13.3	10,608
WTRMN11036	(blank)	WM-DI-400	400	35	1969	5.9	4,735
WTRMN11037	(blank)	WM-CON-600	600	71.25	1998	7.6	14,459
WTRMN11038	(blank)	WM-CON-600	600	71.25	1998	9.2	17,426
WTRMN11039	OSLER BLUFF ROAD-to-HOLLY COURT	WM-DI-150	150	76.25	2002	86.8	42,363
WTRMN11040	HOLLY COURT-to-HOLLY COURT	WM-DI-150	150	76.25	2002	46.5	22,715
WTRMN11041	HOLLY COURT-to-HOLLY COURT	WM-DI-150	150	76.25	2002	79.2	38,675
WTRMN11042	HOLLY COURT-to-HOLLY COURT	WM-DI-150	150	76.25	2002	67.7	33,050
WTRMN11043	EVERGREEN ROAD-to-EVERGREEN ROAD	WM-DI-200	200	76.25	2002	16.2	8,144
WTRMN11044	EVERGREEN ROAD-to-LAUREL BOULEVARD	WM-DI-200	200	76.25	2002	176.1	88,693
WTRMN11045	EVERGREEN ROAD-to-EVERGREEN ROAD	WM-DI-200	200	76.25	2002	100.6	50,663
WTRMN11046	LAUREL BOULEVARD-to-EVERGREEN ROAD	WM-DI-200	200	76.25	2002	60.7	30,580
WTRMN11047	EVERGREEN ROAD-to-EVERGREEN ROAD	WM-DI-200	200	72.5	1999	65.2	32,861
WTRMN11048	LAUREL BOULEVARD-to-JUNIPER COURT	WM-DI-200	200	72.5	1999	294.6	148,377
WTRMN11049	LAUREL BOULEVARD-to-LAUREL BOULEVARD	WM-DI-200	200	72.5	1999	60.2	30,311
WTRMN11050	OSLER BLUFF ROAD-to-JUNIPER COURT	WM-DI-200	200	72.5	1999	105.3	53,052
WTRMN11146	SUNDIAL COURT	WM-PVC-150	150	71.25	1998	8.1	3,959
WTRMN11155	MOUNTAIN ROAD-to-EVERGREEN ROAD	WM-DI-200	200	76.25	2002	28.0	14,087
WTRMN11217	SAUNDERS STREET	WM-DI-150	150	81.25	2006	4.7	2,276
WTRMN11221	CAMBRIDGE STREET-to-CAMBRIDGE STREET	WM-DI-200	200	80	2005	119.8	60,343
WTRMN11222	WILDROSE TRAIL-to-WILDROSE TRAIL	WM-DI-200	200	82.5	2007	12.7	6,378
WTRMN11223	JOSEPH TRAIL-to-JOSEPH TRAIL	WM-DI-200	200	82.5	2007	39.0	19,633
WTRMN11224	JOSEPH TRAIL-to-JOSEPH TRAIL	WM-DI-200	200	82.5	2007	10.2	5,139
WTRMN11225	JEFFREYS WAY-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	23.9	12,058
WTRMN11226	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	10.3	5,204
WTRMN11227	JOSEPH TRAIL-to-JEFFREYS WAY	WM-DI-200	200	82.5	2007	125.2	63,071
WTRMN11228	WILDROSE TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	16.4	8,244
WTRMN11229	SIERRA TRAIL	WM-DI-200	200	82.5	2007	8.7	4,400
WTRMN11230	JEFFREYS WAY-to-WILDROSE TRAIL	WM-DI-200	200	82.5	2007	16.1	8,103
WTRMN11231	(blank)	WM-DI-500	600	71.25	1998	18.7	20,355
WTRMN11232	(blank)	WM-CON-600	600	71.25	1998	33.7	63,996
WTRMN11233	(blank)	WM-CON-600	600	71.25	1998	2.4	4,462
WTRMN11234	(blank)	WM-CON-600	600	71.25	1998	5.0	9,568
WTRMN11235	(blank)	WM-DI-500	600	71.25	1998	15.9	17,331
WTRMN11236	(blank)	WM-DI-500	600	71.25	1998	21.8	23,651
WTRMN11237	(blank)	WM-DI-500	600	71.25	1998	15.4	16,762
WTRMN11238	(blank)	WM-DI-500	750	71.25	1998	17.7	19,269
WTRMN11239	(blank)	WM-CON-600	1067	35	1969	5.6	10,651
WTRMN11240	(blank)	WM-DI-400	400	35	1969	1.7	1,344
WTRMN11241	(blank)	WM-DI-500	600	71.25	1998	8.2	8,923
WTRMN11246	SIDE LAUNCH WAY-to-SewageSIDE LANE	WM-DI-250	250	83.75	2008	213.9	124,300
WTRMN11248	HERITAGE DRIVE	WM-DI-150	150	83.75	2008	13.1	6,380
WTRMN11250	SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	6.9	3,382
WTRMN11251	SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	6.6	3,242

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11252	SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	6.6	3,242
WTRMN11253	SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	14.4	7,024
WTRMN11254	SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	6.6	3,231
WTRMN11255	SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	14.5	7,080
WTRMN11256	HERITAGE DRIVE	WM-DI-150	150	83.75	2008	13.1	6,380
WTRMN11257	WESTMOUNT MEWS	WM-DI-150	150	83.75	2008	90.1	43,970
WTRMN11258	MONTCLAIR MEWS	WM-DI-150	150	83.75	2008	115.9	56,602
WTRMN11259	MONTCLAIR MEWS-to-MONTCLAIR MEWS	WM-DI-150	150	83.75	2008	6.0	2,930
WTRMN11260	COLLSHIP LANE-to-COLLSHIP LANE	WM-DI-150	150	83.75	2008	11.3	5,530
WTRMN11261	NORTH MAPLE STREET-to-COLLSHIP LANE	WM-DI-150	150	83.75	2008	15.7	7,680
WTRMN11262	COLLSHIP LANE-to-COLLSHIP LANE	WM-DI-150	150	83.75	2008	13.2	6,433
WTRMN11263	COLLSHIP LANE-to-COLLSHIP LANE	WM-DI-150	150	83.75	2008	13.2	6,466
WTRMN11264	COLLSHIP LANE-to-COLLSHIP LANE	WM-DI-150	150	83.75	2008	31.6	15,446
WTRMN11265	COLLSHIP LANE-to-COLLSHIP LANE	WM-DI-150	150	83.75	2008	13.3	6,468
WTRMN11266	COLLSHIP LANE-to-COLLSHIP LANE	WM-DI-150	150	83.75	2008	13.2	6,433
WTRMN11267	COLLSHIP LANE-to-PINE STREET	WM-DI-150	150	83.75	2008	4.0	1,940
WTRMN11268	COLLSHIP LANE-to-SIDE LAUNCH WAY	WM-DI-250	250	83.75	2008	170.8	99,293
WTRMN11269	COLLSHIP LANE-to-PINE STREET	WM-DI-250	250	83.75	2008	6.8	3,932
WTRMN11270	COLLSHIP LANE-to-PINE STREET	WM-DI-250	250	83.75	2008	2.2	1,300
WTRMN11271	WESTMOUNT MEWS-to-WESTMOUNT MEWS	WM-DI-150	150	83.75	2008	12.3	6,016
WTRMN11272	WESTMOUNT MEWS-to-WESTMOUNT MEWS	WM-DI-150	150	83.75	2008	11.7	5,689
WTRMN11273	SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	13.8	6,730
WTRMN11275	POPLAR SIDEROAD-to-POPLAR SIDEROAD	WM-DI-150	150	82.5	2007	2.6	1,269
WTRMN11276	POPLAR SIDEROAD	WM-DI-150	150	82.5	2007	9.0	4,411
WTRMN11277	FINDLAY DRIVE-to-POPLAR SIDEROAD	WM-DI-150	150	81.25	2006	489.5	238,995
WTRMN11278	HURONTARIO STREET-to-STANLEY STREET	WM-DI-150	150	81.25	2006	3.2	1,560
WTRMN11279	SAUNDERS STREET-to-HURONTARIO STREET	WM-DI-150	150	81.25	2006	718.4	350,749
WTRMN11280	HUGHES STREET-to-PORTLAND STREET	WM-DI-150	150	82.5	2007	366.0	178,714
WTRMN11281	ROBERTSON STREET-to-COOPER STREET	WM-DI-150	150	82.5	2007	79.5	38,816
WTRMN11282	COOPER STREET-to-PORTLAND STREET	WM-DI-150	150	82.5	2007	130.4	63,649
WTRMN11283	COOPER STREET-to-COOPER STREET	WM-DI-150	150	82.5	2007	9.2	4,488
WTRMN11284	HUGHES STREET-to-ROBERTSON STREET	WM-DI-500	500	82.5	2007	134.8	146,628
WTRMN11285	HUGHES STREET-to-HUGHES STREET	WM-DI-150	150	82.5	2007	13.8	6,734
WTRMN11286	HUGHES STREET-to-HUGHES STREET	WM-DI-500	500	82.5	2007	13.8	15,000
WTRMN11287	HUGHES STREET-to-HUGHES STREET	WM-DI-150	150	82.5	2007	18.5	9,013
WTRMN11288	HURONTARIO STREET-to-HUGHES STREET	WM-DI-500	500	82.5	2007	110.6	120,226
WTRMN11289	HURONTARIO STREET-to-HUGHES STREET	WM-DI-500	500	82.5	2007	107.7	117,067
WTRMN11290	(blank)	WM-DI-500	500	82.5	2007	4.2	4,601
WTRMN11291	HUGHES STREET-to-HURONTARIO STREET	WM-DI-500	500	82.5	2007	2.3	2,501
WTRMN11292	HUGHES STREET-to-HURONTARIO STREET	WM-DI-500	500	82.5	2007	2.7	2,923
WTRMN11293	HURONTARIO STREET-to-HURONTARIO STREET	WM-DI-300	300	81.25	2006	4.2	2,585
WTRMN11294	HURONTARIO STREET-to-HURONTARIO STREET	WM-DI-300	300	81.25	2006	16.4	10,107
WTRMN11295	SAUNDERS STREET-to-NEWBOURNE STREET	WM-DI-150	150	81.25	2006	442.8	216,187
WTRMN11296	STANLEY STREET-to-MARY STREET	WM-DI-150	150	81.25	2006	121.8	59,463
WTRMN11297	NEWBOURNE STREET	WM-DI-150	150	81.25	2006	136.1	66,461
WTRMN11298	HURONTARIO STREET-to-HUGHES STREET	WM-DI-500	500	82.5	2007	25.2	27,356
WTRMN11300	HURONTARIO STREET-to-GOLFVIEW DRIVE	WM-DI-150	150	81.25	2006	40.9	19,983
WTRMN11301	PORTLAND STREET-to-POPLAR SIDEROAD	WM-DI-500	500	82.5	2007	198.8	216,157

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11302	POPLAR SIDEROAD-to-POPLAR SIDEROAD	WM-DI-500	500	82.5	2007	358.6	389,934
WTRMN11303	POPLAR SIDEROAD-to-POPLAR SIDEROAD	WM-DI-300	300	82.5	2007	39.3	24,233
WTRMN11304	(blank)	WM-DI-500	500	82.5	2007	10.0	10,916
WTRMN11305	(blank)	WM-DI-500	500	82.5	2007	5.9	6,415
WTRMN11306	GOLFVIEW DRIVE	WM-DI-150	150	81.25	2006	126.8	61,919
WTRMN11307	POPLAR SIDEROAD	WM-DI-300	300	82.5	2007	102.3	63,052
WTRMN11308	POPLAR SIDEROAD	WM-DI-500	500	82.5	2007	22.4	24,408
WTRMN11309	POPLAR SIDEROAD	WM-DI-500	500	82.5	2007	22.4	24,408
WTRMN11310	HUGHES STREET-to-HUGHES STREET	WM-DI-150	150	82.5	2007	2.9	1,399
WTRMN11311	HUGHES STREET-to-HUGHES STREET	WM-DI-500	500	82.5	2007	2.1	2,391
WTRMN11312	MCKEAN CRESCENT-to-PEEL STREET	WM-DI-150	150	81.25	2006	81.3	39,677
WTRMN11313	COLLINS STREET	WM-CU-50	50	76.25	2006	21.4	620
WTRMN11314	MCKEAN CRESCENT-to-MCKEAN CRESCENT	WM-DI-150	150	81.25	2006	3.9	1,915
WTRMN11315	PEEL STREET-to-MCKEAN CRESCENT	WM-DI-200	200	81.25	2006	47.6	23,990
WTRMN11316	MCKEAN CRESCENT-to-MCKEAN CRESCENT	WM-DI-150	150	81.25	2006	82.0	40,045
WTRMN11317	MCKEAN CRESCENT-to-MCKEAN CRESCENT	WM-DI-150	150	81.25	2006	6.8	3,342
WTRMN11318	MCKEAN CRESCENT-to-PEEL STREET	WM-DI-150	150	81.25	2006	102.5	50,051
WTRMN11319	MCKEAN CRESCENT-to-MCKEAN CRESCENT	WM-DI-150	150	81.25	2006	7.9	3,859
WTRMN11320	MCKEAN CRESCENT-to-MCKEAN CRESCENT	WM-DI-150	150	81.25	2006	7.6	3,718
WTRMN11321	BARRINGTON TRAIL-to-SILVER CRESCENT	WM-DI-150	150	82.5	2007	181.9	88,830
WTRMN11322	SILVER CRESCENT-to-SILVER CRESCENT	WM-DI-150	150	82.5	2007	98.6	48,154
WTRMN11323	SILVER CRESCENT-to-SILVER CRESCENT	WM-DI-150	150	82.5	2007	12.8	6,255
WTRMN11326	MOUNTAIN ROAD	WM-DI-150	150	57.5	1987	11.4	5,549
WTRMN11327	BALSAM STREET-to-OLD MOUNTAIN ROAD	WM-CI-250	250	32.5	1967	20.0	11,639
WTRMN11332	OLD MOUNTAIN ROAD-to-OLD MOUNTAIN ROAD	WM-DI-200	200	82.5	2007	10.2	5,133
WTRMN11333	MOUNTAIN ROAD-to-FIRST STREET	WM-DI-200	200	80	2005	112.9	56,869
WTRMN11339	(blank)	WM-DI-150	150	77.5	2003	7.2	3,526
WTRMN11345	CAMBRIDGE STREET	WM-DI-150	150	80	2005	16.2	7,914
WTRMN11346	BALSAM STREET	WM-CI-200	200	30	1965	5.0	2,512
WTRMN11347	CRANBERRY TRAIL EAST-to-ROYALTON LANE	WM-DI-150	150	78.75	2004	14.5	7,073
WTRMN11357	RAGLAN STREET	WM-DI-200	200	81.25	2006	0.6	290
WTRMN11358	MOUNTAIN ROAD-to-ELEVENTH LINE	WM-DI-400	400	80	2005	1.4	1,089
WTRMN11361	THOMAS DRIVE	WM-DI-400	400	80	2005	4.7	3,704
WTRMN11399	RAGLAN STREET-to-MATTHEW WAY	WM-DI-150	150	62.5	1991	14.4	7,032
WTRMN11400	CONNOR AVENUE-to-BROOKE AVENUE	WM-DI-150	150	81.25	2006	43.1	21,032
WTRMN11401	ALYSSA DRIVE-to-KAYLA CRESCENT	WM-DI-150	150	80	2005	20.7	10,092
WTRMN11402	ALYSSA DRIVE-to-CULLEN COURT	WM-DI-150	150	78.75	2004	20.5	10,016
WTRMN11403	GEORGIAN MEADOWS DRIVE	WM-DI-150	150	76.25	2002	4.8	2,359
WTRMN11404	GEORGIAN MEADOWS DRIVE	WM-DI-150	150	76.25	2002	4.8	2,325
WTRMN11405	SHERWOOD STREET	WM-CU-50	50	78.75	2008	30.7	620
WTRMN11409	MOUNTAIN ROAD-to-MOUNTAIN ROAD	WM-DI-150	150	80	2005	4.4	1,998
WTRMN11410	MAIR MILLS DRIVE-to-FRANCES DRIVE	WM-DI-400	400	80	2005	1.3	1,005
WTRMN11411	KELLS CRESCENT-to-MAIR MILLS DRIVE	WM-DI-400	400	80	2005	1.5	1,208
WTRMN11413	BALSAM STREET-to-BOARDWALK AVENUE	WM-DI-150	150	81.25	2006	14.0	6,825
WTRMN11414	CRANBERRY TRAIL WEST	WM-DI-150	150	66.25	1994	8.9	4,047
WTRMN11415	(blank)	WM-CI-300	300	10	1949	16.3	10,724
WTRMN11416	HURON STREET-to-SewageSIDE LANE	WM-DI-250	250	83.75	2008	45.2	26,243
WTRMN11419	MINNESOTA STREET-to-MINNESOTA STREET	WM-DI-200	200	82.5	2007	15.6	7,870

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11420	FINDLAY DRIVE-to-LOCKERBIE CRESCENT	WM-DI-150	150	83.75	2008	438.0	213,846
WTRMN11421	GARBUTT CRESCENT-to-GARBUTT CRESCENT	WM-DI-150	150	88.75	2012	94.5	46,123
WTRMN11422	GILPIN CRESCENT-to-DANCE STREET	WM-DI-500	450	83.75	2008	92.5	107,531
WTRMN11423	DANCE STREET-to-SAUNDERS STREET	WM-DI-500	450	83.75	2008	239.8	278,736
WTRMN11424	WILSON STREET-to-LOCKERBIE CRESCENT	WM-DI-150	150	93.75	2016	90.8	44,336
WTRMN11425	LOCKERBIE CRESCENT-to-WILSON STREET	WM-DI-150	150	96.25	2018	528.9	258,238
WTRMN11426	CLARK STREET-to-WILSON STREET	WM-DI-150	150	93.75	2016	91.2	44,531
WTRMN11427	LOCKERBIE CRESCENT-to-LOCKERBIE CRESCENT	WM-DI-150	150	93.75	2016	347.3	169,579
WTRMN11428	GARBUTT CRESCENT-to-DANCE STREET	WM-DI-150	150	86.25	2010	76.6	37,409
WTRMN11429	GARBUTT CRESCENT-to-GARBUTT CRESCENT	WM-DI-150	150	88.75	2012	203.9	99,571
WTRMN11430	FINDLAY DRIVE	WM-DI-150	150	97.5	2019	338.8	165,392
WTRMN11431	HIGHWAY 26-to-HIGHWAY 26	WM-DI-200	200	82.5	2007	9.0	4,519
WTRMN11436	OSLER BLUFF ROAD-to-OSLER BLUFF ROAD	WM-DI-200	200	81.25	2006	16.6	8,383
WTRMN11443	CRANBERRY TRAIL EAST-to-JOSEPH TRAIL	WM-DI-300	300	82.5	2007	0.6	414
WTRMN11444	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	19.2	11,852
WTRMN11445	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	30.2	15,218
WTRMN11446	JEFFREYS WAY-to-WILDROSE TRAIL	WM-DI-200	200	82.5	2007	96.8	48,736
WTRMN11447	JOSEPH TRAIL-to-JEFFREYS WAY	WM-DI-200	200	82.5	2007	28.7	14,479
WTRMN11448	WILDROSE TRAIL-to-WILDROSE TRAIL	WM-DI-200	200	82.5	2007	28.3	14,245
WTRMN11449	JOSEPH TRAIL-to-JOSEPH TRAIL	WM-DI-200	200	82.5	2007	48.8	24,586
WTRMN11450	SIERRA TRAIL-to-WILDROSE TRAIL	WM-DI-200	200	82.5	2007	53.9	27,165
WTRMN11451	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	25.1	12,621
WTRMN11452	SIERRA TRAIL-to-ALBANY STREET	WM-CU-50	50	77.5	2007	4.4	620
WTRMN11453	SIERRA TRAIL-to-SIERRA TRAIL	WM-CU-50	50	77.5	2007	3.8	620
WTRMN11454	SIERRA TRAIL-to-SIERRA TRAIL	WM-CU-50	50	77.5	2007	3.8	620
WTRMN11455	JOSEPH TRAIL-to-JOSEPH TRAIL	WM-DI-200	200	82.5	2007	25.8	13,010
WTRMN11456	SIERRA TRAIL-to-SIERRA TRAIL	WM-CU-50	50	77.5	2007	24.8	620
WTRMN11457	SIERRA TRAIL-to-SIERRA TRAIL	WM-CU-50	50	77.5	2007	4.4	620
WTRMN11458	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	48.6	29,920
WTRMN11459	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	9.3	5,721
WTRMN11460	CRANBERRY TRAIL EAST-to-JOSEPH TRAIL	WM-DI-300	300	82.5	2007	6.1	3,744
WTRMN11461	JOSEPH TRAIL-to-JOSEPH TRAIL	WM-DI-200	200	82.5	2007	4.6	2,291
WTRMN11462	JOSEPH TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	3.7	1,875
WTRMN11463	JOSEPH TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	3.8	1,935
WTRMN11464	JOSEPH TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	5.6	2,793
WTRMN11465	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	5.9	2,955
WTRMN11466	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	35.8	18,035
WTRMN11467	WILDROSE TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	3.1	1,559
WTRMN11468	WILDROSE TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	2.4	1,206
WTRMN11469	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	3.3	1,676
WTRMN11471	DAWSON DRIVE-to-HARBOUR STREET WEST	WM-DI-300	300	38.75	1972	6.2	3,839
WTRMN11473	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	3.7	2,298
WTRMN11474	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	36.6	22,581
WTRMN11475	CRANBERRY TRAIL EAST-to-JOSEPH TRAIL	WM-DI-300	300	82.5	2007	7.0	4,599
WTRMN11476	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	7.2	4,423
WTRMN11477	CRANBERRY TRAIL EAST-to-JOSEPH TRAIL	WM-DI-300	300	82.5	2007	156.7	96,563
WTRMN11478	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	2.9	1,754
WTRMN11479	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	4.4	2,678

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11480	JOSEPH TRAIL-to-JOSEPH TRAIL	WM-DI-200	200	82.5	2007	6.4	3,213
WTRMN11481	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	75.3	46,415
WTRMN11482	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	47.5	29,265
WTRMN11483	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	17.5	8,806
WTRMN11484	JEFFREYS WAY-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	4.1	2,084
WTRMN11485	JEFFREYS WAY-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	4.1	2,048
WTRMN11486	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	13.4	6,772
WTRMN11487	SIERRA TRAIL-to-SIERRA TRAIL	WM-CU-50	50	77.5	2007	1.5	620
WTRMN11488	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	16.2	8,168
WTRMN11489	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	10.0	5,043
WTRMN11490	SIERRA TRAIL-to-SIERRA TRAIL	WM-DI-200	200	82.5	2007	3.7	1,859
WTRMN11491	(blank)	WM-CU-50	50	77.5	2007	1.5	620
WTRMN11494	HIGHWAY 26-to-MACDONALD ROAD	WM-DI-400	400	68.75	1996	38.9	31,032
WTRMN11495	FIFTH STREET-to-MACDONALD ROAD	WM-DI-150	150	82.5	2007	3.3	1,487
WTRMN11496	HIGHWAY 26-to-GUN CLUB ROAD	WM-CI-300	300	38.75	1972	3.7	2,265
WTRMN11497	FIFTH STREET-to-FIFTH STREET	WM-DI-150	150	45	1977	8.7	4,268
WTRMN11498	FIFTH STREET-to-FIFTH STREET	WM-CI-200	200	32.5	1967	2.7	1,360
WTRMN11499	FIFTH STREET-to-SPRUCE STREET	WM-CI-300	300	37.5	1971	9.9	6,085
WTRMN11500	HIGHWAY 26-to-HIGHWAY 26	WM-DI-400	400	68.75	1996	340.3	271,373
WTRMN11501	HIGHWAY 26-to-HIGHWAY 26	WM-DI-400	400	68.75	1996	140.6	112,116
WTRMN11502	HIGHWAY 26-to-HIGHWAY 26	WM-DI-400	400	68.75	1996	167.8	133,830
WTRMN11503	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-CON-450	450	33.75	1968	50.7	85,328
WTRMN11504	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-DI-400	400	68.75	1996	56.8	45,292
WTRMN11505	ONTARIO STREET-to-ONTARIO STREET	WM-CI-300	300	23.75	1960	3.3	2,007
WTRMN11506	Beachwood Road-to-DOWNER STREET	WM-DI-300	300	65	1993	6.8	4,188
WTRMN11507	BROADVIEW STREET-to-BROADVIEW STREET	WM-DI-200	200	70	1997	144.5	72,810
WTRMN11508	BROADVIEW STREET-to-BROADVIEW STREET	WM-DI-200	200	70	1997	78.0	39,296
WTRMN11509	JAMES STREET-to-KING STREET	WM-DI-150	150	66.25	1994	12.0	5,871
WTRMN11510	HIGHWAY 26-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	37.8	23,298
WTRMN11511	HIGHWAY 26-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	5.8	3,564
WTRMN11512	SILVER CREEK DRIVE	WM-PVC-300	300	83.75	2008	54.8	25,008
WTRMN11513	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-PVC-150	100	78.75	2008	7.7	3,747
WTRMN11514	SILVER CREEK DRIVE	WM-DI-300	300	60	1989	4.3	2,668
WTRMN11515	GARBUTT CRESCENT-to-GARBUTT CRESCENT	WM-DI-150	150	83.75	2008	15.5	7,541
WTRMN11516	LOCKERBIE CRESCENT-to-CLARK STREET	WM-DI-150	150	93.75	2016	4.9	2,410
WTRMN11517	LOCKERBIE CRESCENT-to-CLARK STREET	WM-DI-150	150	93.75	2016	4.7	2,315
WTRMN11518	GILPIN CRESCENT-to-FINDLAY DRIVE	WM-DI-150	150	83.75	2008	4.6	2,223
WTRMN11519	FINDLAY DRIVE-to-DANCE STREET	WM-DI-150	150	85	2009	15.6	7,634
WTRMN11520	ROBERTSON STREET	WM-DI-150	150	82.5	2007	53.8	26,260
WTRMN11521	GEORGE STREET-to-VICTORY DRIVE	WM-DI-150	150	83.75	2008	184.5	90,097
WTRMN11522	STE MARIE STREET	WM-DI-150	150	83.75	2008	10.7	5,213
WTRMN11523	STE MARIE STREET	WM-DI-150	150	83.75	2008	4.5	2,184
WTRMN11524	HAMILTON STREET-to-DUNCAN STREET	WM-DI-150	150	46.25	1978	8.3	4,057
WTRMN11527	PINE STREET-to-SHIPYARD LANE	WM-DI-150	150	83.75	2008	14.5	7,089
WTRMN11528	PINE STREET	WM-DI-150	150	83.75	2008	14.9	7,265
WTRMN11529	(blank)	WM-DI-150	150	83.75	2008	14.7	7,160
WTRMN11530	MONTCLAIR MEWS-to-SIDE LAUNCH WAY	WM-DI-150	150	83.75	2008	13.3	6,508
WTRMN11531	WHEELHOUSE CRESCENT-to-WHEELHOUSE CRESCENT	WM-DI-150	150	83.75	2008	7.6	3,714

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11537	KELLS CRESCENT-to-LONG LANE	WM-DI-150	150	78.75	2004	15.1	7,368
WTRMN11538	CRANBERRY TRAIL WEST-to-BARKER BOULEVARD	WM-PVC-150	150	65	1993	18.0	8,771
WTRMN11542	PRINCETON SHORES BOULEVARD-to-HIGHWAY 26	WM-CI-300	300	38.75	1972	4.8	2,967
WTRMN11543	PRINCETON SHORES BOULEVARD-to-HIGHWAY 26	WM-CI-150	150	38.75	1972	4.4	2,134
WTRMN11544	PRINCETON SHORES BOULEVARD-to-HIGHWAY 26	WM-DI-300	300	60	1989	3.2	1,950
WTRMN11545	(blank)	WM-CI-150	150	38.75	1972	16.9	8,258
WTRMN11546	(blank)	WM-CI-150	150	38.75	1972	14.2	6,937
WTRMN11547	(blank)	WM-CI-150	150	38.75	1972	11.5	5,614
WTRMN11548	BARTLETT BOULEVARD	WM-CI-150	150	38.75	1972	9.2	4,480
WTRMN11549	(blank)	WM-CI-150	150	38.75	1972	5.1	2,494
WTRMN11550	(blank)	WM-CI-150	150	38.75	1972	11.7	5,731
WTRMN11563	CEDAR POINTE COURT-to-HIGHWAY 26	WM-CI-300	300	38.75	1972	2.0	1,228
WTRMN11569	CRANBERRY TRAIL WEST-to-ELLEN LANE	WM-DI-300	300	66.25	1994	134.5	82,891
WTRMN11570	TENTH LINE-to-MOUNTAIN ROAD	WM-DI-300	300	58.75	1988	27.9	17,191
WTRMN11572	MOUNTAIN ROAD-to-MOUNTAIN ROAD	WM-DI-300	300	57.5	1987	26.5	16,329
WTRMN11574	HIGHWAY 26-to-KEITH AVENUE	WM-DI-250	250	48.75	1980	1.3	727
WTRMN11576	BALSAM STREET-to-CRANBERRY SHORES	WM-DI-150	150	58.75	1988	2.7	1,294
WTRMN11581	DAWSON DRIVE-to-DAWSON DRIVE	WM-DI-150	150	51.25	1982	5.8	2,633
WTRMN11582	DAWSON DRIVE	WM-PVC-150	150	57.5	1987	65.2	31,832
WTRMN11583	FINDLAY DRIVE-to-GILPIN CRESCENT	WM-DI-150	150	83.75	2008	4.9	2,377
WTRMN11584	HIGH STREET	WM-DI-150	150	41.25	1974	5.2	2,520
WTRMN11585	HIGH STREET	WM-DI-150	150	41.25	1974	5.5	2,685
WTRMN11586	CAMPBELL STREET-to-SMART COURT	WM-DI-200	200	53.75	1984	68.9	32,444
WTRMN11587	BRYAN COURT-to-LOCKHART ROAD	WM-CI-200	200	38.75	1972	1.6	792
WTRMN11588	BRYAN COURT-to-LOCKHART ROAD	WM-DI-150	150	38.75	1972	1.0	477
WTRMN11589	LOCKHART ROAD-to-DEY DRIVE	WM-DI-200	200	76.25	2002	13.1	6,577
WTRMN11590	LOCKHART ROAD-to-KRISTA COURT	WM-DI-200	200	46.25	1978	29.2	14,702
WTRMN11591	ONTARIO STREET-to-ST PAUL STREET	WM-DI-150	150	71.25	1998	10.9	5,308
WTRMN11592	ONTARIO STREET-to-FOURTH STREET EAST	WM-CI-200	200	36.25	1970	213.2	107,402
WTRMN11593	STE MARIE STREET-to-FOURTH STREET EAST	WM-CI-200	200	36.25	1970	6.5	3,265
WTRMN11594	CULLEN COURT-to-KAYLA CRESCENT	WM-DI-150	150	78.75	2004	76.2	37,212
WTRMN11595	Sewage STREET-to-SPRUCE STREET	WM-DI-150	150	53.75	1984	8.1	3,976
WTRMN11596	ELM STREET-to-SECOND STREET	WM-CI-150	150	35	1969	9.3	4,516
WTRMN11597	ELM STREET-to-ELM STREET	WM-CI-150	150	35	1969	7.5	3,680
WTRMN11598	SPRUCE STREET-to-FOURTH STREET	WM-CI-150	150	36.25	1970	14.1	6,878
WTRMN11599	SPRUCE STREET-to-SPRUCE STREET	WM-CI-150	150	36.25	1970	12.7	6,197
WTRMN11600	SEVENTH STREET-to-SPRUCE STREET	WM-CI-200	200	32.5	1967	10.6	5,335
WTRMN11601	WHIPPS COURT-to-GIBBARD CRESCENT	WM-CI-150	150	37.5	1971	11.1	5,409
WTRMN11602	GIBBARD CRESCENT-to-GRIFFIN ROAD	WM-CI-200	200	32.5	1967	99.5	50,141
WTRMN11603	TENTH STREET-to-TENTH STREET	WM-DI-150	150	40	1973	5.0	2,419
WTRMN11604	TENTH STREET	WM-DI-150	150	40	1973	11.6	5,673
WTRMN11605	HICKORY STREET-to-FOURTH STREET	WM-DI-150	150	37.5	1971	12.1	5,921
WTRMN11606	NINTH STREET	WM-DI-150	150	48.75	1980	13.3	6,479
WTRMN11607	OAK STREET-to-FIRST STREET	WM-DI-150	150	85	2009	1.6	797
WTRMN11608	ALBANY STREET-to-FIFTH STREET	WM-CI-200	200	32.5	1967	1.1	551
WTRMN11609	FIFTH STREET-to-FIFTH STREET	WM-DI-150	150	45	1977	0.5	246
WTRMN11610	PEEL STREET	WM-CI-250	250	11.25	1950	11.7	6,797
WTRMN11611	PRETTY RIVER PARKWAY	WM-CI-250	250	11.25	1950	6.0	3,483

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11612	RUSSEL STREET-to-SIMCOE COUNTY ROAD 32	WM-DI-150	150	62.5	1991	1.3	610
WTRMN11613	SUNSET COURT-to-HURON STREET	WM-CI-150	150	37.5	1971	4.0	1,949
WTRMN11614	(blank)	WM-CI-150	150	11.25	1950	15.1	7,353
WTRMN11615	(blank)	WM-CI-150	150	11.25	1950	42.1	20,546
WTRMN11616	(blank)	WM-CI-150	150	11.25	1950	55.2	26,951
WTRMN11617	(blank)	WM-CI-150	100	6.25	1950	12.4	6,063
WTRMN11618	LOCKHART ROAD-to-CARMICHEAL CRESCENT	WM-DI-200	200	46.25	1978	81.3	40,974
WTRMN11619	ALICE STREET-to-COLLINS STREET	WM-DI-250	250	47.5	1979	23.2	13,457
WTRMN11620	ALMA STREET-to-ALBERT STREET	WM-DI-150	150	40	1973	1.7	839
WTRMN11621	BUSH STREET	WM-DI-200	200	60	1989	15.2	7,635
WTRMN11622	RAGLAN STREET	WM-DI-150	150	70	1997	13.6	6,652
WTRMN11623	GLEN ROGERS ROAD	WM-PVC-150	150	41.25	1974	5.6	2,737
WTRMN11624	SANDFORD FLEMING DRIVE-to-SANDFORD FLEMING DRIVE	WM-DI-300	300	60	1989	6.5	4,284
WTRMN11625	POPLAR SIDEROAD-to-Beachwood Road	WM-DI-300	300	65	1993	30.6	18,875
WTRMN11626	LAKEVIEW AVENUE-to-Beachwood Road	WM-DI-300	300	65	1993	14.3	8,823
WTRMN11627	GLEN ROAD-to-Beachwood Road	WM-DI-150	150	66.25	1994	208.0	101,547
WTRMN11628	SELKIRK ROAD-to-SELKIRK ROAD	WM-DI-150	150	66.25	1994	6.0	2,911
WTRMN11629	GLEN ROAD-to-SELKIRK ROAD	WM-DI-150	150	66.25	1994	4.7	2,279
WTRMN11630	EDGAR ROAD-to-EDGAR ROAD	WM-DI-150	150	66.25	1994	9.0	4,395
WTRMN11631	Beachwood Road-to-SELKIRK ROAD	WM-DI-150	150	66.25	1994	1.8	881
WTRMN11632	(blank)	WM-DI-150	150	82.5	2009	51.6	25,171
WTRMN11633	MARKET LANE-to-ST PAUL STREET	WM-DI-150	150	40	1973	6.0	2,911
WTRMN11634	ST PAUL STREET	WM-PVC-150	150	83.75	2008	10.5	5,125
WTRMN11635	POPLAR SIDEROAD-to-POPLAR SIDEROAD	WM-DI-500	500	82.5	2007	34.1	37,063
WTRMN11636	POPLAR SIDEROAD-to-POPLAR SIDEROAD	WM-DI-400	400	82.5	2007	2.5	2,025
WTRMN11637	(blank)	WM-DI-300	300	82.5	2007	3.6	2,214
WTRMN11638	HURONTARIO STREET-to-HURONTARIO STREET	WM-PVC-150	150	48.75	1980	13.7	6,706
WTRMN11639	BIRCH STREET-to-FIFTH STREET	WM-CI-150	150	32.5	1967	6.4	3,112
WTRMN11640	BIRCH STREET-to-FIFTH STREET	WM-CI-300	300	32.5	1967	12.8	7,889
WTRMN11641	FIFTH STREET-to-BIRCH STREET	WM-CI-150	150	23.75	1960	10.9	5,319
WTRMN11642	FIFTH STREET-to-FIFTH STREET	WM-CI-150	150	32.5	1967	0.6	269
WTRMN11643	KAYLA CRESCENT-to-KAYLA CRESCENT	WM-DI-150	150	86.25	2010	149.6	73,056
WTRMN11644	ALYSSA DRIVE-to-KAYLA CRESCENT	WM-DI-150	150	86.25	2010	15.5	7,586
WTRMN11648	SANDFORD FLEMING DRIVE	WM-DI-300	300	86.25	2010	11.9	7,833
WTRMN11649	SANDFORD FLEMING DRIVE	WM-DI-300	300	86.25	2010	263.2	162,217
WTRMN11650	SANDFORD FLEMING DRIVE	WM-DI-300	300	86.25	2010	0.7	429
WTRMN11651	SIXTH LINE-to-SANDFORD FLEMING DRIVE	WM-DI-300	300	86.25	2010	59.1	36,411
WTRMN11652	SIXTH LINE-to-SANDFORD FLEMING DRIVE	WM-DI-300	300	86.25	2010	107.1	65,987
WTRMN11653	HIGHWAY 26-to-SIXTH LINE	WM-DI-300	300	86.25	2010	204.2	125,819
WTRMN11654	HIGHWAY 26-to-HIGHWAY 26	WM-DI-300	300	86.25	2010	100.1	61,666
WTRMN11655	HIGHWAY 26-to-HIGHWAY 26	WM-DI-300	300	86.25	2010	8.0	4,913
WTRMN11656	HIGHWAY 26-to-HIGHWAY 26	WM-DI-300	300	86.25	2010	1.5	929
WTRMN11657	CRANBERRY TRAIL EAST-to-DAWSON DRIVE	WM-DI-300	300	73.75	2000	3.3	2,044
WTRMN11658	RON EMO ROAD-to-RAGLAN STREET	WM-DI-300	300	86.25	2010	6.4	3,922
WTRMN11659	RON EMO ROAD-to-RAGLAN STREET	WM-DI-300	300	86.25	2010	18.9	11,634
WTRMN11660	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	86.25	2010	130.4	80,358
WTRMN11661	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	86.25	2010	1.4	878

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11662	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	86.25	2010	300.6	185,254
WTRMN11663	RAGLAN STREET	WM-DI-300	300	86.25	2010	14.0	8,608
WTRMN11664	OSLER BLUFF ROAD-to-SILVER CREEK DRIVE	WM-DI-300	300	86.25	2010	248.3	163,583
WTRMN11665	OSLER BLUFF ROAD	WM-DI-300	300	86.25	2010	1.3	842
WTRMN11666	OSLER BLUFF ROAD-to-FOREST DRIVE	WM-DI-300	300	86.25	2010	320.4	211,046
WTRMN11670	TENTH LINE	WM-DI-150	100	52.5	1987	2.8	1,297
WTRMN11672	RAGLAN STREET-to-RON EMO ROAD	WM-DI-300	300	87.5	2011	291.0	191,661
WTRMN11673	GARBUTT CRESCENT-to-GARBUTT CRESCENT	WM-DI-150	150	88.75	2012	150.5	73,477
WTRMN11674	DANCE STREET-to-GARBUTT CRESCENT	WM-DI-150	150	86.25	2010	196.1	95,744
WTRMN11675	RAGLAN STREET-to-RAGLAN STREET	WM-CON-400	400	30	1965	186.5	243,358
WTRMN11676	(blank)	WM-DI-200	200	70	1997	253.0	127,438
WTRMN11677	ALYSSA DRIVE-to-BROOKE AVENUE	WM-DI-150	150	81.25	2006	176.4	86,107
WTRMN11678	RODNEY STREET-to-NAPIER STREET	WM-DI-150	150	46.25	1978	94.3	46,030
WTRMN11679	KAYLA CRESCENT-to-KAYLA CRESCENT	WM-DI-150	150	86.25	2010	100.1	48,877
WTRMN11680	FERGUSON ROAD-to-DICKSON ROAD	WM-CI-200	200	14.35	1967	110.2	55,497
WTRMN11681	GODDEN STREET-to-BUSH STREET	WM-DI-200	200	60	1989	126.2	63,555
WTRMN11682	SAUNDERS STREET	WM-DI-150	150	81.25	2006	219.7	107,288
WTRMN11683	HURONTARIO STREET-to-STE MARIE STREET	WM-CI-150	150	13.75	1952	130.3	63,623
WTRMN11684	THIRD STREET-to-STEWART ROAD	WM-CI-300	300	36.25	1970	257.4	158,606
WTRMN11685	KAYLA CRESCENT-to-KAYLA CRESCENT	WM-DI-150	150	86.25	2010	92.4	45,113
WTRMN11686	BARRINGTON TRAIL-to-SILVER CRESCENT	WM-DI-150	150	82.5	2007	191.0	93,256
WTRMN11687	BUSH STREET-to-GODDEN STREET	WM-DI-200	200	60	1989	87.8	44,226
WTRMN11688	MANNING AVENUE	WM-CI-150	150	1	1969	161.3	78,755
WTRMN11689	INDIAN TRAIL	WM-DI-150	150	66.25	1994	75.1	36,673
WTRMN11690	ST CLAIR STREET	WM-DI-150	150	40	1973	92.9	45,376
WTRMN11691	HURONIA PATHWAY	WM-DI-300	300	53.21	1987	466.1	287,238
WTRMN11692	LOCKHART ROAD-to-BROCK CRESCENT	WM-CI-200	200	38.75	1972	242.1	121,943
WTRMN11693	BRYAN COURT-to-BRYAN DRIVE	WM-CI-150	150	36.25	1970	260.0	126,930
WTRMN11694	SUNSET COURT-to-HURON STREET	WM-CI-150	100	32.5	1971	140.6	68,657
WTRMN11695	FOURTH STREET-to-FIFTH STREET	WM-CI-300	300	30	1965	224.1	138,099
WTRMN11696	MOUNTAIN ROAD	WM-DI-300	300	58.75	1988	481.7	296,861
WTRMN11697	SECOND STREET-to-THIRD STREET	WM-DI-150	150	50	1981	221.1	107,935
WTRMN11698	OLIVER CRESCENT-to-WALKER STREET	WM-DI-150	150	56.25	1986	75.4	36,794
WTRMN11699	RAGLAN STREET-to-MATTHEW WAY	WM-CON-400	400	30	1965	159.0	207,448
WTRMN11700	BROADVIEW STREET-to-BROADVIEW STREET	WM-DI-200	200	70	1997	268.0	135,017
WTRMN11701	(blank)	WM-CI-150	150	11.25	1950	154.3	75,357
WTRMN11702	KAYLA CRESCENT-to-KAYLA CRESCENT	WM-DI-150	150	86.25	2010	137.2	66,964
WTRMN11703	PEEL STREET-to-NIAGARA STREET	WM-CI-150	150	37.5	1971	181.9	88,796
WTRMN11704	(blank)	WM-CI-150	150	10	1965	48.5	23,681
WTRMN11705	GEORGIAN MEADOWS DRIVE-to-SIXTH STREET	WM-DI-400	400	75	2001	120.7	96,254
WTRMN11706	PINE STREET-to-HURONTARIO STREET	WM-DI-150	150	45	1977	118.0	57,615
WTRMN11707	NIAGARA STREET	WM-CI-250	250	1	1950	126.1	73,271
WTRMN11708	THIRD STREET-to-FOURTH STREET	WM-CI-300	300	30	1965	229.6	141,460
WTRMN11709	SECOND STREET-to-THIRD STREET	WM-CI-150	150	11.25	1950	222.1	108,414
WTRMN11710	DAVIS STREET-to-CHAMBERLAIN CRESCENT	WM-DI-150	150	81.25	2006	87.0	42,468
WTRMN11712	FIRST STREET-to-SECOND STREET	WM-CI-300	300	30	1965	217.2	133,829
WTRMN11713	ALBERT STREET-to-PRETTY RIVER PARKWAY	WM-CI-300	300	10	1949	170.9	105,328
WTRMN11714	WATTS CRESCENT-to-FIFTH STREET	WM-CI-300	300	37.5	1971	112.1	69,050

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11715	MASON ROAD-to-MACKAY COURT	WM-DI-150	150	42.5	1975	82.3	40,190
WTRMN11716	ELM STREET	WM-PVC-150	150	47.5	1979	57.5	28,069
WTRMN11717	NETTLETON COURT-to-NETTLETON COURT	WM-DI-300	300	58.75	1988	54.6	33,663
WTRMN11718	CRANBERRY TRAIL EAST	WM-DI-150	150	86.25	2010	403.6	197,068
WTRMN11719	WALNUT STREET-to-CEDAR STREET	WM-CI-200	200	11.35	1965	123.8	62,366
WTRMN11720	HIGHWAY 26-to-HIGHWAY 26	WM-CU-50	50	82.5	2011	14.9	620
WTRMN11721	HIGHWAY 26-to-HIGHWAY 26	WM-DI-150	150	87.5	2011	41.1	20,080
WTRMN11722	HIGHWAY 26-to-HIGHWAY 26	WM-CON-400	400	33.75	1968	278.5	363,477
WTRMN11723	HUME STREET-to-ST CLAIR STREET	WM-CI-150	150	35	1969	173.4	84,680
WTRMN11724	HIGHWAY 26-to-ELIOTT AVENUE	WM-CON-400	400	33.75	1968	145.1	189,288
WTRMN11725	CEDAR STREET-to-OAK STREET	WM-CI-150	150	11.25	1950	116.2	56,746
WTRMN11726	RAGLAN STREET-to-POPLAR SIDEROAD	WM-DI-300	300	87.5	2011	666.8	439,255
WTRMN11727	SILVER CREEK DRIVE-to-SILVER CREEK DRIVE	WM-DI-300	300	60	1989	166.5	102,618
WTRMN11728	OAK STREET	WM-DI-150	150	43.75	1976	59.8	29,219
WTRMN11729	ST LAWRENCE STREET-to-HURON STREET	WM-CI-150	150	12.71	1965	231.3	112,929
WTRMN11730	FAIR STREET-to-CAMERON STREET	WM-CI-300	300	31.25	1966	107.8	66,401
WTRMN11731	(blank)	WM-CI-150	150	5	1945	6.3	3,054
WTRMN11732	PATERSON STREET-to-DUNCAN STREET	WM-DI-150	150	80	2005	143.3	69,958
WTRMN11733	LOCKHART ROAD-to-LOCKHART ROAD	WM-DI-200	200	46.25	1978	114.5	57,655
WTRMN11734	PRETTY RIVER PARKWAY-to-MACDONALD ROAD	WM-CON-400	400	33.75	1968	233.0	304,039
WTRMN11735	DELLPARR AVENUE	WM-DI-150	150	70	1997	14.0	6,851
WTRMN11736	LONG POINT ROAD	WM-PVC-150	150	88.75	2012	44.6	21,790
WTRMN11737	LONG POINT ROAD	WM-PVC-150	150	88.75	2012	25.3	12,360
WTRMN11738	LONG POINT ROAD	WM-PVC-150	150	88.75	2012	2.6	1,267
WTRMN11739	MADELINE DRIVE	WM-DI-150	150	88.75	2012	139.1	67,930
WTRMN11740	LONG POINT ROAD-to-MADELINE DRIVE	WM-DI-150	150	88.75	2012	21.0	10,264
WTRMN11741	MADELINE DRIVE-to-LONG POINT ROAD	WM-DI-150	150	88.75	2012	161.4	78,810
WTRMN11742	LINDSAY LANE-to-MADELINE DRIVE	WM-DI-150	150	88.75	2012	8.2	4,010
WTRMN11743	LINDSAY LANE-to-MADELINE DRIVE	WM-DI-150	150	88.75	2012	194.5	94,947
WTRMN11744	MADELINE DRIVE-to-LINDSAY LANE	WM-DI-150	150	88.75	2012	12.4	6,069
WTRMN11745	MADELINE DRIVE	WM-DI-150	150	88.75	2012	241.9	118,113
WTRMN11746	MADELINE DRIVE-to-MADELINE DRIVE	WM-DI-150	150	88.75	2012	3.8	1,870
WTRMN11747	LONG POINT ROAD-to-LINDSAY LANE	WM-DI-150	150	88.75	2012	2.3	1,107
WTRMN11748	LINDSAY LANE-to-MADELINE DRIVE	WM-DI-150	150	88.75	2012	139.6	68,159
WTRMN11749	LINDSAY LANE-to-LINDSAY LANE	WM-DI-150	150	88.75	2012	138.8	67,781
WTRMN11750	MADELINE DRIVE-to-LINDSAY LANE	WM-DI-150	150	88.75	2012	427.5	208,732
WTRMN11751	LONG POINT ROAD-to-LONG POINT ROAD	WM-DI-150	150	88.75	2012	14.4	7,024
WTRMN11752	PATERSON STREET-to-KATHERINE STREET	WM-CI-150	150	12.5	1967	82.6	40,328
WTRMN11753	HAMILTON STREET-to-LORNE STREET	WM-DI-250	250	55	1985	116.7	67,838
WTRMN11754	(blank)	WM-CI-150	150	11.25	1950	58.1	28,386
WTRMN11759	BALSAM STREET	WM-CI-150	150	32.5	1967	6.1	2,970
WTRMN11760	Sewage STREET-to-FIRST STREET	WM-CI-150	150	19.71	1964	221.1	107,961
WTRMN11761	FIRST STREET-to-FIRST STREET	WM-CI-150	150	28.75	1964	16.2	7,928
WTRMN11762	BALSAM STREET-to-ELM STREET	WM-CI-250	250	1	1960	142.2	77,336
WTRMN11763	SPRUCE STREET-to-SECOND STREET	WM-CI-150	150	30	1965	9.0	4,371
WTRMN11764	FIRST STREET-to-SECOND STREET	WM-CI-150	150	2.33	1965	216.8	105,866
WTRMN11765	FIRST STREET-to-SPRUCE STREET	WM-PVC-150	150	86.25	2010	11.2	5,466
WTRMN11766	Sewage STREET-to-FIRST STREET	WM-DI-150	150	53.75	1984	223.9	109,306

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11767	ELM STREET-to-SPRUCE STREET	WM-CI-250	250	23.75	1960	118.8	64,577
WTRMN11768	SPRUCE STREET-to-FIRST STREET	WM-CI-250	250	23.75	1960	91.8	49,936
WTRMN11769	FIRST STREET-to-FIRST STREET	WM-DI-300	300	51.25	1982	11.3	6,977
WTRMN11770	FIRST STREET-to-SECOND STREET	WM-CI-150	150	17.5	1955	208.7	101,913
WTRMN11771	FIRST STREET-to-HICKORY STREET	WM-PVC-150	150	86.25	2010	36.9	18,020
WTRMN11772	(blank)	WM-CI-150	150	5	1945	5.2	2,531
WTRMN11773	HICKORY STREET-to-FIRST STREET	WM-DI-150	150	51.25	1982	18.2	8,904
WTRMN11774	FIRST STREET-to-HICKORY STREET	WM-DI-300	300	51.25	1982	35.3	21,741
WTRMN11775	FIRST STREET-to-FIRST STREET	WM-DI-300	300	51.25	1982	9.7	5,976
WTRMN11776	FIRST STREET-to-WALNUT STREET	WM-CI-300	300	30	1965	13.7	8,419
WTRMN11777	FIRST STREET-to-WALNUT STREET	WM-DI-300	300	51.25	1982	104.7	64,515
WTRMN11778	FIRST STREET	WM-DI-150	150	45	1977	73.8	36,049
WTRMN11779	CEDAR STREET-to-CEDAR STREET	WM-DI-150	150	85	2009	2.3	1,126
WTRMN11780	CEDAR STREET-to-CEDAR STREET	WM-DI-150	150	85	2009	0.5	263
WTRMN11781	WALNUT STREET-to-CEDAR STREET	WM-DI-300	300	51.25	1982	116.3	71,692
WTRMN11782	FIRST STREET-to-SECOND STREET	WM-DI-150	150	48.75	1980	209.8	102,409
WTRMN11783	CEDAR STREET-to-OAK STREET	WM-DI-300	300	51.25	1982	115.5	71,203
WTRMN11784	FIRST STREET-to-SECOND STREET	WM-DI-150	150	48.75	1980	232.1	113,304
WTRMN11785	OAK STREET-to-OAK STREET	WM-DI-150	150	48.75	1980	7.9	3,877
WTRMN11786	OAK STREET-to-BIRCH STREET	WM-DI-300	300	51.25	1982	126.6	78,005
WTRMN11787	BIRCH STREET	WM-DI-150	150	85	2009	31.9	15,585
WTRMN11788	FIRST STREET-to-BIRCH STREET	WM-DI-150	150	85	2009	28.1	13,704
WTRMN11789	FIRST STREET-to-BIRCH STREET	WM-DI-150	150	85	2009	173.7	84,811
WTRMN11790	FIRST STREET-to-SECOND STREET	WM-DI-150	150	40	1973	215.8	105,385
WTRMN11791	FIRST STREET-to-BEECH STREET	WM-DI-150	150	85	2009	11.4	5,549
WTRMN11792	FIRST STREET	WM-CI-150	150	5	1945	6.2	3,010
WTRMN11793	MAPLE STREET-to-MAPLE STREET	WM-CI-150	150	85	2009	7.9	3,844
WTRMN11794	MAPLE STREET-to-MAPLE STREET	WM-DI-150	150	85	2009	3.4	1,638
WTRMN11795	MAPLE STREET-to-HIGHWAY 26	WM-DI-150	150	85	2009	0.6	301
WTRMN11796	FIRST STREET-to-SECOND STREET	WM-CI-150	150	2.5	1945	210.3	102,659
WTRMN11797	FIRST STREET	WM-CI-150	150	82.5	2009	24.9	12,134
WTRMN11798	MAPLE STREET-to-PINE STREET	WM-DI-300	300	51.25	1982	120.2	74,083
WTRMN11799	FIRST STREET-to-SECOND STREET	WM-DI-200	200	30.15	1972	232.6	117,178
WTRMN11800	HURONTARIO STREET-to-PINE STREET	WM-DI-300	300	51.25	1982	123.5	76,111
WTRMN11801	MAPLE STREET-to-HERITAGE DRIVE	WM-DI-400	400	83.75	2008	478.8	381,823
WTRMN11802	HURON STREET-to-SIDE LAUNCH WAY	WM-CI-150	150	5	1945	83.8	40,931
WTRMN11803	FIRST STREET-to-SECOND STREET	WM-CI-200	200	11.25	1950	220.3	110,965
WTRMN11804	FIRST STREET-to-FIRST STREET	WM-DI-300	300	51.25	1982	13.6	8,353
WTRMN11805	HURONTARIO STREET-to-HURON STREET	WM-CI-150	150	85	2009	4.4	2,140
WTRMN11806	HURON STREET-to-SIMCOE STREET	WM-DI-300	300	48.75	1980	225.9	139,236
WTRMN11807	HURONTARIO STREET	WM-CI-300	300	10	1949	17.0	10,487
WTRMN11808	HURONTARIO STREET	WM-CI-300	300	10	1949	3.9	2,372
WTRMN11809	HURON STREET-to-HURON STREET	WM-DI-300	300	85	2009	4.5	2,041
WTRMN11810	SIMCOE STREET-to-ONTARIO STREET	WM-CI-200	200	36.25	1970	202.5	101,999
WTRMN11811	HURON STREET-to-SECOND STREET	WM-CI-200	200	1	1970	221.3	111,458
WTRMN11812	HURONTARIO STREET-to-STE MARIE STREET	WM-CI-300	300	10	1949	115.7	71,327
WTRMN11813	MINNESOTA STREET	WM-CI-300	300	10	1949	23.5	14,499
WTRMN11814	STE MARIE STREET	WM-CI-300	300	10	1949	10.5	6,495

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11815	ST PAUL STREET-to-MINNESOTA STREET	WM-CI-300	300	1	1949	190.4	117,351
WTRMN11816	CONSERVATION WAY-to-CONSERVATION WAY	WM-DI-150	150	81.25	2006	51.2	25,013
WTRMN11817	CONSERVATION WAY-to-CONSERVATION WAY	WM-DI-150	150	90	2013	32.6	15,903
WTRMN11818	CONSERVATION WAY-to-CONSERVATION WAY	WM-DI-150	150	90	2013	109.2	53,306
WTRMN11819	CONSERVATION WAY-to-SILVER GLEN BOULEVARD	WM-DI-150	150	90	2013	17.2	8,396
WTRMN11820	STEWART ROAD-to-SIXTH STREET	WM-DI-300	300	70	1997	163.7	100,891
WTRMN11821	STEWART ROAD-to-STEWART ROAD	WM-DI-150	150	90	2013	11.9	5,825
WTRMN11823	CONSERVATION WAY-to-GREENBRIAR DRIVE	WM-DI-150	150	85	2009	84.7	41,373
WTRMN11824	GARBUTT CRESCENT-to-GARBUTT CRESCENT	WM-DI-150	150	86.25	2010	64.3	31,383
WTRMN11825	DANCE STREET-to-GARBUTT CRESCENT	WM-DI-150	150	86.25	2010	15.6	7,623
WTRMN11826	GARBUTT CRESCENT-to-GARBUTT CRESCENT	WM-DI-150	150	86.25	2010	100.3	48,956
WTRMN11827	DANCE STREET-to-GARBUTT CRESCENT	WM-DI-150	150	86.25	2010	15.9	7,764
WTRMN11828	RAGLAN STREET-to-RON EMO ROAD	WM-DI-300	300	86.25	2010	18.6	11,475
WTRMN11829	RON EMO ROAD-to-RON EMO ROAD	WM-DI-300	300	86.25	2010	5.3	3,235
WTRMN11830	RON EMO ROAD-to-RON EMO ROAD	WM-DI-300	300	86.25	2010	283.6	174,762
WTRMN11831	RON EMO ROAD	WM-DI-200	200	73.75	2000	4.2	2,093
WTRMN11832	RON EMO ROAD	WM-DI-300	300	73.75	2000	181.8	112,022
WTRMN11833	RON EMO ROAD-to-RON EMO ROAD	WM-DI-300	300	86.25	2010	2.3	1,429
WTRMN11834	RAGLAN STREET-to-RAGLAN STREET	WM-PVC-150	150	88.75	2012	16.1	7,877
WTRMN11835	RAGLAN STREET	WM-PVC-150	150	88.75	2012	3.4	1,662
WTRMN11836	RAGLAN STREET-to-POPLAR SIDEROAD	WM-DI-300	300	86.25	2010	206.1	127,019
WTRMN11837	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	87.5	2011	18.7	12,312
WTRMN11838	RAGLAN STREET	WM-PVC-150	150	88.75	2012	12.6	6,137
WTRMN11839	RAGLAN STREET-to-RAGLAN STREET	WM-DI-200	200	87.5	2011	113.1	56,949
WTRMN11840	RAGLAN STREET-to-RAGLAN STREET	WM-DI-200	200	87.5	2011	4.5	2,280
WTRMN11841	RAGLAN STREET	WM-DI-200	200	87.5	2011	2.1	1,035
WTRMN11842	RAGLAN STREET	WM-DI-150	50	82.5	2011	2.8	1,349
WTRMN11843	SPRUCE STREET-to-SECOND STREET	WM-CI-150	150	30	1965	221.9	108,357
WTRMN11844	SPRUCE	WM-DI-150	150	86.25	2010	72.4	35,323
WTRMN11845	LORNE STREET-to-LORNE STREET	WM-CI-150	150	32.5	1967	119.3	58,228
WTRMN11846	LORNE STREET	WM-DI-150	150	90	2013	101.0	49,320
WTRMN11847	CRANBERRY TRAIL EAST	WM-DI-150	150	88.75	2012	200.8	98,041
WTRMN11848	ERIE STREET	WM-DI-150	150	72.5	1999	85.2	41,583
WTRMN11849	SIXTH LINE-to-SANDFORD FLEMING DRIVE	WM-DI-300	300	60	1989	549.1	338,365
WTRMN11850	TENTH LINE	WM-DI-300	300	73.75	2000	109.4	67,410
WTRMN11851	CHAMBERLAIN CRESCENT-to-BARR STREET	WM-DI-150	150	81.25	2006	54.5	26,585
WTRMN11852	FOURTH STREET EAST-to-ST PAUL STREET	WM-DI-150	150	53.75	1984	78.1	38,142
WTRMN11853	FOURTH STREET EAST-to-ST PETER STREET	WM-DI-150	150	53.75	1984	148.5	72,524
WTRMN11854	ST PETER STREET-to-ST PETER STREET	WM-DI-150	150	53.75	1984	8.8	4,301
WTRMN11855	ST PETER STREET	WM-DI-150	100	48.75	1984	31.7	15,464
WTRMN11856	FOURTH STREET-to-FIFTH STREET	WM-DI-150	150	33.54	1975	223.3	109,021
WTRMN11857	BIRCH STREET-to-BEECH STREET	WM-DI-150	150	38.75	1972	121.2	59,187
WTRMN11858	THIRD STREET-to-FOURTH STREET	WM-DI-150	150	42.5	1975	228.2	111,419
WTRMN11859	SECOND STREET-to-THIRD STREET	WM-DI-150	150	31.02	1973	222.7	108,742
WTRMN11860	BIRCH STREET-to-BEECH STREET	WM-CI-200	200	8.75	1950	119.8	60,324
WTRMN11861	BEECH STREET-to-MAPLE STREET	WM-CI-200	200	8.75	1950	121.6	61,272
WTRMN11862	BEECH STREET-to-MAPLE STREET	WM-DI-300	300	51.25	1982	121.9	75,141
WTRMN11863	BRAESIDE STREET-to-BRAESIDE STREET	WM-DI-150	150	70	1997	161.2	78,698

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11864	HILL STREET	WM-DI-400	400	80	2005	57.7	46,002
WTRMN11865	THIRD STREET	WM-DI-150	150	86.25	2010	7.2	3,537
WTRMN11866	ALYSSA DRIVE-to-SIXTH STREET	WM-DI-150	150	78.75	2004	48.9	23,850
WTRMN11867	SIXTH STREET-to-ALYSSA DRIVE	WM-DI-150	150	75	2001	10.5	5,122
WTRMN11868	DOCKSIDE DRIVE	WM-CI-300	300	38.75	1972	318.7	196,382
WTRMN11870	HIGHWAY 26-to-VACATION INN DRIVE	WM-DI-200	200	56.25	1986	31.2	15,736
WTRMN11871	PRINCETON SHORES BOULEVARD	WM-CI-300	300	26.65	1972	165.2	101,831
WTRMN11872	ANCHORAGE CRESCENT-to-HIGHWAY 26	WM-DI-150	150	92.5	2015	53.3	26,037
WTRMN11873	ANCHORAGE CRESCENT-to-COVE COURT	WM-DI-150	150	92.5	2015	3.0	1,476
WTRMN11874	ANCHORAGE CRESCENT-to-COVE COURT	WM-DI-150	150	92.5	2015	1.6	779
WTRMN11875	ANCHORAGE CRESCENT	WM-DI-150	150	92.5	2015	48.0	23,411
WTRMN11876	COVE COURT-to-COVE COURT	WM-DI-150	150	92.5	2015	501.6	244,885
WTRMN11877	(blank)	WM-CI-300	300	31.59	1972	279.5	172,239
WTRMN11878	ANCHORAGE CRESCENT-to-HIGHWAY 26	WM-DI-150	150	92.5	2015	66.6	32,534
WTRMN11879	RAMBLINGS WAY-to-RAMBLINGS WAY	WM-PVC-150	150	56.25	1986	1.3	650
WTRMN11880	(blank)	WM-CI-300	300	38.75	1972	159.2	98,122
WTRMN11881	(blank)	WM-CI-300	300	38.75	1972	109.2	67,290
WTRMN11882	(blank)	WM-CI-300	300	38.75	1972	142.6	87,854
WTRMN11883	HIGHWAY 26-to-CRANBERRY TRAIL EAST	WM-DI-300	300	61.25	1990	178.9	110,221
WTRMN11884	HIGHWAY 26-to-HIGHWAY 26	WM-DI-300	300	61.25	1990	135.5	83,497
WTRMN11885	HIGHWAY 26	WM-DI-300	300	61.25	1990	86.0	53,018
WTRMN11886	HIGHWAY 26	WM-DI-300	300	61.25	1990	1.3	786
WTRMN11887	SewageFALLS LANE	WM-CI-300	300	38.75	1972	70.0	43,152
WTRMN11888	HIGHWAY 26	WM-DI-300	300	62.5	1991	30.9	19,025
WTRMN11889	SewageFALLS LANE-to-SewageFALLS LANE	WM-CI-300	300	38.75	1972	12.2	7,500
WTRMN11891	(blank)	WM-CI-300	300	1	1967	117.6	72,483
WTRMN11897	DAWSON DRIVE-to-DAWSON DRIVE	WM-DI-300	300	51.25	1982	66.4	40,910
WTRMN11898	(blank)	WM-CI-300	300	19.87	1967	316.7	195,157
WTRMN11899	FINDLAY DRIVE-to-FINDLAY DRIVE	WM-DI-500	450	93.75	2016	70.1	81,524
WTRMN11900	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-CON-450	450	33.75	1968	69.0	116,070
WTRMN11901	ONTARIO STREET-to-PRETTY RIVER PARKWAY	WM-CON-450	450	33.75	1968	331.7	557,946
WTRMN11904	KELLS CRESCENT-to-FRANCES DRIVE	WM-DI-150	150	78.75	2004	94.6	46,192
WTRMN11905	KELLS CRESCENT-to-LONG LANE	WM-DI-150	150	78.75	2004	112.4	54,871
WTRMN11906	KELLS CRESCENT-to-KELLS CRESCENT	WM-DI-150	150	78.75	2004	194.0	94,718
WTRMN11907	KELLS CRESCENT-to-KELLS CRESCENT	WM-DI-150	150	78.75	2004	154.2	75,261
WTRMN11908	KELLS CRESCENT	WM-DI-150	150	78.75	2004	144.2	70,420
WTRMN11909	KELLS CRESCENT-to-KELLS CRESCENT	WM-DI-150	150	78.75	2004	173.8	84,870
WTRMN11910	ELIOTT AVENUE-to-ST CLAIR STREET	WM-CI-150	150	35	1969	38.7	18,887
WTRMN11911	BARRINGTON TRAIL-to-HURONIA PATHWAY	WM-DI-150	150	82.5	2007	264.5	129,163
WTRMN11913	WILLIAMS STREET-to-PEEL STREET	WM-DI-150	150	81.25	2006	166.7	81,381
WTRMN11914	COOPER STREET-to-COOPER STREET	WM-DI-150	150	82.5	2007	184.3	90,003
WTRMN11915	MINNESOTA STREET-to-DILLON DRIVE	WM-DI-200	200	58.75	1988	120.5	60,701
WTRMN11916	MAIR MILLS DRIVE-to-MAIR MILLS DRIVE	WM-DI-400	400	80	2005	20.9	16,629
WTRMN11917	HURON STREET-to-SIMCOE STREET	WM-CI-150	100	1	1948	195.5	95,462
WTRMN11918	SIMCOE STREET-to-ONTARIO STREET	WM-CI-150	100	1	1948	211.0	103,007
WTRMN11919	ALBERT STREET-to-RAGLAN STREET	WM-CI-250	250	1	1950	299.3	173,993
WTRMN11920	CRAIGLEITH COURT	WM-DI-150	150	60	1989	60.3	29,454
WTRMN11921	HOLLY COURT	WM-DI-150	150	76.25	2002	42.4	20,692

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11922	JUNIPER COURT-to-JUNIPER COURT	WM-DI-200	200	72.5	1999	122.7	61,832
WTRMN11924	(blank)	WM-CI-150	150	38.75	1972	45.8	22,372
WTRMN11927	GILPIN CRESCENT-to-FINDLAY DRIVE	WM-DI-500	450	93.75	2016	115.3	134,086
WTRMN11929	MCINTOSH GATE	WM-DI-150	150	58.75	1988	61.6	30,096
WTRMN11930	NETTLETON COURT	WM-DI-150	150	58.75	1988	82.3	40,195
WTRMN11931	SHEFFIELD TERRACE	WM-DI-150	150	58.75	1988	57.9	28,257
WTRMN11932	STEWART ROAD	WM-DI-200	200	60	1989	57.0	28,709
WTRMN11936	SPRUCE STREET	WM-DI-150	150	41.25	1974	82.9	40,453
WTRMN11937	(blank)	WM-DI-150	150	72.5	1999	38.0	18,544
WTRMN11938	CAMPBELL STREET	WM-DI-150	150	55	1985	117.3	57,293
WTRMN11939	TENTH STREET	WM-DI-150	150	52.5	1983	63.9	31,200
WTRMN11940	NIAGARA STREET	WM-DI-150	150	38.75	1972	61.3	29,946
WTRMN11941	RIVER RUN	WM-DI-150	150	77.5	2003	61.8	30,159
WTRMN11942	HARBEN COURT	WM-DI-150	150	46.25	1978	91.9	44,882
WTRMN11943	BURNSIDE COURT	WM-DI-150	150	57.5	1987	61.3	29,945
WTRMN11945	STE MARIE STREET	WM-DI-150	150	61.25	1990	55.9	27,280
WTRMN11946	LORNE STREET	WM-DI-150	150	90	2013	82.4	40,218
WTRMN11947	ERIE STREET	WM-DI-150	150	76.25	2002	112.0	54,675
WTRMN11949	GEORGIAN MANOR DRIVE	WM-DI-150	150	56.25	1986	166.7	81,384
WTRMN11951	GILPIN CRESCENT-to-FINDLAY DRIVE	WM-DI-500	450	93.75	2016	45.3	52,644
WTRMN11953	CRANBERRY TRAIL EAST-to-JOSEPH TRAIL	WM-DI-300	300	82.5	2007	7.9	4,863
WTRMN11954	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	86.25	2010	71.8	44,267
WTRMN11955	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	86.25	2010	63.3	39,011
WTRMN11956	KEITH AVENUE-to-KEITH AVENUE	WM-DI-250	250	48.75	1980	39.3	22,862
WTRMN11957	KEITH AVENUE	WM-DI-150	150	93.75	2016	15.5	7,563
WTRMN11958	HARBOUR STREET WEST-to-ESCARPMENT CRESCENT	WM-DI-300	300	47.5	1979	180.9	111,472
WTRMN11959	KARI CRESCENT-to-KIMBERLY LANE	WM-DI-200	200	93.75	2016	109.5	55,142
WTRMN11960	HARBOUR STREET WEST-to-SUTTON LANE	WM-DI-200	200	93.75	2016	158.4	79,794
WTRMN11961	DAWSON DRIVE-to-BALSAM STREET	WM-CI-300	300	27.96	1970	241.4	148,736
WTRMN11962	KENNEDY AVENUE	WM-DI-150	150	95	2017	81.9	39,963
WTRMN11963	KENNEDY AVENUE-to-DEVONSHIRE STREET	WM-DI-150	150	95	2017	53.4	26,056
WTRMN11964	CARPENTER STREET-to-DEVONSHIRE STREET	WM-DI-150	150	95	2017	146.6	71,591
WTRMN11965	CARPENTER STREET-to-DEVONSHIRE STREET	WM-DI-150	150	93.75	2016	188.0	91,811
WTRMN11966	CARPENTER STREET-to-DEVONSHIRE STREET	WM-DI-150	150	93.75	2016	173.5	84,693
WTRMN11967	CARPENTER STREET-to-PARROTT AVENUE	WM-DI-150	150	95	2017	128.7	62,812
WTRMN11968	NORTH MAPLE STREET-to-MACKINAW LANE	WM-DI-150	150	83.75	2008	4.6	2,247
WTRMN11969	PINE STREET-to-MACKINAW LANE	WM-DI-150	150	83.75	2008	3.2	1,552
WTRMN11970	MACKINAW LANE-to-MACKINAW LANE	WM-DI-150	150	93.75	2016	106.9	52,202
WTRMN11971	CARPENTER STREET-to-KENNEDY AVENUE	WM-DI-150	150	95	2017	151.2	73,843
WTRMN11972	LETT AVENUE-to-KENNEDY AVENUE	WM-DI-150	150	95	2017	117.6	57,411
WTRMN11973	CRANBERRY TRAIL EAST-to-LETT AVENUE	WM-DI-150	150	93.75	2016	81.9	39,990
WTRMN11976	SAUNDERS STREET	WM-DI-150	150	81.25	2006	271.8	132,688
WTRMN11977	CLARK STREET-to-POPLAR SIDEROAD	WM-DI-150	150	83.75	2008	395.3	192,993
WTRMN11978	LOCKERBIE CRESCENT-to-POPLAR SIDEROAD	WM-DI-150	150	83.75	2008	49.4	24,117
WTRMN11979	CLARK STREET	WM-DI-150	150	83.75	2008	24.7	12,067
WTRMN11980	HUME STREET-to-RAGLAN STREET	WM-DI-300	300	58.75	1988	45.0	27,720
WTRMN11981	RAGLAN STREET-to-RAGLAN STREET	WM-DI-300	300	58.75	1988	372.1	229,299
WTRMN11982	RAGLAN STREET-to-PRETTY RIVER PARKWAY	WM-CI-300	300	33.75	1968	246.8	152,077

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN11983	RAGLAN STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	139.5	68,125
WTRMN11984	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	34.4	16,797
WTRMN11985	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	13.9	6,796
WTRMN11986	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	51.5	25,148
WTRMN11987	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	15.3	7,485
WTRMN11988	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	6.3	3,064
WTRMN11989	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	6.1	2,958
WTRMN11990	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	18.7	9,124
WTRMN11991	HUME STREET-to-HUME STREET	WM-PVC-150	150	93.75	2016	3.8	1,861
WTRMN11992	MOBERLY STREET-to-HUME STREET	WM-CI-150	150	93.75	2016	13.3	6,495
WTRMN11993	HUME STREET	WM-CI-150	150	11.25	1950	12.1	5,904
WTRMN11994	HUME STREET-to-RAGLAN STREET	WM-CON-400	400	30	1965	200.8	262,042
WTRMN11995	HUME STREET	WM-CI-150	150	11.25	1950	129.6	63,258
WTRMN11996	ERIE STREET-to-MOBERLY STREET	WM-CI-150	150	11.25	1950	79.1	38,622
WTRMN11997	PEEL STREET	WM-CI-150	150	11.25	1950	92.2	45,032
WTRMN11998	HUME STREET-to-HUME STREET	WM-CI-150	150	30	1965	3.9	1,916
WTRMN11999	HUME STREET	WM-CI-150	150	92.5	2015	115.6	56,458
WTRMN12000	MINTO STREET-to-HUME STREET	WM-CI-150	150	92.5	2015	4.9	2,373
WTRMN12001	MOBERLY STREET-to-HUME STREET	WM-CI-150	150	11.25	1950	301.4	147,147
WTRMN12002	HUME STREET-to-HARBEN COURT	WM-DI-200	200	40	1973	185.7	93,561
WTRMN12003	ONTARIO STREET-to-MINNESOTA STREET	WM-CON-600	600	72.5	1999	68.8	130,634
WTRMN12004	HUME STREET	WM-CI-400	400	23.75	1960	25.6	20,430
WTRMN12005	(blank)	WM-CON-600	600	72.5	1999	443.7	842,892
WTRMN12006	(blank)	WM-CON-600	600	72.5	1999	634.7	1,205,637
WTRMN12007	(blank)	WM-CON-600	600	72.5	1999	1,240.9	2,357,019
WTRMN12008	ONTARIO STREET	WM-CI-150	150	11.25	1950	179.5	87,621
WTRMN12009	HUME STREET-to-ST PETER STREET	WM-DI-150	150	53.75	1984	15.7	7,681
WTRMN12010	FOURTH STREET-to-HUME STREET	WM-CI-200	200	36.25	1970	179.7	90,507
WTRMN12011	HUME STREET	WM-DI-150	150	92.5	2015	93.1	45,431
WTRMN12012	FOURTH STREET EAST-to-MARKET STREET	WM-DI-150	150	40	1973	162.1	79,159
WTRMN12013	MARKET STREET-to-HUME STREET	WM-PVC-150	150	92.5	2015	12.6	6,173
WTRMN12014	(blank)	WM-DI-150	150	90	2015	59.7	29,125
WTRMN12015	HUME STREET	WM-CI-150	100	87.5	2015	37.9	18,507
WTRMN12016	MINNESOTA STREET-to-MINNESOTA STREET	WM-CI-150	100	1	1950	21.1	10,317
WTRMN12017	MINNESOTA STREET	WM-PVC-150	150	92.5	2015	6.6	3,210
WTRMN12018	HUME STREET	WM-PVC-150	150	11.25	1950	4.3	2,100
WTRMN12019	MOBERLY STREET-to-RAGLAN STREET	WM-CON-400	400	30	1965	292.6	381,880
WTRMN12020	HUME STREET-to-HUME STREET	WM-CON-400	400	30	1965	48.8	63,627
WTRMN12021	HUME STREET	WM-CI-150	150	11.25	1950	9.7	4,743
WTRMN12022	HUME STREET-to-MINNESOTA STREET	WM-PVC-150	150	11.25	1950	5.0	2,432
WTRMN12023	MINNESOTA STREET-to-HUME STREET	WM-PVC-150	150	92.5	2015	27.2	13,292
WTRMN12024	PATERSON STREET-to-HUME STREET	WM-CI-400	400	23.75	1960	191.7	152,892
WTRMN12025	MINNESOTA STREET-to-MOBERLY STREET	WM-CON-400	400	30	1965	411.9	537,488
WTRMN12026	HURON STREET-to-HURON STREET	WM-DI-150	150	36.25	1970	4.2	2,049
WTRMN12027	WEST STREET-to-PEEL STREET	WM-CI-250	250	11.25	1950	111.3	64,706
WTRMN12028	NAPIER STREET-to-WEST STREET	WM-CI-250	250	11.25	1950	70.8	41,170
WTRMN12029	SIMCOE STREET-to-ONTARIO STREET	WM-DI-150	150	46.25	1978	199.4	97,342
WTRMN12030	SIMCOE STREET-to-ONTARIO STREET	WM-DI-150	150	53.75	1984	205.1	100,162

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN12031	HUME STREET-to-HURONTARIO STREET	WM-CI-300	300	23.75	1960	1.5	909
WTRMN12032	FOURTH STREET-to-HUME STREET	WM-CI-300	300	23.75	1960	172.1	106,076
WTRMN12033	BEECH STREET-to-MAPLE STREET	WM-DI-150	150	38.75	1972	119.8	58,497
WTRMN12034	THIRD STREET-to-FOURTH STREET	WM-CI-150	150	2.5	1945	229.5	112,064
WTRMN12035	FOURTH STREET-to-FIFTH STREET	WM-CI-150	150	1	1945	215.5	105,213
WTRMN12036	RON EMO ROAD-to-SANDFORD FLEMING DRIVE	WM-DI-300	300	60	1989	44.7	27,536
WTRMN12037	MACDONALD ROAD-to-MACDONALD ROAD	WM-DI-300	300	60	1989	48.1	29,653
WTRMN12038	SANDFORD FLEMING DRIVE-to-SANDFORD FLEMING DRIVE	WM-CI-150	150	81.25	2006	42.3	20,632
WTRMN12039	SANDFORD FLEMING DRIVE-to-RON EMO ROAD	WM-DI-300	300	60	1989	352.7	217,363
WTRMN12040	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-CI-150	150	33.75	1968	21.2	10,355
WTRMN12041	SILVER CREEK DRIVE-to-FOREST DRIVE	WM-DI-300	300	60	1989	327.1	201,577
WTRMN12042	ALYSSA DRIVE-to-SIXTH STREET	WM-DI-400	400	75	2001	175.2	139,751
WTRMN12043	PEEL STREET-to-PRETTY RIVER PARKWAY	WM-CON-600	600	72.5	1999	469.9	892,486
WTRMN12044	SIMCOE STREET-to-SIMCOE STREET	WM-DI-150	150	46.25	1978	17.5	8,560
WTRMN12045	SIMCOE STREET-to-WEST STREET	WM-DI-150	150	46.25	1978	83.7	40,866
WTRMN12046	SIMCOE STREET-to-PEEL STREET	WM-CON-600	600	72.5	1999	13.2	25,005
WTRMN12047	MINNESOTA STREET-to-SIMCOE STREET	WM-CON-600	600	72.5	1999	372.5	707,607
WTRMN12048	MINNESOTA STREET-to-SIMCOE STREET	WM-CON-600	600	72.5	1999	106.8	202,815
WTRMN12049	SIMCOE STREET-to-MINNESOTA STREET	WM-DI-150	150	51.25	1982	116.6	56,944
WTRMN12050	SIMCOE STREET-to-NAPIER STREET	WM-DI-150	150	51.25	1982	71.7	35,028
WTRMN12051	SIMCOE STREET-to-NAPIER STREET	WM-DI-150	150	67.5	1995	55.8	27,250
WTRMN12052	SIMCOE STREET-to-ONTARIO STREET	WM-DI-150	150	53.75	1984	198.7	96,993
WTRMN12053	PEEL STREET-to-NIAGARA STREET	WM-DI-150	150	38.75	1972	188.1	91,825
WTRMN12054	PRETTY RIVER PARKWAY-to-ERIE STREET	WM-CI-300	300	23.75	1960	227.4	140,116
WTRMN12055	ROBERTSON STREET-to-POPLAR SIDEROAD	WM-DI-500	500	82.5	2007	56.7	61,640
WTRMN12056	OSLER BLUFF ROAD-to-OSLER BLUFF ROAD	WM-DI-300	300	72.5	1999	442.8	272,858
WTRMN12057	OSLER BLUFF ROAD-to-FOREST DRIVE	WM-DI-300	300	66.25	1994	274.2	168,981
WTRMN12058	OAK STREET	WM-DI-300	300	58.57	1996	392.9	242,107
WTRMN12059	OSLER BLUFF ROAD	WM-DI-300	300	72.5	1999	141.5	87,172
WTRMN12060	OSLER BLUFF ROAD	WM-DI-200	200	68.75	1996	27.0	12,713
WTRMN12061	HUGHES STREET-to-PORTLAND STREET	WM-DI-500	500	82.5	2007	439.5	477,957
WTRMN12062	CRANBERRY TRAIL EAST-to-LETT AVENUE	WM-DI-150	150	93.75	2016	165.8	80,925
WTRMN12063	GEORGE ZUBEK DRIVE	WM-DI-150	150	95	2017	3.6	1,776
WTRMN12064	GEORGE ZUBEK DRIVE-to-COLLINS STREET	WM-DI-200	200	95	2017	6.8	3,420
WTRMN12065	COLLINS STREET	WM-DI-200	200	95	2017	245.0	123,413
WTRMN12066	COLLINS STREET-to-GEORGE ZUBEK DRIVE	WM-DI-200	200	81.25	2006	220.9	111,269
WTRMN12067	GREENBRIAR DRIVE-to-CRANBERRY TRAIL	WM-DI-300	300	76.25	2002	47.0	28,975
WTRMN12068	HARBOUR STREET WEST-to-HARBOUR STREET WEST	WM-DI-200	200	93.75	2016	27.3	13,745
WTRMN12069	KARI CRESCENT-to-KARI CRESCENT	WM-DI-200	200	93.75	2016	95.7	48,190
WTRMN12070	SUTTON LANE-to-KARI CRESCENT	WM-DI-200	200	93.75	2016	69.3	34,896
WTRMN12071	KIMBERLY LANE-to-KARI CRESCENT	WM-DI-200	200	93.75	2016	182.4	91,869
WTRMN12072	KARI CRESCENT-to-KARI CRESCENT	WM-DI-200	200	93.75	2016	107.5	54,152
WTRMN12073	HARBOUR STREET WEST-to-SUTTON LANE	WM-DI-200	200	93.75	2016	188.9	95,178
WTRMN12074	KIMBERLY LANE-to-KARI CRESCENT	WM-DI-200	200	93.75	2016	126.7	63,821
WTRMN12075	KIMBERLY LANE-to-KARI CRESCENT	WM-DI-200	200	93.75	2016	147.5	74,284
WTRMN12076	CRANBERRY TRAIL-to-CRANBERRY TRAIL EAST	WM-DI-300	300	95	2017	539.1	332,226
WTRMN12077	HURON STREET-to-SIMCOE STREET	WM-DI-200	200	93.75	2016	196.5	98,976

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN12078	PEEL STREET-to-ALBERT STREET	WM-CI-300	300	10	1949	306.7	188,995
WTRMN12079	HUME STREET-to-HIGHWAY 26	WM-CI-300	300	33.75	1968	44.6	27,491
WTRMN12080	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-DI-400	400	68.75	1996	16.9	13,441
WTRMN12081	SOUTH SERVICE ROAD-to-CONNELL STREET	WM-DI-400	400	68.75	1996	187.2	149,283
WTRMN12082	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	WM-DI-250	250	68.75	1996	8.9	4,863
WTRMN12083	PRETTY RIVER PARKWAY SOUTH-to-PRETTY RIVER PARKWAY	WM-DI-250	250	68.75	1996	6.1	3,311
WTRMN12084	PRETTY RIVER PARKWAY	WM-CI-300	300	35	1969	17.6	10,850
WTRMN12085	SOUTH SERVICE ROAD	WM-CI-300	300	35	1969	199.7	123,090
WTRMN12086	HIGHWAY 26-to-SANDFORD FLEMING DRIVE	WM-DI-300	300	60	1989	256.9	158,288
WTRMN12087	SIXTH LINE	WM-DI-150	150	93.75	2016	138.0	67,371
WTRMN12088	WALNUT STREET-to-CEDAR STREET	WM-CI-150	100	12.5	1955	110.3	53,859
WTRMN12089	FIFTH STREET-to-SIXTH STREET	WM-CI-300	300	30	1965	111.5	68,706
WTRMN12090	HICKORY STREET-to-WALNUT STREET	WM-CI-300	300	37.5	1971	132.3	81,502
WTRMN12091	MAPLE STREET-to-PINE STREET	WM-DI-150	150	45	1977	125.9	61,446
WTRMN12092	LORNE STREET-to-MANNING AVENUE	WM-CI-150	150	17.77	1967	135.8	66,308
WTRMN12093	STE MARIE STREET-to-ELGIN STREET	WM-CI-250	250	8.75	1950	81.1	47,164
WTRMN12094	HUME STREET-to-RAGLAN STREET	WM-CI-300	300	33.75	1968	42.7	26,313
WTRMN12095	RAGLAN STREET-to-HUME STREET	WM-PVC-300	300	33.75	1968	8.0	3,906
WTRMN12096	RAGLAN STREET-to-PRETTY RIVER PARKWAY	WM-CI-300	300	33.75	1968	103.1	63,512
WTRMN12097	HUME STREET	WM-PVC-150	150	78.75	2004	79.7	38,932
WTRMN12098	HURONIA PATHWAY-to-HUGHES STREET	WM-DI-200	200	81.25	2006	164.7	82,940
WTRMN12099	SIDE LAUNCH WAY-to-NORTH PINE STREET	WM-DI-150	150	83.75	2008	501.0	244,598
WTRMN12100	NORTH PINE STREET-to-COLLSHIP LANE	WM-DI-250	250	83.75	2008	41.0	23,846
WTRMN12101	PORTLAND STREET-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	74.2	37,355
WTRMN12102	SPOONER CRESCENT-to-CARPENTER STREET	WM-DI-300	300	93.75	2016	312.2	192,420
WTRMN12103	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-150	150	96.25	2018	262.4	128,130
WTRMN12104	CONSERVATION WAY-to-CONSERVATION WAY	WM-DI-150	150	96.25	2018	13.4	6,536
WTRMN12105	PRESERVATION ROAD-to-PRESERVATION ROAD	WM-CU-50	50	91.25	2018	49.4	620
WTRMN12106	PRESERVATION ROAD-to-CONSERVATION WAY	WM-DI-150	150	96.25	2018	65.6	32,019
WTRMN12107	PRESERVATION ROAD-to-CONSERVATION WAY	WM-DI-150	150	96.25	2018	62.2	30,350
WTRMN12108	CONSERVATION WAY-to-PRESERVATION ROAD	WM-DI-150	150	96.25	2018	120.3	58,748
WTRMN12109	PRESERVATION ROAD	WM-DI-150	150	96.25	2018	44.8	21,864
WTRMN12110	Beachwood Road-to-Beachwood Road	WM-DI-300	300	65	1993	356.5	219,715
WTRMN12111	PRETTY RIVER PARKWAY-to-MACDONALD ROAD	WM-DI-400	400	68.75	1996	221.6	176,708
WTRMN12112	CONNELL STREET	WM-DI-200	200	68.75	1996	17.6	8,312
WTRMN12113	(blank)	WM-DI-500	600	71.25	1998	51.5	56,041
WTRMN12114	SIMCOE STREET	WM-DI-400	400	71.25	1998	6.1	4,899
WTRMN12115	SIMCOE STREET	WM-DI-400	400	71.25	1998	2.9	2,297
WTRMN12116	MOUNTAIN ROAD-to-GRECO COURT	WM-DI-300	300	57.5	1987	154.7	95,336
WTRMN12117	BARFOOT STREET-to-PORTLAND STREET	WM-DI-200	200	96.25	2018	84.4	42,522
WTRMN12118	GRECO COURT-to-MOUNTAIN ROAD	WM-DI-300	300	57.5	1987	412.0	253,890
WTRMN12119	MOUNTAIN ROAD-to-GRECO COURT	WM-DI-200	200	96.25	2018	26.9	13,540
WTRMN12120	BIRCH STREET-to-MAPLE STREET	WM-CI-150	150	82.5	2007	245.6	119,900
WTRMN12121	HICKORY STREET-to-WALNUT STREET	WM-DI-200	200	52.5	1983	121.3	61,090
WTRMN12122	FOURTH STREET	WM-CI-150	100	16.25	1960	110.9	54,160
WTRMN12123	THIRD STREET-to-FOURTH STREET	WM-CI-150	150	23.75	1960	227.7	111,185
WTRMN12124	FIRST STREET	WM-DI-150	150	45	1977	82.5	40,290

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN12125	(blank)	WM-DI-150	150	66.25	1994	124.6	60,848
WTRMN12126	RIVER RUN-to-BUSH STREET	WM-DI-150	150	65	1993	48.1	23,505
WTRMN12127	BUSH STREET-to-PEEL STREET	WM-DI-150	150	60	1989	86.1	42,023
WTRMN12128	BUSH STREET-to-BUSH STREET	WM-DI-150	150	65	1993	101.4	49,499
WTRMN12129	BUSH STREET-to-BUSH STREET	WM-DI-150	150	65	1993	66.8	32,608
WTRMN12130	BUSH STREET-to-BUSH STREET	WM-DI-150	150	65	1993	39.8	19,449
WTRMN12131	PEEL STREET-to-BUSH STREET	WM-DI-150	150	60	1989	126.0	61,524
WTRMN12132	HURONTARIO STREET-to-HAMILTON STREET	WM-CI-150	150	17.5	1955	23.9	11,677
WTRMN12133	HAMILTON STREET-to-STE MARIE STREET	WM-CI-150	150	36.25	1970	119.9	58,560
WTRMN12134	HAMILTON STREET-to-HAMILTON STREET	WM-DI-150	150	36.25	1970	3.2	1,542
WTRMN12135	HUME STREET-to-HAMILTON STREET	WM-CI-150	150	23.75	1960	185.7	90,647
WTRMN12136	HAMILTON STREET-to-GEORGE STREET	WM-CI-150	150	17.86	1969	233.3	113,925
WTRMN12137	STE MARIE STREET-to-HAMILTON STREET	WM-CI-150	150	97.5	2019	109.7	53,563
WTRMN12138	CEDAR STREET-to-OAK STREET	WM-DI-150	150	53.75	1984	116.6	56,948
WTRMN12139	WALNUT STREET-to-CEDAR STREET	WM-DI-150	150	42.5	1975	125.0	61,008
WTRMN12140	THIRD STREET-to-FOURTH STREET	WM-CI-150	150	18.75	1958	230.8	112,681
WTRMN12141	CEDAR STREET-to-OAK STREET	WM-CI-300	300	32.5	1967	115.4	71,084
WTRMN12142	WALNUT STREET-to-CEDAR STREET	WM-CI-300	300	16.27	1967	123.3	75,958
WTRMN12143	FOURTH STREET-to-FIFTH STREET	WM-CI-150	150	18.75	1958	224.1	109,408
WTRMN12144	GRECO COURT	WM-DI-200	200	96.25	2018	237.9	119,826
WTRMN12145	ROBINSON STREET-to-PATERSON STREET	WM-CI-400	400	23.75	1960	118.8	94,747
WTRMN12146	HURONTARIO STREET-to-ROBINSON STREET	WM-CI-400	400	23.75	1960	237.7	189,559
WTRMN12147	HAMILTON STREET-to-HAMILTON STREET	WM-DI-150	150	80	2005	5.8	2,843
WTRMN12148	HUME STREET-to-HAMILTON STREET	WM-CI-150	100	1	1950	199.3	97,301
WTRMN12149	MINNESOTA STREET-to-HUME STREET	WM-CI-150	150	11.25	1950	281.2	137,272
WTRMN12150	NIAGARA STREET-to-HURON STREET	WM-DI-150	150	36.25	1970	72.6	35,449
WTRMN12151	DEY DRIVE-to-DEY DRIVE	WM-DI-200	200	76.25	2002	118.9	59,899
WTRMN12152	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	WM-DI-300	300	82.5	2007	2.1	1,268
WTRMN12153	CRANBERRY TRAIL EAST-to-ROBBIE WAY	WM-DI-300	300	88.75	2012	278.9	171,854
WTRMN12154	HURONTARIO STREET	WM-DI-150	150	92.5	2015	139.0	67,871
WTRMN12155	HUME STREET	WM-PVC-150	150	92.5	2015	13.0	6,337
WTRMN12156	MACALLISTER STREET SOUTH	WM-DI-150	150	66.25	1994	282.2	137,792
WTRMN12157	HIGHWAY 26-to-HIGHWAY 26	WM-DI-300	300	86.25	2010	67.3	41,487
WTRMN12158	SEVENTH STREET-to-EIGHTH STREET	WM-CI-150	100	12.5	1955	129.7	63,339
WTRMN12159	NINTH STREET-to-TENTH STREET	WM-CI-150	150	7.31	1960	121.7	59,401
WTRMN12160	NINTH STREET-to-OAK STREET	WM-DI-150	150	48.75	1980	121.3	59,242
WTRMN12161	OAK STREET-to-BIRCH STREET	WM-DI-150	150	58.75	1988	112.2	54,772
WTRMN12162	EIGHTH STREET-to-NINTH STREET	WM-CI-150	150	6.85	1960	118.4	57,782
WTRMN12163	WALNUT STREET-to-OAK STREET	WM-CI-200	200	23.04	1966	243.7	122,768
WTRMN12164	OAK STREET-to-BIRCH STREET	WM-CI-200	200	31.25	1966	114.1	57,480
WTRMN12165	EIGHTH STREET-to-TENTH STREET	WM-DI-300	300	32.76	1974	235.5	145,154
WTRMN12166	SEVENTH STREET-to-EIGHTH STREET	WM-DI-300	300	41.25	1974	131.7	81,143
WTRMN12167	ALBERT STREET-to-ALMA STREET	WM-DI-150	150	40	1973	181.4	88,549
WTRMN12168	(blank)	WM-DI-150	150	21.25	1974	85.6	41,768
WTRMN12169	MOUNTAIN ROAD-to-EVERGREEN ROAD	WM-DI-400	400	77.5	2003	309.9	247,173
WTRMN12170	BAILEY STREET-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	84.0	42,287
WTRMN12171	MCLEAN AVENUE-to-KIRBY AVENUE	WM-DI-200	200	97.5	2019	11.0	5,515
WTRMN12172	BAILEY STREET-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	4.0	2,009

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN12173	TRACEY LANE-to-ALBANY STREET	WM-DI-200	200	97.5	2019	73.8	37,193
WTRMN12174	ALBANY STREET-to-KIRBY AVENUE	WM-DI-200	200	97.5	2019	79.5	40,049
WTRMN12175	TRACEY LANE-to-TRACEY LANE	WM-DI-200	200	97.5	2019	23.8	11,967
WTRMN12176	TRACEY LANE-to-TRACEY LANE	WM-DI-200	200	97.5	2019	72.7	36,629
WTRMN12177	MCLEAN AVENUE-to-KIRBY AVENUE	WM-DI-200	200	97.5	2019	185.9	93,638
WTRMN12178	ROBERTSON STREET-to-PORTLAND STREET	WM-DI-300	300	82.5	2007	208.8	128,655
WTRMN12179	KIRBY AVENUE-to-PORTLAND STREET	WM-DI-300	300	96.25	2018	66.5	43,805
WTRMN12180	(blank)	WM-CON-600	1067	35	1969	759.6	1,442,883
WTRMN12181	ST VINCENT STREET-to-NAPIER STREET	WM-CI-150	150	1	1950	96.4	47,050
WTRMN12182	PEEL STREET-to-NAPIER STREET	WM-CI-150	150	8.75	1950	179.5	87,625
WTRMN12183	NAPIER STREET-to-PEEL STREET	WM-CI-150	150	93.75	2016	186.2	90,902
WTRMN12184	CAMPBELL STREET	WM-DI-150	150	60	1989	155.9	76,107
WTRMN12185	DICKSON ROAD-to-MAPLE STREET	WM-CI-200	200	32.5	1967	240.8	121,284
WTRMN12186	CAMERON STREET-to-CAMPBELL STREET	WM-CI-150	150	30	1965	307.7	150,249
WTRMN12187	HURONTARIO STREET	WM-CI-200	200	33.75	1968	0.9	463
WTRMN12188	LOCKHART ROAD-to-CAMPBELL STREET	WM-CI-300	300	33.75	1968	22.2	13,684
WTRMN12189	CAMPBELL STREET-to-HURONTARIO STREET	WM-CI-300	300	33.75	1968	131.3	80,937
WTRMN12190	RON EMO ROAD-to-HURONTARIO STREET	WM-DI-200	200	98.75	2020	248.1	124,960
WTRMN12191	DILLON DRIVE-to-NAPIER STREET	WM-DI-200	200	58.75	1988	60.7	30,596
WTRMN12192	HUME STREET	WM-CI-150	150	93.75	2016	127.4	62,211
WTRMN12193	HURONTARIO STREET-to-TRACEY LANE	WM-DI-150	150	81.25	2006	19.4	9,489
WTRMN12194	FINDLAY DRIVE-to-HUGHES STREET	WM-DI-500	500	81.25	2006	264.7	287,841
WTRMN12195	FINDLAY DRIVE-to-GOLFVIEW DRIVE	WM-DI-300	300	81.25	2006	111.3	68,581
WTRMN12196	FINDLAY DRIVE-to-TRACEY LANE	WM-DI-500	450	81.25	2006	751.4	817,143
WTRMN12197	PLEWES DRIVE-to-FOLEY CRESCENT	WM-DI-150	150	96.25	2018	379.5	185,286
WTRMN12198	ARCHER AVENUE	WM-DI-400	400	97.5	2019	71.6	61,017
WTRMN12199	FOLEY CRESCENT	WM-DI-150	150	96.25	2018	37.6	18,368
WTRMN12200	HIGH STREET	WM-DI-200	200	96.25	2018	5.6	2,823
WTRMN12201	(blank)	WM-DI-300	300	96.25	2018	14.1	9,286
WTRMN12202	HIGH STREET-to-FINDLAY DRIVE	WM-DI-500	450	96.25	2018	10.3	12,017
WTRMN12203	FINDLAY DRIVE-to-HIGH STREET	WM-DI-200	200	96.25	2018	148.0	74,555
WTRMN12204	FOLEY CRESCENT-to-ARCHER AVENUE	WM-DI-400	400	97.5	2019	232.7	198,413
WTRMN12205	PLEWES DRIVE-to-PLEWES DRIVE	WM-DI-150	150	97.5	2019	129.5	63,223
WTRMN12206	HIGH STREET-to-ARCHER AVENUE	WM-DI-150	150	97.5	2019	173.2	84,561
WTRMN12207	PLEWES DRIVE-to-ARCHER AVENUE	WM-DI-150	150	97.5	2019	134.3	65,558
WTRMN12208	PLEWES DRIVE-to-HIGH STREET	WM-DI-150	150	96.25	2018	127.9	62,448
WTRMN12209	ARCHER AVENUE-to-HIGH STREET	WM-DI-150	150	96.25	2018	74.4	36,342
WTRMN12210	FOLEY CRESCENT-to-FINDLAY DRIVE	WM-DI-400	400	96.25	2018	66.1	56,330
WTRMN12211	HIGH STREET-to-FINDLAY DRIVE	WM-DI-400	400	96.25	2018	6.2	5,258
WTRMN12212	PLEWES DRIVE-to-ARCHER AVENUE	WM-DI-150	150	97.5	2019	133.7	65,261
WTRMN12213	SPENCER STREET-to-ARCHER AVENUE	WM-DI-150	150	97.5	2019	72.8	35,550
WTRMN12214	PLEWES DRIVE-to-BASSETT STREET	WM-DI-400	400	96.25	2018	165.9	141,414
WTRMN12215	FOLEY CRESCENT-to-BASSETT STREET	WM-DI-400	400	96.25	2018	75.0	63,969
WTRMN12216	PEEL STREET	WM-DI-200	200	97.5	2019	26.1	13,170
WTRMN12217	PEEL STREET	WM-DI-150	150	97.5	2019	1.5	709
WTRMN12218	COLLINS STREET-to-PEEL STREET	WM-DI-200	200	97.5	2019	101.7	51,242
WTRMN12219	DEY DRIVE	WM-DI-150	150	76.25	2002	6.2	3,029
WTRMN12220	DEY DRIVE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	14.1	7,123

DRAFT

Asset	List Description	Asset Class	Dimension 2	Average Condition	Year Built	Meters	Replacement Cost
WTRMN12221	DEY DRIVE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	44.7	22,526
WTRMN12222	KERR STREET-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	74.4	37,484
WTRMN12224	MURRAY COURT-to-ELM STREET	WM-DI-150	150	96.25	2018	92.8	45,305
WTRMN12225	MURRAY COURT-to-MURRAY COURT	WM-DI-150	150	96.25	2018	59.9	29,254
WTRMN12226	MURRAY COURT	WM-DI-150	100	91.25	2018	1.8	899
WTRMN12227	MURRAY COURT	WM-DI-150	150	96.25	2018	1.9	946
WTRMN12228	MURRAY COURT	WM-DI-150	100	91.25	2018	1.8	884
WTRMN12229	MURRAY COURT	WM-DI-150	150	96.25	2018	1.9	915
WTRMN12230	STANLEY STREET	WM-DI-150	150	81.25	2006	3.1	1,527
WTRMN12232	KEITH AVENUE	WM-DI-250	250	48.75	1980	15.5	9,004
WTRMN12234	KEITH AVENUE-to-KEITH AVENUE	(blank)	150	95	2017	13.3	6,510
WTRMN12240	RAGLAN STREET-to-RAGLAN STREET	WM-DI-200	200	97.5	2019	17.6	8,854
WTRMN12245	HUME STREET-to-ERIE STREET	WM-DI-150	150	52.5	1983	315.4	153,995
WTRMN12246	NAPIER STREET-to-HUME STREET	WM-DI-150	150	52.5	1983	12.6	6,153
WTRMN12247	HUME STREET-to-NAPIER STREET	WM-DI-150	150	42.5	1975	7.8	3,816
WTRMN12248	HUME STREET-to-DILLON DRIVE	WM-DI-150	150	98.75	2020	313.4	153,006
WTRMN12250	SIXTH LINE	WM-DI-150	150	93.75	2016	128.7	62,839
WTRMN12251	DEY DRIVE-to-DEY DRIVE	WM-DI-200	200	96.25	2018	7.7	3,858
WTRMN12252	DEY DRIVE-to-DEY DRIVE	WM-DI-200	200	96.25	2018	15.2	7,646
WTRMN12253	MCLEAN AVENUE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	58.2	29,299
WTRMN12254	PORTLAND STREET-to-BARFOOT STREET	WM-DI-200	200	96.25	2018	83.9	42,271
WTRMN12255	TRACEY LANE-to-MCLEAN AVENUE	WM-DI-200	200	97.5	2019	287.0	144,568
WTRMN12256	MCLEAN AVENUE-to-PORTLAND STREET	WM-DI-200	200	96.25	2018	120.9	60,907
WTRMN12257	MCLEAN AVENUE-to-KERR STREET	WM-DI-200	200	96.25	2018	75.1	37,830
WTRMN12258	MCLEAN AVENUE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	297.8	150,024
WTRMN12259	MCLEAN AVENUE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	227.9	114,823
WTRMN12260	TRACEY LANE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	152.7	76,919
WTRMN12261	MCLEAN AVENUE-to-TRACEY LANE	WM-DI-200	200	96.25	2018	75.0	37,779
WTRMN12262	TRACEY LANE-to-BARFOOT STREET	WM-DI-200	200	97.5	2019	83.8	42,207
WTRMN12263	TRACEY LANE-to-BAILEY STREET	WM-DI-200	200	97.5	2019	84.5	42,570
WTRMN12264	TRACEY LANE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	152.3	76,743
WTRMN12265	TRACEY LANE-to-BAILEY STREET	WM-DI-200	200	96.25	2018	94.3	47,523
WTRMN12266	KIRBY AVENUE-to-BAILEY STREET	WM-DI-200	200	96.25	2018	57.7	29,047
WTRMN12267	TRACEY LANE-to-KIRBY AVENUE	WM-DI-200	200	97.5	2019	152.3	76,718
WTRMN12268	KIRBY AVENUE	WM-DI-200	200	96.25	2018	197.7	99,577
WTRMN12269	MCLEAN AVENUE-to-KIRBY AVENUE	WM-DI-200	200	97.5	2019	219.1	110,390
WTRMN12270	DEY DRIVE-to-KIRBY AVENUE	WM-DI-200	200	96.25	2018	125.2	63,049
WTRMN12272	HURON STREET	WM-DI-150	150	98.75	2020	0.0	0
WTRMN12273	NORTH PINE STREET	WM-DI-200	200	97.5	2019	0.0	0
WTRMN12276	HURON STREET	WM-DI-150	150	98.75	2020	0.0	0
WTRMN12278	NORTH PINE STREET	WM-DI-150	150	97.5	2019	0.0	0
WTRMN12279	HURON STREET	WM-DI-150	150	98.75	2020	0.0	0
						170,578.1	103,420,629

DRAFT

Appendix D – Sanitary linear Network

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20000	MARINE VIEW DRIVE-to-SILVER CREEK DRIVE	SAN-675	675	53.15	92.97	55,271
SANSW20001	SILVER CREEK DRIVE-to-HURONIA PATHWAY	SAN-675	675	60.21	92.97	62,615
SANSW20002	CHAMBERLAIN CRESCENT	SAN-250	250	37.33	92.97	19,414
SANSW20003	CHAMBERLAIN CRESCENT	SAN-250	250	43.40	92.97	22,570
SANSW20004	CONNOR AVENUE-to-BROOKE AVENUE	SAN-200	200	38.50	92.43	18,771
SANSW20005	SECOND STREET-to-HURONTARIO STREET	SAN-375	350	98.90	70.67	57,859
SANSW20006	PINE STREET-to-PINE STREET	SAN-250	250	3.03	1.00	1,575
SANSW20007	SPRUCE STREET-to-HICKORY STREET	SAN-750	750	118.96	86.49	146,917
SANSW20008	OAK STREET-to-FIRST STREET	SAN-250	250	56.68	64.83	29,474
SANSW20009	EASEMENT-to-EASEMENT	SAN-600	600	12.50	86.49	10,967
SANSW20010	STE MARIE STREET-to-FOURTH STREET	SAN-450	450	66.07	92.97	42,946
SANSW20011	HURONTARIO STREET-to-GEORGE STREET	SAN-375	350	66.24	60.17	38,749
SANSW20012	RON EMO ROAD-to-SANDFORD FLEMING DRIVE	SAN-300	300	35.45	83.78	19,583
SANSW20013	GLEN ROGERS ROAD-to-ST CLAIR STREET	SAN-450	450	25.45	90.81	16,544
SANSW20014	EASEMENT-to-EASEMENT	SAN-750	750	82.21	86.49	101,532
SANSW20015	EASEMENT	SAN-250	250	94.94	68.33	49,367
SANSW20016	EASEMENT-to-EASEMENT	SAN-250	250	44.89	68.33	23,341
SANSW20017	GEORGIAN MEADOWS DRIVE-to-ALYSSA DRIVE	SAN-200	200	107.98	90.27	52,642
SANSW20018	ALYSSA DRIVE	SAN-150	150	47.32	90.27	21,529
SANSW20019	GEORGIAN MEADOWS DRIVE-to-HIGHLANDS CRESCENT	SAN-200	200	34.49	90.27	16,813
SANSW20020	BROOKE AVENUE-to-CONNOR AVENUE	SAN-450	450	85.49	90.27	55,566
SANSW20021	FIRST STREET-to-CEDAR STREET	SAN-600	600	132.41	57.83	116,190
SANSW20022	HICKORY STREET-to-FIRST STREET	SAN-600	600	12.02	57.83	10,546
SANSW20023	HICKORY STREET-to-EASEMENT	SAN-750	750	92.90	86.49	114,728
SANSW20024	(blank)	SAN-750	750	21.47	86.49	26,515
SANSW20025	(blank)	SAN-750	750	79.08	86.49	97,669
SANSW20038	SANDFORD FLEMING DRIVE	SAN-450	450	94.71	94.05	61,562
SANSW20039	SANDFORD FLEMING DRIVE	SAN-450	450	114.44	94.05	74,385
SANSW20040	SANDFORD FLEMING DRIVE	SAN-450	450	103.61	94.05	67,347
SANSW20041	SANDFORD FLEMING DRIVE	SAN-250	250	98.83	83.78	51,389
SANSW20042	SANDFORD FLEMING DRIVE	SAN-300	300	111.13	83.78	61,397
SANSW20043	RON EMO ROAD-to-SANDFORD FLEMING DRIVE	SAN-300	300	111.62	83.78	61,669
SANSW20044	SANDFORD FLEMING DRIVE-to-SANDFORD FLEMING DRIVE	SAN-300	300	109.11	83.78	60,281
SANSW20045	HURONIA PATHWAY-to-SIXTH LINE	SAN-450	450	67.30	94.05	43,745
SANSW20046	SIXTH LINE-to-SANDFORD FLEMING DRIVE	SAN-450	450	60.00	94.05	39,001
SANSW20047	SIXTH LINE-to-SIXTH LINE	SAN-450	450	59.00	94.05	38,350

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20048	SIXTH LINE-to-SIXTH LINE	SAN-450	450	90.00	94.05	58,501
SANSW20049	HURONIA PATHWAY-to-HURONIA PATHWAY	SAN-450	450	94.90	94.05	61,685
SANSW20050	HURONIA PATHWAY-to-HURONIA PATHWAY	SAN-675	675	41.28	94.05	42,931
SANSW20051	SILVER CRESCENT-to-BARRINGTON TRAIL	SAN-200	200	48.97	92.97	23,870
SANSW20052	BARRINGTON TRAIL-to-BARRINGTON TRAIL	SAN-200	200	107.41	92.97	52,360
SANSW20053	SILVER CRESCENT	SAN-200	200	43.20	92.97	21,061
SANSW20054	SILVER CRESCENT-to-BARRINGTON TRAIL	SAN-200	200	88.58	92.97	43,183
SANSW20055	SILVER CRESCENT-to-SILVER CRESCENT	SAN-200	200	101.99	92.97	49,722
SANSW20056	SILVER CRESCENT-to-SILVER CRESCENT	SAN-675	675	108.35	92.97	112,687
SANSW20057	SILVER CRESCENT-to-SILVER CRESCENT	SAN-200	200	88.32	92.97	43,054
SANSW20058	SILVER CRESCENT-to-BARRINGTON TRAIL	SAN-200	200	103.30	92.97	50,357
SANSW20059	ST CLAIR STREET-to-ROBERT AVENUE	SAN-525	525	77.28	90.81	57,768
SANSW20060	GLEN ROGERS ROAD-to-ST CLAIR STREET	SAN-450	450	109.48	90.81	71,160
SANSW20061	WILLIAMS STREET-to-LYNDEN STREET	SAN-250	250	87.09	92.97	45,286
SANSW20062	WILLIAMS STREET-to-WILLIAMS STREET	SAN-250	250	87.85	92.97	45,679
SANSW20063	WILLIAMS STREET-to-WILLIAMS STREET	SAN-250	250	90.41	92.97	47,015
SANSW20064	COLLINS STREET-to-WILLIAMS STREET	SAN-375	375	67.61	92.97	39,554
SANSW20065	WILLIAMS STREET-to-WILLIAMS STREET	SAN-300	300	67.80	92.97	37,459
SANSW20066	LYNDEN STREET	SAN-250	250	50.37	92.97	26,194
SANSW20067	RIVER RUN-to-BUSH STREET	SAN-250	250	32.89	91.35	17,104
SANSW20068	RIVER RUN	SAN-250	250	49.52	90.81	25,750
SANSW20069	RIVER RUN-to-RIVER RUN	SAN-250	250	91.37	90.81	47,513
SANSW20070	RIVER RUN-to-RIVER RUN	SAN-250	250	25.04	90.81	13,019
SANSW20071	RIVER RUN-to-BUSH STREET	SAN-250	250	56.80	82.70	29,537
SANSW20072	PEEL STREET-to-BUSH STREET	SAN-250	250	70.28	82.70	36,544
SANSW20073	BUSH STREET	SAN-250	250	80.20	82.70	41,702
SANSW20074	PEEL STREET	SAN-250	250	60.55	82.70	31,487
SANSW20075	BUSH STREET-to-BUSH STREET	SAN-250	250	68.08	82.70	35,401
SANSW20076	RIVER RUN-to-BUSH STREET	SAN-250	250	33.30	82.70	17,318
SANSW20077	LOCKHART ROAD-to-KRISTA COURT	SAN-200	200	38.53	81.08	18,782
SANSW20078	DEY DRIVE-to-KRISTA COURT	SAN-200	200	70.94	81.08	34,585
SANSW20079	KRISTA COURT	SAN-200	200	66.97	81.08	32,648
SANSW20080	KRISTA COURT	SAN-200	200	46.77	81.08	22,802
SANSW20081	CARMICHEAL CRESCENT-to-BURNSIDE COURT	SAN-200	200	76.44	82.16	37,265
SANSW20082	CARMICHEAL CRESCENT-to-CARMICHEAL CRESCENT	SAN-200	200	65.14	82.16	31,757
SANSW20083	CARMICHEAL CRESCENT	SAN-200	200	90.32	82.16	44,030

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20084	CARMICHEAL CRESCENT-to-CARMICHEAL CRESCENT	SAN-200	200	34.84	82.16	16,983
SANSW20085	BURNSIDE COURT	SAN-200	200	55.43	82.16	27,024
SANSW20086	CARMICHEAL CRESCENT-to-BURNSIDE COURT	SAN-200	200	59.38	82.16	28,948
SANSW20087	CARMICHEAL CRESCENT-to-LOCKHART ROAD	SAN-200	200	101.63	82.16	49,547
SANSW20088	DILLON DRIVE	SAN-250	250	45.45	82.70	23,635
SANSW20089	NAPIER STREET-to-DILLON DRIVE	SAN-250	250	90.30	82.70	46,956
SANSW20090	DILLON DRIVE-to-DILLON DRIVE	SAN-250	250	66.85	82.70	34,760
SANSW20091	MINNESOTA STREET-to-DILLON DRIVE	SAN-250	250	63.80	82.70	33,176
SANSW20092	GODDEN STREET-to-DILLON DRIVE	SAN-300	300	54.10	82.70	29,892
SANSW20093	GODDEN STREET-to-DILLON DRIVE	SAN-300	300	89.03	82.70	49,189
SANSW20094	GODDEN STREET-to-GODDEN STREET	SAN-300	300	63.83	82.70	35,268
SANSW20095	GODDEN STREET-to-DILLON DRIVE	SAN-300	300	24.60	82.70	13,591
SANSW20096	MINNESOTA STREET-to-DILLON DRIVE	SAN-200	200	59.96	82.70	29,229
SANSW20097	DILLON DRIVE-to-DILLON DRIVE	SAN-200	200	86.32	82.70	42,080
SANSW20098	DILLON DRIVE-to-DILLON DRIVE	SAN-200	200	88.50	82.70	43,145
SANSW20099	GODDEN STREET-to-DILLON DRIVE	SAN-200	200	103.14	82.70	50,281
SANSW20100	STE MARIE STREET-to-STE MARIE STREET	SAN-450	450	44.65	92.97	29,021
SANSW20101	ST PETER STREET	SAN-250	250	66.97	1.00	34,823
SANSW20103	FIRST STREET-to-HURONTARIO STREET	SAN-375	350	109.48	75.33	64,045
SANSW20104	SECOND STREET-to-HURONTARIO STREET	SAN-450	450	111.32	75.33	72,360
SANSW20105	HURONTARIO STREET-to-THIRD STREET	SAN-450	450	110.28	75.33	71,684
SANSW20106	HURONTARIO STREET-to-FOURTH STREET	SAN-450	450	112.31	75.33	73,002
SANSW20107	THIRD STREET-to-HURONTARIO STREET	SAN-450	450	111.38	75.33	72,399
SANSW20108	FOURTH STREET-to-HUME STREET	SAN-450	400	166.02	75.33	107,911
SANSW20109	HUME STREET-to-HURONTARIO STREET	SAN-450	400	70.33	60.17	45,713
SANSW20110	FIFTH STREET-to-HAMILTON STREET	SAN-450	400	105.19	60.17	68,374
SANSW20111	SIXTH STREET-to-SEVENTH STREET	SAN-450	400	119.51	60.17	77,679
SANSW20112	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	68.20	60.17	39,895
SANSW20113	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	118.35	60.17	69,236
SANSW20114	HURONTARIO STREET-to-VICTORY DRIVE	SAN-375	350	71.97	60.17	42,104
SANSW20115	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	42.73	60.17	24,999
SANSW20116	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	110.32	60.17	64,539
SANSW20117	SHANNON COURT	SAN-200	200	103.84	87.57	50,620
SANSW20118	SHANNON COURT-to-SHANNON COURT	SAN-200	200	43.17	87.57	21,047
SANSW20119	(blank)	SAN-200	200	19.95	87.57	9,726
SANSW20120	(blank)	SAN-200	200	23.86	88.11	11,631

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20121	ST PAUL STREET	SAN-200	200	69.22	88.11	33,742
SANSW20122	ST PAUL STREET	SAN-200	200	61.27	88.11	29,870
SANSW20123	CALLARY CRESCENT-to-CALLARY CRESCENT	SAN-200	200	15.41	88.11	7,511
SANSW20124	CALLARY CRESCENT-to-CALLARY CRESCENT	SAN-200	200	98.26	88.11	47,901
SANSW20125	CALLARY CRESCENT-to-CALLARY CRESCENT	SAN-200	200	14.59	88.11	7,113
SANSW20126	ST PAUL STREET-to-CALLARY CRESCENT	SAN-200	200	61.60	88.11	30,030
SANSW20127	ST PAUL STREET-to-ST PAUL STREET	SAN-200	200	41.77	88.11	20,363
SANSW20128	ST PAUL STREET-to-ST PAUL STREET	SAN-300	300	86.68	88.11	47,891
SANSW20129	ST PAUL STREET-to-FOURTH STREET	SAN-250	250	65.12	1.00	33,860
SANSW20130	FOURTH STREET EAST	SAN-250	250	36.68	94.05	19,072
SANSW20131	ST PAUL STREET-to-ST PETER STREET	SAN-250	250	69.18	94.05	35,974
SANSW20132	FOURTH STREET EAST-to-ST PAUL STREET	SAN-200	200	63.70	1.00	31,052
SANSW20133	FOURTH STREET EAST-to-FOURTH STREET EAST	SAN-200	200	52.87	1.00	25,775
SANSW20134	FOURTH STREET EAST-to-MARKET STREET	SAN-250	250	57.88	1.00	30,098
SANSW20135	STE MARIE STREET-to-FOURTH STREET EAST	SAN-250	250	57.28	1.00	29,787
SANSW20136	FOURTH STREET EAST	SAN-250	250	54.71	92.97	28,451
SANSW20137	HURONTARIO STREET-to-FOURTH STREET EAST	SAN-250	250	73.10	1.00	38,014
SANSW20138	PINE STREET	SAN-250	250	96.73	67.17	50,301
SANSW20139	FIRST STREET-to-PINE STREET	SAN-250	250	88.45	67.17	45,993
SANSW20140	SECOND STREET-to-PINE STREET	SAN-300	300	84.37	93.51	46,612
SANSW20141	PINE STREET-to-PINE STREET	SAN-300	300	62.46	93.51	34,511
SANSW20142	PINE STREET-to-PINE STREET	SAN-250	250	72.49	93.51	37,692
SANSW20143	PINE STREET-to-FOURTH STREET	SAN-250	250	70.83	93.51	36,833
SANSW20144	PINE STREET-to-PINE STREET	SAN-250	250	77.27	93.51	40,180
SANSW20145	PINE STREET-to-PINE STREET	SAN-250	250	74.13	93.51	38,546
SANSW20146	PINE STREET-to-FIFTH STREET	SAN-250	250	70.82	93.51	36,827
SANSW20147	MAPLE STREET	SAN-200	200	87.52	84.86	42,665
SANSW20148	MAPLE STREET	SAN-200	200	74.05	84.86	36,099
SANSW20149	MAPLE STREET-to-MAPLE STREET	SAN-300	300	49.62	84.86	27,413
SANSW20150	MAPLE STREET-to-MAPLE STREET	SAN-300	300	113.49	93.51	62,704
SANSW20151	MAPLE STREET-to-MAPLE STREET	SAN-300	300	116.41	93.51	64,319
SANSW20152	MAPLE STREET-to-FIFTH STREET	SAN-250	250	105.72	93.51	54,976
SANSW20153	MAPLE STREET-to-SIXTH STREET	SAN-250	250	117.92	83.24	61,317
SANSW20154	MAPLE STREET-to-MAPLE STREET	SAN-250	250	62.83	93.51	32,672
SANSW20155	MAPLE STREET-to-SEVENTH STREET	SAN-250	250	61.55	93.51	32,005
SANSW20156	SEVENTH STREET-to-MAPLE STREET	SAN-250	250	95.76	93.51	49,797
SANSW20157	EIGHTH STREET-to-NINTH STREET	SAN-250	250	123.53	1.00	64,234
SANSW20158	MAPLE STREET-to-MAPLE STREET	SAN-250	250	156.95	93.51	81,615

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20159	MAPLE STREET	SAN-200	200	84.34	83.24	41,116
SANSW20160	MAPLE STREET-to-MAPLE STREET	SAN-200	200	46.19	83.24	22,519
SANSW20161	CAMPBELL STREET-to-MAPLE STREET	SAN-200	200	11.20	67.17	5,460
SANSW20162	BEECH STREET-to-BEECH STREET	SAN-200	200	80.20	92.43	39,096
SANSW20163	SECOND STREET-to-BEECH STREET	SAN-300	300	87.67	94.59	48,439
SANSW20164	BEECH STREET-to-BEECH STREET	SAN-300	300	108.53	94.59	59,960
SANSW20165	BEECH STREET-to-FOURTH STREET	SAN-300	300	116.01	94.59	64,096
SANSW20166	BEECH STREET-to-FIFTH STREET	SAN-250	250	115.14	94.59	59,874
SANSW20167	FOURTH STREET-to-BEECH STREET	SAN-250	250	106.66	94.59	55,463
SANSW20168	BIRCH STREET-to-BIRCH STREET	SAN-600	600	109.60	92.43	96,170
SANSW20169	BIRCH STREET-to-BIRCH STREET	SAN-450	450	95.24	73.00	61,903
SANSW20170	BIRCH STREET-to-BIRCH STREET	SAN-450	450	79.25	73.00	51,513
SANSW20171	THIRD STREET-to-BIRCH STREET	SAN-375	375	24.90	92.43	14,569
SANSW20172	BIRCH STREET-to-BIRCH STREET	SAN-300	300	106.40	92.43	58,784
SANSW20173	BIRCH STREET-to-FOURTH STREET	SAN-300	300	93.44	92.43	51,625
SANSW20174	FOURTH STREET-to-BIRCH STREET	SAN-250	250	115.66	92.43	60,142
SANSW20175	BIRCH STREET-to-FIFTH STREET	SAN-250	250	105.70	92.43	54,963
SANSW20176	FIFTH STREET-to-SIXTH STREET	SAN-250	250	117.49	92.43	61,093
SANSW20177	BIRCH STREET-to-BIRCH STREET	SAN-250	250	57.57	92.43	29,937
SANSW20178	BIRCH STREET-to-SEVENTH STREET	SAN-250	250	65.68	92.43	34,151
SANSW20179	BIRCH STREET-to-EIGHTH STREET	SAN-250	250	125.93	1.00	65,484
SANSW20180	BIRCH STREET-to-BIRCH STREET	SAN-200	200	70.20	53.17	34,223
SANSW20181	BIRCH STREET-to-NINTH STREET	SAN-200	200	53.34	92.43	26,003
SANSW20182	TENTH STREET	SAN-250	250	43.32	60.17	22,527
SANSW20183	WILLOW STREET	SAN-200	200	70.24	56.67	34,242
SANSW20184	OAK STREET-to-OAK STREET	SAN-300	300	85.72	50.83	47,358
SANSW20185	OAK STREET-to-OAK STREET	SAN-300	300	61.22	50.83	33,824
SANSW20186	CAMERON STREET-to-OAK STREET	SAN-300	300	87.39	50.83	48,285
SANSW20187	TENTH STREET-to-WILLOW STREET	SAN-375	375	95.68	50.83	55,971
SANSW20188	OAK STREET-to-OAK STREET	SAN-375	375	61.21	50.83	35,808
SANSW20189	OAK STREET-to-OAK STREET	SAN-375	375	57.15	50.83	33,430
SANSW20190	OAK STREET-to-OAK STREET	SAN-375	375	32.83	50.83	19,206
SANSW20191	EIGHTH STREET-to-OAK STREET	SAN-375	375	29.90	50.83	17,492
SANSW20192	OAK STREET-to-EIGHTH STREET	SAN-375	375	65.82	50.83	38,502
SANSW20193	OAK STREET-to-OAK STREET	SAN-375	375	65.50	50.83	38,319
SANSW20194	OAK STREET-to-OAK STREET	SAN-450	450	60.03	26.14	39,018
SANSW20195	SIXTH STREET-to-OAK STREET	SAN-450	450	61.46	26.14	39,946
SANSW20196	FIFTH STREET-to-OAK STREET	SAN-450	450	117.04	26.14	76,077
SANSW20197	OAK STREET-to-OAK STREET	SAN-450	450	72.47	26.14	47,106

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20198	OAK STREET-to-OAK STREET	SAN-450	450	77.66	26.14	50,478
SANSW20199	OAK STREET-to-OAK STREET	SAN-450	450	72.92	26.14	47,398
SANSW20200	THIRD STREET-to-OAK STREET	SAN-450	450	75.03	26.14	48,768
SANSW20201	SECOND STREET-to-OAK STREET	SAN-450	450	110.85	55.50	72,051
SANSW20202	OAK STREET-to-OAK STREET	SAN-450	450	41.86	78.83	27,206
SANSW20203	OAK STREET-to-OAK STREET	SAN-450	450	53.60	78.83	34,839
SANSW20204	FIRST STREET-to-OAK STREET	SAN-450	450	89.27	78.83	58,024
SANSW20205	FIRST STREET-to-CEDAR STREET	SAN-200	200	91.31	57.83	44,513
SANSW20206	CEDAR STREET	SAN-200	200	82.43	57.83	40,183
SANSW20207	CEDAR STREET	SAN-200	200	93.58	93.51	45,619
SANSW20208	CEDAR STREET-to-CEDAR STREET	SAN-250	250	69.86	93.51	36,329
SANSW20209	CEDAR STREET-to-CEDAR STREET	SAN-250	250	75.83	93.51	39,432
SANSW20210	THIRD STREET-to-CEDAR STREET	SAN-250	250	77.20	93.51	40,145
SANSW20211	CEDAR STREET-to-CEDAR STREET	SAN-250	250	75.70	93.51	39,364
SANSW20212	CEDAR STREET-to-CEDAR STREET	SAN-250	250	73.61	93.51	38,278
SANSW20213	CEDAR STREET-to-FIFTH STREET	SAN-250	250	72.76	93.51	37,836
SANSW20214	WALNUT STREET-to-EIGHTH STREET	SAN-250	250	71.10	69.50	36,971
SANSW20215	SEVENTH STREET-to-WALNUT STREET	SAN-250	250	57.03	69.50	29,656
SANSW20216	HICKORY STREET-to-FIFTH STREET	SAN-200	200	65.81	59.00	32,081
SANSW20217	SPRUCE STREET-to-FIFTH STREET	SAN-250	250	75.41	64.83	39,212
SANSW20218	SPRUCE STREET	SAN-250	250	57.13	69.50	29,707
SANSW20219	TENTH STREET	SAN-250	250	92.28	66.00	47,984
SANSW20220	ELM STREET-to-ELM STREET	SAN-250	250	73.51	61.33	38,227
SANSW20221	FOURTH STREET-to-SPRUCE STREET	SAN-250	250	53.27	64.83	27,702
SANSW20222	FOURTH STREET-to-HICKORY STREET	SAN-250	250	68.64	64.83	35,691
SANSW20223	FOURTH STREET-to-WALNUT STREET	SAN-250	250	57.48	59.00	29,891
SANSW20224	HICKORY STREET-to-FOURTH STREET	SAN-250	250	62.58	59.00	32,539
SANSW20225	WALNUT STREET	SAN-200	200	77.30	59.00	37,684
SANSW20226	BIRCH STREET	SAN-200	200	29.14	67.17	14,208
SANSW20227	BIRCH STREET	SAN-200	200	60.09	73.00	29,294
SANSW20228	MAPLE STREET	SAN-200	200	67.21	73.00	32,767
SANSW20229	PINE STREET	SAN-200	200	92.22	73.00	44,959
SANSW20230	FIFTH STREET-to-HURONTARIO STREET	SAN-200	200	35.69	70.67	17,400
SANSW20231	PINE STREET-to-FIFTH STREET	SAN-200	200	94.11	93.51	45,878
SANSW20232	MAPLE STREET	SAN-200	200	61.78	70.67	30,119
SANSW20233	BEECH STREET-to-FIFTH STREET	SAN-200	200	80.94	94.59	39,459
SANSW20234	BIRCH STREET	SAN-200	200	100.03	80.54	48,762
SANSW20235	BIRCH STREET	SAN-200	200	71.50	92.43	34,857
SANSW20236	FIFTH STREET-to-OAK STREET	SAN-250	250	61.76	38.71	32,114

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20237	CEDAR STREET-to-FIFTH STREET	SAN-250	250	59.01	38.71	30,686
SANSW20238	FIFTH STREET-to-FIFTH STREET	SAN-250	250	80.62	38.71	41,920
SANSW20239	FIFTH STREET-to-FIFTH STREET	SAN-250	250	80.64	38.71	41,932
SANSW20240	FIFTH STREET-to-FIFTH STREET	SAN-250	250	80.07	38.71	41,637
SANSW20241	FIFTH STREET-to-FIFTH STREET	SAN-200	200	63.28	64.83	30,848
SANSW20242	SPRUCE STREET-to-FIFTH STREET	SAN-200	200	58.58	64.83	28,558
SANSW20243	FIFTH STREET-to-FIFTH STREET	SAN-250	250	86.44	64.83	44,946
SANSW20244	FIFTH STREET-to-FIFTH STREET	SAN-250	250	84.47	64.83	43,926
SANSW20245	SIXTH STREET-to-SIXTH STREET	SAN-250	250	83.22	62.50	43,275
SANSW20246	SIXTH STREET-to-SIXTH LINE	SAN-250	250	86.86	62.50	45,167
SANSW20247	SIXTH STREET-to-SIXTH STREET	SAN-250	250	86.12	62.50	44,784
SANSW20248	SIXTH STREET-to-SIXTH STREET	SAN-250	250	71.80	62.50	37,333
SANSW20249	SIXTH STREET-to-SIXTH STREET	SAN-250	250	96.54	62.50	50,199
SANSW20250	SIXTH STREET-to-SIXTH STREET	SAN-300	300	78.06	26.14	43,128
SANSW20251	SIXTH STREET	SAN-200	200	45.68	26.14	22,269
SANSW20252	SIXTH STREET-to-SIXTH STREET	SAN-200	200	8.67	26.14	4,225
SANSW20253	SIXTH STREET-to-SIXTH STREET	SAN-300	300	75.68	26.14	41,812
SANSW20254	SIXTH STREET-to-OAK STREET	SAN-300	300	76.99	26.14	42,536
SANSW20255	SIXTH STREET	SAN-200	200	106.45	92.43	51,893
SANSW20256	BIRCH STREET-to-SIXTH STREET	SAN-200	200	94.33	92.43	45,986
SANSW20257	SIXTH STREET	SAN-200	200	59.95	1.00	29,224
SANSW20258	SIXTH STREET-to-SIXTH STREET	SAN-200	200	62.21	1.00	30,327
SANSW20259	MAPLE STREET-to-SIXTH STREET	SAN-200	200	67.34	1.00	32,830
SANSW20260	SEVENTH STREET	SAN-250	250	78.53	1.00	40,837
SANSW20261	MAPLE STREET-to-SEVENTH STREET	SAN-250	250	105.64	1.00	54,935
SANSW20262	SEVENTH STREET-to-SEVENTH STREET	SAN-250	250	80.63	1.00	41,926
SANSW20263	BIRCH STREET-to-SEVENTH STREET	SAN-250	250	87.60	1.00	45,554
SANSW20264	SEVENTH STREET-to-SEVENTH STREET	SAN-375	350	78.85	56.67	46,128
SANSW20265	SEVENTH STREET-to-SEVENTH STREET	SAN-375	350	74.10	56.67	43,347
SANSW20266	SEVENTH STREET-to-OAK STREET	SAN-375	350	85.51	56.67	50,020
SANSW20267	SEVENTH STREET-to-WALNUT STREET	SAN-375	350	106.49	61.33	62,299
SANSW20268	SEVENTH STREET-to-SEVENTH STREET	SAN-375	350	72.17	61.33	42,218
SANSW20269	SPRUCE STREET-to-SEVENTH STREET	SAN-375	350	68.26	61.33	39,934
SANSW20270	WALNUT STREET-to-EIGHTH STREET	SAN-250	250	77.81	56.67	40,463
SANSW20271	EIGHTH STREET-to-EIGHTH STREET	SAN-250	250	79.71	56.67	41,448
SANSW20272	EIGHTH STREET-to-OAK STREET	SAN-250	250	80.52	56.67	41,869
SANSW20273	OAK STREET	SAN-200	200	62.01	80.54	30,231
SANSW20274	BIRCH STREET-to-EIGHTH STREET	SAN-250	250	116.71	1.00	60,691
SANSW20275	EIGHTH STREET	SAN-250	250	90.07	69.50	46,837

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20276	EIGHTH STREET-to-EIGHTH STREET	SAN-250	250	89.53	69.50	46,557
SANSW20277	NINTH STREET	SAN-200	200	45.88	1.00	22,366
SANSW20278	NINTH STREET-to-NINTH STREET	SAN-200	200	72.53	1.00	35,356
SANSW20279	MAPLE STREET-to-NINTH STREET	SAN-250	250	82.81	1.00	43,062
SANSW20280	NINTH STREET-to-MAPLE STREET	SAN-200	200	119.96	92.43	58,480
SANSW20281	BIRCH STREET-to-NINTH STREET	SAN-200	200	120.67	92.43	58,827
SANSW20282	NINTH STREET	SAN-250	250	55.90	76.50	29,067
SANSW20283	NINTH STREET-to-OAK STREET	SAN-250	250	106.56	76.50	55,411
SANSW20284	WILLOW STREET-to-BIRCH STREET	SAN-250	250	50.85	59.00	26,440
SANSW20285	REID CRESCENT	SAN-200	200	55.85	82.16	27,227
SANSW20286	REID CRESCENT-to-SPRUCE STREET	SAN-200	200	70.41	82.70	34,324
SANSW20287	REID CRESCENT-to-REID CRESCENT	SAN-200	200	44.66	82.70	21,771
SANSW20288	REID CRESCENT-to-REID CRESCENT	SAN-200	200	56.77	82.70	27,673
SANSW20289	REID CRESCENT-to-REID CRESCENT	SAN-200	200	96.22	82.70	46,906
SANSW20290	TELFER ROAD-to-SPRUCE STREET	SAN-200	200	100.86	82.16	49,171
SANSW20291	POPLAR SIDEROAD	SAN-200	200	85.77	92.97	41,813
SANSW20292	SAUNDERS STREET-to-POPLAR SIDEROAD	SAN-200	200	119.66	92.97	58,336
SANSW20293	SAUNDERS STREET-to-PORT ROAD	SAN-200	200	121.47	92.97	59,216
SANSW20294	SAUNDERS STREET-to-STEPHENS STREET	SAN-200	200	122.14	92.97	59,542
SANSW20295	STEPHENS STREET	SAN-200	200	91.60	92.97	44,656
SANSW20296	SAUNDERS STREET-to-STEPHENS STREET	SAN-200	200	110.10	92.97	53,674
SANSW20297	SAUNDERS STREET-to-MARY STREET	SAN-200	200	121.76	92.97	59,358
SANSW20298	FINDLAY DRIVE-to-STANLEY STREET	SAN-200	200	123.03	92.97	59,979
SANSW20299	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	119.20	93.51	0
SANSW20300	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	67.88	93.51	0
SANSW20301	FINDLAY DRIVE-to-SAUNDERS STREET	SAN-375	375	69.45	93.51	0
SANSW20302	STANLEY STREET-to-STANLEY STREET	SAN-200	200	69.65	92.97	33,952
SANSW20303	STANLEY STREET-to-STANLEY STREET	SAN-200	200	75.46	92.97	36,787
SANSW20304	STANLEY STREET-to-STANLEY STREET	SAN-200	200	103.75	92.97	50,576
SANSW20305	STANLEY STREET-to-NEWBOURNE STREET	SAN-200	200	116.32	92.97	56,704
SANSW20306	STANLEY STREET-to-STANLEY STREET	SAN-200	200	99.33	92.97	48,422
SANSW20307	STANLEY STREET-to-STANLEY STREET	SAN-200	200	99.38	92.97	48,448
SANSW20308	STANLEY STREET-to-HURONTARIO STREET	SAN-200	200	82.31	92.97	40,128
SANSW20309	FINDLAY DRIVE-to-HURONTARIO STREET	SAN-375	375	118.36	92.97	69,243
SANSW20310	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	120.71	92.97	70,617
SANSW20311	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	94.84	92.97	55,483
SANSW20312	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	100.77	92.97	58,949
SANSW20313	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	94.87	92.97	55,499
SANSW20314	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	104.94	92.97	61,389

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20315	FINDLAY DRIVE-to-FINDLAY DRIVE	SAN-375	375	100.00	92.97	58,500
SANSW20316	NORTH MAPLE STREET-to-SIDE LAUNCH WAY	SAN-250	250	7.21	93.51	3,751
SANSW20317	NORTH MAPLE STREET-to-NORTH MAPLE STREET	SAN-250	250	6.52	93.51	3,391
SANSW20318	NORTH MAPLE STREET-to-NORTH MAPLE STREET	SAN-250	250	64.70	93.51	33,643
SANSW20319	NORTH MAPLE STREET-to-NORTH MAPLE STREET	SAN-250	250	70.15	93.51	36,479
SANSW20320	NORTH MAPLE STREET-to-MACKINAW LANE	SAN-250	250	24.51	93.51	12,744
SANSW20321	NORTH MAPLE STREET-to-COLLSHIP LANE	SAN-250	250	66.69	93.51	34,679
SANSW20322	WHEELHOUSE CRESCENT-to-NORTH MAPLE STREET	SAN-250	250	66.80	93.51	34,737
SANSW20323	WHEELHOUSE CRESCENT-to-NORTH MAPLE STREET	SAN-250	250	63.65	93.51	33,097
SANSW20324	WHEELHOUSE CRESCENT-to-WESTMOUNT MEWS	SAN-250	250	63.91	93.51	33,232
SANSW20325	WHEELHOUSE CRESCENT-to-NORTH PINE STREET	SAN-250	250	84.39	93.51	43,883
SANSW20326	NORTH PINE STREET-to-COLLSHIP LANE	SAN-250	250	47.63	93.51	24,767
SANSW20327	COLLSHIP LANE-to-MACKINAW LANE	SAN-250	250	33.65	93.51	17,497
SANSW20328	NORTH PINE STREET-to-NORTH PINE STREET	SAN-300	300	77.15	93.51	42,624
SANSW20329	NORTH PINE STREET-to-NORTH PINE STREET	SAN-300	300	27.32	93.51	15,092
SANSW20330	NORTH PINE STREET-to-SIDE LAUNCH WAY	SAN-300	300	10.09	93.51	5,573
SANSW20331	PINE STREET	SAN-300	300	55.01	1.00	30,394
SANSW20332	PINE STREET-to-FIRST STREET	SAN-300	300	17.47	1.00	9,649
SANSW20333	BIRCH STREET-to-FIRST STREET	SAN-750	750	18.20	1.00	22,471
SANSW20334	OAK STREET	SAN-250	250	54.83	64.83	28,510
SANSW20335	Sewage STREET-to-SPRUCE STREET	SAN-200	200	30.72	57.83	14,975
SANSW20336	FIRST STREET-to-PINE STREET	SAN-750	750	120.24	94.59	148,498
SANSW20337	(blank)	SAN-750	750	121.83	94.59	150,464
SANSW20338	BIRCH STREET-to-BEECH STREET	SAN-750	750	115.76	94.59	142,959
SANSW20339	OAK STREET-to-BIRCH STREET	SAN-750	750	125.13	57.83	154,540
SANSW20340	FIRST STREET-to-OAK STREET	SAN-600	600	117.40	57.83	103,017
SANSW20341	FIRST STREET-to-FIRST STREET	SAN-600	600	97.27	57.83	85,355
SANSW20342	FIRST STREET-to-HICKORY STREET	SAN-525	525	62.50	57.83	46,722
SANSW20343	HURONTARIO STREET-to-TRACEY LANE	SAN-375	375	87.12	92.97	50,966
SANSW20344	GOLFVIEW DRIVE	SAN-200	200	118.66	92.97	57,844
SANSW20345	HURONTARIO STREET-to-GOLFVIEW DRIVE	SAN-200	200	35.99	92.97	17,543
SANSW20346	HURONTARIO STREET-to-GOLFVIEW DRIVE	SAN-375	375	94.22	92.97	55,116
SANSW20347	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	375	94.95	92.97	55,546
SANSW20348	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	86.15	60.17	50,395

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20349	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	84.36	60.17	49,351
SANSW20350	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	81.40	60.17	47,618
SANSW20351	HURONTARIO STREET-to-HURONTARIO STREET	SAN-375	350	54.21	60.17	31,713
SANSW20352	CHAMBERLAIN CRESCENT	SAN-200	200	47.68	92.97	23,244
SANSW20353	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	SAN-250	250	66.69	92.97	34,677
SANSW20354	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	SAN-250	250	108.42	92.97	56,380
SANSW20355	CHAMBERLAIN CRESCENT	SAN-200	200	94.93	92.97	46,280
SANSW20356	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	SAN-250	250	92.04	92.97	47,862
SANSW20357	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	SAN-250	250	87.75	92.97	45,631
SANSW20358	CHAMBERLAIN CRESCENT-to-DAVIS STREET	SAN-250	250	88.94	92.97	46,247
SANSW20359	CHAMBERLAIN CRESCENT-to-HOLDEN STREET	SAN-250	250	86.91	92.97	45,195
SANSW20360	CHAMBERLAIN CRESCENT-to-HOLDEN STREET	SAN-250	250	48.72	92.97	25,334
SANSW20361	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	SAN-250	250	80.24	92.97	41,727
SANSW20362	CHAMBERLAIN CRESCENT-to-BARR STREET	SAN-250	250	66.52	92.97	34,588
SANSW20363	CHAMBERLAIN CRESCENT-to-CHAMBERLAIN CRESCENT	SAN-250	250	55.80	92.97	29,018
SANSW20364	CHAMBERLAIN CRESCENT-to-PATTON STREET	SAN-250	250	110.18	92.97	57,296
SANSW20365	BARR STREET-to-BARR STREET	SAN-250	250	120.46	92.97	62,637
SANSW20366	BARR STREET-to-CHAMBERLAIN CRESCENT	SAN-250	250	110.18	92.97	57,291
SANSW20367	PATTON STREET	SAN-250	250	87.54	92.97	45,519
SANSW20368	PATTON STREET-to-PATTON STREET	SAN-250	250	105.10	92.97	54,653
SANSW20369	BARR STREET-to-PATTON STREET	SAN-250	250	55.59	92.97	28,909
SANSW20370	HOLDEN STREET	SAN-200	200	80.82	92.97	39,399
SANSW20371	HOLDEN STREET-to-HOLDEN STREET	SAN-250	250	95.92	92.97	49,878
SANSW20372	CHAMBERLAIN CRESCENT-to-HOLDEN STREET	SAN-250	250	94.16	92.97	48,963
SANSW20373	DAVIS STREET	SAN-200	200	87.57	92.97	42,690
SANSW20374	DAVIS STREET-to-DAVIS STREET	SAN-250	250	89.91	92.97	46,752
SANSW20375	CHAMBERLAIN CRESCENT-to-DAVIS STREET	SAN-250	250	87.17	92.97	45,329
SANSW20376	GEORGIAN MEADOWS DRIVE	SAN-200	200	42.44	90.27	20,691
SANSW20377	GEORGIAN MEADOWS DRIVE-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	86.68	90.27	42,256
SANSW20378	GEORGIAN MEADOWS DRIVE-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	34.48	90.27	16,809
SANSW20379	GEORGIAN MEADOWS DRIVE-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	11.54	90.27	5,627

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20380	GEORGIAN MEADOWS DRIVE-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	42.19	90.27	20,570
SANSW20381	GEORGIAN MEADOWS DRIVE-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	85.92	90.27	41,886
SANSW20382	GEORGIAN MEADOWS DRIVE	SAN-200	200	33.43	90.27	16,299
SANSW20383	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	SAN-200	200	86.33	90.27	42,083
SANSW20384	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	SAN-200	200	18.26	90.27	8,900
SANSW20385	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	SAN-200	200	39.83	90.27	19,417
SANSW20386	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	SAN-200	200	15.21	90.27	7,417
SANSW20387	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	SAN-200	200	82.46	90.27	40,197
SANSW20388	HIGHLANDS CRESCENT-to-HIGHLANDS CRESCENT	SAN-200	200	29.53	90.27	14,396
SANSW20389	GEORGIAN MEADOWS DRIVE-to-HIGHLANDS CRESCENT	SAN-200	200	100.09	90.27	48,795
SANSW20390	CONNOR AVENUE	SAN-200	200	58.42	91.35	28,479
SANSW20391	CONNOR AVENUE-to-CONNOR AVENUE	SAN-200	200	63.59	91.35	31,002
SANSW20392	CONNOR AVENUE-to-CONNOR AVENUE	SAN-200	200	19.88	91.35	9,691
SANSW20393	CONNOR AVENUE-to-CONNOR AVENUE	SAN-200	200	59.92	91.35	29,210
SANSW20394	CONNOR AVENUE-to-CONNOR AVENUE	SAN-250	250	15.57	91.35	8,097
SANSW20395	BROOKE AVENUE	SAN-200	200	88.54	92.43	43,161
SANSW20396	BROOKE AVENUE-to-ALYSSA DRIVE	SAN-200	200	84.91	92.43	41,393
SANSW20397	BROOKE AVENUE-to-BROOKE AVENUE	SAN-450	450	85.27	90.27	55,424
SANSW20398	BROOKE AVENUE-to-CONNOR AVENUE	SAN-200	200	86.18	92.43	42,011
SANSW20399	CONNOR AVENUE-to-CONNOR AVENUE	SAN-200	200	80.40	92.43	39,195
SANSW20400	BROOKE AVENUE-to-CONNOR AVENUE	SAN-200	200	80.42	92.43	39,202
SANSW20401	CONNOR AVENUE-to-CONNOR AVENUE	SAN-250	250	78.60	91.35	40,874
SANSW20402	CONNOR AVENUE-to-CONNOR AVENUE	SAN-250	250	43.21	91.35	22,470
SANSW20403	CONNOR AVENUE-to-CONNOR AVENUE	SAN-250	250	64.62	91.35	33,602
SANSW20404	CONNOR AVENUE-to-ALYSSA DRIVE	SAN-250	250	104.70	91.35	54,445
SANSW20405	CONNOR AVENUE-to-ALYSSA DRIVE	SAN-450	450	87.43	90.27	56,827
SANSW20406	ALYSSA DRIVE-to-KAYLA CRESCENT	SAN-450	450	87.54	90.27	56,898
SANSW20407	ALYSSA DRIVE-to-ALYSSA DRIVE	SAN-450	450	56.63	90.27	36,811
SANSW20408	ALYSSA DRIVE-to-ALYSSA DRIVE	SAN-450	450	43.59	90.27	28,336
SANSW20409	ALYSSA DRIVE-to-KAYLA CRESCENT	SAN-450	450	12.72	90.27	8,269
SANSW20410	ALYSSA DRIVE-to-ALYSSA DRIVE	SAN-450	450	50.90	90.27	33,082
SANSW20411	ALYSSA DRIVE-to-ALYSSA DRIVE	SAN-375	375	17.80	90.27	10,412
SANSW20413	MATTHEW WAY	SAN-200	200	27.25	84.32	0
SANSW20414	RAGLAN STREET-to-MATTHEW WAY	SAN-200	200	126.10	84.32	0
SANSW20416	MARINE VIEW DRIVE	SAN-675	675	39.08	91.89	40,641

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20421	SPRUCE STREET-to-CAMPBELL STREET	SAN-200	200	14.58	82.16	7,109
SANSW20422	CAMERON STREET-to-CAMERON STREET	SAN-200	200	78.48	81.62	38,259
SANSW20423	TENTH STREET-to-TENTH STREET	SAN-250	250	39.66	67.17	20,621
SANSW20424	BELL BOULEVARD-to-ALICE STREET	SAN-200	200	49.66	61.33	24,208
SANSW20425	CAMPBELL STREET	SAN-200	200	46.22	68.33	22,532
SANSW20426	HUME STREET	SAN-250	250	10.49	56.67	5,454
SANSW20427	NAPIER STREET	SAN-200	200	18.06	26.14	8,803
SANSW20428	HURON STREET-to-NAPIER STREET	SAN-200	200	33.44	64.83	16,302
SANSW20429	SPRUCE STREET-to-CAMPBELL STREET	SAN-200	200	55.09	68.33	26,857
SANSW20430	PRETTY RIVER PARKWAY-to-HUME STREET	SAN-450	450	22.18	59.00	14,415
SANSW20431	(blank)	SAN-750	900	23.12	91.89	28,558
SANSW20432	(blank)	SAN-750	900	99.04	91.89	122,313
SANSW20433	(blank)	SAN-750	900	56.13	91.89	69,314
SANSW20435	COLLINS STREET-to-PEEL STREET	SAN-300	300	13.83	92.97	7,643
SANSW20436	RON EMO ROAD-to-RON EMO ROAD	SAN-300	300	17.91	94.59	9,894
SANSW20437	RON EMO ROAD-to-RON EMO ROAD	SAN-300	300	105.53	94.59	58,305
SANSW20438	RON EMO ROAD-to-RON EMO ROAD	SAN-300	300	110.88	94.59	61,258
SANSW20444	COOPER STREET	SAN-250	250	95.36	93.51	0
SANSW20445	(blank)	SAN-250	250	109.08	93.51	0
SANSW20446	HURONTARIO STREET	SAN-250	250	127.88	93.51	0
SANSW20447	RAGLAN STREET	SAN-300	300	57.00	95.14	31,493
SANSW20448	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	102.71	95.14	56,746
SANSW20449	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	88.30	95.14	48,783
SANSW20450	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	120.00	95.14	66,301
SANSW20451	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	89.40	95.14	49,394
SANSW20452	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	89.40	95.14	49,394
SANSW20453	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	88.25	95.14	48,755
SANSW20454	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	41.04	95.14	22,672
SANSW20455	RON EMO ROAD-to-RON EMO ROAD	SAN-300	300	69.93	94.59	38,634
SANSW20456	RON EMO ROAD-to-RON EMO ROAD	SAN-300	300	103.32	94.59	57,085
SANSW20457	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	37.30	95.68	20,608
SANSW20458	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	120.00	95.68	66,300
SANSW20459	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	117.70	95.68	65,029
SANSW20460	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	79.96	95.68	44,179
SANSW20461	RAGLAN STREET-to-RAGLAN STREET	SAN-300	300	120.00	95.68	66,300
SANSW20462	RAGLAN STREET-to-RAGLAN STREET	SAN-375	375	75.00	95.68	43,875
SANSW20463	RAGLAN STREET-to-RAGLAN STREET	SAN-375	375	119.17	95.68	69,714
SANSW20464	RAGLAN STREET-to-RAGLAN STREET	SAN-375	375	119.00	95.68	69,615
SANSW20465	RAGLAN STREET-to-RAGLAN STREET	SAN-375	375	119.80	95.68	70,084

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20466	HUME STREET-to-RAGLAN STREET	SAN-375	375	109.00	95.68	63,765
SANSW20474	ST CLAIR STREET-to-ST CLAIR STREET	SAN-675	675	45.03	88.65	46,827
SANSW20475	LYNDEN STREET-to-PEEL STREET	SAN-200	200	86.00	92.97	41,925
SANSW20476	WILLIAMS STREET-to-LYNDEN STREET	SAN-200	200	78.83	92.97	38,430
SANSW20477	LYNDEN STREET	SAN-200	200	57.36	92.97	27,965
SANSW20478	MCKEAN CRESCENT-to-LYNDEN STREET	SAN-250	250	100.65	92.97	52,335
SANSW20479	PEEL STREET-to-MCKEAN CRESCENT	SAN-250	250	65.16	92.97	33,881
SANSW20480	MCKEAN CRESCENT-to-PEEL STREET	SAN-250	250	40.85	92.97	21,240
SANSW20481	PEEL STREET-to-PEEL STREET	SAN-250	250	42.98	92.97	22,347
SANSW20482	PEEL STREET-to-PEEL STREET	SAN-250	250	43.12	92.97	22,422
SANSW20483	COLLINS STREET-to-PEEL STREET	SAN-250	250	101.91	92.97	52,993
SANSW20484	MCKEAN CRESCENT-to-MCKEAN CRESCENT	SAN-200	200	20.94	92.97	10,207
SANSW20485	MCKEAN CRESCENT-to-MCKEAN CRESCENT	SAN-200	200	65.74	92.97	32,048
SANSW20486	MCKEAN CRESCENT-to-MCKEAN CRESCENT	SAN-200	200	31.79	92.97	15,498
SANSW20487	MCKEAN CRESCENT-to-PEEL STREET	SAN-200	200	95.36	92.97	46,488
SANSW20488	PEEL STREET-to-MCKEAN CRESCENT	SAN-200	200	108.36	92.97	52,824
SANSW20489	PEEL STREET	SAN-250	250	42.96	82.70	22,338
SANSW20490	PEEL STREET-to-COLLINS STREET	SAN-250	250	18.71	92.97	9,730
SANSW20491	GEORGE ZUBEK DRIVE-to-PEEL STREET	SAN-250	250	72.92	92.97	37,920
SANSW20492	PEEL STREET-to-BUSH STREET	SAN-250	250	67.00	82.70	34,838
SANSW20493	GODDEN STREET-to-PEEL STREET	SAN-250	250	60.10	82.70	31,253
SANSW20494	PEEL STREET-to-PEEL STREET	SAN-250	250	87.01	82.70	45,243
SANSW20495	PEEL STREET-to-PEEL STREET	SAN-250	250	31.67	59.00	16,470
SANSW20496	PEEL STREET-to-PEEL STREET	SAN-250	250	70.85	59.00	36,844
SANSW20497	PEEL STREET-to-PEEL STREET	SAN-250	250	71.34	59.00	37,095
SANSW20498	HUME STREET-to-PEEL STREET	SAN-250	250	74.97	59.00	38,985
SANSW20499	LOCKHART ROAD-to-LOCKHART ROAD	SAN-250	250	54.20	71.83	28,184
SANSW20500	LOCKHART ROAD-to-LOCKHART ROAD	SAN-250	250	94.00	74.17	48,882
SANSW20501	LOCKHART ROAD-to-LOCKHART ROAD	SAN-250	250	55.39	74.17	28,801
SANSW20502	CARMICHEAL CRESCENT-to-LOCKHART ROAD	SAN-250	250	51.01	74.17	26,525
SANSW20503	KATHERINE STREET-to-KATHERINE STREET	SAN-250	250	100.32	62.50	52,164
SANSW20504	COLLINS STREET-to-KATHERINE STREET	SAN-250	250	106.77	62.50	55,521
SANSW20505	STE MARIE STREET	SAN-200	200	37.62	83.78	18,342
SANSW20506	COLLINS STREET-to-STE MARIE STREET	SAN-200	200	108.62	83.78	52,950
SANSW20507	GODDEN STREET-to-PEEL STREET	SAN-300	300	92.96	82.70	51,359
SANSW20511	BELL BOULEVARD-to-COLLINS STREET	SAN-375	375	106.92	92.97	62,549
SANSW20512	MANNING AVENUE-to-SPROULE AVENUE	SAN-375	375	58.46	92.97	34,199
SANSW20513	SPROULE AVENUE-to-SPROULE AVENUE	SAN-375	375	91.77	92.97	53,687

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20514	BELL BOULEVARD-to-SPROULE AVENUE	SAN-200	200	44.03	71.83	21,464
SANSW20515	ALICE STREET	SAN-200	200	52.46	61.33	25,573
SANSW20516	MANNING AVENUE-to-ALICE STREET	SAN-200	200	85.23	61.33	41,550
SANSW20517	ALICE STREET-to-ALICE STREET	SAN-200	200	60.66	61.33	29,574
SANSW20518	LORNE STREET-to-ALICE STREET	SAN-250	250	63.91	61.33	33,231
SANSW20519	LORNE STREET-to-KATHERINE STREET	SAN-450	400	68.55	62.50	44,559
SANSW20520	MANNING AVENUE-to-KATHERINE STREET	SAN-375	350	84.87	62.50	49,651
SANSW20521	KATHERINE STREET-to-KATHERINE STREET	SAN-375	350	67.01	62.50	39,199
SANSW20522	BAKER STREET-to-KATHERINE STREET	SAN-375	350	52.94	62.50	30,967
SANSW20523	PATERSON STREET	SAN-200	200	112.81	62.50	54,993
SANSW20524	PATERSON STREET	SAN-200	200	66.30	62.50	32,322
SANSW20525	PATERSON STREET	SAN-200	200	76.66	62.50	37,369
SANSW20526	PATERSON STREET-to-MANNING AVENUE	SAN-200	200	53.11	62.50	25,891
SANSW20527	LORNE STREET	SAN-200	200	85.35	91.35	41,608
SANSW20528	PATERSON STREET	SAN-200	200	91.60	91.35	44,654
SANSW20529	HUME STREET-to-PATERSON STREET	SAN-200	200	94.34	91.35	45,992
SANSW20530	STE MARIE STREET-to-STE MARIE STREET	SAN-375	375	85.90	92.97	50,252
SANSW20531	STE MARIE STREET-to-STE MARIE STREET	SAN-375	375	86.18	92.97	50,414
SANSW20532	GEORGE STREET-to-STE MARIE STREET	SAN-375	375	86.43	92.97	50,562
SANSW20533	HAMILTON STREET-to-STE MARIE STREET	SAN-375	375	110.61	92.97	64,707
SANSW20534	HUME STREET-to-STE MARIE STREET	SAN-450	450	105.18	92.97	68,364
SANSW20535	HUME STREET-to-ROBINSON STREET	SAN-250	250	107.81	85.95	56,062
SANSW20536	HAMILTON STREET-to-HAMILTON STREET	SAN-250	250	104.50	95.68	54,341
SANSW20537	ROBINSON STREET-to-ROBINSON STREET	SAN-250	250	88.59	95.68	46,068
SANSW20538	ROBINSON STREET-to-ROBINSON STREET	SAN-250	250	88.04	95.68	45,781
SANSW20539	ROBINSON STREET-to-ROBINSON STREET	SAN-250	250	42.17	89.19	21,929
SANSW20540	ROBINSON STREET-to-ROBINSON STREET	SAN-250	250	65.76	26.14	34,194
SANSW20541	STE MARIE STREET-to-ROBINSON STREET	SAN-250	250	75.16	52.00	39,084
SANSW20542	MARKET STREET-to-PATERSON STREET	SAN-250	250	79.85	1.00	41,520
SANSW20543	HUME STREET-to-HUME STREET	SAN-250	250	37.31	1.00	19,402
SANSW20544	ST PAUL STREET-to-HUME STREET	SAN-250	250	68.46	1.00	35,601
SANSW20545	HUME STREET-to-PEEL STREET	SAN-250	250	93.69	56.67	48,721
SANSW20546	HUME STREET-to-HUME STREET	SAN-250	250	91.00	56.67	47,319
SANSW20547	MOBERLY STREET-to-HUME STREET	SAN-250	250	87.31	56.67	45,403
SANSW20548	HUME STREET-to-HUME STREET	SAN-250	250	67.57	56.67	35,137
SANSW20549	HUME STREET-to-RAGLAN STREET	SAN-375	375	107.26	95.68	62,747
SANSW20550	HUME STREET-to-HUME STREET	SAN-375	375	6.00	95.68	3,510
SANSW20551	HUME STREET-to-PRETTY RIVER PARKWAY	SAN-375	375	118.05	95.68	69,059
SANSW20552	NIAGARA STREET-to-HURON STREET	SAN-525	500	64.34	64.83	48,094

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20553	HURON STREET-to-HURON STREET	SAN-525	500	68.60	64.83	51,279
SANSW20554	HURON STREET-to-NAPIER STREET	SAN-525	500	80.34	64.83	60,053
SANSW20555	HURON STREET-to-NIAGARA STREET	SAN-525	500	64.76	92.97	48,405
SANSW20556	HURON STREET-to-HURON STREET	SAN-525	500	60.33	64.83	45,096
SANSW20557	HURON STREET-to-HURON STREET	SAN-525	500	62.08	92.97	46,404
SANSW20558	HURON STREET-to-HURON STREET	SAN-525	500	75.62	64.83	56,528
SANSW20559	PRETTY RIVER PARKWAY-to-SIMCOE STREET	SAN-300	300	89.36	49.67	49,373
SANSW20560	RAGLAN STREET	SAN-200	200	66.20	63.67	32,274
SANSW20561	RAGLAN STREET-to-SIMCOE STREET	SAN-200	200	24.21	63.67	11,803
SANSW20562	RUSSEL STREET-to-SIMCOE STREET	SAN-525	500	61.80	64.83	46,192
SANSW20563	HURON STREET-to-NIAGARA STREET	SAN-250	250	100.81	45.00	52,420
SANSW20564	NIAGARA STREET-to-SIMCOE STREET	SAN-250	250	98.63	45.00	51,287
SANSW20565	SIMCOE STREET-to-NIAGARA STREET	SAN-300	300	102.28	52.00	56,507
SANSW20566	NIAGARA STREET-to-ONTARIO STREET	SAN-300	300	94.92	52.00	52,443
SANSW20567	ONTARIO STREET-to-NIAGARA STREET	SAN-300	300	98.84	63.67	54,610
SANSW20568	ST VINCENT STREET-to-ERIE STREET	SAN-300	300	87.91	63.67	48,568
SANSW20569	NIAGARA STREET	SAN-300	300	99.74	63.67	55,107
SANSW20570	ERIE STREET-to-NIAGARA STREET	SAN-300	300	115.48	63.67	63,804
SANSW20571	ERIE STREET-to-RAGLAN STREET	SAN-250	250	45.74	63.67	23,782
SANSW20572	RAGLAN STREET-to-RAGLAN STREET	SAN-250	250	35.04	63.67	18,222
SANSW20573	RAGLAN STREET-to-RAGLAN STREET	SAN-250	250	97.90	63.67	50,907
SANSW20574	RAGLAN STREET-to-RAGLAN STREET	SAN-250	250	70.19	63.67	36,498
SANSW20575	RAGLAN STREET-to-MATTHEW WAY	SAN-250	250	73.61	63.67	38,276
SANSW20576	ALBERT STREET-to-SIMCOE STREET	SAN-300	300	86.63	96.76	47,861
SANSW20577	SIMCOE STREET-to-ALBERT STREET	SAN-375	375	64.28	96.76	37,606
SANSW20578	NIAGARA STREET-to-SIMCOE STREET	SAN-375	375	62.03	96.76	36,285
SANSW20579	SIMCOE STREET-to-NIAGARA STREET	SAN-450	450	109.91	96.76	71,438
SANSW20580	SIMCOE STREET-to-PEEL STREET	SAN-250	250	100.25	45.00	52,131
SANSW20581	SIMCOE STREET-to-WEST STREET	SAN-200	200	32.47	49.67	15,831
SANSW20582	MINNESOTA STREET-to-SIMCOE STREET	SAN-200	200	82.03	92.43	39,991
SANSW20583	MINNESOTA STREET-to-SIMCOE STREET	SAN-450	450	92.40	92.43	60,061
SANSW20584	MINNESOTA STREET-to-HURON STREET	SAN-525	525	23.32	96.76	17,428
SANSW20585	MINNESOTA STREET-to-ONTARIO STREET	SAN-450	450	99.91	92.43	64,940
SANSW20586	NAPIER STREET-to-ST VINCENT STREET	SAN-375	375	89.30	26.14	52,239
SANSW20587	NAPIER STREET-to-ONTARIO STREET	SAN-375	375	98.68	26.14	57,726
SANSW20588	SIMCOE STREET-to-NAPIER STREET	SAN-375	375	106.43	26.14	62,261
SANSW20589	NAPIER STREET-to-SIMCOE STREET	SAN-375	375	47.55	26.14	27,817
SANSW20590	RODNEY STREET-to-NAPIER STREET	SAN-375	375	59.02	26.14	34,525
SANSW20591	WEST STREET	SAN-200	200	66.36	63.67	32,348

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20592	SIMCOE STREET-to-WEST STREET	SAN-200	200	72.96	63.67	35,569
SANSW20593	RODNEY STREET-to-RODNEY STREET	SAN-525	525	80.49	96.76	60,169
SANSW20594	RODNEY STREET-to-NAPIER STREET	SAN-450	450	81.91	96.76	53,244
SANSW20595	RODNEY STREET-to-RODNEY STREET	SAN-450	450	89.47	96.76	58,156
SANSW20596	RODNEY STREET-to-SIMCOE STREET	SAN-450	450	81.78	96.76	53,160
SANSW20597	SIMCOE STREET-to-PEEL STREET	SAN-250	250	96.72	45.00	50,294
SANSW20598	SIMCOE STREET-to-EAST STREET	SAN-200	200	102.87	50.83	50,147
SANSW20599	EAST STREET-to-ONTARIO STREET	SAN-200	200	100.61	50.83	49,045
SANSW20600	SIMCOE STREET-to-PEEL STREET	SAN-450	450	10.00	49.67	6,501
SANSW20601	PEEL STREET-to-ONTARIO STREET	SAN-250	250	100.10	45.00	52,050
SANSW20602	PEEL STREET-to-ERIE STREET	SAN-200	200	89.75	26.14	43,753
SANSW20603	PEEL STREET-to-ST VINCENT STREET	SAN-200	200	91.13	26.14	44,424
SANSW20604	ERIE STREET-to-MOBERLY STREET	SAN-300	300	72.21	26.14	39,898
SANSW20605	PEEL STREET-to-PEEL STREET	SAN-250	250	91.31	32.43	47,481
SANSW20606	PEEL STREET-to-PEEL STREET	SAN-250	250	91.17	32.43	47,407
SANSW20607	PEEL STREET-to-MOBERLY STREET	SAN-250	250	82.97	26.14	43,142
SANSW20608	MOBERLY STREET-to-HUME STREET	SAN-250	250	130.95	26.14	68,091
SANSW20609	ERIE STREET-to-PEEL STREET	SAN-300	300	79.83	26.14	44,108
SANSW20610	ERIE STREET-to-ERIE STREET	SAN-250	250	78.76	67.17	40,957
SANSW20611	ERIE STREET-to-NIAGARA STREET	SAN-250	250	67.39	67.17	35,044
SANSW20612	ERIE STREET	SAN-250	250	59.41	68.33	30,893
SANSW20613	NIAGARA STREET-to-ERIE STREET	SAN-250	250	61.03	68.33	31,733
SANSW20614	ONTARIO STREET-to-PRETTY RIVER PARKWAY	SAN-250	250	75.29	59.00	39,150
SANSW20615	ONTARIO STREET-to-ONTARIO STREET	SAN-200	200	19.27	63.67	9,392
SANSW20616	ONTARIO STREET-to-ONTARIO STREET	SAN-200	200	32.74	63.67	15,963
SANSW20617	ONTARIO STREET-to-ONTARIO STREET	SAN-200	200	4.60	63.67	2,241
SANSW20618	ONTARIO STREET-to-ONTARIO STREET	SAN-200	200	29.96	63.67	14,607
SANSW20619	ONTARIO STREET-to-ONTARIO STREET	SAN-200	200	79.14	63.67	38,582
SANSW20620	ALBERT STREET-to-ONTARIO STREET	SAN-200	200	93.53	63.67	45,597
SANSW20621	ALBERT STREET	SAN-250	250	16.15	85.95	8,400
SANSW20622	ONTARIO STREET-to-ALBERT STREET	SAN-250	250	58.13	63.67	30,228
SANSW20623	NIAGARA STREET-to-ONTARIO STREET	SAN-250	250	63.95	63.67	33,251
SANSW20624	EAST STREET-to-NIAGARA STREET	SAN-200	200	107.81	50.83	52,555
SANSW20625	PEEL STREET-to-ONTARIO STREET	SAN-200	200	72.88	50.83	35,530
SANSW20626	WEST STREET-to-PEEL STREET	SAN-200	200	109.73	45.00	53,492
SANSW20627	NAPIER STREET-to-ONTARIO STREET	SAN-200	200	68.74	45.00	33,511
SANSW20628	(blank)	SAN-300	300	58.27	87.57	32,193
SANSW20629	ONTARIO STREET-to-ONTARIO STREET	SAN-300	300	111.79	87.57	61,764

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20630	ST VINCENT STREET	SAN-200	200	36.60	62.50	17,843
SANSW20631	NAPIER STREET-to-ST VINCENT STREET	SAN-200	200	98.56	62.50	48,050
SANSW20632	ST VINCENT STREET-to-ST VINCENT STREET	SAN-200	200	62.26	61.33	30,354
SANSW20633	ST VINCENT STREET-to-NIAGARA STREET	SAN-200	200	66.83	61.33	32,582
SANSW20634	SIMCOE STREET-to-ST PAUL STREET	SAN-300	300	30.79	69.50	17,014
SANSW20635	ST PAUL STREET-to-CALLARY CRESCENT	SAN-450	400	100.35	69.50	65,226
SANSW20636	ONTARIO STREET	SAN-300	300	101.20	93.51	55,915
SANSW20637	SIMCOE STREET-to-ST PAUL STREET	SAN-300	300	59.53	69.50	32,890
SANSW20638	STE MARIE STREET-to-STE MARIE STREET	SAN-525	525	57.45	94.05	42,943
SANSW20639	STE MARIE STREET-to-STE MARIE STREET	SAN-525	525	64.10	94.05	47,917
SANSW20640	STE MARIE STREET-to-STE MARIE STREET	SAN-450	450	89.62	92.97	58,252
SANSW20641	HURONTARIO STREET-to-SIMCOE STREET	SAN-200	200	72.51	49.67	35,348
SANSW20642	MARKET LANE-to-ST PAUL STREET	SAN-250	250	105.49	96.22	54,855
SANSW20643	MARKET LANE-to-MARKET STREET	SAN-250	250	143.27	96.22	74,502
SANSW20644	MARKET STREET	SAN-250	250	16.56	1.00	8,610
SANSW20645	STE MARIE STREET-to-STE MARIE STREET	SAN-450	450	96.04	92.97	62,427
SANSW20646	STE MARIE STREET-to-STE MARIE STREET	SAN-450	450	79.15	92.97	51,444
SANSW20647	ONTARIO STREET-to-ST PAUL STREET	SAN-250	250	59.61	1.00	30,995
SANSW20648	MARKET LANE-to-ST PAUL STREET	SAN-250	250	56.42	1.00	29,338
SANSW20649	ST PAUL STREET-to-ST PAUL STREET	SAN-250	250	79.14	1.00	41,153
SANSW20650	FOURTH STREET-to-ST PAUL STREET	SAN-250	250	114.31	94.05	59,440
SANSW20651	ST PAUL STREET-to-HUME STREET	SAN-250	250	17.34	94.05	9,018
SANSW20652	ST PAUL STREET-to-ST PAUL STREET	SAN-250	250	71.44	94.05	37,146
SANSW20653	FOURTH STREET-to-ST PAUL STREET	SAN-250	250	74.30	94.05	38,638
SANSW20654	FOURTH STREET-to-MARKET STREET	SAN-250	250	121.07	96.22	62,957
SANSW20655	STE MARIE STREET-to-HUME STREET	SAN-450	450	79.76	92.97	51,841
SANSW20656	FOURTH STREET EAST-to-STE MARIE STREET	SAN-450	450	85.31	92.97	55,453
SANSW20657	NINTH STREET-to-FAIR STREET	SAN-250	250	147.66	53.17	76,785
SANSW20658	FAIR STREET-to-CAMERON STREET	SAN-250	250	110.24	53.17	57,325
SANSW20659	MAPLE STREET-to-CAMPBELL STREET	SAN-250	250	148.60	93.51	77,270
SANSW20660	OAK STREET-to-CAMPBELL STREET	SAN-300	300	72.86	50.83	40,255
SANSW20661	OAK STREET-to-CAMERON STREET	SAN-375	375	88.39	50.83	51,707
SANSW20662	OAK STREET-to-TENTH STREET	SAN-375	375	62.09	50.83	36,323
SANSW20663	WALNUT STREET-to-TENTH STREET	SAN-250	250	80.58	69.50	41,899
SANSW20664	FOURTH STREET-to-HICKORY STREET	SAN-200	200	74.14	59.00	36,145
SANSW20665	HICKORY STREET-to-HICKORY STREET	SAN-300	300	78.35	59.00	43,287
SANSW20666	THIRD STREET-to-HICKORY STREET	SAN-300	300	77.65	59.00	42,902
SANSW20667	HICKORY STREET-to-HICKORY STREET	SAN-300	300	73.33	57.83	40,514
SANSW20668	SECOND STREET-to-HICKORY STREET	SAN-300	300	74.84	57.83	41,346

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20669	HICKORY STREET-to-HICKORY STREET	SAN-300	300	88.85	57.83	49,090
SANSW20670	FIRST STREET-to-HICKORY STREET	SAN-300	300	75.86	57.83	41,911
SANSW20671	SPRUCE STREET-to-FIRST STREET	SAN-525	525	10.63	57.83	7,942
SANSW20672	FIRST STREET-to-SPRUCE STREET	SAN-250	250	94.01	57.83	48,886
SANSW20673	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	88.76	57.83	46,153
SANSW20674	SECOND STREET-to-SPRUCE STREET	SAN-250	250	67.61	57.83	35,159
SANSW20675	SPRUCE STREET-to-SPRUCE STREET	SAN-200	200	87.84	64.83	42,823
SANSW20676	THIRD STREET-to-SPRUCE STREET	SAN-200	200	74.63	64.83	36,384
SANSW20677	WATTS CRESCENT-to-SPRUCE STREET	SAN-250	250	32.98	64.83	17,148
SANSW20678	COURTICE CRESCENT-to-GIBBARD CRESCENT	SAN-250	250	93.46	61.33	48,601
SANSW20679	GIBBARD CRESCENT-to-GRIFFIN ROAD	SAN-250	250	99.63	61.33	51,806
SANSW20680	GRIFFIN ROAD-to-GIBBARD CRESCENT	SAN-250	250	93.03	61.33	48,374
SANSW20681	SPRUCE STREET-to-TENTH STREET	SAN-250	250	89.24	61.33	46,406
SANSW20682	OAK STREET-to-BIRCH STREET	SAN-250	250	120.89	60.17	62,862
SANSW20683	TENTH STREET-to-OAK STREET	SAN-250	250	82.53	52.00	42,916
SANSW20684	TENTH STREET-to-CLARKSON CRESCENT	SAN-250	250	81.71	52.00	42,489
SANSW20685	WALNUT STREET-to-CLARKSON CRESCENT	SAN-250	250	75.73	52.00	39,377
SANSW20686	TENTH STREET-to-TENTH STREET	SAN-250	250	104.86	61.33	54,529
SANSW20687	SPRUCE STREET-to-TENTH STREET	SAN-250	250	140.24	61.33	72,925
SANSW20688	TENTH STREET-to-SPRUCE STREET	SAN-250	250	64.95	67.17	33,776
SANSW20689	TENTH STREET-to-TENTH STREET	SAN-250	250	67.45	67.17	35,071
SANSW20690	CAMERON STREET-to-PARK ROAD	SAN-250	250	39.27	52.00	20,418
SANSW20691	CAMERON STREET-to-CAMERON STREET	SAN-250	250	83.74	52.00	43,545
SANSW20692	CAMERON STREET-to-OAK STREET	SAN-250	250	83.21	52.00	43,269
SANSW20693	CAMERON STREET-to-DICKSON ROAD	SAN-250	250	80.60	60.17	41,913
SANSW20694	CAMERON STREET-to-MASON ROAD	SAN-250	250	78.35	60.17	40,743
SANSW20695	MAPLE STREET	SAN-200	200	105.28	60.17	51,322
SANSW20696	MAPLE STREET	SAN-200	200	188.03	60.17	91,663
SANSW20697	CAMPBELL STREET	SAN-200	200	55.82	68.33	27,212
SANSW20698	MAPLE STREET-to-CAMPBELL STREET	SAN-200	200	136.42	68.33	66,505
SANSW20699	CAMPBELL STREET-to-CAMPBELL STREET	SAN-250	250	67.13	68.33	34,906
SANSW20700	CAMPBELL STREET-to-CAMPBELL STREET	SAN-250	250	62.82	68.33	32,667
SANSW20701	CAMPBELL STREET-to-MAPLE STREET	SAN-250	250	111.27	68.33	57,861
SANSW20702	CAMPBELL STREET-to-CAMPBELL STREET	SAN-250	250	54.96	68.33	28,581
SANSW20703	OAK STREET-to-CAMPBELL STREET	SAN-250	250	66.61	68.33	34,635
SANSW20704	CAMPBELL STREET-to-CAMPBELL STREET	SAN-250	250	79.94	68.33	41,568
SANSW20705	CAMPBELL STREET-to-CAMPBELL STREET	SAN-250	250	86.64	68.33	45,053
SANSW20706	CAMPBELL STREET-to-CAMPBELL STREET	SAN-250	250	27.02	68.33	14,052

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20707	CAMPBELL STREET-to-OSLER CRESCENT	SAN-250	250	44.34	68.33	23,056
SANSW20708	CAMPBELL STREET-to-CAMPBELL STREET	SAN-250	250	54.47	68.33	28,324
SANSW20709	SPRUCE STREET-to-HERRINGTON COURT	SAN-250	250	90.36	68.33	46,987
SANSW20710	CAMPBELL STREET-to-TESKEY COURT	SAN-250	250	73.69	68.33	38,320
SANSW20711	CAMPBELL STREET-to-CAMPBELL STREET	SAN-200	200	17.91	68.33	8,731
SANSW20712	CAMPBELL STREET-to-SMART COURT	SAN-200	200	91.64	68.33	44,675
SANSW20713	CAMPBELL STREET-to-CAMPBELL STREET	SAN-200	200	104.55	68.33	50,970
SANSW20714	CAMPBELL STREET-to-CAMPBELL STREET	SAN-200	200	54.95	68.33	26,788
SANSW20715	FOURTH STREET-to-SPRUCE STREET	SAN-250	250	28.80	64.83	14,974
SANSW20716	BRANIFF COURT-to-SPRUCE STREET	SAN-250	250	46.93	64.83	24,402
SANSW20717	SPRUCE STREET	SAN-200	200	74.07	69.50	36,107
SANSW20718	WATTS CRESCENT	SAN-200	200	50.61	69.50	24,672
SANSW20719	WATTS CRESCENT-to-WATTS CRESCENT	SAN-200	200	56.25	69.50	27,420
SANSW20720	WATTS CRESCENT-to-SPRUCE STREET	SAN-200	200	60.09	69.50	29,294
SANSW20721	COURTICE CRESCENT-to-COURTICE CRESCENT	SAN-200	200	83.93	61.33	40,917
SANSW20722	COURTICE CRESCENT-to-COURTICE CRESCENT	SAN-200	200	91.46	61.33	44,586
SANSW20723	COURTICE CRESCENT-to-COURTICE CRESCENT	SAN-200	200	86.92	61.33	42,373
SANSW20724	SEVENTH STREET	SAN-250	250	87.45	61.33	45,474
SANSW20725	COURTICE CRESCENT-to-GRIFFIN ROAD	SAN-200	200	99.34	61.33	48,426
SANSW20726	COURTICE CRESCENT-to-COURTICE CRESCENT	SAN-200	200	97.06	61.33	47,314
SANSW20727	COURTICE CRESCENT-to-SPRUCE STREET	SAN-200	200	87.47	61.33	42,641
SANSW20728	GRIFFIN ROAD	SAN-200	200	70.88	61.33	34,556
SANSW20729	GRIFFIN ROAD-to-GRIFFIN ROAD	SAN-200	200	87.14	61.33	42,481
SANSW20730	SPRUCE STREET-to-GIBBARD CRESCENT	SAN-200	200	71.31	61.33	34,765
SANSW20731	GIBBARD CRESCENT-to-GIBBARD CRESCENT	SAN-200	200	70.19	61.33	34,216
SANSW20732	SEVENTH STREET-to-GIBBARD CRESCENT	SAN-200	200	90.27	61.33	44,008
SANSW20733	GIBBARD CRESCENT-to-GIBBARD CRESCENT	SAN-200	200	18.28	61.33	8,912
SANSW20734	GIBBARD CRESCENT-to-GIBBARD CRESCENT	SAN-200	200	83.37	61.33	40,642
SANSW20735	GIBBARD CRESCENT	SAN-200	200	60.64	61.33	29,562
SANSW20736	GIBBARD CRESCENT-to-GIBBARD CRESCENT	SAN-200	200	97.73	61.33	47,645
SANSW20737	GIBBARD CRESCENT-to-GIBBARD CRESCENT	SAN-200	200	78.20	61.33	38,124
SANSW20738	SPRUCE STREET-to-GIBBARD CRESCENT	SAN-200	200	76.75	61.33	37,414
SANSW20739	CLARKSON CRESCENT	SAN-200	200	49.31	52.00	24,039
SANSW20740	CLARKSON CRESCENT-to-CLARKSON CRESCENT	SAN-200	200	42.49	52.00	20,713
SANSW20741	TENTH STREET-to-CLARKSON CRESCENT	SAN-200	200	101.58	52.00	49,520
SANSW20742	TENTH STREET	SAN-200	200	109.89	52.00	53,572

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20743	OAK STREET-to-WILLOW STREET	SAN-250	250	70.32	59.00	36,566
SANSW20744	FAIR STREET	SAN-200	200	76.91	53.17	37,495
SANSW20745	MAPLE STREET-to-FAIR STREET	SAN-200	200	110.14	53.17	53,693
SANSW20746	RHONDA ROAD	SAN-200	200	45.36	70.67	22,111
SANSW20747	MASON ROAD-to-MACKAY COURT	SAN-200	200	78.64	70.67	38,336
SANSW20748	RHONDA ROAD	SAN-200	200	96.63	70.67	47,107
SANSW20749	MASON ROAD and DICKSON ROAD	SAN-200	200	71.79	67.17	34,997
SANSW20750	MASON ROAD-to-MASON ROAD and DICKSON ROAD	SAN-200	200	71.84	67.17	35,022
SANSW20751	MASON ROAD-to-MASON ROAD	SAN-200	200	75.15	67.17	36,638
SANSW20752	CAMERON STREET-to-MASON ROAD	SAN-250	250	53.54	67.17	27,839
SANSW20753	MASON ROAD-to-RHONDA ROAD	SAN-250	250	55.06	67.17	28,630
SANSW20754	DICKSON ROAD-to-MASON ROAD and DICKSON ROAD	SAN-200	200	82.15	67.17	40,048
SANSW20755	DICKSON ROAD-to-DICKSON ROAD	SAN-200	200	86.34	67.17	42,092
SANSW20756	CAMERON STREET-to-DICKSON ROAD	SAN-200	200	82.77	67.17	40,350
SANSW20757	OAK STREET-to-FERGUSON ROAD	SAN-250	250	81.86	60.17	42,565
SANSW20758	FERGUSON ROAD-to-FERGUSON ROAD	SAN-200	200	82.28	60.17	40,110
SANSW20759	FERGUSON ROAD-to-FERGUSON ROAD	SAN-200	200	82.80	60.17	40,365
SANSW20760	PARK ROAD-to-FERGUSON ROAD	SAN-200	200	83.15	60.17	40,534
SANSW20761	PARK ROAD-to-PARK ROAD	SAN-200	200	77.72	60.17	37,890
SANSW20762	PARK ROAD-to-PARK ROAD	SAN-200	200	87.35	60.17	42,583
SANSW20763	CAMERON STREET-to-PARK ROAD	SAN-200	200	85.13	60.17	41,499
SANSW20764	OSLER CRESCENT-to-OSLER CRESCENT	SAN-250	250	36.54	67.17	19,000
SANSW20765	CAMPBELL STREET-to-OSLER CRESCENT	SAN-250	250	72.76	67.17	37,837
SANSW20766	NEWBOURNE STREET	SAN-200	200	122.49	92.97	59,716
SANSW20767	MARY STREET-to-MARY STREET	SAN-200	200	112.76	92.97	54,970
SANSW20768	MARY STREET-to-MARY STREET	SAN-200	200	107.25	92.97	52,286
SANSW20769	MARY STREET-to-MARY STREET	SAN-200	200	99.81	92.97	48,656
SANSW20770	SAUNDERS STREET-to-MARY STREET	SAN-200	200	123.36	92.97	60,136
SANSW20771	STANLEY STREET-to-MARY STREET	SAN-200	200	122.36	92.97	59,652
SANSW20772	MAPLE STREET-to-SIDE LAUNCH WAY	SAN-750	900	65.15	91.89	80,455
SANSW20773	MONTCLAIR MEWS-to-SIDE LAUNCH WAY	SAN-750	900	61.64	91.89	76,129
SANSW20774	SIDE LAUNCH WAY-to-SIDE LAUNCH WAY	SAN-750	900	89.13	91.89	110,073
SANSW20775	SIDE LAUNCH WAY-to-HURONTARIO STREET	SAN-750	900	66.13	91.89	81,666
SANSW20776	PINE STREET-to-SIDE LAUNCH WAY	SAN-750	900	63.14	91.89	77,979
SANSW20777	HICKORY STREET	SAN-250	250	19.68	64.83	10,236
SANSW20778	HICKORY STREET-to-FIRST STREET	SAN-250	250	89.07	64.83	46,317
SANSW20779	SPRUCE STREET-to-FIRST STREET	SAN-250	250	45.60	57.83	23,709
SANSW20780	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	21.04	57.83	10,939

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20781	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	3.58	57.83	1,860
SANSW20782	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	63.29	57.83	32,911
SANSW20783	SPRUCE STREET-to-FIRST STREET	SAN-525	525	59.88	57.83	44,760
SANSW20784	HURONTARIO STREET	SAN-200	200	90.27	92.97	44,008
SANSW20785	HURONTARIO STREET-to-HURONTARIO STREET	SAN-200	200	65.73	92.97	32,045
SANSW20786	HURONTARIO STREET-to-HURONTARIO STREET	SAN-250	250	57.65	92.97	29,975
SANSW20787	STANLEY STREET-to-HURONTARIO STREET	SAN-250	250	80.68	92.97	41,955
SANSW20788	FINDLAY DRIVE-to-HURONTARIO STREET	SAN-250	250	125.45	92.97	65,234
SANSW20789	STEWART ROAD-to-STEWART ROAD	SAN-250	250	85.29	88.11	44,351
SANSW20790	STEWART ROAD-to-STEWART ROAD	SAN-250	250	86.35	88.11	44,901
SANSW20791	STEWART ROAD-to-STEWART ROAD	SAN-250	250	87.61	88.11	45,557
SANSW20792	STEWART ROAD-to-STEWART ROAD	SAN-250	250	40.78	68.33	21,204
SANSW20793	STEWART ROAD-to-STEWART ROAD	SAN-200	200	49.63	83.24	24,196
SANSW20794	STEWART ROAD-to-HIGH STREET	SAN-250	250	93.59	68.33	48,666
SANSW20795	STEWART ROAD-to-STEWART ROAD	SAN-250	250	91.72	68.33	47,694
SANSW20796	STEWART ROAD-to-STEWART ROAD	SAN-250	250	92.60	68.33	48,151
SANSW20797	STEWART ROAD-to-STEWART ROAD	SAN-250	250	85.57	68.33	44,497
SANSW20798	STEWART ROAD-to-STEWART ROAD	SAN-250	250	24.79	68.33	12,891
SANSW20799	MARINA CRESCENT-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	96.80	90.27	47,192
SANSW20800	MARINA CRESCENT-to-MARINA CRESCENT	SAN-200	200	102.17	90.27	49,810
SANSW20801	MARINA CRESCENT-to-MARINA CRESCENT	SAN-200	200	16.65	90.27	8,114
SANSW20802	MARINA CRESCENT-to-MARINA CRESCENT	SAN-200	200	64.47	90.27	31,430
SANSW20803	MARINA CRESCENT-to-MARINA CRESCENT	SAN-200	200	17.60	90.27	8,579
SANSW20804	MARINA CRESCENT-to-MARINA CRESCENT	SAN-200	200	90.98	90.27	44,355
SANSW20805	MARINA CRESCENT-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	101.21	90.27	49,338
SANSW20806	HUGHES STREET-to-HUGHES STREET	SAN-200	200	36.16	93.51	0
SANSW20807	HUGHES STREET-to-ROBERTSON STREET	SAN-200	200	68.56	93.51	0
SANSW20808	HUGHES STREET-to-HUGHES STREET	SAN-200	200	14.52	93.51	0
SANSW20809	HUGHES STREET-to-HUGHES STREET	SAN-200	200	73.59	93.51	0
SANSW20810	HUGHES STREET-to-HUGHES STREET	SAN-200	200	35.22	93.51	0
SANSW20811	HUGHES STREET-to-HUGHES STREET	SAN-200	200	48.54	93.51	0
SANSW20812	HUGHES STREET-to-HUGHES STREET	SAN-200	200	120.66	93.51	0
SANSW20813	HUGHES STREET-to-HUGHES STREET	SAN-200	200	104.74	93.51	0
SANSW20814	HUGHES STREET-to-PORTLAND STREET	SAN-200	200	101.25	93.51	0
SANSW20815	HUGHES STREET-to-PORTLAND STREET	SAN-250	250	86.31	93.51	0
SANSW20816	COOPER STREET-to-PORTLAND STREET	SAN-200	200	85.60	93.51	0
SANSW20817	ROBERTSON STREET-to-PORTLAND STREET	SAN-200	200	38.15	93.51	0

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20818	ROBERTSON STREET-to-PORTLAND STREET	SAN-200	200	81.95	93.51	0
SANSW20819	ROBERTSON STREET-to-ROBERTSON STREET	SAN-200	200	120.02	93.51	0
SANSW20820	ROBERTSON STREET-to-ROBERTSON STREET	SAN-200	200	119.47	93.51	0
SANSW20821	HUGHES STREET-to-ROBERTSON STREET	SAN-200	200	81.75	93.51	0
SANSW20822	COOPER STREET-to-COOPER STREET	SAN-200	200	36.21	93.51	0
SANSW20823	COOPER STREET-to-COOPER STREET	SAN-200	200	119.24	93.51	0
SANSW20824	COOPER STREET-to-COOPER STREET	SAN-200	200	102.09	93.51	0
SANSW20825	COOPER STREET-to-PORTLAND STREET	SAN-200	200	99.47	93.51	0
SANSW20826	LOCKERBIE CRESCENT-to-CLARK STREET	SAN-200	200	41.17	93.51	0
SANSW20827	CLARK STREET-to-CLARK STREET	SAN-200	200	107.47	93.51	0
SANSW20828	CLARK STREET-to-CLARK STREET	SAN-200	200	107.64	93.51	0
SANSW20829	LOCKERBIE CRESCENT-to-CLARK STREET	SAN-200	200	120.85	93.51	0
SANSW20830	FINDLAY DRIVE-to-CLARK STREET	SAN-200	200	90.46	93.51	0
SANSW20831	FINDLAY DRIVE-to-DANCE STREET	SAN-200	200	105.81	93.51	0
SANSW20832	DANCE STREET-to-GARBUTT CRESCENT	SAN-200	200	105.66	93.51	0
SANSW20833	DANCE STREET-to-GARBUTT CRESCENT	SAN-200	200	80.55	95.68	0
SANSW20834	GARBUTT CRESCENT-to-GARBUTT CRESCENT	SAN-200	200	13.82	95.68	0
SANSW20835	GARBUTT CRESCENT-to-GARBUTT CRESCENT	SAN-200	200	100.60	95.68	0
SANSW20836	GARBUTT CRESCENT-to-GARBUTT CRESCENT	SAN-200	200	105.43	95.68	0
SANSW20837	GARBUTT CRESCENT-to-GARBUTT CRESCENT	SAN-200	200	82.46	95.68	0
SANSW20838	GARBUTT CRESCENT-to-GARBUTT CRESCENT	SAN-200	200	17.85	95.68	0
SANSW20839	GARBUTT CRESCENT-to-GARBUTT CRESCENT	SAN-200	200	99.58	95.68	0
SANSW20840	GARBUTT CRESCENT-to-GARBUTT CRESCENT	SAN-200	200	99.67	95.68	0
SANSW20841	SHERWOOD STREET	SAN-200	200	74.05	94.59	36,100
SANSW20842	SHERWOOD STREET-to-SHERWOOD STREET	SAN-200	200	83.24	94.59	40,579
SANSW20843	SHERWOOD STREET-to-BROOKE AVENUE	SAN-200	200	50.81	94.59	24,771
SANSW20844	SHERWOOD STREET-to-SHERWOOD STREET	SAN-200	200	40.11	94.59	19,554
SANSW20845	SHERWOOD STREET	SAN-200	200	33.60	94.59	16,381
SANSW20846	ALYSSA DRIVE-to-KAYLA CRESCENT	SAN-200	200	15.20	95.14	7,411
SANSW20847	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	59.00	95.14	28,760
SANSW20848	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	106.06	95.14	51,704
SANSW20849	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	16.01	95.14	7,803
SANSW20850	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	13.57	95.14	6,615
SANSW20851	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	57.62	95.14	28,087
SANSW20852	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	12.16	95.14	5,927
SANSW20853	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	100.46	95.14	48,975

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20854	KAYLA CRESCENT-to-KAYLA CRESCENT	SAN-200	200	90.85	95.14	44,291
SANSW20855	ALYSSA DRIVE-to-KAYLA CRESCENT	SAN-200	200	18.83	95.14	9,180
SANSW20856	SILVER CRESCENT	SAN-675	675	46.21	92.97	48,056
SANSW20866	BRYAN DRIVE	SAN-200	200	22.65	62.50	11,044
SANSW20867	BAKER STREET-to-KATHERINE STREET	SAN-200	200	56.22	61.33	27,407
SANSW20868	LORNE STREET	SAN-450	400	12.36	62.50	8,037
SANSW20869	BAKER STREET-to-PATERSON STREET	SAN-200	200	59.05	61.33	28,785
SANSW20870	PATERSON STREET-to-BAKER STREET	SAN-200	200	59.11	61.33	28,816
SANSW20871	MINNESOTA STREET	SAN-250	250	51.53	61.33	26,794
SANSW20872	SANDFORD FLEMING DRIVE-to-RON EMO ROAD	SAN-300	300	120.45	83.78	66,546
SANSW20873	SANDFORD FLEMING DRIVE-to-SANDFORD FLEMING DRIVE	SAN-300	300	119.70	83.78	66,134
SANSW20874	(blank)	SAN-300	300	115.73	83.78	63,943
SANSW20875	(blank)	SAN-300	300	56.74	83.78	31,351
SANSW20876	(blank)	SAN-200	200	74.30	81.62	36,222
SANSW20877	(blank)	SAN-200	200	19.73	81.62	9,619
SANSW20878	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	SAN-450	450	24.41	59.00	15,865
SANSW20879	HIGH STREET-to-HIGH STREET	SAN-250	250	79.22	78.83	41,192
SANSW20880	STEWART ROAD-to-HIGH STREET	SAN-250	250	47.59	78.83	24,748
SANSW20881	PRETTY RIVER PARKWAY SOUTH-to-PRETTY RIVER PARKWAY SOUTH	SAN-450	450	13.16	59.00	8,552
SANSW20882	HURONTARIO STREET	SAN-200	200	13.63	92.97	6,645
SANSW20883	PEEL STREET	SAN-200	200	12.57	92.97	6,127
SANSW20884	PEEL STREET	SAN-200	200	15.79	92.97	7,697
SANSW20885	GEORGE ZUBEK DRIVE	SAN-200	200	13.51	92.97	0
SANSW20886	COLLINS STREET	SAN-200	200	13.30	92.97	6,481
SANSW20887	ST CLAIR STREET-to-ST CLAIR STREET	SAN-450	450	62.02	90.81	40,310
SANSW20888	SIDE LAUNCH WAY	SAN-750	900	78.50	91.89	96,946
SANSW20889	HIGHWAY 26	SAN-450	450	45.85	90.81	29,801
SANSW20891	ALBERT STREET	SAN-150	150	36.53	81.08	0
SANSW20893	HURONIA PATHWAY	SAN-300	300	14.90	94.05	8,232
SANSW20895	MACDONALD ROAD-to-MACDONALD ROAD	SAN-375	375	94.10	83.78	55,047
SANSW20896	COLLINS STREET-to-MACDONALD ROAD	SAN-450	400	90.04	83.78	58,527
SANSW20897	MACDONALD ROAD-to-MACDONALD ROAD	SAN-450	400	73.98	61.33	48,088
SANSW20898	MACDONALD ROAD-to-MACDONALD ROAD	SAN-450	400	60.50	61.33	39,326
SANSW20899	SOUTH SERVICE ROAD-to-MACDONALD ROAD	SAN-450	400	68.94	61.33	44,812
SANSW20900	SOUTH SERVICE ROAD-to-SOUTH SERVICE ROAD	SAN-450	400	81.54	61.33	52,998
SANSW20901	PRETTY RIVER PARKWAY-to-SOUTH SERVICE ROAD	SAN-450	400	76.05	61.33	49,431

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20902	HURONIA PATHWAY-to-HURONIA PATHWAY	SAN-450	450	111.50	94.05	72,475
SANSW20903	HIGHWAY 26	SAN-250	250	57.37	86.49	29,831
SANSW20904	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	84.23	61.33	46,539
SANSW20905	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	91.58	61.33	50,597
SANSW20906	HIGHWAY 26-to-HIGHWAY 26	SAN-250	250	57.67	61.33	29,988
SANSW20907	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	54.60	61.33	30,167
SANSW20908	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	74.56	61.33	41,196
SANSW20909	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	69.44	61.33	38,364
SANSW20910	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	68.66	61.33	37,935
SANSW20911	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	79.93	61.33	44,161
SANSW20912	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	68.56	61.33	37,879
SANSW20913	HIGHWAY 26-to-HIGHWAY 26	SAN-300	300	70.55	61.33	38,978
SANSW20914	ELIOTT AVENUE-to-HIGHWAY 26	SAN-300	300	76.70	61.33	42,375
SANSW20915	ST CLAIR STREET-to-ELIOTT AVENUE	SAN-375	375	95.38	61.33	55,795
SANSW20916	ST CLAIR STREET-to-ELIOTT AVENUE	SAN-750	900	36.41	90.81	44,966
SANSW20917	ST CLAIR STREET	SAN-200	200	31.29	64.83	15,251
SANSW20918	ST CLAIR STREET-to-ST CLAIR STREET	SAN-200	200	28.68	64.83	13,981
SANSW20919	ST CLAIR STREET-to-ST CLAIR STREET	SAN-525	525	62.29	90.81	46,560
SANSW20920	ST CLAIR STREET-to-ST CLAIR STREET	SAN-525	525	75.36	90.81	56,330
SANSW20921	ST CLAIR STREET	SAN-200	200	93.80	63.67	45,726
SANSW20922	GLEN ROGERS ROAD	SAN-200	200	38.00	69.50	18,524
SANSW20923	GLEN ROGERS ROAD-to-GLEN ROGERS ROAD	SAN-200	200	52.50	69.50	25,592
SANSW20924	GLEN ROGERS ROAD-to-GLEN ROGERS ROAD	SAN-300	300	77.42	69.50	42,776
SANSW20925	GLEN ROGERS ROAD-to-ST CLAIR STREET	SAN-300	300	114.51	69.50	63,266
SANSW20926	HIGHWAY 26-to-HIGHWAY 26	SAN-450	450	45.70	90.81	29,704
SANSW20927	HIGHWAY 26-to-HIGHWAY 26	SAN-450	450	66.84	90.81	43,449
SANSW20928	HIGHWAY 26	SAN-250	250	105.60	61.33	54,911
SANSW20929	PRETTY RIVER PARKWAY-to-HIGHWAY 26	SAN-250	250	93.59	61.33	48,664
SANSW20930	COLLINS STREET-to-COLLINS STREET	SAN-300	300	51.82	92.97	28,630
SANSW20931	COLLINS STREET-to-COLLINS STREET	SAN-300	300	82.77	92.97	45,732
SANSW20932	GEORGE ZUBEK DRIVE-to-COLLINS STREET	SAN-375	375	82.39	92.97	48,198
SANSW20933	GEORGE ZUBEK DRIVE-to-PEEL STREET	SAN-200	200	17.55	92.97	8,555
SANSW20934	PEEL STREET	SAN-200	200	13.32	92.97	6,492
SANSW20935	PEEL STREET-to-BUSH STREET	SAN-200	200	63.38	59.00	30,900
SANSW20936	PEEL STREET-to-HARBEN COURT	SAN-250	250	37.90	59.00	19,705
SANSW20937	PEEL STREET-to-HARBEN COURT	SAN-250	250	92.52	68.33	48,110
SANSW20938	HARBEN COURT	SAN-250	250	81.25	68.33	42,248

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20939	DEY DRIVE	SAN-200	200	20.72	90.81	10,102
SANSW20940	DEY DRIVE-to-DEY DRIVE	SAN-200	200	19.57	90.81	9,539
SANSW20941	DEY DRIVE-to-DEY DRIVE	SAN-200	200	31.50	90.81	15,354
SANSW20942	DEY DRIVE-to-DEY DRIVE	SAN-200	200	34.89	90.81	17,009
SANSW20943	LOCKHART ROAD-to-KRISTA COURT	SAN-200	200	48.82	81.08	23,799
SANSW20944	LOCKHART ROAD-to-KRISTA COURT	SAN-250	250	49.60	74.17	25,794
SANSW20945	LOCKHART ROAD-to-KRISTA COURT	SAN-250	250	55.40	74.17	28,810
SANSW20946	LOCKHART ROAD-to-LOCKHART ROAD	SAN-250	250	66.03	74.17	34,334
SANSW20947	LOCKHART ROAD-to-DEY DRIVE	SAN-200	200	58.75	74.17	28,639
SANSW20948	LOCKHART ROAD-to-LOCKHART ROAD	SAN-200	200	54.50	74.17	26,570
SANSW20949	LOCKHART ROAD-to-LOCKHART ROAD	SAN-200	200	90.63	74.17	44,183
SANSW20950	LOCKHART ROAD-to-LOCKHART ROAD	SAN-200	200	90.73	74.17	44,232
SANSW20951	LOCKHART ROAD-to-LOCKHART ROAD	SAN-200	200	90.77	74.17	44,252
SANSW20952	LOCKHART ROAD-to-LOCKHART ROAD	SAN-250	250	59.23	66.00	30,797
SANSW20953	BRYAN COURT-to-LOCKHART ROAD	SAN-250	250	97.80	66.00	50,856
SANSW20954	LOCKHART ROAD-to-BROCK CRESCENT	SAN-250	250	60.03	66.00	31,216
SANSW20955	LOCKHART ROAD-to-LOCKHART ROAD	SAN-250	250	84.24	66.00	43,803
SANSW20956	LOCKHART ROAD-to-LOCKHART ROAD	SAN-250	250	51.88	66.00	26,977
SANSW20957	BRYAN DRIVE-to-BRYAN DRIVE	SAN-200	200	81.05	62.50	39,513
SANSW20958	BRYAN DRIVE-to-BRYAN DRIVE	SAN-200	200	81.88	62.50	39,917
SANSW20959	BRYAN DRIVE-to-BRYAN DRIVE	SAN-200	200	68.07	62.50	33,185
SANSW20960	KATHERINE STREET-to-BRYAN DRIVE	SAN-200	200	114.43	62.50	55,784
SANSW20961	LOCKHART ROAD	SAN-250	250	59.08	67.17	30,721
SANSW20962	BROCK CRESCENT-to-BROCK CRESCENT	SAN-250	250	86.14	67.17	44,793
SANSW20963	BROCK CRESCENT	SAN-250	250	93.97	67.17	48,866
SANSW20964	BROCK CRESCENT-to-BROCK CRESCENT	SAN-250	250	82.86	67.17	43,088
SANSW20965	LOCKHART ROAD-to-BROCK CRESCENT	SAN-250	250	95.36	67.17	49,586
SANSW20966	BRYAN DRIVE-to-LOCKHART ROAD	SAN-250	250	91.73	66.00	47,699
SANSW20967	KATHERINE STREET-to-KATHERINE STREET	SAN-250	250	64.36	62.50	33,465
SANSW20968	COLLINS STREET-to-LESLIE DRIVE	SAN-200	200	62.78	67.17	30,603
SANSW20969	LESLIE DRIVE-to-LESLIE DRIVE	SAN-200	200	89.61	67.17	43,683
SANSW20970	LESLIE DRIVE-to-LESLIE DRIVE	SAN-200	200	50.80	67.17	24,765
SANSW20971	COLLINS STREET-to-WILLIAMS STREET	SAN-375	375	75.62	92.97	44,236
SANSW20972	COLLINS STREET-to-COLLINS STREET	SAN-375	375	82.69	92.97	48,374
SANSW20973	LOCKHART ROAD-to-COLLINS STREET	SAN-375	375	12.37	92.97	7,236
SANSW20974	COLLINS STREET	SAN-300	300	87.40	74.17	48,286
SANSW20975	COLLINS STREET-to-COLLSHIP LANE	SAN-300	300	92.91	74.17	51,334
SANSW20976	COLLINS STREET-to-COLLINS STREET	SAN-300	300	32.72	74.17	18,079
SANSW20977	KATHERINE STREET-to-COLLINS STREET	SAN-300	300	109.76	74.17	60,641

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW20978	COLLINS STREET-to-KATHERINE STREET	SAN-200	200	73.89	62.50	36,019
SANSW20979	COLLINS STREET-to-LESLIE DRIVE	SAN-200	200	40.77	62.50	19,874
SANSW20980	COLLINS STREET-to-COLLINS STREET	SAN-200	200	90.24	62.50	43,991
SANSW20981	COLLINS STREET-to-COLLINS STREET	SAN-200	200	67.33	92.97	32,821
SANSW20982	STE MARIE STREET-to-COLLINS STREET	SAN-200	200	66.85	92.97	32,591
SANSW20983	COLLINS STREET-to-STE MARIE STREET	SAN-375	375	55.46	92.97	32,444
SANSW20984	MANNING AVENUE-to-MINNESOTA STREET	SAN-300	300	54.54	82.70	30,132
SANSW20985	MINNESOTA STREET-to-DILLON DRIVE	SAN-375	375	66.63	92.97	38,977
SANSW20986	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	64.16	92.97	37,534
SANSW20987	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	73.55	92.97	43,026
SANSW20988	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	85.55	92.97	50,046
SANSW20989	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	78.84	92.97	46,122
SANSW20990	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	76.44	92.97	44,717
SANSW20991	MANNING AVENUE-to-MINNESOTA STREET	SAN-375	375	82.12	92.97	48,039
SANSW20992	ALICE STREET-to-SPROULE AVENUE	SAN-300	300	84.38	61.33	46,621
SANSW20993	MANNING AVENUE-to-ALICE STREET	SAN-200	200	67.31	61.33	32,812
SANSW20994	MANNING AVENUE-to-KATHERINE STREET	SAN-200	200	60.44	62.50	29,462
SANSW20995	PATERSON STREET-to-MANNING AVENUE	SAN-200	200	60.68	62.50	29,583
SANSW20996	MANNING AVENUE	SAN-200	200	73.53	62.50	35,844
SANSW20997	ALICE STREET-to-BELL BOULEVARD	SAN-200	200	46.80	71.83	22,815
SANSW20998	BELL BOULEVARD-to-BELL BOULEVARD	SAN-200	200	87.97	71.83	42,884
SANSW20999	ALICE STREET-to-BELL BOULEVARD	SAN-200	200	47.52	61.33	23,167
SANSW21000	ALICE STREET-to-MANNING AVENUE	SAN-250	250	71.21	61.33	37,030
SANSW21001	KATHERINE STREET-to-MANNING AVENUE	SAN-450	400	67.35	62.50	43,775
SANSW21002	KATHERINE STREET-to-KATHERINE STREET	SAN-375	350	54.36	62.50	31,801
SANSW21003	KATHERINE STREET-to-COLLINS STREET	SAN-375	350	51.94	62.50	30,384
SANSW21004	LORNE STREET-to-LORNE STREET	SAN-450	400	17.00	62.50	11,051
SANSW21005	LORNE STREET-to-KATHERINE STREET	SAN-450	400	59.09	62.50	38,409
SANSW21006	LORNE STREET-to-LORNE STREET	SAN-250	250	61.25	61.33	31,848
SANSW21007	LORNE STREET-to-ALICE STREET	SAN-250	250	58.95	61.33	30,656
SANSW21008	LORNE STREET-to-LORNE STREET	SAN-250	250	72.59	61.33	37,749
SANSW21009	HAMILTON STREET	SAN-200	200	97.92	26.14	47,736
SANSW21010	HAMILTON STREET	SAN-200	200	51.28	91.35	24,999
SANSW21011	ROBINSON STREET-to-DUNCAN STREET	SAN-200	200	51.49	91.35	25,102
SANSW21012	HAMILTON STREET-to-ROBINSON STREET	SAN-375	350	56.42	1.00	33,006
SANSW21013	STE MARIE STREET-to-HAMILTON STREET	SAN-375	350	64.65	1.00	37,818
SANSW21014	HAMILTON STREET-to-STE MARIE STREET	SAN-300	300	63.94	1.00	35,327
SANSW21015	HURONTARIO STREET-to-HAMILTON STREET	SAN-300	300	62.27	1.00	34,403
SANSW21016	STE MARIE STREET	SAN-200	200	72.94	68.33	35,559

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21017	HURONTARIO STREET	SAN-250	250	102.94	1.00	53,530
SANSW21018	STE MARIE STREET-to-COLLINS STREET	SAN-375	375	85.44	92.97	49,984
SANSW21019	STE MARIE STREET-to-GEORGE STREET	SAN-375	375	125.04	92.97	73,145
SANSW21020	STE MARIE STREET-to-HAMILTON STREET	SAN-450	450	86.69	92.97	56,349
SANSW21021	ROBINSON STREET-to-HAMILTON STREET	SAN-250	250	99.41	85.95	51,695
SANSW21022	ROBINSON STREET-to-ROBINSON STREET	SAN-250	250	114.51	95.68	59,545
SANSW21023	ROBINSON STREET-to-COLLINS STREET	SAN-250	250	59.71	26.14	31,049
SANSW21024	PRETTY RIVER PARKWAY-to-HIGHWAY 26	SAN-450	450	79.70	59.00	51,805
SANSW21025	(blank)	SAN-450	450	82.79	59.00	53,814
SANSW21026	(blank)	SAN-450	450	80.65	59.00	52,419
SANSW21027	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	SAN-450	450	58.12	59.00	37,775
SANSW21028	RONELL CRESCENT-to-RONELL CRESCENT	SAN-250	250	89.71	67.17	46,648
SANSW21029	RONELL CRESCENT-to-RONELL CRESCENT	SAN-250	250	72.88	67.17	37,899
SANSW21030	PRETTY RIVER PARKWAY-to-RONELL CRESCENT	SAN-250	250	24.53	67.17	12,757
SANSW21031	RONELL CRESCENT-to-RONELL CRESCENT	SAN-250	250	84.93	67.17	44,165
SANSW21032	RONELL CRESCENT-to-RONELL CRESCENT	SAN-250	250	55.67	67.17	28,949
SANSW21033	RONELL CRESCENT-to-RONELL CRESCENT	SAN-250	250	77.18	67.17	40,133
SANSW21034	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	SAN-450	450	19.51	59.00	12,680
SANSW21035	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	SAN-450	450	70.75	59.00	45,990
SANSW21036	PRETTY RIVER PARKWAY	SAN-450	450	20.68	59.00	13,444
SANSW21037	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	SAN-450	450	95.13	59.00	61,833
SANSW21038	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	SAN-450	450	69.45	59.00	45,140
SANSW21039	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	SAN-450	450	71.31	59.00	46,353
SANSW21040	PRETTY RIVER PARKWAY-to-PRETTY RIVER PARKWAY	SAN-450	450	87.81	59.00	57,077
SANSW21041	PRETTY RIVER PARKWAY	SAN-200	200	72.74	59.00	35,463
SANSW21042	SIMCOE STREET-to-PRETTY RIVER PARKWAY	SAN-525	500	114.46	59.00	85,560
SANSW21043	SIMCOE STREET-to-SIMCOE STREET	SAN-300	300	18.93	49.67	10,459
SANSW21044	RUSSEL STREET-to-RUSSEL STREET	SAN-525	500	80.39	64.83	60,094
SANSW21045	ST LAWRENCE STREET-to-RUSSEL STREET	SAN-525	500	78.85	64.83	58,943
SANSW21046	ST LAWRENCE STREET-to-ST LAWRENCE STREET	SAN-525	500	88.51	64.83	66,163
SANSW21047	SUNSET COURT	SAN-200	200	47.88	68.33	23,343
SANSW21048	HURON STREET-to-SUNSET COURT	SAN-250	250	96.83	68.33	50,350
SANSW21049	NIAGARA STREET-to-NIAGARA STREET	SAN-200	200	74.81	92.97	36,468
SANSW21050	NIAGARA STREET-to-NIAGARA STREET	SAN-200	200	74.12	92.97	36,131
SANSW21051	HURON STREET-to-NIAGARA STREET	SAN-200	200	74.35	92.97	36,245

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21052	SIMCOE STREET-to-PRETTY RIVER PARKWAY	SAN-300	300	75.56	96.76	41,749
SANSW21053	MINNESOTA STREET-to-MINNESOTA STREET	SAN-450	450	93.07	92.43	60,497
SANSW21054	MINNESOTA STREET-to-MINNESOTA STREET	SAN-450	450	105.24	92.43	68,409
SANSW21055	ONTARIO STREET-to-MINNESOTA STREET	SAN-375	375	82.90	92.43	48,497
SANSW21056	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	81.90	92.43	47,914
SANSW21057	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	100.88	92.43	59,017
SANSW21058	MINNESOTA STREET-to-MINNESOTA STREET	SAN-375	375	101.45	92.43	59,348
SANSW21059	MINNESOTA STREET-to-HUME STREET	SAN-375	375	101.42	92.43	59,331
SANSW21060	MOBERLY STREET-to-MOBERLY STREET	SAN-250	250	93.67	26.14	48,707
SANSW21061	MOBERLY STREET-to-MOBERLY STREET	SAN-250	250	83.82	26.14	43,585
SANSW21062	SIMCOE STREET	SAN-300	300	103.93	93.51	57,422
SANSW21063	PINE STREET-to-PINE STREET	SAN-300	300	74.00	93.51	40,887
SANSW21064	MAPLE STREET-to-THIRD STREET	SAN-300	300	147.16	84.86	81,308
SANSW21065	SECOND STREET-to-MAPLE STREET	SAN-300	300	25.77	93.51	14,238
SANSW21066	BEECH STREET-to-THIRD STREET	SAN-300	300	135.43	94.59	74,823
SANSW21067	BIRCH STREET-to-SECOND STREET	SAN-600	600	117.70	92.43	103,284
SANSW21068	BIRCH STREET-to-BIRCH STREET	SAN-450	450	47.32	73.00	30,761
SANSW21069	BIRCH STREET	SAN-200	200	60.06	92.43	29,279
SANSW21070	OAK STREET-to-THIRD STREET	SAN-450	450	111.02	55.50	72,166
SANSW21071	OAK STREET-to-OAK STREET	SAN-450	450	47.80	78.83	31,067
SANSW21072	FIRST STREET-to-WALNUT STREET	SAN-250	250	29.77	59.00	15,479
SANSW21073	WALNUT STREET-to-WALNUT STREET	SAN-250	250	78.63	59.00	40,889
SANSW21074	WALNUT STREET-to-WALNUT STREET	SAN-250	250	93.18	59.00	48,451
SANSW21075	WALNUT STREET-to-SECOND STREET	SAN-250	250	37.04	59.00	19,262
SANSW21076	WALNUT STREET	SAN-200	200	50.76	59.00	24,747
SANSW21077	WALNUT STREET-to-WALNUT STREET	SAN-200	200	58.97	59.00	28,747
SANSW21078	WALNUT STREET-to-WALNUT STREET	SAN-200	200	59.36	59.00	28,938
SANSW21079	WALNUT STREET-to-WALNUT STREET	SAN-250	250	77.61	59.00	40,356
SANSW21080	FOURTH STREET-to-WALNUT STREET	SAN-200	200	94.43	59.00	46,034
SANSW21081	WALNUT STREET-to-WALNUT STREET	SAN-250	250	81.48	69.50	42,369
SANSW21082	WALNUT STREET-to-WALNUT STREET	SAN-250	250	81.22	69.50	42,233
SANSW21083	HICKORY STREET-to-THIRD STREET	SAN-300	300	71.01	57.83	39,232
SANSW21084	HICKORY STREET-to-HICKORY STREET	SAN-300	300	71.69	57.83	39,609
SANSW21085	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	75.22	57.83	39,115
SANSW21086	ELM STREET-to-SECOND STREET	SAN-250	250	76.68	61.33	39,874
SANSW21087	SECOND STREET-to-HICKORY STREET	SAN-250	250	58.73	57.83	30,540
SANSW21088	WALNUT STREET	SAN-250	250	39.07	80.54	20,315
SANSW21089	SECOND STREET-to-SECOND STREET	SAN-300	300	56.73	93.51	31,342
SANSW21090	SECOND STREET-to-SECOND STREET	SAN-300	300	59.58	93.51	32,919

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21091	SECOND STREET-to-OAK STREET	SAN-300	300	120.45	26.14	66,547
SANSW21092	SECOND STREET	SAN-300	300	91.44	84.32	50,520
SANSW21093	BIRCH STREET-to-BEECH STREET	SAN-525	500	121.41	84.32	90,751
SANSW21094	BEECH STREET-to-MAPLE STREET	SAN-375	375	120.67	82.70	70,593
SANSW21095	MAPLE STREET-to-PINE STREET	SAN-375	375	121.20	82.70	70,900
SANSW21096	SECOND STREET-to-SECOND STREET	SAN-375	350	26.74	70.67	15,645
SANSW21097	HURONTARIO STREET	SAN-200	200	66.13	1.00	32,237
SANSW21098	MAPLE STREET	SAN-200	200	72.87	1.00	35,522
SANSW21099	BEECH STREET	SAN-250	250	92.17	93.51	47,927
SANSW21100	OAK STREET-to-BIRCH STREET	SAN-300	300	121.77	26.14	67,276
SANSW21101	THIRD STREET-to-OAK STREET	SAN-300	300	121.73	26.14	67,254
SANSW21102	THIRD STREET	SAN-250	250	82.15	26.14	42,719
SANSW21103	HICKORY STREET	SAN-200	200	82.25	57.83	40,094
SANSW21104	HICKORY STREET	SAN-200	200	84.17	64.83	41,032
SANSW21105	HIGH STREET	SAN-250	250	112.15	61.33	58,319
SANSW21106	FIFTH STREET	SAN-200	200	10.04	94.59	4,894
SANSW21107	HIGH STREET-to-FIFTH STREET	SAN-250	250	84.80	64.83	44,098
SANSW21108	HIGH STREET-to-SIXTH STREET	SAN-250	250	83.30	62.50	43,317
SANSW21109	TELFER ROAD	SAN-200	200	83.84	81.62	40,870
SANSW21110	TELFER ROAD-to-TELFER ROAD	SAN-200	200	87.04	81.62	42,433
SANSW21111	TELFER ROAD-to-SPRUCE STREET	SAN-200	200	85.34	89.73	41,603
SANSW21112	TELFER ROAD	SAN-200	200	19.59	81.62	9,549
SANSW21113	TELFER ROAD	SAN-200	200	108.91	89.73	53,094
SANSW21114	TELFER ROAD-to-TELFER ROAD	SAN-200	200	109.28	89.73	53,275
SANSW21115	TELFER ROAD-to-SPRUCE STREET	SAN-200	200	109.96	89.73	53,606
SANSW21116	CAMPBELL STREET-to-SMART COURT	SAN-200	200	94.42	81.08	46,030
SANSW21117	CAMPBELL STREET	SAN-200	200	104.16	71.83	50,778
SANSW21118	CAMPBELL STREET	SAN-200	200	109.20	71.83	53,235
SANSW21119	HICKORY STREET-to-HICKORY STREET	SAN-250	250	18.76	64.83	9,755
SANSW21120	HICKORY STREET-to-HICKORY STREET	SAN-250	250	16.28	64.83	8,466
SANSW21121	HICKORY STREET-to-HICKORY STREET	SAN-250	250	30.74	64.83	15,984
SANSW21122	HICKORY STREET-to-HICKORY STREET	SAN-250	250	13.30	64.83	6,918
SANSW21123	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	3.88	57.83	2,017
SANSW21124	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	2.51	57.83	1,307
SANSW21125	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	9.11	57.83	4,737
SANSW21126	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	57.22	57.83	29,752
SANSW21127	Sewage STREET-to-Sewage STREET	SAN-200	200	30.13	57.83	14,689
SANSW21128	Sewage STREET	SAN-200	200	27.52	57.83	13,417
SANSW21129	HIGH STREET	SAN-200	200	57.57	75.33	28,064

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21130	HIGH STREET-to-SIXTH STREET	SAN-250	250	114.33	78.83	59,452
SANSW21131	HIGH STREET-to-HIGH STREET	SAN-250	250	91.15	92.97	47,395
SANSW21132	HIGH STREET-to-HIGH STREET	SAN-250	250	84.28	92.97	43,826
SANSW21133	HIGH STREET-to-CHAMBERLAIN CRESCENT	SAN-250	250	84.58	92.97	43,983
SANSW21134	PATTON STREET-to-PATTON STREET	SAN-250	250	33.93	92.97	17,642
SANSW21135	BROOKE AVENUE-to-BROOKE AVENUE	SAN-450	450	90.39	90.27	58,752
SANSW21136	ALYSSA DRIVE-to-ALYSSA DRIVE	SAN-375	375	51.19	90.27	29,948
SANSW21137	ALYSSA DRIVE	SAN-375	375	13.42	90.27	7,848
SANSW21138	MOUNTAIN ROAD	SAN-200	200	28.42	90.81	13,856
SANSW21139	DAWSON DRIVE-to-DAWSON DRIVE	SAN-300	300	21.92	78.83	12,109
SANSW21140	HIGHWAY 26 WEST/BALSAM STREET-to-OLD MOUNTAIN ROAD	SAN-450	400	49.78	60.17	32,360
SANSW21141	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-525	500	40.03	60.17	29,923
SANSW21142	BALSAM STREET-to-FIRST STREET EXTENSION	SAN-525	500	61.62	60.17	46,059
SANSW21143	BIRCH STREET-to-BIRCH STREET	SAN-750	900	104.67	1.00	129,264
SANSW21144	BIRCH STREET-to-BIRCH STREET	SAN-750	750	53.50	1.00	66,068
SANSW21145	FIRST STREET-to-HURONTARIO STREET	SAN-450	450	6.41	1.00	4,165
SANSW21146	FIRST STREET-to-STE MARIE STREET	SAN-750	750	133.10	1.00	164,374
SANSW21148	BIRCH STREET-to-BIRCH STREET	SAN-675	675	128.70	52.00	133,849
SANSW21149	PINE STREET-to-FIRST STREET	SAN-750	750	100.74	1.00	124,416
SANSW21150	FIRST STREET-to-FIRST STREET	SAN-750	750	19.60	1.00	24,206
SANSW21151	SECOND STREET-to-CEDAR STREET	SAN-200	200	100.25	93.51	48,874
SANSW21153	HICKORY STREET-to-FOURTH STREET	SAN-300	300	70.13	59.00	38,749
SANSW21154	OAK STREET-to-FOURTH STREET	SAN-450	450	73.61	26.14	47,847
SANSW21155	MAPLE STREET-to-FOURTH STREET	SAN-300	300	108.89	93.51	60,163
SANSW21156	OAK STREET-to-OAK STREET	SAN-450	450	73.98	26.14	48,088
SANSW21157	(blank)	SAN-750	750	87.39	86.49	107,922
SANSW21158	(blank)	SAN-750	750	111.98	86.49	138,297
SANSW21162	FIRST STREET-to-BEECH STREET	SAN-200	200	123.45	92.43	60,181
SANSW21163	MAPLE STREET-to-SEVENTH STREET	SAN-250	250	73.97	1.00	38,466
SANSW21164	ALYSSA DRIVE-to-ALYSSA DRIVE	SAN-450	450	31.32	90.27	20,361
SANSW21165	FIRST STREET-to-MAPLE STREET	SAN-200	200	29.41	84.86	14,335
SANSW21166	EIGHTH STREET-to-MAPLE STREET	SAN-250	250	124.81	1.00	64,899
SANSW21167	PINE STREET-to-PINE STREET	SAN-250	250	78.75	93.51	40,948
SANSW21168	MACKINAW LANE-to-SHIPYARD LANE	SAN-250	250	23.09	93.51	12,009
SANSW21169	GEORGIAN MEADOWS DRIVE-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	45.93	90.27	22,391
SANSW21170	GEORGIAN MEADOWS DRIVE-to-HIGHLANDS CRESCENT	SAN-200	200	83.43	90.27	40,673

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21171	CONNOR AVENUE-to-GEORGIAN MEADOWS DRIVE	SAN-200	200	54.00	90.27	26,326
SANSW21172	HURONTARIO STREET-to-SIMCOE STREET	SAN-375	350	111.77	75.33	65,384
SANSW21174	(blank)	SAN-250	250	86.26	93.51	0
SANSW21176	STE MARIE STREET-to-STE MARIE STREET	SAN-525	525	70.91	92.97	53,004
SANSW21177	STE MARIE STREET-to-STE MARIE STREET	SAN-450	450	99.82	92.97	64,880
SANSW21178	HURON STREET-to-STE MARIE STREET	SAN-750	750	29.85	94.05	36,865
SANSW21179	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	78.28	57.83	40,704
SANSW21180	SPRUCE STREET-to-SPRUCE STREET	SAN-250	250	38.05	64.83	19,783
SANSW21181	ST PAUL STREET-to-ST PAUL STREET	SAN-450	400	84.95	69.50	55,218
SANSW21182	(blank)	SAN-450	450	19.25	96.76	12,509
SANSW21183	RODNEY STREET-to-EAST STREET	SAN-450	450	71.84	96.76	46,695
SANSW21184	HICKORY STREET-to-HICKORY STREET	SAN-200	200	82.62	59.00	40,275
SANSW21185	MARKET STREET-to-HUME STREET	SAN-250	250	45.17	96.22	23,486
SANSW21187	SPRUCE STREET-to-SECOND STREET	SAN-250	250	40.13	57.83	20,869
SANSW21188	SPRUCE STREET-to-SECOND STREET	SAN-250	250	62.83	57.83	32,672
SANSW21189	WALNUT STREET-to-FOURTH STREET	SAN-250	250	79.42	59.00	41,298
SANSW21190	WALNUT STREET	SAN-200	200	78.92	59.00	38,473
SANSW21192	MINNESOTA STREET-to-MINNESOTA STREET	SAN-675	675	17.75	96.76	18,461
SANSW21193	MACDONALD ROAD-to-MACDONALD ROAD	SAN-300	300	137.81	83.78	76,141
SANSW21194	HIGH STREET-to-FIFTH STREET	SAN-250	250	64.05	78.83	33,306
SANSW21195	SOUTH SERVICE ROAD-to-ST CLAIR STREET	SAN-450	450	818.05	90.81	531,730
SANSW21196	SOUTH SERVICE ROAD-to-ST CLAIR STREET	SAN-450	450	825.48	90.81	536,561
SANSW21197	ROBINSON STREET-to-PATERSON STREET	SAN-250	250	256.83	91.35	133,551
SANSW21198	HURON STREET	SAN-450	450	167.24	90.81	108,703
SANSW21199	HIGHWAY 26 WEST/BALSAM STREET	SAN-300	300	370.27	64.83	204,576
SANSW21203	RODNEY STREET-to-SOUTH SERVICE ROAD	SAN-450	450	2,172.49	90.81	1,412,116
SANSW21204	RODNEY STREET-to-SOUTH SERVICE ROAD	SAN-450	450	2,172.54	90.81	1,412,152
SANSW21205	HURON STREET-to-HURON STREET	SAN-450	450	72.87	90.81	47,367
SANSW21206	BIRCH STREET-to-BIRCH STREET	SAN-750	900	20.39	1.00	25,179
SANSW21208	BIRCH STREET-to-BIRCH STREET	SAN-750	750	58.26	1.00	71,955
SANSW21209	SPROULE AVENUE-to-SPROULE AVENUE	SAN-375	375	61.35	92.97	35,891
SANSW21215	HIGH STREET-to-FINDLAY DRIVE	SAN-300	300	65.52	98.38	0
SANSW21250	GILPIN CRESCENT-to-FINDLAY DRIVE	SAN-300	300	95.39	98.38	0
SANSW21251	FINDLAY DRIVE-to-CLARK STREET	SAN-300	300	95.44	98.38	0
SANSW21252	GILPIN CRESCENT-to-FINDLAY DRIVE	SAN-200	200	84.15	98.38	0
SANSW21253	GILPIN CRESCENT-to-GILPIN CRESCENT	SAN-200	200	93.63	98.38	0
SANSW21254	GILPIN CRESCENT-to-GILPIN CRESCENT	SAN-200	200	84.04	98.38	0
SANSW21255	GILPIN CRESCENT-to-GILPIN CRESCENT	SAN-200	200	17.85	98.38	0

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21256	GILPIN CRESCENT-to-FINDLAY DRIVE	SAN-200	200	71.09	98.38	0
SANSW21257	LOCKERBIE CRESCENT-to-LOCKERBIE CRESCENT	SAN-200	200	8.31	98.38	0
SANSW21258	LOCKERBIE CRESCENT-to-WILSON STREET	SAN-200	200	111.36	98.38	0
SANSW21259	WILSON STREET-to-WILSON STREET	SAN-200	200	112.01	98.38	0
SANSW21260	WILSON STREET-to-LOCKERBIE CRESCENT	SAN-200	200	112.95	98.38	0
SANSW21261	LOCKERBIE CRESCENT-to-CLARK STREET	SAN-200	200	96.03	98.38	0
SANSW21262	LOCKERBIE CRESCENT-to-LOCKERBIE CRESCENT	SAN-200	200	90.50	98.38	0
SANSW21263	LOCKERBIE CRESCENT-to-LOCKERBIE CRESCENT	SAN-200	200	119.90	98.38	0
SANSW21264	LOCKERBIE CRESCENT-to-LOCKERBIE CRESCENT	SAN-200	200	119.78	98.38	0
SANSW21265	LOCKERBIE CRESCENT-to-LOCKERBIE CRESCENT	SAN-200	200	94.77	98.38	0
SANSW21266	WILSON STREET-to-LOCKERBIE CRESCENT	SAN-200	200	88.41	98.38	0
SANSW21267	WILSON STREET-to-CLARK STREET	SAN-200	200	95.58	98.38	0
SANSW21269	GEORGE ZUBEK DRIVE-to-COLLINS STREET	SAN-200	200	19.48	92.97	0
SANSW21270	GEORGE ZUBEK DRIVE-to-GEORGE ZUBEK DRIVE	SAN-200	200	23.66	98.38	0
SANSW21271	GEORGE ZUBEK DRIVE-to-GEORGE ZUBEK DRIVE	SAN-200	200	55.83	98.38	0
SANSW21272	GEORGE ZUBEK DRIVE-to-GEORGE ZUBEK DRIVE	SAN-200	200	47.13	98.38	0
SANSW21273	GEORGE ZUBEK DRIVE-to-GEORGE ZUBEK DRIVE	SAN-200	200	36.42	98.38	0
SANSW21274	GEORGE ZUBEK DRIVE-to-GEORGE ZUBEK DRIVE	SAN-200	200	32.62	98.38	0
SANSW21275	GEORGE ZUBEK DRIVE-to-GEORGE ZUBEK DRIVE	SAN-200	200	20.97	98.38	0
SANSW21276	GEORGE ZUBEK DRIVE-to-GEORGE ZUBEK DRIVE	SAN-200	200	17.44	98.38	0
SANSW21277	HURONTARIO STREET	SAN-300	300	40.53	97.30	22,391
SANSW21278	KERR STREET-to-KIRBY AVENUE	SAN-200	200	74.80	98.92	0
SANSW21279	MCLEAN AVENUE-to-KIRBY AVENUE	SAN-200	200	44.45	98.92	0
SANSW21280	KIRBY AVENUE-to-KIRBY AVENUE	SAN-200	200	57.42	98.92	0
SANSW21281	KIRBY AVENUE	SAN-200	200	119.71	98.92	0
SANSW21282	DEY DRIVE-to-KIRBY AVENUE	SAN-200	200	80.27	98.92	0
SANSW21283	DEY DRIVE-to-KIRBY AVENUE	SAN-200	200	109.85	98.92	0
SANSW21286	KERR STREET-to-KIRBY AVENUE	SAN-200	200	100.07	98.92	0
SANSW21287	MCLEAN AVENUE-to-KIRBY AVENUE	SAN-200	200	110.58	98.92	0
SANSW21288	MCLEAN AVENUE-to-MCLEAN AVENUE	SAN-200	200	107.00	98.92	0
SANSW21289	MCLEAN AVENUE-to-KERR STREET	SAN-200	200	117.37	98.92	0
SANSW21290	MCLEAN AVENUE-to-MCLEAN AVENUE	SAN-200	200	75.04	98.92	0
SANSW21291	(blank)	SAN-200	200	49.19	98.92	0

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21292	(blank)	SAN-200	200	43.92	98.92	0
SANSW21293	(blank)	SAN-200	200	12.58	98.92	0
SANSW21296	BRYAN DRIVE-to-BRYAN DRIVE	SAN-200	200	7.81	88.65	3,806
SANSW21297	BRYAN COURT	SAN-150	150	7.62	88.65	3,467
SANSW21298	BRYAN COURT-to-BRYAN COURT	SAN-150	150	11.89	88.65	5,410
SANSW21299	BRYAN COURT-to-BRYAN COURT	SAN-150	150	11.59	88.65	5,271
SANSW21300	BRYAN DRIVE-to-BRYAN COURT	SAN-200	200	21.82	88.65	10,638
SANSW21301	ALBERT STREET	SAN-200	200	37.60	66.00	18,331
SANSW21302	ALBERT STREET	SAN-200	200	60.86	66.00	29,667
SANSW21303	ALBERT STREET-to-SIMCOE STREET	SAN-250	250	102.40	66.00	53,246
SANSW21304	ALBERT STREET-to-ALBERT STREET	SAN-250	250	53.61	63.67	27,876
SANSW21305	ALBERT STREET	SAN-250	250	43.16	63.67	22,445
SANSW21306	ALBERT STREET-to-ALBERT STREET	SAN-250	250	11.88	63.67	6,179
SANSW21307	ALBERT STREET-to-ALMA STREET	SAN-250	250	38.46	60.17	19,999
SANSW21308	ALMA STREET	SAN-250	250	85.11	63.67	44,257
SANSW21309	ALBERT STREET-to-ALMA STREET	SAN-250	250	80.61	63.67	41,916
SANSW21310	HURON STREET-to-HURON STREET	SAN-525	500	60.52	64.83	45,239
SANSW21311	HURON STREET-to-HURON STREET	SAN-525	500	65.02	64.83	48,600
SANSW21312	HURON STREET-to-SUNSET COURT	SAN-525	500	67.73	64.83	50,625
SANSW21313	PRETTY RIVER PARKWAY-to-RAGLAN STREET	SAN-250	250	98.55	63.67	51,245
SANSW21314	RAGLAN STREET-to-RAGLAN STREET	SAN-250	250	104.91	63.67	54,554
SANSW21315	ST LAWRENCE STREET-to-HURON STREET	SAN-525	500	63.89	64.83	47,758
SANSW21316	ST LAWRENCE STREET-to-HURON STREET	SAN-250	250	99.39	64.83	51,681
SANSW21317	ST LAWRENCE STREET	SAN-250	250	69.78	64.83	36,284
SANSW21318	ST LAWRENCE STREET-to-ST LAWRENCE STREET	SAN-250	250	98.75	64.83	51,352
SANSW21319	ST LAWRENCE STREET-to-ST LAWRENCE STREET	SAN-250	250	99.72	64.83	51,855
SANSW21320	CRANBERRY TRAIL EAST-to-JOSEPH TRAIL	SAN-375	375	55.57	92.97	0
SANSW21321	(blank)	SAN-750	750	105.60	86.49	130,420
SANSW21322	(blank)	SAN-450	450	64.38	90.27	41,848
SANSW21323	TENTH LINE	SAN-200	200	90.52	88.11	44,129
SANSW21324	MOUNTAIN ROAD	SAN-750	750	61.57	86.49	76,044
SANSW21325	ELM STREET-to-SPRUCE STREET	SAN-750	750	126.21	86.49	155,866
SANSW21326	FIRST STREET-to-ELM STREET	SAN-250	250	73.80	61.33	38,376
SANSW21327	ELM STREET-to-FIRST STREET	SAN-250	250	83.08	61.33	43,200
SANSW21328	ELM STREET-to-ELM STREET	SAN-250	250	74.94	61.33	38,968
SANSW21329	ELM STREET	SAN-250	250	69.76	61.33	36,275
SANSW21330	FIRST STREET-to-ELM STREET	SAN-525	525	79.10	57.83	59,129

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21331	OLD MOUNTAIN ROAD-to-OLD MOUNTAIN ROAD	SAN-525	500	87.54	60.17	65,439
SANSW21332	OLD MOUNTAIN ROAD-to-OLD MOUNTAIN ROAD	SAN-525	500	99.43	60.17	74,322
SANSW21333	OLD MOUNTAIN ROAD-to-OLD MOUNTAIN ROAD	SAN-525	500	86.22	60.17	64,452
SANSW21334	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-375	375	119.32	60.17	69,803
SANSW21335	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-375	375	111.66	60.17	65,319
SANSW21336	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-375	375	64.78	60.17	37,895
SANSW21337	MOUNTAIN ROAD	SAN-200	200	37.10	60.17	18,088
SANSW21338	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-375	375	75.58	60.17	44,213
SANSW21339	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-375	375	119.21	60.17	69,736
SANSW21340	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-375	375	123.89	60.17	72,475
SANSW21341	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-525	525	29.11	60.17	21,763
SANSW21342	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-525	525	17.73	60.17	13,256
SANSW21343	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-525	500	65.22	60.17	48,748
SANSW21344	MOUNTAIN ROAD-to-THOMAS DRIVE	SAN-450	450	59.01	91.89	38,358
SANSW21345	MOUNTAIN ROAD-to-THOMAS DRIVE	SAN-450	450	57.82	91.89	37,586
SANSW21346	THOMAS DRIVE-to-THOMAS DRIVE	SAN-450	450	113.11	91.89	73,522
SANSW21347	THOMAS DRIVE-to-THOMAS DRIVE	SAN-450	450	99.63	91.89	64,762
SANSW21348	THOMAS DRIVE-to-KELLS CRESCENT	SAN-450	450	55.29	91.89	35,937
SANSW21349	FRANCES DRIVE	SAN-200	200	120.65	91.89	58,816
SANSW21350	MAIR MILLS DRIVE-to-FRANCES DRIVE	SAN-200	200	100.87	91.89	49,172
SANSW21351	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-600	600	65.79	85.41	57,734
SANSW21352	CRANBERRY TRAIL EAST-to-DAWSON DRIVE	SAN-600	600	73.42	85.41	64,423
SANSW21353	DAWSON DRIVE-to-DAWSON DRIVE	SAN-200	200	108.12	78.83	52,709
SANSW21354	DAWSON DRIVE-to-DAWSON DRIVE	SAN-300	300	37.84	78.83	20,905
SANSW21355	OXBOW CRESCENT-to-DAWSON DRIVE	SAN-300	300	84.21	78.83	46,527
SANSW21356	DAWSON DRIVE-to-DAWSON DRIVE	SAN-300	300	76.25	78.83	42,126
SANSW21357	DAWSON DRIVE-to-DAWSON DRIVE	SAN-450	400	99.21	68.33	64,484
SANSW21358	DAWSON DRIVE-to-HARBOUR STREET WEST	SAN-450	400	97.57	68.33	63,417
SANSW21359	HARBOUR STREET WEST	SAN-450	400	60.18	64.83	39,114
SANSW21360	HARBOUR STREET WEST-to-KARI CRESCENT	SAN-450	400	70.65	64.83	45,925
SANSW21361	HARBOUR STREET WEST-to-HARBOUR STREET WEST	SAN-450	400	40.36	64.83	26,231
SANSW21362	HARBOUR STREET WEST-to-HARBOUR STREET WEST	SAN-450	400	43.64	64.83	28,369
SANSW21363	HARBOUR STREET WEST-to-DAWSON DRIVE	SAN-525	500	65.94	64.83	49,293
SANSW21364	HARBOUR STREET WEST-to-HARBOUR STREET WEST	SAN-525	500	26.01	64.83	19,439
SANSW21365	HARBOUR STREET WEST-to-HARBOUR STREET WEST	SAN-525	500	90.87	64.83	67,926

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21366	HARBOUR STREET WEST-to-HARBOUR STREET WEST	SAN-525	500	96.30	64.83	71,981
SANSW21367	HARBOUR STREET WEST-to-BALSAM STREET	SAN-750	1050	35.34	81.62	43,647
SANSW21368	HARBOUR STREET EAST-to-HARBOUR STREET EAST	SAN-750	1050	71.18	67.17	87,909
SANSW21369	BALSAM STREET-to-HARBOUR STREET EAST	SAN-300	300	24.88	67.17	13,745
SANSW21370	BALSAM STREET-to-BALSAM STREET	SAN-300	300	35.85	67.17	19,807
SANSW21371	NETTLETON COURT-to-BALSAM STREET	SAN-300	300	70.09	67.17	38,725
SANSW21372	BALSAM STREET-to-BALSAM STREET	SAN-200	200	86.31	67.17	42,078
SANSW21373	CRANBERRY QUAY-to-BALSAM STREET	SAN-200	200	39.25	67.17	19,133
SANSW21374	BALSAM STREET-to-CRANBERRY QUAY	SAN-200	200	28.52	67.17	13,904
SANSW21375	BALSAM STREET-to-BALSAM STREET	SAN-200	200	38.90	67.17	18,964
SANSW21376	NETTLETON COURT-to-NETTLETON COURT	SAN-250	250	46.78	67.17	24,324
SANSW21377	NETTLETON COURT-to-NETTLETON COURT	SAN-250	250	18.80	67.17	9,773
SANSW21378	NETTLETON COURT-to-NETTLETON COURT	SAN-250	250	25.35	67.17	13,181
SANSW21379	TROTT BOULEVARD-to-NETTLETON COURT	SAN-250	250	58.73	67.17	30,540
SANSW21380	TROTT BOULEVARD-to-NETTLETON COURT	SAN-250	250	69.09	67.17	35,928
SANSW21381	NETTLETON COURT	SAN-200	200	29.18	67.17	14,226
SANSW21382	TROTT BOULEVARD-to-NETTLETON COURT	SAN-250	250	40.98	67.17	21,308
SANSW21383	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-250	250	24.10	67.17	12,534
SANSW21384	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-250	250	55.33	67.17	28,769
SANSW21385	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-250	250	34.48	67.17	17,930
SANSW21386	MCINTOSH GATE-to-TROTT BOULEVARD	SAN-200	200	44.69	67.17	21,787
SANSW21387	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-200	200	28.19	67.17	13,740
SANSW21388	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-200	200	35.83	67.17	17,466
SANSW21389	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-200	200	41.67	67.17	20,313
SANSW21390	SHEFFIELD TERRACE	SAN-200	200	49.08	67.17	23,927
SANSW21391	TROTT BOULEVARD-to-SHEFFIELD TERRACE	SAN-200	200	32.83	67.17	16,004
SANSW21392	TROTT BOULEVARD-to-SHEFFIELD TERRACE	SAN-200	200	41.81	67.17	20,384
SANSW21393	TROTT BOULEVARD	SAN-200	200	32.80	67.17	15,991
SANSW21394	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-375	375	50.01	92.97	0
SANSW21395	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-375	375	47.54	92.97	0
SANSW21396	CRANBERRY TRAIL EAST-to-JOSEPH TRAIL	SAN-375	375	97.32	92.97	0
SANSW21397	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-375	375	56.16	92.97	32,854
SANSW21398	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-375	375	56.07	92.97	32,802
SANSW21399	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-375	375	41.98	92.97	24,561
SANSW21400	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-375	375	48.16	92.97	28,172

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21401	MOUNTAIN ROAD-to-TENTH LINE	SAN-375	375	13.48	91.89	7,888
SANSW21402	CRANBERRY TRAIL WEST-to-CRANBERRY TRAIL WEST	SAN-200	200	64.47	90.27	31,430
SANSW21403	MAIR MILLS DRIVE	SAN-150	150	45.76	91.89	20,822
SANSW21404	DAWSON DRIVE-to-WOODLAND COURT	SAN-375	375	78.03	89.19	45,649
SANSW21405	SIMCOE STREET-to-SIMCOE STREET	SAN-525	500	59.16	49.67	44,225
SANSW21406	RUSSEL STREET-to-SIMCOE STREET	SAN-525	500	62.77	49.67	46,920
SANSW21407	ELM STREET-to-SPRUCE STREET	SAN-525	525	120.47	57.83	90,051
SANSW21408	TENTH LINE-to-TENTH LINE	SAN-375	375	23.42	91.89	13,703
SANSW21409	MOUNTAIN ROAD-to-TENTH LINE	SAN-450	450	119.42	91.89	77,622
SANSW21410	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-450	450	119.87	91.89	77,918
SANSW21411	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-450	450	120.08	91.89	78,055
SANSW21412	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-450	450	120.00	91.89	78,003
SANSW21413	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-450	450	118.20	91.89	76,829
SANSW21414	KELLS CRESCENT-to-MAIR MILLS DRIVE	SAN-450	450	23.79	91.89	15,464
SANSW21415	KELLS CRESCENT-to-THOMAS DRIVE	SAN-450	450	23.41	91.89	15,215
SANSW21416	MAIR MILLS DRIVE-to-KELLS CRESCENT	SAN-200	200	37.95	91.89	18,500
SANSW21417	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	21.81	91.89	10,631
SANSW21418	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	86.26	91.89	42,050
SANSW21419	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	13.70	91.89	6,676
SANSW21420	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	86.92	91.89	42,374
SANSW21421	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	71.24	91.89	34,728
SANSW21422	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	101.17	91.89	49,322
SANSW21423	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	138.76	91.89	67,646
SANSW21424	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	13.08	91.89	6,377
SANSW21425	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	91.35	91.89	44,531
SANSW21426	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	93.12	91.89	45,395
SANSW21427	KELLS CRESCENT-to-KELLS CRESCENT	SAN-200	200	110.50	91.89	53,868
SANSW21428	FRANCES DRIVE-to-LONG LANE	SAN-200	200	117.00	91.89	57,035
SANSW21429	LONG LANE	SAN-200	200	74.43	91.89	36,286
SANSW21430	KELLS CRESCENT-to-LONG LANE	SAN-200	200	75.97	91.89	37,035
SANSW21431	MAIR MILLS DRIVE	SAN-200	200	120.25	91.89	58,622
SANSW21432	MAIR MILLS DRIVE	SAN-450	450	58.87	91.89	38,266
SANSW21433	HILL STREET-to-MAIR MILLS DRIVE	SAN-450	450	120.85	91.89	78,554
SANSW21434	MAIR MILLS DRIVE-to-MAIR MILLS DRIVE	SAN-450	450	99.51	91.89	64,680
SANSW21435	MAIR MILLS DRIVE-to-FRANCES DRIVE	SAN-450	450	44.40	91.89	28,862
SANSW21436	MAIR MILLS DRIVE-to-KELLS CRESCENT	SAN-450	450	37.27	91.89	24,226
SANSW21437	CRANBERRY TRAIL WEST-to-GREENBRIAR DRIVE	SAN-250	250	50.68	90.81	26,351

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21438	CRANBERRY TRAIL WEST-to-CRANBERRY TRAIL WEST	SAN-250	250	90.88	90.81	47,256
SANSW21439	CRANBERRY TRAIL WEST-to-CRANBERRY TRAIL WEST	SAN-200	200	44.79	90.27	21,835
SANSW21440	CRANBERRY TRAIL WEST-to-CRANBERRY TRAIL WEST	SAN-200	200	46.80	90.27	22,813
SANSW21441	CRANBERRY TRAIL WEST-to-CRANBERRY TRAIL WEST	SAN-200	200	53.98	90.27	26,314
SANSW21442	CRANBERRY TRAIL WEST-to-CRANBERRY TRAIL WEST	SAN-200	200	53.74	90.27	26,199
SANSW21443	FIRST STREET EXTENSION-to-FIRST STREET EXTENSION	SAN-250	250	49.16	89.19	25,562
SANSW21444	(blank)	SAN-200	200	25.71	90.81	12,532
SANSW21445	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-450	450	8.97	60.17	5,827
SANSW21446	(blank)	SAN-250	250	8.64	64.83	4,492
SANSW21447	(blank)	SAN-450	450	101.93	90.27	66,255
SANSW21448	(blank)	SAN-450	450	21.80	90.27	14,167
SANSW21449	(blank)	SAN-450	450	76.66	90.27	49,829
SANSW21450	(blank)	SAN-450	450	101.43	90.27	65,926
SANSW21451	(blank)	SAN-450	450	81.81	90.27	53,177
SANSW21452	(blank)	SAN-450	450	75.30	90.27	48,942
SANSW21453	(blank)	SAN-450	450	71.98	90.27	46,787
SANSW21454	(blank)	SAN-450	450	55.15	90.27	35,846
SANSW21455	(blank)	SAN-450	450	106.65	90.27	69,321
SANSW21456	(blank)	SAN-450	450	33.34	90.27	21,669
SANSW21457	(blank)	SAN-200	200	35.11	90.81	17,117
SANSW21458	FIRST STREET-to-FIRST STREET EXTENSION	SAN-525	525	14.13	57.83	10,565
SANSW21459	(blank)	SAN-450	450	8.50	60.17	5,527
SANSW21460	(blank)	SAN-450	450	3.24	60.17	2,107
SANSW21461	ELM STREET	SAN-250	250	97.14	62.50	50,514
SANSW21462	HIGH STREET	SAN-200	200	59.52	61.33	29,017
SANSW21464	FIRST STREET-to-BALSAM STREET	SAN-525	525	75.00	57.83	56,065
SANSW21465	FIRST STREET EXTENSION-to-HIGH STREET	SAN-525	525	77.55	63.67	57,966
SANSW21466	HIGH STREET-to-HIGH STREET	SAN-375	350	74.04	63.67	43,312
SANSW21467	HIGH STREET-to-HIGH STREET	SAN-200	200	5.84	63.67	2,847
SANSW21468	HIGH STREET	SAN-375	350	75.38	63.67	44,096
SANSW21469	HIGH STREET-to-HIGH STREET	SAN-300	300	80.18	78.83	44,302
SANSW21470	HIGH STREET-to-HIGH STREET	SAN-300	300	71.21	78.83	39,344
SANSW21471	HIGH STREET-to-HIGH STREET	SAN-250	250	98.03	78.83	50,975
SANSW21472	HIGH STREET-to-HIGH STREET	SAN-250	250	82.88	78.83	43,100
SANSW21473	HIGH STREET-to-HIGH STREET	SAN-200	200	12.74	75.33	6,210
SANSW21474	HIGH STREET	SAN-200	200	52.83	75.33	25,756

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21475	MOUNTAIN ROAD-to-MOUNTAIN ROAD	SAN-525	525	43.96	60.17	32,862
SANSW21479	HIGHWAY 26-to-HIGHWAY 26	SAN-375	350	27.56	81.08	16,122
SANSW21480	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	96.28	81.08	118,906
SANSW21481	SewageFALLS LANE-to-SewageFALLS LANE	SAN-750	750	47.27	81.08	58,380
SANSW21482	SewageFALLS LANE-to-HIGHWAY 26	SAN-750	750	100.56	81.08	124,197
SANSW21483	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	75.93	81.08	93,772
SANSW21484	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	80.01	81.08	98,810
SANSW21485	HIGHWAY 26-to-RAMBLINGS WAY	SAN-750	750	55.14	81.08	68,099
SANSW21486	GUN CLUB ROAD-to-HIGHWAY 26	SAN-750	750	110.70	81.08	136,719
SANSW21487	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	147.55	81.62	182,227
SANSW21488	HARBOUR STREET WEST-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-750	1050	69.05	64.83	85,277
SANSW21489	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-750	1050	79.43	64.83	98,095
SANSW21490	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-750	1050	75.53	64.83	93,273
SANSW21491	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-750	1050	15.53	64.83	19,178
SANSW21492	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-250	250	47.44	64.83	24,667
SANSW21493	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-250	250	16.95	64.83	8,811
SANSW21494	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-250	250	87.65	64.83	45,579
SANSW21495	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-200	200	70.31	64.83	34,275
SANSW21496	HIGHWAY 26 WEST/BALSAM STREET	SAN-200	200	74.98	64.83	36,550
SANSW21497	OLD MOUNTAIN ROAD-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-525	500	100.80	60.17	75,348
SANSW21498	HIGHWAY 26 WEST/BALSAM STREET	SAN-200	200	61.23	60.17	29,851
SANSW21499	HIGHWAY 26 WEST/BALSAM STREET-to-HIGHWAY 26 WEST/BALSAM STREET	SAN-200	200	22.34	60.17	10,891
SANSW21500	MOUNTAIN ROAD-to-FIRST STREET EXTENSION	SAN-525	500	74.10	60.17	55,392
SANSW21501	MOUNTAIN ROAD-to-FIRST STREET EXTENSION	SAN-525	500	41.09	60.17	30,713
SANSW21502	(blank)	SAN-525	500	40.07	60.17	29,949
SANSW21503	(blank)	SAN-525	500	78.96	60.17	59,021
SANSW21504	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-250	250	21.44	67.17	11,147
SANSW21505	OXBOW CRESCENT-to-DAWSON DRIVE	SAN-300	300	58.93	78.83	32,557
SANSW21506	DAWSON DRIVE-to-DAWSON DRIVE	SAN-300	300	26.75	78.83	14,777
SANSW21507	DAWSON DRIVE-to-DAWSON DRIVE	SAN-300	300	96.49	78.83	53,312
SANSW21508	DAWSON DRIVE-to-DAWSON DRIVE	SAN-300	300	61.23	78.83	33,830
SANSW21510	TENTH LINE-to-TENTH LINE	SAN-200	200	21.92	88.11	10,686
SANSW21511	HIGH STREET-to-THIRD STREET	SAN-300	300	71.86	78.83	39,700

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW21512	HIGH STREET-to-HIGH STREET	SAN-250	250	76.00	78.83	39,522
SANSW21513	HIGH STREET-to-MURRAY COURT	SAN-200	200	44.52	63.67	21,703
SANSW21514	HIGH STREET	SAN-200	200	54.30	63.67	26,471
SANSW21515	(blank)	SAN-450	450	73.45	90.27	47,740
SANSW21516	(blank)	SAN-450	450	76.27	90.27	49,577
SANSW21517	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	131.26	81.08	162,104
SANSW21518	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	151.12	81.08	186,637
SANSW21519	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	151.49	81.08	187,094
SANSW21520	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	130.45	81.08	161,111
SANSW21521	HIGHWAY 26-to-GUN CLUB ROAD	SAN-750	750	158.35	81.08	195,561
SANSW21522	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	133.39	81.08	164,735
SANSW21523	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	127.14	81.08	157,020
SANSW21524	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	163.03	81.08	201,346
SANSW21525	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	146.70	81.62	181,179
SANSW21526	HIGHWAY 26-to-HIGHWAY 26	SAN-750	750	152.13	81.62	187,883
SANSW21527	HIGHWAY 26-to-HARBOUR STREET EAST	SAN-750	750	150.41	81.08	185,761
SANSW21528	HIGHWAY 26-to-CRANBERRY TRAIL	SAN-200	200	838.75	90.27	408,889
SANSW21529	MOUNTAIN ROAD-to-TENTH LINE	SAN-375	375	479.05	82.70	280,242
SANSW21561	CRANBERRY TRAIL WEST	SAN-300	300	20.73	90.27	11,454
SANSW21731	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-300	300	63.58	94.05	0
SANSW21732	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-200	200	69.85	97.84	0
SANSW21761	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-200	200	81.17	98.38	0
SANSW21762	CRANBERRY TRAIL EAST-to-SPOONER CRESCENT	SAN-300	300	64.97	97.84	0
SANSW21764	CRANBERRY TRAIL EAST-to-CRANBERRY TRAIL EAST	SAN-250	250	86.87	97.84	0
SANSW21765	CRANBERRY TRAIL EAST-to-CARPENTER STREET	SAN-250	250	85.51	97.84	0
SANSW21998	CRANBERRY TRAIL EAST-to-DAWSON DRIVE	SAN-600	600	44.90	82.70	39,396
SANSW21999	DAWSON DRIVE-to-DAWSON DRIVE	SAN-200	200	54.18	82.70	26,413
SANSW22000	DAWSON DRIVE-to-DAWSON DRIVE	SAN-200	200	42.65	82.70	20,792
SANSW22001	FAIRWAY CRESCENT-to-DAWSON DRIVE	SAN-200	200	37.30	82.70	18,186
SANSW22002	BALSAM STREET-to-CRANBERRY SHORES	SAN-200	200	65.41	67.17	31,886
SANSW22003	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-300	300	59.21	67.17	32,711
SANSW22004	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-300	300	30.15	67.17	16,658
SANSW22005	FIRST STREET EXTENSION	SAN-150	150	9.73	89.19	4,427
SANSW22049	MCINTOSH GATE	SAN-200	200	64.11	67.17	31,251
SANSW22050	MCINTOSH GATE-to-TROTT BOULEVARD	SAN-200	200	58.31	67.17	28,428
SANSW22052	HIGHWAY 26-to-SILVER GLEN BOULEVARD	SAN-250	250	973.81	92.97	506,380

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW22053	HIGHWAY 26-to-SILVER GLEN BOULEVARD	SAN-150	150	980.73	92.97	446,232
SANSW22055	TROTT BOULEVARD-to-TROTT BOULEVARD	SAN-300	300	25.13	67.17	13,882
SANSW22056	NAPIER STREET-to-HUME STREET	SAN-250	250	17.14	99.46	8,915
SANSW22058	NAPIER STREET	SAN-250	250	43.88	56.67	22,816
SANSW22059	NAPIER STREET-to-HUME STREET	SAN-250	250	92.74	56.67	48,227
SANSW22060	NAPIER STREET-to-NAPIER STREET	SAN-250	250	95.99	99.46	49,917
SANSW22061	NAPIER STREET-to-NAPIER STREET	SAN-250	250	108.16	99.46	56,245
SANSW22062	NAPIER STREET-to-NAPIER STREET	SAN-250	250	109.83	99.46	57,114
SANSW22063	NAPIER STREET-to-ERIE STREET	SAN-375	375	89.84	26.14	52,558
SANSW22064	NAPIER STREET-to-ERIE STREET	SAN-300	300	103.28	26.14	57,064
SANSW22066	NAPIER STREET	SAN-200	200	104.01	100.00	50,706
SANSW22067	NAPIER STREET-to-NAPIER STREET	SAN-200	200	109.95	100.00	53,599
SANSW22068	NAPIER STREET-to-NAPIER STREET	SAN-200	200	109.99	100.00	53,619
SANSW22069	HUME STREET-to-NAPIER STREET	SAN-200	200	19.24	100.00	9,378
SANSW22070	FINDLAY DRIVE-to-PLEWES DRIVE	SAN-250	250	13.82	98.92	0
SANSW22071	PLEWES DRIVE	SAN-200	200	8.22	99.46	0
SANSW22072	PLEWES DRIVE-to-PLEWES DRIVE	SAN-250	250	76.50	98.92	0
SANSW22073	PLEWES DRIVE	SAN-200	200	65.15	98.92	0
SANSW22074	FOLEY CRESCENT-to-FOLEY CRESCENT	SAN-200	200	119.85	98.92	0
SANSW22075	FOLEY CRESCENT-to-FOLEY CRESCENT	SAN-200	200	13.15	98.92	0
SANSW22076	PLEWES DRIVE-to-FOLEY CRESCENT	SAN-200	200	75.20	98.92	0
SANSW22077	ARCHER AVENUE-to-ARCHER AVENUE	SAN-200	200	10.85	99.46	0
SANSW22078	BASSETT STREET-to-ARCHER AVENUE	SAN-200	200	81.66	99.46	0
SANSW22079	PLEWES DRIVE-to-BASSETT STREET	SAN-200	200	67.84	99.46	0
SANSW22080	SPENCER STREET-to-ARCHER AVENUE	SAN-200	200	84.88	99.46	0
SANSW22081	PLEWES DRIVE-to-SPENCER STREET	SAN-200	200	67.60	99.46	0
SANSW22082	PLEWES DRIVE-to-SPENCER STREET	SAN-200	200	78.13	99.46	0
SANSW22083	PLEWES DRIVE-to-PLEWES DRIVE	SAN-200	200	14.72	99.46	0
SANSW22084	PLEWES DRIVE-to-PLEWES DRIVE	SAN-200	200	49.65	99.46	0
SANSW22085	ARCHER AVENUE-to-ARCHER AVENUE	SAN-200	200	82.64	99.46	0
SANSW22086	PLEWES DRIVE	SAN-200	200	66.47	99.46	0
SANSW22087	HIGH STREET-to-PLEWES DRIVE	SAN-200	200	132.23	99.46	0
SANSW22088	FOLEY CRESCENT-to-BASSETT STREET	SAN-200	200	82.75	98.92	0
SANSW22089	ARCHER AVENUE-to-ARCHER AVENUE	SAN-200	200	63.36	98.92	0
SANSW22090	FOLEY CRESCENT-to-FOLEY CRESCENT	SAN-200	200	86.61	98.92	0
SANSW22091	PLEWES DRIVE-to-PLEWES DRIVE	SAN-250	250	91.01	98.92	0
SANSW22092	FOLEY CRESCENT-to-PLEWES DRIVE	SAN-250	250	42.53	98.92	0
SANSW22093	PLEWES DRIVE-to-ARCHER AVENUE	SAN-200	200	62.64	98.92	0
SANSW22094	ARCHER AVENUE-to-ARCHER AVENUE	SAN-200	200	79.16	99.46	0

DRAFT

Asset	List Description	Asset Class	Dimension 2	Meters	Avg Condition	Replacement Cost
SANSW22095	PLEWES DRIVE-to-ARCHER AVENUE	SAN-200	200	38.86	99.46	0
SANSW22096	PLEWES DRIVE-to-ARCHER AVENUE	SAN-200	200	39.61	99.46	0
SANSW22097	PLEWES DRIVE-to-PLEWES DRIVE	SAN-200	200	44.68	99.46	0
SANSW22098	SPENCER STREET-to-ARCHER AVENUE	SAN-200	200	66.84	99.46	0
SANSW22099	BASSETT STREET-to-ARCHER AVENUE	SAN-200	200	66.29	99.46	0
SANSW22103	DEY DRIVE-to-DEY DRIVE	SAN-200	200	111.77	98.92	0
SANSW22104	MCLEAN AVENUE-to-KERR STREET	SAN-200	200	75.49	98.92	0
SANSW22105	MCLEAN AVENUE-to-PORTLAND STREET	SAN-200	200	119.57	98.92	0
SANSW22109	MCLEAN AVENUE-to-PORTLAND STREET	SAN-200	200	75.00	98.92	0
SANSW22111	PORTLAND STREET-to-KIRBY AVENUE	SAN-200	200	59.95	98.92	0
SANSW22112	PORTLAND STREET-to-KIRBY AVENUE	SAN-200	200	74.99	98.92	0
SANSW22113	PORTLAND STREET-to-BARFOOT STREET	SAN-200	200	83.71	98.92	0
SANSW22121	BARFOOT STREET-to-PORTLAND STREET	SAN-200	200	83.74	98.92	0
SANSW22122	BAILEY STREET-to-KIRBY AVENUE	SAN-200	200	83.86	98.92	0
SANSW22127	BARFOOT STREET-to-BARFOOT STREET	SAN-200	200	80.29	98.92	0
SANSW22128	TRACEY LANE-to-BARFOOT STREET	SAN-200	200	52.30	98.92	0
SANSW22129	BAILEY STREET-to-KIRBY AVENUE	SAN-200	200	59.97	98.92	0
				117,079.91	75.35	62,716,265

DRAFT

Appendix E – Stormwater

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30000	PRETTY RIVER PARKWAY	STS-900-CSP	900	2001	22.11	61.61	$36,411.00
STMSW30002	BARR STREET	STS-300	300	2006	7.14	92.43	$6,831.00
STMSW30003	BARR STREET	STS-300	300	2006	45.98	92.43	$43,995.00
STMSW30004	BARR STREET	STS-300	300	2006	1.43	92.43	$1,366.00
STMSW30005	BARR STREET	STS-300	300	2006	7.01	92.43	$6,703.00
STMSW30006	TENTH STREET	STS-375	375	1972	16.37	67.17	$16,836.00
STMSW30007	TENTH STREET	STS-375	375	1972	89.43	67.17	$91,960.00
STMSW30008	PRETTY RIVER PARKWAY	STS-300	300	2001	11.73	89.73	$11,227.00
STMSW30009	PRETTY RIVER PARKWAY	STS-300	300	2001	6.09	89.73	$5,829.00
STMSW30011	CHAMBERLAIN CRESCENT	STS-300	300	2006	2.27	92.43	$2,170.00
STMSW30012	CHAMBERLAIN CRESCENT	STS-450	450	2006	78.13	92.43	$83,182.00
STMSW30013	CHAMBERLAIN CRESCENT	STS-450	450	2006	76.34	92.43	$81,274.00
STMSW30014	COLLINS STREET	STS-375	375	2006	3.00	92.43	$3,081.00
STMSW30015	REID CRESCENT	STS-375	375	1989	53.38	83.24	$54,886.00
STMSW30016	HURONTARIO STREET	STS-375	375	1974	8.55	69.50	$8,794.00
STMSW30017	SEVENTH STREET	STS-375	375	1974	38.02	69.50	$39,097.00
STMSW30018	SEVENTH STREET	STS-300	300	1974	9.30	69.50	$8,896.00
STMSW30019	SEVENTH STREET	STS-300	300	1974	57.21	69.50	$54,740.00
STMSW30024	FOURTH STREET	STS-450-CSP	450	1977	59.95	13.12	$63,825.00
STMSW30026	EIGHTH STREET	STS-375	375	1974	53.46	69.50	$54,974.00
STMSW30027	HURONTARIO STREET	STS-375	375	1974	10.26	69.50	$10,553.00
STMSW30030	ONTARIO STREET	STS-300	300	2007	12.69	92.97	$12,145.00
STMSW30031	ONTARIO STREET	STS-750	675	2007	66.14	92.97	$99,483.00
STMSW30033	PINE STREET	STS-300	300	2008	71.48	93.51	$68,390.00
STMSW30034	PINE STREET	STS-300	300	2008	77.26	93.51	$73,920.00
STMSW30036	NINTH STREET	STS-300	300	1980	7.82	76.50	$7,477.00
STMSW30037	NINTH STREET	STS-300	300	1980	3.88	76.50	$3,711.00
STMSW30038	NINTH STREET	STS-300	300	1980	7.51	76.50	$7,183.00
STMSW30039	HURONTARIO STREET	STS-300	300	1967	16.33	61.33	$15,621.00
STMSW30040	HURONTARIO STREET	STS-750	675	1967	31.79	61.33	$47,815.00
STMSW30041	HURONTARIO STREET	STS-300	300	1967	12.42	61.33	$11,880.00
STMSW30042	PEEL STREET	STS-300	300	1984	10.73	80.54	$10,265.00
STMSW30043	PRETTY RIVER PARKWAY	STS-300	300	2001	11.09	89.73	$10,610.00
STMSW30044	PRETTY RIVER PARKWAY	STS-525	525	2001	30.27	89.73	$33,287.00
STMSW30045	PRETTY RIVER PARKWAY	STS-300	300	2001	17.21	89.73	$16,470.00
STMSW30046	PRETTY RIVER PARKWAY	STS-300	300	2001	11.97	89.73	$11,449.00
STMSW30047	PRETTY RIVER PARKWAY	STS-600	600	2001	27.96	89.73	$36,061.00
STMSW30048	TENTH STREET	STS-300	300	1972	13.07	67.17	$12,507.00
STMSW30049	SEVENTH STREET	STS-300	300	1974	9.40	69.50	$8,995.00
STMSW30050	SEVENTH STREET	STS-300	300	1974	83.07	69.50	$79,485.00
STMSW30051	TENTH STREET	STS-300	300	1972	15.86	67.17	$15,171.00
STMSW30052	HERRINGTON COURT	STS-300	300	1976	8.32	71.83	$7,958.00
STMSW30053	HERRINGTON COURT	STS-300	300	1976	7.76	71.83	$7,428.00
STMSW30054	SIXTH STREET	STS-300	300	1971	9.00	66.00	$8,613.00
STMSW30055	DILLON DRIVE	STS-750	625	1984	10.95	80.54	$16,468.00
STMSW30056	NINTH STREET	STS-300	300	1974	9.59	69.50	$9,173.00

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30058	NINTH STREET	STS-300	300	1974	9.83	69.50	$9,402.00
STMSW30060	FIFTH STREET	STS-375-CSP	375	1975	10.52	9.08	$10,821.00
STMSW30061	HURONTARIO STREET	STS-300	300	1967	8.25	61.33	$7,892.00
STMSW30062	HURONTARIO STREET	STS-450	450	1967	47.55	61.33	$50,626.00
STMSW30063	HURONTARIO STREET	STS-300	300	1967	8.14	61.33	$7,784.00
STMSW30064	WALNUT STREET	STS-375	375	1980	20.88	76.50	$21,469.00
STMSW30065	WALNUT STREET	STS-1500-CSP	1600	1983	173.26	25.24	$567,133.00
STMSW30066	FINDLAY DRIVE	STS-300	300	2006	1.53	92.43	$1,468.00
STMSW30067	SAUNDERS STREET	STS-300	300	2006	7.38	92.43	$7,063.00
STMSW30070	HURONTARIO STREET	STS-600	600	2006	78.95	92.43	$101,815.00
STMSW30071	PATTON STREET	STS-300	300	2006	3.36	92.43	$3,210.00
STMSW30072	PATTON STREET	STS-300	300	2001	5.74	89.73	$5,487.00
STMSW30073	CHAMBERLAIN CRESCENT	STS-300	300	2006	2.15	92.43	$2,058.00
STMSW30074	CHAMBERLAIN CRESCENT	STS-1050	1050	2006	117.25	92.43	$238,842.00
STMSW30075	FINDLAY DRIVE	STS-300	300	2006	10.23	92.43	$9,783.00
STMSW30076	FINDLAY DRIVE	STS-300	300	2006	1.56	92.43	$1,491.00
STMSW30077	SIXTH STREET	STS-300	300	1972	10.28	67.17	$9,834.00
STMSW30078	SIXTH STREET	STS-525	525	1972	83.86	67.17	$92,234.00
STMSW30079	SIXTH STREET	STS-600	600	1972	15.26	67.17	$19,682.00
STMSW30080	SIXTH STREET	STS-300	300	1972	2.44	67.17	$2,337.00
STMSW30081	SIXTH STREET	STS-600-CSP	600	1972	73.95	3.02	$95,370.00
STMSW30082	WALNUT STREET	STS-300	300	1972	15.66	67.17	$14,982.00
STMSW30083	SIXTH STREET	STS-525	525	1968	65.24	62.50	$71,751.00
STMSW30084	SIXTH STREET	STS-300	300	1972	2.84	67.17	$2,720.00
STMSW30085	DAVIS STREET	STS-300	300	2006	3.32	92.43	$3,179.00
STMSW30086	BARR STREET	STS-300	300	2006	11.21	92.43	$10,723.00
STMSW30087	CHAMBERLAIN CRESCENT	STS-300	300	2006	3.44	92.43	$3,289.00
STMSW30088	CHAMBERLAIN CRESCENT	STS-525	525	2006	90.60	92.43	$99,641.00
STMSW30090	HOLDEN STREET	STS-300	300	2006	7.07	92.43	$6,767.00
STMSW30091	HOLDEN STREET	STS-300	300	2006	3.08	92.43	$2,948.00
STMSW30092	FINDLAY DRIVE	STS-300	300	2006	1.26	92.43	$1,204.00
STMSW30093	FINDLAY DRIVE	STS-375	375	2007	54.85	92.97	$56,406.00
STMSW30094	HURONTARIO STREET	STS-450	450	1966	55.85	60.17	$59,462.00
STMSW30095	HURONTARIO STREET	STS-450	450	1966	39.84	60.17	$42,421.00
STMSW30096	HURONTARIO STREET	STS-300	300	2006	12.34	92.43	$11,806.00
STMSW30097	HURONTARIO STREET	STS-300	300	2006	11.68	92.43	$11,174.00
STMSW30099	MCKEAN CRESCENT	STS-525	525	2006	60.05	92.43	$66,042.00
STMSW30100	SAUNDERS STREET	STS-300	300	2006	2.36	92.43	$2,256.00
STMSW30102	CHAMBERLAIN CRESCENT	STS-300	300	2006	7.44	92.43	$7,114.00
STMSW30104	CHAMBERLAIN CRESCENT	STS-300	300	2006	5.87	92.43	$5,620.00
STMSW30105	SIXTH STREET	STS-450-CSP	450	1998	40.90	55.55	$43,543.00
STMSW30106	SIXTH STREET	STS-600	600	1998	120.66	88.11	$155,599.00
STMSW30107	CHAMBERLAIN CRESCENT	STS-300	300	2006	3.08	92.43	$2,951.00
STMSW30110	LOCKHART ROAD	STS-900	825	1978	45.03	74.17	$74,167.00
STMSW30111	Hume Street	STS-900	800	2006	22.54	92.43	$37,122.00
STMSW30112	CARMICHEAL CRESCENT	STS-300	300	1987	7.58	82.16	$7,253.00
STMSW30113	FIRST STREET	STS-525	525	1964	48.01	57.83	$52,796.00
STMSW30114	SEVENTH STREET	STS-300	300	1974	8.67	69.50	$8,293.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30115	SEVENTH STREET	STS-300	300	1974	8.75	69.50	$8,372.00
STMSW30116	WALNUT STREET	STS-750	750	1974	51.50	69.50	$77,463.00
STMSW30117	WALNUT STREET	STS-750	750	1974	52.30	69.50	$78,664.00
STMSW30118	SEVENTH STREET	STS-300	300	1974	52.53	69.50	$50,263.00
STMSW30119	SEVENTH STREET	STS-300	300	1974	12.24	69.50	$11,714.00
STMSW30120	SEVENTH STREET	STS-750	675	1974	49.02	69.50	$73,728.00
STMSW30121	SEVENTH STREET	STS-450	450	1974	14.97	69.50	$15,934.00
STMSW30122	ST CLAIR STREET	STS-1350	1350	1980	138.57	76.50	$394,134.00
STMSW30123	HIGHWAY 26 EAST	STS-900	900	1980	71.65	76.50	$118,006.00
STMSW30124	HIGHWAY 26 EAST	STS-900	900	1980	76.57	76.50	$126,123.00
STMSW30125	HIGHWAY 26 EAST	STS-900	900	1980	84.14	76.50	$138,589.00
STMSW30126	WALNUT STREET	STS-300	300	1974	13.83	69.50	$13,234.00
STMSW30127	STE MARIE STREET	STS-525	525	1976	13.73	71.83	$15,099.00
STMSW30128	SIXTH STREET	STS-300	300	2006	9.23	92.43	$8,833.00
STMSW30129	PRETTY RIVER PARKWAY	STS-525	525	2001	46.25	89.73	$50,866.00
STMSW30130	PRETTY RIVER PARKWAY	STS-300-CSP	300	2001	7.46	61.61	$7,141.00
STMSW30131	FINDLAY DRIVE	STS-450	450	2006	6.75	92.43	$7,182.00
STMSW30132	FINDLAY DRIVE	STS-300	300	2006	3.01	92.43	$2,883.00
STMSW30133	HURONTARIO STREET	STS-525	525	1967	56.42	61.33	$62,049.00
STMSW30134	SIXTH STREET	STS-300	300	1972	2.88	67.17	$2,751.00
STMSW30135	CAMPBELL STREET	STS-300-CSP	300	1989	28.97	37.37	$27,721.00
STMSW30136	HURONTARIO STREET	STS-300	300	2006	11.26	92.43	$10,774.00
STMSW30137	PRETTY RIVER PARKWAY	STS-600	600	2001	39.07	89.73	$50,380.00
STMSW30138	HURONTARIO STREET	STS-525	525	2006	73.77	92.43	$81,128.00
STMSW30140	ST PAUL STREET	STS-300-CSP	300	1998	82.83	55.55	$79,247.00
STMSW30143	PRETTY RIVER PARKWAY	STS-300	300	2001	14.71	89.73	$14,074.00
STMSW30144	CHAMBERLAIN CRESCENT	STS-450	450	2006	103.61	92.43	$110,313.00
STMSW30145	CHAMBERLAIN CRESCENT	STS-450	450	2006	38.74	92.43	$41,244.00
STMSW30146	PATTON STREET	STS-600	600	2006	115.81	92.43	$149,349.00
STMSW30147	PATTON STREET	STS-600	600	2006	105.48	92.43	$136,027.00
STMSW30148	LOCKHART ROAD	STS-900	825	1978	60.36	74.17	$99,426.00
STMSW30149	BUSH STREET	STS-450	450	1993	11.39	85.41	$12,126.00
STMSW30151	BUSH STREET	STS-450	450	1993	40.37	85.41	$42,986.00
STMSW30153	LOCKHART ROAD	STS-525	525	1978	59.28	74.17	$65,194.00
STMSW30154	LOCKHART ROAD	STS-450	450	1978	64.03	74.17	$68,175.00
STMSW30155	TESKEY COURT	STS-300	300	1976	29.59	71.83	$28,314.00
STMSW30156	SHEFFIELD TERRACE	STS-450-CSP	450	1972	49.36	3.02	$52,554.00
STMSW30158	MCKEAN CRESCENT	STS-525	525	2007	15.82	92.97	$17,396.00
STMSW30159	MAPLE STREET	STS-300	300	1989	22.04	83.24	$21,089.00
STMSW30160	SIXTH STREET	STS-300	300	1972	8.41	67.17	$8,050.00
STMSW30161	SIXTH STREET	STS-300	300	1972	11.03	67.17	$10,552.00
STMSW30162	SIXTH STREET	STS-300	300	1972	2.19	67.17	$2,098.00
STMSW30163	SIXTH STREET	STS-300	300	1972	2.51	67.17	$2,401.00
STMSW30164	SIXTH STREET	STS-300	300	1971	19.81	66.00	$18,958.00
STMSW30165	SIXTH STREET	STS-600	600	1971	35.47	66.00	$45,738.00
STMSW30166	SIXTH STREET	STS-300	300	1971	9.15	66.00	$8,750.00
STMSW30167	SIXTH STREET	STS-600	600	1971	37.87	66.00	$48,836.00
STMSW30168	SIXTH STREET	STS-300	300	1971	9.81	66.00	$9,381.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30169	SIXTH STREET	STS-375	375	1971	11.24	66.00	$11,562.00
STMSW30170	SIXTH STREET	STS-300	300	1971	10.19	66.00	$9,746.00
STMSW30172	PRETTY RIVER PARKWAY	STS-300	300	2001	2.38	89.73	$2,278.00
STMSW30173	PRETTY RIVER PARKWAY	STS-300	300	2001	13.89	89.73	$13,294.00
STMSW30175	FINDLAY DRIVE	STS-300	300	2006	2.34	92.43	$2,241.00
STMSW30176	WALNUT STREET	STS-450-CSP	400	1980	43.43	19.18	$46,241.00
STMSW30177	HOLDEN STREET	STS-300	300	2006	13.97	92.43	$13,367.00
STMSW30178	CHAMBERLAIN CRESCENT	STS-300	300	2006	18.27	92.43	$17,476.00
STMSW30179	NINTH STREET	STS-300	300	1980	3.98	76.50	$3,811.00
STMSW30180	NINTH STREET	STS-300	300	1980	7.48	76.50	$7,152.00
STMSW30181	NINTH STREET	STS-300	300	1980	4.10	76.50	$3,921.00
STMSW30182	High Street	STS-600	600	1997	39.27	87.57	$50,648.00
STMSW30183	High Street	STS-600	600	1997	119.29	87.57	$153,838.00
STMSW30185	POPLAR SIDEROAD	STS-600-CSP	600	1997	6.31	53.53	$8,141.00
STMSW30187	PINE STREET	STS-300	300	2008	11.95	93.51	$11,429.00
STMSW30189	EIGHTH STREET	STS-300	300	1974	8.20	69.50	$7,843.00
STMSW30190	EIGHTH STREET	STS-300	300	1974	48.04	69.50	$45,967.00
STMSW30191	EIGHTH STREET	STS-300	300	1974	8.59	69.50	$8,218.00
STMSW30192	EIGHTH STREET	STS-300	300	1974	37.08	69.50	$35,477.00
STMSW30193	EIGHTH STREET	STS-300	300	1974	8.13	69.50	$7,780.00
STMSW30195	TENTH STREET	STS-375	375	1972	27.13	67.17	$27,901.00
STMSW30196	TENTH STREET	STS-300	300	1972	9.22	67.17	$8,822.00
STMSW30197	ST PAUL STREET	STS-750	675	1920	72.86	1.00	$109,589.00
STMSW30198	PRETTY RIVER PARKWAY	STS-300	300	2001	15.90	89.73	$15,214.00
STMSW30199	PRETTY RIVER PARKWAY	STS-300	300	2001	5.81	89.73	$5,557.00
STMSW30200	PRETTY RIVER PARKWAY	STS-300	300	2001	16.45	89.73	$15,742.00
STMSW30201	PRETTY RIVER PARKWAY	STS-300	300	2001	10.35	89.73	$9,898.00
STMSW30204	NAPIER STREET	STS-450	450	1950	20.81	26.14	$22,155.00
STMSW30206	RODNEY STREET	STS-300	300	1950	40.71	26.14	$38,954.00
STMSW30208	NAPIER STREET	STS-450	450	1950	52.68	26.14	$56,085.00
STMSW30209	RODNEY STREET	STS-375	375	1950	49.40	26.14	$50,794.00
STMSW30210	RODNEY STREET	STS-300	300	1950	8.79	26.14	$8,413.00
STMSW30211	RODNEY STREET	STS-300	300	1950	19.43	26.14	$18,592.00
STMSW30212	RODNEY STREET	STS-300	300	1950	21.47	26.14	$20,541.00
STMSW30213	RODNEY STREET	STS-300	300	1950	8.97	26.14	$8,582.00
STMSW30214	RODNEY STREET	STS-300	300	1950	1.87	26.14	$1,788.00
STMSW30215	RODNEY STREET	STS-300	300	1950	11.72	26.14	$11,215.00
STMSW30216	RODNEY STREET	STS-300	300	1950	8.59	26.14	$8,214.00
STMSW30217	RODNEY STREET	STS-300	300	1950	9.22	26.14	$8,822.00
STMSW30218	RODNEY STREET	STS-300	300	1950	1.39	26.14	$1,329.00
STMSW30220	SIXTH STREET	STS-300	300	2008	9.11	93.51	$8,719.00
STMSW30221	BIRCH STREET	STS-375	375	2006	5.75	92.43	$5,914.00
STMSW30222	SIXTH STREET	STS-300	300	1971	8.97	66.00	$8,579.00
STMSW30223	SIXTH STREET	STS-300	300	2006	10.98	92.43	$10,508.00
STMSW30226	FINDLAY DRIVE	STS-300	300	2006	1.60	92.43	$1,532.00
STMSW30227	CHAMBERLAIN CRESCENT	STS-300	300	2006	2.41	92.43	$2,308.00
STMSW30228	CHAMBERLAIN CRESCENT	STS-300	300	2006	8.87	92.43	$8,491.00
STMSW30229	CHAMBERLAIN CRESCENT	STS-300	300	2006	1.20	92.43	$1,151.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30230	CHAMBERLAIN CRESCENT	STS-300	300	2006	7.82	92.43	$7,477.00
STMSW30231	CHAMBERLAIN CRESCENT	STS-300	300	2006	2.20	92.43	$2,102.00
STMSW30232	CHAMBERLAIN CRESCENT	STS-300	300	2006	6.86	92.43	$6,567.00
STMSW30233	CHAMBERLAIN CRESCENT	STS-600	600	2006	22.23	92.43	$28,668.00
STMSW30235	FAIR STREET	STS-300	300	1974	8.84	69.50	$8,456.00
STMSW30236	FAIR STREET	STS-300	300	1974	79.61	69.50	$76,168.00
STMSW30237	FAIR STREET	STS-300	300	1974	8.82	69.50	$8,434.00
STMSW30238	PRETTY RIVER PARKWAY	STS-300	300	2001	21.73	89.73	$20,795.00
STMSW30242	FOURTH STREET	STS-300	300	2008	7.71	93.51	$7,375.00
STMSW30243	FOURTH STREET	STS-300	300	1977	31.44	73.00	$30,080.00
STMSW30245	ST PAUL STREET	STS-750	675	1920	8.73	1.00	$13,135.00
STMSW30246	FINDLAY DRIVE	STS-300	300	2006	4.28	92.43	$4,096.00
STMSW30247	EIGHTH STREET	STS-300-CSP	300	1960	30.26	1.00	$28,950.00
STMSW30250	HURONTARIO STREET	STS-750-CSP	675	2006	78.69	71.71	$118,355.00
STMSW30251	HURONTARIO STREET	STS-450	450	2006	16.08	92.43	$17,116.00
STMSW30252	HURONTARIO STREET	STS-525	525	2006	20.39	92.43	$22,425.00
STMSW30253	FINDLAY DRIVE	STS-300	300	2006	7.78	92.43	$7,442.00
STMSW30254	CEDAR STREET	STS-300	300	1969	8.48	63.67	$8,112.00
STMSW30255	FIRST STREET	STS-300	300	1969	24.92	63.67	$23,842.00
STMSW30256	CEDAR STREET	STS-300	300	1969	8.67	63.67	$8,295.00
STMSW30257	OSLER CRESCENT	STS-300	300	1972	9.60	67.17	$9,183.00
STMSW30258	TENTH STREET	STS-300	300	1972	7.46	67.17	$7,138.00
STMSW30259	NINTH STREET	STS-300	300	1974	39.04	69.50	$37,351.00
STMSW30260	NINTH STREET	STS-300	300	1974	9.23	69.50	$8,831.00
STMSW30261	NINTH STREET	STS-300	300	1974	52.59	69.50	$50,320.00
STMSW30262	NINTH STREET	STS-300	300	1987	52.29	82.16	$50,028.00
STMSW30263	FAIR STREET	STS-300	300	1974	32.42	69.50	$31,015.00
STMSW30264	FAIR STREET	STS-300	300	1974	8.14	69.50	$7,785.00
STMSW30265	FAIR STREET	STS-300	300	1974	42.70	69.50	$40,852.00
STMSW30266	ONTARIO STREET	STS-750	675	2006	31.38	92.43	$47,191.00
STMSW30269	PRETTY RIVER PARKWAY	STS-300	300	2001	14.80	89.73	$14,163.00
STMSW30270	PRETTY RIVER PARKWAY	STS-525	525	2001	27.66	89.73	$30,415.00
STMSW30273	BIRCH STREET	STS-375	375	2006	87.09	92.43	$89,553.00
STMSW30274	NINTH STREET	STS-375	375	2006	51.59	92.43	$53,053.00
STMSW30275	NINTH STREET	STS-300	300	2006	86.34	92.43	$82,607.00
STMSW30277	EIGHTH STREET	STS-300-CSP	300	1960	10.85	1.00	$10,383.00
STMSW30278	BIRCH STREET	STS-525-CSP	475	1960	10.99	1.00	$12,085.00
STMSW30279	BIRCH STREET	STS-300-CSP	300	1960	38.25	1.00	$36,593.00
STMSW30280	EIGHTH STREET	STS-525	525	2006	9.22	92.43	$10,143.00
STMSW30281	ERIE STREET	STS-600	600	2019	55.07	99.46	$71,013.00
STMSW30282	NAPIER STREET	STS-375-CSP	375	1983	28.45	25.24	$29,254.00
STMSW30283	NAPIER STREET	STS-600	600	2019	11.68	99.46	$15,057.00
STMSW30284	THIRD STREET	STS-450-CSP	450	1910	64.51	1.00	$68,684.00
STMSW30285	ONTARIO STREET	STS-375-CSP	375	1910	10.12	1.00	$10,403.00
STMSW30286	HURONTARIO STREET	STS-300-CSP	300	1981	18.52	21.20	$17,715.00
STMSW30287	HURONTARIO STREET	STS-300-CSP	300	1981	11.30	21.20	$10,808.00
STMSW30288	PINE STREET	STS-300	300	2008	5.75	93.51	$5,500.00
STMSW30289	PINE STREET	STS-300	300	2008	12.97	93.51	$12,412.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30290	BARR STREET	STS-525	525	2006	61.63	92.43	$67,775.00
STMSW30292	DAWSON DRIVE	STS-750	675	1982	53.80	78.83	$80,921.00
STMSW30300	HIGHWAY 26	STS-450-CSP	450	1992	50.83	43.43	$54,122.00
STMSW30301	PRETTY RIVER PARKWAY	STS-300	300	2001	6.97	89.73	$6,667.00
STMSW30302	TESKEY COURT	STS-300	300	1976	9.32	71.83	$8,915.00
STMSW30303	PINE STREET	STS-300	300	2008	1.39	93.51	$1,325.00
STMSW30306	PRETTY RIVER PARKWAY	STS-300	300	2001	6.60	89.73	$6,310.00
STMSW30307	PRETTY RIVER PARKWAY	STS-300	300	2001	7.69	89.73	$7,360.00
STMSW30308	PRETTY RIVER PARKWAY	STS-300	300	2001	17.91	89.73	$17,132.00
STMSW30309	PRETTY RIVER PARKWAY	STS-600	600	2001	56.35	89.73	$72,672.00
STMSW30310	NAPIER STREET	STS-300	300	1950	9.03	26.14	$8,640.00
STMSW30311	RODNEY STREET	STS-450	450	1950	19.51	26.14	$20,777.00
STMSW30312	RODNEY STREET	STS-450-CSP	400	1950	8.83	1.00	$9,396.00
STMSW30313	DILLON DRIVE	STS-750	750	1984	52.76	80.54	$79,353.00
STMSW30314	DILLON DRIVE	STS-750	750	1984	4.06	80.54	$6,099.00
STMSW30315	SAUNDERS STREET	STS-300	300	2006	1.76	92.43	$1,688.00
STMSW30316	FINDLAY DRIVE	STS-300	300	2006	4.65	92.43	$4,448.00
STMSW30317	FINDLAY DRIVE	STS-300	300	2006	7.06	92.43	$6,759.00
STMSW30318	FINDLAY DRIVE	STS-300	300	2006	1.42	92.43	$1,355.00
STMSW30319	FINDLAY DRIVE	STS-300	300	2006	5.32	92.43	$5,094.00
STMSW30320	ONTARIO STREET	STS-300-CSP	300	1998	5.26	55.55	$5,035.00
STMSW30321	SPRUCE STREET	STS-525	525	1989	58.84	83.24	$64,713.00
STMSW30322	SPRUCE STREET	STS-450-CSP	450	1987	13.87	33.33	$14,771.00
STMSW30323	REID CRESCENT	STS-450	450	1989	60.20	83.24	$64,097.00
STMSW30324	CHAMBERLAIN CRESCENT	STS-300	300	2006	2.55	92.43	$2,441.00
STMSW30325	CHAMBERLAIN CRESCENT	STS-300	300	2006	6.57	92.43	$6,289.00
STMSW30326	REID CRESCENT	STS-300	300	1989	8.21	83.24	$7,859.00
STMSW30327	BARR STREET	STS-450	450	2006	55.90	92.43	$59,518.00
STMSW30328	BARR STREET	STS-300	300	2006	1.26	92.43	$1,207.00
STMSW30330	DAVIS STREET	STS-300	300	2006	1.47	92.43	$1,403.00
STMSW30331	DAVIS STREET	STS-300	300	2006	7.30	92.43	$6,981.00
STMSW30332	PATTON STREET	STS-300	300	2001	2.37	89.73	$2,265.00
STMSW30333	LOCKHART ROAD	STS-300	300	1971	8.31	66.00	$7,947.00
STMSW30334	LOCKHART ROAD	STS-600	600	1971	40.70	66.00	$52,489.00
STMSW30335	LOCKHART ROAD	STS-600	600	1971	38.75	66.00	$49,976.00
STMSW30336	LOCKHART ROAD	STS-300-CSP	300	1971	11.55	1.00	$11,046.00
STMSW30337	LOCKHART ROAD	STS-300	300	1971	10.23	66.00	$9,788.00
STMSW30338	LOCKHART ROAD	STS-750	750	1971	60.69	66.00	$91,279.00
STMSW30339	BRYAN COURT	STS-750	750	1971	97.51	66.00	$146,663.00
STMSW30340	LOCKHART ROAD	STS-375	375	1978	40.97	74.17	$42,134.00
STMSW30342	LOCKHART ROAD	STS-450-CSP	450	1971	46.63	1.00	$49,642.00
STMSW30345	HURONTARIO STREET	STS-450	400	1966	13.98	60.17	$14,889.00
STMSW30346	SPROULE AVENUE	STS-300	300	1976	37.78	71.83	$36,144.00
STMSW30347	ST PAUL STREET	STS-750	675	1920	27.44	1.00	$41,279.00
STMSW30348	FOURTH STREET EAST	STS-750	675	1920	12.18	1.00	$18,323.00
STMSW30349	SIMCOE STREET	STS-300-CSP	300	2007	12.32	73.73	$11,788.00
STMSW30350	SIMCOE STREET	STS-1050	1050	1920	109.54	1.00	$223,136.00
STMSW30351	HURON STREET	STS-1200	1200	1920	108.84	1.00	$274,628.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30352	ST PAUL STREET	STS-300	300	1974	7.51	69.50	$7,185.00
STMSW30353	ST PAUL STREET	STS-300	300	1974	8.13	69.50	$7,774.00
STMSW30354	ST PAUL STREET	STS-900	900	1974	52.04	69.50	$85,717.00
STMSW30355	BARR STREET	STS-450	450	2006	103.14	92.43	$109,814.00
STMSW30356	BARR STREET	STS-300	300	2006	7.12	92.43	$6,809.00
STMSW30357	BARR STREET	STS-300	300	2006	45.99	92.43	$44,002.00
STMSW30360	STE MARIE STREET	STS-525	525	2007	76.67	92.97	$84,322.00
STMSW30361	SAUNDERS STREET	STS-300	300	2006	8.12	92.43	$7,770.00
STMSW30362	SAUNDERS STREET	STS-300	300	2006	2.05	92.43	$1,964.00
STMSW30364	ST PAUL STREET	STS-450-CSP	450	1998	58.06	55.55	$61,818.00
STMSW30366	FIFTH STREET	STS-375	375	2006	32.57	92.43	$33,496.00
STMSW30367	FIFTH STREET	STS-450	450	2006	12.86	92.43	$13,689.00
STMSW30368	SIXTH STREET	STS-300	300	2006	13.31	92.43	$12,730.00
STMSW30369	SIXTH STREET	STS-600	600	2006	25.39	92.43	$32,740.00
STMSW30370	CHAMBERLAIN CRESCENT	STS-450	450	2006	23.27	92.43	$24,777.00
STMSW30371	PATTON STREET	STS-600	600	2006	34.34	92.43	$44,278.00
STMSW30372	MAPLE STREET	STS-450-CSP	450	1992	13.95	43.43	$14,852.00
STMSW30373	MAPLE STREET	STS-450-CSP	450	1992	1.31	43.43	$1,397.00
STMSW30374	CALLARY CRESCENT	STS-300-CSP	300	1998	12.03	55.55	$11,514.00
STMSW30375	SAUNDERS STREET	STS-300	300	2006	3.87	92.43	$3,707.00
STMSW30376	PRETTY RIVER PARKWAY	STS-525	525	2001	57.36	89.73	$63,082.00
STMSW30377	PRETTY RIVER PARKWAY	STS-525	525	2001	59.93	89.73	$65,914.00
STMSW30380	FOURTH STREET	STS-600	600	2007	79.59	92.97	$102,641.00
STMSW30381	FOURTH STREET EAST	STS-300-CSP	300	1920	2.30	1.00	$2,204.00
STMSW30382	STE MARIE STREET	STS-1050	1050	2007	91.73	92.97	$186,859.00
STMSW30383	ONTARIO STREET	STS-1050	1050	2007	45.68	92.97	$93,057.00
STMSW30384	STE MARIE STREET	STS-300	300	2007	9.29	92.97	$8,892.00
STMSW30385	MAPLE STREET	STS-450	450	1992	65.26	84.86	$69,483.00
STMSW30386	MACDONALD ROAD	STS-600	600	1969	2.74	63.67	$3,535.00
STMSW30387	EIGHTH STREET	STS-525	525	2006	40.58	92.43	$44,624.00
STMSW30388	MINNESOTA STREET	STS-750	675	2006	7.63	92.43	$11,472.00
STMSW30389	MCKEAN CRESCENT	STS-300	300	2006	10.97	92.43	$10,497.00
STMSW30390	Dey Drive	STS-300	300	1978	54.08	74.17	$51,740.00
STMSW30392	LOCKHART ROAD	STS-300	300	1978	40.70	74.17	$38,945.00
STMSW30394	FIRST STREET	STS-300	300	1969	4.46	63.67	$4,264.00
STMSW30395	FIRST STREET	STS-450-CSP	450	1964	51.02	1.00	$54,319.00
STMSW30396	FIRST STREET	STS-300-CSP	300	1964	4.72	1.00	$4,518.00
STMSW30397	CARMICHEAL CRESCENT	STS-375	375	1987	43.92	82.16	$45,158.00
STMSW30398	CARMICHEAL CRESCENT	STS-300	300	1987	8.43	82.16	$8,067.00
STMSW30399	CARMICHEAL CRESCENT	STS-375	375	1987	42.08	82.16	$43,267.00
STMSW30400	CARMICHEAL CRESCENT	STS-300	300	1987	7.97	82.16	$7,629.00
STMSW30401	MINNESOTA STREET	STS-900	900	1984	76.54	80.54	$126,066.00
STMSW30402	MINNESOTA STREET	STS-525	525	1984	20.73	80.54	$22,794.00
STMSW30403	NAPIER STREET	STS-450-CSP	400	1984	29.67	27.27	$31,591.00
STMSW30405	DILLON DRIVE	STS-300	300	1984	10.99	80.54	$10,517.00
STMSW30406	GODDEN STREET	STS-300	300	1984	3.78	80.54	$3,620.00
STMSW30407	DAWSON DRIVE	STS-450	450	1988	12.43	82.70	$13,236.00
STMSW30408	DAWSON DRIVE	STS-750	750	1988	121.46	82.70	$182,693.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30409	SHEFFIELD TERRACE	STS-300-CSP	300	1972	30.94	3.02	$29,602.00
STMSW30411	CALLARY CRESCENT	STS-375-CSP	375	1998	131.79	55.55	$135,519.00
STMSW30412	Second Street	STS-525	525	1975	76.37	70.67	$83,990.00
STMSW30413	Second Street	STS-525	525	1975	50.71	70.67	$55,772.00
STMSW30414	SIMCOE STREET	STS-450-CSP	400	1957	32.55	1.00	$34,660.00
STMSW30415	THIRD STREET	STS-300	300	2008	9.75	93.51	$9,330.00
STMSW30416	THIRD STREET	STS-300-CSP	300	1981	5.35	21.20	$5,120.00
STMSW30417	THIRD STREET	STS-300-CSP	300	1981	8.31	21.20	$7,949.00
STMSW30418	THIRD STREET	STS-300-CSP	300	1981	5.07	21.20	$4,850.00
STMSW30420	PINE STREET	STS-300	300	2008	1.71	93.51	$1,640.00
STMSW30421	PINE STREET	STS-300	300	2008	70.23	93.51	$67,193.00
STMSW30422	PINE STREET	STS-300	300	2008	1.53	93.51	$1,466.00
STMSW30424	HURONTARIO STREET	STS-375-CSP	375	1920	73.13	1.00	$75,198.00
STMSW30425	HURON STREET	STS-750	750	1920	60.98	1.00	$91,726.00
STMSW30426	HURON STREET	STS-300-CSP	300	1920	12.21	1.00	$11,683.00
STMSW30427	HURON STREET	STS-900	900	1920	64.08	1.00	$105,548.00
STMSW30428	HURON STREET	STS-1500	1500	1920	107.16	1.00	$350,774.00
STMSW30429	BARR STREET	STS-300	300	2006	2.07	92.43	$1,982.00
STMSW30430	BARR STREET	STS-300	300	2006	6.06	92.43	$5,793.00
STMSW30431	DAVIS STREET	STS-300	300	2006	107.94	92.43	$103,279.00
STMSW30432	DAVIS STREET	STS-300	300	2006	11.01	92.43	$10,532.00
STMSW30433	DAVIS STREET	STS-525	525	2006	89.34	92.43	$98,257.00
STMSW30434	DAVIS STREET	STS-300	300	2006	7.41	92.43	$7,088.00
STMSW30435	DAVIS STREET	STS-750	750	2006	90.73	92.43	$136,470.00
STMSW30436	CHAMBERLAIN CRESCENT	STS-750	750	2007	41.49	92.97	$62,398.00
STMSW30437	CHAMBERLAIN CRESCENT	STS-525	525	2007	94.97	92.97	$104,451.00
STMSW30438	HOLDEN STREET	STS-300	300	2006	1.90	92.43	$1,822.00
STMSW30439	PRETTY RIVER PARKWAY	STS-525	525	2001	35.95	89.73	$39,535.00
STMSW30441	COLLINS STREET	STS-375	375	1978	2.83	74.17	$2,913.00
STMSW30442	COLLINS STREET	STS-450	450	1978	58.60	74.17	$62,389.00
STMSW30444	WALNUT STREET	STS-525	525	1972	8.37	67.17	$9,209.00
STMSW30445	HERRINGTON COURT	STS-300	300	1976	7.79	71.83	$7,453.00
STMSW30446	HERRINGTON COURT	STS-300	300	1976	45.73	71.83	$43,752.00
STMSW30447	BARR STREET	STS-600	600	2006	59.64	92.43	$76,914.00
STMSW30448	PATTON STREET	STS-300	300	2006	9.05	92.43	$8,654.00
STMSW30449	CHAMBERLAIN CRESCENT	STS-900	825	2006	19.80	92.43	$32,609.00
STMSW30450	CHAMBERLAIN CRESCENT	STS-975	975	2006	48.62	92.43	$86,841.00
STMSW30451	CHAMBERLAIN CRESCENT	STS-975	975	2006	78.71	92.43	$140,594.00
STMSW30453	FOURTH STREET	STS-375	375	2006	42.84	92.43	$44,049.00
STMSW30454	PEEL STREET	STS-450	450	2006	55.34	92.43	$58,923.00
STMSW30455	PEEL STREET	STS-375	375	2006	86.25	92.43	$88,694.00
STMSW30456	LYNDEN STREET	STS-300	300	2006	1.31	92.43	$1,257.00
STMSW30457	LYNDEN STREET	STS-300	300	2006	7.48	92.43	$7,154.00
STMSW30458	LYNDEN STREET	STS-300	300	2006	54.83	92.43	$52,462.00
STMSW30459	PRETTY RIVER PARKWAY	STS-300	300	2001	2.55	89.73	$2,439.00
STMSW30460	RODNEY STREET	STS-300	300	1950	43.93	26.14	$42,032.00
STMSW30461	ST PAUL STREET	STS-900	825	1974	77.51	69.50	$127,673.00
STMSW30462	SIMCOE STREET	STS-750	750	1957	65.58	49.67	$98,642.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30463	COLLINS STREET	STS-375	375	2007	18.39	92.97	$18,908.00
STMSW30464	COLLINS STREET	STS-600	600	2006	52.21	92.43	$67,324.00
STMSW30465	PEEL STREET	STS-600	600	2007	21.98	92.97	$28,348.00
STMSW30466	WILLIAMS STREET	STS-900	825	2007	77.47	92.97	$127,594.00
STMSW30467	WILLIAMS STREET	STS-600	600	2006	90.34	92.43	$116,505.00
STMSW30468	HURONTARIO STREET	STS-525	525	1967	62.04	61.33	$68,233.00
STMSW30469	ST CLAIR STREET	STS-1200	1200	1980	87.07	76.50	$219,709.00
STMSW30472	BIRCH STREET	STS-450	450	2006	55.38	92.43	$58,965.00
STMSW30473	BIRCH STREET	STS-450	450	2006	56.75	92.43	$60,421.00
STMSW30474	SIXTH STREET	STS-525	525	2006	38.77	92.43	$42,636.00
STMSW30475	SIXTH STREET	STS-300	300	1971	40.68	66.00	$38,926.00
STMSW30476	SIXTH STREET	STS-300	300	1971	12.61	66.00	$12,064.00
STMSW30477	MARY STREET	STS-750	675	2006	6.76	92.43	$10,171.00
STMSW30480	FIFTH STREET	STS-375-CSP	375	1975	16.83	9.08	$17,301.00
STMSW30481	FIFTH STREET	STS-375	375	2008	32.57	93.51	$33,489.00
STMSW30483	FIFTH STREET	STS-375	375	2008	54.78	93.51	$56,328.00
STMSW30485	OSLER CRESCENT	STS-375	375	1972	54.91	67.17	$56,466.00
STMSW30486	OSLER CRESCENT	STS-300	300	1972	11.19	67.17	$10,709.00
STMSW30487	CAMPBELL STREET	STS-375	375	1972	53.44	67.17	$54,954.00
STMSW30488	SEVENTH STREET	STS-525	525	1967	79.11	61.33	$87,003.00
STMSW30489	HURONTARIO STREET	STS-300	300	1967	8.27	61.33	$7,912.00
STMSW30490	HURONTARIO STREET	STS-525	525	1967	52.69	61.33	$57,953.00
STMSW30491	HURONTARIO STREET	STS-525	525	1967	60.08	61.33	$66,073.00
STMSW30492	HURONTARIO STREET	STS-300	300	1967	8.21	61.33	$7,856.00
STMSW30493	HURONTARIO STREET	STS-300	300	1967	8.01	61.33	$7,661.00
STMSW30494	HURONTARIO STREET	STS-300	300	1967	8.07	61.33	$7,723.00
STMSW30495	CHAMBERLAIN CRESCENT	STS-975	975	2006	46.46	92.43	$82,990.00
STMSW30496	CHAMBERLAIN CRESCENT	STS-900	825	2006	106.60	92.43	$175,578.00
STMSW30497	HOLDEN STREET	STS-300	300	2006	7.15	92.43	$6,842.00
STMSW30498	CHAMBERLAIN CRESCENT	STS-300	300	2007	9.54	92.97	$9,126.00
STMSW30499	ST MARIE STREET	STS-375	375	1976	34.56	71.83	$35,538.00
STMSW30500	PRETTY RIVER PARKWAY	STS-300	300	2001	16.67	89.73	$15,947.00
STMSW30501	PRETTY RIVER PARKWAY	STS-450	450	2001	15.72	89.73	$16,739.00
STMSW30502	HURONTARIO STREET	STS-600	600	1967	65.66	61.33	$84,673.00
STMSW30503	HURONTARIO STREET	STS-300	300	1967	3.09	61.33	$2,957.00
STMSW30504	POPLAR SIDEROAD	STS-300	300	2007	2.29	92.97	$2,192.00
STMSW30505	HURONTARIO STREET	STS-600	600	1967	79.63	61.33	$102,684.00
STMSW30506	HURONTARIO STREET	STS-300	300	1967	15.95	61.33	$15,263.00
STMSW30507	HURONTARIO STREET	STS-300	300	1967	10.71	61.33	$10,251.00
STMSW30508	HURONTARIO STREET	STS-300	300	1967	2.08	61.33	$1,987.00
STMSW30509	HURONTARIO STREET	STS-600	600	1966	41.47	60.17	$53,480.00
STMSW30510	FINDLAY DRIVE	STS-300	300	2006	1.55	92.43	$1,484.00
STMSW30511	FINDLAY DRIVE	STS-300	300	2006	13.58	92.43	$12,997.00
STMSW30512	FINDLAY DRIVE	STS-300	300	2006	7.44	92.43	$7,122.00
STMSW30513	WALNUT STREET	STS-525-CSP	525	1972	7.87	3.02	$8,655.00
STMSW30514	SPRUCE STREET	STS-300	300	1972	71.98	67.17	$68,873.00
STMSW30515	SIXTH STREET	STS-300	300	1972	2.95	67.17	$2,818.00
STMSW30517	BIRCH STREET	STS-375-CSP	375	1972	2.06	3.02	$2,118.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30518	FOURTH STREET	STS-375-CSP	375	1972	8.38	3.02	$8,615.00
STMSW30521	FOURTH STREET	STS-375-CSP	375	1972	56.67	3.02	$58,272.00
STMSW30522	BIRCH STREET	STS-300	300	2006	57.10	92.43	$54,634.00
STMSW30523	MANNING AVENUE	STS-300	300	1997	1.49	87.57	$1,426.00
STMSW30524	HARBEN COURT	STS-300-CSP	300	1973	34.05	5.04	$32,574.00
STMSW30525	HARBEN COURT	STS-300	300	1973	11.77	68.33	$11,258.00
STMSW30526	HARBEN COURT	STS-300	300	1973	4.49	68.33	$4,296.00
STMSW30527	PEEL STREET	STS-375	375	1973	85.20	68.33	$87,607.00
STMSW30528	PEEL STREET	STS-300	300	1984	9.05	80.54	$8,660.00
STMSW30531	LOCKHART ROAD	STS-900	825	1978	48.68	74.17	$80,178.00
STMSW30532	LOCKHART ROAD	STS-750	675	1978	57.05	74.17	$85,807.00
STMSW30535	MINNESOTA STREET	STS-525	525	1984	36.88	80.54	$40,561.00
STMSW30536	MANNING AVENUE	STS-750	750	1984	13.26	80.54	$19,950.00
STMSW30537	MANNING AVENUE	STS-300	300	1997	6.26	87.57	$5,987.00
STMSW30538	MANNING AVENUE	STS-300	300	1997	37.58	87.57	$35,957.00
STMSW30539	MANNING AVENUE	STS-300	300	1997	16.57	87.57	$15,853.00
STMSW30540	PEEL STREET	STS-525	525	2006	72.24	92.43	$79,447.00
STMSW30543	PEEL STREET	STS-300	300	2006	18.11	92.43	$17,331.00
STMSW30544	PEEL STREET	STS-300	300	2006	9.02	92.43	$8,634.00
STMSW30545	COLLINS STREET	STS-600	600	2007	8.52	92.97	$10,987.00
STMSW30547	PEEL STREET	STS-750	675	2006	37.89	92.43	$56,990.00
STMSW30548	PEEL STREET	STS-300	300	2006	2.56	92.43	$2,446.00
STMSW30549	PEEL STREET	STS-300	300	2006	5.83	92.43	$5,582.00
STMSW30550	PEEL STREET	STS-750	675	2006	50.27	92.43	$75,617.00
STMSW30551	MCKEAN CRESCENT	STS-750-CSP	675	2007	16.03	73.73	$24,106.00
STMSW30552	PEEL STREET	STS-300	300	2006	15.84	92.43	$15,159.00
STMSW30553	PEEL STREET	STS-300	300	2006	1.05	92.43	$1,008.00
STMSW30554	PEEL STREET	STS-750-CSP	675	2006	38.19	71.71	$57,437.00
STMSW30555	PEEL STREET	STS-300	300	2006	7.38	92.43	$7,057.00
STMSW30556	PEEL STREET	STS-300	300	2006	3.28	92.43	$3,141.00
STMSW30557	PEEL STREET	STS-300	300	2006	7.42	92.43	$7,100.00
STMSW30558	PEEL STREET	STS-600	600	2006	63.74	92.43	$82,202.00
STMSW30559	PEEL STREET	STS-450-CSP	450	2007	9.03	73.73	$9,612.00
STMSW30560	PEEL STREET	STS-450-CSP	450	2006	92.85	71.71	$98,862.00
STMSW30561	MCKEAN CRESCENT	STS-300	300	2006	7.42	92.43	$7,102.00
STMSW30562	MCKEAN CRESCENT	STS-300	300	2006	1.09	92.43	$1,040.00
STMSW30563	(blank)	STS-300-CSP	300	2006	5.70	71.71	$5,456.00
STMSW30564	WILLIAMS STREET	STS-300	300	2006	8.52	92.43	$8,149.00
STMSW30565	WILLIAMS STREET	STS-450	450	2006	47.44	92.43	$50,507.00
STMSW30566	WILLIAMS STREET	STS-300	300	2006	0.95	92.43	$908.00
STMSW30567	WILLIAMS STREET	STS-300	300	2006	6.96	92.43	$6,662.00
STMSW30568	SIXTH STREET	STS-300	300	1972	10.86	67.17	$10,395.00
STMSW30569	THIRD STREET	STS-450-CSP	450	1910	62.45	1.00	$66,491.00
STMSW30570	THIRD STREET	STS-300	300	2008	25.36	93.51	$24,268.00
STMSW30571	THIRD STREET	STS-375	375	2008	76.96	93.51	$79,139.00
STMSW30572	PINE STREET	STS-300	300	2008	4.08	93.51	$3,905.00
STMSW30573	EIGHTH STREET	STS-300	300	1991	10.75	84.32	$10,282.00
STMSW30574	EIGHTH STREET	STS-450-CSP	400	1991	125.41	41.41	$133,525.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30578	COLLINS STREET	STS-450	450	1978	61.19	74.17	$65,148.00
STMSW30580	COLLINS STREET	STS-525	525	1978	71.53	74.17	$78,670.00
STMSW30582	LOCKHART ROAD	STS-300	300	1978	45.91	74.17	$43,931.00
STMSW30585	PEEL STREET	STS-300	300	1984	39.39	80.54	$37,690.00
STMSW30586	TESKEY COURT	STS-300	300	1976	7.90	71.83	$7,557.00
STMSW30587	MCKEAN CRESCENT	STS-300	300	2006	8.25	92.43	$7,891.00
STMSW30588	PEEL STREET	STS-300	300	2006	2.59	92.43	$2,475.00
STMSW30593	HURONTARIO STREET	STS-300	300	1967	10.58	61.33	$10,123.00
STMSW30594	COLLINS STREET	STS-600	600	1978	22.40	74.17	$28,888.00
STMSW30595	COLLINS STREET	STS-900	825	1978	42.02	74.17	$69,208.00
STMSW30596	SAUNDERS STREET	STS-300	300	2007	7.07	92.97	$6,767.00
STMSW30597	FIRST STREET	STS-300-CSP	300	1964	13.89	1.00	$13,292.00
STMSW30598	SPROULE AVENUE	STS-300	300	1976	17.31	71.83	$16,564.00
STMSW30599	BELL BOULEVARD	STS-300	300	1976	7.99	71.83	$7,647.00
STMSW30602	KRISTA COURT	STS-300	300	1978	9.87	74.17	$9,443.00
STMSW30603	TESKEY COURT	STS-300	300	1976	23.36	71.83	$22,348.00
STMSW30604	TESKEY COURT	STS-300	300	1976	8.09	71.83	$7,740.00
STMSW30607	SPRUCE STREET	STS-600	600	1972	10.43	67.17	$13,454.00
STMSW30608	SIXTH STREET	STS-300	300	1972	9.01	67.17	$8,617.00
STMSW30609	SIXTH STREET	STS-600	600	1971	38.59	66.00	$49,759.00
STMSW30610	WILLIAMS STREET	STS-300	300	2006	7.39	92.43	$7,066.00
STMSW30611	WILLIAMS STREET	STS-300	300	2006	1.16	92.43	$1,109.00
STMSW30612	ELIOTT AVENUE	STS-1200	1200	1980	88.07	76.50	$222,230.00
STMSW30613	HIGHWAY 26 EAST	STS-900	900	1980	84.89	76.50	$139,827.00
STMSW30614	HIGHWAY 26 EAST	STS-1050	1050	1967	94.09	61.33	$191,661.00
STMSW30615	HURONTARIO STREET	STS-450	450	1967	69.47	61.33	$73,966.00
STMSW30616	GEORGIAN MANOR DRIVE	STS-450-CSP	400	1987	43.14	33.33	$45,927.00
STMSW30617	GEORGIAN MANOR DRIVE	STS-375-CSP	375	1987	107.30	33.33	$110,337.00
STMSW30618	HURONIA PATHWAY	STS-450	450	2007	49.08	92.97	$52,253.00
STMSW30620	CAMPBELL STREET	STS-600-CSP	600	1985	43.12	29.29	$55,609.00
STMSW30621	MINNESOTA STREET	STS-300	300	1984	18.74	80.54	$17,928.00
STMSW30622	HIGHWAY 26 EAST	STS-1050	1000	1980	89.26	76.50	$181,830.00
STMSW30623	MACDONALD STREET	STS-1050	1000	1980	116.67	76.50	$237,662.00
STMSW30624	GODDEN STREET	STS-525	525	1984	52.69	80.54	$57,946.00
STMSW30626	GODDEN STREET	STS-300	300	1984	8.03	80.54	$7,678.00
STMSW30627	GODDEN STREET	STS-300	300	1984	55.15	80.54	$52,767.00
STMSW30628	GODDEN STREET	STS-300	300	1984	8.07	80.54	$7,717.00
STMSW30629	GODDEN STREET	STS-450	450	1988	20.54	82.70	$21,867.00
STMSW30630	DILLON DRIVE	STS-450	450	1984	10.97	80.54	$11,684.00
STMSW30631	DILLON DRIVE	STS-750	750	1984	74.02	80.54	$111,329.00
STMSW30632	WILLIAMS STREET	STS-750	675	2006	91.39	92.43	$137,461.00
STMSW30633	WILLIAMS STREET	STS-750	675	2007	86.81	92.97	$130,568.00
STMSW30634	WILLIAMS STREET	STS-750	750	2006	15.40	92.43	$23,157.00
STMSW30635	SPROULE AVENUE	STS-300	300	1997	7.97	87.57	$7,623.00
STMSW30636	MACDONALD ROAD	STS-600	600	1969	9.20	63.67	$11,868.00
STMSW30637	MACDONALD STREET	STS-600	600	1969	4.99	63.67	$6,431.00
STMSW30638	MACDONALD STREET	STS-600	600	1969	8.06	63.67	$10,399.00
STMSW30639	MACDONALD STREET	STS-900	900	1969	27.21	63.67	$44,824.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30641	FIFTH STREET	STS-525	525	1975	10.52	70.67	$11,573.00
STMSW30642	WILLIAMS STREET	STS-300	300	2006	6.64	92.43	$6,349.00
STMSW30643	PEEL STREET	STS-300	300	2007	1.20	92.97	$1,150.00
STMSW30644	CAMPBELL STREET	STS-375-CSP	375	1985	20.89	29.29	$21,477.00
STMSW30645	LOCKHART ROAD	STS-300	300	1978	46.09	74.17	$44,095.00
STMSW30650	LOCKHART ROAD	STS-375	375	1978	46.45	74.17	$47,764.00
STMSW30651	ALICE STREET	STS-450	450	1974	36.97	69.50	$39,363.00
STMSW30652	WATER STREET	STS-300-CSP	300	1964	7.08	1.00	$6,769.00
STMSW30654	CARMICHEAL CRESCENT	STS-450	450	1987	41.61	82.16	$44,300.00
STMSW30656	WILLIAMS STREET	STS-300	300	2006	49.84	92.43	$47,687.00
STMSW30657	WILLIAMS STREET	STS-375	375	2006	77.96	92.43	$80,170.00
STMSW30658	LYNDEN STREET	STS-300	300	2006	7.62	92.43	$7,288.00
STMSW30659	LYNDEN STREET	STS-300	300	2006	1.37	92.43	$1,314.00
STMSW30660	MCKEAN CRESCENT	STS-300	300	2006	5.28	92.43	$5,051.00
STMSW30661	CARMICHEAL CRESCENT	STS-300	300	1989	8.26	83.24	$7,906.00
STMSW30662	FIRST STREET	STS-525	525	1970	8.32	64.83	$9,151.00
STMSW30663	FIRST STREET	STS-300-CSP	300	1964	13.67	1.00	$13,075.00
STMSW30665	BUSH STREET	STS-450	450	1993	63.24	85.41	$67,326.00
STMSW30666	PEEL STREET	STS-300	300	1984	6.50	80.54	$6,220.00
STMSW30669	NETTLETON COURT	STS-450-CSP	450	1972	33.08	3.02	$35,218.00
STMSW30670	MACDONALD STREET	STS-900	900	1969	82.77	63.67	$136,326.00
STMSW30671	MACDONALD ROAD	STS-600-CSP	600	1969	5.57	1.00	$7,181.00
STMSW30672	MACDONALD ROAD	STS-1050	1000	1969	47.49	63.67	$96,736.00
STMSW30673	MACDONALD ROAD	STS-1050	1000	1969	32.08	63.67	$65,344.00
STMSW30675	Hume Street	STS-300	300	1967	6.19	61.33	$5,924.00
STMSW30676	COLLINS STREET	STS-600	600	2007	2.64	92.97	$3,401.00
STMSW30677	PEEL STREET	STS-300	300	2006	8.09	92.43	$7,744.00
STMSW30678	PEEL STREET	STS-300	300	2006	8.98	92.43	$8,595.00
STMSW30679	PEEL STREET	STS-750	675	2006	37.32	92.43	$56,133.00
STMSW30680	PEEL STREET	STS-450	450	2007	9.99	92.97	$10,632.00
STMSW30681	PEEL STREET	STS-300	300	2006	6.64	92.43	$6,349.00
STMSW30682	PEEL STREET	STS-300	300	2006	1.37	92.43	$1,308.00
STMSW30683	PEEL STREET	STS-450	450	2006	44.61	92.43	$47,494.00
STMSW30684	PEEL STREET	STS-300	300	2006	6.90	92.43	$6,605.00
STMSW30685	COLLINS STREET	STS-750	675	2007	62.72	92.97	$94,333.00
STMSW30686	FINDLAY DRIVE	STS-300	300	2006	2.17	92.43	$2,073.00
STMSW30687	HARBEN COURT	STS-300	300	1984	9.78	80.54	$9,354.00
STMSW30688	PEEL STREET	STS-300	300	1984	32.22	80.54	$30,832.00
STMSW30689	PEEL STREET	STS-300	300	1984	10.96	80.54	$10,485.00
STMSW30691	SPROULE AVENUE	STS-300	300	1978	3.07	74.17	$2,935.00
STMSW30692	SPROULE AVENUE	STS-1050	1050	1978	71.09	74.17	$144,815.00
STMSW30697	LOCKHART ROAD	STS-900	825	1978	51.47	74.17	$84,781.00
STMSW30700	LOCKHART ROAD	STS-750	750	1978	40.12	74.17	$60,349.00
STMSW30702	COLLINS STREET	STS-1050	1050	1978	78.00	74.17	$158,902.00
STMSW30704	PEEL STREET	STS-750	675	1984	50.82	80.54	$76,435.00
STMSW30707	DILLON DRIVE	STS-375	375	1984	75.88	80.54	$78,025.00
STMSW30709	DILLON DRIVE	STS-450	450	1984	21.33	80.54	$22,710.00
STMSW30710	DILLON DRIVE	STS-375	375	1984	45.62	80.54	$46,909.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30711	SPRUCE STREET	STS-300	300	1989	7.59	83.24	$7,257.00
STMSW30712	COLLINS STREET	STS-600	600	2006	45.61	92.43	$58,816.00
STMSW30713	COLLINS STREET	STS-375	375	2006	8.49	92.43	$8,725.00
STMSW30714	WILLIAMS STREET	STS-300	300	2006	16.19	92.43	$15,489.00
STMSW30717	NAPIER STREET	STS-300	300	1984	16.19	80.54	$15,486.00
STMSW30719	WILLIAMS STREET	STS-600	600	2007	6.84	92.97	$8,820.00
STMSW30721	WILLIAMS STREET	STS-300	300	2006	1.85	92.43	$1,770.00
STMSW30722	ALICE STREET	STS-300	300	1974	8.11	69.50	$7,755.00
STMSW30723	ALICE STREET	STS-375	375	1974	45.97	69.50	$47,274.00
STMSW30724	HARBEN COURT	STS-300	300	1973	13.26	68.33	$12,686.00
STMSW30725	HARBEN COURT	STS-300	300	1973	7.94	68.33	$7,595.00
STMSW30726	HARBEN COURT	STS-300	300	1973	8.74	68.33	$8,361.00
STMSW30727	ALICE STREET	STS-300	300	1974	6.11	69.50	$5,841.00
STMSW30728	BELL BOULEVARD	STS-300	300	1974	36.26	69.50	$34,696.00
STMSW30729	BELL BOULEVARD	STS-300	300	1974	7.79	69.50	$7,455.00
STMSW30730	FIRST STREET	STS-1050	1050	1964	78.50	57.83	$159,910.00
STMSW30732	Elm Street	STS-300-CSP	300	1967	8.92	1.00	$8,532.00
STMSW30733	FIRST STREET	STS-450-CSP	450	1969	45.77	1.00	$48,733.00
STMSW30734	CARMICHEAL CRESCENT	STS-300	300	1987	44.54	82.16	$42,615.00
STMSW30735	SMART COURT	STS-300	300	1985	59.82	81.08	$57,240.00
STMSW30736	CARMICHEAL CRESCENT	STS-300	300	1987	7.99	82.16	$7,646.00
STMSW30737	MAPLE STREET	STS-300-CSP	300	1989	84.84	37.37	$81,178.00
STMSW30738	MAPLE STREET	STS-375	375	1989	14.14	83.24	$14,536.00
STMSW30740	BALSAM STREET	STS-525	500	1972	9.79	67.17	$10,765.00
STMSW30741	FIRST STREET	STS-300-CSP	300	1964	13.92	1.00	$13,322.00
STMSW30742	FIRST STREET	STS-300-CSP	300	1964	36.69	1.00	$35,100.00
STMSW30743	FIRST STREET EXTENSION	STS-525	500	2000	53.44	89.19	$58,777.00
STMSW30744	FIRST STREET EXTENSION	STS-300-CSP	300	2000	14.03	59.59	$13,427.00
STMSW30745	FIRST STREET EXTENSION	STS-300-CSP	300	1964	8.29	1.00	$7,934.00
STMSW30746	FIRST STREET	STS-300-CSP	300	1964	4.38	1.00	$4,195.00
STMSW30747	BALSAM STREET	STS-450-CSP	400	1964	38.86	1.00	$41,379.00
STMSW30748	POPLAR SIDEROAD	STS-900-CSP	900	2007	57.74	73.73	$95,100.00
STMSW30749	POPLAR SIDEROAD	STS-450	450	2007	9.95	92.97	$10,592.00
STMSW30750	POPLAR SIDEROAD	STS-750-CSP	750	2007	83.60	73.73	$125,735.00
STMSW30751	POPLAR SIDEROAD	STS-600	600	2007	35.98	92.97	$46,401.00
STMSW30755	CHAMBERLAIN CRESCENT	STS-450	450	2006	96.58	92.43	$102,831.00
STMSW30756	DAVIS STREET	STS-300	300	2006	1.19	92.43	$1,138.00
STMSW30757	EIGHTH STREET	STS-300-CSP	300	1960	30.26	1.00	$28,950.00
STMSW30758	FIRST STREET EXTENSION	STS-300	300	2006	25.26	92.43	$24,169.00
STMSW30759	FIRST STREET EXTENSION	STS-300	300	2006	19.17	92.43	$18,344.00
STMSW30760	GEORGIAN MANOR DRIVE	STS-450-CSP	450	1987	63.22	33.33	$67,315.00
STMSW30761	GEORGIAN MANOR DRIVE	STS-375-CSP	375	1987	13.41	33.33	$13,791.00
STMSW30762	GEORGIAN MANOR DRIVE	STS-375-CSP	375	1987	96.61	33.33	$99,348.00
STMSW30763	GEORGIAN MANOR DRIVE	STS-375	375	2007	10.02	92.97	$10,307.00
STMSW30764	GEORGIAN MANOR DRIVE	STS-375-CSP	375	2007	79.87	73.73	$82,132.00
STMSW30767	HIGHWAY 26 EAST	STS-1050	1050	1980	93.46	76.50	$190,381.00
STMSW30769	PATTERSON STREET	STS-375-CSP	375	1985	61.42	29.29	$63,158.00
STMSW30771	PEEL STREET	STS-525	525	1984	7.47	80.54	$8,219.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30773	PEEL STREET	STS-450	450	1984	52.56	80.54	$55,959.00
STMSW30774	PEEL STREET	STS-300	300	1984	7.96	80.54	$7,615.00
STMSW30776	PEEL STREET	STS-450	450	1984	25.85	80.54	$27,525.00
STMSW30777	SMART COURT	STS-300	300	1985	7.64	81.08	$7,311.00
STMSW30778	SMART COURT	STS-300	300	1985	41.66	81.08	$39,860.00
STMSW30779	DILLON DRIVE	STS-300	300	1984	52.58	80.54	$50,306.00
STMSW30780	DILLON DRIVE	STS-300	300	1984	6.37	80.54	$6,091.00
STMSW30781	DILLON DRIVE	STS-750	750	1984	89.82	80.54	$135,092.00
STMSW30787	PEEL STREET	STS-375	375	1984	42.24	80.54	$43,430.00
STMSW30788	BUSH STREET	STS-300	300	1986	7.71	81.62	$7,377.00
STMSW30789	BUSH STREET	STS-375	375	1986	44.34	81.62	$45,599.00
STMSW30790	PEEL STREET	STS-300	300	1984	6.13	80.54	$5,869.00
STMSW30791	BUSH STREET	STS-300	300	1984	9.28	80.54	$8,880.00
STMSW30793	BUSH STREET	STS-600	600	1978	102.63	74.17	$132,352.00
STMSW30794	REID CRESCENT	STS-300	300	1989	10.11	83.24	$9,676.00
STMSW30795	REID CRESCENT	STS-300	300	1989	8.02	83.24	$7,669.00
STMSW30796	REID CRESCENT	STS-375	350	1989	51.60	83.24	$53,062.00
STMSW30798	SPROULE AVENUE	STS-300	300	1976	51.61	71.83	$49,382.00
STMSW30799	Dey Drive	STS-450	450	1978	11.21	74.17	$11,936.00
STMSW30800	Dey Drive	STS-450	450	1985	31.77	81.08	$33,829.00
STMSW30801	KRISTA COURT	STS-450	450	1985	12.90	81.08	$13,737.00
STMSW30802	MINNESOTA STREET	STS-900	900	1984	52.46	80.54	$86,405.00
STMSW30805	CAMPBELL STREET	STS-450-CSP	400	1989	188.88	37.37	$201,099.00
STMSW30806	CAMPBELL STREET	STS-450-CSP	400	1985	16.99	29.29	$18,091.00
STMSW30810	DILLON DRIVE	STS-750	675	1984	71.32	80.54	$107,278.00
STMSW30811	SPRUCE STREET	STS-300	300	1989	8.09	83.24	$7,739.00
STMSW30812	TROTT BOULEVARD	STS-375-CSP	375	1972	59.03	3.02	$60,703.00
STMSW30814	TROTT BOULEVARD	STS-375-CSP	375	1972	29.93	3.02	$30,776.00
STMSW30815	TROTT BOULEVARD	STS-375-CSP	375	1972	49.00	3.02	$50,382.00
STMSW30817	SPRUCE STREET	STS-600-CSP	600	1989	6.85	37.37	$8,839.00
STMSW30818	CHAMBERLAIN CRESCENT	STS-600	600	2006	62.39	92.43	$80,454.00
STMSW30819	DILLON DRIVE	STS-750	675	1984	42.43	80.54	$63,816.00
STMSW30820	CARMICHEAL CRESCENT	STS-450	450	1986	59.65	81.62	$63,504.00
STMSW30822	CARMICHEAL CRESCENT	STS-450	450	1987	13.80	82.16	$14,693.00
STMSW30824	BURNSIDE COURT	STS-450	450	1987	42.80	82.16	$45,566.00
STMSW30826	CAMPBELL STREET	STS-300-CSP	300	1989	48.50	37.37	$46,405.00
STMSW30830	NETTLETON COURT	STS-525	525	1972	35.48	67.17	$39,023.00
STMSW30832	BALSAM STREET	STS-525	500	1972	16.97	67.17	$18,667.00
STMSW30833	CRANBERRY SURF	STS-525	500	1972	29.95	67.17	$32,940.00
STMSW30834	CRANBERRY SURF	STS-525	500	1972	5.21	67.17	$5,729.00
STMSW30836	BURNSIDE COURT	STS-375	375	1987	38.21	82.16	$39,294.00
STMSW30837	REID CRESCENT	STS-375-CSP	375	1988	44.65	35.35	$45,918.00
STMSW30838	MARY STREET	STS-450	450	2007	6.81	92.97	$7,248.00
STMSW30839	PEEL STREET	STS-300	300	1984	67.45	80.54	$64,533.00
STMSW30840	VICTORY DRIVE	STS-450-CSP	450	1944	10.65	1.00	$11,334.00
STMSW30841	HIGHWAY 26 EAST	STS-1050	1050	1980	93.55	76.50	$190,561.00
STMSW30842	HIGHWAY 26 EAST	STS-900	900	1967	20.22	61.33	$33,308.00
STMSW30843	NINTH STREET	STS-300	300	1974	15.15	69.50	$14,491.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30844	FIRST STREET	STS-450-CSP	400	1964	1.14	1.00	$1,212.00
STMSW30845	FIRST STREET	STS-1050	1050	1964	23.69	57.83	$48,259.00
STMSW30846	FIRST STREET	STS-1050	1050	1964	56.08	57.83	$114,239.00
STMSW30847	MCINTOSH GATE	STS-300-CSP	300	1972	73.27	3.02	$70,108.00
STMSW30848	MCINTOSH GATE	STS-300-CSP	300	1972	49.63	3.02	$47,481.00
STMSW30849	NETTLETON COURT	STS-300-CSP	300	1972	13.10	3.02	$12,531.00
STMSW30850	MAPLE STREET	STS-300	300	1989	7.90	83.24	$7,556.00
STMSW30851	MAPLE STREET	STS-300	300	1989	54.76	83.24	$52,392.00
STMSW30852	MAPLE STREET	STS-300	300	1989	7.90	83.24	$7,555.00
STMSW30854	MAPLE STREET	STS-300	300	1989	7.86	83.24	$7,520.00
STMSW30856	BUSH STREET	STS-300	300	1993	2.68	85.41	$2,565.00
STMSW30857	BUSH STREET	STS-300	300	1993	9.36	85.41	$8,951.00
STMSW30859	FIRST STREET	STS-450-CSP	450	1920	24.18	1.00	$25,747.00
STMSW30860	BIRCH STREET	STS-300-CSP	300	1920	11.16	1.00	$10,677.00
STMSW30861	FIRST STREET	STS-450-CSP	450	1964	60.85	1.00	$64,785.00
STMSW30862	FIRST STREET	STS-450-CSP	400	1964	11.03	1.00	$11,747.00
STMSW30863	FIRST STREET	STS-600	600	2006	47.35	92.43	$61,061.00
STMSW30864	MOUNTAIN ROAD	STS-525	525	2006	32.02	92.43	$35,210.00
STMSW30865	CAMBRIDGE STREET	STS-525	525	2006	16.80	92.43	$18,478.00
STMSW30866	FIRST STREET EXTENSION	STS-375	375	2006	34.75	92.43	$35,728.00
STMSW30867	CAMBRIDGE STREET	STS-375	375	2006	13.82	92.43	$14,213.00
STMSW30868	FIRST STREET	STS-450	450	1969	64.96	63.67	$69,162.00
STMSW30869	BUSH STREET	STS-450	450	1993	62.99	85.41	$67,062.00
STMSW30870	CAMBRIDGE STREET	STS-300	300	2006	95.61	92.43	$91,482.00
STMSW30871	CAMBRIDGE STREET	STS-375	375	2006	35.11	92.43	$36,108.00
STMSW30872	CAMBRIDGE STREET	STS-450	450	2006	23.41	92.43	$24,920.00
STMSW30873	CAMBRIDGE STREET	STS-300	300	2006	11.51	92.43	$11,014.00
STMSW30874	PEEL STREET	STS-525	525	1984	85.32	80.54	$93,831.00
STMSW30877	NETTLETON COURT	STS-300-CSP	300	1972	8.12	3.02	$7,769.00
STMSW30878	NETTLETON COURT	STS-450-CSP	450	1972	49.06	3.02	$52,230.00
STMSW30879	BOARDWALK AVENUE	STS-525	525	1972	46.06	67.17	$50,658.00
STMSW30880	CRANBERRY QUAY	STS-525	525	1972	81.61	67.17	$89,751.00
STMSW30882	OAK STREET	STS-300	300	1982	3.73	78.83	$3,568.00
STMSW30883	OAK STREET	STS-300	300	1982	10.29	78.83	$9,843.00
STMSW30884	OAK STREET	STS-300	300	1982	3.65	78.83	$3,492.00
STMSW30885	OAK STREET	STS-300	300	1982	6.91	78.83	$6,611.00
STMSW30886	OAK STREET	STS-300	300	1982	2.82	78.83	$2,697.00
STMSW30887	OAK STREET	STS-300	300	1982	7.73	78.83	$7,398.00
STMSW30888	OAK STREET	STS-300	300	1982	6.27	78.83	$5,995.00
STMSW30890	SHEFFIELD TERRACE	STS-375-CSP	350	1972	50.08	3.02	$51,499.00
STMSW30891	SHEFFIELD CRESCENT	STS-450-CSP	400	1972	39.72	3.02	$42,289.00
STMSW30892	TROTT BOULEVARD	STS-375-CSP	375	1972	35.25	3.02	$36,249.00
STMSW30893	BIRCH STREET	STS-300	300	2006	69.40	92.43	$66,398.00
STMSW30894	BIRCH STREET	STS-300	300	2006	65.82	92.43	$62,977.00
STMSW30895	THIRD STREET	STS-750	675	2006	45.00	92.43	$67,688.00
STMSW30896	BIRCH STREET	STS-750	675	2006	8.57	92.43	$12,890.00
STMSW30898	THIRD STREET	STS-750	675	2006	43.87	92.43	$65,982.00
STMSW30899	BIRCH STREET	STS-375	375	2006	9.60	92.43	$9,873.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30901	FIFTH STREET	STS-300	300	2006	9.92	92.43	$9,488.00
STMSW30902	DAWSON DRIVE	STS-750	675	1982	56.59	78.83	$85,119.00
STMSW30903	DAWSON DRIVE	STS-450	450	1982	11.44	78.83	$12,175.00
STMSW30904	FOURTH STREET	STS-375-CSP	375	1972	30.68	3.02	$31,545.00
STMSW30905	High Street	STS-1050	1050	1969	4.62	63.67	$9,403.00
STMSW30906	High Street	STS-1050	1050	1969	130.96	63.67	$266,787.00
STMSW30907	MURRAY COURT	STS-300-CSP	300	1969	14.11	1.00	$13,501.00
STMSW30908	High Street	STS-300-CSP	300	1969	4.92	1.00	$4,710.00
STMSW30909	Elm Street	STS-1500-CSP	1830	1967	10.37	1.00	$33,948.00
STMSW30910	FIRST STREET	STS-1050-CSP	1050	1964	29.35	1.00	$59,797.00
STMSW30911	FIRST STREET	STS-300-CSP	300	1964	4.41	1.00	$4,222.00
STMSW30912	FIRST STREET EXTENSION	STS-300-CSP	300	2000	31.41	59.59	$30,050.00
STMSW30914	MOUNTAIN ROAD	STS-900	825	2006	2.82	92.43	$4,645.00
STMSW30915	MOUNTAIN ROAD	STS-900	900	2006	33.82	92.43	$55,698.00
STMSW30916	MOUNTAIN ROAD	STS-600	600	2006	69.54	92.43	$89,683.00
STMSW30917	FIRST STREET	STS-300	300	2006	21.67	92.43	$20,734.00
STMSW30918	FIRST STREET	STS-525	525	2006	19.41	92.43	$21,352.00
STMSW30919	FIRST STREET	STS-300	300	2006	3.75	92.43	$3,591.00
STMSW30920	MACDONALD STREET	STS-600	600	1969	10.91	63.67	$14,064.00
STMSW30921	OAK STREET	STS-450-CSP	400	1991	14.08	41.41	$14,987.00
STMSW30922	CEDAR STREET	STS-300	300	1969	12.97	63.67	$12,407.00
STMSW30923	FIRST STREET	STS-300	300	1969	16.07	63.67	$15,371.00
STMSW30924	FIRST STREET	STS-300	300	1969	2.92	63.67	$2,791.00
STMSW30925	FIRST STREET	STS-450	450	1969	49.61	63.67	$52,824.00
STMSW30926	FIRST STREET	STS-300	300	1969	71.14	63.67	$68,062.00
STMSW30927	FIRST STREET	STS-300	300	1969	16.27	63.67	$15,570.00
STMSW30928	FIRST STREET	STS-300	300	1964	3.54	57.83	$3,383.00
STMSW30929	FIRST STREET	STS-300	300	1969	13.84	63.67	$13,246.00
STMSW30930	FIRST STREET	STS-300	300	1969	25.73	63.67	$24,614.00
STMSW30931	GEORGIAN MANOR DRIVE	STS-450-CSP	400	1987	12.33	33.33	$13,131.00
STMSW30932	MINNESOTA STREET	STS-450	400	1984	18.83	80.54	$20,052.00
STMSW30933	GODDEN STREET	STS-300	300	1984	12.22	80.54	$11,691.00
STMSW30935	MINNESOTA STREET	STS-450	400	2006	6.70	92.43	$7,137.00
STMSW30936	MINNESOTA STREET	STS-300	300	2006	69.16	92.43	$66,174.00
STMSW30939	SIMCOE STREET	STS-300	300	2006	64.81	92.43	$62,007.00
STMSW30940	BALSAM STREET	STS-300	300	1970	29.40	64.83	$28,128.00
STMSW30941	BALSAM STREET	STS-300	300	1966	32.51	60.17	$31,105.00
STMSW30942	BALSAM STREET	STS-600	600	1970	27.85	64.83	$35,914.00
STMSW30943	BALSAM STREET	STS-600	600	1970	32.21	64.83	$41,535.00
STMSW30944	BALSAM STREET	STS-600	600	1970	60.55	64.83	$78,090.00
STMSW30945	BALSAM STREET	STS-600	600	1970	66.33	64.83	$85,544.00
STMSW30946	BALSAM STREET	STS-600	600	1970	57.45	64.83	$74,093.00
STMSW30947	BALSAM STREET	STS-600	600	1970	43.57	64.83	$56,181.00
STMSW30948	BEECH STREET	STS-375	375	1969	61.13	63.67	$62,864.00
STMSW30949	BEECH STREET	STS-375	375	1969	47.26	63.67	$48,593.00
STMSW30950	FIRST STREET	STS-300	300	1969	59.33	63.67	$56,762.00
STMSW30951	BEECH STREET	STS-450	450	1969	10.08	63.67	$10,731.00
STMSW30952	PINE STREET	STS-450	450	1969	67.56	63.67	$71,933.00

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW30953	PINE STREET	STS-300	300	1969	64.99	63.67	$62,183.00
STMSW30954	FIRST STREET	STS-600	600	1969	66.10	63.67	$85,245.00
STMSW30955	FIRST STREET	STS-525	525	1969	63.48	63.67	$69,818.00
STMSW30956	FIRST STREET	STS-375	375	1969	72.62	63.67	$74,679.00
STMSW30957	THIRD STREET	STS-300	300	1987	39.72	82.16	$38,003.00
STMSW30958	MACKAY COURT	STS-900	900	1977	32.79	73.00	$54,010.00
STMSW30960	BALSAM STREET	STS-300	300	1964	26.55	57.83	$25,400.00
STMSW30961	BALSAM STREET	STS-300	300	1964	39.56	57.83	$37,855.00
STMSW30962	BRANIFF COURT	STS-300-CSP	300	1974	49.25	7.06	$47,120.00
STMSW30963	HURONTARIO STREET	STS-750	750	1980	76.97	76.50	$115,775.00
STMSW30964	HURONTARIO STREET	STS-375-CSP	375	1980	50.93	19.18	$52,372.00
STMSW30965	HURONTARIO STREET	STS-300-CSP	300	1980	60.18	19.18	$57,584.00
STMSW30966	SIMCOE STREET	STS-450-CSP	450	1980	58.29	19.18	$62,056.00
STMSW30967	PINE STREET	STS-375-CSP	375	1982	67.93	23.22	$69,857.00
STMSW30968	PINE STREET	STS-450-CSP	450	1982	60.46	23.22	$64,373.00
STMSW30969	Second Street	STS-450-CSP	450	1965	46.11	1.00	$49,093.00
STMSW30970	Second Street	STS-300-CSP	300	1974	111.85	7.06	$107,019.00
STMSW30971	ELGIN STREET	STS-300-CSP	300	1973	58.16	5.04	$55,650.00
STMSW30972	HURONTARIO STREET	STS-300-CSP	300	1980	54.69	19.18	$52,329.00
STMSW30973	FOURTH STREET EAST	STS-300-CSP	300	1920	51.36	1.00	$49,145.00
STMSW30974	NAPIER STREET	STS-375-CSP	375	1950	497.68	1.00	$511,759.00
STMSW30975	MOBERLY STREET	STS-375-CSP	375	1950	63.37	1.00	$65,163.00
STMSW30976	ONTARIO STREET	STS-450-CSP	450	2000	158.30	59.59	$168,543.00
STMSW30977	MINNESOTA STREET	STS-600	600	1994	109.02	85.95	$140,588.00
STMSW30978	MINNESOTA STREET	STS-900	900	1960	123.56	53.17	$203,507.00
STMSW30979	ONTARIO STREET	STS-1500	1800	1960	100.58	53.17	$329,252.00
STMSW30980	HURON STREET	STS-300-CSP	300	1960	63.66	1.00	$60,906.00
STMSW30981	HURON STREET	STS-375-CSP	375	1950	61.41	1.00	$63,147.00
STMSW30982	HURON STREET	STS-450-CSP	450	1950	61.73	1.00	$65,724.00
STMSW30983	HURON STREET	STS-525	525	1950	59.95	26.14	$65,937.00
STMSW30984	HURON STREET	STS-450-CSP	450	1950	52.66	1.00	$56,070.00
STMSW30985	Dey Drive	STS-300-CSP	300	1985	58.24	29.29	$55,722.00
STMSW30988	COLLINS STREET	STS-300-CSP	300	1978	17.75	15.14	$16,984.00
STMSW30989	KATHERINE STREET	STS-1050	1000	1968	254.79	62.50	$519,031.00
STMSW30990	KATHERINE STREET	STS-750	750	2000	43.11	89.19	$64,840.00
STMSW30991	FIRST STREET	STS-1350	1350	1965	36.93	59.00	$105,044.00
STMSW30993	HURONTARIO STREET	STS-375-CSP	375	1981	37.96	21.20	$39,030.00
STMSW30994	HURONTARIO STREET	STS-300-CSP	300	1981	66.66	21.20	$63,782.00
STMSW30995	STE MARIE STREET	STS-450-CSP	450	1974	84.98	7.06	$90,479.00
STMSW30996	STE MARIE STREET	STS-300-CSP	300	1974	7.66	7.06	$7,324.00
STMSW30997	STE MARIE STREET	STS-300-CSP	300	1974	13.90	7.06	$13,300.00
STMSW30998	LOCKHART ROAD	STS-600	600	1984	86.80	80.54	$111,941.00
STMSW30999	KATHERINE STREET	STS-450-CSP	450	2000	76.63	59.59	$81,589.00
STMSW31000	BRANIFF COURT	STS-300-CSP	300	1972	18.38	3.02	$17,586.00
STMSW31001	BRANIFF COURT	STS-300-CSP	300	1972	7.96	3.02	$7,618.00
STMSW31002	FIFTH STREET	STS-375-CSP	375	1965	43.48	1.00	$44,714.00
STMSW31003	FIFTH STREET	STS-375-CSP	375	1965	43.02	1.00	$44,237.00
STMSW31004	FIFTH STREET	STS-375-CSP	375	1965	16.05	1.00	$16,507.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31005	SPRUCE STREET	STS-375-CSP	375	1965	20.23	1.00	$20,797.00
STMSW31009	FIFTH STREET	STS-375-CSP	375	1965	32.67	1.00	$33,598.00
STMSW31010	FIFTH STREET	STS-375-CSP	375	1965	12.36	1.00	$12,709.00
STMSW31011	FIFTH STREET	STS-375-CSP	375	1965	29.46	1.00	$30,295.00
STMSW31012	FIFTH STREET	STS-375-CSP	375	1965	25.63	1.00	$26,353.00
STMSW31013	FIFTH STREET	STS-375-CSP	375	1965	15.98	1.00	$16,432.00
STMSW31014	FIFTH STREET	STS-300-CSP	300	1950	22.64	1.00	$21,664.00
STMSW31015	OAK STREET	STS-300-CSP	300	1950	11.09	1.00	$10,611.00
STMSW31017	OAK STREET	STS-450-CSP	400	2000	11.54	59.59	$12,289.00
STMSW31018	FOURTH STREET	STS-450-CSP	400	2000	26.39	59.59	$28,097.00
STMSW31019	OAK STREET	STS-750	675	1973	9.05	68.33	$13,606.00
STMSW31020	THIRD STREET	STS-750	675	1973	59.63	68.33	$89,689.00
STMSW31022	EIGHTH STREET	STS-300-CSP	300	1991	14.03	41.41	$13,419.00
STMSW31023	EIGHTH STREET	STS-300-CSP	300	1991	22.29	41.41	$21,322.00
STMSW31024	EIGHTH STREET	STS-300-CSP	300	1991	20.59	41.41	$19,702.00
STMSW31025	CAMPBELL STREET	STS-600-CSP	600	1985	45.58	29.29	$58,783.00
STMSW31026	CAMPBELL STREET	STS-600-CSP	600	1985	94.26	29.29	$121,551.00
STMSW31027	MINNESOTA STREET	STS-300	300	2006	13.72	92.43	$13,123.00
STMSW31030	NINTH STREET	STS-450-CSP	450	1978	16.62	15.14	$17,695.00
STMSW31031	OAK STREET	STS-450-CSP	450	1978	5.47	15.14	$5,824.00
STMSW31032	OAK STREET	STS-450-CSP	450	1978	6.22	15.14	$6,625.00
STMSW31033	HURONTARIO STREET	STS-300-CSP	300	2006	13.23	71.71	$12,655.00
STMSW31040	PARK ROAD	STS-450-CSP	450	1974	108.46	7.06	$115,476.00
STMSW31041	PARK ROAD	STS-450-CSP	450	1974	40.19	7.06	$42,785.00
STMSW31042	(blank)	STS-375-CSP	375	1991	227.53	41.41	$233,972.00
STMSW31045	RAGLAN STREET	STS-375-CSP	375	1997	87.01	53.53	$89,474.00
STMSW31046	RAGLAN STREET	STS-450-CSP	450	2002	35.15	63.63	$37,420.00
STMSW31047	RAGLAN STREET	STS-375-CSP	375	2002	35.42	63.63	$36,420.00
STMSW31048	SHANNON COURT	STS-300-CSP	300	2002	7.76	63.63	$7,421.00
STMSW31049	SHANNON COURT	STS-375-CSP	375	2002	58.13	63.63	$59,770.00
STMSW31050	RAGLAN STREET	STS-375-CSP	375	2002	154.49	63.63	$158,857.00
STMSW31051	ERIE STREET	STS-375-CSP	375	2002	28.66	63.63	$29,467.00
STMSW31052	ONTARIO STREET	STS-300-CSP	300	1994	10.47	47.47	$10,016.00
STMSW31053	ONTARIO STREET	STS-450-CSP	450	2000	9.30	59.59	$9,906.00
STMSW31056	ONTARIO STREET	STS-375-CSP	375	1994	65.17	47.47	$67,017.00
STMSW31057	ONTARIO STREET	STS-450-CSP	450	1994	45.91	47.47	$48,876.00
STMSW31060	ONTARIO STREET	STS-600	600	1994	60.12	85.95	$77,533.00
STMSW31061	ONTARIO STREET	STS-600	600	1994	40.26	85.95	$51,924.00
STMSW31062	ONTARIO STREET	STS-600	600	1994	35.14	85.95	$45,319.00
STMSW31063	ONTARIO STREET	STS-600	600	1994	43.09	85.95	$55,569.00
STMSW31070	ONTARIO STREET	STS-300-CSP	300	1994	26.60	47.47	$25,454.00
STMSW31072	ONTARIO STREET	STS-300-CSP	300	1994	25.64	47.47	$24,536.00
STMSW31073	RAGLAN STREET	STS-450-CSP	450	1994	16.08	47.47	$17,124.00
STMSW31075	(blank)	STS-300	300	2008	12.99	93.51	$12,427.00
STMSW31088	MAPLE STREET	STS-450	450	2008	12.14	93.51	$12,925.00
STMSW31089	CAMERON STREET	STS-600	600	2008	97.72	93.51	$126,024.00
STMSW31090	MAPLE STREET	STS-300	300	2008	22.92	93.51	$21,930.00
STMSW31093	CAMERON STREET	STS-600	600	2008	28.70	93.51	$37,008.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31094	MAPLE STREET	STS-600	600	2008	51.84	93.51	$66,857.00
STMSW31095	MAPLE STREET	STS-600	600	2008	58.24	93.51	$75,106.00
STMSW31096	MAPLE STREET	STS-600	600	2008	145.20	93.51	$187,246.00
STMSW31099	CAMERON STREET	STS-600	600	2008	90.81	93.51	$117,109.00
STMSW31101	MAPLE STREET	STS-300	300	2008	13.91	93.51	$13,307.00
STMSW31102	MAPLE STREET	STS-375	375	2008	1.92	93.51	$1,976.00
STMSW31103	SIXTH STREET	STS-375	375	2008	21.44	93.51	$22,044.00
STMSW31107	MAPLE STREET	STS-300	300	2008	50.88	93.51	$48,686.00
STMSW31111	OAK STREET	STS-600	600	1980	13.62	76.50	$17,564.00
STMSW31122	CEDAR STREET	STS-600	600	2008	49.10	93.51	$63,313.00
STMSW31123	CEDAR STREET	STS-600	600	2008	44.73	93.51	$57,688.00
STMSW31124	CEDAR STREET	STS-600	600	2008	27.28	93.51	$35,174.00
STMSW31125	CEDAR STREET	STS-600	600	2008	62.99	93.51	$81,229.00
STMSW31126	CEDAR STREET	STS-600	600	2008	15.97	93.51	$20,597.00
STMSW31127	Second Street	STS-600	600	2008	47.38	93.51	$61,100.00
STMSW31128	Second Street	STS-600	600	2008	54.43	93.51	$70,197.00
STMSW31134	MINNESOTA STREET	STS-300	300	2006	83.01	92.43	$79,420.00
STMSW31137	MINNESOTA STREET	STS-375	375	2006	27.39	92.43	$28,166.00
STMSW31144	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	5.34	65.65	$5,108.00
STMSW31145	ONTARIO STREET	STS-300-CSP	300	2003	13.89	65.65	$13,286.00
STMSW31146	ALBERT STREET	STS-375-CSP	375	2003	8.87	65.65	$9,124.00
STMSW31147	ALBERT STREET	STS-375-CSP	375	2003	13.49	65.65	$13,870.00
STMSW31148	ALBERT STREET	STS-300-CSP	300	2003	13.71	65.65	$13,115.00
STMSW31149	PRETTY RIVER PARKWAY	STS-600	600	2003	57.59	90.81	$74,272.00
STMSW31150	PRETTY RIVER PARKWAY	STS-375-CSP	375	2003	65.65	65.65	$67,512.00
STMSW31151	PRETTY RIVER PARKWAY	STS-375-CSP	375	2003	68.45	65.65	$70,387.00
STMSW31152	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	2.80	65.65	$2,981.00
STMSW31153	RAGLAN STREET	STS-300-CSP	300	2003	18.22	65.65	$17,437.00
STMSW31154	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	17.45	65.65	$18,581.00
STMSW31155	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	3.30	65.65	$3,512.00
STMSW31156	ONTARIO STREET	STS-900	900	2003	62.28	90.81	$102,585.00
STMSW31157	PRETTY RIVER PARKWAY	STS-600	600	2003	34.69	90.81	$44,739.00
STMSW31158	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	9.55	65.65	$9,139.00
STMSW31159	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	9.99	65.65	$9,562.00
STMSW31160	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	18.22	65.65	$17,428.00
STMSW31161	ALBERT STREET	STS-300-CSP	300	2003	4.22	65.65	$4,042.00
STMSW31162	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	3.32	65.65	$3,538.00
STMSW31163	PRETTY RIVER PARKWAY	STS-600	600	2003	2.50	90.81	$3,229.00
STMSW31164	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	16.35	65.65	$17,405.00
STMSW31165	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	9.88	65.65	$9,451.00
STMSW31166	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	8.76	65.65	$8,378.00
STMSW31167	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	8.34	65.65	$8,877.00
STMSW31168	PRETTY RIVER PARKWAY	STS-600	600	2003	42.32	90.81	$54,571.00
STMSW31169	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	47.49	65.65	$50,567.00
STMSW31170	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	5.13	65.65	$4,904.00
STMSW31171	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	21.03	65.65	$20,124.00
STMSW31172	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	16.45	65.65	$15,739.00
STMSW31173	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	20.33	65.65	$21,641.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31174	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	1.86	65.65	$1,982.00
STMSW31175	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	3.81	65.65	$3,649.00
STMSW31180	STE MARIE STREET	STS-375	375	2007	69.83	92.97	$71,803.00
STMSW31181	GEORGE STREET	STS-375	375	2007	78.76	92.97	$80,990.00
STMSW31182	STE MARIE STREET	STS-450	450	2007	75.69	92.97	$80,588.00
STMSW31183	STE MARIE STREET	STS-450	450	2007	81.00	92.97	$86,242.00
STMSW31186	TELFER ROAD	STS-300-CSP	300	2002	15.01	63.63	$14,359.00
STMSW31187	TELFER ROAD	STS-900	825	2002	67.68	90.27	$111,469.00
STMSW31194	TELFER ROAD	STS-900	825	2002	64.82	90.27	$106,768.00
STMSW31196	TELFER ROAD	STS-450	450	2002	10.69	90.27	$11,377.00
STMSW31197	TELFER ROAD	STS-900	825	2002	8.00	90.27	$13,183.00
STMSW31198	TELFER ROAD	STS-750	750	2002	17.71	90.27	$26,635.00
STMSW31199	TELFER ROAD	STS-600	600	2002	49.33	90.27	$63,620.00
STMSW31207	TELFER ROAD	STS-450	450	2002	32.99	90.27	$35,127.00
STMSW31208	TELFER ROAD	STS-600	600	2002	68.24	90.27	$88,001.00
STMSW31209	TELFER ROAD	STS-450	450	2002	55.33	90.27	$58,908.00
STMSW31210	TELFER ROAD	STS-450	450	2002	40.09	90.27	$42,686.00
STMSW31211	TELFER ROAD	STS-300	300	2002	58.15	90.27	$55,633.00
STMSW31212	PRETTY RIVER PARKWAY	STS-525	525	1973	92.00	68.33	$101,184.00
STMSW31213	PRETTY RIVER PARKWAY	STS-300-CSP	300	1973	22.75	5.04	$21,770.00
STMSW31214	TELFER ROAD	STS-600	600	2002	39.92	90.27	$51,482.00
STMSW31216	TELFER ROAD	STS-450-CSP	450	2002	8.03	63.63	$8,548.00
STMSW31247	High Street	STS-300-CSP	300	1969	5.10	1.00	$0.00
STMSW31248	High Street	STS-300-CSP	300	1984	20.18	27.27	$0.00
STMSW31249	FIFTH STREET	STS-375-CSP	375	1965	44.28	1.00	$45,531.00
STMSW31250	SPRUCE STREET	STS-600-CSP	600	1989	17.01	37.37	$21,939.00
STMSW31253	OAK STREET	STS-300-CSP	300	1950	12.28	1.00	$11,751.00
STMSW31254	FIFTH STREET	STS-300-CSP	300	1950	19.91	1.00	$19,053.00
STMSW31255	HURONTARIO STREET	STS-750	675	1967	51.49	61.33	$77,446.00
STMSW31259	SIXTH STREET	STS-300	300	1972	42.96	67.17	$41,105.00
STMSW31260	SIXTH STREET	STS-300	300	1972	60.51	67.17	$57,894.00
STMSW31261	SIXTH STREET	STS-525	525	1968	81.97	62.50	$90,155.00
STMSW31265	SIXTH STREET	STS-600	600	1972	89.81	67.17	$115,815.00
STMSW31266	SIXTH STREET	STS-600	600	1972	94.11	67.17	$121,368.00
STMSW31268	SIXTH STREET	STS-600	600	1972	34.54	67.17	$44,547.00
STMSW31269	SIXTH STREET	STS-600	600	1972	20.84	67.17	$26,871.00
STMSW31271	SIXTH STREET	STS-375	375	1971	120.85	66.00	$124,274.00
STMSW31274	FOURTH STREET EAST	STS-900	900	1920	75.11	1.00	$123,720.00
STMSW31278	HURONTARIO STREET	STS-900	900	1940	87.08	1.00	$143,429.00
STMSW31280	FOURTH STREET	STS-525	525	1977	87.17	73.00	$95,874.00
STMSW31282	HURONTARIO STREET	STS-750	750	1980	76.42	76.50	$114,949.00
STMSW31283	FOURTH STREET	STS-450-CSP	450	1977	60.41	13.12	$64,316.00
STMSW31284	OAK STREET	STS-450-CSP	400	2000	112.29	59.59	$119,556.00
STMSW31286	SPRUCE STREET	STS-300-CSP	300	1974	20.34	7.06	$19,463.00
STMSW31288	WATTS CRESCENT	STS-375	375	1977	41.70	73.00	$42,883.00
STMSW31289	WATTS CRESCENT	STS-375	375	1977	52.86	73.00	$54,354.00
STMSW31290	WATTS CRESCENT	STS-300	300	1990	25.19	83.78	$24,104.00
STMSW31292	SPRUCE STREET	STS-600	600	1974	106.08	69.50	$136,803.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31294	SEVENTH STREET	STS-375-CSP	375	1989	63.19	37.37	$64,976.00
STMSW31295	SPRUCE STREET	STS-375-CSP	375	1989	43.94	37.37	$45,181.00
STMSW31296	SPRUCE STREET	STS-600	600	1974	11.70	69.50	$15,086.00
STMSW31297	(blank)	STS-375-CSP	350	1967	12.10	1.00	$12,437.00
STMSW31298	COURTICE CRESCENT	STS-375-CSP	350	1967	35.54	1.00	$36,541.00
STMSW31299	COURTICE CRESCENT	STS-375-CSP	350	1967	12.12	1.00	$12,460.00
STMSW31300	COURTICE CRESCENT	STS-375-CSP	350	1967	9.82	1.00	$10,097.00
STMSW31301	COURTICE CRESCENT	STS-375-CSP	350	1967	11.65	1.00	$11,984.00
STMSW31302	COURTICE CRESCENT	STS-375-CSP	350	1967	11.94	1.00	$12,279.00
STMSW31303	(blank)	STS-375-CSP	350	1967	16.72	1.00	$17,191.00
STMSW31304	(blank)	STS-375-CSP	350	1967	11.87	1.00	$12,205.00
STMSW31305	(blank)	STS-375-CSP	350	1967	27.22	1.00	$27,985.00
STMSW31306	(blank)	STS-375-CSP	350	1967	12.10	1.00	$12,443.00
STMSW31307	(blank)	STS-375-CSP	350	1967	33.55	1.00	$34,498.00
STMSW31308	(blank)	STS-375-CSP	350	1967	11.82	1.00	$12,155.00
STMSW31309	(blank)	STS-375-CSP	350	1967	8.97	1.00	$9,223.00
STMSW31310	COURTICE CRESCENT	STS-375-CSP	350	1967	16.14	1.00	$16,596.00
STMSW31311	COURTICE CRESCENT	STS-375-CSP	350	1967	45.69	1.00	$46,986.00
STMSW31312	COURTICE CRESCENT	STS-375-CSP	350	1967	12.51	1.00	$12,863.00
STMSW31313	COURTICE CRESCENT	STS-375-CSP	350	1967	28.72	1.00	$29,531.00
STMSW31314	SPRUCE STREET	STS-600	600	1974	10.77	69.50	$13,884.00
STMSW31315	SPRUCE STREET	STS-600	600	1974	78.75	69.50	$101,552.00
STMSW31316	SPRUCE STREET	STS-375-CSP	350	1967	29.98	1.00	$30,832.00
STMSW31317	(blank)	STS-375-CSP	350	1967	27.30	1.00	$28,071.00
STMSW31318	(blank)	STS-375-CSP	350	1967	12.29	1.00	$12,641.00
STMSW31319	(blank)	STS-375-CSP	350	1967	11.96	1.00	$12,300.00
STMSW31320	(blank)	STS-375-CSP	350	1967	12.16	1.00	$12,506.00
STMSW31321	(blank)	STS-375-CSP	350	1967	12.07	1.00	$12,409.00
STMSW31322	(blank)	STS-375-CSP	350	1967	53.41	1.00	$54,920.00
STMSW31323	KELLS CRESCENT	STS-525	525	2005	6.59	91.89	$7,244.00
STMSW31325	LONG LANE	STS-600	600	2005	117.79	91.89	$151,901.00
STMSW31329	BARR STREET	STS-300	300	2006	3.15	92.43	$3,009.00
STMSW31331	TELFER ROAD	STS-450-CSP	450	1988	67.32	35.35	$71,677.00
STMSW31332	SMART COURT	STS-600-CSP	600	1985	10.70	29.29	$13,792.00
STMSW31333	TESKEY COURT	STS-600-CSP	600	1985	52.56	29.29	$67,779.00
STMSW31334	PARK ROAD	STS-450-CSP	400	1966	67.49	1.00	$71,861.00
STMSW31335	PARK ROAD	STS-450-CSP	400	1966	24.19	1.00	$25,755.00
STMSW31336	PARK ROAD	STS-450-CSP	400	1966	11.09	1.00	$11,802.00
STMSW31337	PARK ROAD	STS-450-CSP	400	1966	79.69	1.00	$84,843.00
STMSW31338	PARK ROAD	STS-450-CSP	400	1966	75.26	1.00	$80,134.00
STMSW31339	PARK ROAD	STS-450-CSP	400	1966	40.87	1.00	$43,517.00
STMSW31340	PARK ROAD	STS-450-CSP	400	1959	13.76	1.00	$14,648.00
STMSW31341	FERGUSON ROAD	STS-450-CSP	400	1966	11.85	1.00	$12,615.00
STMSW31342	FERGUSON ROAD	STS-450-CSP	400	1966	29.94	1.00	$31,872.00
STMSW31343	FERGUSON ROAD	STS-450-CSP	400	1966	11.54	1.00	$12,285.00
STMSW31344	FERGUSON ROAD	STS-450-CSP	400	1966	24.79	1.00	$26,398.00
STMSW31345	FERGUSON ROAD	STS-450-CSP	400	1966	12.69	1.00	$13,512.00
STMSW31346	FERGUSON ROAD	STS-450-CSP	400	1966	31.57	1.00	$33,617.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31347	(blank)	STS-450-CSP	400	1966	15.68	1.00	$16,699.00
STMSW31348	FERGUSON ROAD	STS-300-CSP	300	1966	53.26	1.00	$50,962.00
STMSW31349	FERGUSON ROAD	STS-300-CSP	300	1966	69.58	1.00	$66,572.00
STMSW31350	FERGUSON ROAD	STS-450-CSP	400	1966	11.25	1.00	$11,976.00
STMSW31351	FERGUSON ROAD	STS-450-CSP	400	1966	19.26	1.00	$20,507.00
STMSW31352	FERGUSON ROAD	STS-450-CSP	400	1966	24.53	1.00	$26,121.00
STMSW31353	OAK STREET	STS-300-CSP	300	1958	3.60	1.00	$3,446.00
STMSW31354	High Street	STS-300	300	2007	6.40	92.97	$6,124.00
STMSW31355	High Street	STS-300	300	2007	13.95	92.97	$13,347.00
STMSW31356	High Street	STS-300	300	2007	57.01	92.97	$54,544.00
STMSW31357	GRIFFIN ROAD	STS-300	300	2007	15.63	92.97	$14,955.00
STMSW31358	GRIFFIN ROAD	STS-300	300	2007	20.94	92.97	$20,036.00
STMSW31359	High Street	STS-300	300	2007	16.58	92.97	$15,862.00
STMSW31360	High Street	STS-300	300	2007	14.02	92.97	$13,418.00
STMSW31361	High Street	STS-300	300	2007	113.97	92.97	$109,047.00
STMSW31363	CHAMBERLAIN CRESCENT	STS-300	300	2007	9.10	92.97	$8,710.00
STMSW31364	High Street	STS-300	300	2012	14.96	95.68	$14,312.00
STMSW31365	High Street	STS-300	300	2012	89.16	95.68	$85,307.00
STMSW31366	High Street	STS-300	300	2012	19.20	95.68	$18,371.00
STMSW31367	High Street	STS-300	300	2012	6.01	95.68	$5,746.00
STMSW31368	High Street	STS-450	450	2012	57.65	95.68	$61,380.00
STMSW31369	High Street	STS-300	300	2012	18.90	95.68	$18,082.00
STMSW31370	High Street	STS-300	300	2012	6.91	95.68	$6,611.00
STMSW31371	High Street	STS-525	525	2012	11.87	95.68	$13,055.00
STMSW31372	High Street	STS-525	525	2012	39.38	95.68	$43,309.00
STMSW31373	(blank)	STS-300	300	2012	15.86	95.68	$15,177.00
STMSW31374	SIXTH STREET	STS-300	300	2012	13.45	95.68	$12,869.00
STMSW31375	SIXTH STREET	STS-300	300	2012	13.32	95.68	$12,740.00
STMSW31376	SIXTH STREET	STS-300	300	2012	9.76	95.68	$9,341.00
STMSW31378	FIFTH STREET	STS-525	525	2012	56.60	95.68	$62,248.00
STMSW31379	FIFTH STREET	STS-525	525	2012	2.14	95.68	$2,352.00
STMSW31380	High Street	STS-300-CSP	300	1981	18.78	21.20	$0.00
STMSW31381	High Street	STS-300-CSP	300	1981	19.16	21.20	$0.00
STMSW31382	High Street	STS-600	600	2007	16.54	92.97	$21,335.00
STMSW31383	(blank)	STS-450-CSP	400	1973	47.23	5.04	$50,286.00
STMSW31384	CAMPBELL STREET	STS-450-CSP	400	1973	30.48	5.04	$0.00
STMSW31385	CAMPBELL STREET	STS-450-CSP	400	1973	28.83	5.04	$0.00
STMSW31386	CAMPBELL STREET	STS-450-CSP	400	1973	19.35	5.04	$0.00
STMSW31387	CAMPBELL STREET	STS-450-CSP	400	1973	17.06	5.04	$18,160.00
STMSW31389	CAMPBELL STREET	STS-300-CSP	300	1973	99.75	5.04	$95,438.00
STMSW31390	CAMPBELL STREET	STS-300-CSP	300	1973	12.77	5.04	$12,215.00
STMSW31393	BROCK CRESCENT	STS-300-CSP	300	1972	6.92	3.02	$6,624.00
STMSW31394	BROCK CRESCENT	STS-300-CSP	300	1972	9.23	3.02	$8,826.00
STMSW31395	BROCK CRESCENT	STS-300-CSP	300	1972	32.39	3.02	$30,991.00
STMSW31396	BROCK CRESCENT	STS-300-CSP	300	1972	13.89	3.02	$13,290.00
STMSW31397	BROCK CRESCENT	STS-300-CSP	300	1972	9.85	3.02	$9,427.00
STMSW31398	BROCK CRESCENT	STS-300-CSP	300	1972	63.31	3.02	$60,575.00
STMSW31399	BROCK CRESCENT	STS-300-CSP	300	1972	29.43	3.02	$28,157.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31400	BROCK CRESCENT	STS-450-CSP	400	1972	60.96	3.02	$64,904.00
STMSW31401	(blank)	STS-300-CSP	300	1972	27.98	3.02	$26,769.00
STMSW31402	BROCK CRESCENT	STS-450-CSP	400	1972	71.51	3.02	$76,132.00
STMSW31403	BROCK CRESCENT	STS-300-CSP	300	1972	34.76	3.02	$33,260.00
STMSW31404	BROCK CRESCENT	STS-300-CSP	300	1972	21.33	3.02	$20,411.00
STMSW31405	(blank)	STS-300-CSP	300	1972	20.33	3.02	$19,449.00
STMSW31406	(blank)	STS-300-CSP	300	1972	12.31	3.02	$11,781.00
STMSW31407	(blank)	STS-300-CSP	300	1972	7.00	3.02	$6,699.00
STMSW31408	(blank)	STS-300-CSP	300	1972	13.58	3.02	$12,997.00
STMSW31409	(blank)	STS-300-CSP	300	1972	22.68	3.02	$21,704.00
STMSW31410	(blank)	STS-300-CSP	300	1972	14.45	3.02	$13,829.00
STMSW31411	(blank)	STS-300-CSP	300	1972	6.00	3.02	$5,739.00
STMSW31412	(blank)	STS-300-CSP	300	1972	6.39	3.02	$6,111.00
STMSW31413	(blank)	STS-300-CSP	300	1972	19.39	3.02	$18,550.00
STMSW31414	(blank)	STS-300-CSP	300	1972	5.82	3.02	$5,572.00
STMSW31415	(blank)	STS-300-CSP	300	1972	49.73	3.02	$47,582.00
STMSW31416	BROCK CRESCENT	STS-300-CSP	300	1972	12.29	3.02	$11,754.00
STMSW31417	BROCK CRESCENT	STS-300-CSP	300	1972	13.18	3.02	$12,613.00
STMSW31418	LOCKHART ROAD	STS-300-CSP	300	1972	8.52	3.02	$8,156.00
STMSW31419	BRYAN COURT	STS-300-CSP	300	1971	10.40	1.00	$9,952.00
STMSW31420	LOCKHART ROAD	STS-300-CSP	300	1971	8.40	1.00	$8,035.00
STMSW31421	BROCK CRESCENT	STS-300-CSP	300	1972	11.73	3.02	$11,218.00
STMSW31424	BRYAN COURT	STS-450-CSP	400	1968	13.30	1.00	$14,157.00
STMSW31425	BRYAN DRIVE	STS-450-CSP	400	1968	65.15	1.00	$69,368.00
STMSW31426	BRYAN DRIVE	STS-450-CSP	400	1968	66.22	1.00	$70,503.00
STMSW31427	BRYAN DRIVE	STS-450-CSP	400	1968	41.34	1.00	$44,016.00
STMSW31428	BRYAN DRIVE	STS-450-CSP	400	1968	22.02	1.00	$23,448.00
STMSW31429	BRYAN DRIVE	STS-450-CSP	400	1968	20.62	1.00	$21,957.00
STMSW31430	BRYAN DRIVE	STS-450-CSP	400	1968	23.50	1.00	$25,025.00
STMSW31431	BRYAN DRIVE	STS-450-CSP	400	1968	22.62	1.00	$24,082.00
STMSW31432	BRYAN DRIVE	STS-450-CSP	400	1968	21.80	1.00	$23,208.00
STMSW31433	BRYAN DRIVE	STS-450-CSP	400	1968	24.48	1.00	$26,067.00
STMSW31434	(blank)	STS-300-CSP	300	1968	6.09	1.00	$5,827.00
STMSW31435	(blank)	STS-450-CSP	400	1968	19.33	1.00	$20,579.00
STMSW31436	(blank)	STS-300-CSP	300	1968	8.95	1.00	$8,564.00
STMSW31437	(blank)	STS-450-CSP	400	1968	18.57	1.00	$19,776.00
STMSW31438	BRYAN DRIVE	STS-450-CSP	400	1968	44.33	1.00	$47,197.00
STMSW31439	BRYAN DRIVE	STS-450-CSP	400	1968	78.10	1.00	$83,150.00
STMSW31440	BRYAN DRIVE	STS-450-CSP	400	1968	42.92	1.00	$45,698.00
STMSW31441	BRYAN DRIVE	STS-450-CSP	400	1968	14.36	1.00	$15,285.00
STMSW31442	BRYAN DRIVE	STS-450-CSP	400	1968	36.87	1.00	$39,258.00
STMSW31444	(blank)	STS-375-CSP	375	1972	26.07	3.02	$0.00
STMSW31445	(blank)	STS-375-CSP	375	1972	6.22	3.02	$0.00
STMSW31446	(blank)	STS-375-CSP	375	1972	5.22	3.02	$0.00
STMSW31447	(blank)	STS-375-CSP	375	1972	5.48	3.02	$0.00
STMSW31448	(blank)	STS-375-CSP	375	1972	12.31	3.02	$0.00
STMSW31449	(blank)	STS-375-CSP	375	1972	11.39	3.02	$0.00
STMSW31450	(blank)	STS-375-CSP	375	1972	32.19	3.02	$0.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31459	CRANBERRY SURF	STS-525	500	1972	87.01	67.17	$95,689.00
STMSW31460	BALSAM STREET	STS-300-CSP	300	1966	5.32	1.00	$0.00
STMSW31461	BALSAM STREET	STS-300-CSP	300	1966	13.93	1.00	$0.00
STMSW31462	BALSAM STREET	STS-300-CSP	300	1970	14.07	1.00	$0.00
STMSW31463	BALSAM STREET	STS-300-CSP	300	1970	4.94	1.00	$0.00
STMSW31464	BALSAM STREET	STS-300-CSP	300	1970	5.50	1.00	$0.00
STMSW31465	BALSAM STREET	STS-300-CSP	300	1970	9.44	1.00	$0.00
STMSW31466	BALSAM STREET	STS-300-CSP	300	1970	13.96	1.00	$0.00
STMSW31467	BALSAM STREET	STS-300-CSP	300	1970	5.17	1.00	$0.00
STMSW31468	BALSAM STREET	STS-300-CSP	300	1970	2.91	1.00	$0.00
STMSW31469	BALSAM STREET	STS-300-CSP	300	1970	13.92	1.00	$0.00
STMSW31470	BALSAM STREET	STS-300-CSP	300	1970	3.66	1.00	$0.00
STMSW31471	BALSAM STREET	STS-300-CSP	300	1970	6.23	1.00	$0.00
STMSW31472	BALSAM STREET	STS-300-CSP	300	1970	7.49	1.00	$0.00
STMSW31473	BALSAM STREET	STS-300-CSP	300	1970	13.87	1.00	$0.00
STMSW31474	BALSAM STREET	STS-600	600	1970	17.22	64.83	$22,211.00
STMSW31475	OLD MOUNTAIN ROAD	STS-300-CSP	300	1966	5.71	1.00	$5,465.00
STMSW31476	MOUNTAIN ROAD	STS-750	750	1966	93.89	60.17	$141,226.00
STMSW31477	MOUNTAIN ROAD	STS-750	750	1966	57.88	60.17	$87,060.00
STMSW31478	MOUNTAIN ROAD	STS-600	600	1966	5.07	60.17	$6,532.00
STMSW31479	OLD MOUNTAIN ROAD	STS-450	450	1966	36.08	60.17	$38,413.00
STMSW31480	OLD MOUNTAIN ROAD	STS-600	600	1966	38.65	60.17	$49,838.00
STMSW31481	OLD MOUNTAIN ROAD	STS-600	600	1966	6.17	60.17	$7,952.00
STMSW31486	OLD MOUNTAIN ROAD	STS-600	600	2006	14.00	92.43	$18,054.00
STMSW31487	SHERWOOD STREET	STS-375	375	2002	18.68	90.27	$19,210.00
STMSW31488	ALYSSA DRIVE	STS-375	375	2002	4.23	90.27	$4,353.00
STMSW31489	ALYSSA DRIVE	STS-375	375	2002	8.46	90.27	$8,696.00
STMSW31490	CONNOR AVENUE	STS-375	375	2004	7.94	91.35	$8,166.00
STMSW31491	CONNOR AVENUE	STS-375	375	2004	2.89	91.35	$2,970.00
STMSW31492	CONNOR AVENUE	STS-375	375	2004	1.85	91.35	$1,904.00
STMSW31493	CONNOR AVENUE	STS-375	375	2004	1.51	91.35	$1,551.00
STMSW31494	CONNOR AVENUE	STS-375	375	2004	1.33	91.35	$1,370.00
STMSW31495	CONNOR AVENUE	STS-375	375	2002	0.87	90.27	$898.00
STMSW31496	CONNOR AVENUE	STS-375	375	2002	0.50	90.27	$514.00
STMSW31497	ALYSSA DRIVE	STS-375	375	2002	8.29	90.27	$8,526.00
STMSW31498	ALYSSA DRIVE	STS-375	375	2002	1.97	90.27	$2,023.00
STMSW31499	CONNOR AVENUE	STS-375	375	2004	2.12	91.35	$2,178.00
STMSW31500	CONNOR AVENUE	STS-375	375	2004	1.59	91.35	$1,633.00
STMSW31501	KAYLA CRESCENT	STS-375	375	2011	2.00	95.14	$2,056.00
STMSW31502	CULLEN COURT	STS-375	375	2002	8.59	90.27	$8,830.00
STMSW31503	ALYSSA DRIVE	STS-375	375	2002	7.75	90.27	$7,972.00
STMSW31504	ALYSSA DRIVE	STS-375	375	2002	1.16	90.27	$1,192.00
STMSW31505	KAYLA CRESCENT	STS-375	375	2011	2.00	95.14	$2,056.00
STMSW31506	CONNOR AVENUE	STS-375	375	2004	0.76	91.35	$778.00
STMSW31507	ALYSSA DRIVE	STS-375	375	2002	1.39	90.27	$1,431.00
STMSW31508	BROOKE AVENUE	STS-375	375	2006	7.57	92.43	$7,780.00
STMSW31509	BROOKE AVENUE	STS-375	375	2002	0.85	90.27	$875.00
STMSW31510	BROOKE AVENUE	STS-375	375	2002	7.92	90.27	$8,146.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31511	BROOKE AVENUE	STS-375	375	2002	5.04	90.27	$5,178.00
STMSW31512	BROOKE AVENUE	STS-375	375	2006	2.78	92.43	$2,858.00
STMSW31513	CONNOR AVENUE	STS-375	375	2006	7.85	92.43	$8,072.00
STMSW31514	STE MARIE STREET	STS-450-CSP	450	1968	50.28	1.00	$53,532.00
STMSW31530	CAMPBELL STREET	STS-300-CSP	300	1972	48.86	3.02	$46,746.00
STMSW31531	CAMPBELL STREET	STS-450-CSP	400	1972	3.97	3.02	$4,224.00
STMSW31556	NAPIER STREET	STS-450-CSP	450	1950	10.64	1.00	$11,332.00
STMSW31557	Elm Street	STS-300-CSP	300	1964	8.39	1.00	$0.00
STMSW31614	RIVER RUN	STS-450-CSP	450	2003	43.78	65.65	$46,613.00
STMSW31617	RIVER RUN	STS-450-CSP	450	2003	47.15	65.65	$50,198.00
STMSW31629	High Street	STS-450	450	2005	29.59	91.89	$31,504.00
STMSW31637	(blank)	STS-300	300	2005	28.82	91.89	$27,578.00
STMSW31644	High Street	STS-300-CSP	300	1969	14.47	1.00	$0.00
STMSW31645	High Street	STS-600-CSP	600	1964	7.31	1.00	$9,426.00
STMSW31646	BALSAM STREET	STS-525-CSP	500	1964	16.54	1.00	$18,190.00
STMSW31648	FIRST STREET	STS-300-CSP	300	2000	18.51	59.59	$17,714.00
STMSW31649	OAK STREET	STS-300-CSP	300	1958	26.26	1.00	$25,125.00
STMSW31650	OAK STREET	STS-300-CSP	300	1958	21.81	1.00	$20,865.00
STMSW31651	OAK STREET	STS-300-CSP	300	1958	26.85	1.00	$25,688.00
STMSW31652	OAK STREET	STS-450-CSP	400	1958	71.75	1.00	$76,396.00
STMSW31653	OAK STREET	STS-450-CSP	400	1958	2.98	1.00	$3,173.00
STMSW31654	OAK STREET	STS-450-CSP	400	1958	28.71	1.00	$30,566.00
STMSW31655	OAK STREET	STS-450-CSP	400	1958	36.61	1.00	$38,977.00
STMSW31656	OAK STREET	STS-450-CSP	400	1958	36.37	1.00	$38,718.00
STMSW31657	OAK STREET	STS-450-CSP	400	1958	3.63	1.00	$3,863.00
STMSW31658	PARK ROAD	STS-450-CSP	450	1966	21.55	1.00	$22,942.00
STMSW31659	CAMERON STREET	STS-450-CSP	450	1966	43.37	1.00	$46,172.00
STMSW31660	CAMERON STREET	STS-300-CSP	300	1959	10.80	1.00	$10,330.00
STMSW31661	CAMERON STREET	STS-450-CSP	400	1959	31.77	1.00	$33,820.00
STMSW31666	SEVENTH STREET	STS-750-CSP	675	1974	89.09	7.06	$134,003.00
STMSW31667	SEVENTH STREET	STS-750	675	1974	48.84	69.50	$73,465.00
STMSW31669	SPRUCE STREET	STS-375-CSP	375	1967	77.78	1.00	$79,981.00
STMSW31670	SPRUCE STREET	STS-375-CSP	375	1967	11.82	1.00	$12,151.00
STMSW31671	SPRUCE STREET	STS-375-CSP	375	1967	48.70	1.00	$50,074.00
STMSW31672	SPRUCE STREET	STS-375-CSP	375	1967	42.34	1.00	$43,540.00
STMSW31673	GIBBARD CRESCENT	STS-375-CSP	375	1967	28.25	1.00	$29,048.00
STMSW31674	GIBBARD CRESCENT	STS-375-CSP	375	1967	12.33	1.00	$12,678.00
STMSW31678	COLLINS STREET	STS-300	300	2007	119.24	92.97	$114,086.00
STMSW31683	MARKET STREET	STS-300	300	2010	6.26	94.59	$5,985.00
STMSW31684	MARKET STREET	STS-300	300	2010	9.08	94.59	$8,692.00
STMSW31690	ST PAUL STREET	STS-300	300	2009	63.34	94.05	$60,608.00
STMSW31700	SIMCOE STREET	STS-1050	1050	2007	120.49	92.97	$245,452.00
STMSW31706	SIMCOE STREET	STS-750	750	2007	60.52	92.97	$91,033.00
STMSW31735	Second Street	STS-375-CSP	375	1982	23.14	23.22	$23,793.00
STMSW31748	HURONTARIO STREET	STS-300-CSP	275	1980	5.70	19.18	$5,452.00
STMSW31749	HURONTARIO STREET	STS-300-CSP	275	1980	17.07	19.18	$16,328.00
STMSW31750	HURONTARIO STREET	STS-300-CSP	275	1980	22.84	19.18	$21,849.00
STMSW31751	HURONTARIO STREET	STS-300-CSP	275	1980	29.81	19.18	$28,524.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31752	HURONTARIO STREET	STS-300-CSP	275	1980	5.16	19.18	$4,941.00
STMSW31753	HURONTARIO STREET	STS-300-CSP	275	1980	13.24	19.18	$12,665.00
STMSW31754	HURONTARIO STREET	STS-300-CSP	275	1980	19.06	19.18	$18,232.00
STMSW31755	HURONTARIO STREET	STS-300-CSP	275	1980	11.84	19.18	$11,332.00
STMSW31756	HURONTARIO STREET	STS-300-CSP	275	1980	19.05	19.18	$18,225.00
STMSW31757	HURONTARIO STREET	STS-300-CSP	275	1980	11.13	19.18	$10,647.00
STMSW31758	HURONTARIO STREET	STS-300-CSP	275	1980	5.92	19.18	$5,659.00
STMSW31759	HURONTARIO STREET	STS-300-CSP	275	1980	12.58	19.18	$12,035.00
STMSW31760	HURONTARIO STREET	STS-300-CSP	275	1980	11.26	19.18	$10,772.00
STMSW31761	HURONTARIO STREET	STS-300-CSP	275	1980	5.74	19.18	$5,493.00
STMSW31762	HURONTARIO STREET	STS-300-CSP	275	1980	12.71	19.18	$12,156.00
STMSW31763	HURONTARIO STREET	STS-300-CSP	275	1980	11.59	19.18	$11,089.00
STMSW31764	HURONTARIO STREET	STS-300-CSP	275	1980	11.61	19.18	$11,107.00
STMSW31765	HURONTARIO STREET	STS-300-CSP	275	1980	19.23	19.18	$18,397.00
STMSW31808	BALSAM STREET	STS-300-CSP	300	1964	8.71	1.00	$0.00
STMSW31809	BALSAM STREET	STS-300-CSP	300	1964	6.51	1.00	$0.00
STMSW31810	BALSAM STREET	STS-300-CSP	300	1964	11.39	1.00	$0.00
STMSW31811	SPRUCE STREET	STS-300-CSP	300	1964	24.42	1.00	$23,368.00
STMSW31812	SPRUCE STREET	STS-1050	1050	1964	14.21	57.83	$28,949.00
STMSW31813	HICKORY STREET	STS-1350	1350	1964	11.11	57.83	$31,613.00
STMSW31819	Second Street	STS-750	675	1991	64.05	84.32	$96,332.00
STMSW31824	Second Street	STS-600	600	1991	61.94	84.32	$79,873.00
STMSW31825	Second Street	STS-600	600	1991	58.19	84.32	$75,041.00
STMSW31828	Second Street	STS-450	450	2010	16.72	94.59	$17,805.00
STMSW31831	BEECH STREET	STS-600	600	1988	58.98	82.70	$76,063.00
STMSW31835	MAPLE STREET	STS-375-CSP	375	1974	6.96	7.06	$7,161.00
STMSW31838	ONTARIO STREET	STS-750	675	1979	60.72	75.33	$91,332.00
STMSW31856	MAPLE STREET	STS-450-CSP	450	1992	13.31	43.43	$14,172.00
STMSW31872	HURON STREET	STS-750	750	1920	5.66	1.00	$8,507.00
STMSW31875	HURON STREET	STS-1350	1350	1920	34.16	1.00	$97,173.00
STMSW31876	ST PAUL STREET	STS-900	900	1974	31.66	69.50	$52,141.00
STMSW31878	HURON STREET	STS-900	900	1974	15.01	69.50	$24,721.00
STMSW31881	MAPLE STREET	STS-450-CSP	450	1992	20.02	43.43	$21,316.00
STMSW31922	MINNESOTA STREET	STS-450	450	2006	46.44	92.43	$49,439.00
STMSW31923	MINNESOTA STREET	STS-300	300	2006	21.52	92.43	$20,592.00
STMSW31950	THIRD STREET	STS-600	600	2008	45.08	93.51	$58,131.00
STMSW31952	Second Street	STS-450-CSP	400	2008	45.89	75.76	$48,857.00
STMSW31953	SHERWOOD STREET	STS-375	375	2010	13.39	94.59	$13,766.00
STMSW31954	BROOKE AVENUE	STS-450	450	2011	10.03	95.14	$10,683.00
STMSW31955	KAYLA CRESCENT	STS-300	300	2011	12.59	95.14	$12,046.00
STMSW31956	KAYLA CRESCENT	STS-450	450	2011	8.54	95.14	$9,089.00
STMSW31957	KAYLA CRESCENT	STS-375	375	2011	1.41	95.14	$1,445.00
STMSW31958	KAYLA CRESCENT	STS-375	375	2011	7.76	95.14	$7,976.00
STMSW31959	CONNOR AVENUE	STS-375	375	2004	19.65	91.35	$20,202.00
STMSW31960	DILLON DRIVE	STS-300	300	1984	7.89	80.54	$7,550.00
STMSW31961	PRETTY RIVER PARKWAY	STS-300-CSP	300	2003	19.81	65.65	$18,952.00
STMSW31962	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	12.93	65.65	$13,769.00
STMSW31963	PRETTY RIVER PARKWAY	STS-525	525	2003	43.18	90.81	$47,485.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW31964	PRETTY RIVER PARKWAY	STS-600	600	2003	59.35	90.81	$76,533.00
STMSW31965	PRETTY RIVER PARKWAY	STS-900	900	2003	52.53	90.81	$86,529.00
STMSW31966	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	15.79	65.65	$16,807.00
STMSW31967	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	16.98	65.65	$18,079.00
STMSW31969	NIAGARA STREET	STS-300-CSP	300	1970	10.91	1.00	$10,437.00
STMSW31970	NIAGARA STREET	STS-300-CSP	300	1973	25.19	5.04	$24,103.00
STMSW31971	HURON STREET	STS-750	675	1955	90.82	47.33	$136,601.00
STMSW31972	HURON STREET	STS-1350	1350	2020	12.98	100.00	$36,929.00
STMSW31973	HURON STREET	STS-1350	1350	2020	15.64	100.00	$44,498.00
STMSW31974	HURON STREET	STS-300-CSP	300	1973	18.55	5.04	$17,744.00
STMSW31975	NIAGARA STREET	STS-525	525	1973	79.92	68.33	$87,891.00
STMSW31976	HURON STREET	STS-525	525	1973	82.26	68.33	$90,473.00
STMSW31977	SUNSET COURT	STS-450-CSP	450	1990	97.00	39.39	$103,275.00
STMSW31978	HURON STREET	STS-450-CSP	450	1970	18.04	1.00	$19,210.00
STMSW31980	HURON STREET	STS-600	600	1955	82.67	47.33	$106,606.00
STMSW31981	HURON STREET	STS-750	675	1950	9.17	26.14	$13,785.00
STMSW31983	WALNUT STREET	STS-600	600	1980	13.88	76.50	$17,902.00
STMSW31985	NINTH STREET	STS-1350	1350	1980	120.18	76.50	$341,829.00
STMSW31986	NINTH STREET	STS-525-CSP	525	1965	54.92	1.00	$60,403.00
STMSW31988	NINTH STREET	STS-1350	1250	1965	94.36	59.00	$268,386.00
STMSW31989	(blank)	STS-450-CSP	450	1978	6.34	15.14	$6,751.00
STMSW31990	OAK STREET	STS-1350	1250	1965	30.21	59.00	$85,938.00
STMSW31991	TENTH STREET	STS-450-CSP	450	1978	269.42	15.14	$286,847.00
STMSW31992	MASON ROAD	STS-525	500	2008	3.46	93.51	$3,810.00
STMSW31993	CAMPBELL STREET	STS-525-CSP	500	1973	65.51	5.04	$72,042.00
STMSW31994	CAMPBELL STREET	STS-900-CSP	900	1972	74.14	3.02	$122,123.00
STMSW31995	TELFER ROAD	STS-600	600	1972	57.54	67.17	$74,209.00
STMSW31996	TELFER ROAD	STS-300-CSP	300	1972	18.11	3.02	$17,323.00
STMSW31997	CAMPBELL STREET	STS-600	600	1972	20.96	67.17	$27,034.00
STMSW31998	CAMPBELL STREET	STS-900	900	1972	99.95	67.17	$164,623.00
STMSW31999	TENTH STREET	STS-1350	1250	1965	168.16	59.00	$478,311.00
STMSW32000	CAMERON STREET	STS-450-CSP	450	1969	303.37	1.00	$323,001.00
STMSW32001	OAK STREET	STS-1350	1250	1978	161.90	74.17	$460,506.00
STMSW32002	MAPLE STREET	STS-450	450	2008	17.79	93.51	$18,937.00
STMSW32003	WALNUT STREET	STS-1500	1500	1979	127.50	75.33	$417,359.00
STMSW32004	CAMERON STREET	STS-1350	1250	1977	108.04	73.00	$307,318.00
STMSW32005	MASON ROAD	STS-900	900	1977	64.68	73.00	$106,529.00
STMSW32006	RHONDA ROAD	STS-1350	1250	1977	129.46	73.00	$368,225.00
STMSW32007	MASON ROAD	STS-1350	1250	1977	47.53	73.00	$135,194.00
STMSW32009	FIFTH STREET	STS-300	300	2010	43.64	94.59	$41,754.00
STMSW32010	FIFTH STREET	STS-300	300	2011	37.12	95.14	$35,512.00
STMSW32011	BEECH STREET	STS-300	300	2010	73.08	94.59	$69,918.00
STMSW32012	BEECH STREET	STS-375	375	2010	73.24	94.59	$75,308.00
STMSW32013	BEECH STREET	STS-375	375	2010	61.10	94.59	$62,824.00
STMSW32014	BEECH STREET	STS-450	450	2010	15.22	94.59	$16,203.00
STMSW32015	MAPLE STREET	STS-300-CSP	300	1975	10.24	9.08	$9,795.00
STMSW32016	FIFTH STREET	STS-300-CSP	300	1975	11.24	9.08	$10,752.00
STMSW32017	FIFTH STREET	STS-300-CSP	300	1975	115.14	9.08	$110,163.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32019	THIRD STREET	STS-450	450	2010	65.83	94.59	$70,085.00
STMSW32020	THIRD STREET	STS-600	600	1987	40.41	82.16	$52,114.00
STMSW32021	THIRD STREET	STS-750	675	1987	35.60	82.16	$53,541.00
STMSW32022	THIRD STREET	STS-525	525	1987	29.51	82.16	$32,452.00
STMSW32023	PEEL STREET	STS-450-CSP	450	1994	89.71	47.47	$95,509.00
STMSW32029	STE MARIE STREET	STS-375	375	2007	55.03	92.97	$56,588.00
STMSW32030	HURONTARIO STREET	STS-300	300	2007	13.23	92.97	$12,655.00
STMSW32031	BRYAN COURT	STS-600	600	1968	297.02	62.50	$383,037.00
STMSW32034	HURONTARIO STREET	STS-300-CSP	300	1966	7.42	1.00	$7,099.00
STMSW32035	HURONTARIO STREET	STS-450	400	1966	8.24	60.17	$8,776.00
STMSW32038	ELIOTT AVENUE	STS-1050	1050	1980	88.75	76.50	$180,795.00
STMSW32039	RIVER RUN	STS-300-CSP	300	2003	63.33	65.65	$60,589.00
STMSW32043	BEECH STREET	STS-450	450	2010	65.92	94.59	$70,180.00
STMSW32044	BEECH STREET	STS-450	450	2010	77.74	94.59	$82,764.00
STMSW32045	BEECH STREET	STS-300	300	2010	35.23	94.59	$33,712.00
STMSW32046	BEECH STREET	STS-450	450	2010	32.18	94.59	$34,259.00
STMSW32047	ALYSSA DRIVE	STS-375	375	2011	15.64	95.14	$16,079.00
STMSW32048	ALYSSA DRIVE	STS-375	375	2002	7.29	90.27	$7,498.00
STMSW32049	ALYSSA DRIVE	STS-375	375	2011	12.03	95.14	$12,367.00
STMSW32050	ALYSSA DRIVE	STS-375	375	2002	8.09	90.27	$8,320.00
STMSW32051	CONNOR AVENUE	STS-375	375	2004	7.05	91.35	$7,248.00
STMSW32052	CONNOR AVENUE	STS-375	375	2004	6.88	91.35	$7,079.00
STMSW32053	CONNOR AVENUE	STS-375	375	2004	7.29	91.35	$7,497.00
STMSW32054	CONNOR AVENUE	STS-375	375	2004	7.20	91.35	$7,405.00
STMSW32055	CONNOR AVENUE	STS-375	375	2004	7.53	91.35	$7,746.00
STMSW32056	CONNOR AVENUE	STS-375	375	2004	7.15	91.35	$7,347.00
STMSW32057	ALYSSA DRIVE	STS-375	375	2002	15.95	90.27	$16,402.00
STMSW32058	ALYSSA DRIVE	STS-375	375	2002	7.12	90.27	$7,324.00
STMSW32061	CEDAR STREET	STS-375	375	2008	66.79	93.51	$68,675.00
STMSW32063	CEDAR STREET	STS-375	375	2008	81.33	93.51	$83,631.00
STMSW32065	CEDAR STREET	STS-450	450	2008	72.35	93.51	$77,034.00
STMSW32066	CEDAR STREET	STS-375	375	2008	25.96	93.51	$26,699.00
STMSW32069	CEDAR STREET	STS-525	525	2008	75.00	93.51	$82,483.00
STMSW32070	WALNUT STREET	STS-300-CSP	300	1973	14.32	5.04	$13,697.00
STMSW32071	WALNUT STREET	STS-300-CSP	300	1973	12.47	5.04	$11,928.00
STMSW32072	THIRD STREET	STS-450-CSP	450	1973	86.31	5.04	$91,894.00
STMSW32073	THIRD STREET	STS-450-CSP	450	1973	136.28	5.04	$145,099.00
STMSW32076	THIRD STREET	STS-525	525	2008	68.00	93.51	$74,784.00
STMSW32078	THIRD STREET	STS-600	600	2008	57.90	93.51	$74,661.00
STMSW32079	CEDAR STREET	STS-600	600	2008	37.88	93.51	$48,849.00
STMSW32080	THIRD STREET	STS-300	300	2008	35.00	93.51	$33,487.00
STMSW32081	NETTLETON COURT	STS-450-CSP	450	1972	47.01	3.02	$50,054.00
STMSW32082	NETTLETON COURT	STS-450-CSP	450	1972	39.50	3.02	$42,051.00
STMSW32099	HIGHLANDS CRESCENT	STS-300-CSP	300	2002	83.16	63.63	$79,567.00
STMSW32100	GEORGIAN MEADOWS DRIVE	STS-450-CSP	450	2002	30.33	63.63	$32,287.00
STMSW32111	GEORGIAN MEADOWS DRIVE	STS-900	900	2002	40.09	90.27	$66,031.00
STMSW32114	GEORGIAN MEADOWS DRIVE	STS-600	600	2002	41.54	90.27	$53,575.00
STMSW32116	GEORGIAN MEADOWS DRIVE	STS-525	525	2002	46.89	90.27	$51,571.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32118	GEORGIAN MEADOWS DRIVE	STS-525	525	2002	89.44	90.27	$98,368.00
STMSW32124	GEORGIAN MEADOWS DRIVE	STS-375-CSP	375	2002	80.34	63.63	$82,608.00
STMSW32125	GEORGIAN MEADOWS DRIVE	STS-300-CSP	300	2002	56.78	63.63	$54,324.00
STMSW32126	GEORGIAN MEADOWS DRIVE	STS-375-CSP	375	2002	92.72	63.63	$95,346.00
STMSW32142	HIGHLANDS CRESCENT	STS-375-CSP	375	2002	101.83	63.63	$104,712.00
STMSW32145	HIGHLANDS CRESCENT	STS-300-CSP	300	2002	83.08	63.63	$79,490.00
STMSW32155	MARINA CRESCENT	STS-900	900	2002	86.80	90.27	$142,962.00
STMSW32156	MARINA CRESCENT	STS-750	750	2002	21.81	90.27	$32,807.00
STMSW32159	MARINA CRESCENT	STS-375-CSP	375	2002	101.11	63.63	$103,968.00
STMSW32160	MARINA CRESCENT	STS-750	750	2002	45.73	90.27	$68,775.00
STMSW32163	MARINA CRESCENT	STS-900	900	2002	103.50	90.27	$170,468.00
STMSW32164	MARINA CRESCENT	STS-750	750	2002	9.14	90.27	$13,749.00
STMSW32172	BIRCH STREET	STS-375	375	2006	47.22	92.43	$48,560.00
STMSW32173	BIRCH STREET	STS-300	300	2006	63.25	92.43	$60,520.00
STMSW32174	BEECH STREET	STS-300	300	2006	70.70	92.43	$67,644.00
STMSW32203	NETTLETON COURT	STS-375-CSP	375	1972	66.30	3.02	$68,171.00
STMSW32204	NETTLETON COURT	STS-375-CSP	375	1972	14.45	3.02	$14,855.00
STMSW32205	SHEFFIELD CRESCENT	STS-450-CSP	450	1972	68.42	3.02	$72,850.00
STMSW32206	DAWSON DRIVE	STS-750	750	1988	69.71	82.70	$104,845.00
STMSW32207	High Street	STS-525-CSP	525	1981	47.56	21.20	$52,302.00
STMSW32208	High Street	STS-300	300	2012	8.31	95.68	$7,948.00
STMSW32209	FIFTH STREET	STS-525-CSP	525	1981	61.79	21.20	$67,953.00
STMSW32210	High Street	STS-300-CSP	300	1981	18.73	21.20	$0.00
STMSW32211	High Street	STS-600-CSP	600	1981	60.29	21.20	$77,754.00
STMSW32212	High Street	STS-600-CSP	600	1981	60.71	21.20	$78,285.00
STMSW32213	High Street	STS-300-CSP	300	1984	13.88	27.27	$0.00
STMSW32214	High Street	STS-750-CSP	675	1984	58.70	27.27	$88,285.00
STMSW32215	High Street	STS-600-CSP	600	1984	19.83	27.27	$25,569.00
STMSW32216	High Street	STS-750-CSP	675	1984	35.78	27.27	$53,811.00
STMSW32217	High Street	STS-300-CSP	300	1984	14.10	27.27	$0.00
STMSW32218	High Street	STS-750-CSP	750	1984	62.81	27.27	$94,468.00
STMSW32219	High Street	STS-300-CSP	300	1984	13.94	27.27	$0.00
STMSW32220	High Street	STS-750	750	1984	59.41	80.54	$89,356.00
STMSW32221	High Street	STS-300-CSP	300	1984	13.59	27.27	$0.00
STMSW32222	High Street	STS-900	900	1984	51.28	80.54	$84,468.00
STMSW32223	High Street	STS-300-CSP	300	1984	13.18	27.27	$0.00
STMSW32224	High Street	STS-900	900	1984	45.90	80.54	$75,608.00
STMSW32225	High Street	STS-900	825	1984	17.73	80.54	$29,196.00
STMSW32226	High Street	STS-1050	1050	1984	37.46	80.54	$76,302.00
STMSW32228	High Street	STS-1050	1050	1984	27.83	80.54	$56,699.00
STMSW32229	High Street	STS-300-CSP	300	1984	16.03	27.27	$0.00
STMSW32230	High Street	STS-1050	1050	1984	60.27	80.54	$122,768.00
STMSW32231	High Street	STS-300-CSP	300	1984	18.79	27.27	$0.00
STMSW32232	High Street	STS-1050	1050	1984	60.16	80.54	$122,550.00
STMSW32234	High Street	STS-300-CSP	300	1984	18.99	27.27	$0.00
STMSW32235	Second Street	STS-1050	1050	1969	50.67	63.67	$103,216.00
STMSW32236	High Street	STS-1050	1050	1969	87.41	63.67	$178,065.00
STMSW32237	High Street	STS-300-CSP	300	1969	14.69	1.00	$0.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32238	High Street	STS-600	550	1964	7.27	57.83	$9,378.00
STMSW32239	FIRST STREET EXTENSION	STS-525	500	1964	10.27	57.83	$11,295.00
STMSW32240	FIRST STREET	STS-300-CSP	300	1964	4.98	1.00	$4,760.00
STMSW32241	FIRST STREET	STS-300-CSP	300	1964	10.12	1.00	$9,682.00
STMSW32242	FIRST STREET	STS-300-CSP	300	1964	7.59	1.00	$7,259.00
STMSW32243	FIRST STREET	STS-300-CSP	300	1964	18.10	1.00	$17,315.00
STMSW32244	FIRST STREET	STS-1050-CSP	1050	1964	66.45	1.00	$135,373.00
STMSW32245	Elm Street	STS-300-CSP	300	1967	24.41	1.00	$23,352.00
STMSW32246	SPRUCE STREET	STS-300-CSP	300	1964	7.21	1.00	$6,897.00
STMSW32247	SPRUCE STREET	STS-900-CSP	900	1989	54.82	37.37	$90,294.00
STMSW32248	SPRUCE STREET	STS-1050-CSP	1050	1964	6.73	1.00	$13,710.00
STMSW32249	SPRUCE STREET	STS-900-CSP	900	1989	29.44	37.37	$48,482.00
STMSW32250	SPRUCE STREET	STS-900-CSP	900	1989	42.85	37.37	$70,577.00
STMSW32251	SPRUCE STREET	STS-900-CSP	900	1989	151.40	37.37	$249,363.00
STMSW32252	Second Street	STS-900-CSP	900	1989	16.75	37.37	$27,596.00
STMSW32253	THIRD STREET	STS-600-CSP	600	1989	208.36	37.37	$268,705.00
STMSW32254	FOURTH STREET	STS-600-CSP	600	1989	22.65	37.37	$29,213.00
STMSW32255	SPRUCE STREET	STS-600-CSP	600	1989	35.20	37.37	$45,399.00
STMSW32256	SPRUCE STREET	STS-600-CSP	600	1989	36.42	37.37	$46,967.00
STMSW32257	SPRUCE STREET	STS-600-CSP	600	1989	60.24	37.37	$77,687.00
STMSW32258	SPRUCE STREET	STS-600-CSP	600	1989	20.02	37.37	$25,818.00
STMSW32259	WATTS CRESCENT	STS-600-CSP	600	1989	20.31	37.37	$26,188.00
STMSW32260	FIFTH STREET	STS-600-CSP	600	1989	38.73	37.37	$49,946.00
STMSW32261	SPRUCE STREET	STS-900-CSP	900	1989	102.40	37.37	$168,666.00
STMSW32262	SPRUCE STREET	STS-900-CSP	900	1989	48.87	37.37	$80,499.00
STMSW32263	FIRST STREET	STS-1350	1350	1964	67.92	57.83	$193,192.00
STMSW32264	FIRST STREET	STS-300-CSP	300	1964	23.09	1.00	$22,093.00
STMSW32267	KATHERINE STREET	STS-750	750	1968	29.75	62.50	$44,744.00
STMSW32268	KATHERINE STREET	STS-750	750	1968	22.69	62.50	$34,125.00
STMSW32269	KATHERINE STREET	STS-750	750	1968	10.89	62.50	$16,381.00
STMSW32270	KATHERINE STREET	STS-750	750	1968	11.87	62.50	$17,846.00
STMSW32271	BIRCH STREET	STS-300-CSP	300	1920	9.55	1.00	$9,136.00
STMSW32273	FRANCES DRIVE	STS-525	525	2005	4.30	91.89	$4,725.00
STMSW32274	MAIR MILLS DRIVE	STS-300	300	2005	51.75	91.89	$49,512.00
STMSW32275	MAIR MILLS DRIVE	STS-375	375	2005	3.12	91.89	$3,208.00
STMSW32276	MAIR MILLS DRIVE	STS-300	300	2005	7.29	91.89	$6,974.00
STMSW32277	MAIR MILLS DRIVE	STS-375	375	2005	5.25	91.89	$5,401.00
STMSW32278	MAIR MILLS DRIVE	STS-300	300	2005	12.83	91.89	$12,276.00
STMSW32279	MAIR MILLS DRIVE	STS-300	300	2005	7.78	91.89	$7,440.00
STMSW32280	HILL STREET	STS-300	300	2005	6.16	91.89	$5,898.00
STMSW32281	HILL STREET	STS-300	300	2005	3.70	91.89	$3,537.00
STMSW32282	FRANCES DRIVE	STS-300	300	2005	6.58	91.89	$6,300.00
STMSW32283	MAIR MILLS DRIVE	STS-300	300	2005	4.90	91.89	$4,685.00
STMSW32284	KELLS CRESCENT	STS-300	300	2005	60.23	91.89	$57,623.00
STMSW32285	KELLS CRESCENT	STS-300	300	2005	8.55	91.89	$8,183.00
STMSW32286	KELLS CRESCENT	STS-300	300	2005	67.79	91.89	$64,862.00
STMSW32287	KELLS CRESCENT	STS-300	300	2005	9.60	91.89	$9,186.00
STMSW32288	KELLS CRESCENT	STS-300	300	2005	6.64	91.89	$6,348.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32289	KELLS CRESCENT	STS-525	525	2005	17.69	91.89	$19,460.00
STMSW32290	KELLS CRESCENT	STS-300	300	2005	9.87	91.89	$9,446.00
STMSW32291	THOMAS DRIVE	STS-300	300	2005	6.22	91.89	$5,948.00
STMSW32292	THOMAS DRIVE	STS-300	300	2005	2.35	91.89	$2,247.00
STMSW32293	THOMAS DRIVE	STS-300	300	2005	4.21	91.89	$4,027.00
STMSW32294	THOMAS DRIVE	STS-300	300	2005	8.14	91.89	$7,784.00
STMSW32295	THOMAS DRIVE	STS-300	300	2005	7.29	91.89	$6,977.00
STMSW32296	THOMAS DRIVE	STS-300	300	2005	7.84	91.89	$7,500.00
STMSW32297	THOMAS DRIVE	STS-975	975	2005	4.70	91.89	$8,397.00
STMSW32298	THOMAS DRIVE	STS-975	975	2005	17.33	91.89	$30,957.00
STMSW32299	THOMAS DRIVE	STS-300	300	2005	3.48	91.89	$3,328.00
STMSW32300	THOMAS DRIVE	STS-300	300	2005	8.33	91.89	$7,969.00
STMSW32301	THOMAS DRIVE	STS-300	300	2005	33.11	91.89	$31,681.00
STMSW32302	MAIR MILLS DRIVE	STS-300	300	2005	1.00	91.89	$953.00
STMSW32303	MAIR MILLS DRIVE	STS-300	300	2005	3.97	91.89	$3,799.00
STMSW32304	MAIR MILLS DRIVE	STS-300	300	2005	1.24	91.89	$1,182.00
STMSW32305	MAIR MILLS DRIVE	STS-300	300	2005	4.73	91.89	$4,529.00
STMSW32306	KELLS CRESCENT	STS-300	300	2005	3.56	91.89	$3,405.00
STMSW32307	MAIR MILLS DRIVE	STS-300	300	2005	11.45	91.89	$10,951.00
STMSW32308	MAIR MILLS DRIVE	STS-300	300	2005	2.21	91.89	$2,118.00
STMSW32309	MAIR MILLS DRIVE	STS-525	525	2005	5.14	91.89	$5,647.00
STMSW32310	HERITAGE DRIVE	STS-1500	1500	1950	167.26	26.14	$547,496.00
STMSW32318	FINDLAY DRIVE	STS-450	450	2008	8.95	93.51	$9,525.00
STMSW32323	FINDLAY DRIVE	STS-1350	1350	2008	7.85	93.51	$22,331.00
STMSW32342	KELLS CRESCENT	STS-900	900	2005	23.65	91.89	$38,952.00
STMSW32343	KELLS CRESCENT	STS-900	900	2005	9.09	91.89	$14,970.00
STMSW32344	KELLS CRESCENT	STS-600	600	2005	18.76	91.89	$24,190.00
STMSW32345	KELLS CRESCENT	STS-600	600	2005	22.10	91.89	$28,505.00
STMSW32346	KELLS CRESCENT	STS-600	600	2005	106.98	91.89	$137,955.00
STMSW32347	KELLS CRESCENT	STS-600	600	2005	85.96	91.89	$110,854.00
STMSW32349	KELLS CRESCENT	STS-525	525	2005	104.79	91.89	$115,246.00
STMSW32350	KELLS CRESCENT	STS-375	375	2005	102.76	91.89	$105,664.00
STMSW32351	KELLS CRESCENT	STS-450	450	2005	107.70	91.89	$114,665.00
STMSW32352	KELLS CRESCENT	STS-450	450	2005	5.75	91.89	$6,119.00
STMSW32353	KELLS CRESCENT	STS-525	525	2005	111.25	91.89	$122,353.00
STMSW32354	KELLS CRESCENT	STS-600	600	2005	18.49	91.89	$23,845.00
STMSW32355	KELLS CRESCENT	STS-375	375	2005	56.12	91.89	$57,708.00
STMSW32356	MAIR MILLS DRIVE	STS-750	675	2005	101.35	91.89	$152,435.00
STMSW32357	HILL STREET	STS-300	300	2005	56.03	91.89	$53,609.00
STMSW32358	HILL STREET	STS-375	375	2005	119.09	91.89	$122,460.00
STMSW32359	MAIR MILLS DRIVE	STS-525	525	2005	102.31	91.89	$112,519.00
STMSW32360	MAIR MILLS DRIVE	STS-900	825	2005	38.48	91.89	$63,377.00
STMSW32361	MAIR MILLS DRIVE	STS-900	825	2005	44.53	91.89	$73,337.00
STMSW32362	THOMAS DRIVE	STS-975	975	2005	32.35	91.89	$57,775.00
STMSW32363	THOMAS DRIVE	STS-525	525	2005	24.09	91.89	$26,495.00
STMSW32364	THOMAS DRIVE	STS-525	525	2005	74.17	91.89	$81,572.00
STMSW32365	MAIR MILLS DRIVE	STS-300	300	2005	51.54	91.89	$49,313.00
STMSW32366	SHERWOOD STREET	STS-300	300	2010	97.13	94.59	$92,929.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32367	SHERWOOD STREET	STS-375	375	2010	67.37	94.59	$69,275.00
STMSW32368	SHERWOOD STREET	STS-300	300	2010	44.79	94.59	$42,850.00
STMSW32369	SHERWOOD STREET	STS-300	300	2010	40.91	94.59	$39,139.00
STMSW32370	SHERWOOD STREET	STS-300	300	2010	18.98	94.59	$18,163.00
STMSW32371	KAYLA CRESCENT	STS-300	300	2011	55.36	95.14	$52,965.00
STMSW32372	KAYLA CRESCENT	STS-300	300	2011	85.38	95.14	$81,688.00
STMSW32373	KAYLA CRESCENT	STS-300	300	2011	53.56	95.14	$51,247.00
STMSW32374	KAYLA CRESCENT	STS-300	300	2011	109.96	95.14	$105,206.00
STMSW32375	KAYLA CRESCENT	STS-300	300	2011	12.03	95.14	$11,513.00
STMSW32376	KAYLA CRESCENT	STS-300	300	2011	55.60	95.14	$53,201.00
STMSW32377	KAYLA CRESCENT	STS-300	300	2011	10.36	95.14	$9,911.00
STMSW32378	SHERWOOD STREET	STS-450	450	2011	77.90	95.14	$82,942.00
STMSW32379	CONNOR AVENUE	STS-300	300	2004	64.29	91.35	$61,510.00
STMSW32380	CONNOR AVENUE	STS-375	375	2004	21.41	91.35	$22,015.00
STMSW32381	CONNOR AVENUE	STS-375	375	2004	62.26	91.35	$64,018.00
STMSW32382	CONNOR AVENUE	STS-375	375	2004	22.04	91.35	$22,663.00
STMSW32383	CONNOR AVENUE	STS-450	450	2004	72.10	91.35	$76,767.00
STMSW32384	CONNOR AVENUE	STS-525	525	2004	40.95	91.35	$45,035.00
STMSW32385	CONNOR AVENUE	STS-600	600	2004	61.04	91.35	$78,722.00
STMSW32386	CONNOR AVENUE	STS-600	600	2004	110.63	91.35	$142,663.00
STMSW32387	KAYLA CRESCENT	STS-375	375	2002	58.96	90.27	$60,623.00
STMSW32388	ALYSSA DRIVE	STS-525	525	2002	9.00	90.27	$9,903.00
STMSW32389	ALYSSA DRIVE	STS-600	600	2002	40.71	90.27	$52,503.00
STMSW32390	ALYSSA DRIVE	STS-1200	1200	2002	58.62	90.27	$147,916.00
STMSW32391	ALYSSA DRIVE	STS-1200	1200	2002	29.16	90.27	$73,587.00
STMSW32392	SHERWOOD STREET	STS-1350	1350	2002	92.53	90.27	$263,178.00
STMSW32393	CONNOR AVENUE	STS-1350	1350	2002	87.76	90.27	$249,630.00
STMSW32394	BROOKE AVENUE	STS-1350	1350	2002	87.09	90.27	$247,707.00
STMSW32395	GEORGIAN MEADOWS DRIVE	STS-1050	1050	2002	64.27	90.27	$130,931.00
STMSW32396	GEORGIAN MEADOWS DRIVE	STS-1050	1050	2002	49.28	90.27	$100,390.00
STMSW32397	BROOKE AVENUE	STS-375	375	2006	92.37	92.43	$94,982.00
STMSW32398	BROOKE AVENUE	STS-1350	1350	2002	81.67	90.27	$232,302.00
STMSW32399	BROOKE AVENUE	STS-1350	1350	2002	79.39	90.27	$225,811.00
STMSW32400	BROOKE AVENUE	STS-1350	1350	2002	24.32	90.27	$69,162.00
STMSW32401	BROOKE AVENUE	STS-1350	1350	2002	17.91	90.27	$50,955.00
STMSW32402	BROOKE AVENUE	STS-750	675	2006	153.46	92.43	$230,825.00
STMSW32403	BROOKE AVENUE	STS-375	375	2006	89.02	92.43	$91,540.00
STMSW32404	GARBUTT CRESCENT	STS-600	600	2012	75.81	95.68	$97,763.00
STMSW32405	GARBUTT CRESCENT	STS-525	525	2012	11.47	95.68	$12,611.00
STMSW32406	GARBUTT CRESCENT	STS-525	525	2012	116.77	95.68	$128,423.00
STMSW32407	FINDLAY DRIVE	STS-750	750	2008	110.07	93.51	$165,550.00
STMSW32408	DANCE STREET	STS-750	750	2008	102.04	93.51	$153,483.00
STMSW32409	GARBUTT CRESCENT	STS-600	600	2012	83.27	95.68	$107,380.00
STMSW32410	GARBUTT CRESCENT	STS-525	525	2012	99.77	95.68	$109,731.00
STMSW32411	FINDLAY DRIVE	STS-900	825	2008	46.69	93.51	$76,900.00
STMSW32412	FINDLAY DRIVE	STS-450	450	2008	109.77	93.51	$116,867.00
STMSW32413	LOCKERBIE CRESCENT	STS-900	900	2008	121.03	93.51	$199,355.00
STMSW32414	CLARK STREET	STS-900	900	2008	99.82	93.51	$164,409.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32415	CLARK STREET	STS-750	750	2008	115.05	93.51	$173,042.00
STMSW32416	LOCKERBIE CRESCENT	STS-600	600	2008	56.87	93.51	$73,340.00
STMSW32417	SAUNDERS STREET	STS-300	300	2006	58.65	92.43	$56,115.00
STMSW32418	SAUNDERS STREET	STS-450	450	2006	60.73	92.43	$64,660.00
STMSW32419	SAUNDERS STREET	STS-450	450	2006	61.97	92.43	$65,975.00
STMSW32420	SAUNDERS STREET	STS-600	600	2006	77.51	92.43	$99,950.00
STMSW32421	SAUNDERS STREET	STS-375	375	2006	14.88	92.43	$15,301.00
STMSW32422	FINDLAY DRIVE	STS-300	300	2006	7.25	92.43	$6,939.00
STMSW32423	SAUNDERS STREET	STS-300	300	2006	4.96	92.43	$4,743.00
STMSW32424	SAUNDERS STREET	STS-300	300	2006	3.91	92.43	$3,742.00
STMSW32425	SAUNDERS STREET	STS-750	675	2006	43.71	92.43	$65,747.00
STMSW32426	FINDLAY DRIVE	STS-375	375	2006	23.17	92.43	$23,826.00
STMSW32427	FINDLAY DRIVE	STS-750	750	2006	122.20	92.43	$183,798.00
STMSW32429	FINDLAY DRIVE	STS-750	750	2006	127.20	92.43	$191,319.00
STMSW32430	FINDLAY DRIVE	STS-900	825	2006	114.19	92.43	$188,076.00
STMSW32431	FINDLAY DRIVE	STS-900	900	2007	73.31	92.97	$120,742.00
STMSW32432	FINDLAY DRIVE	STS-450	450	2006	46.01	92.43	$48,982.00
STMSW32434	FINDLAY DRIVE	STS-375	375	2006	35.24	92.43	$36,236.00
STMSW32435	FINDLAY DRIVE	STS-375	375	2007	48.13	92.97	$49,492.00
STMSW32436	FINDLAY DRIVE	STS-300	300	2006	83.57	92.43	$79,957.00
STMSW32437	FINDLAY DRIVE	STS-375	375	2006	71.99	92.43	$74,027.00
STMSW32438	FINDLAY DRIVE	STS-375	375	2006	33.92	92.43	$34,877.00
STMSW32439	FINDLAY DRIVE	STS-300	300	2006	66.86	92.43	$63,968.00
STMSW32441	FINDLAY DRIVE	STS-300	300	2006	8.49	92.43	$8,126.00
STMSW32442	FINDLAY DRIVE	STS-300	300	2006	7.15	92.43	$6,843.00
STMSW32443	FINDLAY DRIVE	STS-300	300	2006	8.97	92.43	$8,578.00
STMSW32444	FINDLAY DRIVE	STS-300	300	2006	7.18	92.43	$6,866.00
STMSW32445	FINDLAY DRIVE	STS-300	300	2006	6.45	92.43	$6,170.00
STMSW32446	FINDLAY DRIVE	STS-300	300	2006	7.26	92.43	$6,950.00
STMSW32448	FINDLAY DRIVE	STS-300	300	2006	8.55	92.43	$8,184.00
STMSW32449	SAUNDERS STREET	STS-300	300	2006	8.64	92.43	$8,263.00
STMSW32450	SAUNDERS STREET	STS-375	375	2006	14.11	92.43	$14,508.00
STMSW32451	SAUNDERS STREET	STS-300	300	2006	5.48	92.43	$5,238.00
STMSW32452	SAUNDERS STREET	STS-300	300	2006	3.44	92.43	$3,292.00
STMSW32453	SAUNDERS STREET	STS-300	300	2006	13.60	92.43	$13,009.00
STMSW32454	SAUNDERS STREET	STS-300	300	2006	6.62	92.43	$6,337.00
STMSW32455	SAUNDERS STREET	STS-300	300	2006	4.28	92.43	$4,098.00
STMSW32456	SAUNDERS STREET	STS-300	300	2006	13.58	92.43	$12,991.00
STMSW32457	SAUNDERS STREET	STS-300	300	2006	6.49	92.43	$6,213.00
STMSW32459	SAUNDERS STREET	STS-300	300	2006	6.70	92.43	$6,411.00
STMSW32460	SAUNDERS STREET	STS-300	300	2006	7.32	92.43	$7,002.00
STMSW32461	HUGHES STREET	STS-300	300	2008	67.82	93.51	$64,887.00
STMSW32462	HUGHES STREET	STS-300	300	2008	11.02	93.51	$10,542.00
STMSW32463	HUGHES STREET	STS-450	450	2008	27.84	93.51	$29,643.00
STMSW32464	HUGHES STREET	STS-450	450	2008	63.01	93.51	$67,089.00
STMSW32465	HUGHES STREET	STS-525	525	2008	89.90	93.51	$98,867.00
STMSW32466	HUGHES STREET	STS-600	600	2008	105.09	93.51	$135,525.00
STMSW32467	HUGHES STREET	STS-750	675	2008	120.02	93.51	$180,527.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32468	ROBERTSON STREET	STS-300	300	2008	80.49	93.51	$77,011.00
STMSW32469	ROBERTSON STREET	STS-375	375	2008	80.96	93.51	$83,246.00
STMSW32470	ROBERTSON STREET	STS-450	450	2008	79.94	93.51	$85,114.00
STMSW32471	ROBERTSON STREET	STS-600	600	2008	96.16	93.51	$124,011.00
STMSW32472	COOPER STREET	STS-375	375	2008	90.06	93.51	$92,607.00
STMSW32473	COOPER STREET	STS-525	525	2008	96.08	93.51	$105,669.00
STMSW32474	COOPER STREET	STS-750	675	2008	116.23	93.51	$174,817.00
STMSW32475	PORTLAND STREET	STS-900	855	2008	41.07	93.51	$67,638.00
STMSW32484	HUGHES STREET	STS-750	750	2008	85.55	93.51	$128,668.00
STMSW32487	COOPER STREET	STS-750	675	2008	85.90	93.51	$129,195.00
STMSW32535	SILVER CRESCENT	STS-750	675	2007	5.17	92.97	$7,772.00
STMSW32539	SILVER CRESCENT	STS-300	300	2007	17.42	92.97	$16,664.00
STMSW32540	BARRINGTON TRAIL	STS-300	300	2007	48.77	92.97	$46,663.00
STMSW32541	SILVER CRESCENT	STS-300	300	2007	7.73	92.97	$7,393.00
STMSW32542	BARRINGTON TRAIL	STS-300	300	2007	9.33	92.97	$8,931.00
STMSW32543	BARRINGTON TRAIL	STS-375	375	2007	68.70	92.97	$70,639.00
STMSW32544	SILVER CRESCENT	STS-300	300	2007	50.03	92.97	$47,869.00
STMSW32545	SILVER CRESCENT	STS-450	450	2007	20.91	92.97	$22,263.00
STMSW32546	SILVER CRESCENT	STS-300	300	2007	51.50	92.97	$49,274.00
STMSW32547	SILVER CRESCENT	STS-450	450	2007	54.24	92.97	$57,749.00
STMSW32548	SILVER CRESCENT	STS-300	300	2007	48.77	92.97	$46,665.00
STMSW32549	SILVER CRESCENT	STS-450	450	2007	23.37	92.97	$24,878.00
STMSW32550	SILVER CRESCENT	STS-300	300	2007	50.64	92.97	$48,449.00
STMSW32551	SILVER CRESCENT	STS-525	525	2007	21.77	92.97	$23,947.00
STMSW32552	SILVER CRESCENT	STS-525	525	2007	92.63	92.97	$101,877.00
STMSW32554	SILVER CRESCENT	STS-525	525	2007	5.97	92.97	$6,569.00
STMSW32555	SILVER CRESCENT	STS-750	675	2007	47.85	92.97	$71,974.00
STMSW32556	SILVER CRESCENT	STS-450	450	2007	28.00	92.97	$29,812.00
STMSW32557	SILVER CRESCENT	STS-450	450	2007	60.06	92.97	$63,947.00
STMSW32558	SILVER CRESCENT	STS-300	300	2007	46.28	92.97	$44,277.00
STMSW32559	SILVER CREEK DRIVE	STS-375	375	2007	106.38	92.97	$109,392.00
STMSW32560	SILVER CREEK DRIVE	STS-300	300	2007	25.15	92.97	$24,064.00
STMSW32562	BARRINGTON TRAIL	STS-300	300	2007	47.68	92.97	$45,620.00
STMSW32570	WHEELHOUSE CRESCENT	STS-600	600	2008	4.57	93.51	$5,895.00
STMSW32587	MAPLE STREET	STS-525	525	2005	57.14	91.89	$62,840.00
STMSW32599	MAPLE STREET	STS-600	600	2008	19.69	93.51	$25,396.00
STMSW32600	NORTH MAPLE STREET	STS-525	525	2008	55.28	93.51	$60,796.00
STMSW32601	NORTH MAPLE STREET	STS-450	450	2008	45.61	93.51	$48,558.00
STMSW32602	NORTH MAPLE STREET	STS-450	450	2008	24.82	93.51	$26,422.00
STMSW32605	NORTH MAPLE STREET	STS-300	300	2008	7.05	93.51	$6,745.00
STMSW32606	NORTH MAPLE STREET	STS-300	300	2008	49.56	93.51	$47,417.00
STMSW32607	WHEELHOUSE CRESCENT	STS-375	375	2008	77.38	93.51	$79,572.00
STMSW32608	WHEELHOUSE CRESCENT	STS-300	300	0	7.74	1.00	$0.00
STMSW32609	WHEELHOUSE CRESCENT	STS-600	600	2008	14.41	93.51	$18,581.00
STMSW32610	WHEELHOUSE CRESCENT	STS-600	600	2008	4.92	93.51	$6,346.00
STMSW32611	WHEELHOUSE CRESCENT	STS-600	600	2008	64.64	93.51	$83,362.00
STMSW32612	WHEELHOUSE CRESCENT	STS-600	600	2008	63.92	93.51	$82,431.00
STMSW32613	WHEELHOUSE CRESCENT	STS-525	525	2008	78.67	93.51	$86,522.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32614	NORTH PINE STREET	STS-525	500	2008	44.44	93.51	$48,877.00
STMSW32615	NORTH PINE STREET	STS-450	450	2008	22.49	93.51	$23,945.00
STMSW32616	NORTH PINE STREET	STS-450	450	2008	46.54	93.51	$49,552.00
STMSW32617	NORTH PINE STREET	STS-525	525	2008	31.14	93.51	$34,242.00
STMSW32625	OLD MOUNTAIN ROAD	STS-375	375	1966	10.94	60.17	$11,251.00
STMSW32626	OLD MOUNTAIN ROAD	STS-525	525	1966	7.64	60.17	$8,401.00
STMSW32628	OLD MOUNTAIN ROAD	STS-600	600	1966	56.15	60.17	$72,411.00
STMSW32629	OLD MOUNTAIN ROAD	STS-525	525	1966	75.44	60.17	$82,968.00
STMSW32635	OLD MOUNTAIN ROAD	STS-300	300	2006	10.72	92.43	$0.00
STMSW32636	OLD MOUNTAIN ROAD	STS-300	300	2006	15.08	92.43	$14,431.00
STMSW32638	OLD MOUNTAIN ROAD	STS-450	450	2006	25.19	92.43	$26,819.00
STMSW32702	High Street	STS-525	525	2012	17.40	95.68	$19,131.00
STMSW32703	High Street	STS-525	525	2012	10.03	95.68	$11,032.00
STMSW32733	ST PAUL STREET	STS-300	300	2013	109.27	96.22	$104,548.00
STMSW32734	MARKET STREET	STS-300	300	2013	38.02	96.22	$36,375.00
STMSW32735	MARKET STREET	STS-300	300	2013	80.61	96.22	$77,124.00
STMSW32736	MARKET STREET	STS-300	300	2013	23.49	96.22	$22,479.00
STMSW32737	MARKET STREET	STS-300	300	2013	45.00	96.22	$43,054.00
STMSW32738	MARKET STREET	STS-300	300	2010	9.02	94.59	$8,628.00
STMSW32739	Hume Street	STS-300	300	2015	13.58	97.30	$12,989.00
STMSW32740	Hume Street	STS-300	300	2015	13.24	97.30	$12,670.00
STMSW32742	ST MARIE STREET	STS-375	375	1976	76.63	71.83	$78,798.00
STMSW32745	Hume Street	STS-525	525	1976	84.32	71.83	$92,736.00
STMSW32747	Hume Street	STS-525	525	1976	32.18	71.83	$35,393.00
STMSW32751	Hume Street	STS-525	525	1978	9.61	74.17	$10,564.00
STMSW32756	Hume Street	STS-525	525	1978	67.86	74.17	$74,637.00
STMSW32758	Hume Street	STS-525	525	1978	31.87	74.17	$35,055.00
STMSW32760	Hume Street	STS-375	375	1978	89.50	74.17	$92,035.00
STMSW32762	Hume Street	STS-375	375	2015	6.56	97.30	$6,750.00
STMSW32763	PATTERSON STREET	STS-375-CSP	375	1985	90.05	29.29	$92,597.00
STMSW32768	Hume Street	STS-750	675	2015	84.22	97.30	$126,678.00
STMSW32769	MINNESTOA STREET	STS-300	300	2015	11.32	97.30	$10,828.00
STMSW32770	MINNESOTA STREET	STS-300	300	2015	7.98	97.30	$7,631.00
STMSW32771	Hume Street	STS-300	300	2015	5.22	97.30	$4,995.00
STMSW32772	Hume Street	STS-300	300	2015	14.89	97.30	$14,246.00
STMSW32777	Hume Street	STS-900	825	2015	30.62	97.30	$50,436.00
STMSW32778	MINNESTOA STREET	STS-300	300	2015	15.39	97.30	$14,720.00
STMSW32781	Hume Street	STS-525	525	2020	17.58	100.00	$19,330.00
STMSW32783	NAPIER STREET	STS-300	300	2015	11.08	97.30	$10,600.00
STMSW32784	NAPIER STREET	STS-300	300	2015	3.11	97.30	$2,979.00
STMSW32786	Hume Street	STS-300	300	2015	3.79	97.30	$3,621.00
STMSW32787	Hume Street	STS-300	300	2015	8.92	97.30	$8,532.00
STMSW32788	Hume Street	STS-900	825	2015	88.48	97.30	$145,739.00
STMSW32789	Hume Street	STS-300	300	2015	3.95	97.30	$3,780.00
STMSW32790	Hume Street	STS-300	300	2015	8.23	97.30	$7,874.00
STMSW32791	Hume Street	STS-300	300	2015	8.64	97.30	$8,262.00
STMSW32792	Hume Street	STS-900	825	2015	95.43	97.30	$157,178.00
STMSW32793	Hume Street	STS-300	300	2015	4.07	97.30	$3,892.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32794	PEEL STREET	STS-300	300	2015	12.41	97.30	$11,871.00
STMSW32796	PEEL STREET	STS-375	375	2015	12.33	97.30	$12,679.00
STMSW32797	Hume Street	STS-450	450	2015	16.06	97.30	$17,100.00
STMSW32799	PEEL STREET	STS-300	300	2015	13.00	97.30	$12,436.00
STMSW32801	PEEL STREET	STS-300	300	2015	25.24	97.30	$24,153.00
STMSW32802	Hume Street	STS-300	300	2015	9.59	97.30	$9,179.00
STMSW32803	Hume Street	STS-450	450	2015	68.34	97.30	$72,756.00
STMSW32805	MOBERLY STREET	STS-300	300	2015	7.78	97.30	$7,442.00
STMSW32810	Hume Street	STS-300	300	2015	7.74	97.30	$7,406.00
STMSW32813	Hume Street	STS-900	900	2015	44.32	97.30	$72,993.00
STMSW32814	RAGLAN STREET	STS-300	300	2015	26.61	97.30	$25,464.00
STMSW32815	Hume Street	STS-750	675	2015	17.46	97.30	$26,257.00
STMSW32816	Hume Street	STS-300	300	2015	7.10	97.30	$6,789.00
STMSW32817	Hume Street	STS-600	600	2015	19.79	97.30	$25,517.00
STMSW32818	Hume Street	STS-300	300	2015	3.52	97.30	$3,371.00
STMSW32819	Hume Street	STS-300	300	2015	3.35	97.30	$3,209.00
STMSW32820	Hume Street	STS-600	600	2015	111.05	97.30	$143,209.00
STMSW32822	Hume Street	STS-600	600	2015	53.88	97.30	$69,485.00
STMSW32824	Hume Street	STS-750	750	2015	15.95	97.30	$23,983.00
STMSW32825	Hume Street	STS-750	750	2015	32.53	97.30	$48,933.00
STMSW32826	Hume Street	STS-750	750	2015	20.36	97.30	$30,625.00
STMSW32827	Hume Street	STS-600	600	2015	71.00	97.30	$91,556.00
STMSW32828	Hume Street	STS-300	300	2015	10.11	97.30	$9,674.00
STMSW32829	MOBERLY STREET	STS-525	525	2015	94.52	97.30	$103,956.00
STMSW32832	Hume Street	STS-300	300	2015	51.04	97.30	$48,831.00
STMSW32833	Hume Street	STS-900	900	2015	9.12	97.30	$15,028.00
STMSW32834	Hume Street	STS-750	675	2015	16.57	97.30	$24,915.00
STMSW32835	Hume Street	STS-750	675	2015	6.87	97.30	$10,335.00
STMSW32836	Hume Street	STS-900	900	2015	12.40	97.30	$20,422.00
STMSW32838	Hume Street	STS-300	300	2015	9.16	97.30	$8,765.00
STMSW32839	Hume Street	STS-300	300	1978	26.15	74.17	$25,024.00
STMSW32841	Hume Street	STS-300	300	2015	3.41	97.30	$3,260.00
STMSW32842	Hume Street	STS-750	675	2015	74.88	97.30	$112,629.00
STMSW32844	Hume Street	STS-900	825	2015	100.64	97.30	$165,756.00
STMSW32847	ROBINSON STREET	STS-300	300	2012	62.03	95.68	$59,349.00
STMSW32850	ROBINSON STREET	STS-300	300	2012	52.56	95.68	$50,292.00
STMSW32852	STE MARIE STREET	STS-375	375	2007	76.74	92.97	$78,911.00
STMSW32856	GEORGE STREET	STS-300	300	2012	82.15	95.68	$78,600.00
STMSW32859	ROBINSON STREET	STS-300	300	2012	71.67	95.68	$68,572.00
STMSW32862	ROBINSON STREET	STS-300	300	2012	37.53	95.68	$35,909.00
STMSW32863	ROBINSON STREET	STS-300	300	2012	23.94	95.68	$22,901.00
STMSW32869	FOURTH STREET EAST	STS-300	300	2009	21.11	94.05	$20,201.00
STMSW32870	FOURTH STREET EAST	STS-300	300	2009	7.05	94.05	$6,744.00
STMSW32871	FOURHT STREET EAST	STS-375	375	2009	68.75	94.05	$70,690.00
STMSW32878	GEORGE STREET	STS-375	375	2012	59.42	95.68	$61,102.00
STMSW32881	GEORGE STREET	STS-375	375	2012	57.40	95.68	$59,022.00
STMSW32882	RODNEY STREET	STS-375	375	1950	12.73	26.14	$13,090.00
STMSW32883	RODNEY STREET	STS-375-CSP	375	1950	22.86	1.00	$23,508.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW32886	SIMCOE STREET	STS-375-CSP	375	1957	12.53	1.00	$12,880.00
STMSW32887	SIMCOE STREET	STS-525	525	1957	26.96	49.67	$29,651.00
STMSW32890	SIMCOE STREET	STS-450-CSP	450	2003	4.72	65.65	$5,021.00
STMSW32892	FIRST STREET	STS-300-CSP	300	1964	6.53	1.00	$6,249.00
STMSW32894	HURON STREET	STS-300-CSP	300	1920	9.56	1.00	$9,143.00
STMSW32896	LOCKERBIE CRESCENT	STS-300	300	2017	11.87	98.38	$11,354.00
STMSW32897	LOCKERBIE CRESCENT	STS-300	300	2017	71.86	98.38	$68,755.00
STMSW32898	LOCKERBIE CRESCENT	STS-375	375	2017	109.84	98.38	$112,946.00
STMSW32899	LOCKERBIE CRESCENT	STS-1200	1200	2017	16.52	98.38	$41,680.00
STMSW32900	STE MARIE STREET	STS-300	300	2007	13.66	92.97	$13,065.00
STMSW32902	COLLINS STREET	STS-375-CSP	375	1966	66.25	1.00	$68,123.00
STMSW32903	CAMERON STREET	STS-300-CSP	300	1966	38.25	1.00	$36,601.00
STMSW32904	CAMERON STREET	STS-450-CSP	400	1966	43.11	1.00	$45,894.00
STMSW32905	CAMERON STREET	STS-450-CSP	400	1966	30.18	1.00	$32,136.00
STMSW32906	SIMCOE STREET	STS-1200	1143	2016	65.24	97.84	$164,618.00
STMSW32908	NIAGARA STREET	STS-300	300	2007	13.15	92.97	$12,580.00
STMSW32910	SIMCOE STREET	STS-300-CSP	300	1953	8.66	1.00	$8,288.00
STMSW32911	SIMCOE STREET	STS-450-CSP	450	1953	43.05	1.00	$45,835.00
STMSW32912	PEEL STREET	STS-300-CSP	300	1957	8.65	1.00	$8,279.00
STMSW32913	PEEL STREET	STS-300-CSP	300	1957	12.08	1.00	$11,555.00
STMSW32914	SIMCOE STREET	STS-300-CSP	300	1953	9.42	1.00	$9,013.00
STMSW32917	WEST STREET	STS-300	300	2016	98.77	97.84	$94,499.00
STMSW32918	EAST STREET	STS-375	375	2016	118.00	97.84	$121,338.00
STMSW32920	SIMCOE STREET	STS-750-CSP	750	2016	36.48	91.92	$54,871.00
STMSW32921	SIMCOE STREET	STS-600	600	2012	59.79	95.68	$77,104.00
STMSW32951	GEORGE ZUBEK DRIVE	STS-300	300	2017	20.99	98.38	$20,083.00
STMSW32952	GEORGE ZUBEK DRIVE	STS-450	450	2017	36.42	98.38	$38,781.00
STMSW32953	GEORGE ZUBEK DRIVE	STS-450	450	2017	16.01	98.38	$17,046.00
STMSW32954	COLLINS STREET	STS-300	300	2017	29.78	98.38	$28,491.00
STMSW32955	COLLINS STREET	STS-375	375	2007	10.59	92.97	$10,893.00
STMSW32956	WILLIAMS STREET	STS-375	375	2006	8.23	92.43	$8,463.00
STMSW32957	WILLIAMS STREET	STS-375	375	2006	14.33	92.43	$14,730.00
STMSW32958	COLLINS STREET	STS-300	300	2006	9.30	92.43	$8,902.00
STMSW32959	WILLIAMS STREET	STS-375	375	2006	14.32	92.43	$14,728.00
STMSW32960	COLLINS STREET	STS-600	600	2007	52.08	92.97	$67,156.00
STMSW32961	COLLINS STREET	STS-450	450	2006	81.47	92.43	$86,736.00
STMSW32962	COLLINS STREET	STS-375	375	2006	8.74	92.43	$8,982.00
STMSW32963	GEORGE ZUBEK DRIVE	STS-750	675	2007	125.89	92.97	$189,348.00
STMSW32964	GEORGE ZUBEK DRIVE	STS-750	675	2007	43.57	92.97	$65,532.00
STMSW32965	open space on George Zubek Drive	STS-750	675	2007	51.86	92.97	$78,009.00
STMSW32966	along open space @ George Zubek Drive	STS-300	300	2017	41.10	98.38	$39,324.00
STMSW32967	GEORGE ZUBEK DRIVE	STS-300	300	2017	8.42	98.38	$8,057.00
STMSW32968	along open space @ George Zubek Drive	STS-450	450	2017	47.02	98.38	$50,063.00
STMSW32969	along open space @ George Zubek Drive	STS-300	300	2017	33.41	98.38	$31,970.00
STMSW32970	GEORGE ZUBEK DRIVE	STS-300	300	2017	19.04	98.38	$18,217.00
STMSW32973	GEORGE ZUBEK DRIVE	STS-300	300	2017	54.41	98.38	$52,059.00
STMSW33012	LOCKERBIE CRESCENT	STS-600	600	2017	63.89	98.38	$82,387.00
STMSW33013	High Street	STS-600-CSP	600	1997	47.10	53.53	$60,741.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33014	High Street	STS-600	600	2017	8.18	98.38	$10,553.00
STMSW33015	High Street	STS-600	600	1997	41.24	87.57	$53,178.00
STMSW33016	High Street	STS-600	600	1997	35.74	87.57	$46,085.00
STMSW33017	High Street	STS-300-CSP	300	1997	10.34	53.53	$9,890.00
STMSW33018	LOCKERBIE CRESCENT	STS-1200	1200	2017	95.15	98.38	$240,097.00
STMSW33019	LOCKERBIE CRESCENT	STS-1200	1200	2017	78.53	98.38	$198,162.00
STMSW33020	WILSON STREET	STS-450	450	2017	120.92	98.38	$128,738.00
STMSW33021	LOCKERBIE CRESCENT	STS-750	675	2017	112.07	98.38	$168,560.00
STMSW33022	High Street	STS-300-CSP	300	1997	112.30	53.53	$107,450.00
STMSW33024	High Street	STS-750	750	1997	6.94	87.57	$10,432.00
STMSW33025	LOCKERBIE CRESCENT	STS-750	750	2017	40.48	98.38	$60,889.00
STMSW33026	LOCKERBIE CRESCENT	STS-750	750	2017	17.05	98.38	$25,640.00
STMSW33027	High Street	STS-750	750	1997	48.77	87.57	$73,352.00
STMSW33029	High Street	STS-750	750	1997	93.01	87.57	$139,898.00
STMSW33030	High Street	STS-750	750	1997	12.97	87.57	$19,511.00
STMSW33033	High Street	STS-600	600	1997	6.23	87.57	$8,030.00
STMSW33034	FINDLAY DRIVE	STS-450	450	2017	56.65	98.38	$60,318.00
STMSW33035	FINDLAY DRIVE	STS-600	600	2017	96.55	98.38	$124,511.00
STMSW33036	GILPIN CRESCENT	STS-1350	1350	2008	45.14	93.51	$128,399.00
STMSW33037	FINDLAY DRIVE	STS-1350	1350	2008	91.62	93.51	$260,590.00
STMSW33038	FINDLAY DRIVE	STS-750	675	2017	94.83	98.38	$142,634.00
STMSW33040	High Street	STS-375-CSP	375	1997	102.79	53.53	$105,699.00
STMSW33041	GILPIN CRESCENT	STS-450	450	2017	12.71	98.38	$13,531.00
STMSW33042	GILPIN CRESCENT	STS-600	600	2017	72.94	98.38	$94,065.00
STMSW33043	GILPIN CRESCENT	STS-300	300	2017	33.22	98.38	$0.00
STMSW33044	GILPIN CRESCENT	STS-300	300	2017	10.08	98.38	$0.00
STMSW33046	GILPIN CRESCENT	STS-525	525	2017	87.67	98.38	$96,416.00
STMSW33048	GILPIN CRESCENT	STS-300	300	2017	33.89	98.38	$32,428.00
STMSW33049	GILPIN CRESCENT	STS-300	300	2017	8.80	98.38	$8,418.00
STMSW33051	High Street	STS-300-CSP	300	1997	16.20	53.53	$15,502.00
STMSW33052	LOCKERBIE CRESCENT	STS-600	600	2017	106.82	98.38	$137,750.00
STMSW33054	LOCKERBIE CRESCENT	STS-750	750	2017	110.50	98.38	$166,197.00
STMSW33058	LOCKERBIE CRESCENT	STS-750	675	2017	109.76	98.38	$165,084.00
STMSW33060	WILSON STREET	STS-450	450	2017	85.98	98.38	$91,540.00
STMSW33089	SIMCOE STREET	STS-750	750	2016	58.62	97.84	$88,173.00
STMSW33091	NIAGARA STREET	STS-450	450	2016	15.14	97.84	$16,114.00
STMSW33092	HURON STREET	STS-450	450	2016	72.11	97.84	$76,779.00
STMSW33094	NIAGARA STREET	STS-450	450	2016	32.28	97.84	$34,373.00
STMSW33095	NIAGARA STREET	STS-450	450	2016	76.05	97.84	$80,966.00
STMSW33103	ST PAUL STREET	STS-750	750	1974	22.62	69.50	$34,024.00
STMSW33104	ST PAUL STREET	STS-750	750	1998	51.38	88.11	$77,285.00
STMSW33107	ST PAUL STREET	STS-750	675	2009	10.44	94.05	$15,700.00
STMSW33108	ST PAUL STREET	STS-750	675	1920	67.92	1.00	$102,152.00
STMSW33109	MARKET LANE	STS-750	750	1920	42.90	1.00	$64,524.00
STMSW33110	ONTARIO STREET	STS-525	525	1920	58.69	1.00	$64,542.00
STMSW33111	ST PAUL STREET	STS-750	750	1998	43.04	88.11	$64,735.00
STMSW33112	CALLARY CRESCENT	STS-750	750	1998	45.01	88.11	$67,695.00
STMSW33114	(blank)	STS-300	300	2008	54.00	93.51	$51,664.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33115	STE MARIE STREET	STS-300	300	2007	41.51	92.97	$39,712.00
STMSW33116	ONTARIO STREET	STS-525	500	1997	70.38	87.57	$77,406.00
STMSW33117	ST PAUL STREET	STS-300-CSP	300	1920	39.92	1.00	$38,197.00
STMSW33118	ST PAUL STREET	STS-300-CSP	300	1974	26.27	7.06	$25,139.00
STMSW33119	SIMCOE STREET	STS-300-CSP	300	1974	45.39	7.06	$43,431.00
STMSW33135	MINNESOTA STREET	STS-1500-CSP	1800	1988	217.05	35.35	$710,495.00
STMSW33136	MINNESOTA STREET	STS-1500-CSP	1800	1988	209.04	35.35	$684,265.00
STMSW33142	ST MARIE STREET	STS-1200	1200	2007	104.87	92.97	$264,629.00
STMSW33144	MARKET LANE	STS-300	300	2007	8.27	92.97	$7,910.00
STMSW33145	STE MARIE STREET	STS-750	750	1920	66.21	1.00	$99,579.00
STMSW33146	FOURTH STREET EAST	STS-300-CSP	300	1920	7.28	1.00	$6,963.00
STMSW33147	FIRST STREET	STS-300-CSP	300	1964	19.94	1.00	$19,078.00
STMSW33148	KELLS CRESCENT	STS-900	900	2005	22.43	91.89	$36,946.00
STMSW33149	SIXTH STREET	STS-525	525	2012	34.30	95.68	$37,726.00
STMSW33150	High Street	STS-525	525	2012	19.86	95.68	$21,845.00
STMSW33151	SPRUCE STREET	STS-300-CSP	300	1964	3.27	1.00	$3,128.00
STMSW33152	SPRUCE STREET	STS-300-CSP	300	1964	1.87	1.00	$1,791.00
STMSW33165	GARBUTT CRESCENT	STS-300	300	2012	27.95	95.68	$26,739.00
STMSW33167	FINDLAY DRIVE	STS-1350	1350	2008	63.72	93.51	$181,239.00
STMSW33175	PRETTY RIVER PARKWAY	STS-450-CSP	450	2002	11.86	63.63	$12,625.00
STMSW33190	MINNESOTA STREET	STS-300	300	2006	5.43	92.43	$5,199.00
STMSW33191	FIRST STREET	STS-300-CSP	300	2000	30.76	59.59	$29,430.00
STMSW33192	FIRST STREET	STS-300-CSP	300	2000	4.14	59.59	$3,959.00
STMSW33193	BALSAM STREET	STS-300-CSP	300	1964	18.50	1.00	$0.00
STMSW33194	BALSAM STREET	STS-300	300	1970	24.27	64.83	$23,217.00
STMSW33195	CEDAR STREET	STS-600	600	2008	18.00	93.51	$23,213.00
STMSW33196	THIRD STREET	STS-525	525	1987	37.35	82.16	$41,079.00
STMSW33197	THIRD STREET	STS-525	525	1987	31.58	82.16	$34,736.00
STMSW33198	THIRD STREET	STS-525	525	1987	22.75	82.16	$25,022.00
STMSW33199	FIRST STREET	STS-375	375	2006	21.44	92.43	$22,048.00
STMSW33200	GOLFVIEW DRIVE	STS-450	450	2007	62.76	92.97	$66,820.00
STMSW33201	HURONTARIO STREET	STS-450	450	2007	98.38	92.97	$104,747.00
STMSW33204	HURONTARIO STREET	STS-750	675	2007	28.05	92.97	$42,189.00
STMSW33205	THIRD STREET	STS-300-CSP	300	1984	12.36	27.27	$0.00
STMSW33206	THIRD STREET	STS-450-CSP	450	1984	37.18	27.27	$39,589.00
STMSW33207	THIRD STREET	STS-300-CSP	300	1984	14.36	27.27	$0.00
STMSW33208	High Street	STS-300-CSP	300	1984	4.91	27.27	$0.00
STMSW33213	PRETTY RIVER PARKWAY	STS-900	900	1975	20.13	70.67	$33,158.00
STMSW33214	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	4.03	65.65	$4,288.00
STMSW33215	PRETTY RIVER PARKWAY	STS-450-CSP	450	2003	3.63	65.65	$3,865.00
STMSW33217	PRETTY RIVER PARKWAY	STS-1050	1050	1975	30.20	70.67	$61,512.00
STMSW33218	PRETTY RIVER PARKWAY	STS-1050	1050	1975	30.38	70.67	$61,895.00
STMSW33219	ONTARIO STREET	STS-1050	1050	1975	36.29	70.67	$73,920.00
STMSW33220	MAPLE STREET	STS-450-CSP	400	1965	31.17	1.00	$33,181.00
STMSW33221	THIRD STREET	STS-450	450	2008	73.91	93.51	$78,689.00
STMSW33224	FOURTH STREET	STS-450	450	2008	64.22	93.51	$68,376.00
STMSW33225	ST PAUL STREET	STS-750	750	1920	4.35	1.00	$6,540.00
STMSW33226	MINNESOTA STREET	STS-300	300	2006	25.26	92.43	$24,170.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33228	FOURTH STREET	STS-300-CSP	300	2000	3.24	59.59	$3,098.00
STMSW33233	FIFTH STREET	STS-375	375	2006	30.01	92.43	$30,855.00
STMSW33234	PATTERSON STREET	STS-375-CSP	375	1985	45.13	29.29	$46,402.00
STMSW33235	POPLAR SIDEROAD	STS-300	300	2010	33.27	94.59	$31,831.00
STMSW33236	POPLAR SIDEROAD	STS-450	450	2010	17.94	94.59	$19,105.00
STMSW33240	POPLAR SIDEROAD	STS-450	450	2010	54.86	94.59	$58,414.00
STMSW33243	POPLAR SIDEROAD	STS-450	450	2010	64.83	94.59	$69,029.00
STMSW33245	POPLAR SIDEROAD	STS-450	450	2010	4.02	94.59	$4,276.00
STMSW33246	POPLAR SIDEROAD	STS-450	450	2010	110.47	94.59	$117,615.00
STMSW33249	POPLAR SIDEROAD	STS-450	450	2010	43.25	94.59	$46,047.00
STMSW33250	POPLAR SIDEROAD	STS-450	450	2010	52.26	94.59	$55,643.00
STMSW33253	POPLAR SIDEROAD	STS-450	450	2010	23.44	94.59	$24,956.00
STMSW33259	POPLAR SIDEROAD	STS-300	300	2010	5.82	94.59	$5,572.00
STMSW33260	POPLAR SIDEROAD	STS-450	450	2010	39.02	94.59	$41,544.00
STMSW33261	POPLAR SIDEROAD	STS-300	300	2010	7.73	94.59	$7,400.00
STMSW33262	POPLAR SIDEROAD	STS-600	600	2010	7.03	94.59	$9,063.00
STMSW33263	POPLAR SIDEROAD	STS-600	600	2010	28.26	94.59	$36,447.00
STMSW33264	POPLAR SIDEROAD	STS-300	300	2010	65.50	94.59	$62,670.00
STMSW33265	POPLAR SIDEROAD	STS-600	600	2010	31.53	94.59	$40,655.00
STMSW33266	POPLAR SIDEROAD	STS-300	300	2010	39.10	94.59	$37,408.00
STMSW33270	CLARK STREET	STS-600	600	2010	13.11	94.59	$16,909.00
STMSW33274	POPLAR SIDEROAD	STS-450	450	2010	65.81	94.59	$70,070.00
STMSW33276	POPLAR SIDEROAD	STS-600	600	2010	90.95	94.59	$117,284.00
STMSW33278	POPLAR SIDEROAD	STS-600	600	2010	91.64	94.59	$118,182.00
STMSW33281	POPLAR SIDEROAD	STS-750	675	2010	20.35	94.59	$30,607.00
STMSW33284	POPLAR SIDEROAD	STS-900	900	2010	106.07	94.59	$174,713.00
STMSW33288	POPLAR SIDEROAD	STS-600	600	2010	119.49	94.59	$154,093.00
STMSW33291	POPLAR SIDEROAD	STS-600	600	2010	107.26	94.59	$138,320.00
STMSW33292	POPLAR SIDEROAD	STS-600	600	2010	67.96	94.59	$87,636.00
STMSW33297	POPLAR SIDEROAD	STS-450	450	2010	93.18	94.59	$99,210.00
STMSW33298	POPLAR SIDEROAD	STS-450	450	2010	30.85	94.59	$32,846.00
STMSW33305	NIAGARA STREET	STS-600	600	2016	16.13	97.84	$20,795.00
STMSW33306	(blank)	STS-300	300	2008	34.85	93.51	$33,341.00
STMSW33308	NORTH PINE STREET	STS-450	450	2008	22.90	93.51	$24,376.00
STMSW33313	SIDE LAUNCH WAY	STS-375	375	2005	5.89	91.89	$6,059.00
STMSW33316	SIDE LAUNCH WAY	STS-450	450	2005	35.54	91.89	$37,835.00
STMSW33317	SIDE LAUNCH WAY	STS-750	675	2005	44.15	91.89	$66,409.00
STMSW33318	NORTH PINE STREET	STS-600	600	2005	60.95	91.89	$78,604.00
STMSW33319	SIDE LAUNCH WAY	STS-900	825	2005	19.05	91.89	$31,384.00
STMSW33320	SIDE LAUNCH WAY	STS-900	825	2005	6.10	91.89	$10,054.00
STMSW33340	SPRUCE STREET	STS-600-CSP	600	1989	21.66	37.37	$27,935.00
STMSW33343	WATTS CRESCENT	STS-375	375	1977	18.32	73.00	$18,841.00
STMSW33344	WATTS CRESCENT	STS-375	375	1977	16.30	73.00	$16,758.00
STMSW33345	THIRD STREET	STS-300	300	1987	35.77	82.16	$34,229.00
STMSW33370	ST MARIE STREET	STS-1050	1050	2007	73.49	92.97	$149,715.00
STMSW33371	ST PAUL STREET	STS-750	675	1920	18.79	1.00	$28,258.00
STMSW33372	ST PAUL STREET	STS-750	750	1998	21.18	88.11	$31,857.00
STMSW33373	CALLARY CRESCENT	STS-750	750	1998	40.70	88.11	$61,214.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33374	ONTARIO STREET	STS-1500	1800	1960	46.53	53.17	$152,321.00
STMSW33375	RAGLAN STREET	STS-450-CSP	450	1994	5.40	47.47	$5,754.00
STMSW33378	FIFTH STREET	STS-300-CSP	300	1950	9.64	1.00	$9,219.00
STMSW33381	POPLAR SIDEROAD	STS-900-CSP	900	2007	42.62	73.73	$70,198.00
STMSW33382	POPLAR SIDEROAD	STS-750-CSP	750	2007	30.60	73.73	$46,030.00
STMSW33399	TRACEY LANE	STS-300	300	2019	50.99	99.46	$48,785.00
STMSW33400	BARFOOT STREET	STS-450	450	2019	84.38	99.46	$89,838.00
STMSW33402	BAILEY STREET	STS-300	300	2019	56.21	99.46	$53,779.00
STMSW33403	BAILEY STREET	STS-525	525	2019	83.75	99.46	$92,108.00
STMSW33410	TRACEY LANE	STS-750	675	2019	85.63	99.46	$128,799.00
STMSW33411	MCLEAN AVENUE	STS-450	450	2019	119.02	99.46	$126,721.00
STMSW33412	MCLEAN AVENUE	STS-450	450	2018	118.71	98.92	$126,385.00
STMSW33413	MCLEAN AVENUE	STS-450	450	2018	9.25	98.92	$9,848.00
STMSW33414	MCLEAN AVENUE	STS-450	450	2018	40.66	98.92	$43,285.00
STMSW33415	Dey Drive	STS-450	450	2018	52.79	98.92	$56,204.00
STMSW33416	Dey Drive	STS-1050	1050	2018	27.80	98.92	$56,629.00
STMSW33417	Dey Drive	STS-1050	1050	2018	131.40	98.92	$267,669.00
STMSW33418	Dey Drive	STS-300	300	2018	84.59	98.92	$80,936.00
STMSW33419	MCLEAN AVENUE	STS-1050	1050	2018	99.34	98.92	$202,359.00
STMSW33420	MCLEAN AVENUE	STS-1050	1050	2018	9.39	98.92	$19,137.00
STMSW33421	MCLEAN AVENUE	STS-750	750	2018	78.10	98.92	$117,467.00
STMSW33422	MCLEAN AVENUE	STS-525	525	2018	74.67	98.92	$82,124.00
STMSW33423	MCLEAN AVENUE	STS-450	450	2019	74.22	99.46	$79,022.00
STMSW33424	MCLEAN AVENUE	STS-375	375	2019	112.40	99.46	$115,581.00
STMSW33425	TRACEY LANE	STS-300	300	2019	68.94	99.46	$65,965.00
STMSW33426	TRACEY LANE	STS-375	375	2019	14.39	99.46	$14,801.00
STMSW33427	TRACEY LANE	STS-300	300	2019	67.27	99.46	$64,368.00
STMSW33428	MCLEAN AVENUE	STS-375	375	2019	77.96	99.46	$80,163.00
STMSW33429	MCLEAN AVENUE	STS-450	450	2018	78.38	98.92	$83,449.00
STMSW33430	KERR STREET	STS-300	300	2018	67.86	98.92	$64,930.00
STMSW33431	KERR STREET	STS-375	375	2018	115.99	98.92	$119,274.00
STMSW33432	PORTLAND STREET	STS-450	450	2019	65.80	99.46	$70,054.00
STMSW33433	BARFOOT STREET	STS-750	675	2019	83.97	99.46	$126,298.00
STMSW33434	PORTLAND STREET	STS-750	750	2018	74.00	98.92	$111,302.00
STMSW33435	KERR STREET	STS-750	750	2018	74.94	98.92	$112,714.00
STMSW33436	MCLEAN AVENUE	STS-375	375	2018	65.77	98.92	$67,627.00
STMSW33437	Kirby Avenue	STS-900	825	2018	62.07	98.92	$102,242.00
STMSW33438	Kirby Avenue	STS-900	825	2018	72.20	98.92	$118,926.00
STMSW33439	Kirby Avenue	STS-900	825	2018	76.39	98.92	$125,827.00
STMSW33440	Kirby Avenue	STS-1200	1200	2018	40.17	98.92	$101,361.00
STMSW33441	Kirby Avenue	STS-300	300	2018	50.10	98.92	$47,940.00
STMSW33442	MCLEAN AVENUE	STS-900	825	2018	40.92	98.92	$67,399.00
STMSW33443	MCLEAN AVENUE	STS-300	300	2018	57.56	98.92	$55,069.00
STMSW33444	KERR STREET	STS-750	675	2018	74.65	98.92	$112,275.00
STMSW33445	PORTLAND STREET	STS-600	600	2019	74.61	99.46	$96,218.00
STMSW33449	GOLFVIEW DRIVE	STS-300	300	2007	9.82	92.97	$9,395.00
STMSW33450	GOLFVIEW DRIVE	STS-750	675	2007	5.30	92.97	$7,978.00
STMSW33452	Dey Drive	STS-450	450	1985	52.85	81.08	$56,267.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33453	EASEMENT	STS-900	900	2018	44.00	98.92	$72,464.00
STMSW33454	EASEMENT	STS-900	900	2018	78.87	98.92	$129,907.00
STMSW33455	EASEMENT	STS-900	900	2018	11.90	98.92	$19,592.00
STMSW33456	EASEMENT	STS-900	900	2018	68.36	98.92	$112,599.00
STMSW33457	MCLEAN AVENUE	STS-300	300	2019	35.53	99.46	$0.00
STMSW33459	MCLEAN AVENUE	STS-300	300	2019	35.71	99.46	$0.00
STMSW33460	Kirby Avenue	STS-300	300	2018	41.11	98.92	$39,335.00
STMSW33461	Kirby Avenue	STS-300	300	2018	39.65	98.92	$37,933.00
STMSW33462	Kirby Avenue	STS-300	300	2018	40.53	98.92	$38,779.00
STMSW33463	Kirby Avenue	STS-300	300	2018	39.35	98.92	$37,645.00
STMSW33464	Kirby Avenue	STS-300	300	2018	39.89	98.92	$38,165.00
STMSW33547	Kirby Avenue	STS-375	375	2018	7.42	98.92	$7,631.00
STMSW33554	Dey Drive	STS-450-CSP	450	1978	4.85	15.14	$5,160.00
STMSW33555	KRISTA COURT	STS-300-CSP	300	1978	10.94	15.14	$10,469.00
STMSW33556	Dey Drive	STS-300-CSP	300	1978	34.15	15.14	$32,679.00
STMSW33557	FINDLAY DRIVE	STS-900	900	0	21.37	1.00	$0.00
STMSW33558	HURONTARIO STREET	STS-450-CSP	400	1966	75.49	1.00	$80,374.00
STMSW33559	HURONTARIO STREET	STS-300-CSP	300	1966	9.06	1.00	$8,670.00
STMSW33560	HURONTARIO STREET	STS-375-CSP	350	1966	32.11	1.00	$33,023.00
STMSW33561	HURONTARIO STREET	STS-450-CSP	400	1966	47.56	1.00	$50,636.00
STMSW33562	HURONTARIO STREET	STS-375-CSP	350	1966	84.02	1.00	$86,396.00
STMSW33564	HURONTARIO STREET	STS-450-CSP	450	1966	78.93	1.00	$84,040.00
STMSW33565	HURONTARIO STREET	STS-375-CSP	350	1966	14.42	1.00	$14,831.00
STMSW33568	MINNESOTA STREET	STS-1500	1800	1960	100.58	53.17	$329,252.00
STMSW33569	MINNESOTA STREET	STS-900	900	1960	123.54	53.17	$203,488.00
STMSW33571	Hume Street	STS-1500	3000	2018	22.44	98.92	$73,445.00
STMSW33573	HURONTARIO STREET	STS-375-CSP	375	1980	37.16	19.18	$38,216.00
STMSW33574	HURONTARIO STREET	STS-300-CSP	300	1980	35.33	19.18	$33,803.00
STMSW33575	HURONTARIO STREET	STS-375-CSP	375	1980	47.26	19.18	$48,602.00
STMSW33576	HURONTARIO STREET	STS-300-CSP	300	1980	37.23	19.18	$35,623.00
STMSW33577	HURON STREET	STS-450	450	2020	13.09	100.00	$13,937.00
STMSW33578	(blank)	STS-1350	1350	2016	25.58	97.84	$72,748.00
STMSW33579	(blank)	STS-1350	1350	2020	70.44	100.00	$200,368.00
STMSW33580	(blank)	STS-1350	1350	2020	42.32	100.00	$120,378.00
STMSW33595	CRANBERRY QUAY	STS-525	525	1972	22.39	67.17	$24,621.00
STMSW33596	TROTT BOULEVARD	STS-375-CSP	375	1972	10.36	3.02	$10,653.00
STMSW33598	BRYAN DRIVE	STS-450-CSP	400	1968	20.56	1.00	$21,888.00
STMSW33600	PEEL STREET	STS-300	300	1984	16.20	80.54	$15,500.00
STMSW33602	FIRST STREET	STS-300-CSP	300	1964	1.83	1.00	$0.00
STMSW33603	Second Street	STS-450-CSP	450	1968	19.02	1.00	$20,248.00
STMSW33604	THIRD STREET	STS-300-CSP	300	1973	1.26	5.04	$1,204.00
STMSW33605	RAGLAN STREET	STS-450-CSP	450	1997	19.24	53.53	$20,486.00
STMSW33606	CRANBERRY SURF	STS-525	500	1972	74.84	67.17	$82,310.00
STMSW33609	NAPIER STREET	STS-375	375	2020	113.25	100.00	$116,458.00
STMSW33612	NAPIER STREET	STS-450	450	2020	43.31	100.00	$46,109.00
STMSW33615	NAPIER STREET	STS-525	525	2020	100.08	100.00	$110,064.00
STMSW33619	NAPIER STREET	STS-525	525	2020	48.16	100.00	$52,967.00
STMSW33624	PLEWES DRIVE	STS-600	600	2018	82.43	98.92	$106,295.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33625	PLEWES DRIVE	STS-600	600	2018	85.13	98.92	$109,785.00
STMSW33626	FOLEY CRESCENT	STS-1200	1200	2018	89.36	98.92	$225,477.00
STMSW33627	PLEWES DRIVE	STS-750	750	2019	74.15	99.46	$111,534.00
STMSW33628	PLEWES DRIVE	STS-750	750	2019	13.10	99.46	$19,701.00
STMSW33629	PLEWES DRIVE	STS-750	750	2019	46.69	99.46	$70,223.00
STMSW33630	PLEWES DRIVE	STS-750	750	2019	43.31	99.46	$65,135.00
STMSW33631	PLEWES DRIVE	STS-750	750	2019	43.01	99.46	$64,697.00
STMSW33632	PLEWES DRIVE	STS-300	300	2019	35.44	99.46	$33,913.00
STMSW33633	Archer Avenue	STS-300	300	2019	79.95	99.46	$76,497.00
STMSW33634	Spencer Street	STS-300	300	2019	89.32	99.46	$85,460.00
STMSW33635	Bassett Street	STS-300	300	2019	81.94	99.46	$78,395.00
STMSW33636	Archer Avenue	STS-300	300	2019	76.69	99.46	$73,372.00
STMSW33637	Archer Avenue	STS-300	300	2019	12.72	99.46	$12,172.00
STMSW33638	Archer Avenue	STS-300	300	2018	59.34	98.92	$56,774.00
STMSW33639	PLEWES DRIVE	STS-375	375	2018	65.71	98.92	$67,570.00
STMSW33640	Bassett Street	STS-900	900	2019	66.91	99.46	$110,201.00
STMSW33641	PLEWES DRIVE	STS-900	900	2019	66.45	99.46	$109,445.00
STMSW33642	Spencer Street	STS-300	300	2019	72.02	99.46	$68,908.00
STMSW33643	PLEWES DRIVE	STS-450	450	2019	61.56	99.46	$65,543.00
STMSW33644	FOLEY CRESCENT	STS-1350	1350	2018	72.67	98.92	$206,708.00
STMSW33645	FOLEY CRESCENT	STS-1350	1350	2018	27.73	98.92	$78,887.00
STMSW33647	FOLEY CRESCENT	STS-600	600	2018	110.84	98.92	$142,938.00
STMSW33649	FOLEY CRESCENT	STS-525	525	2018	78.71	98.92	$86,564.00
STMSW33650	Archer Avenue	STS-900	900	2019	30.83	99.46	$50,774.00
STMSW33653	FOLEY CRESCENT	STS-375	350	2018	21.47	98.92	$22,081.00
STMSW33654	FOLEY CRESCENT	STS-1350	1350	2018	7.89	98.92	$22,454.00
STMSW33655	FOLEY CRESCENT	STS-300	300	2018	16.57	98.92	$15,857.00
STMSW33695	FOLEY CRESCENT	STS-900	825	2018	30.50	98.92	$50,230.00
STMSW33696	FOLEY CRESCENT	STS-900	825	2018	18.61	98.92	$30,654.00
STMSW33697	High Street	STS-300	300	2018	276.80	98.92	$264,837.00
STMSW33698	High Street	STS-300	300	2018	35.43	98.92	$33,902.00
STMSW33701	FOLEY CRESCENT	STS-300	300	2018	9.19	98.92	$8,797.00
STMSW33718	Kirby Avenue	STS-525	525	2018	16.64	98.92	$18,304.00
STMSW33719	Kirby Avenue	STS-375	375	2018	2.96	98.92	$3,039.00
STMSW33720	Kirby Avenue	STS-300	300	2018	40.51	98.92	$38,759.00
STMSW33722	Dey Drive	STS-300	300	2018	7.65	98.92	$7,320.00
STMSW33728	Dey Drive	STS-450	450	2018	41.20	98.92	$43,869.00
STMSW33729	Dey Drive	STS-450	450	2018	21.59	98.92	$22,984.00
STMSW33730	Dey Drive	STS-450	450	2018	31.73	98.92	$33,782.00
STMSW33742	MURRAY COURT	STS-300	300	2017	5.77	98.38	$5,517.00
STMSW33743	Elm Street	STS-450	400	2017	18.14	98.38	$19,313.00
STMSW33744	Second Street	STS-450	400	2017	45.70	98.38	$48,653.00
STMSW33764	MCLEAN AVENUE	STS-300	300	0	36.33	1.00	$34,759.00
STMSW33767	KARI CRESCENT	STS-300-CSP	300	0	21.10	1.00	$20,191.00
STMSW33768	(blank)	STS-450-CSP	400	0	20.55	1.00	$21,874.00
STMSW33769	(blank)	STS-300-CSP	300	0	12.09	1.00	$11,568.00
STMSW33772	(blank)	STS-450-CSP	450	0	4.00	1.00	$4,256.00
STMSW33773	(blank)	STS-300-CSP	300	0	12.37	1.00	$11,836.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33774	(blank)	STS-450-CSP	425	0	21.04	1.00	$22,398.00
STMSW33775	(blank)	STS-450-CSP	425	0	20.98	1.00	$22,341.00
STMSW33776	(blank)	STS-525-CSP	500	0	24.24	1.00	$26,655.00
STMSW33777	(blank)	STS-525-CSP	500	0	25.39	1.00	$27,927.00
STMSW33778	(blank)	STS-600-CSP	600	0	12.56	1.00	$16,196.00
STMSW33779	(blank)	STS-450-CSP	400	0	12.54	1.00	$13,356.00
STMSW33780	(blank)	STS-450-CSP	425	0	23.18	1.00	$24,682.00
STMSW33781	(blank)	STS-450-CSP	425	0	23.34	1.00	$24,853.00
STMSW33782	(blank)	STS-525-CSP	525	0	9.26	1.00	$10,180.00
STMSW33784	(blank)	STS-600-CSP	600	0	13.54	1.00	$17,464.00
STMSW33785	(blank)	STS-450-CSP	400	0	11.23	1.00	$11,959.00
STMSW33786	(blank)	STS-750-CSP	750	0	18.45	1.00	$27,751.00
STMSW33788	(blank)	STS-600-CSP	600	0	11.37	1.00	$14,665.00
STMSW33821	NAPIER STREET	STS-375	375	2019	113.20	99.46	$116,398.00
STMSW33824	NAPIER STREET	STS-300	300	2019	2.99	99.46	$2,863.00
STMSW33832	HIGHWAY 26	STS-300	300	2018	19.78	98.92	$18,924.00
STMSW33833	SOUTH SERVICE ROAD	STS-300	300	2018	10.83	98.92	$10,357.00
STMSW33834	Pretty River Parkway South	STS-300	300	2018	11.67	98.92	$11,165.00
STMSW33835	SOUTH SERVICE ROAD	STS-300	300	2018	16.71	98.92	$15,987.00
STMSW33836	Hume Street	STS-300-CSP	300	0	14.76	1.00	$14,120.00
STMSW33837	Hume Street	STS-300-CSP	300	0	11.11	1.00	$10,633.00
STMSW33838	Hume Street	STS-375-CSP	375	0	57.94	1.00	$59,578.00
STMSW33839	Hume Street	STS-300-CSP	300	0	56.81	1.00	$54,356.00
STMSW33840	HIGHWAY 26	STS-300	300	2018	19.75	98.92	$18,894.00
STMSW33841	HIGHWAY 26	STS-375	375	2018	50.34	98.92	$51,766.00
STMSW33842	HIGHWAY 26	STS-375	375	2018	97.71	98.92	$100,472.00
STMSW33843	HIGHWAY 26	STS-300	300	2018	3.64	98.92	$3,487.00
STMSW33844	HIGHWAY 26	STS-525	500	2018	33.42	98.92	$36,753.00
STMSW33845	HIGHWAY 26	STS-450	450	2018	48.90	98.92	$52,063.00
STMSW33846	HIGHWAY 26	STS-450	450	2018	48.83	98.92	$51,994.00
STMSW33847	HIGHWAY 26	STS-525	525	2018	48.90	98.92	$53,785.00
STMSW33848	HIGHWAY 26	STS-525	525	2018	47.95	98.92	$52,734.00
STMSW33849	HIGHWAY 26	STS-600	600	2018	50.95	98.92	$65,701.00
STMSW33850	HIGHWAY 26	STS-300	300	2018	5.88	98.92	$5,628.00
STMSW33851	HIGHWAY 26	STS-300	300	2018	4.94	98.92	$4,730.00
STMSW33852	HIGHWAY 26	STS-300	300	2018	22.88	98.92	$21,891.00
STMSW33853	HIGHWAY 26	STS-300	300	2018	14.68	98.92	$14,043.00
STMSW33854	HIGHWAY 26	STS-750	675	2018	123.43	98.92	$185,651.00
STMSW33855	HIGHWAY 26	STS-300	300	2018	13.02	98.92	$12,456.00
STMSW33856	HIGHWAY 26	STS-300	300	2018	4.97	98.92	$4,755.00
STMSW33857	HIGHWAY 26	STS-300	300	2018	12.59	98.92	$12,041.00
STMSW33858	HIGHWAY 26	STS-300	300	2018	5.16	98.92	$4,933.00
STMSW33859	HIGHWAY 26	STS-750	675	2018	94.38	98.92	$141,954.00
STMSW33860	HIGHWAY 26	STS-300	300	2018	12.51	98.92	$11,973.00
STMSW33861	HIGHWAY 26	STS-300	300	2018	4.88	98.92	$4,665.00
STMSW33862	HIGHWAY 26	STS-300	300	2018	12.44	98.92	$11,899.00
STMSW33863	HIGHWAY 26	STS-300	300	2018	5.03	98.92	$4,810.00
STMSW33865	HIGHWAY 26	STS-750	675	2018	54.46	98.92	$81,907.00

DRAFT

Asset	Name	Asset Class	Dimension 2	Year Built	Meters	Average Condition	Replacement Cost
STMSW33866	HIGHWAY 26	STS-300	300	2018	5.13	98.92	$4,912.00
STMSW33867	HIGHWAY 26	STS-450	450	2018	96.67	98.92	$102,922.00
STMSW33868	HIGHWAY 26	STS-300	300	2018	1.82	98.92	$1,745.00
STMSW33869	HIGHWAY 26	STS-300	300	2018	2.44	98.92	$2,334.00
STMSW33870	HIGHWAY 26	STS-450	450	2018	100.53	98.92	$107,036.00
STMSW33871	HIGHWAY 26	STS-300	300	2018	2.85	98.92	$2,727.00
STMSW33872	HIGHWAY 26	STS-375	375	2018	100.97	98.92	$103,822.00
STMSW33873	HIGHWAY 26	STS-300	300	2018	2.17	98.92	$2,075.00
STMSW33874	HIGHWAY 26	STS-300	300	2018	1.82	98.92	$1,744.00
STMSW33875	HIGHWAY 26	STS-300	300	2018	5.04	98.92	$4,823.00
STMSW33876	HIGHWAY 26	STS-300	300	0	3.15	1.00	$0.00
Grand Total					79,323.43	66.73	$100,815,048.00

Appendix F- Core Equipment

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
Water	Carmichael Reservoir Building	AIT-01R	Chlorine Analyzer Carmichael Reservoir	14	2017	5	$10,400
		ARV-HLP-CR-1	High Lift Pump 1 Air Release Valve	15	1991	31	$8,823
		ARV-HLP-CR-2	High Lift Pump 2 Air Release Valve	25	1991	31	$8,823
		ARV-HLP-CR-3	High Lift Pump 3 Air Release Valve	15	1991	31	$8,823
		Chlor-CR	Chlorinator Carmichael Reservoir	-8	2019	3	$30,615
		FIT-01-R	Distribution flow meter Carmichael inflow	17	2018	4	$7,595
		FIT-02-R	Distribution flow meter - outflow Carmichael	12	2018	4	$7,595
		GWS-CR	Chlorine Gas Weigh Scale	11	2020	2	$2,877
		HLP-CR-1	High Lift Pump 1	25	1991	31	$40,300
		HLP-CR-1-M	High Lift pump 1 Motor	25	1991	31	$100,000
		HLP-CR-1-PCV	High Lift Pump 1 Pump Control Valve	35	1991	31	$12,800
		HLP-CR-2	High Lift Pump 2	25	1991	31	$40,300
		HLP-CR-2-M	High Lift Pump 2 Motor	25	1991	31	$100,000
		HLP-CR-2-PCV	High Lift Pump 2 Pump Control Valve	25	1991	31	$12,800
		HLP-CR-3	High Lift Pump 3	25	1991	31	$40,300
		HLP-CR-3-M	High Lift Pump 3 Motor	25	1991	31	$100,000
		HLP-CR-3-PCV	High Lift Pump 3 Pump Control Valve	25	1991	31	$12,800
		HV-01-CR	Isolation Hand Valve 1 Carmichael	40	1991	31	$8,210

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		HV-02-CR	Isolation Hand Valve 2 - Carmichael	40	1991	31	$8,210
		HV-03-CR	Isolation Hand Valve 3 - Carmichael	40	1991	31	$8,210
		HV-04-CR	Isolation Hand Valve 4 - Carmichael	40	1991	31	$8,210
		HV-05-CR	Isolation Hand Valve 5 - Carmichael	40	1991	31	$8,210
		HV-06-CR	Isolation Hand Valve 6 - Carmichael	40	1991	31	$8,210
		HV-07-CR	Isolation Hand Valve 7 - Carmichael	40	1991	31	$8,210
		HV-08-CR	Isolation Hand Valve 8 - Carmichael	40	1991	31	$8,210
		HV-09-CR	Isolation Hand Valve 9 - Carmichael	40	1991	31	$8,210
		HV-10-CR	Isolation Hand Valve 10 - Carmichael	40	1991	31	$8,210
		HV-11-CR	Isolation Hand Valve 11 - Carmichael	40	1991	31	$8,210
		HV-HLP-1-CR	High Lift Pump 1 Isolating Hand Valve	25	1991	31	$13,294
		HV-HLP-2-CR	High Lift Pump 2 Isolating Hand Valve	25	1991	31	$13,294
		HV-HLP-3-CR	High Lift Pump 3 Isolating Hand Valve	25	1991	31	$13,294
		ICV-CR	Inflow Control Valve	40	1991	31	$12,800
		LIT-01-CR	Reservoir Level Carmichael Cell A	-2	2018	4	$4,058
		LIT-02-CR	Reservoir Level Carmichael Cell B	-2	2018	4	$4,058
		MCC-BPT-CR	Breaker panel tub - Carmichael	25	1991	31	$0
		MCC-HLP-1-PT-CR	Pump Tub - Highlift pump 1 - Soft Start - Carmichael	15	1991	31	$0
		MCC-HLP-2-PT-CR	Pump Tub - Highlift pump 2 - Soft Start - Carmichael	15	1991	31	$0
		MCC-HLP-3-PT-CR	Pump Tub - Highlift pump 3 - Soft Start - Carmichael	15	1991	31	$0
		MCC-HT-1-CR	Heater tub - Carmichael	25	1991	31	$0
		MCC-HT-2-CR	Heater tub - Carmichael	25	1991	31	$0
		MCC-HT-3-CR	Heater tub - Carmichael	25	1991	31	$0
		MCC-MT-CR	Metering tub - Carmichael	25	1991	31	$0
		MCC-P-CR	Panel - Carmichael	25	1991	31	$280,500
		MCC-SPT-CR	Spare Pump tub - Soft Start - Carmichael	15	1991	31	$0
		MCC-UET-CR	Utility Entrance tub - Carmichael	25	1991	31	$0
		PIPE-DI-150-CR	Ductile Iron 150 mm piping	75	1991	31	$1,142
		PIPE-DI-200-CR	Ductile Iron 200 mm piping	75	1991	31	$3,026
		PIPE-DI-250-CR	Ductile Iron 250 mm piping	75	1991	31	$1,577
		PIPE-DI-300-CR	Ductile Iron 300 mm piping	75	1991	31	$16,031
		PIPE-DI-350-CR	Ductile Iron 350 mm piping	75	1991	31	$27,195
		PIT-01-R	Carmichael Reservoir Discharge Pressure	12	2018	4	$9,171
		PLC-AIC-1-CR	Analog Input Card +/-20mA +/-10V 4pt. - Carmichael	15	1991	31	$7,500
		PLC-AIC-2-CR	Analog Input Card +/-20mA +/-10V 4pt. - Carmichael	15	1991	31	$7,500
		PLC-DIC-1-CR	Digital Input Card 120Vac 16pt. - Carmichael	15	1991	31	$1,500
		PLC-DIC-2-CR	Digital Input Card 120Vac 16pt. - Carmichael	15	1991	31	$1,500
		PLC-DIC-3-CR	Digital Input Card 120Vac 16pt. - Carmichael	15	1991	31	$1,500
		PLC-DOC-1-CR	Digital Output Card Indivdually Isolated Relays 8pt. - Carmichael	15	1991	31	$1,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PLC-DOC-2-CR	Digital Output Card Indivdually Isolated Relays 8pt. - Carmichael	15	1991	31	$1,500
		PLC-P-CR	PLC Panel - Carmichael	15	1991	31	$100,000
		PLC-PS-CR	Power Supply - Carmichael	15	1991	31	$4,400
		PLC-R10-CR	Rack 10 Slot - Carmichael	15	1991	31	$3,000
		PLC-SLC-CR	SLC Processor 5/05 16K OS401 C - Carmichael	15	1991	31	$9,600
		RRV-CR	Reservoir Recirculating Valve	50	1991	31	$38,400
		RRV-STR	Reservoir Water Storage Structure	60	1991	31	$5,932,000
	Davey Reservoir Building	ARV-400-DR	Air Relief Valve	30	2009	13	$3,288
		ARV-401-DR	Air Relief Valve	30	2009	13	$3,288
		ARV-402-DR	Air Relief Valve	30	2009	13	$3,288
		ARV-403-DR	Air Relief Valve	30	2009	13	$3,288
		ARV-404-DR	Air Relief Valve	30	2009	13	$3,288
		ARV-405-DR	Air Relief Valve	30	2009	13	$3,288
		ARV-406-DR	Air Relief Valve	30	2009	13	$3,288
		BVA-213-DR	Butterfly Valve / Actuator	30	2009	13	$5,000
		CIT-401-DR	Chlorine Analyzer Davey control	19	2017	5	$13,500
		CIT-402-DR	Distribution Chlorine Analyzer Davey	19	2017	5	$13,500
		CMP-01-DR	Chlorine Metering Pump	9	2020	2	$15,250
		CMP-02-DR	Chlorine Metering Pump	20	2009	13	$15,250
		CST-601-DR	Chlorine Storage Tank	19	2020	2	$15,250
		CV-101-DR	Check Valve Clear Well Overflow	30	2009	13	$10,938
		CV-402-DR	Check Valve HLP 2	30	2009	13	$10,938
		CV-403-DR	Check Valve HLP 3	30	2009	13	$10,938
		CV-404-DR	Check Valve HLP 4	30	2017	5	$10,938
		CV-405-DR	Check Valve HLP 5	30	2009	13	$10,938
		CV-BW-DR	Bulk Water Control Valve	10	2020	2	$10,330
		HLP-DR-2	High Lift Pump 2	15	2020	2	$40,300
		HLP-DR-2-M	High Lift Pump 2 Motor	23	2020	2	$50,000
		HLP-DR-3	High Lift Pump 3	35	2009	13	$40,300
		HLP-DR-3-M	High Lift Pump 3 Motor	35	2009	13	$70,000
		HLP-DR-4	High Lift Pump 4	24	2020	2	$40,300
		HLP-DR-4-M	High Lift Pump 4 motor	24	2020	2	$60,000
		HLP-DR-5	High Lift Pump 5	35	2009	13	$40,300
		HLP-DR-5-M	High Lift Pump 5 Motor	35	2009	13	$60,000
		HV-BV-103-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-104-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-105-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-106-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-107-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-201-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		HV-BV-202-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-209-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-210-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-212-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-214-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-216-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-411-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-412-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-413-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-414-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-415-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-416-DR	Isolating Hand Valve Butterfly	25	2009	13	$13,684
		HV-BV-417-DR	Isolating Hand Valve Butterfly	25	2009	13	$13,684
		HV-BV-418-DR	Isolating Hand Valve Butterfly	25	2009	13	$13,684
		HV-BV-501-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		HV-BV-502-DR	Isolating Hand Valve Butterfly	25	2009	13	$8,210
		MCC-DS-DR	Utility MCC - Distribution Secti - Daveyon	25	2009	13	$45,000
		MCC-ES-DR	Utility MCC - Entrance Section - Davey	25	2009	13	$45,000
		MCC-ET-DR	Entrance tub - Davey	25	2009	13	$0
		MCC-FT-1-DR	Fan tub 1 - Davey	25	2009	13	$0
		MCC-FT-2-DR	Fan tub 2 - Davey	25	2009	13	$0
		MCC-HLP-2-VFD-T	VFD tub - Highlift pump 2 - Davey	15	2009	13	$0
		MCC-HLP-3-VFD-T	VFD tub - Highlift pump 3 - Davey	15	2009	13	$0
		MCC-HLP-4-VFD-T	VFD tub - Highlift pump 4 - Davey	15	2009	13	$0
		MCC-HLP-5-VFD-T	VFD tub - Highlift pump 5 - Davey	15	2009	13	$0
		MCC-HLPS-VFD-T-	VFD tub - Highlift pump Spare - Davey	25	2009	13	$0
		MCC-P-DR	Panel - Davey	25	2009	13	$280,500
		MCC-ST-DR	spare tub - Davey	25	2009	13	$0
		MCC-TS-DR	Transfer Switch - Davey	25	2009	13	$0
		MCC-TVSST-DR	TVSS tub - Davey	25	2009	13	$0
		MCC-UN-DR	unknown Tub - Davey	25	2009	13	$0
		MFM-201-DR	Flow meter Davey Reservoir inflow	25	2009	13	$7,595
		MFM-401-DR	Flow Meter Davey Reservoir Outflow	16	2018	4	$7,595
		MFM-401-SP-DR	Magnetic Flow Meter Outflow NIS/Design Flow Spare	25	2011	11	$9,493
		MFM-402-DR	Davey Bulk Water Flow Meter	16	2018	4	$7,595
		M-PRV-215-DR	Modualting Pressure Relief Valve Surge Anticipation	25	2009	13	$12,800
		PIT-201-DR	Suction Pressure Davey Reservoir	25	2009	13	$9,171
		PIT-401-DR	Discharge Pressure Davey Reservoir 1	25	2009	13	$9,171
		PIT-402-DR	Discharge Pressure Davey Reservoir 2	25	2009	13	$9,171

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PLC-AIC-1-DR	Analog Input Card +/-20mA +/-10V 8pt. - Davey	15	2009	13	$7,500
		PLC-AIC-2-DR	Analog Input Card +/-20mA +/-10V 8pt. - Davey	15	2009	13	$7,500
		PLC-AIC-3-DR	Analog Input Card +/-20mA +/-10V 8pt. - Davey	15	2009	13	$7,500
		PLC-AOC-1-DR	Analog Output Card 0-20mA 4pt. - Davey	15	2009	13	$7,500
		PLC-AOC-2-DR	Analog Output Card 0-20mA 4pt. - Davey	15	2009	13	$7,500
		PLC-AOC-3-DR	Analog Output Card 0-20mA 4pt. - Davey	15	2009	13	$7,500
		PLC-DIC-1-DR	Digital Input Card 120Vac 16pt. - Davey	15	2009	13	$1,500
		PLC-DIC-2-DR	Digital Input Card 120Vac 16pt. - Davey	15	2009	13	$1,500
		PLC-DIC-3-DR	Digital Input Card 120Vac 16pt. - Davey	15	2009	13	$1,500
		PLC-DIC-4-DR	Digital Input Card 120Vac 16pt. - Davey	15	2009	13	$1,500
		PLC-DOC-DR	Digital Output Card Indivdually Isolated Relays 8pt. - Davey	15	2009	13	$1,500
		PLC-PS-DR	Power Supply - Davey	15	2009	13	$4,400
		PLC-R13-DR	Rack 13 Slot - Davey	15	2009	13	$3,800
		PLC-SLC-DR	SLC Processor 5/05 64K OS501 - Davey	15	2009	13	$13,600
		PPV-PR-312-DR	Pump Priming Valve Vacuum	25	2009	13	$10,000
		PPV-PR-313-DR	Pump Priming Valve Vacuum	25	2009	13	$10,000
		PPV-PR-314-DR	Pump Priming Valve Vacuum	25	2009	13	$10,000
		PPV-PR-315-DR	Pump Priming Valve Vacuum	25	2009	13	$10,000
		PRV-M-211-DR	Pressure Reducing Valve Modulating	25	2009	13	$12,800
		PSFC-205-DR	Position Sensing Flow Control - Inflow	25	2009	13	$12,800
		SV-501-DR	Bladder Type Surge Vessel / Hydropneumatic Tank	29	2020	2	$160,000
		SV-502-DR	Bladder Type Surge Vessel / Hydropneumatic Tank	29	2020	2	$160,000
		ULT-101-DR	Reservoir Level Davey Cell 1	25	2009	13	$4,058
		ULT-102-DR	Reservoir Level Davey Cell 2	25	2009	13	$4,058
		ULT-103-DR	Chlorine Storage Tank Level Transmitter	25	2009	13	$2,905
		VPS-DR	Vacuum Priming System	30	2009	13	$50,000
	Elevated Tower	AIT-19-ET	Distribution Chlorine Analyzer Tower	13	2018	4	$13,500
		CMP-1-ET	Chlorine Metering Pump	20	2008	14	$15,250
		CMP-2-ET	Chlorine Metering Pump	20	2008	14	$15,250
		FIT-1001-ET	Flow meter to / from Tower	15	2018	4	$7,595
		GV-1-ET	Gate Valve	75	1960	62	$13,294
		LIT-09-BU-ET	Tower Level Backup	0	0	0	$4,058
		LIT-09-BU-ETOLD	Tower Level Backup	17	2018	4	$3,000
		LIT-09-ET	Tower Level	18	2021	1	$1,888
		LIT-09-ET-BU	Tower Level	25	2021	1	$3,000
		LIT-09-ET-old	Tower Level	25	2014	8	$3,000
		PIPE-DI-450-ET	Ductile Iron 450 mm piping	75	1960	62	$0
		PIPE-SS-150-DR	Stainless Steel 150 mm piping	100	2008	14	$0
		PIPE-SS-200-DR	Stainless Steel 200 mm piping	100	2008	14	$0
		PIPE-SS-250-DR	Stainless Steel 250 mm piping	100	2008	14	$0
		PIPE-SS-300-DR	Stainless Steel 300 mm piping	100	2008	14	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PIPE-SS-400-DR	Stainless Steel 400 mm piping	100	2008	14	$0
		PIPE-SS-500-DR	Stainless Steel 500 mm piping	100	2008	14	$0
		PLC-A2I-ET	Analog 2 Chan. Input @ Chan. Output - Elevated Tower	12	2015	7	$7,500
		PLC-A4I-T	Analog 4 Chan. Input - Elevated Tower	12	2015	7	$7,500
		PLC-CPU-ET	Micrologix 1400 CPU series B - Elevated Tower	12	2015	7	$5,000
		PLC-P-ET	PLC Panel - Elevated Tower	12	2015	7	$100,000
		UPS-ET	Uninterupted Power Supply - the Tower	15	2014	8	$10,000
	Environmental Services Administrarion	CL2-Dist-1	Portable Colorimeter CL2 Test	9	2017	5	$1,635
		CL2-Dist-2	Portable Colorimeter CL2 Test	9	2017	5	$1,635
		CL2-Dist-3	Portable Colorimeter CL2 Test	9	2017	5	$1,635
		CL2-Dist-5	SC400 Portable Colorimeter	9	2017	5	$1,700
		CL2-Dist-6	Portable Colorimeter CL2 Test	10	2019	3	$1,635
		CL2-Dist-7	Portable Colorimeter CL2 Test	9	2020	2	$1,635
		CL2-Dist-8	Portable Colorimeter CL2 Test	12	2020	2	$1,635
		CL2-Res-1	Portable Colorimeter CL2 Test	9	2017	5	$1,635
	Georgian Meadows Booster Stn	BP-01-GM	5 HP Submersible Pump	15	2001	21	$32,550
		BP-02-GM	15 HP Submersible Pump	15	2001	21	$72,450
		BP-03-GM	15 HP Submersible Pump	15	2015	7	$72,450
		BPCV-01-GM	Booster Pump Control Valve	25	2001	21	$10,330
		BPCV-02-GM	Booster Pump Control Valve	25	2001	21	$10,330
		BPCV-03-GM	Booster Pump Control Valve	25	2001	21	$10,330
		BP-SP-GM	15 HP Submersible Pump	30	2015	7	$72,450
		BT-01-GM	Pressurized Bladder Tank 1000 L	15	2001	21	$0
		BT-02-GM	Pressurized Bladder Tank 1000 L	15	2001	21	$0
		BT-03-GM	Pressurized Bladder Tank 1000 L	15	2001	21	$0
		HV-BV-01-GM	Isolating Hand Valve Butterfly	25	2001	21	$8,210
		HV-BV-02-GM	Isolating Hand Valve Butterfly	25	2001	21	$8,210
		HV-BV-03-GM	Isolating Hand Valve Butterfly	25	2001	21	$8,210
		HV-BV-04-GM	Isolating Hand Valve Butterfly	25	2001	21	$8,210
		HV-BV-05-GM	Isolating Hand Valve Butterfly	25	2001	21	$8,210
		HV-BV-06-GM	Isolating Hand Valve Butterfly	25	2001	21	$8,210
		HV-BV-07-GM	Isolating Hand Valve Butterfly	25	2001	21	$8,210
		PIPE-SS-150-GM	Stainless Steel 150 mm piping	75	2001	21	$0
		PIT-01-GM	Suction Pressure Georgian Meadows	22	2018	4	$2,908
		PIT-02-GM	Discharge Pressure Georgian Meadows	8	2018	4	$9,171
		PLC-AIC-GM	Analog Input Card +/-20mA +/-10V 4pt. - Georgian Meadows	15	2006	16	$7,500
		PLC-DI2-C-GM	Digital Input Card 24Vdc 16pt. - Georgian Meadows	15	2006	16	$1,500
		PLC-DIC-1-GM	Digital Input Card 24Vdc 16pt. - Georgian Meadows	15	2006	16	$1,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PLC-DOC-1-GM	Digital Output Card Indivdually Isolated Relays 8pt. - Georgian Meadows	15	2006	16	$1,500
		PLC-DOC-2-GM	Digital Output Card Indivdually Isolated Relays 8pt. - Georgian Meadows	15	2006	16	$1,500
		PLC-PS-GM	Power Supply - Georgian Meadows	15	2006	16	$4,400
		PLC-R7-GM	Rack 7 Slot - Georgian Meadows	15	2006	16	$2,600
		PLC-SLC-GM	SLC Processor 5/05 16K OS401 C - Georgian Meadows	15	2006	16	$9,600
		PRV-GM	Pressure Relief Valve	25	2001	21	$12,800
	Osler Booster Station	PIT-01 OB	Suction Pressure Osler Bluffs	0	2018	4	$2,559
		PLC-AIC-1-OB	Analog Input Card +/-20mA +/-10V 4pt. - Osler Booster	12	2021	1	$7,500
		PLC-AIC-2-OB	Analog Input Card +/-20mA +/-10V 4pt. - Osler Booster	12	2021	1	$7,500
		PLC-CPU-OB	Micrologix 1400 CPU series A - Osler Booster	12	2021	1	$5,000
		PLC-DIC1-OB	Digital Input Card 24Vdc 16pt. - Osler Booster	12	2021	1	$1,500
		PLC-DIC2-OB	Digital Input Card 24Vdc 16pt. - Osler Booster	12	2021	1	$1,500
		PLC-DOC-OB	Digital Output Card 24Vdc 16pt. - Osler Booster	12	2021	1	$1,500
		PLC-DORC-OB	Digital Output Relay Card 16pt - Osler Booster	12	2021	1	$1,500
		PLC-P-DR	PLC Panel - Davey	15	2009	13	$100,000
		PLC-P-OB	PLC Panel - Osler Booster	12	2021	1	$100,000
	Osler Booster Station	PIT-02 OB	Discharge Pressure Osler Bluffs	0	2018	4	$7,337
	R.A.B. Water Filtration Plant	2100P	Portable Turbidimeter	20	1997	25	$4,758
		AIT-01 / AIT-03	Chlorine and pH Analyzer Finished Water	10	2014	8	$13,500
		AIT-02	Turbidimeter Finished Water	20	2008	14	$3,628
		AIT-05	Chlorine Analyzer Raw Water	20	2008	14	$13,000
		AIT-07	Turbidimeter Industrial Water	20	2008	14	$13,063
		AIT-13	Chlorine Analyzer Permeate Water	10	2014	8	$13,500
		AIT-15	pH Analyzer Raw Water	20	2008	14	$5,760
		AIT-17	Turbidimeter Raw Water	20	2008	14	$3,628
		AIT-18A	Permeate Water Turbidimeter	20	2008	14	$2,985
		AIT-18B	Permeate Water Turbidimeter	20	2008	14	$2,985
		AIT-18C	Permeate Water Turbidimeter	20	2008	14	$2,985
		AIT-18D	Permeate Water Turbidimeter	20	2008	14	$2,985
		AIT-18E	Permeate Water Turbidimeter	20	2008	14	$2,985
		AIT-3537	Permeate Water Turbidimeter	20	2008	14	$13,063
		AIT-7637	Raw Water Turbidimeter	20	2008	14	$13,063
		AIT-BKUP	Backup Chlorine Residual Analyzer	10	2017	5	$13,500
		ARV-1	NT Air Relief Valve #1	30	2000	22	$6,594
		ARV-1005	Air Relief Valve Pump #1	30	1997	25	$6,594
		ARV-1006	Air Relief Valve Pump #2	30	1997	25	$8,823
		ARV-1007	Air Relief Valve Pump #4	30	1997	25	$8,823
		ARV-1008	Air Relief Valve Pump #4	30	1997	25	$8,823

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		ARV-2	NT Air Relief Valve #1	30	2000	22	$6,594
		ARV-3	NT Air Relief Valve #1	30	2000	22	$6,594
		ARV-3601-A	Air Release Valve	10	2008	14	$3,288
		ARV-3601-B	Air Release Valve	10	2008	14	$3,288
		ARV-3601-C	Air Release Valve	22	1996	26	$3,288
		ARV-3601-D	Air Release Valve	10	2008	14	$3,288
		ARV-3601-E	Air Release Valve	10	2008	14	$3,288
		ARV-3602-A	Air Release Valve	10	2008	14	$3,288
		ARV-3602-B	Air Release Valve	10	2008	14	$3,288
		ARV-3602-C	Air Release Valve	10	2008	14	$3,288
		ARV-3602-D	Air Release Valve	10	2008	14	$3,288
		ARV-3602-E	Air Release Valve	10	2008	14	$3,288
		ARV-3603-A	Air Release Valve	10	2008	14	$3,288
		ARV-3603-B	Air Release Valve	10	2008	14	$3,288
		ARV-3603-C	Air Release Valve	10	2008	14	$3,288
		ARV-3603-D	Air Release Valve	10	2008	14	$3,288
		ARV-3603-E	Air Release Valve	10	2008	14	$3,288
		B-85-A-M	Air Scour Blower Motor	25	1997	25	$100,000
		B-85-A-P	Air Scour Blower Pump	25	1997	25	$100,000
		B-85-A-V	Air Scour Blower VFD	20	2019	3	$20,000
		B-85-B-M	Air Scour Blower Motor	25	1997	25	$100,000
		B-85-B-P	Air Scour Blower Pump	25	1997	25	$100,000
		B-85-B-V	Air Scour Blower VFD	20	1998	24	$20,000
		B-85-C-M	Air Scour Blower Motor	25	1997	25	$100,000
		B-85-C-P	Air Scour Blower Pump	25	1997	25	$100,000
		B-85-C-V	Air Scour Blower VFD	20	2019	3	$20,000
		B-85-D-M	Air Scour Blower Motor	25	1998	24	$100,000
		B-85-D-P	Air Scour Blower Pump	25	1998	24	$100,000
		B-85-D-V	Air Scour Blower VFD	20	1998	24	$20,000
		B-85-E-M	Air Scour Blower Motor	25	1998	24	$100,000
		B-85-E-P	Air Scour Blower Pump	25	1998	24	$100,000
		B-85-E-V	Air Scour Blower VFD	20	1998	24	$20,000
		B-85-F-P	Membrane Air Blower	20	2001	21	$20,000
		BPV-6582	Citric acid injection pressure relief valve	20	2001	21	$3,500
		CL2-Dist-4	SC400 Portable Colorimeter	9	2017	5	$1,600
		CL2-WTP-1	Portable Colorimeter CL2 Test	10	2014	8	$1,635
		CL2-WTP-2	Portable Colorimeter CL2 Test	10	2012	10	$1,635
		Comp-1-M	Compressor 1 Pump Motor	15	2014	8	$20,000
		Comp-1-Pump-1	Compressor 1 pump 1	15	2014	8	$23,750
		Comp-1-Pump-2	Compressor 1 pump 2	15	2014	8	$23,750
		Comp-2-M	Compressor 2 Pump Motor	15	2014	8	$20,000
		Comp-2-Pump-1	Compressor 2 pump 1	15	2014	8	$23,750

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		Comp-2-Pump-2	Compressor 2 pump 2	15	2014	8	$23,750
		Crane-CL2-H	Chlorine Tonner storage Chain Hoist	25	1998	24	$21,450
		Crane-CL2-T	Chlorine Tonner Storage Room Crane Trolly	25	1998	24	$100,000
		Crane-HLP-H	High Lift Pump Room Chain Hoist	28	1998	24	$21,450
		Crane-HLP-T	High Lift Pump Room Crane Trolly	28	1997	25	$200,000
		CV-3585	Check Valve	30	1997	25	$10,938
		CV-3585-A	Permeate Discharge Check Valve	30	1997	25	$9,760
		CV-3585-B	Permeate Discharge Check Valve	30	1997	25	$9,760
		CV-3585-C	Permeate Discharge Check Valve	30	1997	25	$9,760
		CV-3585-D	Permeate Discharge Check Valve	30	1997	25	$9,760
		CV-3585-E	Permeate Discharge Check Valve	30	1997	25	$9,760
		CV-3885	Tank Drain Check Valve	30	2001	21	$2,125
		CV-7685	Raw Water Check Valve	30	2001	21	$18,655
		CV-8582-A	Blower Check Valve	30	1997	25	$1,750
		CV-8582-B	Blower Check Valve	30	1997	25	$1,750
		CV-8582-C	Blower Check Valve	30	1997	25	$1,750
		CV-8582-D	Blower Check Valve	28	1997	25	$1,750
		CV-8582-E	Blower Check Valve	28	1997	25	$1,750
		CV-8886	Backpulse/CIP tank drain overflow check valve	30	1997	25	$3,250
		CV-HLP-2	In line check valve highlift pump 2	25	2017	5	$22,989
		CV-HLP-3	In line check valve highlift pump 3	25	2017	5	$22,989
		D-Fuel-1-A	Fuel Storage Tank	25	1997	25	$10,000
		D-Fuel-1-B	Fuel Storage Tank	25	1997	25	$10,000
		D-Fuel-2-A	Fuel Storage Tank	25	1997	25	$10,000
		D-Fuel-2-B	Fuel Storage Tank	25	1997	25	$10,000
		DR2010	Laboratory Spectrophotometer	20	1997	25	$80,000
		DR900	Multiparameter Portable Colorimeter	15	2020	2	$4,264
		DRYER-1	Compressed Air Dryer	10	2014	8	$4,769
		DRYER-2	Compressed Air Dryer	10	2014	8	$4,769
		FCV-1009-HLP-1	Flow Control Valve Pump 1	27	1997	25	$22,400
		FCV-1012-HLP-4	Flow Control Valve Pump 4	30	1997	25	$38,400
		FCV-3463-A	Modulating Rotary Valve Electric Actuator	10	2014	8	$20,000
		FCV-3463-V	Raw Water Flow Control Valve	10	2014	8	$2,630
		FCV-3760-A-A	Concentrate Flow Pneumatic Actuator	15	2010	12	$10,000
		FCV-3760-A-P	Concentrate Flow Valve Positioner	15	2010	12	$10,000
		FCV-3760-A-V	Concentrate Flow Actuated Valve	28	1997	25	$4,960
		FCV-3760-B-A	Concentrate Flow Pneumatic Actuator	15	2010	12	$10,000
		FCV-3760-B-P	Concentrate Flow Valve Positioner	15	2010	12	$10,000
		FCV-3760-B-V	Concentrate Flow Actuated Valve	28	1997	25	$4,960
		FCV-3760-C-A	Concentrate Flow Pneumatic Actuator	15	2010	12	$10,000
		FCV-3760-C-P	Concentrate Flow Valve Positioner	15	2010	12	$10,000
		FCV-3760-C-V	Concentrate Flow Actuated Valve	28	1997	25	$4,960

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		FCV-3760-D-A	Concentrate Flow Pneumatic Actuator	15	2010	12	$10,000
		FCV-3760-D-P	Concentrate Flow Valve Positioner	15	2010	12	$10,000
		FCV-3760-D-V	Concentrate Flow Actuated Valve	28	1997	25	$4,960
		FCV-3760-E-A	Concentrate Flow Pneumatic Actuator	5	2020	2	$10,000
		FCV-3760-E-P	Concentrate Flow Valve Positioner	15	2010	12	$10,000
		FCV-3760-E-V	Concentrate Flow Actuated Valve	28	1997	25	$4,960
		FCV-NT-HLP-1	NT Flow Control Valve Pump 1	30	2000	22	$12,800
		FCV-NT-HLP-2	NT Flow Control Valve Pump 2	30	2000	22	$12,800
		FCV-NT-HLP-3	NT Flow Control Valve Pump 3	30	2000	22	$12,800
		FIT-02	Distribution flow meter - Collingwood and TOBM	30	1997	25	$7,595
		FIT-03	Industrial Flow Meter	10	2018	4	$9,493
		FIT-1020	Regional Pipeline Flow meter	30	2000	22	$7,595
		FIT-3420-1	ZW1000 Feed Raw Water Flow Meter	30	2001	21	$9,873
		FIT-3520-1	ZW1000 Permeate Water Flow Meter	30	2001	21	$9,873
		FIT-3520-A	Permeate Flow Meter Train A	20	2015	7	$7,595
		FIT-3520-B	Permeate Flow Meter Train B	30	1997	25	$30,000
		FIT-3520-C	Permeate Flow Meter Train C	30	1997	25	$30,000
		FIT-3520-D	Permeate Flow Meter Train D	20	2019	3	$30,000
		FIT-3520DH	Permeate Flow Meter Train D	42	1997	25	$30,000
		FIT-3520-E	Permeate Flow Meter Train E	20	2015	7	$30,000
		FIT-3520-F	Permeate/backpulse flow meter	30	2001	21	$9,113
		FIT-3720-A	Concentrate Flow meter Train A	30	1997	25	$9,493
		FIT-3720-B	Concentrate Flow meter Train B	30	1997	25	$9,493
		FIT-3720-C	Concentrate Flow meter Train C	30	1997	25	$9,493
		FIT-3720-D	Concentrate Flow meter Train D	30	1997	25	$9,493
		FIT-3720-E	Concentrate Flow meter Train E	30	1997	25	$7,595
		FV-3466-A-AIV	Membrane Cassette Actuated Isolation Valve	25	2001	21	$2,630
		FV-3466-A-EA	Membrane Cassette Electric Actuator	25	2001	21	$20,000
		FV-3466-B-AIV	Membrane Cassette Actuated Isolation Valve	25	2001	21	$2,630
		FV-3466-B-EA	Membrane Cassette Electric Actuator	25	2001	21	$20,000
		FV-3466-C-AIV	Membrane Cassette Actuated Isolation Valve	25	2001	21	$2,630
		FV-3466-C-EA	Membrane Cassette Electric Actuator	25	2001	21	$20,000
		FV-3466-D-AIV	Membrane Cassette Actuated Isolation Valve	25	2001	21	$2,630
		FV-3466-D-EA	Membrane Cassette Electric Actuator	25	2001	21	$20,000
		FV-3475-A-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3475-A-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3475-B-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3475-B-V	Cyclic Air Valve	18	2002	20	$10,000
		FV-3475-C-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3475-C-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3475-D-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3475-D-V	Cyclic Air Valve	18	2002	20	$4,000

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		FV-3475-E-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3475-E-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3476-A-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3476-A-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3476-B-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3476-B-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3476-C-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3476-C-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3476-D-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3476-D-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3476-E-A	Cyclic Rotary Pneumatic Actuator	18	2002	20	$10,000
		FV-3476-E-V	Cyclic Air Valve	18	2002	20	$4,000
		FV-3560-A-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3560-A-V	Permeate Flow Actuated Valve	23	1997	25	$20,000
		FV-3560-B-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3560-B-V	Permeate Flow Actuated Valve	23	1997	25	$20,000
		FV-3560-C-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3560-C-V	Permeate Flow Actuated Valve	23	1997	25	$20,000
		FV-3560-D-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3560-D-V	Permeate Flow Actuated Valve	23	1997	25	$20,000
		FV-3560-E-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3560-E-V	Permeate Flow Actuated Valve	23	1997	25	$20,000
		FV-3560-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3560-V	Permeate Flow Actuated Valve	23	1997	25	$2,630
		FV-3568-A-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3568-A-V	Permeate Actuated Flow Valve	23	1997	25	$9,760
		FV-3568-B-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3568-B-V	Permeate Actuated Flow Valve	23	1997	25	$9,760
		FV-3568-C-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3568-C-V	Permeate Actuated Flow Valve	23	1997	25	$9,760
		FV-3568-D-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3568-D-V	Permeate Actuated Flow Valve	23	1997	25	$9,760
		FV-3568-E-PA	Permeate Flow Pneumatic Actuator	10	2010	12	$20,000
		FV-3568-E-V	Permeate Actuated Flow Valve	23	1997	25	$9,760
		FV-3569-A-PA	Permeate to Waste Pneumatic Actuator	28	1997	25	$10,000
		FV-3569-A-V	Permeate to Waste Actuated Flow Valve	28	1997	25	$9,760
		FV-3569-B-PA	Permeate to Waste Pneumatic Actuator	28	1997	25	$10,000
		FV-3569-B-V	Permeate to Waste Actuated Flow Valve	28	1997	25	$9,760
		FV-3569-C-PA	Permeate to Waste Pneumatic Actuator	28	1997	25	$10,000
		FV-3569-C-V	Permeate to Waste Actuated Flow Valve	28	1997	25	$9,760
		FV-3569-D-PA	Permeate to Waste Pneumatic Actuator	28	1997	25	$10,000
		FV-3569-D-V	Permeate to Waste Actuated Flow Valve	28	1997	25	$9,760

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		FV-3569-E-PA	Permeate to Waste Pneumatic Actuator	28	1997	25	$10,000
		FV-3569-E-V	Permeate to Waste Actuated Flow Valve	28	1997	25	$9,760
		FV-3577-PA	Backpulse/CIP Pneumatic Actuator	28	1997	25	$10,000
		FV-3577-V	Backpulse/CIP Tank Suction Flow Actuated Valve	28	1997	25	$2,630
		FV-3860-PA	Backwash Drain Pneumatic Actuator	28	1997	25	$10,000
		FV-3860-V	Backwash Drain Flow Actuated Valve	28	1997	25	$2,630
		FV-3861-PA	Process Tank Drain Pneumatic Actuator	28	1997	25	$10,000
		FV-3861-V	Process Tank Drain Flow Valve	28	1997	25	$2,630
		FV-5598-A-CIV	Chemical Injection Valve	20	2005	17	$20,070
		FV-5598-A-CVPA	Chemical Valve Pneumatic Actuator	20	2005	17	$10,000
		FV-5598-B-CIV	Chemical Injection Valve	20	2005	17	$20,070
		FV-5598-B-CVPA	Chemical Valve Pneumatic Actuator	20	2005	17	$10,000
		FV-5598-C-CIV	Chemical Injection Valve	20	2005	17	$20,070
		FV-5598-C-CVPA	Chemical Valve Pneumatic Actuator	20	2005	17	$10,000
		FV-5598-D-CIV	Chemical Injection Valve	20	2005	17	$20,070
		FV-5598-D-CVPA	Chemical Valve Pneumatic Actuator	20	2005	17	$10,000
		FV-5598-E-CIV	Chemical Injection Valve	20	2005	17	$20,070
		FV-5598-E-CVPA	Chemical Valve Pneumatic Actuator	20	2005	17	$10,000
		FV-8160-PA	Clean In Place Tank Fill Pneumatic Actuator	28	1997	25	$10,000
		FV-8160-V	Clean In Place Tank Fill Flow Actuated Valve	28	1997	25	$2,630
		FV-8860-PA	Backpulse/CIP Pneumatic Actuator	28	1997	25	$10,000
		FV-8860-V	Backpulse/CIP Flow Actuated Valve	28	1997	25	$2,630
		FV-8861-PA	Backpulse/CIP Pneumatic Actuator	28	1997	25	$10,000
		FV-8861-V	Backpulse/CIP Pump Flow Actuated Valve	28	1997	25	$2,630
		FV-8863-PA	Backpulse Tank Fill Pneumatic Actuator	11	2014	8	$10,000
		FV-8863-V	Backpulse Tank Fill FlowActuated valve	28	1997	25	$2,630
		FV-8864-A-PA	Backpulse Flow Pneumatic Actuator	20	2017	5	$10,000
		FV-8864-A-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8864-B-PA	Backpulse Flow Pneumatic Actuator	15	2010	12	$10,000
		FV-8864-B-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8864-C-PA	Backpulse Flow Pneumatic Actuator	15	2010	12	$10,000
		FV-8864-C-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8864-D-PA	Backpulse Flow Pneumatic Actuator	15	2010	12	$10,000
		FV-8864-D-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8864-E-PA	Backpulse Flow Pneumatic Actuator	13	2012	10	$10,000
		FV-8864-E-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8865-A-PA	Backpulse Flow Pneumatic Actuator	13	2012	10	$10,000
		FV-8865-A-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8865-B-PA	Backpulse Flow Pneumatic Actuator	16	2009	13	$10,000
		FV-8865-B-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8865-C-PA	Backpulse Flow Pneumatic Actuator	15	2009	13	$10,000
		FV-8865-C-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		FV-8865-D-PA	Backpulse Flow Pneumatic Actuator	15	2010	12	$10,000
		FV-8865-D-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		FV-8865-E-PA	Backpulse Flow Pneumatic Actuator	13	2012	10	$10,000
		FV-8865-E-V	Backpulse Flow Actuated Valve	28	1997	25	$14,500
		GEN-1	Diesel Standby Generator	33	1997	25	$1,000,000
		HLP-1	High Lift Pump 1	29	1997	25	$40,300
		HLP-1-M	High Lift pump 1 Motor	29	1997	25	$20,000
		HLP-2	High Lift Pump 2	28	1997	25	$40,300
		HLP-2-M	High Lift Pump 2 Motor	28	1997	25	$100,000
		HLP-3	High Lift Pump 3	28	1997	25	$40,300
		HLP-3-M	High Lift Pump 3 Motor	28	1997	25	$100,000
		HLP-4	High Lift Pump 4	28	1997	25	$40,300
		HLP-4-M	High Lift Pump 4 motor	28	1997	25	$100,000
		HLP-NT-1-M	NT High Lift pump 1 Motor	20	2014	8	$60,000
		HLP-NT-1-P	NT High Lift Pump 1	20	2014	8	$100,000
		HLP-NT-2-M	NT High Lift pump 2 Motor	34	2000	22	$60,000
		HLP-NT-2-P	NT High Lift Pump 2	34	2000	22	$100,000
		HLP-NT-3-M	NT High Lift pump 3 Motor	34	2000	22	$60,000
		HLP-NT-3-P	NT High Lift Pump 3	34	2000	22	$100,000
		HV 8186	Clean In Place Tank Drain to Waste Isolation valve	28	1997	25	$2,630
		HV-1013-HLP-1	Hand Isolation Valve pump 1	28	1997	25	$13,294
		HV-1014-HLP-2	Hand Isolation Valve pump 2	28	1997	25	$13,294
		HV-1015-HLP-3	Hand Isolation Valve pump 3	28	1997	25	$13,294
		HV-1016-HLP-4	Hand Isolation Valve pump 4	28	1997	25	$13,294
		HV-1018	Isolating Hand Valve Gate	30	1998	24	$26,625
		HV-1020	Isolating Hand Valve Gate	30	1998	24	$26,625
		HV-1021	Isolating Hand Valve Gate	30	1998	24	$26,625
		HV-150-GV-8	Isolating Hand Valve Gate	30	1998	24	$13,294
		HV-300-GV-HLP-1	NT Hand Isolation Valve pump 1	30	2000	22	$26,625
		HV-300-GV-HLP-2	NT Hand Isolation Valve pump 2	30	2000	22	$26,625
		HV-300-GV-HLP-3	NT Hand Isolation Valve pump 3	30	2000	22	$26,625
		HV-3495	Tank drain hand valve	28	1997	25	$2,630
		HV-3589-A	Permeate Isolation Hand Valve	28	1997	25	$9,760
		HV-3589-B	Permeate Isolation Hand Valve	28	1997	25	$9,760
		HV-3589-C	Permeate Isolation Hand Valve	28	1997	25	$9,760
		HV-3589-D	Permeate Isolation Hand Valve	28	1997	25	$9,760
		HV-3589-E	Permeate Isolation Hand Valve	28	1997	25	$9,760
		HV-3593-1	Permeate Water Isolation Hand Valve	28	1997	25	$2,630
		HV-3783-A	Concentrate Pump Foot Valve	28	1997	25	$10,000
		HV-3783-B	Concentrate Pump Foot Valve	28	1997	25	$10,000
		HV-3783-C	Concentrate Pump Foot Valve	28	1997	25	$10,000
		HV-3783-D	Concentrate Pump Foot Valve	28	1997	25	$10,000

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		HV-3783-E	Concentrate Pump Foot Valve	28	1997	25	$10,000
		HV-3787-A	Concentrate Isolation Hand Valve	28	1997	25	$4,960
		HV-3787-B	Concentrate Isolation Hand Valve	28	1997	25	$4,960
		HV-3787-C	Concentrate Isolation Hand Valve	28	1997	25	$4,960
		HV-3787-D	Concentrate Isolation Hand Valve	28	1997	25	$4,960
		HV-3787-E	Concentrate Isolation Hand Valve	28	1997	25	$4,960
		HV-3788-A	Concentrate to Sewer Isolation Hand Valve	28	1997	25	$4,960
		HV-3788-B	Concentrate to Sewer Isolation Hand Valve	28	1997	25	$4,960
		HV-3788-C	Concentrate to Sewer Isolation Hand Valve	28	1997	25	$4,960
		HV-3788-D	Concentrate to Sewer Isolation Hand Valve	28	1997	25	$4,960
		HV-3788-E	Concentrate to Sewer Isolation Hand Valve	28	1997	25	$4,960
		HV-3880	Tank drain hand valve	28	1997	25	$2,630
		HV-400-GV-5	Isolating Hand Valve Gate	30	1998	24	$51,250
		HV-400-GV-6	Isolating Hand Valve Gate	30	1998	24	$51,250
		HV-400-GV-7	Isolating Hand Valve Gate	30	1998	24	$51,250
		HV-7681-A	Raw Water Inlet Isolation Hand Valve	28	1997	25	$13,200
		HV-7681-B	Raw Water Inlet Isolation Hand Valve	28	1997	25	$13,200
		HV-7681-C	Raw Water Inlet Isolation Hand Valve	28	1997	25	$13,200
		HV-7681-D	Raw Water Inlet Isolation Hand Valve	28	1997	25	$13,200
		HV-7681-E	Raw Water Inlet Isolation Hand Valve	28	1997	25	$13,200
		HV-7696	Raw Water Isolation Hand Valve	28	1997	25	$8,210
		HV-7697	Raw Water Strainer by-pass Isolation Hand Valve	28	1997	25	$8,210
		HV-7698	Raw Water Isolation Hand Valve	28	1997	25	$8,210
		HV-8162	Clean In Place Feed Isolation Valve	28	1997	25	$2,630
		HV-8181-A	Clean in Place Isolation Hand Flow Valve	28	1997	25	$9,760
		HV-8181-B	Clean in Place Isolation Hand Flow Valve	28	1997	25	$9,760
		HV-8181-C	Clean in Place Isolation Hand Flow Valve	28	1997	25	$9,760
		HV-8181-D	Clean in Place Isolation Hand Flow Valve	28	1997	25	$9,760
		HV-8181-E	Clean in Place Isolation Hand Flow Valve	28	1997	25	$9,760
		HV-8581-A	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8581-B	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8581-C	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8581-D	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8581-E	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8581-F	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8583-A	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8583-B	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8583-C	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8583-D	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8583-E	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8583-F	Blower Isolation Hand Valve	28	1997	25	$2,630
		HV-8880	Backpulse/CIP Feed Water Isolation Valve	28	1997	25	$2,630

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		HV-8881-A	Backpulse Isolation Hand Valve	28	1997	25	$14,500
		HV-8881-B	Backpulse Isolation Hand Valve	28	1997	25	$14,500
		HV-8881-C	Backpulse Isolation Hand Valve	28	1997	25	$14,500
		HV-8881-D	Backpulse Isolation Hand Valve	28	1997	25	$14,500
		HV-8881-E	Backpulse Isolation Hand Valve	28	1997	25	$14,500
		HV-8882	Backpulse feed Isolation valve	28	1997	25	$14,500
		HV-8886	Backpulse Tank drain to Waste Isolation Valve	28	1997	25	$4,960
		HV-8895	Backpulse/CIP Tank Drain Hand Valve	28	1997	25	$3,356
		ICEPIC	Turbidimeter Calibration Monitor	12	2012	10	$2,985
		INTAKE	Intake Pipe and Chamber	26	2018	4	$10,558,000
		LCV-7660-A-PA	Raw Water Inlet Pneumatic Actuator	28	1997	25	$40,000
		LCV-7660-A-PP	Raw Water Inlet Pneumatic Positioner	28	1997	25	$40,000
		LCV-7660-A-V	Raw Water Inlet valve	28	1997	25	$38,400
		LCV-7660-B-PA	Raw Water Inlet Pneumatic Actuator	28	1997	25	$40,000
		LCV-7660-B-PP	Raw Water Inlet Pneumatic Positioner	28	1997	25	$40,000
		LCV-7660-B-V	Raw Water Inlet valve	28	1997	25	$38,400
		LCV-7660-C-PA	Raw Water Inlet Pneumatic Actuator	28	1997	25	$40,000
		LCV-7660-C-PP	Raw Water Inlet Pneumatic Positioner	28	1997	25	$40,000
		LCV-7660-C-V	Raw Water Inlet valve	28	1997	25	$38,400
		LCV-7660-D-PA	Raw Water Inlet Pneumatic Actuator	28	1997	25	$40,000
		LCV-7660-D-PP	Raw Water Inlet Pneumatic Positioner	28	1997	25	$40,000
		LCV-7660-D-V	Raw Water Inlet valve	28	1997	25	$38,400
		LCV-7660-E-PA	Raw Water Inlet Pneumatic Actuator	28	1997	25	$40,000
		LCV-7660-E-PP	Raw Water Inlet Pneumatic Positioner	28	1997	25	$40,000
		LCV-7660-E-V	Raw Water Inlet valve	28	1997	25	$38,400
		LIT-01	Chlorine Contact Chamber Level	28	1997	25	$4,058
		LIT-02	Clear Well Level	28	1997	25	$4,058
		LIT-08	Industrial wet well level	7	2018	4	$4,058
		LIT-3426	Process Tank Level Transmitter	28	1997	25	$4,644
		LIT-3426A	Filter Basin Level Transmitter Train A	28	1997	25	$4,058
		LIT-3426B	Filter Basin Level Transmitter Train B	28	1997	25	$4,058
		LIT-3426C	Filter Basin Level Transmitter Train C	28	1997	25	$4,058
		LIT-3426D	Filter Basin Level Transmitter Train D	28	1997	25	$4,058
		LIT-3426E	Filter Basin Level Transmitter Train E	28	1997	25	$4,058
		LIT-8126	Clean in place tank level transmitters	28	1997	25	$4,058
		LIT-8826	Backpulse Tank Level Transmitters	28	1997	25	$4,058
		MCC-ACT-ZW	Air compressor tub - ZW1000	25	2001	21	$0
		MCC-BRBT-DIST	Blower Room breaker tub - Distribution	25	1998	24	$0
		MCC-BTA-BR	Blower tub - Train A	15	2020	2	$0
		MCC-BTB-BR	Blower tub - Train B	15	1998	24	$0
		MCC-BTC-BR	Blower tub - Train C	15	2019	3	$0
		MCC-BTD-BR	Blower tub - Train D	15	1998	24	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		MCC-BTE-BR	Blower tub - Train E	15	1998	24	$0
		MCC-BT-GEN	Breaker tub - Genset	25	1998	24	$0
		MCC-BTS-BR	Blower tub - Spare	25	1998	24	$0
		MCC-BT-ZW	Blower tub - ZW1000	25	2001	21	$0
		MCC-CF-1-DIST	Cooling fan 1 tub - Distribution	25	1998	24	$0
		MCC-CF-2-DIST	Cooling fan 2 tub - Distribution	25	1998	24	$0
		MCC-CPT-A-F	Concentrate Pump tub - Filter	25	1998	24	$0
		MCC-CPT-B-F	Concentrate Pump tub - Filter	25	1998	24	$0
		MCC-CPT-C-F	Concentrate Pump tub - Filter	25	1998	24	$0
		MCC-CPT-D-F	Concentrate Pump tub - Filter	25	1998	24	$0
		MCC-CPT-E-F	Concentrate Pump tub - Filter	25	1998	24	$0
		MCC-CT-HLP	Connection tub	15	1998	24	$0
		MCC-CTHT-BR	CIP tank heater tub	25	1998	24	$0
		MCC-DPT-ZW	Drain pump tub - ZW1000	15	2001	21	$0
		MCC-DT-1-F	Dehumidifier tub - Filter	25	1998	24	$0
		MCC-DT-2-F	Dehumidifier tub - Filter	25	1998	24	$0
		MCC-DT-3-F	Dehumidifier tub - Filter	25	1998	24	$0
		MCC-EF15T-DIST	Exhaust fan 15 tub - Distribution	15	1998	24	$0
		MCC-EF16T-DIST	Exhaust fan 16 tub - Distribution	15	1998	24	$0
		MCC-EFT-1-BR	Exhaust fan tub	15	2017	5	$0
		MCC-EFT-2-BR	Exhaust fan tub	25	1998	24	$0
		MCC-EFT-3-BR	Exhaust fan tub	25	1998	24	$0
		MCC-EFT-F	Exhaust fan tub - Filter	25	1998	24	$0
		MCC-ET-DIST	Entrance tub - Distribution	25	1998	24	$0
		MCC-ET-NT	Entrance tub - New Tec	25	1998	24	$0
		MCC-FPT-ZW	Feed pump tub - ZW1000	25	2001	21	$0
		MCC-F-ZW	Panel - ZW1000	25	2001	21	$280,500
		MCC-HPT-F	Heat pump tub - Filter	25	1998	24	$0
		MCC-HTT-ZW	Heater/Transformer tub - ZW1000	25	2001	21	$0
		MCC-MBT-BR	Main breaker tub	25	1998	24	$0
		MCC-MBT-IND	Main Breaker tub - Industrial process	25	1998	24	$0
		MCC-MBT-ZW	Main breaker tub - ZW1000	25	2001	21	$0
		MCC-MDT-F	Main disconnect tub - Filter	25	1998	24	$0
		MCC-MDT-HLP	Main disconnect tub	25	1998	24	$0
		MCC-MPT-IND	Mixer pump tub - Industrial process	25	1998	24	$0
		MCC-MT-BR	Metering tub	25	1998	24	$0
		MCC-MT-HLP	Metering tub	25	1998	24	$0
		MCC-MT-IND	Metering tub - Industrial process	25	1998	24	$0
		MCC-MT-NT	Metering tub- New Tec	25	1998	24	$0
		MCC-MT-ZW	Metering tub - ZW1000	25	2001	21	$0
		MCC-NT-BT-HLP	New Tech breaker tub	15	1998	24	$0
		MCC-P-BR	Panel	25	1998	24	$280,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		MCC-PBT-ZW	Panel board tub - ZW1000	25	2001	21	$0
		MCC-P-DIST	Panel - Distribution	25	1998	24	$280,500
		MCC-PDT-BR	Panel D tub	25	1998	24	$0
		MCC-PDT-HLP-1-N	HLP 1 Pump disconnect tub- New Tec	25	1998	24	$0
		MCC-PDT-HLP-2-N	HLP 2 Pump disconnect tub- New Tec	25	1998	24	$0
		MCC-PDT-HLP-3-N	HLP 3 Pump disconnect tub- New Tec	25	1998	24	$0
		MCC-P-F	Panel - Filter	25	1998	24	$280,500
		MCC-P-GEN	Panel - Genset	25	1998	24	$280,500
		MCC-P-HLP	Panel	25	1998	24	$280,500
		MCC-P-IND	Panel - Industrial process	25	1998	24	$280,500
		MCC-P-NT	Panel- New Tec	25	1998	24	$280,500
		MCC-PPT-A-F	Perm Pump tub - Filter	15	1998	24	$0
		MCC-PPT-B-F	Perm Pump tub - Filter	15	1998	24	$0
		MCC-PPT-C-F	Perm Pump tub - Filter	15	1998	24	$0
		MCC-PPT-D-F	Perm Pump tub - Filter	15	1998	24	$0
		MCC-PPT-E-F	Perm Pump tub - Filter	15	1998	24	$0
		MCC-PPT-ZW	perm pump tubs - ZW1000	15	2021	1	$0
		MCC-PT-HLP-1	Pump tub	25	1998	24	$0
		MCC-PT-HLP-1-IN	Pump tub - Industrial process	15	1998	24	$0
		MCC-PT-HLP-1-NT	HLP 1 Pump tub- New Tec	15	1998	24	$0
		MCC-PT-HLP-2	Pump tub	25	1998	24	$0
		MCC-PT-HLP-2-IN	Pump tub - Industrial process	25	1998	24	$0
		MCC-PT-HLP-2-NT	HLP 2 Pump tub- New Tec	15	1998	24	$0
		MCC-PT-HLP-3	Pump tub	15	1998	24	$0
		MCC-PT-HLP-3-NT	HLP 3 Pump tub- New Tec	15	1998	24	$0
		MCC-PT-HLP-4	Pump tub	15	1998	24	$0
		MCC-SPARE-GEN	Spare - Genset	25	1998	24	$0
		MCC-SPT-1-IND	Spare tub - Industrial process	25	1998	24	$0
		MCC-SPT-2-IND	Spare tub - Industrial process	25	1998	24	$0
		MCC-SPT-A-F	Spare tub - Filter	25	1998	24	$0
		MCC-SST-ZW	Surge supression tub - ZW1000	25	2001	21	$0
		MCC-ST-1-BR	Spare tub	25	1998	24	$0
		MCC-ST-2-BR	Spare tub	25	1998	24	$0
		MCC-ST-DIST	Spare tub - Distribution	25	1998	24	$0
		MCC-ST-HLP	Spare tub	25	1998	24	$0
		MCC-TB-IND	Transformer tub - Industrial process	25	1998	24	$0
		MCC-TBT-BR	Transformer breaker tub	25	1998	24	$0
		MCC-TBT-DIST	Transformer breaker tub - Distribution	25	1998	24	$0
		MCC-T-GEN	Tub - Genset	25	1998	24	$0
		MCC-TSFT-IND	Travelling screen feed tub - Industrial process	25	1998	24	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		MCC-TST-GEN	Transfer switch tub - Genset	25	1998	24	$0
		MCC-TST-IND	Travelling screen tub - Industrial process	25	1998	24	$0
		MCC-TT-ZW	Transformer tub - ZW1000	25	2001	21	$0
		MCC-UBT-GEN	Utlity breaker tub - Genset	25	1998	24	$0
		MCC-UH-13-DIST	Unit heater UH-13 tub - Distribution	25	1998	24	$0
		MCC-UH-14-DIST	Unit heater UH-14 tub - Distribution	25	1998	24	$0
		MCC-UHT-1-BR	Unit heater tub	25	1998	24	$0
		MCC-UHT-1-F	Unit heater tub - Filter	25	1998	24	$0
		MCC-UHT-1-IND	Unit heater tub - Industrial process	25	1998	24	$0
		MCC-UHT-2-BR	Unit heater tub	25	1998	24	$0
		MCC-UHT-2-F	Unit heater tub - Filter	25	1998	24	$0
		MCC-UHT-2-IND	Unit heater tub - Industrial process	25	1998	24	$0
		MCC-UHT-3-BR	Unit heater tub	25	1998	24	$0
		MCC-UHT-3-F	Unit heater tub - Filter	25	1998	24	$0
		MCC-UHT-4-F	Unit heater tub - Filter	25	1998	24	$0
		MCC-UHT-IND	Unit heater tub - Industrial process	25	1998	24	$0
		MCC-UT-GEN	Utility tub - Genset	25	1998	24	$0
		MCC-VPT-A-F	Vacuum Pump tub - Filter	25	1998	24	$0
		MCC-VPT-B-F	Vacuum Pump tub - Filter	25	1998	24	$0
		MCC-VPT-C-F	Vacuum Pump tub - Filter	25	1998	24	$0
		MCC-VPT-D-F	Vacuum Pump tub - Filter	25	1998	24	$0
		MCC-VPT-E-F	Vacuum Pump tub - Filter	25	1998	24	$0
		MCC-VPT-IND	Vacuum pump tub - Industrial process	25	1998	24	$0
		MCC-VPT-ZW	Vacuum pump tub - ZW1000	25	2001	21	$0
		MCC-WTPBT-DIST	WTP breaker tub - Distribution	25	1998	24	$0
		OLD 21PIT-3523E	Membrane Pressure Transmitter Train E	4	2021	1	$6,000
		P35-A-M	Permeate Pump Motor	20	2010	12	$50,000
		P35-A-P	Permeate Pump	20	2010	12	$40,000
		P35-B-M	Permeate Pump Motor	20	2010	12	$50,000
		P35-B-P	Permeate Pump	20	2010	12	$40,000
		P35-C-M	Permeate Pump Motor	20	2019	3	$50,000
		P35-C-P	Permeate Pump	20	2010	12	$40,000
		P35-D-M	Permeate Pump Motor	20	2014	8	$50,000
		P35-D-P	Permeate Pump	20	2014	8	$40,000
		P35-E-M	Permeate Pump Motor	20	2014	8	$50,000
		P35-E-P	Permeate Pump	20	2014	8	$40,000
		P35-F-M	Permeate/backpulse Pump Motor	22	2012	10	$50,000
		P35-F-P	Permeate/Backpulse Pump	20	2014	8	$40,000
		P36-A	Vacuum Pump	10	2015	7	$10,000
		P36-B	Vacuum Pump	10	2015	7	$10,000
		P36-C	Vacuum Pump	10	2015	7	$10,000

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		P36-D	Vacuum Pump	10	2015	7	$10,000
		P36-E	Vacuum Pump	10	2015	7	$10,000
		P37-A-M	Concentrate Pump Motor	13	2012	10	$20,000
		P37-A-P	Concentrate Pump	13	2012	10	$29,250
		P37-B-M	Concentrate Pump Motor	13	2012	10	$20,000
		P37-B-P	Concentrate Pump	6	2019	3	$29,250
		P37-C-M	Concentrate Pump Motor	13	2012	10	$20,000
		P37-C-P	Concentrate Pump	13	2012	10	$29,250
		P37-D-M	Concentrate Pump Motor	13	2012	10	$20,000
		P37-D-P	Concentrate Pump	13	2012	10	$29,250
		P37-E-M	Concentrate Pump Motor	13	2012	10	$20,000
		P37-E-P	Concentrate Pump	13	2012	10	$29,250
		P37-Spare	Concentrate Pump	13	2012	10	$29,250
		P38-M	Tank Drain Pump Motor	20	2008	14	$20,000
		P38-P	Tank Drain pump	20	2008	14	$20,000
		P-38-V	ZW1000 Drain Pump VFD	5	2021	1	$14,354
		P51	Hypochlorite solution pump	20	2001	21	$15,250
		P54	Hypochlorite solution pump (backpulse water)	20	2001	21	$15,250
		P60	Citric acid solution pump	20	2001	21	$3,661
		P65	Citric acid injection pump injection	20	2001	21	$3,661
		P66	Hypochlorite injection pump	20	2001	21	$15,250
		P76-M	Z1000 Raw Water Pump Motor	15	2010	12	$10,000
		P76-P	ZW 1000 Raw Water Pump	15	2010	12	$20,000
		P92	Vacuum Pump	15	2010	12	$10,000
		P-92A-V	ZW1000 Permeate Pump VFD	20	2021	1	$14,354
		PCX 2200	FW Particle Counter	20	2005	17	$19,814
		pH-WTP-1	Laboratory portable ph meter	30	2000	22	$4,000
		ph-WTP-2	Laboratory pH Meter	15	2018	4	$3,250
		PIPE-DI-200	Ductile Iron 200 mm piping	75	1998	24	$0
		PIPE-DI-300	Ductile Iron 300 mm piping	75	1998	24	$0
		PIPE-DI-350	Ductile Iron 350 mm piping	75	1998	24	$0
		PIPE-SS-100	Stainless Steel 100 mm piping	75	1998	24	$0
		PIPE-SS-150	Stainless Steel 150 mm piping	75	1998	24	$0
		PIPE-SS-150-HLP	Stainless Steel 150 mm piping	75	1998	24	$0
		PIPE-SS-200	Stainless Steel 200 mm piping	75	1998	24	$0
		PIPE-SS-200-HLP	Stainless Steel 200 mm piping	75	1998	24	$0
		PIPE-SS-250	Stainless Steel 250 mm piping	75	1998	24	$0
		PIPE-SS-250-HLP	Stainless Steel 250 mm piping	75	1998	24	$0
		PIPE-SS-300	Stainless Steel 350 mm piping	75	1998	24	$0
		PIPE-SS-300-HLP	Stainless Steel 300 mm piping	75	1998	24	$0
		PIPE-SS-400	Stainless Steel 400 mm piping	75	1998	24	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PIPE-SS-400-HLP	Stainless Steel 400 mm piping	75	1998	24	$0
		PIT-01	Finished Water Discharge Pressure Transmitter	25	2000	22	$2,327
		PIT-01 bkup	Finished Water Discharge Pressure back up	25	2000	22	$2,676
		PIT-02	Industrial System Pressure	7	2018	4	$9,171
		PIT-02 bkup	Industrial System Pressure Backup	7	2018	4	$9,171
		PIT-1001	Pump Pressure Transmitter New Tech #1	25	2000	22	$2,908
		PIT-1002	Pump Pressure Indicator Transmitter	25	2000	22	$2,908
		PIT-1006	Pump Pressure Transmitter New Tech #2	25	2000	22	$2,908
		PIT-1008	Pump Pressure Transmitter New Tech #3	25	2000	22	$2,908
		PIT-1019	Finished Water Discharge Pressure New Tech	25	2000	22	$2,908
		PIT-3421	Membrane Integrity Test Pressure Transmitter	25	2000	22	$9,171
		PIT-3523	Membrane pressure transmitter ZW1000	25	2000	22	$9,171
		PIT-3523A	Membrane Pressure Transmitter Train A	25	2000	22	$9,171
		PIT-3523B	Membrane Pressure Transmitter Train B	25	2000	22	$9,171
		PIT-3523C	Membrane Pressure Transmitter Train C	25	2000	22	$9,171
		PIT-3523D	Membrane Pressure Transmitter Train D	25	2000	22	$9,171
		PIT-3523E	Membrane Pressure Transmitter Train E	4	2021	1	$9,171
		PIT-SP-1	Spare Pressure Transmitter	25	2000	22	$6,000
		PIT-SP-2	Spare Pressure Transmitter	25	2000	22	$6,000
		PIT-SP-3	Spare Pressure Transmitter	25	2000	22	$6,000
		PIT-SP-4	Spare Pressure Transmitter	25	2000	22	$6,000
		PLC-AIC-1-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500
		PLC-AIC-1-IND	Analog Input Card +/-20mA +/-10V 4pt. - Industrial Process	15	1998	24	$7,500
		PLC-AIC-1-NT	Analog Input Card +/-20mA +/-10V 8pt. - New Tec	15	1998	24	$7,500
		PLC-AIC-1-Z1	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AIC-1-Z2	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AIC-1-ZW	Analog Input Card +/-20mA +/-10V 8pt.- ZW1000	15	2001	21	$7,500
		PLC-AIC-2-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500
		PLC-AIC-2-IND	Analog Input Card +/-20mA +/-10V 4pt. - Industrial Process	15	1998	24	$7,500
		PLC-AIC-2-NT	Analog Input Card +/-20mA +/-10V 8pt. - New Tec	15	1998	24	$7,500
		PLC-AIC-2-Z1	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AIC-2-Z2	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AIC-2-ZW	Analog Input Card +/-20mA +/-10V 8pt.- ZW1000	15	2001	21	$7,500
		PLC-AIC-3-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500
		PLC-AIC-3-Z1	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AIC-3-Z2	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AIC-3-ZW	Analog Input Card +/-20mA +/-10V 8pt.- ZW1000	15	2001	21	$7,500
		PLC-AIC-4-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500
		PLC-AIC-4-Z1	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AIC-4-Z2	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AIC-5-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PLC-AIC-5-Z1	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AIC-5-Z2	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AIC-6-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500
		PLC-AIC-6-Z2	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AIC-7-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500
		PLC-AIC-7-Z2	Analog Input Card +/-20mA +/-10V 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AIC-8-HLP	Analog Input Card +/-20mA +/-10V 4pt.	15	1998	24	$7,500
		PLC-AOC-1-HLP	Analog Output Card 0-20mA 4pt.	15	1998	24	$7,500
		PLC-AOC-1-IND	Analog Output Card 0-20mA 4pt. - Industrial Process	15	1998	24	$7,500
		PLC-AOC-1-Z1	Analog Output Card 0-20mA 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AOC-1-Z2	Analog Output Card 0-20mA 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AOC-1-ZW	Analog Output Card 0-20mA 4pt.- ZW1000	15	2001	21	$7,500
		PLC-AOC-2-HLP	Analog Output Card 0-20mA 4pt.	15	1998	24	$7,500
		PLC-AOC-2-IND	Analog Output Card 0-20mA 4pt. - Industrial Process	15	1998	24	$7,500
		PLC-AOC-2-Z1	Analog Output Card 0-20mA 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AOC-2-Z2	Analog Output Card 0-20mA 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AOC-2-ZW	Analog Output Card 0-20mA 4pt.- ZW1000	15	2001	21	$7,500
		PLC-AOC-3-IND	Analog Output Card 0-20mA 4pt. - Industrial Process	15	1998	24	$7,500
		PLC-AOC-3-Z1	Analog Output Card 0-20mA 4pt. - Zenon 1	15	1998	24	$7,500
		PLC-AOC-3-Z2	Analog Output Card 0-20mA 4pt. - Zenon 2	15	1998	24	$7,500
		PLC-AOC-3-ZW	Analog Output Card 0-20mA 4pt.- ZW1000	15	2001	21	$7,500
		PLC-AOC-GEN	Analog Output Card 0-10vdc pt.	15	1998	24	$7,500
		PLC-AOC-NT	Analog Output Card 0-20mA 4pt. - New Tec	15	1998	24	$7,500
		PLC-D-CPU	Dialer - Micrologix 1400 CPU series A	12	2012	10	$5,000
		PLC-DIC-1-HLP	Digital Input Card 120Vac 16pt.	15	1998	24	$1,500
		PLC-DIC-1-IND	Digital Input Card 120Vac 16pt. - Industrial Process	15	1998	24	$1,500
		PLC-DIC-1-NT	Digital Input Card 120Vac 16pt. - New Tec	15	1998	24	$1,500
		PLC-DIC-1-Z1	Digital Input Card 120Vac 16pt. - Zenon 1	15	1998	24	$1,500
		PLC-DIC-1-Z2	Digital Input Card 120Vac 16pt. - Zenon 2	15	1998	24	$1,500
		PLC-DIC-1-ZW	Digital Input Card 120Vac 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DIC-2-HLP	Digital Input Card 120Vac 16pt.	15	1998	24	$1,500
		PLC-DIC-2-IND	Digital Input Card 120Vac 16pt. - Industrial Process	15	1998	24	$1,500
		PLC-DIC-2-NT	Digital Input Card 120Vac 16pt. - New Tec	15	1998	24	$1,500
		PLC-DIC-2-Z1	Digital Input Card 120Vac 16pt. - Zenon 1	15	1998	24	$1,500
		PLC-DIC-2-Z2	Digital Input Card 120Vac 16pt. - Zenon 2	15	1998	24	$1,500
		PLC-DIC-2-ZW	Digital Input Card 120Vac 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DIC-3-HLP	Digital Input Card 120Vac 16pt.	15	1998	24	$1,500
		PLC-DIC-3-IND	Digital Input Card 120Vac 16pt. - Industrial Process	15	1998	24	$1,500
		PLC-DIC-3-Z1	Digital Input Card 120Vac 16pt. - Zenon 1	15	1998	24	$1,500
		PLC-DIC-3-Z2	Digital Input Card 120Vac 16pt. - Zenon 2	15	1998	24	$1,500
		PLC-DIC-3-ZW	Digital Input Card 120Vac 16pt.- ZW1000	15	2001	21	$1,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PLC-DIC-4-IND	Digital Input Card 120Vac 16pt. - Industrial Process	15	1998	24	$1,500
		PLC-DIC-4-Z1	Digital Input Card 120Vac 16pt. - Zenon 1	15	1998	24	$1,500
		PLC-DIC-4-Z2	Digital Input Card 120Vac 16pt. - Zenon 2	15	1998	24	$1,500
		PLC-DIC-4-ZW	Digital Input Card 120Vac 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DIC-5-Z1	Digital Input Card 120Vac 16pt. - Zenon 1	15	1998	24	$1,500
		PLC-DIC-5-Z2	Digital Input Card 120Vac 16pt. - Zenon 2	15	1998	24	$1,500
		PLC-DIC-5-ZW	Digital Input Card 120Vac 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DIC-6-Z1	Digital Input Card 120Vac 16pt. - Zenon 1	15	1998	24	$1,500
		PLC-DIC-6-Z2	Digital Input Card 120Vac 16pt. - Zenon 2	15	1998	24	$1,500
		PLC-DIC-6-ZW	Digital Input Card 120Vac 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DIC-7-Z1	Digital Input Card 120Vac 16pt. - Zenon 1	15	1998	24	$1,500
		PLC-DIC-7-Z2	Digital Input Card 120Vac 16pt. - Zenon 2	15	1998	24	$1,500
		PLC-DIC-GEN	Digital Input Card 24Vdc 16pt. Sinking.	15	1998	24	$1,500
		PLC-DOC-1-HLP	Digital Output Card Indivdually Isolated Relays 8pt.	15	1998	24	$1,500
		PLC-DOC-1-IND	Digital Output Card Indivdually Isolated Relays 8pt. - Industrial Process	15	1998	24	$1,500
		PLC-DOC-1-Z1	Digital Output Card Indivdually Isolated Relays 8pt. - Zenon 1	15	1998	24	$1,500
		PLC-DOC-1-Z2	Digital Output Card Indivdually Isolated Relays 8pt. - Zenon 2	15	1998	24	$1,500
		PLC-DOC-1-ZW	Digital Output Card Triac 120Vac. 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DOC-2-HLP	Digital Output Card Indivdually Isolated Relays 8pt.	15	1998	24	$1,500
		PLC-DOC-2-IND	Digital Output Card Indivdually Isolated Relays 8pt. - Industrial Process	15	1998	24	$1,500
		PLC-DOC-2-Z1	Digital Output Card Indivdually Isolated Relays 8pt. - Zenon 1	15	1998	24	$1,500
		PLC-DOC-2-Z2	Digital Output Card Indivdually Isolated Relays 8pt. - Zenon 2	15	1998	24	$1,500
		PLC-DOC-2-ZW	Digital Output Card Triac 120Vac. 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DOC-3-HLP	Digital Output Card Indivdually Isolated Relays 8pt.	15	1998	24	$1,500
		PLC-DOC-3-Z1	Digital Output Card Indivdually Isolated Relays 8pt. - Zenon 1	15	1998	24	$1,500
		PLC-DOC-3-Z2	Digital Output Card Indivdually Isolated Relays 8pt. - Zenon 2	15	1998	24	$1,500
		PLC-DOC-3-ZW	Digital Output Card Triac 120Vac. 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DOC-4-HLP	Digital Output Card Indivdually Isolated Relays 8pt.	15	1998	24	$1,500
		PLC-DOC-4-ZW	Digital Output Card Triac 120Vac. 16pt.- ZW1000	15	2001	21	$1,500
		PLC-DOC-GEN	Digital Output Card 24Vdc 16pt.	15	1998	24	$1,500
		PLC-DOC-NT	Digital Output Card Indivdually Isolated Relays 8pt. - New Tec	15	1998	24	$1,500
		PLC-EM-GEN	Ethernet Module	15	1998	24	$7,500
		PLC-EM-HLP	Ethernet Module	15	1998	24	$7,500
		PLC-EM-IND	Ethernet Module - Industrial Process	15	1998	24	$7,500
		PLC-EM-Z1	Ethernet Module - Zenon 1	15	1998	24	$7,500
		PLC-EM-Z2	Ethernet Module - Zenon 2	15	1998	24	$7,500
		PLC-EM-ZW	Ethernet Module- ZW1000	15	2001	21	$7,500
		PLC-GW-NT	WIFI Router (in master panel) - New Tec	15	1998	24	$7,500
		PLC-P-GEN	Panelview	15	1998	24	$82,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		PLC-P-GM	PLC Panel - Georgian Meadows	15	2006	16	$100,000
		PLC-P-GMM	PLC Panel - Georgian Meadows Master	15	2006	16	$100,000
		PLC-P-HLP	PLC Panel	15	1998	24	$100,000
		PLC-P-IND	PLC Panel - Industrial Process	15	1998	24	$100,000
		PLC-P-NT	PLC Panel - New Tec	15	1998	24	$100,000
		PLC-PS-1-HLP	Power Supply 1	15	1998	24	$4,400
		PLC-PS-1-IND	Power Supply - Industrial Process	15	1998	24	$4,400
		PLC-PS-1-Z1	Power Supply - Zenon 1	15	1998	24	$4,400
		PLC-PS-1-ZW	Power Supply- ZW1000	15	2001	21	$8,800
		PLC-PS-2-HLP	Power Supply 2	15	1998	24	$4,400
		PLC-PS-2-IND	Power Supply - Industrial Process	15	1998	24	$4,400
		PLC-PS-2-Z1	Power Supply - Zenon 1	15	1998	24	$4,400
		PLC-PS-2-ZW	Power Supply- ZW1000	15	2001	21	$8,800
		PLC-PS-GEN	Power Supply	15	1998	24	$4,400
		PLC-PS-GMM	Power Supply - Georgian Meadows Master	15	2006	16	$4,400
		PLC-PS-NT	Power Supply - New Tec	15	1998	24	$4,400
		PLC-P-Z1	PLC Panel - Zenon 1	15	1998	24	$100,000
		PLC-P-Z2	PLC Panel - Zenon 2	15	1998	24	$100,000
		PLC-P-ZW	PLC Panel- ZW1000	15	2001	21	$100,000
		PLC-R10-1-HLP	Rack 10 slot 1	15	1998	24	$3,000
		PLC-R10-2-HLP	Rack 10 slot 2	15	1998	24	$3,000
		PLC-R10-NT	Rack 10 Slot - New Tec	15	1998	24	$3,000
		PLC-R13-1-IND	Rack 13 Slot - Industrial Process	15	1998	24	$3,800
		PLC-R13-1-Z1	Rack 13 Slot - Zenon 1	15	1998	24	$3,400
		PLC-R13-2-IND	Rack 13 Slot - Industrial Process	15	1998	24	$3,800
		PLC-R13-2-Z1	Rack 13 Slot - Zenon 1	15	1998	24	$3,400
		PLC-R13-ZW	Rack 13 Slot- ZW1000	15	2001	21	$3,800
		PLC-R4-GEN	Rack 4 Slot	15	1998	24	$1,400
		PLC-R4-ZW	Rack 4 Slot- ZW1000	15	2001	21	$1,400
		PLC-R7-GMM	Rack 7 Slot - Georgian Meadows Master	15	2006	16	$2,600
		PLC-SLCBM-Z1	SLC Basic Module - Zenon 1	15	1998	24	$3,000
		PLC-SLCBM-Z2	SLC Basic Module - Zenon 2	15	1998	24	$3,000
		PLC-SLC-GEN	SLC Processor 5/04 16K OS401	15	1998	24	$9,000
		PLC-SLC-GMM	SLC Processor 5/05 16K OS401 C - Georgian Meadows Master	15	2006	16	$9,600
		PLC-SLC-HLP	SLC Processor 5/05 32K OS401 C	15	1998	24	$10,000
		PLC-SLC-IND	SLC Processor 5/05 32K OS501 - Industrial Process	15	1998	24	$10,000
		PLC-SLC-NT	SLC Processor 5/04 32K OS401 - New Tec	15	1998	24	$9,600
		PLC-SLC-Z1	SLC Processor 5/05 32K OS401 C - Zenon 1	15	1998	24	$10,000
		PLC-SLC-Z2	Zenon 2 - SLC Processor 5/05 32K OS401 C - Zenon 2	15	1998	24	$10,000
		PLC-SLC-ZW	SLC Processor 5/05 32K OS501 - ZW1000	15	2001	21	$10,000
		PLC-SS-GMM	Stratix Switch - Georgian Meadows Master	15	2011	11	$17,500

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		Post-Chlor-1	Post chlorinator #1	10	2019	3	$46,615
		Post-Chlor-2	Post chlorinator #2	10	2018	4	$46,615
		Pre-Chlor	Pre chlorinator	28	1997	25	$46,615
		PRV-1	Pressure Relief Valve	25	2002	20	$10,240
		PRV-2	Pressure Relief Valve	30	1998	24	$12,800
		PRV-8580-A	Blower Pressure Relief Valve	30	1997	25	$2,000
		PRV-8580-B	Blower Pressure Relief Valve	30	1997	25	$2,000
		PRV-8580-C	Blower Pressure Relief Valve	30	1997	25	$2,000
		PRV-8580-D	Blower Pressure Relief Valve	30	1997	25	$2,000
		PRV-8580-E	Blower Pressure Relief Valve	30	1997	25	$2,000
		PRV-8580-F	Blower Pressure Relief Valve	30	1997	25	$2,000
		PSV-1017	Pressure Relief Valve	25	2002	20	$10,240
		PSV-6582	Citric acid injection backpressure anisiphon valve	25	2002	20	$3,500
		R-HLPC02-VFD001	VFD Drive for HLP 2 Collingwood	20	2021	1	$34,000
		R-OLN000-SW0001	Ethernet Switch	20	2022	0	$7,000
		SC200-01	Controller for analyzers	24	2019	3	$6,278
		Strainer	Automatic Pre Filter Strainer	25	2000	22	$80,000
		Strainer M	ZW1000 Strainer pump motor	5	2021	1	$10,000
		Strainer P	ZW1000 Strainer Pump	5	2021	1	$10,000
		TE/TT 8130-1	Clean in place tank water heater	20	2005	17	$30,000
		TE/TT 8130-2	Clean in place tank temperature transmitter	20	2005	17	$5,000
		TIT-12	Temperature Analyzer Finished Water	9	2018	4	$5,000
		TIT-14	Temperature Analyzer Raw Water	5	2022	0	$5,000
		TIT-14 old 2021	Temperature Analyzer Raw Water	6	2021	1	$2,000
		TIT-14 old 2022	Temperature Sensor Raw Water	15	2021	1	$2,000
		TK66	Hypochlorite bulk storage tank & containment	20	2015	7	$19,736
		TK67	Hypochlorite bulk storage tank & containment	20	2015	7	$19,736
		Train A 05 old	Membrane Filter Cassette	6	2018	4	$100,000
		Train A 06 old	Membrane Filter Cassette	6	2018	4	$100,000
		Train A 10 old	Membrane Filter Cassette	6	2018	4	$100,000
		Train A 15 old	Membrane Filter Cassette	6	2018	4	$100,000
		Train A Cass 01	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 02	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 03	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 04	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 05	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 06	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 07	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 08	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 09	Membrane Filter Cassette	6	2018	4	$171,115

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		Train A Cass 10	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 11	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 12	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 13	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 14	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass 15	Membrane Filter Cassette	6	2018	4	$171,115
		Train A Cass05	Membrane Filter Cassette	6	2018	4	$100,000
		Train B Cass 01	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 02	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 03	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 04	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 05	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 06	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 07	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 08	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 09	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 10	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 11	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 12	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 13	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 14	Membrane Filter Cassette	10	2018	4	$171,115
		Train B Cass 15	Membrane Filter Cassette	10	2018	4	$171,115
		Train C 04 old	Membrane Filter Cassette	-3	2018	4	$100,000
		Train C 05 old	Membrane Filter Cassette	-3	2018	4	$100,000
		Train C 08 old	Membrane Filter Cassette	-3	2018	4	$100,000
		Train C Cass 01	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 02	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 03	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 04	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 05	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 06	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 07	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 08	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 09	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 10	Membrane Filter Cassette	-3	2018	4	$171,115
		Train C Cass 11	Membrane Filter Cassette	-10	2018	4	$171,115
		Train C Cass 12	Membrane Filter Cassette	-10	2018	4	$171,115
		Train C Cass 13	Membrane Filter Cassette	-10	2018	4	$171,115
		Train C Cass 14	Membrane Filter Cassette	-10	2018	4	$171,115
		Train C Cass 15	Membrane Filter Cassette	-10	2018	4	$171,115
		Train D 01 old	Membrane Filter Cassette	4	2018	4	$100,000
		Train D 02 old	Membrane Filter Cassette	4	2018	4	$100,000

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		Train D 03 old	Membrane Filter Cassette	4	2018	4	$100,000
		Train D 09 old	Membrane Filter Cassette	4	2018	4	$100,000
		Train D 11 old	Membrane Filter Cassette	-10	2018	4	$100,000
		Train D 12 old	Membrane Filter Cassette	-10	2018	4	$100,000
		Train D 13 old	Membrane Filter Cassette	-10	2018	4	$100,000
		Train D 14 old	Membrane Filter Cassette	-10	2018	4	$100,000
		Train D Cass 01	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 02	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 03	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 04	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 05	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 06	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 07	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 08	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 09	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 10	Membrane Filter Cassette	1	2021	1	$171,115
		Train D Cass 11	Membrane Filter Cassette	-13	2021	1	$171,115
		Train D Cass 12	Membrane Filter Cassette	-13	2021	1	$171,115
		Train D Cass 13	Membrane Filter Cassette	-13	2021	1	$171,115
		Train D Cass 14	Membrane Filter Cassette	-13	2021	1	$171,115
		Train D Cass 15	Membrane Filter Cassette	-13	2021	1	$171,115
		Train E Cass 01	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 02	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 03	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 04	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 05	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 06	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 07	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 08	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 09	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 10	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 11	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 12	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 13	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 14	Membrane Filter Cassette	10	2017	5	$171,115
		Train E Cass 15	Membrane Filter Cassette	10	2017	5	$171,115
		Train F Cass 01	Membrane Filter Cassette	5	2017	5	$171,115
		Train F Cass 02	Membrane Filter Cassette	5	2017	5	$171,115
		Train F Cass 03	Membrane Filter Cassette	5	2017	5	$171,115
		Train F Cass 04	Membrane Filter Cassette	10	2017	5	$171,115
		FIT-ToB	Distribution flow meter - TOBM at Cypress	28	2020	2	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
Wastewater	Black Ash Water Pumping Station	WC-BAC-0001	Diesel Fuel Engine	25	2019	3	$0
		WC-BAC-0002	Backup Power Generator	0	2019	3	$81,574
		WC-BAC-0003	Influent Masticator	25	2019	3	$115,000
		WC-BAC-0004	Main Pump No.1	25	2019	3	$137,931
		WC-BAC-0005	Main Pump No.2	25	2019	3	$137,931
		WC-BAC-0006	Main Pump No.3	25	2019	3	$137,931
		WC-BAC-0007	Overflow Chamber Submersible Pump	25	2019	3	$29,946
		WC-BAC-0008	High High level float	25	2019	3	$690
		WC-BAC-0009	High Level Float	25	2019	3	$690
		WC-BAC-0010	Ultrasonic Level Transducer	25	2019	3	$8,970
		WC-BAC-0011	Low Low Float	25	2019	3	$690
		WC-BAC-0012	High High level float	25	2019	3	$690
		WC-BAC-0013	High Level Float	25	2019	3	$690
		WC-BAC-0014	Ultrasonic Level Transducer	25	2019	3	$8,970
		WC-BAC-0015	Low Low Float	25	2019	3	$690
		WC-BAC-0016	Sanitary Sewer MH 1 to MH 2	75	2020	2	$0
		WC-BAC-0017	Overflow discharge pipe	75	1971	51	$0
		WC-BAC-0018	Overflow discharge pipe	75	1971	51	$0
		WC-BAC-0019	Knife Gate Valve c/w handwheel for Pump 1	25	2019	3	$15,807
		WC-BAC-0020	Knife Gate Valve c/w handwheel for Pump 2	25	2019	3	$15,807
		WC-BAC-0021	Knife Gate Valve c/w handwheel for Pump 3	25	2019	3	$15,807
		WC-BAC-0022	Knife gate valve c/w chainwheel operator after Pump 1	25	2019	3	$714
		WC-BAC-0023	Knife gate valve c/w chainwheel operator after Pump 2	25	2019	3	$714
		WC-BAC-0024	Knife gate valve c/w chainwheel operator after Pump 3	25	2019	3	$714
		WC-BAC-0025	Pipe to MH 2	75	2020	2	$0
		WC-BAC-0026	Overflow Pipe	75	1971	51	$0
		WC-BAC-0027	Overflow Pipe	75	1971	51	$0
		WC-BAC-0028	Discharge Pipe from Pump 1	75	2019	3	$3,500
		WC-BAC-0029	Discharge Pipe from Pump 2	75	2019	3	$2,870
		WC-BAC-0030	Discharge Pipe from Pump 3	75	2019	3	$3,500
		WC-BAC-0031	Flow Meter	20	2019	3	$13,800
		WC-BAC-0032	Pipe to Pump 1	75	2019	3	$974
		WC-BAC-0033	Air Release Valve	25	2019	3	$3,025
		WC-BAC-0034	Sanitary Sewer MH 3 to MH 1	75	2020	2	$0
		WC-BAC-0035	Overflow Pipe	75	2019	3	$4,782
		WC-BAC-0036	Pipe to Pump 2	75	2019	3	$974
		WC-BAC-0039	Pipe to Pump 3	75	2019	3	$974
		WC-BAC-0040	Discharge Pipe from Pumps 2 and 3	75	2019	3	$1,267
		WC-BAC-0041	Combined Discharge Pipe	75	2019	3	$4,385

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-BAC-0042	90 deg MJ Elbow Overflow	75	2020	2	$0
		WC-BAC-0043	22.5 deg MJ Elbow Overflow	75	2020	2	$0
		WC-BAC-0044	Effluent Pipe to Forcemain	75	2019	3	$2,237
		WC-BAC-0045	Overflow discharge reducer	0	0	0	$0
		WC-BAC-0046	Overflow discharge check valve	25	2019	3	$0
		WC-BAC-0047	Overflow discharge 90 LR Elbow	0	0	0	$0
		WC-BAC-0048	Sluice Gate	25	2019	3	$21,409
		WC-BAC-0049	45 deg MJ Elbow to MH2	75	2020	2	$0
		WC-BAC-0050	Sluice Gate	25	2019	3	$21,409
		WC-BAC-0051	90 deg MJ elbow	75	2020	2	$0
		WC-BAC-0052	Sluice Gate	25	2005	17	$21,409
		WC-BAC-0053	Plugged and abandoned forcemain	0	0	0	$0
		WC-BAC-0054	Plugged and abandoned inlet sewer	0	0	0	$0
		WC-BAC-0055	Power Distribution Panel	20	2005	17	$23,000
		WC-BAC-0056	Automatic Transfer Switch	20	2005	17	$15,249
		WC-BAC-0057	PLC	20	2005	17	$80,500
		WC-BAC-0058	Stainless Steel Grating over channels as platform	0	2020	2	$0
		WC-BAC-0059	Guardrails	0	2020	2	$0
		WC-BAC-0060	Safety Chains	0	2020	2	$0
		WC-BAC-0061	Access Hatch over Building	0	0	0	$0
		WC-BAC-0062	Access Hatch for Submersible Pump	0	0	0	$0
		WC-BAC-0063	Access Ladder to Wet Well	0	2020	2	$0
		WC-BAC-0064	Access Ladder to Wet Well	0	2020	2	$0
		WC-BAC-0065	Grinder Access Hatch	0	0	0	$0
		WC-BAC-0066	Access Ladder to Grinder	0	2020	2	$0
		WC-BAC-0067	Safety Platform	0	2020	2	$0
		WC-BAC-0068	Guardrails	0	2020	2	$0
		WC-BAC-0069	Equipment Access Hatch	0	0	0	$0
		WC-BAC-0070	Pump No. 1 Access Hatch	0	0	0	$0
		WC-BAC-0071	Pump No. 2 Access Hatch	0	0	0	$0
		WC-BAC-0072	Pump No. 3 Access Hatch	0	0	0	$0
		WC-BAC-0073	Dry Well Access Hatch	0	0	0	$0
		WC-BAC-0074	Wall mounted exhaust fan	0	0	0	$0
		WC-BAC-0075	Wall mounted exhaust fan	0	0	0	$0
		WC-BAC-0076	VFD 1	20	2019	3	$460,000
		WC-BAC-0077	VFD 2	20	2019	3	$460,000
		WC-BAC-0078	VFD 3	20	2019	3	$460,000
		WC-BAC-0079	Grinder Control Panel	20	2019	3	$80,500
		WC-BAC-0080	Pump - Sump	25	2019	3	$345
		WC-BAC-0081	Check Valve after Pump 1	25	2019	3	$17,079
		WC-BAC-0082	Check Valve after Pump 2	25	2019	3	$17,079
		WC-BAC-0083	Check Valve after Pump 3	25	2019	3	$17,079

DRAFT

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-BAC-0084	Desk	0	0	0	$0
		WC-BAC-0085	Intake Louvre	0	0	0	$0
		WC-BAC-0086	Intake Louvre c/w plenum and ductwork down to dry well	0	0	0	$0
		WC-BAC-0087	Dry Well Access Ladder	0	2020	2	$0
		WC-BAC-0088	1x4 style with gasket	0	0	0	$0
		WC-BAC-0089	1x4 style with gasket	0	0	0	$0
		WC-BAC-0090	1x4 style with gasket	0	0	0	$0
		WC-BAC-0091	LED wallpack	0	0	0	$0
		WC-BAC-0092	motion sensor	0	0	0	$0
		WC-BAC-0093	1x2 style with gasket	0	0	0	$0
		WC-BAC-0094	Emergency Combo	0	0	0	$0
		WC-BAC-0095	Emergency Combo	0	0	0	$0
		WC-BAC-0096	Battery unit	0	0	0	$0
		WC-BAC-0097	Emergency Remote	0	0	0	$0
		WC-BAC-0098	Emergency Remote	0	0	0	$0
		WC-BAC-0099	Electric Heater	0	0	0	$0
		WC-BAC-0100	Electric Heater	0	0	0	$0
		WC-BAC-0101	Electric Heater	0	0	0	$0
		WC-BAC-0102	Electric Heater	0	0	0	$0
		WC-BAC-0103	Fan	0	0	0	$0
		WC-BAC-0104	Fan	0	0	0	$0
		WC-BAC-0105	Supply Grille	0	0	0	$0
		WC-BAC-0106	Return Grille	0	0	0	$0
		WC-BAC-0107	Damper	0	0	0	$0
		WC-BAC-0108	Damper	0	0	0	$0
		WC-BAC-0220	Overflow Check Valve	25	2019	3	$0
		WC-BAC-0370	Knife Gate Valve c/w motorized operator	25	2019	3	$31,213
		WC-BAC-0389	Knife Gate Valve c/w motorized operator	25	2019	3	$31,213
	Cranberry Sewage Pumping Station	WC-CRN-0109	PLC Cabinet	20	2002	20	$80,500
		WC-CRN-0110	Roof Mounted Exhaust Fan	0	0	0	$0
		WC-CRN-0111	Vent Pipe c/w dowturned elbow and insect screen	0	0	0	$0
		WC-CRN-0112	Forcemain Effluent Wet Well from Pump 1	75	2002	20	$3,760
		WC-CRN-0113	Forcemain Effluent Wet Well from Pump 2	75	2002	20	$188
		WC-CRN-0114	Forcemain Effluent From Wet Well to Generator Building	75	2002	20	$4,386
		WC-CRN-0115	Forcemain Effluent - Emergency Bypass	75	2002	20	$1,253
		WC-CRN-0116	150mm magnetic flowmeter Generator Building	20	2002	20	$11,500
		WC-CRN-0117	Natural Gas Generator with Heat Exchanger	0	2002	20	$75,948
		WC-CRN-0118	Effluent Pipe generator building	75	2002	20	$570
		WC-CRN-0119	Main Pump No.1	25	2002	20	$29,946

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-CRN-0120	Influent Sanitary Sewer	75	2003	19	$0
		WC-CRN-0121	Main Pump No.2	25	2002	20	$29,946
		WC-CRN-0122	Pump Control Panel	20	2002	20	$80,500
		WC-CRN-0123	Exterior Louver	0	0	0	$0
		WC-CRN-0124	Exhaust fan	0	0	0	$0
		WC-CRN-0125	Aluminum Ladder Rungs	0	2003	19	$0
		WC-CRN-0126	Safety Chain	0	2003	19	$0
		WC-CRN-0127	Aluminum Safety Railing	0	2003	19	$0
		WC-CRN-0128	Aluminum Safety Platform	0	2003	19	$0
		WC-CRN-0129	Aluminum Checker Plate Access Hatch	0	0	0	$0
		WC-CRN-0130	Automatic Transfer Switch	20	2021	1	$13,260
		WC-CRN-0131	Float HHWL Alarm (elev. 175.85)	25	2002	20	$690
		WC-CRN-0132	Motorized Damper	0	0	0	$0
		WC-CRN-0133	Unit Heater Type 1	0	0	0	$0
		WC-CRN-0134	Float HWL Alarm & Stand-By Pump ON (elev. 175.75)	25	2002	20	$690
		WC-CRN-0135	Float LWL Duty Pump ON (elev. 175.67)	25	2002	20	$690
		WC-CRN-0136	Float LLWL Pumps OFF (elev. 174.47)	25	2002	20	$690
		WC-CRN-0137	Level Sensor	25	2002	20	$8,970
	Minnesota Water Pumping Station	WC-MIN-0138	Main Pump No.1	25	2019	3	$111,895
		WC-MIN-0139	Main Access Hatch	0	0	0	$0
		WC-MIN-0140	Main Pump No.2	25	2019	3	$111,895
		WC-MIN-0141	Main Pump No.3	25	2019	3	$111,895
		WC-MIN-0142	Forcemain 1 to discharge header	75	2019	3	$2,310
		WC-MIN-0143	Mobile gantry to pump removal c/w chain hoist	25	2020	2	$0
		WC-MIN-0144	Forcemain 2 to discharge header	75	2019	3	$2,310
		WC-MIN-0145	Forcemain 3 to discharge header	75	2019	3	$2,310
		WC-MIN-0146	Suction Pipe to Pump 1	75	2019	3	$1,008
		WC-MIN-0147	Gooseneck Intake	0	0	0	$0
		WC-MIN-0148	Gooseneck Intake	0	0	0	$0
		WC-MIN-0149	Suction Pipe to Pump 2	75	2019	3	$1,008
		WC-MIN-0150	Suction Pipe to Pump 3	75	2019	3	$1,008
		WC-MIN-0151	Gate Valve on Pump Suction 1	25	2019	3	$25,463
		WC-MIN-0152	Gate Valve on Pump Suction 2	25	2019	3	$25,463
		WC-MIN-0153	Gate Valve on Pump Suction 3	25	2019	3	$25,463
		WC-MIN-0154	300mm Bypass Pipe	75	2019	3	$2,016
		WC-MIN-0155	300mm Bypass Pipe	75	2019	3	$2,118
		WC-MIN-0157	Exhaust Vent	0	0	0	$0
		WC-MIN-0158	400mm Discharge Header Pipe to Bypass Maintenance Chamber	75	2019	3	$10,869
		WC-MIN-0159	400mm Pipe	75	2019	3	$4,831

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-MIN-0160	400mm Effluent Pipe to forcemain	75	2019	3	$6,038
		WC-MIN-0161	Back up power generator	0	2018	4	$77,636
		WC-MIN-0162	Grinder Access Hatch	0	0	0	$0
		WC-MIN-0163	Pump Access Hatch	0	0	0	$0
		WC-MIN-0164	Influent Masticator	25	2019	3	$115,000
		WC-MIN-0165	Access Ladder with Ladder-Up Safety Bar	0	1995	27	$0
		WC-MIN-0166	Access Grating to Pump for Operator	0	0	0	$0
		WC-MIN-0167	Access Ladder and Grab Bar to Dry Well	0	1995	27	$0
		WC-MIN-0168	Lifting Davit Sockets	25	2018	4	$0
		WC-MIN-0169	Exhaust fan	0	0	0	$0
		WC-MIN-0170	Intake Louvre	0	0	0	$0
		WC-MIN-0171	MH Access Cover	0	0	0	$0
		WC-MIN-0172	PLC Control Panel	20	2019	3	$80,500
		WC-MIN-0173	Guide Rail	0	2018	4	$0
		WC-MIN-0174	VFD for Pump 1	20	2019	3	$460,000
		WC-MIN-0175	Lighting Control Panel	20	2018	4	$0
		WC-MIN-0176	Grinder Package	25	2019	3	$440,000
		WC-MIN-0177	VFD for Pump 2	20	2019	3	$460,000
		WC-MIN-0178	VFD for Pump 3	20	2019	3	$460,000
		WC-MIN-0179	Engine Drive	25	2019	3	$0
		WC-MIN-0180	600V PDP	20	2019	3	$26,000
		WC-MIN-0181	Automatic Transfer Switch	20	2019	3	$15,249
		WC-MIN-0182	Exhaust fan	0	0	0	$0
		WC-MIN-0183	Heater	0	0	0	$0
		WC-MIN-0184	Safety Cage and Ladder	0	1995	27	$0
		WC-MIN-0185	Safety Cage and Ladder	0	1995	27	$0
		WC-MIN-0186	Sump Pump	25	2019	3	$345
		WC-MIN-0187	Flow Meter Transmitter	25	2019	3	$8,970
		WC-MIN-0188	Pump 1 Junction Box	20	2019	3	$1,380
		WC-MIN-0189	Main Disconnect Switch	20	2019	3	$500
		WC-MIN-0190	Pump 2 Junction Box	20	2019	3	$1,380
		WC-MIN-0191	Pump 3 Junction Box	20	2019	3	$1,380
		WC-MIN-0192	High Level Float	25	2019	3	$690
		WC-MIN-0193	Start float	25	2019	3	$690
		WC-MIN-0194	Stop float	25	2019	3	$690
		WC-MIN-0195	Sump Pump Float	25	2019	3	$690
		WC-MIN-0196	Bypass flooding float	25	2019	3	$690
		WC-MIN-0197	Pump 1 2 3 Pressure Gauge	25	2019	3	$368
		WC-MIN-0632	400mm Discharge Header Pipe	75	2019	3	$13,225
	Paterson St. Water Pumping Station	WC-PAT-0198	Sump Pump	25	1995	27	$345

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-PAT-0199	Main Pump No.1	25	1995	27	$36,628
		WC-PAT-0200	Main Pump No.2	25	1995	27	$36,628
		WC-PAT-0201	Main Pump No.3	25	1995	27	$36,628
		WC-PAT-0202	Main Pump Motor No.1	25	1995	27	$0
		WC-PAT-0203	Main Pump Motor No.2	25	1995	27	$0
		WC-PAT-0204	Main Pump Motor No.3	25	1995	27	$0
		WC-PAT-0205	Pumping Station Backup Generator	0	1995	27	$81,574
		WC-PAT-0206	Before flow meter	75	1995	27	$40
		WC-PAT-0207	Bypass piping connection	25	1995	27	$4,141
		WC-PAT-0208	Bypass piping connection	75	1995	27	$0
		WC-PAT-0209	Bypass to Wet Well	25	1995	27	$4,141
		WC-PAT-0210	90 deg bend	75	1995	27	$0
		WC-PAT-0211	Magnetic Flow Meter	20	1995	27	$11,500
		WC-PAT-0212	Bypass to Wet Well	75	1995	27	$0
		WC-PAT-0213	Bypass to Wet Well	75	1995	27	$0
		WC-PAT-0214	Vertical Pipe from Pump 1	75	1995	27	$376
		WC-PAT-0215	Roof Mounted Exhaust Fan	0	0	0	$0
		WC-PAT-0216	Vertical Pipe from Pump 2	75	1995	27	$376
		WC-PAT-0217	Vertical Pipe from Pump 3	75	1995	27	$376
		WC-PAT-0218	Pipe from Pump 1 to Pump 2	75	1995	27	$40
		WC-PAT-0219	Combined effluent to Bypass Tee	25	1995	27	$4,141
		WC-PAT-0221	Combined effluent to Bypass Tee	25	1995	27	$10,088
		WC-PAT-0222	Pump 1 Effluent	25	1995	27	$10,088
		WC-PAT-0223	Pump 2 Effluent	25	1995	27	$10,088
		WC-PAT-0224	Pump 1 Effluent	25	1995	27	$10,424
		WC-PAT-0225	Pump 2 Effluent	25	1995	27	$10,424
		WC-PAT-0226	Pump 3 Effluent	25	1995	27	$10,424
		WC-PAT-0227	Effluent Pipe	75	1995	27	$88
		WC-PAT-0228	Pipe from Pump 2 to Pump 3	75	1995	27	$30
		WC-PAT-0229	Pipe from Pump 3 to Bypass	75	1995	27	$120
		WC-PAT-0230	Combined effluent to Bypass Tee	75	1995	27	$714
		WC-PAT-0231	Generator fuel tank with secondary containment	0	2011	11	$1,261
		WC-PAT-0232	Electrical Unit Heater - Access House	0	0	0	$0
		WC-PAT-0233	Electrical Unit Heater - Access House	0	0	0	$0
		WC-PAT-0234	Influent Masticator	25	1995	27	$89,700
		WC-PAT-0235	Sluice Gate	25	1995	27	$14,816
		WC-PAT-0236	Hatch	0	0	0	$0
		WC-PAT-0237	Automatic Transfer Switch	20	1995	27	$15,249
		WC-PAT-0238	Aluminum Bar Screen	25	1995	27	$0
		WC-PAT-0239	Aluminum Handrailing	0	1995	27	$0
		WC-PAT-0240	Aluminum Grating	0	1995	27	$0
		WC-PAT-0241	Aluminum Access Ladder	0	1995	27	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-PAT-0242	Generator Disconnect	20	1995	27	$575
		WC-PAT-0243	3 Section Motor Control Center	20	1995	27	$138,000
		WC-PAT-0244	Automatic Transfer Switch	20	1995	27	$13,260
		WC-PAT-0245	Hydro Metering	20	1995	27	$0
		WC-PAT-0246	Main Fuse Disconnect	20	1995	27	$0
		WC-PAT-0247	Pump Control Panel	20	1995	27	$80,500
		WC-PAT-0248	Pump 3 VFD	20	1995	27	$0
		WC-PAT-0249	Pump 2 Relais Milltronics	20	1995	27	$0
		WC-PAT-0250	Pump 1 Floats	20	1995	27	$0
		WC-PAT-0251	Heat Main Floor	20	1995	27	$0
		WC-PAT-0252	Heat Dry Well	20	1995	27	$0
		WC-PAT-0253	30KVA Transformer Disconnect	20	1995	27	$0
		WC-PAT-0254	Muffin Monster	20	1995	27	$0
		WC-PAT-0255	Lighting Control Panel	20	1995	27	$0
		WC-PAT-0256	5 KVA Transformer 600/240/120V	20	1995	27	$0
		WC-PAT-0257	Pump 3 VFD	20	1995	27	$460,000
		WC-PAT-0258	Three Phase Isolation Transformer CP	20	1995	27	$11,500
		WC-PAT-0259	High level float (Elev. 181.90)	25	1995	27	$690
		WC-PAT-0260	Ventilating Thermostat - Line Voltage	0	0	0	$0
		WC-PAT-0261	Wall Mounted Intake Louvre	0	0	0	$0
		WC-PAT-0262	Supply Air Grill	0	0	0	$0
		WC-PAT-0263	Heavy Duty Floor Drain	0	0	0	$0
		WC-PAT-0264	Automatic Trap Seal Primer	0	0	0	$0
		WC-PAT-0265	Backflow Preventer on Potable Water Line	25	1995	27	$0
		WC-PAT-0266	Wall Mounted Hose Bibb	75	1995	27	$0
		WC-PAT-0267	Supply Air Duct	0	0	0	$0
		WC-PAT-0268	100% Float (Elev. 181.30)	25	1995	27	$690
		WC-PAT-0269	60% Float (Elev. 180.70))	25	1995	27	$690
		WC-PAT-0270	Low level float (Elev. 180.10)	25	1995	27	$690
		WC-PAT-0271	Lo-Lo level float (Elev. 180.00)	25	1995	27	$690
		WC-PAT-0272	Pump 3 Effluent	25	1995	27	$10,088
	Pretty River Water Pumping Station	WC-PRE-0273	Swingflex Check Valve From Pump 1 discharge	25	2008	14	$3,136
		WC-PRE-0274	Swingflex Check Valve From Pump 2 discharge	25	2008	14	$3,136
		WC-PRE-0275	Discharge Pipe from Pump 1	75	2008	14	$222
		WC-PRE-0276	Discharge Pipe from Pump 2	75	2008	14	$222
		WC-PRE-0277	Gate Valve from Pump 1 discharge	25	2008	14	$3,760
		WC-PRE-0278	Gate Valve from Pump 2 discharge	25	2008	14	$3,760
		WC-PRE-0279	Combined effluent pipe	75	2008	14	$40
		WC-PRE-0280	Combined effluent gate valve	25	2008	14	$3,760
		WC-PRE-0281	Main Pump No.1	25	2008	14	$66,654

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-PRE-0282	Main Pump No.2	25	2008	14	$66,654
		WC-PRE-0283	Air Intake Air Vent	0	0	0	$0
		WC-PRE-0284	Exhaust Air Vent	0	0	0	$0
		WC-PRE-0285	Sanitary Sewer Influent	75	2008	14	$60
		WC-PRE-0286	Louvre	0	0	0	$0
		WC-PRE-0287	Magnetic Flow Meter	20	2008	14	$11,500
		WC-PRE-0288	Access Ladder	0	2008	14	$0
		WC-PRE-0289	Alumimum Hand Rail	0	2008	14	$0
		WC-PRE-0290	Safety Platform	0	2008	14	$0
		WC-PRE-0291	Access Rungs	0	2008	14	$0
		WC-PRE-0292	Access Hatch	0	0	0	$0
		WC-PRE-0293	Control Panel	20	2008	14	$70,000
		WC-PRE-0294	VFD for Pump 1	20	2008	14	$460,000
		WC-PRE-0295	VFD for Pump 2	20	2008	14	$460,000
		WC-PRE-0296	Wet Well Control Panel	20	2008	14	$80,500
		WC-PRE-0297	4 Section Motor Control Center	20	2008	14	$161,000
		WC-PRE-0298	Main Lighting in Electrical Building	0	0	0	$0
		WC-PRE-0299	Pump Station Flow Transmitter	25	2008	14	$1,495
		WC-PRE-0300	TVSS Panel	20	2008	14	$80,500
		WC-PRE-0301	Main incoming circuit breaker 80 Amp Trip	20	2008	14	$0
		WC-PRE-0302	SCADA HMI	20	2008	14	$70,000
		WC-PRE-0303	High High Float	25	2008	14	$690
		WC-PRE-0304	Pump 1 Float	25	2008	14	$690
		WC-PRE-0305	Pump 2 Float	25	2008	14	$690
		WC-PRE-0306	Pumps Off Float	25	2008	14	$690
		WC-PRE-0307	Low Level Float	25	2008	14	$690
		WC-PRE-0308	Sonic Level Transducer	25	2008	14	$8,970
		WC-PRE-0309	Wet Well Level Transmitter	25	2008	14	$1,495
		WC-PRE-0310	Wet Well Level Transmitter	25	2008	14	$1,495
	Silver Glen Sewage Pumping Station	WC-SIL-0311	Flanged check valve on Discharge Pipe 1	25	2005	17	$4,493
		WC-SIL-0312	Flanged check valve on Discharge Pipe 2	25	2007	15	$4,493
		WC-SIL-0313	FL/PE Adaptor on Discharge Pipe 1	75	2007	15	$575
		WC-SIL-0314	FL/PE Adaptor on Discharge Pipe 2	75	2007	15	$575
		WC-SIL-0315	Flanged gate valve on Discharge Pipe 1	25	2007	15	$3,760
		WC-SIL-0316	Flanged gate valve on Discharge Pipe 2	25	2007	15	$3,760
		WC-SIL-0317	90 deg elbow on Discharge Pipe 1	75	2007	15	$54
		WC-SIL-0318	90 deg elbow on Discharge Pipe 2	75	2007	15	$54
		WC-SIL-0319	FL/PE Adaptor on combined effluent	75	2007	15	$575
		WC-SIL-0320	Combined effluent pipe 1	75	2007	15	$64
		WC-SIL-0321	Combined effluent pipe 2	75	2007	15	$191

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-SIL-0322	Magnetic Flow Meter	20	2007	15	$11,500
		WC-SIL-0323	FL/PE Adaptor in Air Release Valve Chamber	75	2007	15	$575
		WC-SIL-0324	Effluent to forcemain	75	2007	15	$49
		WC-SIL-0325	Air Release Tee	75	2007	15	$184
		WC-SIL-0326	Sump Pump in Valve Chamber	25	2005	17	$345
		WC-SIL-0327	Future connection pipe to exterior	75	2006	16	$0
		WC-SIL-0328	Future connect gate valve	25	2006	16	$0
		WC-SIL-0329	PBA including splitter capacity and disconnect	20	2007	15	$23,000
		WC-SIL-0330	Tee for future connection	75	2006	16	$0
		WC-SIL-0331	Pump 1 and 2 Duplex Control Panel	20	2007	15	$80,500
		WC-SIL-0332	Wall Mounted lighting	0	0	0	$0
		WC-SIL-0333	Wall Mounted lighting	0	0	0	$0
		WC-SIL-0334	3 Phase Dry Type Transformer	20	2007	15	$11,500
		WC-SIL-0335	Vent	0	0	0	$0
		WC-SIL-0336	Forcemain connection for future	75	2006	16	$0
		WC-SIL-0337	Surge Protector	20	2005	17	$13,800
		WC-SIL-0338	Pump 1 discharge pipe to building	75	2005	17	$64
		WC-SIL-0339	Pump 2 discharge pipe to building	75	2005	17	$635
		WC-SIL-0340	Air Release Gate Valve	25	2006	16	$0
		WC-SIL-0341	Air Release Valve	25	2007	15	$0
		WC-SIL-0342	Mechanical Joint Increaser	75	2007	15	$204
		WC-SIL-0343	Air Release Vent	0	0	0	$0
		WC-SIL-0344	Aluminum Safety Platform	0	2006	16	$0
		WC-SIL-0345	Aluminum Handrail	0	2006	16	$0
		WC-SIL-0346	Aluminum ladder	0	2006	16	$0
		WC-SIL-0347	Access Hatch	0	0	0	$0
		WC-SIL-0348	Access Hatch	0	0	0	$0
		WC-SIL-0349	Aluminum Steps	0	2006	16	$0
		WC-SIL-0350	Combined effluent pipe	75	2007	15	$323
		WC-SIL-0351	Power Backup Generator	0	2007	15	$31,618
		WC-SIL-0352	90 deg bend from Pump 1 discharge	75	2007	15	$875
		WC-SIL-0353	90 deg bend from Pump 2 discharge	75	2007	15	$875
		WC-SIL-0354	Pump 1 discharge pipe	75	2007	15	$424
		WC-SIL-0355	Pump 2 discharge pipe	75	2007	15	$424
		WC-SIL-0356	90 deg bend from Pump 1 discharge	75	2007	15	$875
		WC-SIL-0357	HPS Titan Transformer	20	2007	15	$0
		WC-SIL-0358	90 deg bend from Pump 2 discharge	75	2007	15	$875
		WC-SIL-0359	Forcemain influent	75	2007	15	$191
		WC-SIL-0360	Main Pump No.1	25	2007	15	$29,964
		WC-SIL-0361	Main Pump No.2	25	2007	15	$29,964
		WC-SIL-0362	High Level Float	25	2007	15	$690
		WC-SIL-0363	Low Level Float	25	2007	15	$690

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-SIL-0364	Low Low Level Float	25	2007	15	$690
		WC-SIL-0365	Ultrasonic Level Control	25	2007	15	$8,970
	St. Clair Water Pumping Station	WC-SCL-0367	Aboveground Fuel Tank 1	0	2005	17	$1,261
		WC-SCL-0368	Aboveground Fuel Tank 2	0	2005	17	$1,261
		WC-SCL-0369	Main Pump No.1 (Well 1)	25	2005	17	$66,654
		WC-SCL-0371	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0372	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0373	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0374	Swing Check Valve	25	2005	17	$17,079
		WC-SCL-0375	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0376	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0377	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0378	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0379	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0380	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0381	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0382	Handwheel operated gate valve	25	2005	17	$18,712
		WC-SCL-0383	Hydraulic Fuel Pump	25	2005	17	$0
		WC-SCL-0384	Backup power generator Diesel	0	2005	17	$219,406
		WC-SCL-0385	Influent Masticator	25	2005	17	$156,400
		WC-SCL-0386	Grinder Panel	20	2005	17	$80,500
		WC-SCL-0387	Main Pump No.2 (Well 2 or 1 if need)	25	2005	17	$187,864
		WC-SCL-0388	Main Pump No.3 (Spare - not installed during visit)	25	2005	17	$187,864
		WC-SCL-0390	Motorized Valve	25	2005	17	$24,462
		WC-SCL-0391	Gate Valve	25	2005	17	$18,712
		WC-SCL-0392	Sump Pump Control Panel	20	2005	17	$80,500
		WC-SCL-0393	Magnetic Flow Meter	20	2005	17	$11,500
		WC-SCL-0394	Flow sensor and transmitter for Well 1	25	2005	17	$1,495
		WC-SCL-0395	Flow sensor and transmitter for Well 2	25	2005	17	$1,495
		WC-SCL-0396	Sump Pump	25	2005	17	$345
		WC-SCL-0397	Power Monitor 3000	20	2005	17	$6,000
		WC-SCL-0398	5 Section Motor Control Center	20	2005	17	$184,000
		WC-SCL-0399	VFD for Main Pump No. 1	20	2005	17	$460,000
		WC-SCL-0400	VFD for Main Pump No. 2	20	2005	17	$460,000
		WC-SCL-0401	VFD for Main Pump No. 3	20	2005	17	$460,000
		WC-SCL-0402	HMI control panel	20	2005	17	$80,500
		WC-SCL-0403	SCADA HMI	20	2005	17	$80,500
		WC-SCL-0404	Ultrasonic Level Sensor Well No. 1	25	2005	17	$8,970
		WC-SCL-0405	Ultrasonic Level Sensor Well No. 2	25	2005	17	$8,970
		WC-SCL-0406	High Level Float Well 1	25	2005	17	$690

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WC-SCL-0407	Low Level Float Well 1	25	2005	17	$690
		WC-SCL-0408	High Level Float Well 2	25	2005	17	$690
		WC-SCL-0409	Low Level Float Well 2	25	2005	17	$690
		WC-SCL-0633	Stainless Steel Piping	75	2005	17	$15,401
		WC-SCL-0634	Stainless Steel Piping	75	2005	17	$15,401
		WC-SCL-0756	Channel Grinder Hydraulic Unit	0	2005	17	$0
	Tenth Line Sewage Pumping Station	WC-TLN-0410	Float Low Level (Stop)	25	2014	8	$690
		WC-TLN-0411	Float High Level (Start)	25	2014	8	$690
		WC-TLN-0412	Float High-High Level (Overflow)	25	2014	8	$690
		WC-TLN-0413	Pump - Removed due to overheating	0	0	0	$25,760
		WC-TLN-0414	Ladder	0	1988	34	$0
		WC-TLN-0415	Control Panel	20	2014	8	$70,000
		WC-TLN-0416	Vent Pipe c/w dowturned elbow and insect screen	0	0	0	$0
		WC-TLN-0417	Vent Pipe c/w dowturned elbow and insect screen	0	0	0	$0
		WC-TLN-0637	Inlet Pipe	75	1988	34	$0
		WC-TLN-0638	Inlet Pipe	75	1988	34	$0
		WC-TLN-0639	Outlet Pipe	75	1988	34	$0
	Wastewater Treatment Plant (WWTP01)	WT-WWTP-0037	Motor for Digester Recirculation Pump 1	25	1982	40	$0
		WT-WWTP-0038	Motor for Digester Recirculation Pump 2	25	2021	1	$0
		WT-WWTP-0156	Digester Sludge Pump 1	25	1982	40	$0
		WT-WWTP-0366	Digester Sludge Pump 2	25	1982	40	$0
		WT-WWTP-0418	Airflow indicating control valve	25	2005	17	$8,821
		WT-WWTP-0419	Airflow indicating control valve	25	2005	17	$8,821
		WT-WWTP-0420	Airflow indicating control valve	25	2005	17	$8,821
		WT-WWTP-0421	Airflow indicating control valve	25	2005	17	$8,821
		WT-WWTP-0422	Airflow indicating control valve	25	2005	17	$8,821
		WT-WWTP-0423	Airflow indicating control valve	25	2005	17	$8,821
		WT-WWTP-0424	Actuated Plug Valve	25	2005	17	$14,953
		WT-WWTP-0425	100mm Actuated Plug Valve on Grit Seperator #1	25	1999	23	$9,504
		WT-WWTP-0426	100mm Actuated Plug Valve on Grit Seperator #2	25	1999	23	$9,504
		WT-WWTP-0427	Vortex Valve on grit effluent	25	1999	23	$9,504
		WT-WWTP-0428	Airflow mass meter transmitter	25	2005	17	$23,000
		WT-WWTP-0429	Airflow mass meter transmitter	25	2005	17	$23,000
		WT-WWTP-0430	Airflow mass meter transmitter	25	2005	17	$23,000
		WT-WWTP-0431	Airflow mass meter transmitter	25	2005	17	$23,000
		WT-WWTP-0432	Interconnection Weir gate 1	25	2005	17	$23,788
		WT-WWTP-0433	Interconnection Weir gate 2	25	2005	17	$23,788
		WT-WWTP-0434	Interconnection Weir gate 3	25	2005	17	$23,788

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0435	Interconnection Weir gate 4	25	2005	17	$23,788
		WT-WWTP-0436	Interconnection Weir gate 5	25	2005	17	$23,788
		WT-WWTP-0437	Interconnection Weir gate 6	25	2005	17	$23,788
		WT-WWTP-0438	Motor for Aeration Blower #1	25	1999	23	$0
		WT-WWTP-0439	Motor for Aeration Blower #2	25	1999	23	$0
		WT-WWTP-0440	Motor for Aeration Blower #3	25	1999	23	$0
		WT-WWTP-0441	Blower #1 Check Valve	25	1999	23	$18,124
		WT-WWTP-0442	Blower #2 Check Valve	25	1999	23	$18,124
		WT-WWTP-0443	Blower #3 Check Valve	25	1999	23	$18,124
		WT-WWTP-0444	Butterfly Valve 1	25	1999	23	$7,553
		WT-WWTP-0445	Butterfly Valve 2	25	1999	23	$7,553
		WT-WWTP-0446	Butterfly Valve 3	25	1999	23	$7,553
		WT-WWTP-0447	RAS TSS Probe	25	2015	7	$4,600
		WT-WWTP-0448	Alum pump 1 Isolation valve	25	2015	7	$0
		WT-WWTP-0449	Alum pump 1 Isolation valve	25	2015	7	$0
		WT-WWTP-0450	Alum Pump 2 isolation valve	25	2015	7	$0
		WT-WWTP-0451	Alum Pump 2 isolation valve	25	2015	7	$0
		WT-WWTP-0452	Aeration Blower #1	25	1999	23	$172,500
		WT-WWTP-0453	Aeration Blower #2	25	1999	23	$172,500
		WT-WWTP-0454	Aeration Blower #3	25	1999	23	$172,500
		WT-WWTP-0455	Alum Control Panel	20	2016	6	$80,500
		WT-WWTP-0456	5 Section Motor Control Center	20	1982	40	$184,000
		WT-WWTP-0457	SP1 Check Valve	25	1999	23	$60,058
		WT-WWTP-0458	SP2 Check Valve	25	1999	23	$60,058
		WT-WWTP-0459	Fluid Power Gas Valve	25	1982	40	$0
		WT-WWTP-0460	SP3 Check Valve	25	1999	23	$60,058
		WT-WWTP-0461	Tunnel Piping	75	1982	40	$180,780
		WT-WWTP-0462	Tunnel Piping	75	1982	40	$215,832
		WT-WWTP-0463	Alum 1 Dosing Pump	25	2016	6	$8,706
		WT-WWTP-0464	Natural Gas Powered Water Boiler	25	1995	27	$483,805
		WT-WWTP-0465	Microturbine HW Pump Fed From JB6	20	1995	27	$70,000
		WT-WWTP-0466	Boiler Stop and Building Ventilation	20	1982	40	$80,500
		WT-WWTP-0467	Disconnect Switch	20	1995	27	$500
		WT-WWTP-0468	Junction Box JB-6	20	1995	27	$1,200
		WT-WWTP-0469	Boiler Power Disconnect	20	1995	27	$500
		WT-WWTP-0470	Alum 2 Dosing Pump	25	2016	6	$8,706
		WT-WWTP-0471	Alum pump #1	25	2003	19	$13,833
		WT-WWTP-0472	Alum pump #2	25	2014	8	$13,833
		WT-WWTP-0473	Exhaust fan	0	1998	24	$0
		WT-WWTP-0474	Exhaust fan	0	1998	24	$0
		WT-WWTP-0475	Intake Louvre	0	1998	24	$0
		WT-WWTP-0476	Intake Louvre	0	1998	24	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0477	Intake Louvre	0	1998	24	$0
		WT-WWTP-0478	Motorized damper MDp-1A	0	0	0	$0
		WT-WWTP-0479	Motorized damper MDp-1B	0	0	0	$0
		WT-WWTP-0480	Motorized damper MDp-2A	0	0	0	$0
		WT-WWTP-0481	Motorized damper MDp-2B	0	0	0	$0
		WT-WWTP-0482	Motorized damper MDp-3A	0	0	0	$0
		WT-WWTP-0483	Motorized damper MDp-3B	0	0	0	$0
		WT-WWTP-0484	Motorized damper MDp-4	0	0	0	$0
		WT-WWTP-0485	Motorized damper MDp-6A	0	0	0	$0
		WT-WWTP-0486	Motorized damper MDp-6B	0	0	0	$0
		WT-WWTP-0487	Motorized Damper Panel	20	2020	2	$80,500
		WT-WWTP-0488	Commercial Pump - Boiler	25	1995	27	$10,715
		WT-WWTP-0489	Air Compressor #3	25	1980	42	$6,000
		WT-WWTP-0490	Gas Conditioning System Control Panel	25	2017	5	$0
		WT-WWTP-0491	Fuel Alarm Panel	20	2020	2	$80,500
		WT-WWTP-0492	Surge Protection Device	20	2020	2	$13,800
		WT-WWTP-0493	15KVA Transformer	20	2020	2	$11,500
		WT-WWTP-0494	Switchgear	20	2020	2	$0
		WT-WWTP-0495	G.F.I Monitor	20	2020	2	$80,500
		WT-WWTP-0496	Switchgear	20	1998	24	$230,000
		WT-WWTP-0497	Main Circuit Breaker	20	1998	24	$0
		WT-WWTP-0498	30 KVA Transformer	20	1998	24	$11,500
		WT-WWTP-0499	Generator monitoring panel	20	2020	2	$80,500
		WT-WWTP-0500	Transfer switch	20	2020	2	$15,249
		WT-WWTP-0501	HVAC Panel	20	1998	24	$0
		WT-WWTP-0502	Circulating Pump - Boiler	25	1995	27	$10,885
		WT-WWTP-0503	Multiparameter module for effluent probes	25	2019	3	$4,600
		WT-WWTP-0504	Aeration DO probe	25	2005	17	$10,017
		WT-WWTP-0505	Aeration DO probe	25	2005	17	$10,017
		WT-WWTP-0506	Aeration DO probe	25	2005	17	$10,017
		WT-WWTP-0507	Aeration DO probe	25	2005	17	$10,017
		WT-WWTP-0508	Aeration DO probe	25	2005	17	$10,017
		WT-WWTP-0509	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0510	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0511	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0512	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0513	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0514	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0515	Plug Valve	25	1982	40	$12,482
		WT-WWTP-0516	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0517	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0518	Plug Valve	25	1982	40	$12,482

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0519	Plug Valve	25	1982	40	$5,510
		WT-WWTP-0520	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0521	Plug Valve	25	1982	40	$12,482
		WT-WWTP-0522	Plug Valve	25	1982	40	$12,482
		WT-WWTP-0523	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0524	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0525	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0526	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0527	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0528	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0529	Butterfly Valve	25	1982	40	$12,589
		WT-WWTP-0530	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0531	Plug Valve	25	1982	40	$9,203
		WT-WWTP-0532	Butterfly Valve	25	1982	40	$3,071
		WT-WWTP-0533	Butterfly Valve	25	1982	40	$3,071
		WT-WWTP-0534	Butterfly Valve	25	1982	40	$3,071
		WT-WWTP-0535	Butterfly Valve	25	1982	40	$3,071
		WT-WWTP-0536	Check Valve after Pump	25	1982	40	$21,150
		WT-WWTP-0537	Check Valve after Pump	25	1982	40	$21,150
		WT-WWTP-0538	Check Valve after Pump	25	1982	40	$21,150
		WT-WWTP-0539	Check Valve after Pump	25	1982	40	$21,150
		WT-WWTP-0540	Aeration DO probe	25	2005	17	$10,017
		WT-WWTP-0541	Disconnect Switch for DHWP #1	20	1982	40	$500
		WT-WWTP-0542	Disconnect Switch for DHWP #1	20	1982	40	$500
		WT-WWTP-0543	Digester Fan	0	0	0	$0
		WT-WWTP-0544	Final Effluent DO probe	25	2019	3	$10,017
		WT-WWTP-0545	Effluent flow meter	20	2005	17	$23,000
		WT-WWTP-0546	Effluent flow meter	20	1982	40	$23,000
		WT-WWTP-0547	Sludge Heat Exchanger for Digesters 1 & 2	25	1982	40	$35,813
		WT-WWTP-0548	Plug Valve	25	1968	54	$3,088
		WT-WWTP-0549	Plug Valve	25	1968	54	$3,088
		WT-WWTP-0550	Plug Valve	25	1968	54	$3,088
		WT-WWTP-0551	Plug Valve	25	1968	54	$3,088
		WT-WWTP-0552	Knife Gate Valve	25	1968	54	$12,231
		WT-WWTP-0553	Butterfly Valve	25	1968	54	$3,071
		WT-WWTP-0554	Check Valve	25	1968	54	$6,600
		WT-WWTP-0555	Knife Gate Valve	25	1968	54	$12,231
		WT-WWTP-0556	Butterfly Valve	25	1968	54	$3,071
		WT-WWTP-0557	Check Valve	25	1968	54	$6,600
		WT-WWTP-0558	Butterfly Valve	25	1968	54	$3,071
		WT-WWTP-0559	Butterfly Valve	25	1968	54	$3,071
		WT-WWTP-0560	WAS magmeter	20	2015	7	$23,000

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0561	Butterfly Valve	25	1968	54	$3,071
		WT-WWTP-0562	Butterfly Valve	25	1968	54	$3,071
		WT-WWTP-0563	Plug Valve	25	1968	54	$3,088
		WT-WWTP-0564	Knife Gate Valve	25	1968	54	$12,231
		WT-WWTP-0565	Knife Gate Valve	25	1968	54	$12,231
		WT-WWTP-0566	Knife Gate Valve	25	1968	54	$12,231
		WT-WWTP-0567	Plug Valve	25	1968	54	$3,088
		WT-WWTP-0568	Butterfly Valve	25	1968	54	$7,553
		WT-WWTP-0569	Butterfly Valve	25	1968	54	$7,553
		WT-WWTP-0570	Butterfly Valve	25	1968	54	$7,553
		WT-WWTP-0571	Digester Recirculation Pump 1	25	1982	40	$38,985
		WT-WWTP-0572	Gas Conditioning System Control Panel	20	2019	3	$80,500
		WT-WWTP-0573	Digester Recirculation Pump 2	25	1982	40	$38,985
		WT-WWTP-0574	Liquid Level Indicator for Dig. #1	25	1992	30	$0
		WT-WWTP-0575	Liquid Level Indicator for Dig. #2	25	1992	30	$0
		WT-WWTP-0576	Liquid Level Indicator for Waste Gas	25	1992	30	$0
		WT-WWTP-0577	Influent Isolation Valve SP1	25	1999	23	$34,645
		WT-WWTP-0578	Influent Isolation Valve SP2	25	1999	23	$34,645
		WT-WWTP-0579	Flameproof Aerofoil Fan	0	1982	40	$0
		WT-WWTP-0580	Control Panel for Gas Monitor	25	1992	30	$80,500
		WT-WWTP-0581	Influent Isolation Valve SP3	25	1999	23	$34,645
		WT-WWTP-0582	CH4 Monitor	25	1992	30	$0
		WT-WWTP-0583	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0584	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0585	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0586	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0587	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0588	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0589	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0590	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0591	Manual Air Release Valve	25	1982	40	$0
		WT-WWTP-0592	Manual Air Release Valve	25	1995	27	$0
		WT-WWTP-0593	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0594	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0595	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0596	Manual Air Release Valve	25	1995	27	$0
		WT-WWTP-0597	Manual Air Release Valve	25	1995	27	$0
		WT-WWTP-0598	Manual Air Release Valve	25	1995	27	$0
		WT-WWTP-0599	Manual Air Release Valve	25	1995	27	$0
		WT-WWTP-0600	Manual Air Release Valve	25	1995	27	$0
		WT-WWTP-0601	Manual Air Release Valve	25	1995	27	$0
		WT-WWTP-0602	Plug Valve	25	1992	30	$3,088

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0603	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0604	Plug Valve	25	1992	30	$3,088
		WT-WWTP-0605	7 Section Motor Control Center	20	1992	30	$230,000
		WT-WWTP-0606	GIT PLC	20	1992	30	$80,500
		WT-WWTP-0607	Influent Isolation Plug Valve SP1	25	1999	23	$34,645
		WT-WWTP-0608	Influent Isolation Plug Valve SP2 A	25	1999	23	$34,645
		WT-WWTP-0609	Influent Isolation Plug Valve SP2 B	25	1999	23	$34,645
		WT-WWTP-0610	Influent Isolation Plug Valve SP3	25	1999	23	$34,645
		WT-WWTP-0611	Flow Meter Display	25	1982	40	$1,495
		WT-WWTP-0612	UV Bldg sump pump #9	25	2005	17	$345
		WT-WWTP-0613	Master Stop - Gas Conditioning	20	2017	5	$0
		WT-WWTP-0614	Moisture Separator	25	2017	5	$62,790
		WT-WWTP-0615	Odour Control Unit	25	1999	23	$230,000
		WT-WWTP-0616	Scum Pump Plug Valve	25	1980	42	$3,088
		WT-WWTP-0617	Scum Pump Check Valve	25	1980	42	$6,600
		WT-WWTP-0618	Scum Pump Plug Valve	25	1980	42	$3,088
		WT-WWTP-0619	Disinfection UV Unit	0	2019	3	$1,035,000
		WT-WWTP-0620	3 Section Motor Control Center	20	2015	7	$138,000
		WT-WWTP-0621	Transformer	20	2015	7	$10,000
		WT-WWTP-0622	Disconnect Switch	20	2015	7	$23,000
		WT-WWTP-0623	UV Energy Monitoring Panel	20	2015	7	$80,500
		WT-WWTP-0624	DP-1	20	2015	7	$80,500
		WT-WWTP-0625	Flow Chart Recorder	20	1968	54	$4,600
		WT-WWTP-0626	UV Disinfection HMI	20	2019	3	$70,000
		WT-WWTP-0627	Effluent PLC Panel	20	2015	7	$70,000
		WT-WWTP-0628	Network Panel	20	2015	7	$80,500
		WT-WWTP-0629	Disconnect Switch for Effluent Pump #1	20	2010	12	$500
		WT-WWTP-0630	Disconnect Switch for Effluent Pump #2	20	2009	13	$500
		WT-WWTP-0631	Bioscrubber Tank	25	1999	23	$345,000
		WT-WWTP-0635	Electromagnetic Flow Monitor	20	2009	13	$1,495
		WT-WWTP-0636	Sludge loading flow meter	20	2009	13	$11,500
		WT-WWTP-0640	Digester Sludge Pump 1	25	1982	40	$38,985
		WT-WWTP-0641	Power Distribution Center For 1A-1C	20	2019	3	$0
		WT-WWTP-0642	Digester Sludge Pump 2	25	1982	40	$38,985
		WT-WWTP-0643	Gas Compressor 1	25	1992	30	$0
		WT-WWTP-0644	Gas Compressor 2	25	1992	30	$0
		WT-WWTP-0645	Methane Tank 1	25	1992	30	$0
		WT-WWTP-0646	Magnetic flowmeter on SP-1	20	1999	23	$11,500
		WT-WWTP-0647	Ultrasonic Flowmeter on SP-2	20	1999	23	$11,500
		WT-WWTP-0648	Ultrasonic Flowmeter on SP-3	20	1999	23	$11,500
		WT-WWTP-0649	Methane Tank 2	25	1992	30	$0
		WT-WWTP-0650	Effluent Pump 1	25	2010	12	$12,700

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0651	Disconnect switch SP 1	20	1999	23	$500
		WT-WWTP-0652	Disconnect switch SP 2	20	1999	23	$500
		WT-WWTP-0653	Disconnect Switch SP 3	20	1999	23	$500
		WT-WWTP-0654	Effluent Pump 2	25	2009	13	$12,700
		WT-WWTP-0655	Sump Pump in Dry Well	25	1999	23	$345
		WT-WWTP-0656	Digester Hot Water Pump #1	25	1982	40	$11,607
		WT-WWTP-0657	Digester Hot Water Pump #2	25	1982	40	$11,607
		WT-WWTP-0658	Secondary scum pump #1	25	1980	42	$24,554
		WT-WWTP-0659	Influent Sewage Pump #1	25	1999	23	$0
		WT-WWTP-0660	Influent Sewage Pump #2	25	1999	23	$0
		WT-WWTP-0661	Influent Sewage Pump #3	25	1999	23	$0
		WT-WWTP-0662	Slide Gate 1.6	25	2009	13	$23,788
		WT-WWTP-0663	Slide Gate 1.7	25	2009	13	$23,788
		WT-WWTP-0664	Hand Pull Gate 1.4	25	2009	13	$23,788
		WT-WWTP-0665	Slide Gate 1.5	25	2009	13	$23,788
		WT-WWTP-0666	Slide Gate 1.1	25	2009	13	$21,409
		WT-WWTP-0667	Slide Gate 1.2	25	2009	13	$21,409
		WT-WWTP-0668	Slide Gate 1.3	25	2009	13	$21,409
		WT-WWTP-0669	Slide Gate 1.8	25	2009	13	$21,409
		WT-WWTP-0670	Slide Gate 1.12	25	2009	13	$21,409
		WT-WWTP-0671	Slide Gate 1.13	25	2009	13	$21,409
		WT-WWTP-0672	Slide Gate 1.14	25	2009	13	$21,409
		WT-WWTP-0673	Slide Gate 1.15	25	2009	13	$21,409
		WT-WWTP-0674	Slide Gate 1.09	25	2009	13	$18,486
		WT-WWTP-0675	Slide Gate 1.10	25	2009	13	$18,486
		WT-WWTP-0676	Slide Gate 1.11	25	2009	13	$18,486
		WT-WWTP-0677	Grit Separator #1 (east)	25	1999	23	$1,357,000
		WT-WWTP-0678	Grit Separator #2 (west)	25	1999	23	$0
		WT-WWTP-0679	Wet well level controller Milltronics	25	1982	40	$1,495
		WT-WWTP-0680	High level floats	25	2021	1	$690
		WT-WWTP-0681	TWAS well level	25	1980	42	$690
		WT-WWTP-0682	Primary clarifier #1 Longitudinal drive #1 (east)	25	2005	17	$498,853
		WT-WWTP-0683	Primary clarifier #1 Longitudinal drive #2 (west)	25	2005	17	$498,853
		WT-WWTP-0684	Primary clarifier #1 Cross collector drive	25	2005	17	$498,853
		WT-WWTP-0685	Primary clarifier #2 Longitudinal drive	25	2005	17	$498,853
		WT-WWTP-0686	Primary clarifier #2 Cross collector drive	25	2005	17	$498,853
		WT-WWTP-0687	Primary clarifier #3 Longitudinal drive	25	2005	17	$498,853
		WT-WWTP-0688	Primary clarifier #3 Cross collector drive	25	2005	17	$498,853
		WT-WWTP-0689	Primary Clarifier #1 Scum Pump	25	2005	17	$89,700
		WT-WWTP-0690	Weir Gate 3.1	25	2005	17	$25,079
		WT-WWTP-0691	Grit Screw Classifier	25	2005	17	$0
		WT-WWTP-0692	Sludge Loading Arm	25	2005	17	$278,300

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0693	Mechanical Bar Screen Screw Conveyor	25	2005	17	$0
		WT-WWTP-0694	Raw Sludge Pump Control Panel	20	2005	17	$80,500
		WT-WWTP-0695	5 Section Motor Control Center	20	2005	17	$184,000
		WT-WWTP-0696	Airflow mass meter contol panel	25	2005	17	$80,500
		WT-WWTP-0697	Mechanical Bar Screen	25	1999	23	$0
		WT-WWTP-0698	By-pass manual bar screen	25	1999	23	$19,550
		WT-WWTP-0699	Raw Sludge Pump 3	25	1968	54	$57,500
		WT-WWTP-0700	Digester Pump 5	25	2021	1	$11,500
		WT-WWTP-0701	Digester Pump 6	25	2021	1	$11,500
		WT-WWTP-0702	Digester Pump 7	25	2021	1	$11,500
		WT-WWTP-0703	Raw Sludge Pump 1	25	1968	54	$57,500
		WT-WWTP-0704	Raw Sludge Pump 2	25	1968	54	$57,500
		WT-WWTP-0705	Screw pump #1	25	1980	42	$237,475
		WT-WWTP-0706	Screw pump #2	25	1980	42	$237,475
		WT-WWTP-0707	VFD for Screw Pump #1	20	2015	7	$460,000
		WT-WWTP-0708	VFD for Screw Pump #2	20	2015	7	$460,000
		WT-WWTP-0709	5 Section Motor Control Center	20	2015	7	$184,000
		WT-WWTP-0710	Screw Pumping Building CP 2	20	2015	7	$80,500
		WT-WWTP-0711	Marshalling Panel	20	2015	7	$80,500
		WT-WWTP-0712	Secondary clarifier #2 NorthLongitudinal drive	25	2006	16	$498,853
		WT-WWTP-0713	Secondary clarifier #1_South Longitudinal drive	25	1980	42	$498,853
		WT-WWTP-0714	Sec. Clarifier Pump No. 1 Switch	20	1982	40	$500
		WT-WWTP-0715	Sec. Clarifier Pump No. 2 Switch	20	1982	40	$500
		WT-WWTP-0716	Manually actuated weir gate 1	25	1984	38	$25,079
		WT-WWTP-0717	Manually actuated weir gate 2	25	1984	38	$25,079
		WT-WWTP-0718	Manually actuated weir gate 3	25	1984	38	$25,079
		WT-WWTP-0719	Manually actuated weir gate 4	25	1984	38	$25,079
		WT-WWTP-0720	Manually actuated weir gate 5	25	1984	38	$25,079
		WT-WWTP-0721	Manually actuated weir gate 6	25	1984	38	$25,079
		WT-WWTP-0722	Manually actuated weir gate 7	25	1984	38	$25,079
		WT-WWTP-0723	Manually actuated weir gate 8	25	1984	38	$25,079
		WT-WWTP-0724	Supernatant pump	25	1980	42	$24,554
		WT-WWTP-0725	Thickened sludge pump	25	1980	42	$24,554
		WT-WWTP-0726	Thickener top collector drive	25	1980	42	$0
		WT-WWTP-0727	Thickener re-aeration pump	25	1980	42	$24,127
		WT-WWTP-0728	Polymer addition pump	25	1980	42	$10,988
		WT-WWTP-0729	Thickener recirculation pump	25	1980	42	$37,120
		WT-WWTP-0730	Diesel Driven Generator (Engine)	0	1998	24	$0
		WT-WWTP-0731	Butterfly Valve	25	1980	42	$3,071
		WT-WWTP-0732	Butterfly Valve	25	1980	42	$3,071
		WT-WWTP-0733	Knife Gate Valve	25	1980	42	$12,231
		WT-WWTP-0734	Butterfly Valve	25	1980	42	$3,071

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0735	Plug Valve	25	1980	42	$3,088
		WT-WWTP-0736	Plug Valve	25	1980	42	$3,088
		WT-WWTP-0737	Butterfly Valve	25	1980	42	$3,071
		WT-WWTP-0738	Plug Valve	25	1980	42	$3,088
		WT-WWTP-0739	Butterfly Valve	25	1980	42	$3,071
		WT-WWTP-0740	Butterfly Valve	25	1980	42	$3,071
		WT-WWTP-0741	Butterfly Valve	25	1980	42	$3,071
		WT-WWTP-0742	Plug Valve	25	1980	42	$3,088
		WT-WWTP-0743	Polymer addition pump	25	1980	42	$39,900
		WT-WWTP-0744	Diesel Driven Generator (Generator)	0	2020	2	$282,914
		WT-WWTP-0745	Thickener Feed Pump Disconnect Switch	20	1980	42	$500
		WT-WWTP-0746	Polymer mixer #1	25	1980	42	$5,819
		WT-WWTP-0747	Polymer mixer #2	25	1980	42	$5,819
		WT-WWTP-0748	Polymer Mixer #1 Disconnect Switch	20	1980	42	$500
		WT-WWTP-0749	Polymer Mixer #2 Disconnect Switch	20	1980	42	$500
		WT-WWTP-0750	Alum Tank 1	50	1958	64	$39,477
		WT-WWTP-0751	Alum Tank 2	50	1982	40	$39,477
		WT-WWTP-0752	Air Compressor Disconnect Switch	20	1980	42	$500
		WT-WWTP-0753	Polymer storage tank #1	50	1980	42	$18,853
		WT-WWTP-0754	Polymer storage tank #2	50	1980	42	$18,853
		WT-WWTP-0755	DAF Tank and Pressure Vessel	50	1980	42	$39,477
		WT-WWTP-0757	Aboveground Diesel Storage Tank	0	2020	2	$8,050
		WT-WWTP-0758	Final Effluent pH probe	25	2019	3	$18,400
		WT-WWTP-0759	Final Effluent TSS probe	25	2019	3	$18,400
		WT-WWTP-0760	Aboveground Diesel Storage Tank	0	2020	2	$8,050
		WT-WWTP-0761	Aboveground Diesel Storage Tank	0	2020	2	$8,050
		WT-WWTP-0762	Weir Gate	25	2019	3	$18,486
		WT-WWTP-0763	Thickener feed pump	25	2011	11	$24,554
		WT-WWTP-0764	UV Control Panel	20	2019	3	$80,500
		WT-WWTP-0765	(blank)	50	2017	5	$34,635
		WT-WWTP-0766	Pressure Indicator	25	2017	5	$368
		WT-WWTP-0767	Control Panel (No Markings)	20	2017	5	$80,500
		WT-WWTP-0768	Control Panel with HMI	20	2017	5	$80,500
		WT-WWTP-0769	Pressure Gauge with Digital Display	25	2017	5	$368
		WT-WWTP-0770	Pressure Gauge with Digital Display	25	2017	5	$368
		WT-WWTP-0771	Thermometer with Digital Display	25	2017	5	$368
		WT-WWTP-0772	Thermometer with Digital Display	25	2017	5	$368
		WT-WWTP-0773	Exhaust fan	0	0	0	$0
		WT-WWTP-0774	Supernatant pump	25	1980	42	$0
		WT-WWTP-0775	Analog Temperature Gauge	25	2017	5	$368
		WT-WWTP-0776	Heat Trace Panel	20	2017	5	$80,500
		WT-WWTP-0777	Explosion Proof Actuated Valve (Ball Valve)	25	2017	5	$0

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		WT-WWTP-0778	Pump - Condensate	25	2017	5	$0
		WT-WWTP-0779	(blank)	25	2017	5	$1,157,590
		WT-WWTP-0780	Siloxane Removal Vessel	25	2017	5	$0
		WT-WWTP-0781	Siloxane Removal Vessel	25	2017	5	$0
		WT-WWTP-0782	Siloxane Removal Vessel	25	2017	5	$0
		WT-WWTP-0783	Industrial Heat Exchanger with Proplene glycol and distilled water	25	2017	5	$0
		WT-WWTP-0784	Temperature Indicator Probe	25	2017	5	$4,600
		WT-WWTP-0785	Oil Filter	25	2017	5	$0
		WT-WWTP-0786	Oil Seperator	25	2017	5	$0
		WT-WWTP-0787	Moisture Knockout	25	2017	5	$0
		WT-WWTP-0788	Inlet Moisture/Particulate Filter	25	2017	5	$0
		WT-WWTP-0789	Final Particulate Filter	25	2017	5	$0
		WT-WWTP-0790	System Biogas Inlet	25	2017	5	$0
		WT-WWTP-0791	Inlet Pre-Cooler	25	2017	5	$0
		WT-WWTP-0792	System Biogas Outlet	25	2017	5	$0
		WT-WWTP-0793	Biogas Compressor	25	2017	5	$0
		WT-WWTP-0794	Oil Cooler	25	2017	5	$0
		WT-WWTP-0795	Battery Charger	25	2020	2	$0
		WT-WWTP-0796	Junction Box - Gas Conditioning	20	2017	5	$1,380
		WT-WWTP-0797	Junction Box - Gas Conditioning	20	2017	5	$1,380
		WT-WWTP-0798	Condensate Outlet	25	2017	5	$0
		WT-WWTP-0799	Glycol Connection	25	2017	5	$0
		WT-WWTP-0800	Glycol Connection	25	2017	5	$0
	OSLER BLUFF LAGOON	LAG-LNR-01	Osler Bluff Lagoon Liner Structure	0	1985	37	$684,710
	Wastewater Treatment Plant (WWTP01)	AER-DIF-01	Aeration Basin No. 1 Bubble Diffusers	0	1979	43	$1,160,000
		AER-DIF-02	Aeration Basin No. 2 Bubble Diffusers	0	1979	43	$1,160,000
		AER-TNK-01	Aeration Basin No. 1 Tank	0	1979	43	$3,358,000
		AER-TNK-02	Aeration Basin No. 2 Tank	0	1979	43	$3,358,000
		DIG-COA-01	Digester No. 1 Interior Coating	0	1979	43	$145,000
		DIG-COA-02	Digester No. 2 Interior Coating	0	1979	43	$145,000
		DIG-COA-03	Digester No. 3 Interior Coating	0	1967	55	$145,000
		DIG-MXR-01	Digester No. 1 Mechanical Mixer	0	1967	55	$942,000
		DIG-MXR-02	Digester No. 1 Mechanical Mixer	0	1967	55	$942,000
		DIG-ROO-01	Digester No. 1 Floating Roof	0	2004	18	$4,922,000
		DIG-ROO-02	Digester No. 2 Concrete Roof	0	1979	43	$528,000
		DIG-ROO-03	Digester No. 3 Concrete Roof (Suspended Slab)	0	1967	55	$528,000
		DIG-TNK-01	Digester No. 1 Tank	0	1979	43	$1,162,000
		DIG-TNK-02	Digester No. 2 Tank	0	1979	43	$1,162,000

DRAFT

Department	Asset	Equipment	Description	Use Life	Year	Age	Replacement Cost
		DIG-TNK-03	Digester No. 3 Tank	0	1967	55	$1,162,000
		INF-CHN-01	Chain for Mechanical Screen	0	1999	23	$0
		INF-CON-01	Screw Pump Conveyor	0	1999	23	$0
		INF-LOG-01	Aluminum stop logs to prevent overflow	0	1999	23	$6,560
		INF-SCR-01	Mechanical Bar Screen	0	1999	23	$2,759,714
		PRC-CHN-01	Primary Clarifier No. 1 Chains and Flights	0	1999	23	$120,000
		PRC-CHN-02	Primary Clarifier No. 2 Chains and Flights	0	2021	1	$120,000
		PRC-TNK-01	Primary Clarifier Cell 1	0	1958	64	$1,160,000
		PRC-TNK-02	Primary Clarifier Cell 2	0	1958	64	$1,160,000
		PRC-TNK-03	Primary Clarifier Cell 3	0	1958	64	$1,160,000
		SEC-CHN-01	Secondary Clarifier No. 1 Chains and Flights	0	1999	23	$120,000
		SEC-CHN-02	Secondary Clarifier No. 2 Chains and Flights	0	1999	23	$120,000
		SEC-TNK-01	Secondary Clarifier No. 1	0	1967	55	$7,198,000
		SEC-TNK-02	Secondary Clarifier No. 2	0	1967	55	$7,198,000
		SST-COA-01	Sludge Storage Tank Interior Coating	0	1958	64	$145,000
		SST-ROO-01	Sludge Storage Tank Concrete Roof (Suspended Slab)	0	1958	64	$528,000
		SST-TNK-01	Sludge Storage Tank	0	1958	64	$1,162,000
		UVC-BNK-01	UV Banks	0	2019	3	$2,578,667
		UVC-BNK-02	UV Transmittence Probe	0	2021	1	$82,000
		UVC-LMP-01	UV Lamps	0	2019	3	$88,000
		UVC-TNK-01	UV Channel	0	1967	55	$182,000
Grand Total							$125,311,891

DRAFT

T2022-02
Appendix B

Strategic Asset Management Policy

FINANCE

Effective Date: June 24, 2019

POLICY NUMBER: FIN-001-05

POLICY STATEMENT:

The Town of Collingwood relies on a wide range of diversified assets to provide essential services to its community. An integral component of ensuring reliable service is creating an effective approach to managing existing and future municipal assets. Effective asset management aims to manage assets in a way that balances levels of service, risk, and cost effectiveness throughout the entire asset lifecycle. Notably by considering emerging issues such as local risks related to climate change. The critical importance of services to the well-being of today's community, and tomorrow's, is what drives the implementation of a structured approach to asset management.

As a result, the Town is committed to creating, implementing and continually improving a balanced approach to asset management by linking the elements of its various plans with best practices and provincial regulation in asset management. The Town's vision for asset management is to proactively manage its assets to enable the achievement of the Community Based Strategic Plan, including by:

- Promoting lifecycle and risk management of all municipal infrastructure assets, with the goal of achieving the lowest total cost of ownership while meeting desired levels of service;
- Balancing stakeholder expectations, sustainable development, and the actual needs of existing and future assets; and,
- Maintaining prudent financial planning and decision making that align with the means of the Town's stakeholders and its values.

APPLICATION:

This Policy applies to all departments and employees of the Town that have a direct and indirect link with assets or asset systems in order to provide services to Town stakeholders. It also applies to all assets owned or maintained by the Town whose role in service delivery requires deliberate management by the Town. It also covers the ecological services provided by the natural assets that serve the Town as well as infrastructure related contracts and agreements established with other parties.

1. Purpose

The purpose of this policy is to provide leadership in and commitment to the development and implementation of the Town of Collingwood's asset management program. It is intended to guide the consistent use of asset management across the organization, to facilitate logical and evidence-based decision making for the management of municipal infrastructure assets and to support the delivery of sustainable community services.

By using sound asset management practices, the Town will work to ensure that all municipal infrastructure assets meet expected performance levels and continue to provide desired service levels in the most efficient and effective manner. Linking service outcomes to infrastructure investment decisions will assist the Town in focusing on service, rather than budget driven asset management approaches.

This policy demonstrates an organization-wide commitment to the good stewardship of municipal infrastructure assets, and to improved accountability and transparency to the community through the adoption of best practices regarding asset management planning.

The Town of Collingwood's asset management policy aims to:

- Provide a framework for implementing asset management to enable a consistent approach at all department levels within the Town;
- Provide guidance to staff responsible for asset management;
- Communicate asset management principles endorsed by the Town of Collingwood; and,
- Provide transparency, accountability and demonstrates the decision-making process which combines municipal plans and policies, budgets, service levels and risk.

2. Definitions

Unless otherwise noted, the definitions provided in this document align with those outlined in Ontario Regulation 588/17 (O. Reg. 588/17), Asset Management Planning for Municipal Infrastructure, under the *Infrastructure for Jobs and Prosperity Act, 2015*.

Asset:	An item that has potential or actual value to the municipality. Value can be tangible or intangible, financial or non-financial, and includes consideration of risks and liabilities.
Asset Lifecycle:	The various phases of an asset's life that are identified as: planning & construction, operations, maintenance and disposal. Each phase has its own opportunities, risks, impacts and costs.
Asset Management:	Coordinated activity of the municipality to realize value from assets. Realization of value will normally involve an appropriate balancing of costs, performance and risks, opportunities and performance benefits.
Asset Management Plan:	Documents that detail how groups of assets are to be managed over a period of time. The plan describes the characteristics and condition of infrastructure assets, the levels of service expected from them, planned operational and maintenance actions to help with the accomplishment of assets providing the expected level of service, and financing strategies

	to try to implement the planned actions. This document also addresses the impacts and maintenance risks associated with owning the asset.
Asset Management System:	The people, processes, tools and other resources involved in the delivery of asset management.
Capitalization Threshold:	The value of a municipal infrastructure asset above which the Town will capitalize the value of it and below which it will expense the value of it.
Green Infrastructure Asset:	An infrastructure asset consisting of natural or human-made elements that provide ecological and hydrological functions and processes and includes natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces and green roofs.
Institutional Memory:	The accumulated body of data, information, and knowledge created in the course of an individual organization's existence.
Level of Service:	The parameters, or combination of parameters, which reflect social, political, environmental and economic outcomes that the organization delivers. Service level parameters can include, but are not necessarily limited to, safety, customer satisfaction, quality, quantity, capacity, reliability, responsiveness, environmental acceptability, cost, and availability.
Performance:	Performance can relate to quantitative or qualitative findings and is usually expressed as a measurable result (i.e. performance measures). Performance can relate to the management of activities, processes, products, services, or systems. For the purpose of asset management, performance of assets relate to their ability to fulfill service level requirements or objectives.
Resilience:	The capacity to function, survive and thrive no matter what changes, stresses or shocks are encountered.
Sustainability:	Meeting the needs of today without compromising the needs of future generations. It is about maintaining or improving the standard of living by protecting human health, conserving the environment, using resources efficiently and advancing long-term economic competitiveness. It requires the integration of environmental, economic and socio-cultural priorities into policies and programs with actions at all levels.

3.0 Guiding Principles

To effectively use asset management to support the achievement of the Town's strategic objectives, management must ensure that the following features and principles are applied in the asset management system:

- **Holistic** – The Town shall take a comprehensive approach that looks at the "big picture" (i.e. the combined implications of managing all aspects rather than treating each aspect in isolation). This includes the interdependencies and contributions of different assets within the asset management system during all phases of the lifecycle.

- **Level of Service** – The Town shall have clearly defined levels of service and apply asset management practices to maintain the confidence of customers in how the Town assets are managed.

- **Risk-based** – The Town will manage the asset risk associated with attaining the agreed levels of service by focusing resources, expenditures, and priorities based upon risk assessments and the corresponding cost/benefit, recognizing that public safety is the priority.

- **Affordable** – The Town will choose practices, interventions and operations that aim at minimizing the life cycle cost of asset ownership, while satisfying levels of service. Decisions are based on balancing strategic goals, service levels, risks, and costs. As part of this strategy, the Town will look at lifecycle costing where assets need to be replaced in an acceptable timeframe to ensure that continued operational costs of the asset do not outweigh actual replacement.

The *Infrastructure for Jobs and Prosperity Act, 2015* sets out principles to guide asset management planning by municipalities in Ontario. The Town shall adopt the following principles in managing its infrastructure assets whenever applicable:

- **Forward looking:** The Town shall take a long-term view while considering demographic and economic trends in the region.

- **Budgeting and planning:** The Town shall take into account any applicable budgets or fiscal plans, such fiscal plans as released under the following:

    1. Fiscal Transparency and Accountability Act, 2004
    2. Budgets adopted under Part VII of the Municipal Act, 2001.

- **Prioritizing:** The Town shall clearly identify infrastructure priorities which will drive investment decisions.

- **Economic development:** The Town shall promote economic competiveness, productivity, job creation, and training opportunities in support of a strong, dynamic, and innovative local economy.

- **Transparency:** The Town shall be evidence-based and transparent. Additionally, subject to any prohibitions under an Act or otherwise by law on the collection, use, or disclosure of information, the municipality shall:

    1. Make decisions with respect to infrastructure based on information that is publicly available or made available to the public, and
    2. Share information with implications on infrastructure and investment decisions with the Government and broader public sector entities.

- **Consistency:** The Town shall ensure the continued provision of core public services.[1]

- **Environmentally conscious**: The Town shall minimize the impact of infrastructure on the environment by:

    1. Respecting and helping maintain ecological and biological diversity,
    2. Augmenting resilience to the effects of climate change,
    3. Endeavoring to make use of acceptable recycled aggregates and materials, and
    4. Being good stewards of the rivers, waterways, and natural environment the community enjoys.

- **Health and safety:** The Town shall ensure that the health and safety of workers involved in the construction and maintenance of infrastructure assets is protected.

- **Community focused:** The Town shall promote community benefits, being the supplementary social and economic benefits, arising from an infrastructure project, that are intended to improve the well-being of a community affected by the project, such as:

    1. Local job creation and training opportunities (including for apprentices, within the meaning of section 9 of the *Infrastructure for Jobs and Prosperity Act*, 2015),
    2. Improvement of public space within the community, and
    3. Promoting accessibility for persons with disabilities.

- **Innovation:** The Town shall create opportunities to make use of innovative technologies, services, and practices, particularly where doing so would utilize technology, techniques, and practices developed in Ontario.

- **Integration:** The Town shall, where relevant and appropriate, be mindful and consider the principles and content of non-binding provincial or municipal plans and strategies established under an Act or otherwise, in planning and making decisions surrounding the infrastructure that supports them.

4.0 Community Planning

- The combination of lifecycle analysis and financial sustainability principles will be the driver in the design and selection of community development or redevelopment that requires new assets, or existing asset enhancements, to take place. Parties involved in the development of the asset management plans will reference the direction established in the community plan as well as the methods, assumptions, and data used in its development. The aim of cross-referencing these plans is to ensure that development and redevelopment occur within the Town's means through an understanding of current and future asset needs.

- The Town of Collingwood strives to maintain a safe community with sustainable growth which requires alignment of many initiatives underway within our municipality at any

[1] The *Infrastructure for Jobs and Prosperity Act*, 2015 defines "core municipal infrastructure asset as an asset that pertains to water, wastewater, stormwater, roads or bridges.

given time. This alignment is necessary to properly consider whether the service level provided by the municipality's existing and planned assets are aligned with the Town's asset management goals.

- Asset management planning will not occur in isolation from other municipal goals, plans, and policies. An integrated approach will be followed to successfully develop practical asset management plans that align with overarching accountabilities and aspirations of the community.

- The Town will incorporate this policy into the asset management planning approach that fosters the integration of municipal documents such as:

    - Community Based Strategic Plan
    - Official Plan
    - Transportation Master Plan
    - Master Servicing Plan
    - Stormwater Management Plan
    - Energy Conservation and Demand Management Plan
    - Fire Master Plan
    - PRC Master Plan
    - Waterfront Master Plan

5.0 Climate Change

The Town will leverage new and existing opportunities for reducing greenhouse gas emissions (mitigation) and building resiliency to projected climate change impacts (adaptation) into corporate asset management practices. Applying climate change mitigation and adaptation lenses will be achieved by strategically embedding tactical, operational and reflexive considerations related to climate change into lifecycle management practices. This will reduce vulnerabilities and promote adaptation and resiliency to climate change impacts, incrementally over time. This includes, but is not limited to, incorporating climate change considerations into infrastructure design, risk assessments, anticipated operational costs, changing levels of service and related contingency funding.

- Climate change will be considered as part of the Town's risk management approach embedded in its asset management planning methods.
- This approach will balance the potential cost of vulnerabilities to climate change impact and other risks with the cost of reducing these vulnerabilities.
- The Town will foster its resilience to climate change in levels of service delivered through operations, maintenance schedules, disaster response plans, contingency funding, and capital investments.
- The Town's contribution to climate change through greenhouse gas emissions will be mitigated in accordance with its local reduction targets, financial capacity, and stakeholder support.
- The Town of Collingwood is committed to implementing a Policy on Green Procurement. This is to ensure that the Town cost effectively procures, operates and disposes of its assets in a manner that protects the environment and supports sustainable development

objectives. This policy will be all encompassing and applies across all four stages of the procurement process, from planning and acquisition through use and disposal.

6.0 Capitalization Thresholds

There are two perspectives when defining an asset in financial reporting versus asset management planning:

- The financial perspective focuses on the monetary value (quantitative) of an asset. The Town of Collingwood uses a cost threshold of $5,000 minimum across all asset classes (stated in the Town's Tangible Capital Asset Policy) as a guide to identify assets that must be accounted for in the financial statements. The original purchase price, or historical cost, is the basis for depreciating the value of the assets and reporting.

- The asset management perspective focuses on the service provided (qualitative) by the asset. It assesses the role of the asset and plans for inspections, maintenance and replacement. Using a forward looking view, the cost of owning the asset over its service life is the basis for short- and long-term financial planning.

The asset management policy applies to all assets whose role in service delivery requires deliberate management by the Town of Collingwood. Current and proposed levels of service, at the community and technical level, will be outlined for each asset category within the Town's asset management plans. The service-focus intent of this policy serves as the requirement for identifying the assets to be included in the Town's asset management plan, which is different from the capitalization threshold which has been developed for the purpose of financial reporting. This qualitative approach is unlike the quantitative, dollar value-based methodology prescribed in the tangible capital asset policy. Therefore, quantitative capitalization thresholds will be used for financial reporting, while qualitative, service-driven thresholds will be used for asset management planning and forecasting.

7.0 Financial Planning and Budgeting

The value of asset management planning is achieved when it impacts the overall budget and specific investment decisions. Asset management plans will be produced every five years and monitored annually. Therefore, they are well suited to inform existing budget inputs used by the municipality and water/wastewater financial plans. The involvement of finance in the asset management planning process will bring consistency to financial forecasting and will ensure asset management is included in the budgeting process, specifically by:

- Assessing what the Town is able to afford,
- Assessing the projected annual funding available, and
- Maintaining alignment with other financial plans.

The Town of Collingwood will integrate findings from its asset management plan into its budgeting process. Sound financial analysis will be encompassed in asset management planning in order for the asset management plan to act as a guide for employees when budgeting and financial planning. The financial strategy to prepare the annual budget (with integration of the asset management plan) will be completed by a multi-disciplinary team that will include finance and department managers for each municipal service area. The department level budget submission prepared by each department will be evaluated by the applicable Director, Treasurer and CAO in preparation of the municipality's annual budget.

The asset management plan and progress made on the plan will be considered annually in the creation of the municipality's capital and operating budget in order to help:

- Identify all potential revenues and costs (i.e. operating, maintenance, replacement and disposal) associated with forthcoming infrastructure asset decisions.
- Evaluate the validity and need of each significant new capital asset, including considering the impact on future operating costs.
- Incorporate new revenue tools and alternative funding strategies (including applications for asset management grant opportunities) where possible.
- Prioritize spending needs based on gaps and risks identified in the asset management plan.

For the purposes of sustainably managing water and wastewater assets, the water and wastewater financial plans will be used as the basis for establishing user fees based on long-term capital renewal plans and the maintenance of adequate reserves. Financial services, water services, and wastewater services will work together to align the financial strategy developed in the asset management plan with the financial plans related to the water and wastewater assets. The alignment will stem from a multi-disciplinary team, common analytical methods followed, and common data sources used.

8.0 Governance and Continuous Improvement

The policy requires the commitment of key stakeholders within the Town of Collingwood's organization to ensure the policy guides the development of a clear plan that can be implemented, reviewed and updated. The Town of Collingwood is committed to the success of asset management planning.

Council is entrusted with the responsibility of overseeing, on behalf of citizens, a large range of services provided through a diverse portfolio of assets. These assets include, but are not limited to, safe and reliable water distribution networks, safe and reliable sanitary sewer collection and treatment systems, safe and maintained road distribution networks, productive fleets, as well as accessible parks, recreation and other municipal facilities. Council, having stewardship responsibility, is the final decision maker on all matters related to asset management in the Town.

The development and continuous support of the Town's asset management program requires a wide range of duties and responsibilities. The following sections outline the roles and responsibilities for these tasks.

8.1 Council

Within asset management planning, Council is responsible for:

- Approving, by resolution, the asset management plan and its updates every five years.
- Receive an annual review, through a Staff Report, providing a progress update to Council on its asset management plan on or before July 1 of every year. This includes:
    - Progress on ongoing efforts to implement the asset management plan,
    - Consideration of the Strategic Asset Management Policy,

  - Any factors affecting the ability of the municipality to implement its asset management plan, and
  - A strategy to address these factors including the adoption of appropriate practices.
- Support ongoing efforts to continuously improve and implement the asset management plans.
- Approve asset funding to ensure required resources are available to implement and maintain core asset management practices.

8.2 Chief Administrative Officer

The CAO is the sole employee who reports directly to council, and as such, he or she is head of the public service, accountable for the operation of the administrative apparatus of municipal government.

The role of the CAO in asset management is to be held accountable for ensuring compliance with the asset management policy and provincial asset management regulations as well as endorsing the asset management plan in advance of seeking Council approval. The CAO is also an integral member of the cross-departmental team responsible for the development of the asset management plan and components thereof.

8.3 Senior Management Team

Senior Management team members are responsible for:

- Asset management planning activities within their service area;
- Clearly identifying the infrastructure priorities;
- Providing input on all asset management plans, policies and strategies within the organization including the review, approval and alignment with Town's goals;
- Supporting and encouraging corporate adoption and integration of asset management principles, objectives and practices;
- Encouraging an integrated approach to planning and communication to help ensure the asset management goals are achieved;
- Develop and monitor levels of service and make recommendations to Council; and,
- Track, analyze and report on asset management program progress and results.

8.4 Departmental Staff

Departmental staff are responsible to:

- Utilize the new business processes and technology tools developed as part of the asset management program;
- Participate in implementation task teams to carry-out asset management activities;
- Implement and maintain defined capital asset levels of service;
- Provide support and direction for asset management practices within their department;
- Track and analyze asset management program progress and results;
- Ensure that all information needed to compile and update the asset register is provided to the Finance Department; and,

- Ensure that the Finance Department is notified of any changes in status of the assets under the departments' control including reporting any enhancement/improvement, transfer or disposal.

9.0 Stakeholder Engagement

Stakeholder engagement is the process by which an organization involves people who may be affected by the decisions it makes or can influence the implementation of its decisions. They may support or oppose the decisions, be influential in the organization or within the community in which it operates, hold relevant official positions or be affected in the long term. For stakeholder engagement to be effective it must be meaningful. Inherent in the concept of meaningful engagement are the following ideas:

- A two-way process including exchange of information, research, analysis and opinions between the organization and stakeholder.
- A commitment and willingness from each side to contemplating changes in behavior – actions, priorities, organizational structure, staffing, training etc.
- Actions are based on an unambiguous set of objectives, with clearly defined outputs, and projected outcomes and impacts.
- An understanding that organizations are rarely homogenous in nature, and therefore how stakeholders establish and build relations with different departments in the organization may be distinct, and will be influenced by the particular organization context, corporate culture and structure.
- A shared and acknowledged understanding of the political environment in which the Town and stakeholders are living.[2]

The potential benefits from a meaningful engagement process include the strengthening of democracy by encouraging more active involvement by residents and other stakeholders in the direction of the community, building greater community cohesion, and mutual understanding.

9.1 The Town of Collingwood

The Town of Collingwood recognizes that the purpose of asset management is to enable municipalities to achieve their objectives through a proactive approach to managing infrastructure. Therefore, the primary goal of the Town of Collingwood is to efficiently provide its residents, businesses, institutions, community groups, stakeholders, neighboring municipalities, and provincial agencies with the municipal services they need. In order to achieve this goal, it is necessary that the Town understand the needs of current stakeholders, consider the needs of future generations, and incorporate these perspectives into its asset management plans. In addition, the Town of Collingwood recognizes these needs to be an integral part of the municipality's asset management approach in order to make informed decisions regarding its infrastructure. Accordingly, the Town of Collingwood will:

- Provide engagement opportunities for residents and other stakeholders served by the municipality to provide input into asset management planning; and,
- Coordinate asset management planning with other infrastructure asset owning agencies such as municipal bodies and regulated utilities.

---

[2] Neil Jeffery, *Stakeholder Engagement: A Road Map to Meaningful Engagement*, The Doughty Centre for Corporate Responsibility, Cranfield University School of Management, 2009

9.2 Residents, Stakeholders and Customers

Providing ongoing and meaningful opportunities for communication and input allows stakeholders to contribute as experts in their field, have their issues heard, and contribute to the decision making process. Accordingly, the Town is asking its residents, stakeholders and customers to:

- Participate in public information sessions, and stakeholder engagement initiatives, where possible;
- Provide feedback related to levels of service, service experience, and service expectations; and,
- Notify the Town, via appropriate means, when service deficiencies or failures are observed.

10.0 Benefit of Implementation

Implementation of this policy will result in the following benefits:

- Planning that optimizes maintenance and replacement of existing assets as well as the development of new assets;
- Prevention of conflicts across the investment priorities set by each of the Town's departments, good coordination, and efficient provision of services;
- Capital and urban development projects that are consistent with the Town's actual needs;
- Maintenance of the Town's institutional memory; and,
- Preservation of the ecological services rendered by natural assets.

These benefits will enable:

- Technical and financial capacity of the Town to provide the expected levels of service to current and future generations;
- Security, accessibility, and reliability of services provided through the infrastructure; and,
- Alignment of the Town's strategic objectives with asset management and service delivery activities.

11.0 Policy Review

This policy shall be reviewed when changes to the *Municipal Act* or Ontario Regulations affect the provisions contained herein. At a minimum this policy shall be reviewed every five (5) years.

Revision History:

Review Date	Description

T2022-02
Appendix C

MFOA | MUNICIPAL FINANCE OFFICERS' ASSOCIATION OF ONTARIO

ASSET MANAGEMENT FRAMEWORK

This publication was made possible through funding from the Province of Ontario, MFOA and its members
© 2018 MFOA

1 Introduction

1.1 Asset Management Framework

The Asset Management Framework has been prepared to assist Ontario municipalities assess and improve their maturity level in all aspects of asset management planning. While most Ontario municipalities already have an Asset Management (AM) plan, many may be unsure on how to best use it or if it meets the needs of the municipality. This document provides guidance to municipalities on how to move through the AM continuum, and how to progress towards meeting the municipality's objectives through effective and efficient management of all its assets.

Structure of Framework

This Framework is organized as follows:

Chapter 1: Introduction;
Chapter 2: Asset Management Policies and Strategies;
Chapter 3: State of Local Infrastructure;
Chapter 4: Levels of Service Analysis;
Chapter 5: Lifecycle Management Strategy;
Chapter 6: Financing Strategy;
Chapter 7: Asset Management Integration;
Chapter 8: Continuous Updates and Improvements;
Chapter 9: Asset Management Tools;
Chapter 10: Internal Governance and Ownership;
Chapter 11: Council Approval and Support; and
Chapter 12: Public Engagement and Consultation.

Overview of Chapters:

Chapter 2: Asset Management Policies and Strategies
Explains how asset management should be viewed as a process, supported by policies and strategies for meeting AM objectives effectively.

Chapter 3: State of Local Infrastructure
Provides a discussion on capital asset information collection, storage, and use. The discussion relates to a municipality's asset inventory, including asset attributes, accounting valuations, current valuations, condition assessments, service potential, risk

assessments, and data integrity. This information provides the foundation for other sections of an AM plan.

Chapter 4: Levels of Service Analysis
Examines the identification of services, community expectations, strategic (or community) based levels of service, technical levels of service, and the comparison of current service levels to expected levels of service. In addition, budget impacts of the levels of service analysis and the importance of measuring trends and performance are explained.

Chapter 5: Lifecycle Management Strategy
Provides a foundation for developing a municipality's long-term operating and capital forecast for asset related costs. This includes the requirements for non-infrastructure solutions, maintenance and operation, rehabilitation, replacement/disposal, and expansion of the municipality's asset base while moving towards the expected levels of service. The goal of a lifecycle management strategy is to have the municipality in (or moving towards) a sustainable asset management position.

Chapter 6: Financing Strategy
Identifies concepts and strategies for long-term funding plans for the lifecycle management strategies. This includes consideration of rate impacts, available funding sources, infrastructure funding deficits/shortfalls, performance and sustainability measures, and reporting options.

Chapter 7: Asset Management Integration
Describes how AM can be integrated into the budget process, strategic planning, PSAB 3150 compliance, and other relevant organizational processes.

Chapter 8: Continuous Updates and Improvements
Discusses processes and tools available for incorporating improvements and updates to the AM process.

Chapter 9: Asset Management Tools
Provides guidance related to the selection and utilization of beneficial AM software and related tools.

Chapter 10: Internal Governance and Ownership
Outlines the importance of supporting AM through the municipality's organizational

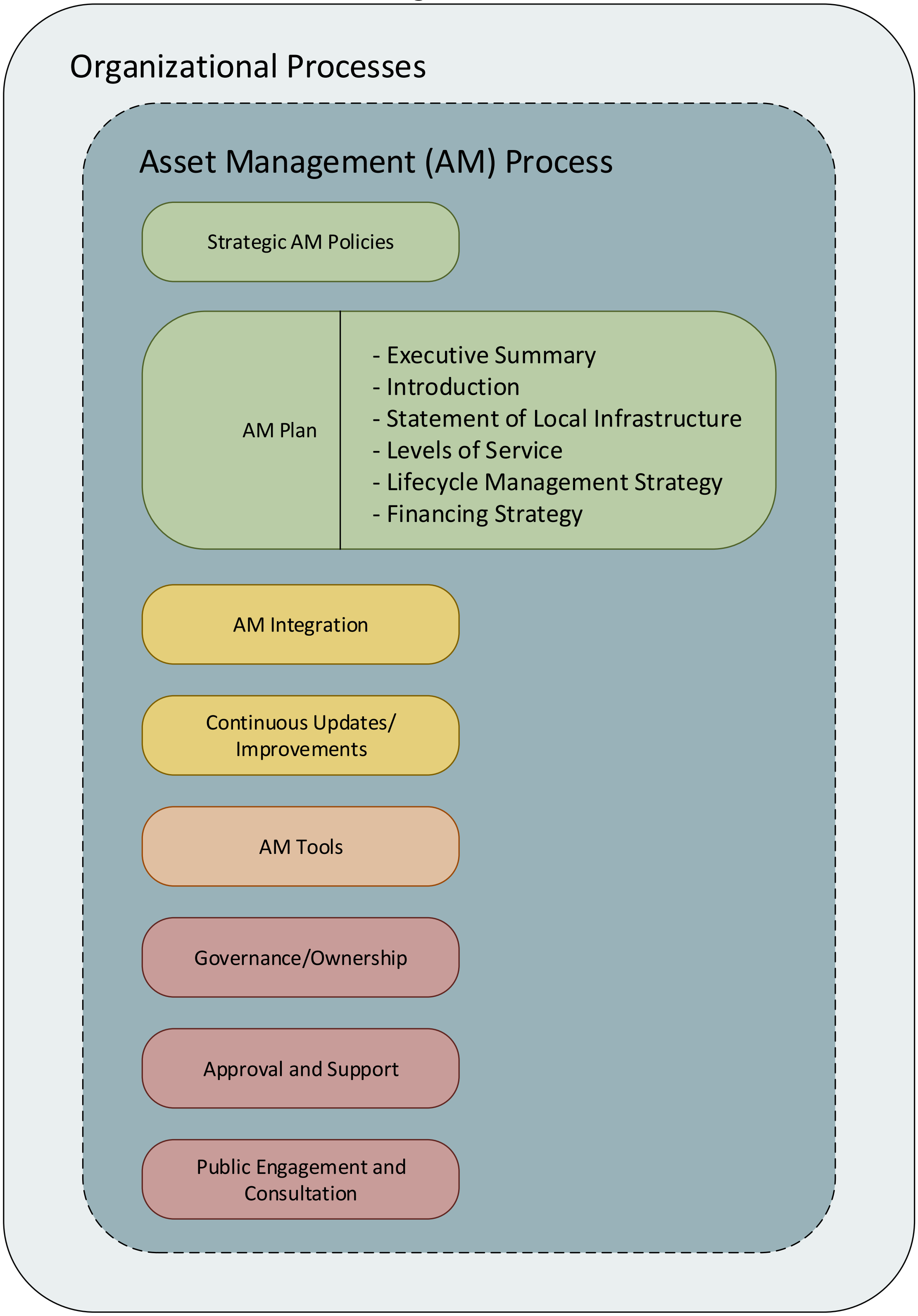
structure, leadership through senior management, and allocating sufficient AM resourcing levels.

Chapter 11: Council Approval and Support
Discusses the significance of achieving and maintaining council approval and support throughout the AM process.

Chapter 12: Public Engagement and Consultation
Highlights the advantages of involving the public in the AM process.

Figure 1-1 (below) shows the flow of these chapters in the context of the framework:

Figure 1-1
Asset Management Framework

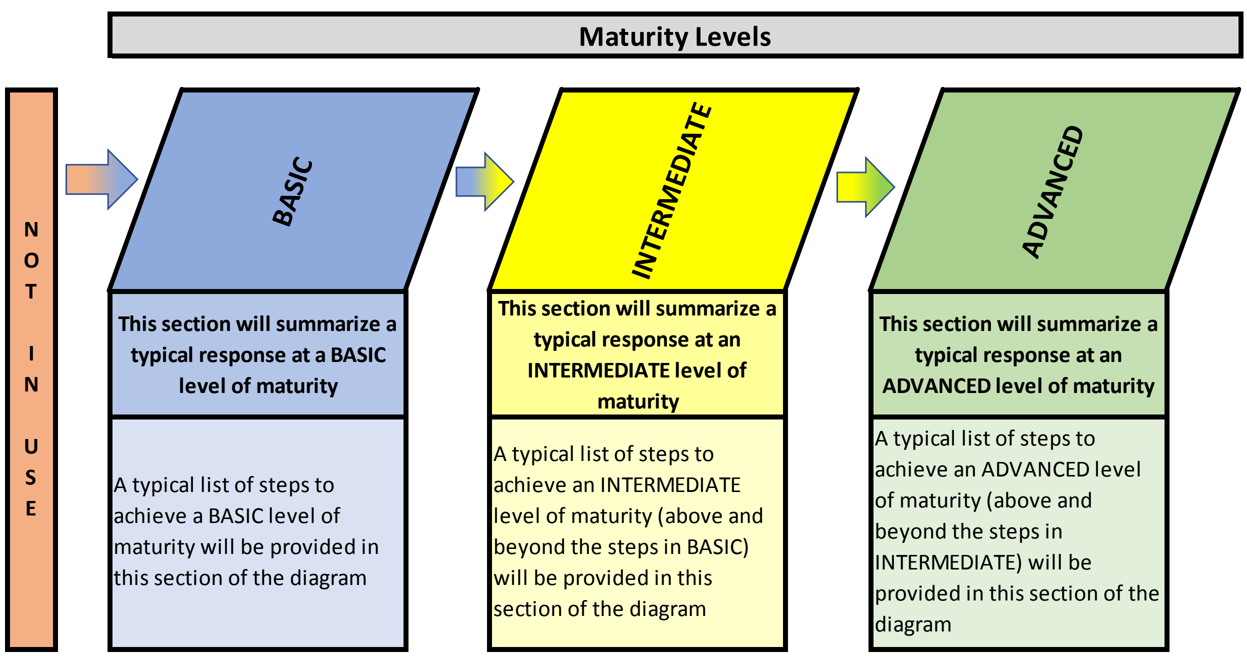


It is important to note that Figure 1-1 (above), and the chapters within this document, consist of much more than the steps to create an AM plan. Chapters 3 through 6 (State of Local Infrastructure, Levels of Service Analysis, Lifecycle Management Strategy, and Financing Strategy) form the basis for an AM plan. This document treats asset management as a process, with one portion of that process being the creation of an AM plan.

In addition, an effective asset management process involves processes, people, and technology to provide expected levels of services to the community. It is the culmination of all of these variables that makes asset management effective.

Level of Maturity Diagrams

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic leve*l requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

List of Acronyms and Abbreviations

AM	Asset Management

ARL	Annual Repayment Limit
BCI	Bridge Condition Index
CCTV	Closed-Circuit Television
CMMS	Computerized Maintenance Management System
CoF	Consequence of Failure
CPI	Consumer Price Index
DCA	Development Charges Act
FIR	Financial Information Return
GIS	Geographic Information System
IIMM	International Infrastructure Management Manual
IJPA	Infrastructure for Jobs and Prosperity Act
IT	Information Technology
LMS	Lifecycle Management Strategy
LOS	Level(s) of Service
NRCPI	Non-Residential Consumer Price Index
PoF	Probability of Failure
PSAB	Public Sector Accounting Board
RFP	Request for Proposal
RRF	Reserve/Reserve Fund
SAMP	Strategic Asset Management Policy
SOLI	State of Local Infrastructure
TCA	Tangible Capital Asset

1.2 Utilizing the Benefits of Asset Management

To what extent is the municipality utilizing the benefits of asset management planning within the organization?

Background

The importance of having an effective AM plan has been increasingly recognized internationally. This recognition was underscored by the 2014 release of the related International Standard ISO 55000, which "provides an overview of asset management, its principles and terminology, and the expected benefits from adopting asset management".

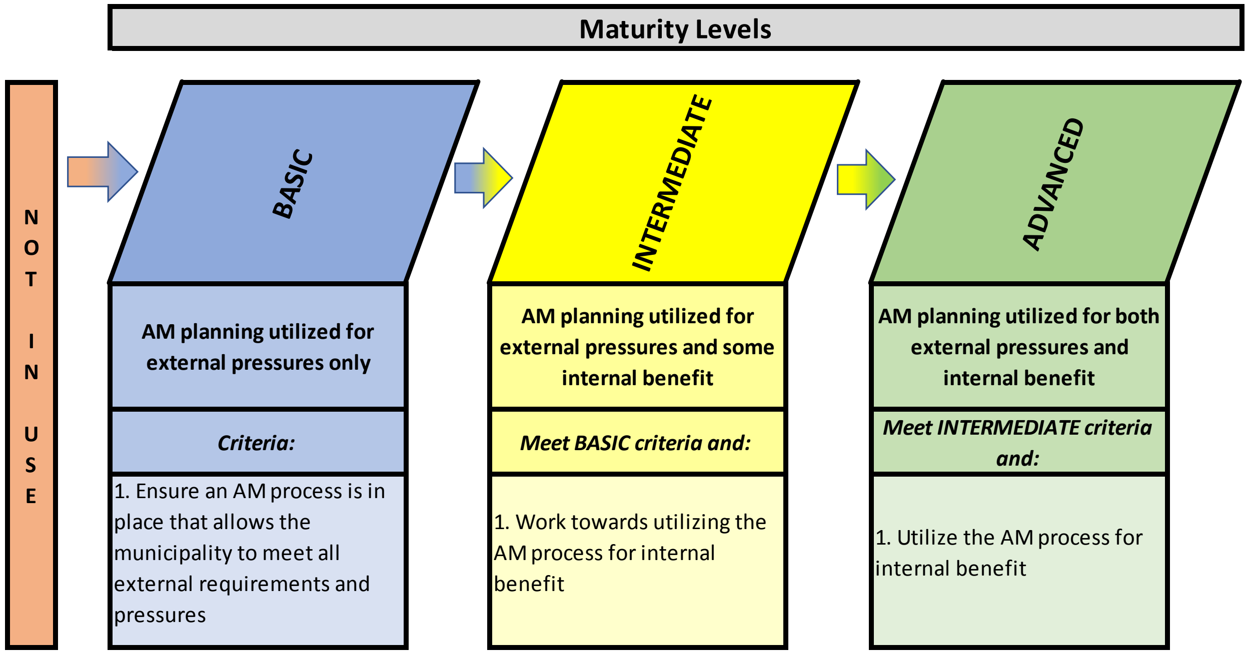
Indeed, our communities, economies, and in many ways, our quality of life are all supported by various elements of infrastructure. It follows that governments have a great responsibility to properly manage their assets. This stewardship function falls heavily at the municipal level of government, where local citizens and taxpayers rely on the availability of critical services delivered by their municipality.

Consequently, municipalities need to be aware that there are many compelling reasons for engaging in a mature asset management process. These include the following internal benefits:

- Enhance financial performance;
- Assess and manage risk;
- Support sustainability of services:
- Meet service needs & promote customer satisfaction; and
- Support economic activity & promote satisfying lifestyle.

Levels of Maturity – Utilizing Benefits of Asset Management

To what extent is the municipality utilizing the benefits of asset management planning within the organization?



At the **basic level of maturity**, municipalities use asset management planning in response to external pressures, such as unexpected changes to service delivery, asset condition or risk; and/or financial conditions. Municipalities at the basic level need to ensure they have an asset management process in place that enables the ability and flexibility necessary to respond when external pressures demand it. However, at the basic level of maturity, these circumstances are often dealt with as part of the budget process at a high level.

At the **intermediate level of maturity**, asset management planning needs to be used to not only respond to external pressures, but also to derive some internal benefit. Municipalities are considered to be at the intermediate level of maturity if they recognize that asset management has integral connections to several other processes (e.g. budget, optimal maintenance schedules, planning, service delivery, etc.) and begin the process of integrating these processes.

At the **advanced level of maturity**, asset management is used for responding to external pressures and deriving internal benefits. Municipalities at this level should have identified all links between asset management and other processes, and should have integrated them to achieve internal efficiencies, track financial performance, focus on service delivery, and promote asset management sustainability.

Asset Management Overview

There are a number of internal benefits to be gained by implementing asset management practices in addition to legislative and funding requirements. These potential benefits are discussed throughout this document. Figure 1-2 (below) highlights many of the elements of the asset management plan (discussed in detail in Chapters 3 through 6), how they interrelate, as well as other processes that could be integrated with asset management, such as:

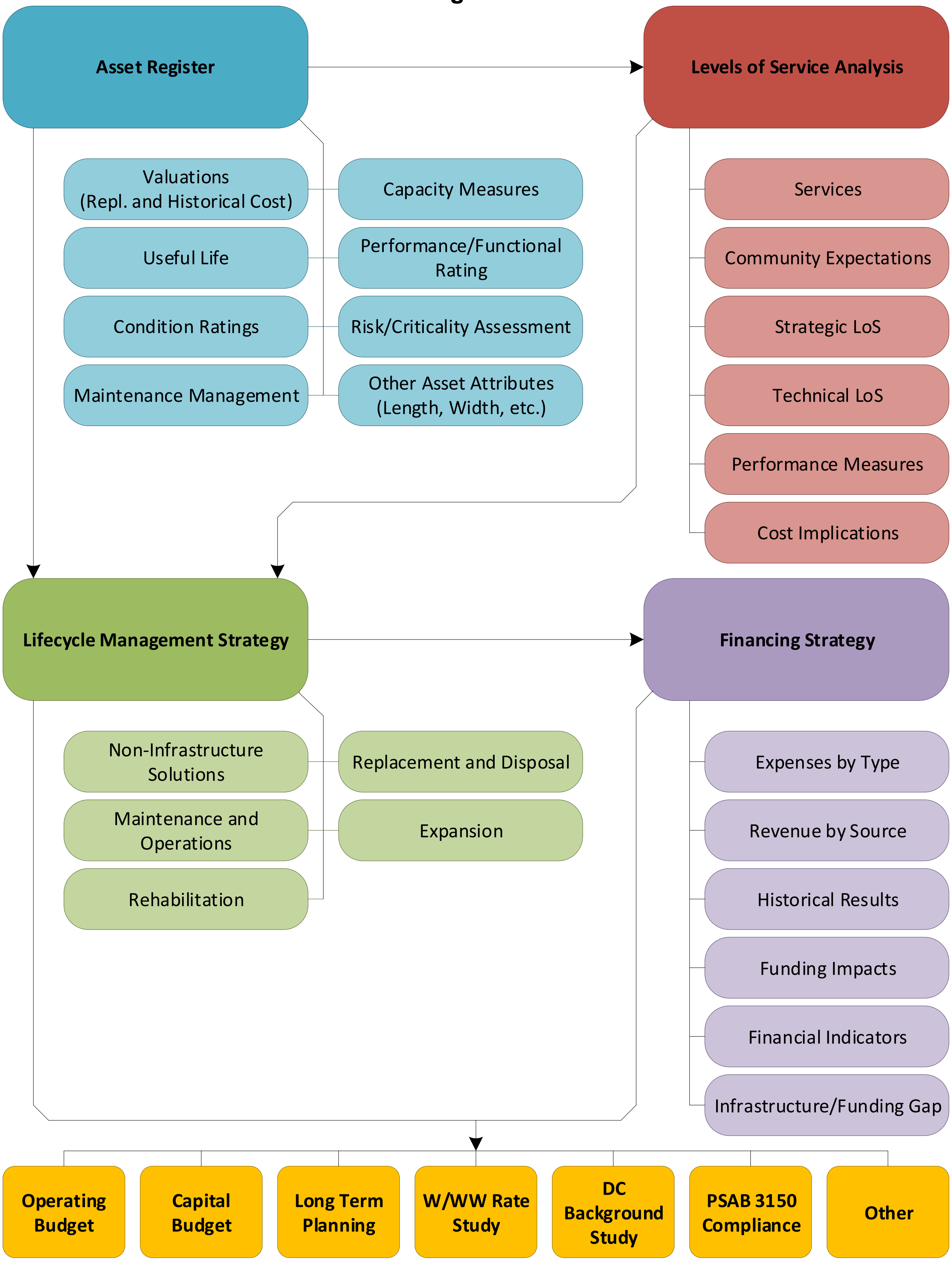
- Operating Budget;
- Capital Budget;
- Long-term Capital Plans;
- User Fee Rate Studies (i.e. water, wastewater, stormwater);
- Development Charge Background Study; and
- PSAB 3150 Compliance Process.

Municipalities will begin to see added benefits as the processes above are integrated with their asset management planning processes.

As the relationship between a municipality's AM process and the processes identified above is enhanced, the municipality will start seeing added internal benefits to the asset management process. A time will come when the internal benefits of AM planning will exceed the benefits from only responding to external pressures and requirements.

Keep in mind that a supporting comprehensive AM process ensures the development of a consistent and accurate AM plan. Figure 1-2 (below) shows the process and relationships among the component activities.

Figure 1-2
Asset Management Process



1.3 Complying with Asset Management Requirements in Ontario

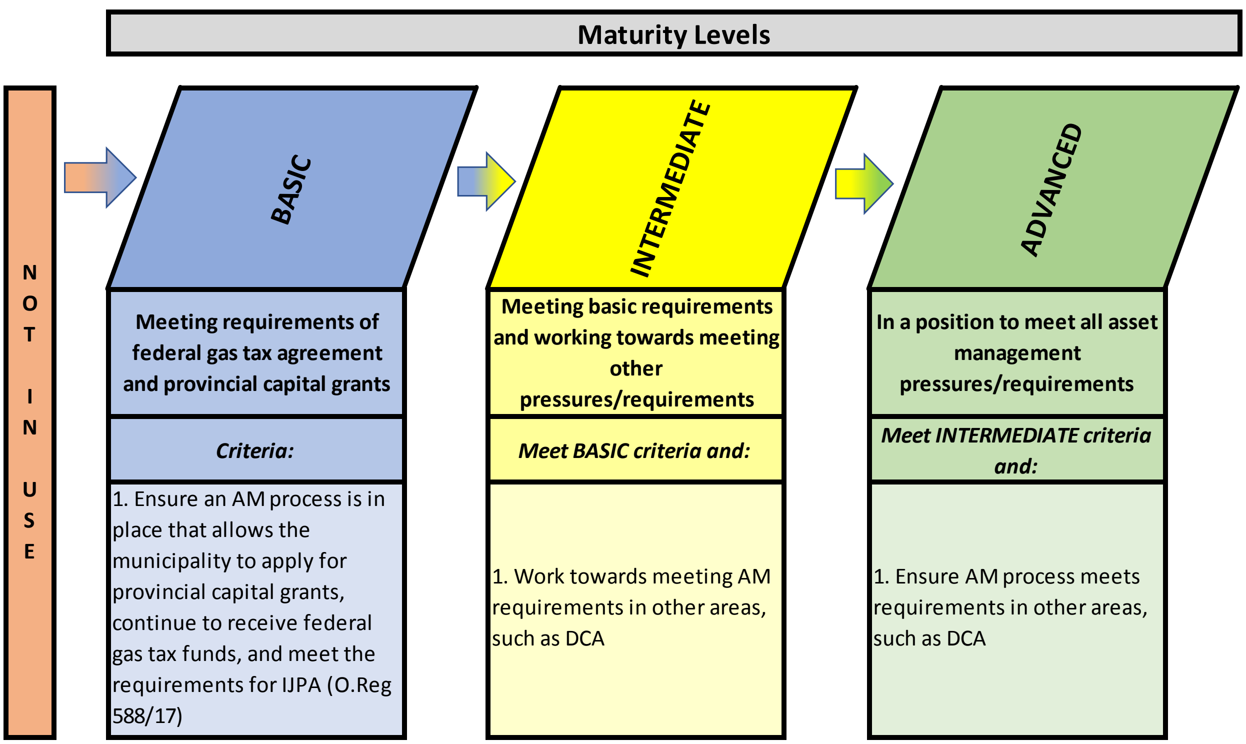
To what extent is the municipality complying with asset management pressures/requirements in Ontario?

Background

The importance of implementing and maintaining a mature asset management process has been reinforced by the requirements of provincial legislation and federal/provincial grant application processes. Municipalities should be aware of these requirements to ensure they are in compliance with them.

Levels of Maturity – Complying with Asset Management Requirements

To what extent is the municipality complying with asset management pressures/requirements in Ontario?



At the **basic level of maturity**, municipalities engage in asset management activities to comply with the AM requirements under the Ontario Federal Gas Tax Agreement, ongoing provincial capital grant applications, and the *Infrastructure for Jobs and Prosperity Act* (IJPA) through O.Reg 588/17).

At the **intermediate level of maturity**, municipalities need to comply with the requirements outlined in the Federal Gas Tax Agreement for Ontario, the requirements for applying for provincial capital grants, and the requirements of the IJPA through O.Reg 588/17. In addition, the municipality should be actively progressing towards meeting other asset management requirements, such as the DCA requirements.

At the **advanced level of maturity**, the municipality should comply with the requirements outlined in the Federal Gas Tax Agreement for Ontario, the requirements for applying for provincial capital grants, the IJPA requirements through O.Reg 588/17, DCA requirements, as well as other applicable areas.

Asset Management Requirements

The following sections provide some detail on how asset management planning fits in with federal and provincial requirements:

Ontario: "Building Together"

In 2011, the Ontario government released "Building Together", a long-term infrastructure plan which "sets out a strategic framework that will guide future investments in ways that support economic growth, are fiscally responsible, and respond to changing needs. A key element of this framework is ensuring good stewardship through proper asset management". This document highlights the importance of addressing municipal infrastructure needs through a co-operative approach by all levels of government, and underpinned by AM strategy. In conjunction with this document, provincial capital grant opportunities have been made available where having an AM plan is a prerequisite before receiving funding.

As outlined in Ontario's *Building Together: Guide for Municipal Asset Management Plans*, the elements of a detailed asset management plan must include the following:

- **Executive Summary:**
  - Typically, the final section to be prepared, and provides a succinct overview of the plan.
- **Introduction:**
  - Explains how the goals of the municipality are dependent on infrastructure. This could include discussing how infrastructure assets

support economic activity and improve quality of life. The municipality's goals may already be set out in documents, including the strategic plan and/or the Official Plan, or may need to be developed in consultation with residents.
    - Clarifies the relationship of the asset management plan to municipal planning and financial documents (e.g. how the plan impacts the budget, Official Plan and Infrastructure Master Plan).
    - Describes to the public the purpose of the asset management plan (i.e. to set out how the municipality's infrastructure will be managed to ensure that it is capable of providing the levels of service needed to support the municipality's goals).
    - States which infrastructure assets are included in the plan. Best practice is to develop a plan that covers all infrastructure assets for which the municipality is responsible. At a minimum, plans should cover roads, bridges, water and wastewater systems, and social housing.
    - Identifies how many years the asset management plan covers and when it will be updated. At a minimum, plans must cover 10 years and be updated regularly. Best practice is for plans to cover the entire lifecycle of assets.
    - Describes how the asset management plan was developed — who was involved, what resources were used, any limitations, etc.
    - Identifies how the plan will be evaluated and improved through clearly defined actions. Best practice is for actions to be short-term (less than three years) and include a timetable for implementation.
- **State of Local Infrastructure:**
    - See Chapter 3.
- **Expected Levels of Service:**
    - See Chapter 4.
- **Asset Management Strategy:**
    - See Chapter 5 – section renamed **Lifecycle Management Strategy**.
- **Financing Strategy**
    - See Chapter 6.

Federal Gas Tax Agreement in Ontario

Asset management is included as part of the requirements to receive federal gas tax funding in Ontario. In the administrative agreement for the federal gas tax fund, asset management is defined as:

> *…a strategic document that states how a group of assets are to be managed over a period of time. The plan describes the characteristics and condition of infrastructure assets, the levels of service expected from them, planned actions to ensure the assets are providing the expected level of service, and financing strategies to implement the planned actions. The plan may use any appropriate format, as long as it includes the information and analysis required to be in a plan as described in Ontario's Building Together: Guide for Municipal Asset Management Plans.*

Provisions of the federal gas tax administrative agreement related to asset management plans include:

- The costs to develop asset management plans are considered eligible expenditures for gas tax funding;
- In order to continue to be eligible for gas tax funding, municipalities must have developed an asset management plan by December 31, 2016; and
- Municipalities must provide a report to the Association of Municipalities of Ontario that an asset management plan is being used as a guide to infrastructure planning and investment decisions, including how federal gas tax funds are to be used.

Infrastructure for Jobs and Prosperity Act, 2015 (IJPA)

The *Infrastructure for Jobs and Prosperity Act*, *2015* (IJPA) was passed by the Province of Ontario June 4, 2015. As noted in section 1 of the IJPA, the Act has been enacted to “establish mechanisms to encourage principled, evidence-based and strategic long-term infrastructure planning that supports job creation and training opportunities, economic growth and protection of the environment, and incorporate design excellence into infrastructure planning”. The IJPA applies to the broader public sector of which municipalities as noted in subsection 6 (2)(a), are part. (Note: local boards are also included as noted in subsection 6 (2)(b), however for the discussion purposes within this chapter, only municipalities will be specifically referenced). For the purposes of the IJPA, the definition of municipalities is identified as being from the Municipal Act, 2001 in subsection 1 (1).

The IJPA outlines the need for an Infrastructure Asset Management Plan in subsection 6 (1):

> *Every broader public-sector entity prescribed for the purposes of this section shall prepare the infrastructure asset management plans that are required by the regulations and that satisfy the prescribed requirements.*

Further, IJPA stipulates that the municipality shall provide the infrastructure AM plan to the province, as required by the Minister, and if required by regulations, shall also make the infrastructure AM plan available to the public.

The IJPA also presents a number of principles for municipalities to consider when making decisions related to infrastructure. Please refer to Chapter 2 for more details.

Requirements for the development of an asset management process are also outlined in a regulation of the IJPA (O.Reg 588/17):

1. A Strategic Asset Management Policy by *July 1, 2019* (discussed in detail in Chapter 2);
2. Municipalities would be required to prepare an asset management plan in three phases:
    a. Phase I would address core infrastructure assets (i.e. roads, bridges, culverts, wastewater, water, and stormwater) and would be required to be completed by *July 1, 2021*.
    b. Phase II would expand on Phase I by including all infrastructure assets in the plan by *July 1, 2023*.
    c. Phase III would require further details to be provided for all infrastructure assets by *July 1, 2024*.
3. Phase I (i.e. core infrastructure) and Phase II (i.e. all infrastructure) of the asset management implementation would include the following:
    a. Current levels of service.
    b. Current asset performance, using performance measures.
    c. An asset inventory, including replacement cost, age, and condition.
    d. Estimated lifecycle costs by asset category to maintain current levels of service for 10 years.
    e. For municipalities with populations under 25,000: Assumptions regarding future changes in population or economic activity, and how they relate to estimated lifecycle costs to maintain current levels of service.
    f. For municipalities with populations over 25,000: Population and employment forecasts (from Growth Plans, official plans, etc.), and the

lifecycle costs required to maintain current levels of service in order to accommodate projected increases in demand caused by growth.

4. Phase III of the asset management implementation would include the following:
   a. Proposed levels of service for the next 10 years, using provided metrics for core infrastructure and municipally created metrics for other infrastructure.
   b. An explanation of why the proposed levels of service are appropriate, including risks, affordability and whether they are achievable.
   c. The proposed performance of each category for each year over 10 years.
   d. A lifecycle management strategy.
   e. A financial strategy.
   f. Document and address available funding as well as funding shortfalls.
   g. For municipalities with populations under 25,000: A discussion of how assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management strategy and financial strategy.
   h. Municipalities with populations over 25,000: Estimated lifecycle costs to achieve proposed levels of service in order to accommodate projected increases in demand caused by population and employment growth, the funding projected to be available (by source)as a result of increased population and economic activity, and an overview of risks associated.
   i. An explanation of any other key assumptions.
5. Updates, approvals and public availability:
   a. Review and update the asset management plan at least every 5 years.
   b. The asset management plan (or update) must be endorsed by the executive lead of the municipality, and approved by Council resolution.
   c. Municipalities would be required to provide Council with an annual update on asset management planning progress, by July 1st of each year.
   d. Municipalities would be required to post their strategic asset management policy and asset management plan on the municipality's website, if one exists, and make copies of these documents available to the public, if requested.

Please note that the specific requirements of the regulation are discussed in the introduction/overview sections of each chapter throughout this framework document.

Development Charges Act (DCA)

The recent changes to the DCA in December 2016 (new clause 10(2) (c.2)) requires that a Development Charge Background Study must include an asset management plan related to new infrastructure.

Subsection 10 (3) of the DCA provides:

(3) The asset management plan shall,

- *(a) deal with all assets whose capital costs are proposed to be funded under the development charge by-law;*
- *(b) demonstrate that all the assets mentioned in clause (a) are financially sustainable over their full lifecycle;*
- *(c) contain any other information that is prescribed; and*
- *(d) be prepared in the prescribed manner.*

There are no prescribed requirements at this time for all services, except transit. Therefore, the municipality defines the approach to include within the background study.

For transit, the amended regulations provide for a prescriptive evaluation. In regard to the DCA requirements for asset management for the Transit Service, Ontario Regulation 82/98 (as amended) provides the following:

> *8(3) If a council of a municipality proposes to impose a development charge in respect of transit services, the asset management plan referred to in subsection 10 (2) (c.2) of the Act shall include the following in respect of those services:*

1. *A section that sets out the state of local infrastructure and that sets out,*
   - *i. the types of assets and their quantity or extent,*
   - *ii. the financial accounting valuation and replacement cost valuation for all assets,*
   - *iii. the asset age distribution and asset age as a proportion of expected useful life for all assets, and*
   - *iv. the asset condition based on standard engineering practices for all assets.*
2. *A section that sets out the proposed level of service and that,*
   - *i. defines the proposed level of service through timeframes and performance measures,*

ii. *discusses any external trends or issues that may affect the proposed level of service or the municipality's ability to meet it, and*

iii. *shows current performance relative to the targets set out.*

3. *An asset management strategy that,*

   i. *sets out planned actions that will enable the assets to provide the proposed level of service in a sustainable way, while managing risk, at the lowest life cycle cost,*

   ii. *is based on an assessment of potential options to achieve the proposed level of service, which assessment compares,*

      A. *life cycle costs,*

      B. *all other relevant direct and indirect costs and benefits, and*

      C. *the risks associated with the potential options,*

   iii. *contains a summary of, in relation to achieving the proposed level of service,*

      A. *non-infrastructure solutions,*

      B. *maintenance activities,*

      C. *renewal and rehabilitation activities,*

      D. *replacement activities,*

      E. *disposal activities, and*

      F. *expansion activities,*

   iv. *discusses the procurement measures that are intended to achieve the proposed level of service, and*

   v. *includes an overview of the risks associated with the strategy and any actions that will be taken in response to those risks.*

4. *A financial strategy that,*

   i. *shows the yearly expenditure forecasts that are proposed to achieve the proposed level of service, categorized by,*

      A. *non-infrastructure solutions,*

      B. *maintenance activities,*

      C. *renewal and rehabilitation activities,*

      D. *replacement activities,*

      E. *disposal activities, and*

      F. *expansion activities,*

   ii. *provides actual expenditures in respect of the categories set out in sub-subparagraphs i A to F from the previous two years, if available, for comparison purposes,*

   iii. *gives a breakdown of yearly revenues by source,*

iv. *discusses key assumptions and alternative scenarios where appropriate, and*
v. *identifies any funding shortfall relative to financial requirements that cannot be eliminated by revising service levels, asset management or financing strategies, and discusses the impact of the shortfall and how the impact will be managed.*

1.4 Resources and References

Government of Canada, Infrastructure Canada, 2014, Administrative Agreement on the Federal Gas Tax Fund (Canada-Ontario-The Association of Municipalities of Ontario-The City of Toronto), http://www.infrastructure.gc.ca/prog/agreements-ententes/gtf-fte/2014-on-eng.html

International Organization for Standardization (ISO), 2014, ISO 55000:2014, Asset management – Overview, principles and terminology, http://www.iso.org/iso/catalogue_detail?csnumber=55088

Province of Ontario, 1996, Development Charges Act, https://www.ontario.ca/laws/statute/97d27

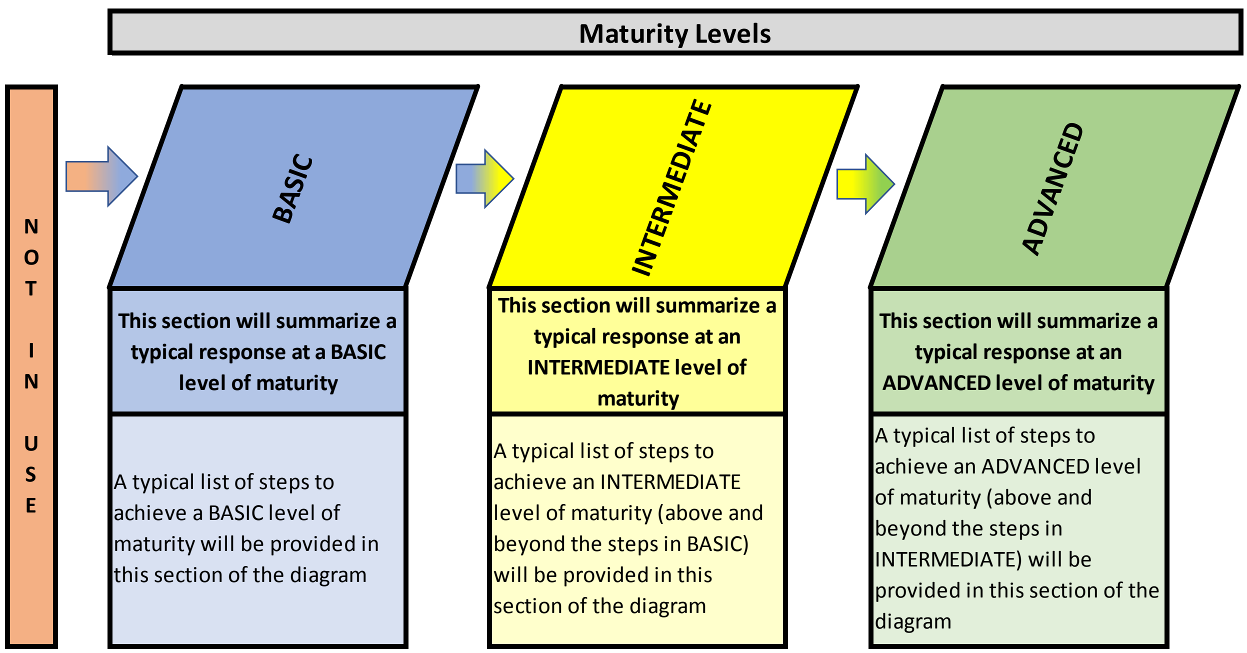
Province of Ontario, Ministry of Infrastructure, https://www.ontario.ca/page/ministry-infrastructure

Province of Ontario, Ministry of Infrastructure, 2012, Building Together: Guide for Municipal Asset Management Plans, https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans

2 Asset Management Policies and Strategies

2.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management

should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic level* requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

2.2 Overview

Asset management planning is a process[1], which should be informed by policies that assist in outlining overall approach, requirements, and roles/responsibilities, and should link to other organizational processes. A process should also detail the strategies,

[1] Note that the ISO 55000 series refers to this as an asset management *system*.

methods, and activities to undertake in order to achieve the planning objectives. One output of the AM process is the creation of an AM plan. See Figure 2-1 (below).

Figure 2-1
AM Process Output – AM Plan

<u>*Infrastructure for Jobs and Prosperity Act* (IJPA) and O. Reg 588/17 requirements:</u>

A Strategic Asset Management Policy (SAMP) must be developed and adopted by *July 1, 2019*, reviewed and updated at least every 5 years, and include the following:

1. Identify which municipal goals, plans or policies the AM plan would support (e.g. official plan, strategic plan, master plans, etc.);
2. A process for how the AM plan is to be considered in the development of the annual budget and any applicable long-term financial plans;
3. The municipality's approach to continuous improvement and adoption of best practices regarding AM planning;

4. The principles that would guide AM planning in the municipality, including principles identified in section 3 of the IJPA;
5. A commitment to consider:
   a. the actions required to address the risks/vulnerabilities caused by climate change to the municipality's infrastructure assets, including to operations, levels of service, and lifecycle management, including the anticipated costs that could arise from these impacts, and the adaptation opportunities that may be undertaken to manage these potential risks;
   b. Mitigation approaches to climate change, such as greenhouse gas emissions reduction goals and targets;
   c. Disaster planning and any required contingency funding;
6. A process to ensure AM planning would be aligned with water and wastewater financial plans, including any financial plans prepared under the Safe Drinking Water Act, 2002.
7. A process to ensure AM planning would be aligned with Ontario's land-use planning framework, including any relevant policy statements issued under section 3(1) of the Planning Act; Provincial plans as defined in the Planning Act; and, municipal official plans;
8. A discussion of capitalization thresholds used to determine which assets are to be included in the AM plan and how this compares to the municipality's Tangible Capital Asset policy;
9. A commitment to coordinate planning between interrelated infrastructure assets with separate ownership structures by pursuing collaborative opportunities with upper-tier municipalities, neighbouring municipalities, and jointly-owned municipal bodies;
10. Identification of who would be responsible for AM planning, including an executive lead;
11. An explanation of Council's involvement in AM planning; and
12. A commitment to provide opportunities for municipal residents and other interested parties to provide input into AM planning.

Item (4) above references principles outlined under section 3 of the IJPA. These principles indicate that infrastructure planning and investment should:

- Take a long-term view, considering the needs of citizens and being mindful of demographic and economic trends;
- Take into account any applicable budgets and fiscal plans of the municipality;
- Be based on clearly identified infrastructure priorities;

- Ensure the continued provision of core public services such as health care and education;
- Promote economic competitiveness, productivity, job creation, and training opportunities;
- Ensure that the health and safety of workers who are involved in the construction and maintenance of infrastructure assets is protected;
- Foster innovation through the use of innovative technologies, techniques, and practices developed in Ontario;
- Be evidence based and transparent;
- Be undertaken with consideration of any provincial or municipal plans or strategies established in Ontario, even when they are not binding, but may still be relevant (e.g. Section 3 of the *Planning Act*, water sustainability plans under *Water Opportunities Act, 2010*, Lake Simcoe Protection Plan established under the *Lake Simcoe Protection Act, 2008*, transportation plans established under the *Metrolinx Act, 2006*);
- Promote accessibility for persons with disabilities;
- Minimize environmental impact—as well as respect and help maintain ecological and biological diversity—with infrastructure designed to be resilient to the effects of climate change;
- Endeavour to make use of acceptable recycled aggregates; and
- Promote community, social, and economic benefits, such as local job creation and training, improvement of public spaces, etc.

2.3 Asset Management Policies and Strategies

AM policies and strategies provide structure and guidance as to how a municipality will execute, maintain, and continuously improve AM planning, in order to provide services to stakeholders.

Is the asset management planning process supported by asset management policies and strategies?

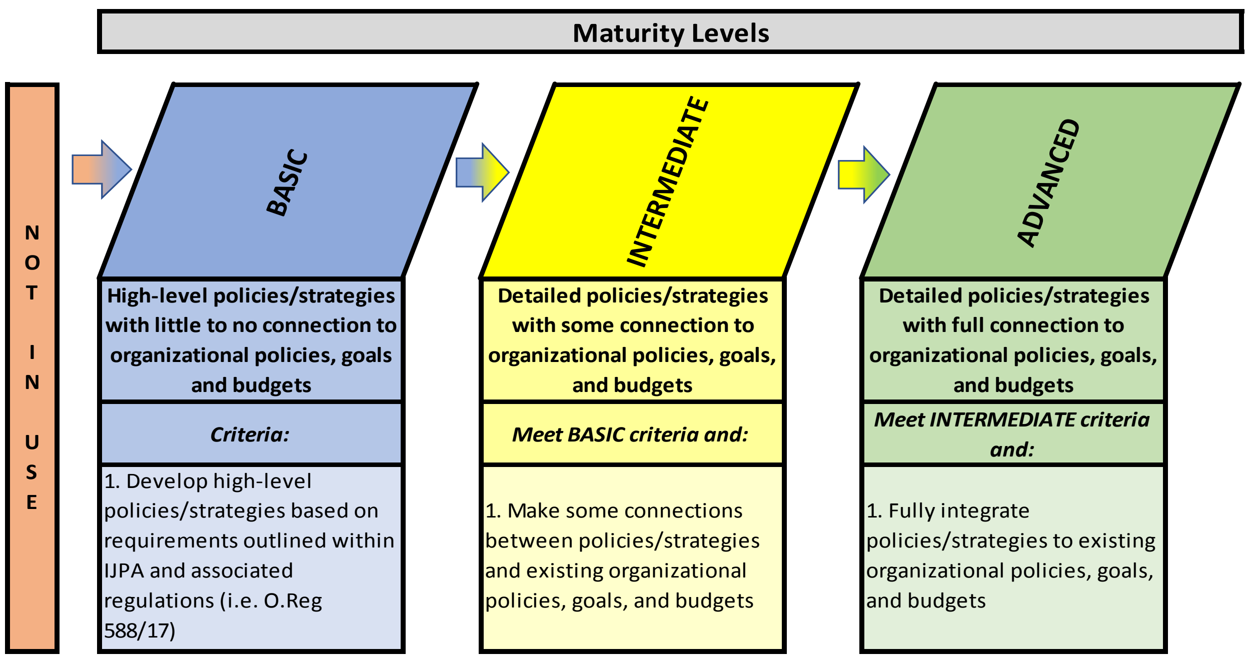
Background

Asset Management policies and strategies provide direction to municipal staff throughout the entire asset management process. They provide a framework for the asset management process and provide the connection to other organizational processes outside of asset management.

The regulation to the *Infrastructure for Jobs and Prosperity Act, 2015* (IJPA) requires that municipalities develop a strategic asset management policy (SAMP) with a number of principles and prescribed elements. The SAMP, which combines asset management policies and strategies into one requirement, support the asset management planning process through its connection to long-term organizational policies, goals and objectives.

Levels of Maturity – AM Planning and SAMP

Is the asset management planning process supported by asset management policies and strategies?



At the **basic level of maturity**, municipalities often have high-level AM policies/strategies (which adhere to the requirements of O.Reg 588/17). It is likely that there is little connection between the AM policies/ strategies and other organizational policies, goals, and budgets. The AM policies/strategies have likely been developed at a high level based upon the requirements outlined within the IJPA.

At the **intermediate level of maturity**, the municipality should prepare detailed AM policies/strategies based on the requirements of the IJPA and its associated regulations. Some connections should be made between the AM policies/strategies and the organizational policies, goals, and budgets.

At the **advanced level of maturity**, the municipality should prepare detailed AM policies/strategies based on the requirements of the IJPA and its associated regulations. The AM policies/strategies should be fully integrated with organizational policies, goals, and budgets.

Asset Management Policies

From a broad perspective, asset management policies set forth how a municipality uses asset management planning to fulfill its objectives and goals that have been established in other organizational policies and strategies. These AM policies will broadly explain how the asset management process will align with and carry out a municipality's mission statement as outlined in strategic planning documents.

Creating and maintaining asset management policies are vital steps in developing a robust and sustainable asset management process. These steps set forth the municipality's commitment to AM, offer high-level guidance, and ensure accountability throughout the process. Ultimately, these policies are the broad foundation on which the rest of the asset management planning process will build upon.

Examples of policy topics:

- Explain how all legislated rules and laws will be followed, or how the asset management process will assist in current reporting practices.
- Detail the municipal-wide principles and vision to which the AM process must adhere, and how it will integrate into existing municipal planning and operational processes.
- Describe how the annual budgeting process will be advised by the outputs of the asset management process.
- Outline existing departments/divisions responsible for AM, or the creation of a specific asset management group (e.g. committee), that will be tasked with creating, maintaining, updating, and managing the entire asset management process.
- Detail and define all asset classes/categories that will be managed and how they will be kept up to date (e.g. valuations, conditions, etc.). This can also be outlined in a process manual that supplements the AM policies (more on this below).

- Set forth expected services, community expectations, and service levels that will be maintained over time.
- Introduce key metrics that are easily understood, functional, and reviewable in order to set standard functionality and performance levels for each asset class/category.
- Determine how inspections and reviews will be carried out to ensure service standards are being maintained at agreed upon levels. This can also be outlined in a process manual that supplements the AM policies (more on this below).

Asset Management Strategies

Asset management strategies build upon the structure set in the AM policies and lay a path, or action plan, to accomplish the municipality's organizational goals at a more detailed level. The AM strategies answer how the municipality intends to provide expected service levels to the public through sustainable assets. In so doing, the AM strategies should aim to minimize the costs and risks associated with the AM process. It should be noted that the ISO 55000 series as well as some organizations refer to asset management strategies as a "strategic asset management plan". These terms are interchangeable and this document will always reference the former.

Comprehensive AM strategies are important because they provide a clear link between the asset management policy and asset management plan. If policies largely answer "why" to undertake asset management planning and asset management plans answer the "what" and "when", the strategy answers "how" this will all be undertaken. The strategies will provide guidance on how staff will go about executing the duties necessary in maintaining the municipality's asset management process.

Examples of strategy topics:

- Detail, through a schedule, the frequency of review and updates to all facets of the asset management process.
- Identify the current state of all asset classes/categories within the AM process and include all relevant info (e.g. replacement costs, service levels, risk, probability of failure) to be maintained, as well as the municipality's policies.
- Specify how the outputs and strategies of the asset management process will tie into existing municipal documents and plans.
- Clarify how all departments/divisions will incorporate asset management into their decision-making process.

- Specify the AM plans and processes that will be implemented, and how.
- Specify the metrics that will be utilized to measure the progress of the asset management process (e.g. service level metrics or additional metrics).
- Create timelines or roadmaps that detail progress and provide accountability to the municipality.
- Specify the roles and responsibilities of staff that will carry out the administration of the asset management process, as well as the roles of Council and the public.
- Identify all the data that will be collected and maintained on all assets, and set schedules for these updates (e.g. reviews every 1, 3, 5, etc. years).
- Specify any technical tools (e.g. IT systems, asset databases) that will be utilized in the asset management system and their level of integration.

Process Manual

Given the number of possible updates to the asset register, the number of sources of information, and the breadth of staff and potential consultants in an organization involved in the various aspects of asset management planning, a formal process manual can be beneficial to ensure a consistent application of methodologies across the asset register. The manual can be used to identify how the asset register is to be updated, when updates take place, and by whom. The major assumptions to be made can also be identified and documented as part of the process manual.

In order to facilitate consistency, issues such as staff/consultant hiring, training, and performance review (see Chapter 10 for more discussion on these issues) should be touched upon in the manual. Having a manual in place and included with other AM strategies should assist in providing a level of consistency to the AM updates being performed.

Strategic Asset Management Policy

The *Infrastructure for Jobs and Prosperity Act, 2015* (IJPA) requires asset management planning for public sector entities. The Province of Ontario has created a regulation under the IJPA (O.Reg 588/17) requiring municipalities to create a Strategic Asset Management Policy (SAMP). Please refer to the Overview section of this chapter (see above) for the detailed requirements of this SAMP as outlined in O.Reg 588/17.

2.4 Use of the Asset Management Policies and Strategies

Commitment to following AM policies and strategies ensures structure, consistency, and accountability in the AM process.

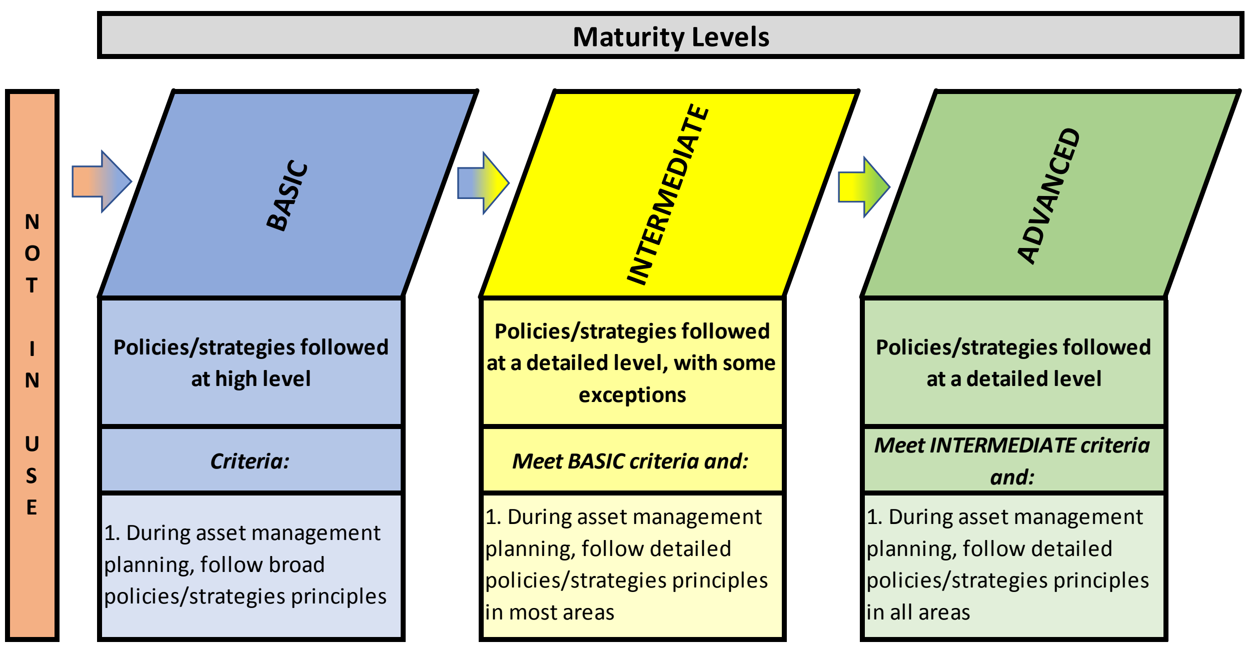
To what extent do the AM policies/strategies guide the asset management planning process?

Background

AM policies and strategies can be great guides for the asset management process, once in place and approved by Council. The extent of their use in guiding a municipality in AM planning going forward is the optimal method of determining their overall effectiveness and AM maturity level.

Levels of Maturity – Use of AM Policies/Strategies

To what extent do the AM policies/strategies guide the asset management planning process?



At the **basic level of maturity**, municipalities will follow their AM policies/strategies at a high level only. Broad AM policies/strategies principles would be followed during asset management planning.

At the **intermediate level of maturity**, municipalities will follow the AM policies/strategies at a detailed level, with some exceptions and/or gaps identified in policy/strategy areas.

At the **advanced level of maturity**, the municipalities will follow the AM policies/strategies at a detailed level in all areas, with no gaps in policy/strategy areas.

Use of AM Policies/Strategies

This section provides an overview of municipalities' ability to follow the AM policies and strategies in place (see examples discussed above). These policies and strategies are present to put structure, consistency, and accountability in the AM process. Following them shows commitment to asset management over the long-term.

A municipality will typically put in place initial policies and strategies based on early interpretations of AM planning needs within a municipality. It is only through ongoing trial and error that these policies and strategies are improved and updated to the point where they effectively guide the municipality in AM planning. Improvements and updates can take the form of:

- Relating existing policies and strategies to the specific needs of the municipality;
- Filling gaps in policy/strategy areas that were not addressed in previous updates; and
- Refining the ongoing action plan (e.g. strategies) to take into consideration recent decisions by Council, new information and available tools and techniques.

2.5 Asset Management Performance and Effectiveness

Incorporating performance measures and other metrics into AM policies and strategies allows municipalities to evaluate whether their AM process is producing the desired outcomes.

To what extent do the policies/strategies provide an approach to evaluate the performance and effectiveness of the AM planning process?

Background

It is important to determine whether the AM planning process is resulting in the desired outcomes. There are different approaches available to accomplish this, from high-level discussions (e.g. reach sustainability within 'x' years), to detailed performance metrics or ratios. The more rigorous and regular the evaluation process is, the higher the level of maturity for this issue.

Levels of Maturity – Evaluating the AM Process

To what extent do the policies/strategies provide an approach to evaluate the performance and effectiveness of the AM planning process?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Policies/strategies identify high-level discussions as method to evaluate AM planning process performance/effectiveness	**Policies/strategies identify both discussions and some documented metrics to evaluate AM planning process performance/effectiveness**	**Policies/strategies identify detailed discussions and metrics to evaluate AM planning process performance/effectiveness**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Develop broad discussion points on how the AM process can be evaluated in terms of performance and effectiveness	1. Develop discussion points on how the AM process can be evaluated in terms of performance and effectiveness	1. Develop detailed discussion points on how the AM process can be evaluated in terms of performance and effectiveness
	2. Include these broad discussion points within the policies/strategies, and use them to evaluate the performance/effectiveness on an ad hoc basis	2. Develop and document high-level AM planning performance metrics	2. Develop and document detailed AM planning performance metrics
		3. Include the discussion points and metrics within the policies/strategies and use them to evaluate the performance/effectiveness on an ad hoc basis	3. Include the discussion points and metrics within the policies/strategies and use them to evaluate the performance/effectiveness on a frequent/scheduled basis

At the **basic level of maturity**, municipalities use high-level discussions to evaluate the AM planning process performance and effectiveness. Broad discussion points to be used as criteria for evaluation will be developed and documented within the AM policies/strategies. These discussion points will tend to be used on an ad hoc basis as opposed to a scheduled or periodic basis.

At the **intermediate level of maturity**, municipalities should use both discussions and metrics to evaluate the AM planning process performance and effectiveness. High-level AM planning performance metrics to be used as criteria for evaluation will be developed and documented within the AM policies/strategies, along with agreed upon discussion points. These discussion points and metrics will tend to be used on an ad hoc basis.

At the **advanced level of maturity**, municipalities should use both detailed discussions and metrics to evaluate the AM planning process performance and effectiveness. Detailed AM planning performance metrics to be used as criteria for evaluation will be developed and documented within the AM policies/strategies. These discussion points and metrics should be used on a frequent and scheduled basis.

Performance Discussions

Performance discussions relate to the ability to describe the outcomes of a successful asset management process. This discussion should feed directly from the municipality's AM policies and strategies. Performance areas to consider include:

- Asset condition ratings, functionality, and/or performance;
- Moving towards expected service levels;
- Implementing (or moving towards) a sustainable asset management planning position;
- Meeting legislative requirements;
- Customer satisfaction; and
- Mitigating risk to acceptable levels.

This discussion can take place within a municipality's AM plan, within a periodic update report to Council, or even in an internal report to staff (e.g. senior management). The overall objective is to describe whether the AM planning process in place is creating the desired outcome or outcomes.

Performance Metrics

Performance metrics represent a more formal approach to measuring a municipality's success in achieving its desired objectives or outcomes. Performance metrics are designed to evaluate actual performance outcomes against desired service delivery-based outcomes. In addition, measuring performance over time will provide trending information related to progress in moving towards important goals. This lends itself to greater accountability as objective measures can be used to evaluate AM performance of not only the corporation as a whole, but municipal departments or divisions. Examples are as follows:

- Specific level of service performance measures (see Chapter 4);
- Infrastructure gap (see Chapter 6);
- Funding gap or sustainability ratio (see Chapter 6);
- Incidents of non-compliance with AM policies/strategies;
- Incidents of non-compliance with legislation; and
- Comparison of risk per service area in relation to acceptable levels.

2.6 Resources and References

Asset Management BC, Asset Management for Sustainable Service Delivery: A BC Framework, https://www.assetmanagementbc.ca/framework/

Institute of Public Works Engineering Australasia, 2015, International Infrastructure Management Manual, https://www.ipwea.org/publications/bookshop/ipweabookshop/iimm

International Organization for Standardization (ISO), 2014, ISO 55000:2014, Asset management – Overview, principles and terminology, http://www.iso.org/iso/catalogue_detail?csnumber=55088

Municipal Finance Officers' Association of Ontario, 2014, A Guide to Developing a Municipal Asset Management Policy, http://www.mfoa.on.ca/mfoa/main/VLFile.aspx?a=242&s=955758

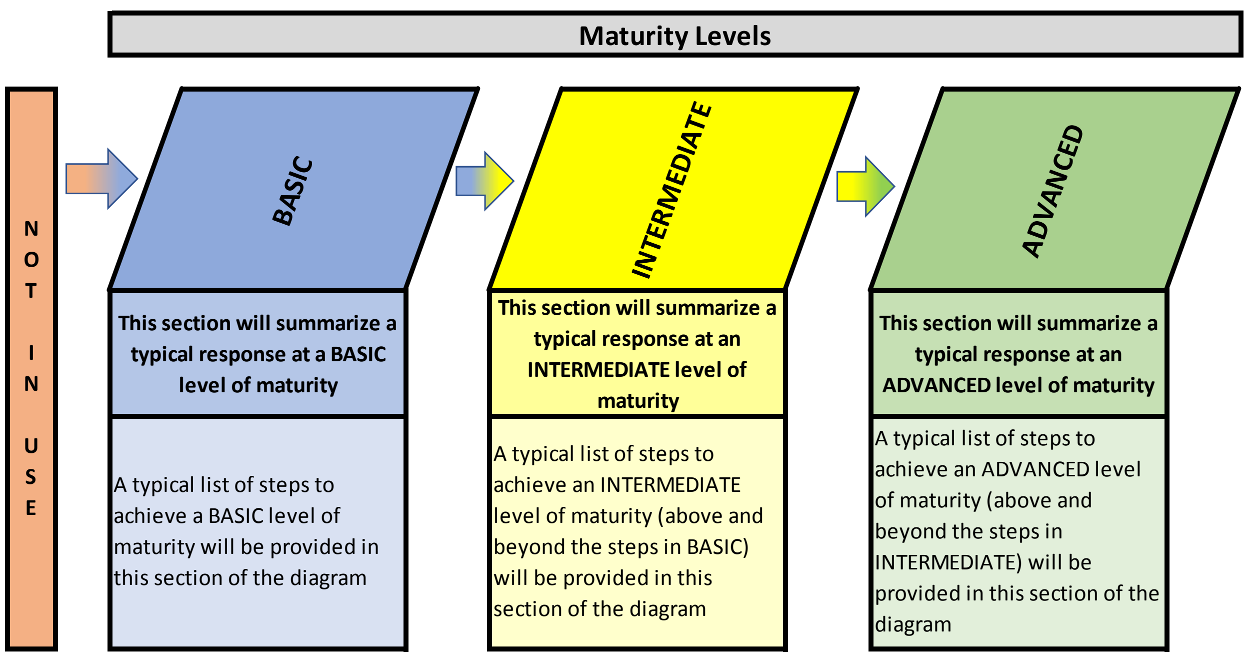
Province of Ontario, 2015, Infrastructure for Jobs and Prosperity Act, https://www.ontario.ca/laws/statute/15i15

Province of Ontario, Ministry of Infrastructure, 2017, Infrastructure for Jobs and Prosperity Act – Draft Regulation, https://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTMyNTkw&statusId=MjAxMzgx

3 State of Local Infrastructure

3.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of maturity diagrams within this framework will assist municipalities to identify their current levels of maturity for each AM area. Furthermore, for municipalities that have a desire to move to a higher level of maturity over time, the diagrams will provide potential approaches to doing so. To more easily depict the maturity levels ascribed to specific questions posed within the framework, the following diagram will be utilized for each question:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices

to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic leve*l requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

3.2 Overview

The capital assets of a municipality exist for the purpose of delivering services, either directly or indirectly, to the public. In order to track and determine how well capital assets are performing in this regard, an asset inventory containing appropriate information on each asset should be collected and maintained. From this data, the “state of a municipality’s local infrastructure” can be determined and evaluated to provide the foundation for decisions and recommendations within the asset management planning process.

This chapter focuses on the process of undertaking a state of local infrastructure analysis. A municipality can prepare for this analysis by creating and updating an asset register, which is also an important tool for maintaining asset inventory information. Discussion will focus on the following:

1. Use and importance;
2. Asset attributes;
3. Level of asset detail;
4. Asset valuations;
5. Condition assessments;
6. Risk and criticality;
7. Age/condition profile; and
8. Updating the asset register.

Infrastructure for Jobs and Prosperity Act (IJPA) and O. Reg 588/17 Requirements

O.Reg 588/17 outlines the following requirements with respect to asset inventories:

A municipality's AM plan must include the following (for each asset category):

a) A summary of the assets in the category;
b) The replacement cost of the assets in the category;
c) the average age of the assets in the category, determined by assessing the average age of the components of the assets;
d) The information available on the condition of the assets in the category; and
e) A description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.

The information above must be available for core infrastructure by July 1, 2021 and for all other assets by July 1, 2023.

As per O.Reg 588/17, a municipality's AM plan must be reviewed and updated at least every 5 years. Therefore, the information above must also be reviewed and updated at least every 5 years.

3.3 The Asset Register

3.3.1 Use and Importance

A comprehensive asset register provides a centralized source of asset information that enables efficient analysis and dissemination of information for many corporate needs, including asset management.

Is there one comprehensive asset register?

Background

Asset information is used across multiple departments, services and activities within an organization. This includes PSAB 3150 compliance, FIR reporting, asset management, maintenance management, GIS, condition/inspection reports and “capital needs” studies or reports. In each of these areas, the common need is to have accurate, available, and up-to-date asset data upon which decisions can be made. With so many uses of asset data across an organization, a common struggle among municipalities is the ability to have all departments using the same asset data. This is commonly referred to as having “one version of truth” from an asset perspective.

Some organizations may keep asset registers in spreadsheets, while other organizations may keep them in more formal databases or systems that are designed for the specific purpose of maintaining asset data in an efficient and effective manner. Regardless of the technology in place, data integrity, completeness and reliability become critical to ensure accurate asset information is available to make decisions. Asset registers will be discussed further in Chapter 9 (Asset Management Tools).

Levels of Maturity – Structure of Asset Register(s)

Is there one comprehensive asset register?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Several asset registers with no connecting attributes	**Several asset registers but with connecting asset attributes**	**One comprehensive asset register**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Decide on platform to house data (i.e. software, MS Excel)	1. Determine if an asset attribute exists that can be common across asset registers	1. Review all asset registers for all one-to-one versus one-to-multiple asset relationships
	2. Determine how the asset data is to be organized (i.e. by asset type)	2. Create a unique AssetID # to link asset registers	2. Find all assets with overlapping properties and make revisions to correct
	3. Determine asset attributes to be maintained	3. Ensure AssetID # is entered into all asset registers	3. Combine all asset data into one asset register
	4. Compile best available asset data from throughout organization		

At the **basic level of maturity**, municipalities often have a number of asset registers in multiple formats with no connecting attributes. For example, different departments may each have an asset register for their own purposes, but with no objective of connecting the data between them. At this level, an asset register exists for asset management purposes.

As municipalities with no asset register(s) prepare to collect and maintain asset data, a few decisions will have to be made. First, where will the asset information be stored and maintained. There are many alternatives, such as using spreadsheets (i.e. MS Excel or Access) or obtaining specialized software. Second, how will the asset data be organized within the asset register, and which asset attributes will be collected and maintained. With these questions answered, the municipality will be in a position to gather the necessary information from various sources within the organization. Asset attributes will be discussed in more detail below.

At the **intermediate level of maturity**, municipalities establish linkages between the various asset registers, including the asset management register. This can be achieved through asset attributes such as a common asset identifier.

At the **advanced level of maturity**, municipalities operate with one comprehensive asset register, or multiple asset registers that are connected to provide “one version of truth”. While asset data may be stored in multiple registers, they are interconnected and controls are in place to ensure consistency, completeness and accuracy. To move from an intermediate to advanced level of maturity, the municipality should perform a review of all asset registers to identify all one-to-one asset relationships, where the same asset may reside in more than one asset register (i.e. PSAB register and GIS), versus one-to-multiple asset relationships (road segment could include base, surface, curbs, etc. or multiple road segments could equate to one segment in another register). Further investigation should be done to identify assets with overlapping properties across asset types. For example, consider a length of road complete with wastewater mains. The road segments may not exactly line up with those of the wastewater mains. When developing one comprehensive asset register, these overlapping properties will have to be managed in clearly defined business processes.

The Asset Register

As discussed above, there are many uses for an asset register or multiple connected asset registers. The asset register is the foundation for any organization’s asset management process. This section describes various best practices for maintaining asset register(s).

There are two primary components of an asset register:

1. **Physical asset register components**: These components include the data required to maintain the levels of service that the assets provide. At a minimum, this includes physical attributes (i.e. description, location, size, material type) and condition, but may be extended to include technical data, criticality, functionality, capacity, and maintenance history.
2. **Financial asset register components**: These components include relevant asset financial details such as valuations and costing. In part, the financial asset register forms a part of a larger corporate finance system, through PSAB 3150 valuations, but also includes asset management values such as benchmark costs and current costs (i.e. replacement cost).

Physical and financial asset registers may exist as separate registers or may exist in combination as a single asset register. In cases where the registers are separate, there should be some level of integration or connectivity (manual or automated) between them to ensure common data is kept consistent. Maintaining a common and unique identifier for each asset is suggested for any asset register where asset data is maintained in separate areas. The most common unique identifier is the Asset ID.

Maintain "One Version of Truth"

A comprehensive asset register will often be made up of a number of integrated data sources, where each is primarily designed for specific department use. In situations where the asset register is not integrated and comprehensive, multiple asset registers exist and are maintained by specific departments or staff. The concern with having multiple asset registers from an asset management perspective is the challenge of ensuring "one version of truth". For example, the Public Works department may believe they have 250 road segments with a replacement cost of $150 million. However, the Finance department may believe there are 200 road segments with a replacement cost of $250 million. In this situation, both departments are relying on different and inconsistent sources of information to meet their needs.

Perhaps the most critical best practice for any asset register is to establish parameters to ensure that there is only one version of truth for all asset management data. These parameters define the "primary data sources" for each type of data and how it will be used and managed across the organization. This may require documented business processes that are supported and enforced across existing department boundaries. The development of these processes may be especially challenging within organizations that have traditionally stored and maintained similar data in different data stores with no formal processes to define data truth.

Multiple Asset Registers for Multiple Uses

In some cases, municipalities may decide to have multiple asset registers that are disconnected. This can work where asset data is maintained for significantly different needs. Examples include:

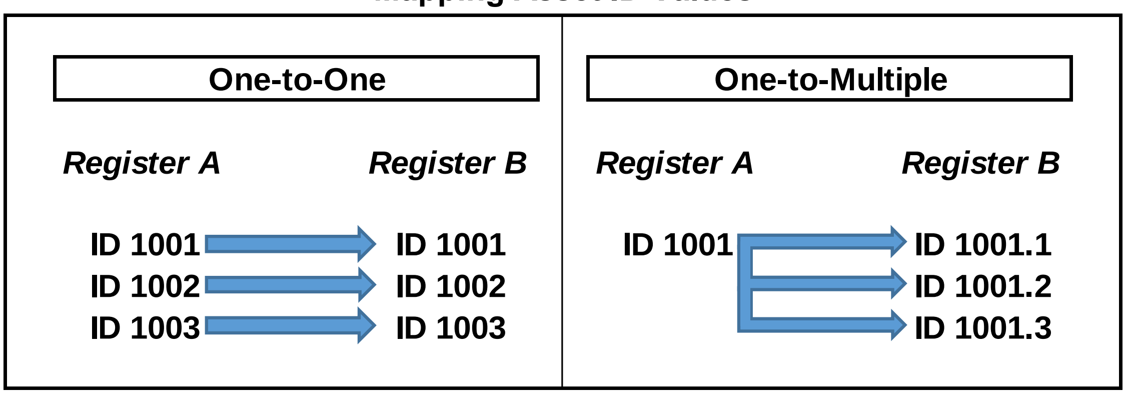
- Asset management:
- Maintenance management; and
- Financial reporting.

These asset registers may have attributes that are similar, such as descriptions, size, material type, replacement cost, etc. However, they also have independent (i.e. unique) attributes, such as historical cost and amortization. Also, these asset registers can be maintained at differing levels of detail. For example, an asset management buildings inventory may have 20 components per building, however a financial reporting (PSAB) register may record buildings as a single asset. Both approaches in this example meet the specific needs of the users and stakeholders of each register. Municipalities will need to determine if a connection between the multiple asset registers is warranted. Where similar attributes exist, a beneficial first step would be to assess if the multiple asset registers are providing similar results (such as the total length of roadways).

The most important parameters for maintaining an asset register with one version of truth across multiple data sources include using unique asset ID numbers and developing an approach for accessing and maintaining the data.

1. **Defining Asset ID Values:** Each asset within the asset register(s) should be assigned a unique asset ID value. This ID is used within asset inventories and spreadsheets to connect sources of asset data relevant to a specific asset across all data stores. For example, condition data, financial data, and maintenance data from different sources can be connected to assets through the asset ID. Keep in mind that this connection through asset IDs can be a one-to-one relationship or a “one-to-multiple” relationship. See below for examples of each.

Figure 3-1
Mapping Asset ID Values



2. **Accessing and Maintaining Data:** Processes and rules should be developed for how data will be accessed and maintained across all sources of data. This includes the ability to see asset data (i.e. “read-only” permission) and the ability to edit asset data (i.e. “write” permission). These permissions can span to:

- All assets (i.e. certain staff can see all assets);
- Some departments/assets (i.e. only Public Works can edit road assets); or
- Particular asset attributes (i.e. only Finance can edit PSAB 3150 values or only Public Works staff can update roads condition ratings and replacement costs).

Maintain an Asset Hierarchy or Structure

An optimal asset hierarchy or structure is developed in a manner such that both external and internal reporting needs are addressed. For example, from an external perspective, there is a need to report assets based on asset type for the annual audited financial statements, and by department for the FIR. However, a municipality may choose to internally track assets based on a structure that differs from external reporting needs.

An example of an internal asset categorization is as follows:

1. Roads Related;
2. Bridges and Major Culverts;
3. Water Supply;
4. Wastewater;
5. Stormwater Drainage;
6. Solid Waste;
7. Facilities (Buildings);
8. Vehicles, Machinery, and Equipment;
9. Land Improvements; and
10. Other.

Many of these asset classes can be broken down into various asset sub-classes.

Table 3-1
Sample Asset Hierarchy

<table>
<tr><th>Asset Class</th><th>Asset Type</th><th>Component</th></tr>
<tr><td rowspan="8">Transportation</td><td rowspan="2">Road</td><td>Surface</td></tr>
<tr><td>Base</td></tr>
<tr><td rowspan="2">Structures</td><td>Bridges</td></tr>
<tr><td>Culverts > 3m</td></tr>
<tr><td>Curb</td><td>N/A</td></tr>
<tr><td>Sidewalk</td><td>N/A</td></tr>
<tr><td>Streetlight</td><td>N/A</td></tr>
<tr><td>Traffic Management Device</td><td>N/A</td></tr>
<tr><td>Facility</td><td>General Building</td><td>Substructure</td></tr>
</table>

Asset Class	Asset Type	Component
		Shell
		Interior
		Services
		Equipment and Furnishings
		Special Construction
Water Supply	Main	Gravity
		Pressure
	Node	Joint
		Valve
		Hydrant
	Storage Facility Pumping Station Treatment Facility	Process Equipment
		Process Electrical
		Process Instrumentation
		Process Piping
		Build and Process Structural
		Building Architectural
		Building Services

Municipal assets possess relationships and are associated with other municipal assets. For instance, an asset can have components or segments (discussed further in sections below), it can share a location with other assets, and it can be associated with one or multiple departments, or even associated with one or multiple asset classes or types.

Table 3-2
Sample Asset Register

Asset ID	Asset	Asset Type	Location	FIR Department	Internal Department
RD 005	Tom St.	Road – Infrastructure	From Smith St. to John St.	Transportation	Public Works
W 012	Watermain	Water – Infrastructure	Tom St. RD 005	Water	Public Works
WW 012	Wastewater Main	Wastewater – Infrastructure	Tom St. RD 005	Wastewater	Public Works
BLDG 02	West Arena	Facility	123 Smith St.	Recreation and Culture	Parks and Recreation
EQ 56	Generator	Equipment	West Arena	Recreation and Culture	Parks and Recreation
ST 003	Stormwater Pond	Land Improvement	Wilson Blvd.	Stormwater	Public Works
SW 115	Truck	Vehicle	East End Landfill	Solid Waste	Public Works

BR 203	Culvert	Road – Infrastructure	Tom St.	Transportation	Public Works

Maintaining an asset hierarchy that provides some type of classification and structure to the municipal assets provides many benefits such as:

- External and internal reporting classifications;
- The ability to locate assets spatially; and
- Determine if related/associated assets impact each other.

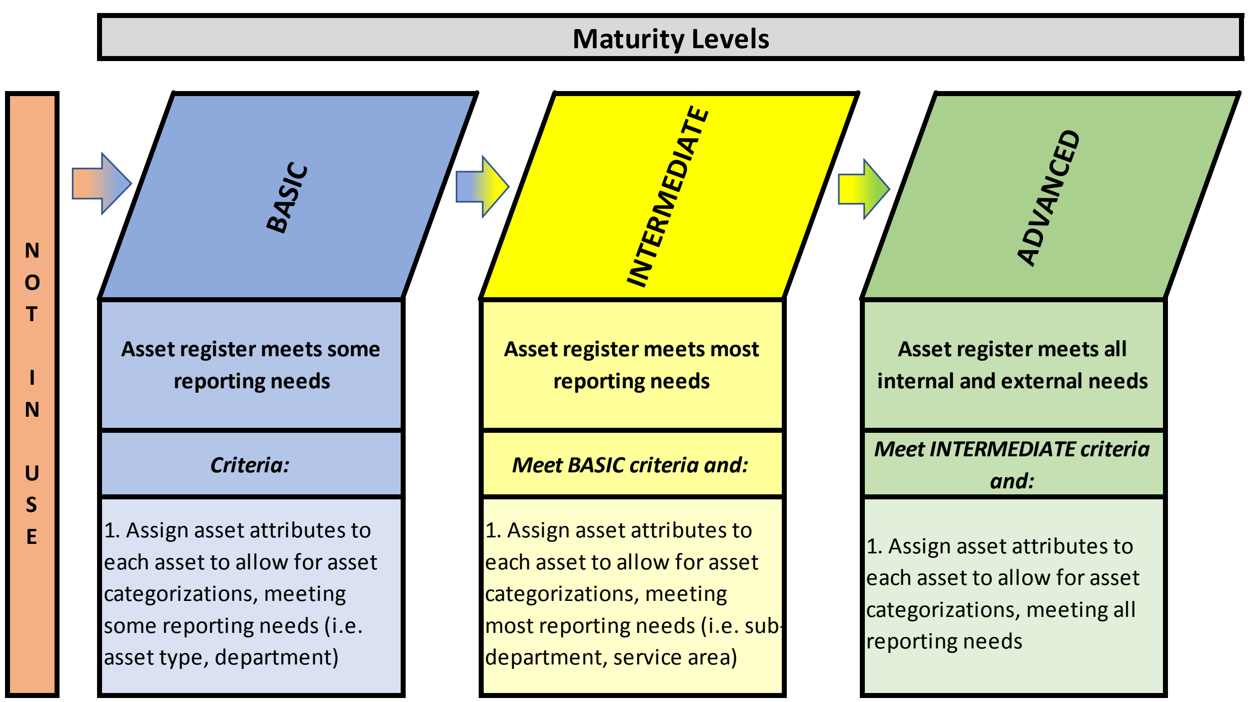
To what extent does your asset register meet internal and external reporting needs?

Background

Regardless of the platform(s) used to retain asset information, it is important to strive towards the successful use of the available information for reporting purposes. There are a number of internal and external reporting needs within a municipality, therefore consideration should be given to the ability of the asset register to provide the necessary timely information for this purpose.

Levels of Maturity – Asset Register and Reporting

To what extent does your asset register meet internal and external reporting needs?



At the **basic level of maturity**, municipalities will find that their asset register will meet some of their reporting needs. These municipalities will assign asset attributes, such as asset type and department, to each asset, which will allow for asset categorizations for use in reporting. Initial focus should be on required reporting needs such as annual financial reporting.

At the **intermediate level of maturity**, the asset register will meet most of the municipal reporting needs, both externally and internally. The municipality will make use of more specific asset attributes, such as sub-department and/or service area, for asset categorization to be used in meeting most reporting needs.

At the **advanced level of maturity**, the municipality will ensure all necessary asset attributes are assigned to assets to allow for sufficient asset categorization to meet all reporting needs, both internally and externally. At this level, reports should be generated easily with very little need for manual formatting/adjustments.

Reporting Needs

The asset register should contain sufficient and accurate detail to meet a municipality's internal and external reporting needs.

Internal reporting would relate to the ability to produce reports that facilitate the effective management of capital assets in the delivery of municipal services. External reporting would meet legislative, operational, and financial accounting reporting needs. Examples of each are as follows:

Table 3-3
Sample Internal/External Reports

Internal Reporting	External Reporting
Annual Budget	Audited Financial Statements (including segment reporting)
Asset Management Planning	Financial Information Return (FIR)
Long-Term Forecasting and Financial Planning	Grant Applications
Maintenance Management	Water and Wastewater Financial Plans
Asset Condition/Inspection Reports	Asset Condition/Inspection Reports

Municipalities should determine what asset information is required, and in what classification or format for each reporting need. Reviewing all reporting needs before making refinements to an asset register can assist in identifying appropriate asset categorizations, as well as asset attribute data to collect.

Many of the reporting needs identified relate to either external accounting or internal (management) accounting reporting. The following chart from the “Guide to Accounting for and Reporting Tangible Capital Assets”, highlights the contrast in the requirements for financial accounting and internal management accounting.

Table 3-4
Financial/Management Accounting Requirements

Financial Accounting	Management Accounting
Oriented to those external to the organization	Oriented to those internal to the organization
Reports governed by prescribed principles	Reports and content are flexible
Based on the needs of external users	Based on the needs of management
There is need for uniformity in reporting due to various user needs	Management can specify the type and content of information needed
Addresses all financial aspects of the local government as a whole for decision making	Typically addresses certain aspects of the local government for decision making
Focuses on financial position, annual results and cash-generating ability	Focuses on issues such as determining prices to be charged, choices in product lines offered and product profitability
Transaction and event based	Includes transactions and events, future plans and any other required data
Unified by the basic equation Assets – Liabilities = Net Assets	Based on three principles: full, differential, and responsibility costing
Mandatory	Optional

Source: Guide to Accounting for and Reporting Tangible Capital Assets, April 2007

3.3.2 Asset Attributes

Collecting and tracking appropriate asset attributes enables municipalities to understand the state, extent, and relative importance of the organization’s assets.

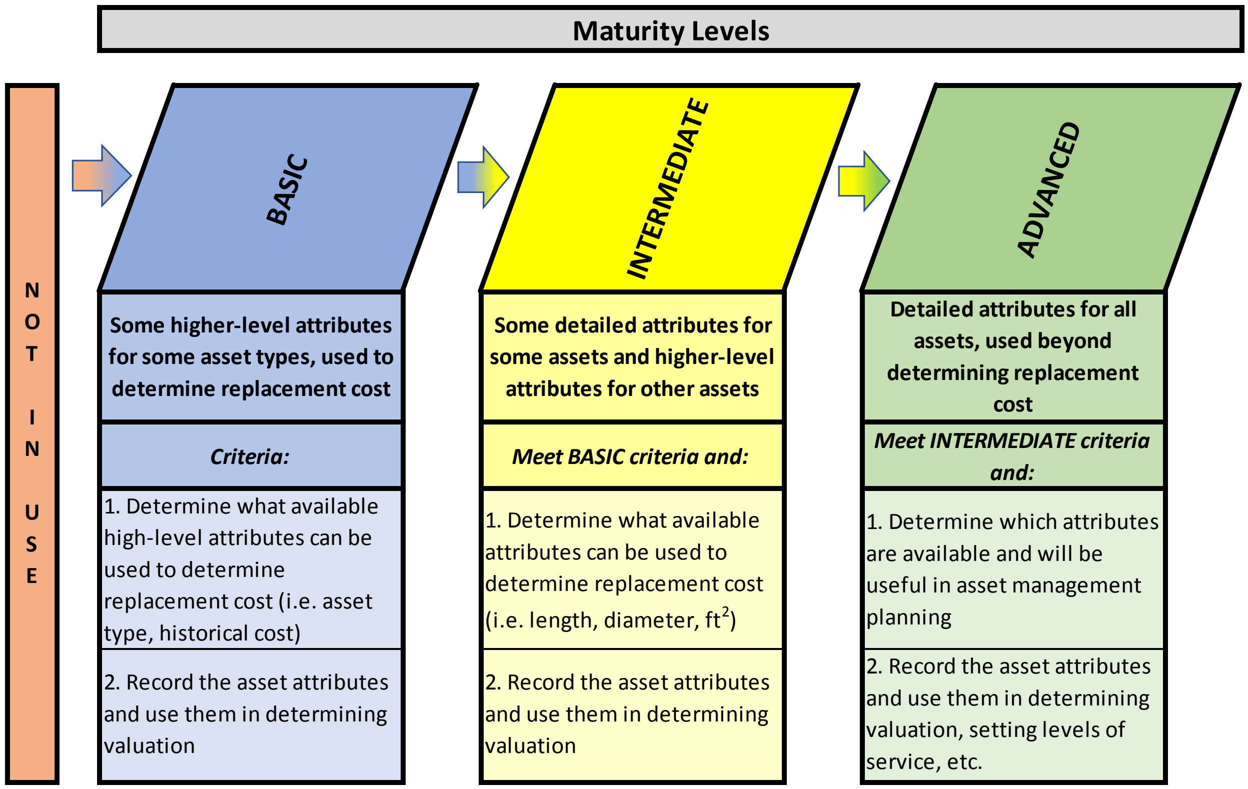
To what extent does the municipality include detailed asset attributes in the asset register?

Background

Asset attributes are characteristics that enable each asset to be clearly identified, quantified, described, evaluated, and accounted for. Asset attribute information requirements will vary between asset classes and between different asset types. Some attribute data will be held at the asset level while other data will be required at a more detailed component level. In addition, required attribute data will also vary by municipality. The level of detail required will, as a general rule, be dependent on the sophistication of the organization’s asset management processes and more so, the level of detail deemed important to the municipality. For an organization using basic asset management functions only higher-level attributes may be accounted for. Similarly, the level at which attribute data is collected should be related to the end use of the data. If assets are managed at a “whole asset” level it may not be necessary to collect and maintain detailed attribute data at a component level. Also, asset attribute data will depend on the type of information used for each asset type to determine valuation and expected levels of service.

Levels of Maturity – Asset Attributes

To what extent does the municipality include detailed asset attributes in the asset register?



At the **basic level of maturity**, municipalities include within their asset data some higher-level attributes for some asset types. Municipalities need to determine for which attributes are available, easily recorded, and can be used to determine current valuation for each asset. It would be expected that, as a minimum, attributes such as asset type, location, useful life, age and historical cost would be included. Once the asset attributes have been recorded, they can be used in determining current valuation of the assets.

At the **intermediate level of maturity**, detailed attributes for some assets may be used, along with some higher-level attributes for other assets. This includes attributes at a more granular level, such as asset length, width, diameter and material type (if applicable) for more complex assets. This level of detail enables the municipality to calculate benchmark costs, such as cost per length, cost per diameter and/or cost by square foot/metre. This information allows for a more detailed costing to be completed, and also a more detailed levels of service analysis.

At the **advanced level of maturity**, detailed attributes would be documented and maintained for all assets. At this level, municipalities may include additional attributes that allow valuations to be done at a more detailed level. Attributes, such as functionality and capacity, are also used to set current levels of service and risk at a detailed level.

Types of Asset Attributes

The following table illustrates examples of attribute types that can be considered as part of maintaining an asset register.

Table 3-5
Sample Asset Register Attribute Types

Parameters	Description of use
Asset Identifiers, Location, and Descriptors	To identify, describe and locate the asset. Will also define asset in terms of position in an asset hierarchy.
Detailed Technical Data	To individualize and quantify each asset from similar assets.
Valuation Data	Data that allows the organization to assess costs of the assets (both historical and current) and record/track amortization.
Maintenance Data	Data that identifies the work to be completed and work completed against an asset.
Condition Data	Data used to assess asset risk and determine actual remaining useful lives of assets.
Predictive Data	Data used to allow future behaviour of assets to be predicted. These would include deterioration curves and treatment effect details.
Performance Data	Data recording demand and capacity performance. Unplanned maintenance activity is recorded against asset including cause and costs. Planned maintenance procedures adopted for critical assets.
Risk Data	Data used to analyze risk of an asset's failure and determine the risk to organizations if the asset were to fail.
Lifecycle data	Data used to plan future costs associated with operations, maintenance, creation, renewal, disposal of assets. The cost of any strategy should also be determined.
Optimized Lifecycle Data	Data used to optimize analysis of works taking into account the following factors: risk, maintenance, operations, life extension, age and condition of asset, asset decay, treatment options and cost.

Source: Adapted from IIMM 2011 2.4.1 table 2.4.1.

The following attribute types will be discussed in more detail below:

1. Identification, Description, and Location;
2. Classification;
3. Physical – Components, Materials, and Dimensions;
4. Financial;

5. Condition;
6. Risk / Criticality;
7. Functionality and Capacity;
8. Maintenance; and
9. Predictive.

Identification, Description, and Location attributes

These attributes identify an individual asset, provide information as to its location and describe it in basic terms. Typically, these attributes may include:

Identifiers: details that enable the asset to be recognized.

- Asset ID or Asset Number: an identifier unique to the asset;
- Asset Name: where a name simplifies identification and location e.g. Smith Pavilion; and
- Parent Asset: often provides context to identifying the asset e.g. Smith Pavilion may be a child of XYZ Sports Ground.

Location: details that enable the asset to be located and/or related to other assets or features, can include:

- A street address;
- Start and end distances for linear assets;
- A floor level, or room within a building;
- A generic locality or local name;
- Precincts, neighbourhoods, wards, etc.;
- Map references; and
- Spatial coordinates (GIS data).

Classification Attributes

Classification attributes allow assets to be grouped for reporting and other management requirements, enable placement in asset hierarchies, and differentiate assets with differing service level requirements. Examples include:

- Asset Class;
- Asset Type;
- Hierarchy;

- Significance; and
- Ownership.

Physical Attributes

Physical attributes relate to the physical make-up of an asset that enable it or its components to be differentiated from other similar assets, quantified and described in detail. Examples include:

- Detailed descriptors;
- Structural details;
- Manufacturer (make, model and vin number);
- Insurance details;
- Materials; and
- Dimensions.

Financial Attributes

Financial attributes relate to financial aspects of assets. This may include:

- Asset valuation for asset management:
  - Unit rate for replacement (i.e. benchmark cost);
  - Current replacement cost;
  - Asset consumption (deterioration curve/profile);
  - Estimated service life (deterioration curve/profile);
  - Maintenance costs;
  - Capital costs for rehabilitation or enhancement/expansion activities; and
  - Operating costs.
- Asset valuation specific to PSAB 3150:
  - Historical cost;
  - Accumulated amortization;
  - Net book value;
  - Useful life (amortization period);
  - Age;
  - Amortization rate;
  - Amortization method (e.g. straight line based on age, consumption-based); and
  - Remaining useful life.

Condition Attributes

Condition attributes relate to the physical condition of the asset. As municipalities may have various condition ratings scales across asset types, best practices would suggest that this be considered “raw data” and used to generate condition ratings that are consistent across all assets. For example, if a municipality decides that a consistent condition rating out of 10 is to be used for all assets, but a consultant provides the municipality bridge condition indexes (BCI) out of 100, then the BCI data would be treated as raw data to be used to generate an asset management condition rating out of 10 (i.e. BCI divided by 10). Having a consistent rating across all assets allows municipalities to compare assets across departments or service areas for asset management purposes.

Some assets will only require a single condition attribute while other more complex assets may require multiple condition attributes. More complex asset (i.e. road and bridge) condition ratings prepared by consultants typically include multiple ratings while less complex assets usually receive one overall condition rating. The municipality must determine which ratings are to be used for asset management purposes. Further discussion on condition ratings is provided in later sections.

Risk or Criticality Attributes

Risk or criticality attributes relate to risks associated with assets. Typically, the attributes are related to the overall risk of the asset failing (i.e. exposure, probability of failure and consequence of failure). Risk attributes may also include items such as number of customers affected (in case of asset failure), existence of alternatives (detours for roads or reverse feeds for water supply), potential service delays, costing implications and social implications. Risk mitigation factors can also be accounted for within the calculations. Further discussions on risk and criticality are outlined in later sections.

Functionality and Capacity Attributes

Functionality and capacity attributes relate to the “fitness for purpose” of assets. These attributes define how well an asset is capable of performing compared to expected performance. This information can become very useful in determining levels of service (See Chapter 4) as well as asset risk (to be discussed below).

Functionality attributes typically relate to how well an asset is suited to the service provided while capacity attributes tend to relate to the scale of the service or the ability to cope with current or future use. For example:

- An area may lack functionality if no public toilet is provided;
- A building used to provide services to senior citizens that is not fitted with grab rails or wheelchair access would be lacking in functionality;
- Ongoing occurrences of roads congestion or subway congestion could suggest a lack of capacity; and
- Stormwater mains filled with roots or other debris may impact capacity.

Both functionality and capacity attributes are often derived from other attributes. For example, the functional adequacy of a road or sidewalk, may be related to its width dimension, its surface material, or both in comparison to the desired size and material of a road or sidewalk as defined by the municipality.

Functionality and capacity attributes support asset management planning as they relate to the ability of the asset to provide the defined desired levels of service. Long-term planning should include actions required to correct functionality and capacity issues, if expected levels of service indicate that corrections are needed. The degree and level of the functional or capacity issue will often be used to prioritize asset rehabilitation, replacement, upgrade/expansion, or the creation of new assets.

The table below provides some examples of functionality and capacity attributes:

Table 3-6
Sample Capacity/Functionality Attributes

Asset Type	Capacity	Functionality
Roads Related	Road Width Road Standard (i.e. urban vs. rural) Available Sidewalks Available Streetlights	Comfort/Amenity Accessibility Usability Environment
Bridges and Major Culverts	Load Limit Bridge Width	Comfort/Amenity Accessibility Usability Environment
Water, Wastewater, and Stormwater	Pressure/Flow Rate Interconnection/Distribution Future Demand Size (diameter) and Depth	Risk of Damage Public Rating Factor Properties Service Ratio Pressure/Flow Rate

Asset Type	Capacity	Functionality
	Gravity Factor	
Buildings and Facilities	Bathroom Availability Parking Spots Room Layout Available Storage Sports/Fitness Availability	Comfort/Amenity Accessibility Usability Environment
Vehicles, Machinery, and Equipment	Available Power Available Storage – People Available Storage – Cargo	Comfort/Amenity Accessibility Usability
Land Improvements	Usable Area Number of Benches/Picnic Tables Limited Parking Spots	Comfort/Amenity (Public Toilets) Accessibility Usability Environment
Solid Waste	Available Landfill Volume Recycling Volume Roadside Collection Volume	Environment Diversion Percent Number of Complaints

The following is an example of a functionality assessment matrix that can be used to assess functionality across municipal buildings. This type of analysis can be used in assessing levels of service.

Table 3-7
Sample Functionality Assessment Matrix

Functionality		Bldg. 1	Bldg. 2	Bldg. 3	Bldg. 4	Bldg. 5
Indicator	**Aspects Considered**					
Accessibility	Location Hrs of Operation Design, Disabled Access	✓	✓	✓	✓	✓
Accommodation	Fit for Purpose	X	✓	✓	X	✓
Room Layout	Fit for Purpose	✓	✓	✓	✓	✓
Circulation Spaces	Suitability and Adequacy	✓	✓	✓	✓	✓
Temporary Storage	Location Quantity and Suitability	X	✓	✓	✓	✓
Permanent Storage	Location Quantity and Suitability	✓	✓	✓	✓	✓
Acoustics	Adequacy – Internal and External	X	✓	✓	✓	✓
Fixed Joinery Items	General Condition Quality and Quantity	✓	✓	✓	✓	✓

Functionality		Bldg. 1	Bldg. 2	Bldg. 3	Bldg. 4	Bldg. 5
Indicator	**Aspects Considered**					
Fittings and Furniture	General Condition Quality and Quantity	X	✓	✓	✓	✓
Fixed Appliances	General Condition Quality and Quantity	✓	✓	✓	✓	✓
Window Coverings	General Condition Quality and Quantity	X	✓	✓	✓	✓
Signage	Location Quality and Appropriateness	✓	X	✓	✓	✓
Technology	Access to IT Automation, etc.	X	X	✓	✓	✓
Car Parking	Availability Suitability	✓	X	✓	✓	✓

Maintenance Attributes

Maintenance attributes relate to the maintenance of assets throughout their lifecycle. This can include responsibility (owner, manager, etc.), inspection and/or testing schedules, work identified (defects), programmed work, work status (pending, outstanding or completed). In the event that the municipality has a maintenance management system, this data would be integrated into that system (see Chapter 9). Maintenance attributes can be useful in determining an asset's condition, especially with assets that are difficult to assess (i.e. water mains, wastewater force mains, and difficult to access stormwater mains). It can also be useful in establishing future maintenance needs within the asset management process.

Predictive Attributes

Predictive attributes allow future behaviour of assets to be predicted. These would include deterioration curves and treatment effect details. These enable the future state of an asset to be predicted. Attributes used for valuation such as useful life, remaining useful life, and age are often also included here.

In summary, the table below provides examples of individual asset attributes for various attribute types:

Table 3-8
Sample Individual Asset Attributes

Attribute Type	Attribute Examples		
Identification, description, and location	Asset ID Street Address	Asset Name GIS ID	Parent Address
Classification	Asset Class Significance	Asset Type Heritage	Hierarchy Ownership
Physical	Detailed Descriptors Materials	Structural Details	Manufacturer
Financial	Historical Cost Age Consumption Pattern Renewal/Betterment	Replacement Cost Useful Life (UL) Maintenance Costs	Net Book Value Remaining UL Amortization Rate
Condition	Date of Assessment	Method of Assessment	Rating
Risk	Risk Type Consequence of Failure	Exposure Date of Assessment	Probability of Failure
Functionality and capacity	Expected LOS	Measured LOS	
Maintenance	Responsible Person Programmed Work	Inspection Schedule Work Status (pending, outstanding, or complete)	Work Identified
Predictive	Deterioration Curves	Treatment Effect Details	

The table below outlines some basic attributes that may be seen for different asset categories or types:

Table 3-9
Sample Basic Attributes

Asset Type	Attribute Examples		
Roads	Road Name Length Road Type	“From” Street Width	“To” Street Material Type
Bridges	Bridge Name Length	Location (street) Width	Structure Type
Stormwater	Road Name Length	“From” Street/Node Diameter	“To” Street/Node Pipe Material
Water System	Road Name Length	“From” Street/Node Diameter	“To” Street/Node Pipe Material
Wastewater	Road Name Length	“From” Street/Node Diameter	“To” Street/Node Pipe Material
Facilities	Address Number of Floors	Material Type Dimensions	Square Footage

Asset Type	Attribute Examples		
Solid Waste	Address	Odour Factor	Diversion %
Equipment and Vehicles	Vehicle Number	Department	Insurance Information
Land Improvements	Address	Material Type	Quantity

3.3.3 Asset Level of Detail

The level of asset componentization and segmentation should reflect how the organization manages its assets. Having the right level of detail allows for more informed AM decisions.

How are your assets broken down into components?

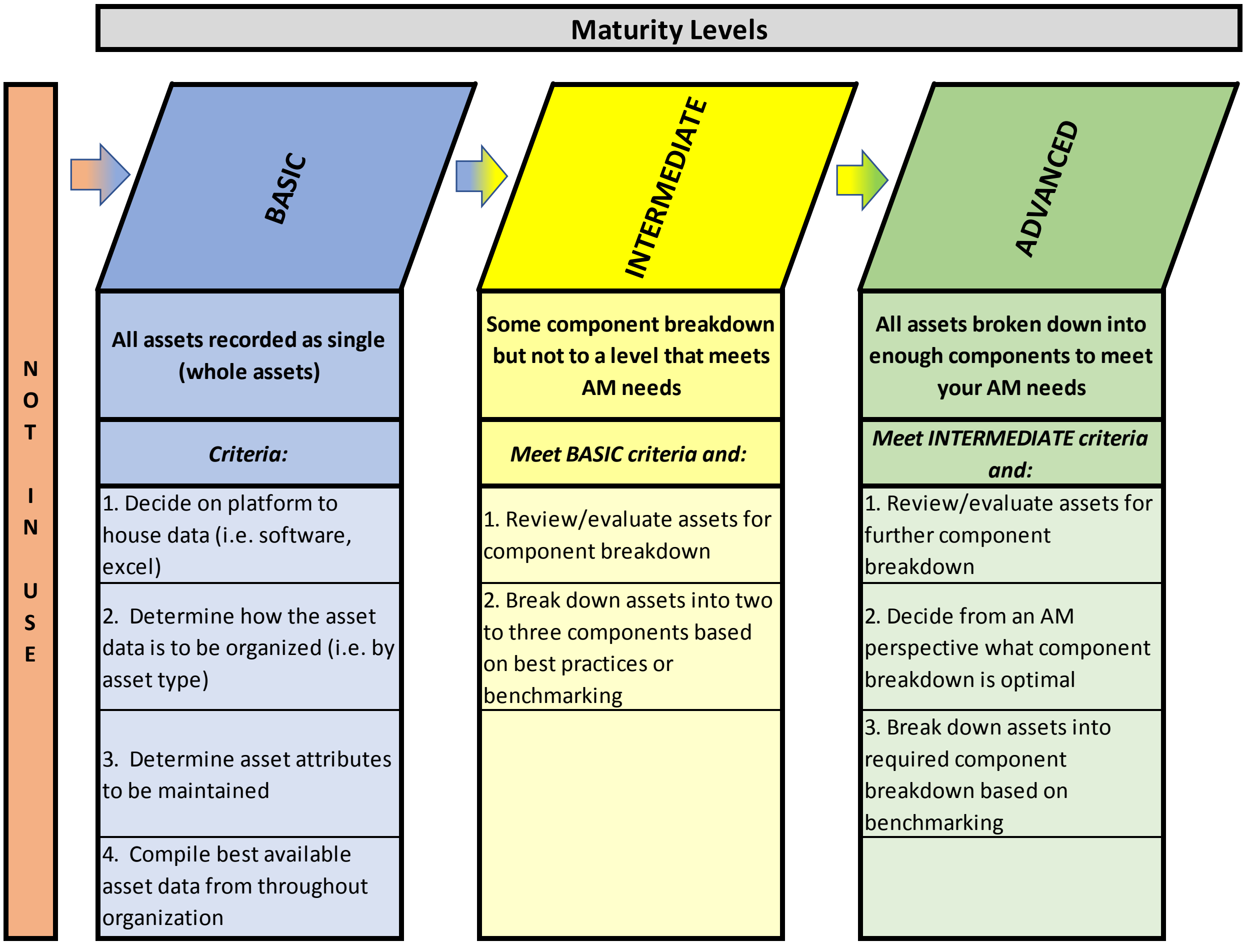
Background

Identifying the level of asset detail to be recorded is a key to successful asset management. Insufficient or inaccurate data does not provide reliable inputs for decision making and reporting, while excessive data often creates confusion and leads to the data becoming unused and poorly maintained.

A good starting point for determining an appropriate level of detail is to identify how data is to be used and what level of detail is required for that use from a component perspective. (e.g. if an asset is to be managed and costed at a whole asset level there is probably little value in capturing condition data at a component level.)

Levels of Maturity – Asset Components

How are your assets broken down into components?



At the **basic level of maturity**, municipalities record all assets as single assets (whole assets). The steps to attain this level are: first, determine where the asset information will be housed; second, determine how the asset data will be organized within the asset register, and which asset attributes will be maintained; and third, gather the necessary information to populate the asset register from various sources within the organization.

At the **intermediate level of maturity**, some component breakdown is undertaken, but not to a level that meets all asset management needs. In order to move to the intermediate level, municipalities will need to review and evaluate their assets to determine which types or categories should be broken down into components (focusing on more complex assets such as buildings and roads). At this level, it would be expected that these assets may be broken down into some components, based on best practices or benchmarking. Once components are created, they are treated as individual assets that relate to the overall whole asset.

At the **advanced level of maturity**, all assets are broken down into enough components to meet the municipality’s asset management needs. Again, a review and evaluation would be completed to identify assets for further breakdown. This evaluation would be undertaken from an asset management perspective to determine the optimal level of component breakdown for all assets.

Use of Asset Components

The decision to break down an asset and maintain it at a component level will be based on the benefits this approach versus the cost to collect and maintain the data by the municipality. Complex assets (such as treatment plants, roads, and facilities) are often maintained at the component level to facilitate more accurate service delivery cost information. This occurs because major components have their own expected useful life that can be significantly different than the whole asset’s useful life. Similarly, the individual major components may also have significantly different useful lives from each other. This difference in components’ useful lives may then require replacement at different intervals during the life of the overall complex asset. By separately maintaining component data, important attributes such as replacement cost, risk/criticality, condition, and functionality/capacity can be tracked and made readily available for each component. Thus, a more accurate service delivery cost is developed with the use of components for certain assets.

The following tables provide examples of various assets being broken down into key components as well as examples of asset categorizations and classes.

Table 3-10
Sample Asset Classes/Categories/Components – Roads

Parent Asset	Classification	Road Type	Class*	Ward	Asset	Component Asset
Roads	Urban	Local	Class 1	Ward 1	Road 1	Surface
			Class 2	Ward 2	Road 2	Base
		Collector	Class 3	Ward 3	Road 3	Curb
	Rural		Class 4	Ward 4	Road 4	Sidewalk
		Arterial	Class 5	Ward 5	Road 5	Guard Rails
			Class 6	Ward 6	Road 6	Streetlights

* Minimum Maintenance Standards

Table 3-11
Sample Asset Classes/Categories/Components – Bridges

Parent Asset	Classification	Road Type	Class*	Ward	Asset	Component Asset
Bridges	Urban	Local	Class 1	Ward 1	Bridge 1	Surface
			Class 2	Ward 2	Bridge 2	
		Collector	Class 3	Ward 3	Bridge 3	Deck
	Rural		Class 4	Ward 4	Bridge 4	Structure
		Arterial	Class 5	Ward 5	Bridge 5	Rails
			Class 6	Ward 6	Bridge 6	

* Minimum Maintenance Standards

Table 3-12
Sample Asset Classes/Categories/Components – Buildings

Parent Asset	Department	Service	Ward	Asset	Uniformat Level 1	Uniformat Level 2
Buildings	Dept. 1	Service A	Ward 1	Building 1	Substructure	Foundations
						Basement Constr'n
			Ward 2		Shell	Superstructure
				Building 2		Exterior Enclosure
			Ward 3			Roofing
		Service B			Interiors	Interior Constr'n
			Ward 4	Building 3		Stairs
						Interior Finishes
			Ward 5		Services	Conveying
	Dept. 2	Service C		Building 4		Plumbing
			Ward 6			HVAC
						Fire Protection
			Ward 7	Building 5		Electrical
		Service D			Equipment and Furnishings	Equipment
			Ward 8			Furnishings
				Building 6	Special Constr'n / Demo.	Special Constr'n
			Ward 9			Selective Building Demolition

Table 3-13
Sample Asset Classes/Categories/Components – Water/Wastewater Facilities

Parent Asset	Classification	Ward	Asset	Component Asset
	Water	Ward 1	Building 1	Process Equipment

Parent Asset	Classification	Ward	Asset	Component Asset
Water and Wastewater Buildings				Process Electrical
		Ward 2	Building 2	Process Instrumentation
		Ward 3		Process Piping
	Wastewater	Ward 4	Building 3	Building and Process Structural
		Ward 5	Building 4	Building Architectural
		Ward 6		Building Services

Table 3-14
Sample Asset Classes/Categories/Components – Environmental Linear Assets

Parent Asset	Classification	Ward	Main ID	Component Asset
Water, Wastewater, and Stormwater Linear Assets	Water	Ward 1	Main 1	Main
		Ward 2	Main 2	
	Wastewater	Ward 3	Main 3	Service Connection
		Ward 4	Main 4	
	Stormwater	Ward 5	Main 5	Manholes
		Ward 6	Main 6	

Table 3-15
Sample Asset Classes/Categories/Components – Solid Waste

Parent Asset	Ward	Address	Component Asset
Solid Waste	Ward 1	Address 1	Collection Vehicles
	Ward 2	Address 2	
	Ward 3	Address 3	Scales
	Ward 4	Address 4	
	Ward 5	Address 5	Sorting Equipment
	Ward 6	Address 6	

Table 3-16
Sample Asset Classes/Categories/Components – Vehicles/Machinery/Equipment

Parent Asset	Classification	Ward	Address	Component Asset
Vehicles, Machinery, and Equipment	Roads	Ward 1	Address 1	Main Vehicle/Mach., Equipment
		Ward 2	Address 2	
	Fire	Ward 3	Address 3	Motor
		Ward 4	Address 4	
	Parks	Ward 5	Address 5	Detachable Components
		Ward 6	Address 6	

Table 3-17
Sample Asset Classes/Categories/Components – Land Improvements

Parent Asset	Classification	Ward	Address	Component Asset
	Roads	Ward 1	Address 1	

Parent Asset	Classification	Ward	Address	Component Asset
Land Improvements		Ward 2	Address 2	Parking Lots: Surface, Base
	Fire	Ward 3	Address 3	Playground Structure: By Piece of Equipment
		Ward 4	Address 4	
	Parks	Ward 5	Address 5	Fencing: Use of Fence "Segments"
		Ward 6	Address 6	

It is important to note, however, that there may be other opportunities to break down a whole asset into its components. Each municipality must assess its asset-related needs, and make appropriate determinations based on how the assets are actually operated and maintained. In general, it would be advantageous to organize an asset's data into components when:

- The components of a single whole asset have significantly different useful lives from each other;
- The assets are operated and maintained more at a component level;
- Asset condition differs from one component to another; and
- The cost or risk of failure of the components is significant enough to warrant separate tracking.

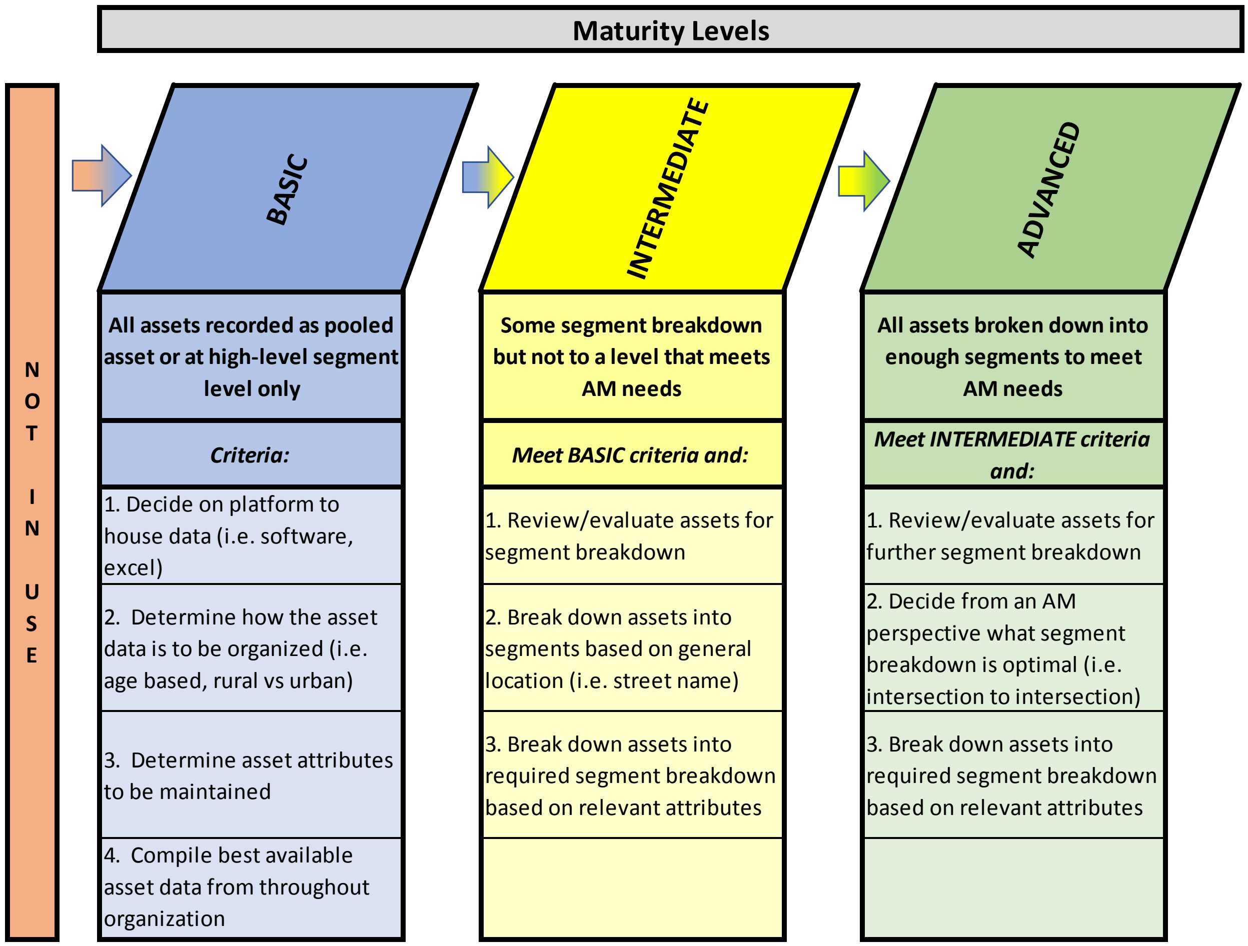
How are your assets broken down into segments (i.e. Roads, Water, Storm, Wastewater)?

Background

The optimal level of linear asset segmentation is another factor to consider when determining the appropriate level of asset detail (i.e. for roads, water mains, wastewater mains and storm mains). Determining the level of segmentation is a process that is somewhat similar to determining the level of asset component breakdown. Both require a cost/benefit analysis to determine what makes sense for each specific municipality.

Levels of Maturity – Asset Segmentation

How are your assets broken down into segments (i.e. Roads, Water, Storm, Wastewater)?



At the **basic level of maturity**, municipalities record all assets as single assets (whole assets) or through some type of pooling approach. An example would include pooling roads by year of construction. The steps to attain this level are:

1. Determine where the asset information will be housed;
2. Determine how the asset data will be organized within the asset register; and
3. Ascertain which asset attributes will be maintained.

From this point, the municipality will be in a position to gather the necessary information from various sources within the organization.

At the **intermediate level of maturity**, some segmentation is undertaken but not to a level that meets asset management needs. Asset pooling would be minimal for linear assets. To successfully advance to the intermediate level, municipalities will first need to review and evaluate their assets to determine which should be broken down into segments. At this level, it is expected that assets may be broken down into segments based on general location (i.e. by street name) and by age (year of construction).

At the **advanced level of maturity**, all assets are broken down into enough segments to meet asset management needs. A review and evaluation should be completed to identify assets for further segmentation. This evaluation is undertaken from an asset management perspective to determine the optimal level of segmentation (i.e. intersection to intersection, or GIS node to node). At the advanced level of maturity, municipalities may make use of shorter and clearly identifiable segments.

Use of Asset Segmentation

The collection of data for linear or network-related assets such as roads, water, wastewater, and stormwater systems will typically include length, unit of measure and location (start and end points). This information provides the opportunity to identify and track network assets based on logically determined “segments”. The determination of the basis for segmentation will hinge upon how the municipality’s data is arranged. Common examples of asset segmentation include:

- By intersection;
- By length (i.e. every 500 meters);
- By GIS node; and/or
- By age/condition (Since different segments of linear assets are constructed, or replaced at different times, it is usually advantageous to track these segments separately).

By using a segmentation approach, a municipality will have a more accurate and detailed breakdown of network or linear related assets. The advantages of using segments includes the ability to document betterments and replacements more accurately (i.e. limit the instances where segments are partial replaced or improved). However, there are disadvantages related to the need to maintain more assets within the asset register.

Once again, the municipality must consider its asset management needs when deciding whether to apply segmentation to a linear asset category. As discussed earlier, the municipality should attempt to break down its assets based on how they are operated and maintained.

3.3.4 Asset Costs

Realistic asset cost estimates enable more accurate costing of asset needs. To ensure the asset costings remain realistic municipalities should establish a process for continuous or periodic updates.

How is replacement cost determined?

Background

Asset costs are not only a requirement in asset record keeping, but also of great benefit to municipalities in asset management planning and other areas. Costs take many forms, including:

- **Historical cost:** The original cost to purchase or construct the asset, which is typically only used for accounting purposes; and
- **Current cost:** The cost of the asset in today's dollars, which can represent:
  - **Reproduction cost:** The current cost of the asset in place today; and
  - **Replacement cost:** The current cost of the asset with which you intend to replace an existing asset.

Accurate costs assist asset managers with external reporting needs, as well as making long-term asset management and financial management decisions. They provide an understanding of the asset investment level and allow staff to allocate costs and plan for maintenance, rehabilitation, and replacements.

Levels of Maturity – Replacement Cost

How is replacement cost determined?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Reproduction cost primarily based on inflated historical cost and/or high-level estimates from credible sources	**Some use of replacement cost and some reproduction cost, based on credible sources (i.e. minimal reliance on inflated historical cost)**	**Replacement cost utilized throughout, based on credible sources**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Ensure historical cost and year of purchase or construction is recorded	1. Use credible replacement cost data, where available, through development of a list of benchmark costs or whole costs	1. Consider replacement cost sources such as internal benchmark data (i.e. past invoices) and external benchmark data (i.e. local municipalities or Ontario)
	2. Use appropriate cost index to inflate historical cost to an estimated reproduction cost.	2. For assets missing a replacement cost, use appropriate cost index to inflate historical cost to estimate reproduction cost	2. Develop a master list of benchmark costs and whole value replacement costs that can be linked or imported into the asset register based on asset attributes
	3. Review reproduction costs for accuracy, substituting other costs, as available (i.e. insurance costs)	3. Review costs for accuracy, substituting other costs, as available (i.e. insurance costs)	3. Review costs for accuracy, adjusting the master list of replacement costs, as necessary

At the **basic level of maturity**, municipalities determine current cost by using reproduction cost estimates, based on inflating historical cost to current year cost using relevant inflation indices. To perform these calculations municipalities will first require, as a minimum, the historical cost of their assets and the year of acquisition/construction. Second, municipalities will require an appropriate cost index to be applied to inflate historical cost to current year costs. Statistics Canada maintains many historical cost indices that are relevant including CPI (for purchased assets such as equipment, machinery, vehicles, etc.) and NRCPI (for construction related assets such as roads, water, wastewater, facilities, etc.). It is recommended that the resulting reproduction costs are reviewed for accuracy with consideration given to substituting other available costs (i.e. engineering estimates, insurance), if deemed more appropriate.

At the **intermediate level of maturity**, municipalities make more use of replacement cost estimates for future cost purposes, and supplement replacement costs with reproduction cost (from credible sources) where necessary. Inflated historical cost use is minimized wherever possible. The use of credible sources for replacement cost, through the development of benchmark costs or whole asset cost estimates is undertaken. For assets with no available replacement cost information, reproduction cost estimates are used. It is recommended that resulting replacement/reproduction costs be reviewed for accuracy with consideration to substituting other available costs (i.e. engineering estimates, insurance), if deemed more appropriate.

At the **advanced level of maturity**, municipalities use replacement cost exclusively, based on credible and supportable sources. This requires the municipality to have in place a process to find and document replacement cost sources (i.e. internal sources, such as past tenders and invoices; and external sources, such as benchmark costs from comparable municipalities or the province). This master list of benchmark costs and whole value replacement costs should be linked to or imported into the asset register based on asset attributes (i.e. road length or road square metres). It is recommended that the resulting replacement costs be reviewed to ensure an appropriate level of accuracy.

Definition of Asset Cost

PSAB 3150 states that the historical cost of an asset should include "all costs directly attributable to the acquisition, construction or development of the tangible capital asset. This includes installing the asset at the location and in the condition necessary for its intended use. Examples of directly attributable costs include:

- Asset purchase or construction;
- Site preparation costs;
- Initial delivery and handling costs;
- Installation and assembly costs;
- Costs of testing that the asset is functioning properly prior to, or during, installation;
- Professional fees (e.g. design, legal, etc.); and
- Other (e.g. service continuity costs).

The term "directly attributable" is the key to determining whether a cost can be allocated to a tangible capital asset" from a historical cost perspective. While this term is related to determining the historical cost of an asset, the same guideline can be applied in determining the asset's current cost for asset management purposes. If a municipality only includes an asset's purchase or construction cost in the determination of current cost the cost will be underestimated, as it is ignoring the other costs that are directly attributable to making the asset "service ready". Therefore, when determining current cost, a municipality should be mindful of all costs involved in getting the asset ready to be used and put into service.

Current Estimates of Future Costs

There are a number of methods available to determine the current cost of a capital asset. Current valuation for different capital assets may require varied approaches depending on availability of costing information, and complexity of the calculation itself. The use of benchmarking costs can be very useful in this regard. Benchmarking costs can be internally calculated, or retrieved from external sources such as neighbouring municipalities, industry publications/experts, online searches, and buyers' guides. The following are various methods of determining current cost:

- **Inflated historical cost:** The historical cost of an asset, as used for PSAB 3150 purposes, inflated to current year dollars using some type of construction or consumer price index (i.e. from Stats Can or MFOA);
- **Insured cost:** The current cost of an asset as identified by insurance appraisal;
- **Reproduction cost:** The cost of reproducing an asset in substantially identical form, often referred to as like-for-like, since it does not attempt to take into account impacts on costs such as changes in technology or construction methods; and
- **Replacement cost:** The cost of the asset intended to replace an existing asset. It attempts to take into account changes in technology, as well as the municipality's expected levels of service.

The methods of determining current cost described above vary in terms of complexity and level of accuracy. In determining a reproduction or replacement cost, source costs or benchmark costs can be derived from external sources (i.e. other municipalities or provincial averages) or from internal sources (i.e. recent tender pricing). The following list of approaches is presented in order of accuracy for determining current valuation:

1. **Replacement Cost – Internal Benchmark Cost:** This method is most accurate since it relates to the cost of the asset being purchased or constructed, and it takes into account any specific local cost factors for the municipality. A good

source of information for internal benchmark costs would be from recent tender results or capital project progress payments.

2. **Replacement Cost – External Benchmark Cost:** This method provides the cost of the asset being purchased or constructed but will not necessarily consider specific cost factors existing for the municipality.

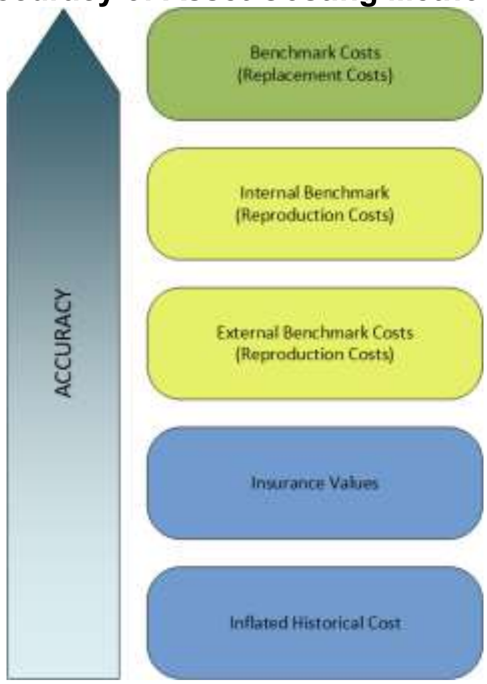
3. **Reproduction Cost – Internal Benchmark Cost:** This method will provide a cost to reproduce the existing asset in its current form, taking into account any specific local cost factors for the municipality.

4. **Reproduction Cost – External Benchmark Cost:** This method will provide a cost to reproduce the existing asset in its current form, but will not necessarily consider specific cost factors existing for the municipality.

5. **Insurance Cost:** Replacement costs for insurance purposes are estimates based on factors and inputs that may be quite different than those required for asset management costing purposes. Again, caution should be exercised before considering this method of current valuation.

6. **Inflated Historical Cost:** This method can be easier to perform, but caution is advised when considering the result. Current valuation, undertaken in this manner, is predicated on many assumptions used when determining historical cost, and also relies on inflationary cost indexes as being accurate. For example, assets purchased in the past may have completely different attributes than currently available comparable assets or may have been constructed using methods/materials that have undergone significant change over the years. In addition, there are numerous available rates of inflation that could be applied in the calculation, and the alternative applications will impact on the final result.

Figure 3-2
Accuracy of Asset Costing Methods



Some examples of benchmark costs are shown in the table below:

Table 3-18
Sample Benchmark Costing Methods

Benchmark Costs		
Service Area	**Asset Type**	**Examples**
Roads	Roads	$/Linear Metre
		$/m^2
Bridges	Bridges	$/Bridge Type per Span
Stormwater	Stormwater Main	$/m by Diameter
Solid Waste	Landfill	$/Item by Type
Water	Water Main	$/m by Diameter
Wastewater	Wastewater Main	$/m by Diameter
Buildings	Buildings	$/ft^2
Equipment and Vehicles	Equipment and Vehicles	$/Item by Type
Land Improvements	Fencing	$/m
	Land Improvements	$/Item by Type

Do you have documentation in place to determine when and how current values (i.e. replacement costs) are updated?

Background

As noted in the previous section, there are a number of alternative methods to determine replacement costs. Once replacement costs have been initially determined, a process should be put into place to update replacement costs on a regular basis. New or better information can come to light that can significantly affect currently recorded replacement costs. In addition, inflation can play a role in valuation adjustments. Since replacement costs can come from various sources, documentation of the frequency and recommended sources of replacement costs should be created and put in place.

Levels of Maturity – Replacement Cost Documentation

Do you have documentation in place to determine when and how current values (i.e. replacement costs) are updated?

	Maturity Levels		
NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	No documentation in place but informal processes followed on an ad hoc basis	**Documentation in place that is somewhat followed on an ad hoc basis**	**Complete policy in place that is followed**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. At a staff level, determine when replacement costs values are to be updated (i.e. by asset categories)	1. Review best practices in regards to how and when to update replacement cost values	1. Formalize documentation into municipal policy
	2. For each asset category determine how replacement cost values are to be updated (i.e. inflation, benchmark, study)	2. At a staff level, document how and when replacement costs are to be updated by asset category	2. Put policy into practice
		3. Documentation utilized as a general guide	3. Periodically review policy to ensure it continues to meet the needs of the municipality

At the **basic level of maturity**, municipalities may have no documentation in place to outline the cost process. Instead, costing is undertaken in an informal way, typically on an ad hoc basis. At a staff level, it would be determined when current costs would be updated (i.e. by asset category), and by what methodology.

At the **intermediate level of maturity**, municipalities have a costing process documented and in place, however it may only be followed on an ad hoc basis. It is recommended that when putting a process in place, municipalities review best practices and applicable legislation related to the timing and methodologies of asset valuation. This provides an opportunity for staff to prepare the valuation process with best practices and legislative requirements in mind. However, at the intermediate level of maturity, the documentation, once completed, may not be fully used as intended.

At the **advanced level of maturity**, a complete costing policy will be put in place and be followed consistently by staff. This requires municipalities to formalize the costing process into a policy with appropriate approval processes. The policy is put into practice with periodic reviews to ensure it is still meeting the needs of the municipality.

Updating Current Estimates of Future Costs

Updating estimates of future costs can be completed using different methodologies and at different time intervals. For example, a municipality may perform a formal update of benchmarking costs for an asset type once every five years. In the intervening years, using appropriate construction or consumer related inflationary adjustments can be considered (see table below). A municipality may also decide to undertake formal updates on current costs on a more frequent basis for high risk/critical assets, or for assets with legislated requirements to perform assessments on a more frequent basis (i.e. bridges).

Table 3-19
Sample Timeline for Updating Benchmark Costs

Year					
0	1	2	3	4	5
Benchmarking Costs Updated	Inflationary Factor Applied	Inflationary Factor Applied	Inflationary Factor Applied	Inflationary Factor Applied	Benchmarking Costs Updated

3.3.5 Condition Assessments

Asset condition ratings that accurately reflect the health of the asset portfolio are an integral element of an asset register. Developing formal policies on the methods and frequency of updating asset conditions ensures consistent and reliable information.

What sources of information are used to assess asset condition?

Background

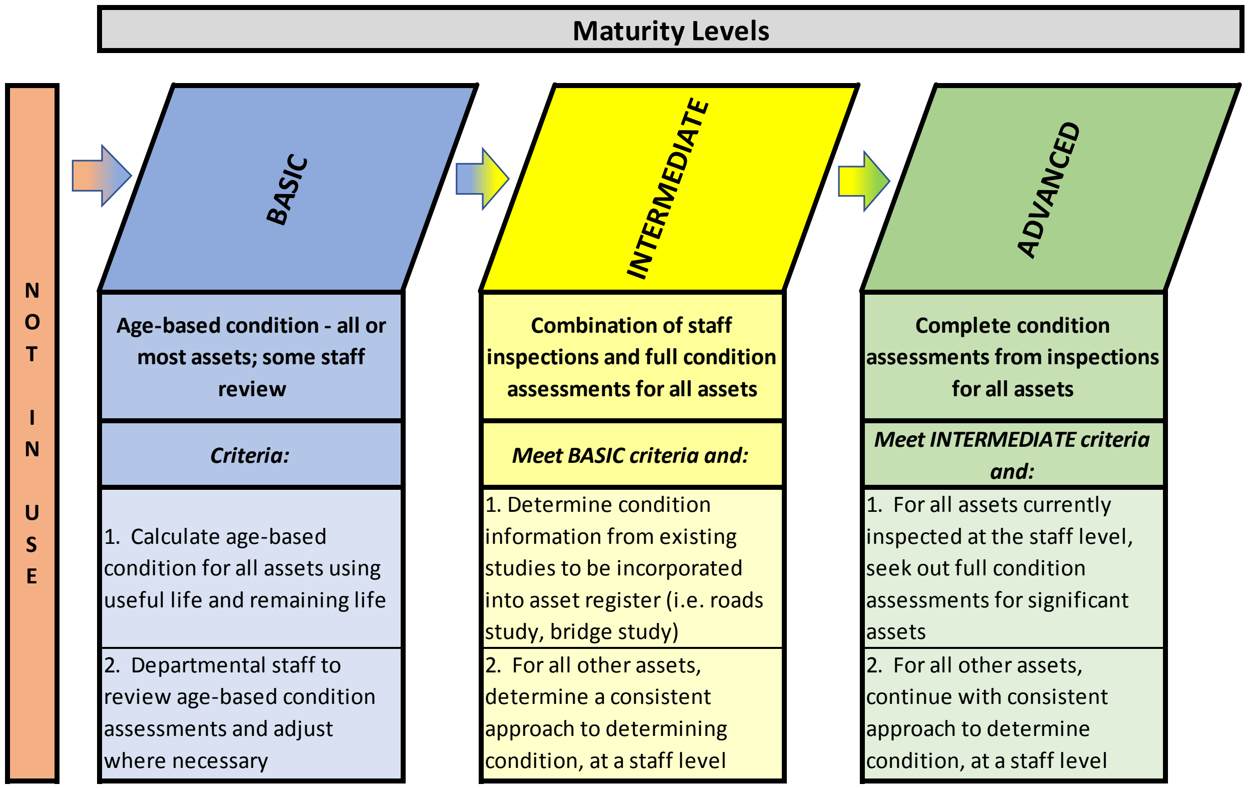
The physical state or health of an asset is defined by its condition rating. Condition measures provide information about where an asset is in its overall life cycle. Condition ratings are also considered a more accurate attribute to be used in making asset decisions, in comparison to an age-based approach.

Asset condition is measured in order to:

- Identify and plan for treatments that maximize asset life, avoid unplanned failures, and maintain service levels;
- Be able to assess the remaining useful life of an asset;
- Enable long-term financial planning based on asset deterioration and renewal needs; and
- To comply with statutory and regulatory requirements (where applicable).

Levels of Maturity – Condition Assessment

What sources of information are used to assess asset condition?



At the **basic level of maturity**, municipalities rely on age-based condition ratings for all or most assets, although some adjustments are expected based on staff review. This process includes the calculation of each asset's remaining useful life and how the result compares to that asset's total useful life. This relationship would drive the determination of each particular asset's condition rating. For example, an asset at the end of its life would have a condition rating of 'poor', or 0/5 or 0/10, whereas an asset at the beginning of its life would have a condition rating of 'very good' or 5/5 or 10/10. Staff could review the resulting condition assessments and adjust, where necessary, based on asset knowledge.

At the **intermediate level of maturity**, municipalities engage in a combination of staff inspections and full condition assessments for all assets. Condition information would be sourced from existing studies (i.e. roads studies, bridge studies, etc.) and incorporated into the asset register. For other assets, staff would follow a consistent approach to determining condition based on visual or full inspections.

At the **advanced level of maturity,** complete condition assessments by inspection of all assets are undertaken. This entails the use of full condition assessments for all significant assets with staff following a consistent approach to determine condition for the remaining assets.

Condition Assessment Approaches and Examples

There are different approaches to assessing the condition of assets. Also, there are different factors to consider when choosing a condition assessment method for each asset type.

Generally, condition assessment methods fall under the following headings:

1. **Age-Based:** Using the asset's age in relation to useful life, make an estimation of where the asset is in its life cycle. This method provides a similar result to an age-based asset analysis.
   Example***:*** *An asset has a useful life of 60 years, and is 50 years old. The age based condition rating is: (60 – 50) / 60 = 17% of maximum condition (i.e. 1.7/10)*

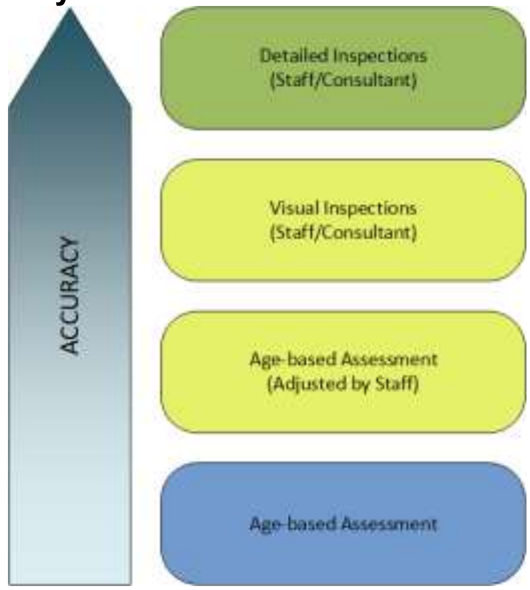
2. **Age-Based with Adjustments by Staf**f: Similar to age-based assessments, however, the municipality's staff would review the results and make amendments where deemed appropriate.
   Example***:*** *An asset has a useful life of 60 years, and is 50 years old. The age-based condition rating is: (60 – 50) / 60 = 17% of max condition (i.e. 1.7/10). Public Works staff have decided to adjust the condition score from 1.7 to 5.0 due to their knowledge of the asset and how it has been maintained. This may result in delaying scheduled replacement by several years.*

3. **Visual Inspection:** This can be undertaken by municipal staff or consultant. A visual inspection of each asset is used to determine an overall condition rating.

4. **Detailed Inspection:** Again, this can be undertaken by municipal staff or consultant, and standard engineering practices should be applied. The inspection moves beyond visual, and includes other factors such as functionality and testing.

The following diagram outlines how the level of condition assessment accuracy increases based on the type of assessment performed.

Figure 3-3
Accuracy of Condition Assessment Methods



The method of condition assessment is often determined by asset type. For example, if the asset is easily accessible and identifiable, a visual inspection may often be an appropriate method of condition assessment. This may apply to assets such as road surface related assets, bridges, buildings, furniture and equipment. A visual assessment may also be completed using digital imaging. Road condition data is increasingly being assessed using digital imaging, with the condition assessed off-site using the images. Similar techniques are also used to inspect hard to access areas of large buildings and structures.

For assets that are difficult to inspect (e.g. buried assets such as water and wastewater mains), physical inspection may not be possible. In such cases, condition is often derived from the asset age, maintenance records, or CCTV inspections (if possible). A sample may be inspected and the results extrapolated to the remainder of the network. For assets such as road bases, frequently consultants will perform tests and drill bore holes into the base to determine condition. Past maintenance data, including repair/breakdown/deficiency data of assets being assessed can be taken into account, as well.

For some assets such as pumps and other machinery, constant monitoring of factors such as pressure, temperature, and vibration will provide continuous condition data. The following table provides some examples of asset condition assessment factors:

Table 3-20
Sample Asset Condition Assessment Factors

<table>
<tr><th colspan="2">Rating</th><th>Condition Description</th></tr>
<tr><td colspan="2">Roads</td><td>Cracking – Linear, Transverse, Pattern
Rutting
Roughness (Ride)
Surface Texture – Flushing and Stripping
Asphalt Ravelling
Bitumen Oxidisation
Deformation
Skid Resistance
Deflection (Strength)
Joint Spalling (Concrete)
Joint Stepping (Concrete)</td></tr>
<tr><td colspan="2">Sidewalks</td><td>Trips (Steps)
Cracking</td></tr>
<tr><td colspan="2">Curbs</td><td>Cracking
Displacement (Vertical)
Displacement (Horizontal)
Rotation</td></tr>
<tr><td rowspan="4">Bridges and Major Culverts</td><td>Deck</td><td>Cracking
Expansion Joint Displacement
Deformation</td></tr>
<tr><td>Superstructure and Substructure</td><td>Cracking
Spalling
Corrosion
Deformation</td></tr>
<tr><td>Abutments/End Walls</td><td>Cracking
Spalling
Erosion (Undercutting)
Corrosion</td></tr>
<tr><td>Railings/Handrails and Barriers</td><td>Cracking
Spalling
Deformation
Accident Damage</td></tr>
</table>

Condition ratings can follow any scale and can be either quantitative or qualitative. Regardless of the condition rating scale used, it is recommended that municipalities remain consistent with that scale over all asset categories. Table 3-21 (below) provides some examples:

Table 3-21
Sample Condition Rating Scales

Quantitative Condition Scale	Qualitative Condition Scale
0 to 3 Scale 0 to 5 Scale 0 to 10 Scale 0 to 100 Scale	Poor, Average, Good (Equivalent to a 0 to 3 Scale). Very Poor, Poor, Average, Good, Very Good (Equivalent to a 0 to 5 Scale).

Actual condition data can take many forms, although as a general rule it is expressed in terms of:

- **Severity:** Measures how good/bad the asset condition is; and
- **Extent:** Measures how much of a particular distress or defect there is.

Some examples of condition measures commonly used for assets are shown below.

A basic condition rating scale:

Table 3-22
Sample Qualitative Condition Rating Scale

Rating	Condition Description
Poor	The asset exhibits obvious signs of deterioration and should either be monitored more closely or some form of intervention undertaken to improve the condition. The risk of failure is higher.
Fair	The asset is showing some signs of deterioration and may therefore require more attention but is still a moderate to low risk of failure.
Good	The asset shows little, if any, sign of deteriorations and should only require basic maintenance and upkeep. Very low risk of failure.

This scale is suitable for simple assets with low criticality. It is relatively easy to define and assess condition.

A slightly more detailed numeric scale based on severity of visible attributes:

Table 3-23
Sample Qualitative Condition Rating Scale – Severity

Rating	Condition Description
0	Asset Unserviceable
1	Renewal Required
2	Maintenance Required
3	Minor Defects Only
4	Very Good Condition
5	Brand New

Similar to above, this scale is suitable for simple assets with low criticality. It is relatively easy to define and assess condition.

A numeric scale based on “extent”:

Table 3-24
Sample Quantitative Condition Rating Scale – Extent

Rating	Condition Description
0	Cracking affecting > 40% of the Asset
1	Defect affecting between 20% and 40% of the Asset
2	Defect affecting between 10% and 20% of the Asset
3	Defect affecting between 5% and 10% of the Asset
4	Defect affecting < 5% of the Asset (length, area)
5	No Defect

This scale is suitable for simple or complex/linear assets, provides a reasonably simple method of assessment, and provides reasonable indication of treatment needs.

A numeric scale can also be associated with a severity scale such as the one below for cracking:

Table 3-25
Sample Quantitative Condition Rating Scale – Severity

Severity	Severity Description
Severe (X)	Cracks > 5mm
Moderate (M)	Cracks > 2mm < 5mm
Slight (S)	Cracks < 2mm

This approach results in a matrix as shown in the following table:

Table 3-26
Sample Severity/Extent Matrix

Severity	Extent 0	Extent 1	Extent 2	Extent 3	Extent 4	Extent 5
Severe (X)		X1	X2	X3	X4	X5
Moderate (M)		M1	M2	M3	M4	M5
Slight (S)	0	S1	S2	S3	S4	S5

Another combination of severity and extent is often used for all assets, in this case the percentage of the asset in each condition state for the numerical scale is reported:

Table 3-27
Sample Condition Rating Scale

%Condition 1	%Condition 2	%Condition 3	%Condition 4	%Condition 5	Total Condition
10%	15%	20%	35%	20%	100%

This table provides a good indication of the extent of remedial work required as well as combining to provide overall condition. This can also be used in the municipality's levels of service analysis (see Chapter 4).

Regardless of the type of condition information collected or which method of capture is used, it is essential to have an understanding of the accuracy of the data and its reliability/consistency. Different personnel (staff or consultants) may assess the condition of assets differently, even after training and using a standard method. For example, if three different consulting companies assessed the condition of a road, you could potentially receive 3 different rating approaches that cannot be compared to each other. Processes and approaches to determine condition ratings should be put in place to ensure a somewhat consistent approach that should be much less open to interpretation.

Prior to commencing the condition assessments, it is important to develop a strategy which outlines not only the approach, but also the timing and frequency to be used with completing condition assessments. Consideration should be given to:

- Assessment approach:
  - Identify how much useful life has been consumed;
  - Identify a condition (or multiple condition ratings) where some intervention is required to ensure the asset meets service standards (i.e. renewal, rehabilitation or maintenance); and
  - Indicate if the asset is in danger of service or physical failure.
- Use of condition information;
- Condition assessment collection options; and
- Costs and limitations of each method.

Do you have documentation in place to determine when and how condition assessments are updated?

Background

Condition assessments should be updated on a regular basis. In order to facilitate the planning of condition assessment updates, it is advisable to document the frequency and recommended methods for doing so.

Levels of Maturity – Condition Assessment Documentation

Do you have documentation in place to determine when and how condition assessments are updated?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	No documentation in place but informal processes followed on an ad hoc basis	**Documentation in place that is somewhat followed on an ad hoc basis**	**Complete policy in place that is followed**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. At a staff level, determine when condition assessments are to be updated (i.e. by asset categories)	1. Review best practices in regards to how and when to update condition assessments	1. Formalize documentation into municipal policy
	2. For each asset category determine how condition assessments are to be updated (i.e. staff adjustments, new studies)	2. At a staff level, document how and when condition assessments are to be updated by asset category	2. Put policy into practice
		3. Documentation utilized as a general guide	3. Periodically review policy to ensure it continues to meet the needs of the municipality, and that condition rating process is repeatable and consistent

At the **basic level of maturity**, municipalities may not have any documentation in place related to condition assessment processes. Rather, the condition assessment might be undertaken in an informal way, on an ad hoc basis, as needed. At a staff level, it might be determined when condition assessments would be updated (i.e. by asset category), as well as the methodology to be used.

At the **intermediate level of maturity**, municipalities have a documented process in place, but it may only be followed on an ad hoc basis. It is recommended that municipalities review best practices related to the timing and methodologies of condition assessments when putting documentation into place. Legislative requirements should also be consulted. Staff should prepare the documentation with best practices and legislative requirements in mind. However, at the intermediate level of maturity, the documentation, once completed, may not be fully used as intended.

At the **advanced level of maturity**, a complete condition assessment policy is put in place, and is followed by staff. This requires municipalities to formalize condition assessment documentation into a policy with appropriate approval processes. The policy in place should undergo periodic reviews to ensure it is still meeting the needs of the municipality.

Updating Condition Assessment Data

Condition assessments should be kept up to date within the asset register. The municipality will need to determine the desired level of detail to be tracked and frequency at which these assessments should take place. One approach is to hire a qualified consultant to undertake a formal condition assessment periodically (i.e. every 5 years) with staff performing assessments (i.e. visual inspections or adjustments) in the intervening years (see table below). This approach allows for more minor adjustments to condition assessments, with condition “resets” occurring on a frequent basis.

Table 3-28
Sample Timeline for Updating Condition Assessment

Year					
0	1	2	3	4	5
Assessment by Qualified Consultant	Assessment Reviewed by Staff	Assessment Reviewed by Staff	Assessment Reviewed by Staff	Assessment Reviewed by Staff	Assessment by Qualified Consultant

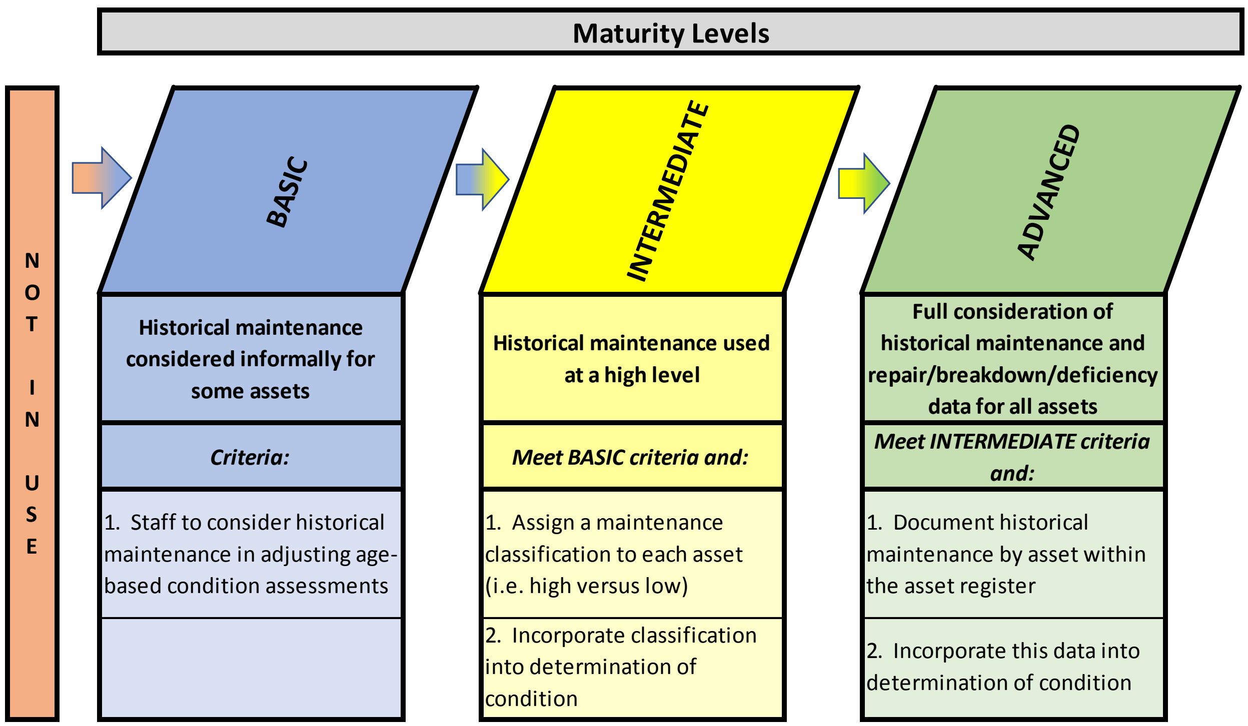
To what extent are the condition assessments impacted by historical maintenance (i.e. repair/breakdown/deficiency) data?

Background

Historical maintenance data is important to factor in when assessing asset condition. Historical maintenance includes any repairs, breakdowns or deficiencies. This data is especially useful for assets where assessing condition is a challenge, such as watermains.

Levels of Maturity – Condition Assessment and Historical Maintenance

To what extent are the condition assessments impacted by historical maintenance (i.e. repair/breakdown/deficiency) data?



At the **basic level of maturity**, municipalities informally consider historical maintenance for some assets. This would likely occur informally as staff reviewed age-based condition assessments (based on knowledge and professional judgement).

At the **intermediate level of maturity**, a more formal process may be in place but at a high level. For example, a maintenance classification may be assigned to each asset, such as ‘high’ versus ‘low’. This classification would be considered in the determination of each asset’s condition assessment.

At the **advanced level of maturity**, municipalities give full consideration of historical maintenance, repairs, breakdowns, and deficiencies in determining asset conditions. This will require the documentation of these events for each asset within the asset register. The impact of this data would then be part of the condition assessment process, through standard engineering practices.

Is there a process in place that ensures repeatability and consistency of condition ratings?

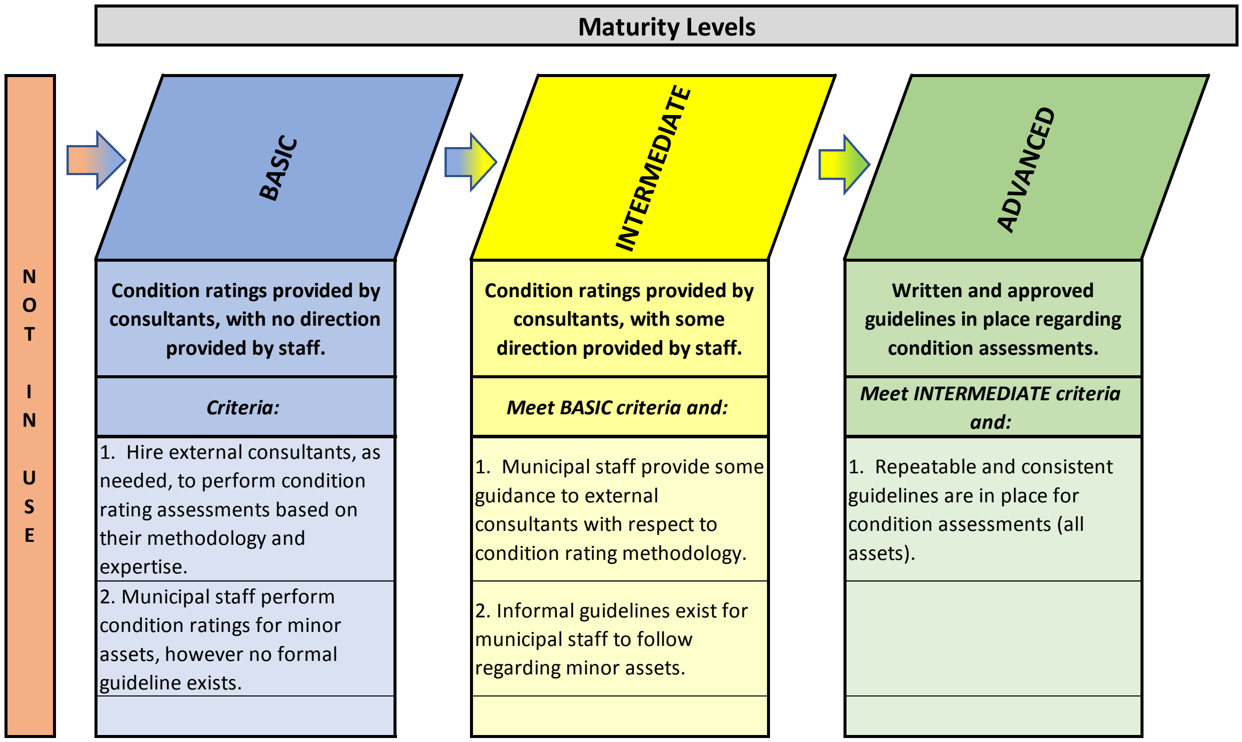
Background

The ability to make accurate decisions based on asset condition ratings is very much based on the accuracy of the condition ratings themselves. This can be difficult, with staff turnover within the municipality and within the consulting firms that may assist in conducting the condition assessments. In addition, a municipality may hire different consulting firms from one year to the next, based on a tender/proposal award process.

With different people conducting condition assessments over time for a municipality, the ability to complete a "trending analysis" on asset condition is difficult unless these condition ratings are conducted using a consistent and repeatable approach. Without this documented approach, an asset with a condition rating of "7" based on one consultant's calculations may not be consistent with a "7" for another consultant's calculations.

Levels of Maturity

Is there a process in place that ensures repeatability and consistency of condition ratings?



At the **basic level of maturity**, municipalities hire external consultants or have internal staff perform condition ratings, however how the condition ratings are determined is based on the professional expertise of the consultant/staff with no direction provided. Condition ratings are reviewed on a periodic basis with no formal process in place.

At the **intermediate level of maturity**, municipalities provide some direction to external consultants and/or internal staff members that are assisting with determining condition ratings. This can take the form of high-level direction or process regarding condition content or the methods used to determine condition ratings. This direction can be verbal or written and may not be followed on a regular basis.

At the **advanced level of maturity**, municipalities have written guidelines/procedures for calculating condition ratings for all assets. These guidelines ensure the repeatability and consistency of condition ratings, regardless of who is conducting them. The condition rating guidelines make up and approved component of the asset management planning process. Condition ratings are completed and verified to the guideline on a regular basis.

Consistency of Condition Ratings

For some assets, condition ratings can be legislated, such as the OSIM bridge inspections required every 2 years in Ontario. For other asset types, condition ratings may be more high level (i.e. vehicles). Regardless of the amount of effort or the level of detail required to conduct condition assessments, a consistent and repeatable methodology is needed. Documenting this methodology in a formal process ensures that consistency is maintained, even when staff turnover brings new employees into the condition assessment process.

Components of a consistent and repeatable condition assessment process:

- The assets being assessed as part of the methodology;
- The condition rating format (i.e. out of 5, 10 or 100);
- The calculation required to conduct the condition assessment (if applicable);
- Definition of variables and inputs within the calculation; and
- Definitions and examples of condition ratings, such as:
  - *"A 7 out of 10 is defined as…"*
  - *"The following picture illustrates an asset with a condition rating of 7/10".*

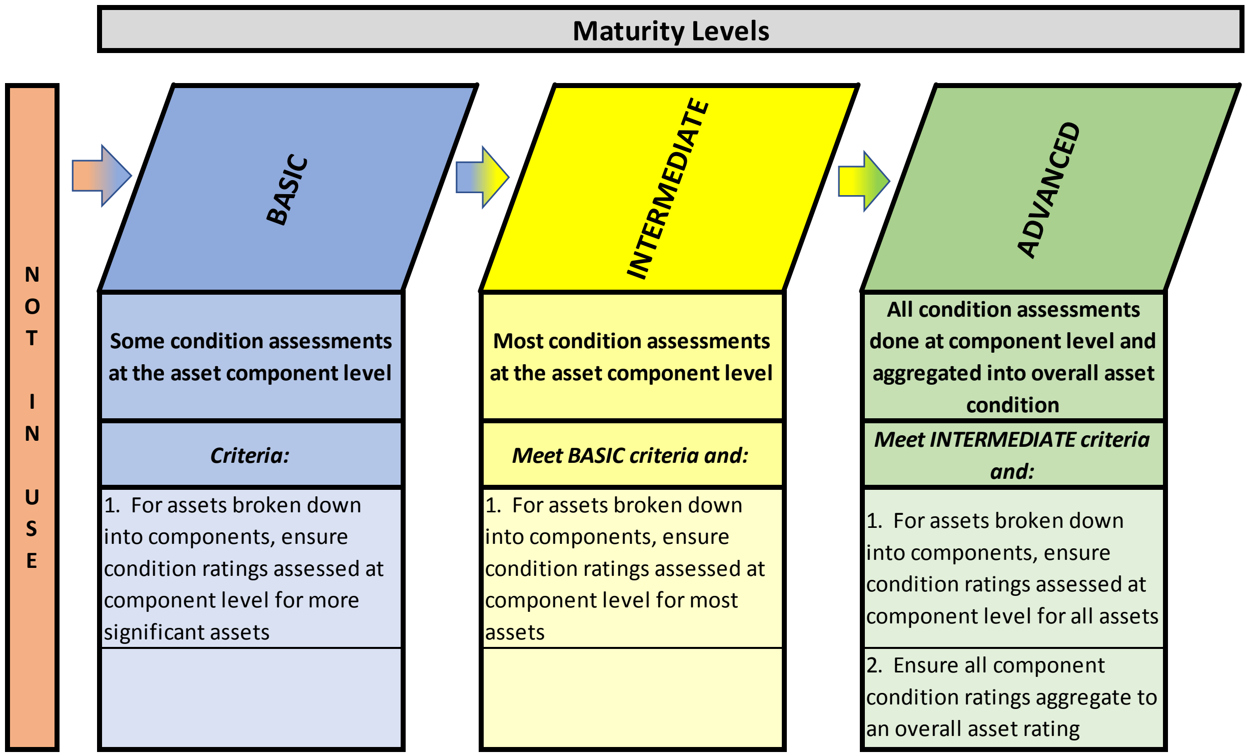
Are the condition assessments performed at the asset component level (for assets with components)?

Background

Since many assets will be broken down into components, consideration should be given to assessing condition at the component level versus at the whole asset level.

Levels of Maturity – Condition Assessment and Asset Components

Are the condition assessments performed at the asset component level (for assets with components)?



At the **basic level of maturity**, condition ratings are completed at the component level for significant assets, such as roads, bridges and facilities.

At the **intermediate level of maturity**, condition ratings are completed at the component level for most assets.

At the **advanced level of maturity**, condition ratings are completed at the component level for all assets where components are used. The component condition ratings would then be aggregated into an overall asset condition rating for the complex asset as a whole.

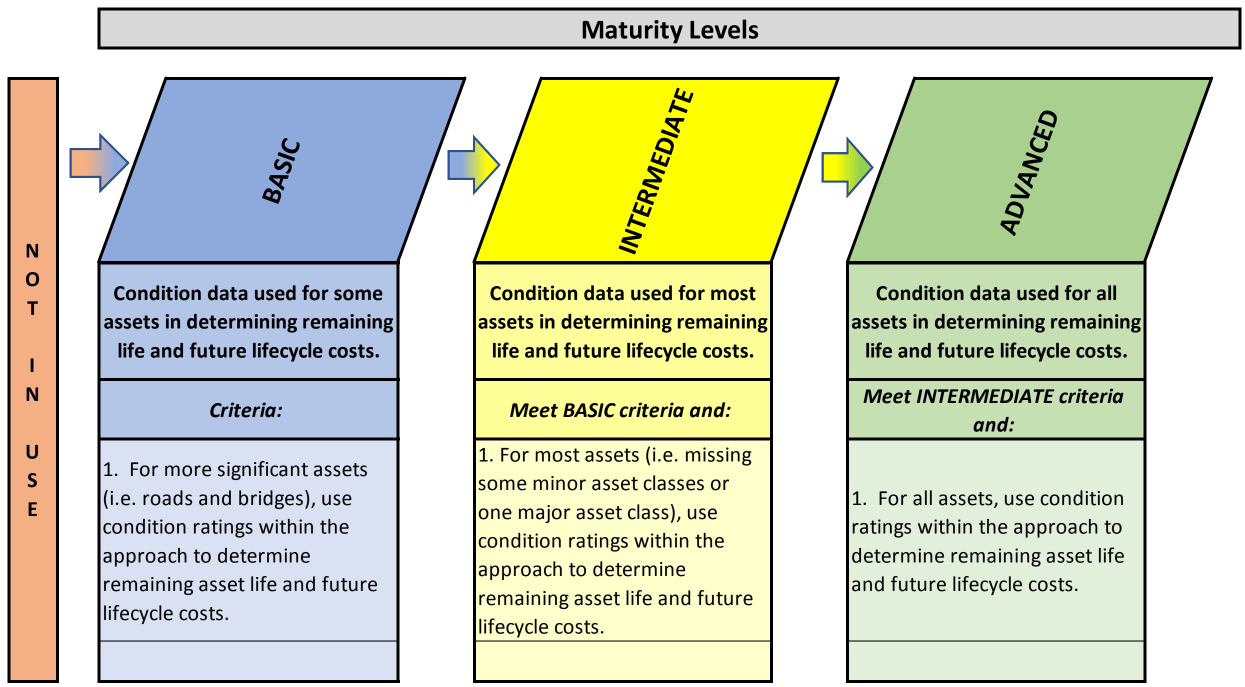
Is condition data used to determine remaining life and future lifecycle costs?

Background

As discussed in this chapter, condition rating data provides a more accurate approach to determining the remaining useful life of an asset, in comparison to using asset age and the asset's estimated useful life. An asset can be half way through its anticipated useful life from an age perspective, however it has been maintained very well and has a "good" condition rating. Using condition ratings in the determinization of remaining useful life leads to a more accurate determination of future lifecycle costs required.

Levels of Maturity

Is condition data used to determine remaining life and future lifecycle costs?



At the **basic level of maturity**, condition ratings are used for some assets (i.e. occasionally used) in determining remaining useful life and future lifecycle costs.

At the **intermediate level of maturity**, condition ratings are used for most assets (i.e. more moderately or frequently used) in determining remaining useful life and future lifecycle costs.

At the **advanced level of maturity**, condition ratings are used for all assets in determining remaining useful life and future lifecycle costs.

Using Condition Ratings to Make Decisions

Using condition ratings in the asset management process to determine asset remaining useful life and future lifecycle cost requirements can take many forms, depending on the complexity of the overall process, including:

- Using condition ratings in an asset database, for municipal staff to make decisions based on professional judgement;

- Using condition ratings in asset management spreadsheets, using formulas to make decisions; and
- Inputting condition ratings into asset management software to generate asset management related decisions and outcomes.

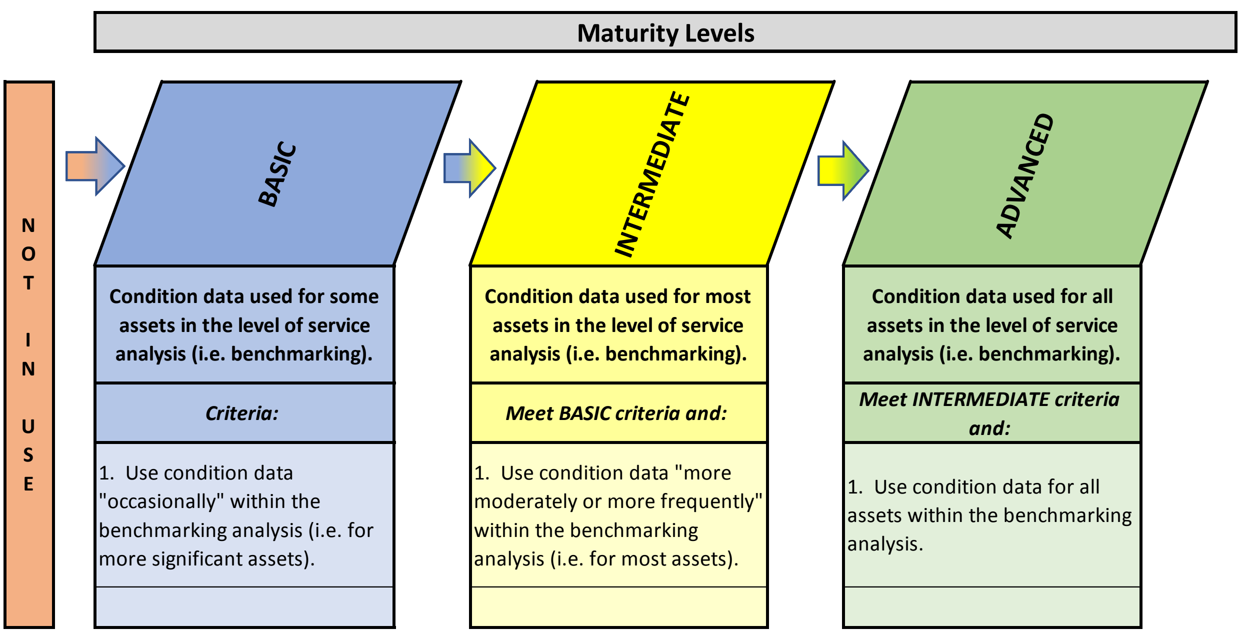
Is condition data used in the level of service analysis (i.e. benchmarking) from year to year?

Background

As discussed in chapter 4, an important tool in the levels of service analysis is the ability to do a trending analysis on metrics or performance measures. Condition is a metric that is commonly used in this area. Understanding if an asset's condition rating is tracking towards or away from condition objectives provides useful information with respect to spending levels and the impact on service.

Levels of Maturity

Is condition data used in the level of service analysis (i.e. benchmarking) from year to year?



At the **basic level of maturity**, condition ratings are used for some assets (i.e. occasionally used) in determining service levels (i.e. benchmarking).

At the **intermediate level of maturity**, condition ratings are used for most assets (i.e. more moderately or frequently used) in determining service levels (i.e. benchmarking).

At the **advanced level of maturity**, condition ratings are used for all assets in determining service levels (i.e. benchmarking).

Condition Data and Levels of Service

Please refer to the discussion on performance measures and trending within Chapter 4.

3.3.6 Risk and Criticality

Risk and criticality measures can allow municipalities to prioritize asset needs. Tying the risk/criticality of an asset to the frequency of its condition updates ensures that a municipality's most vital assets are consistently monitored.

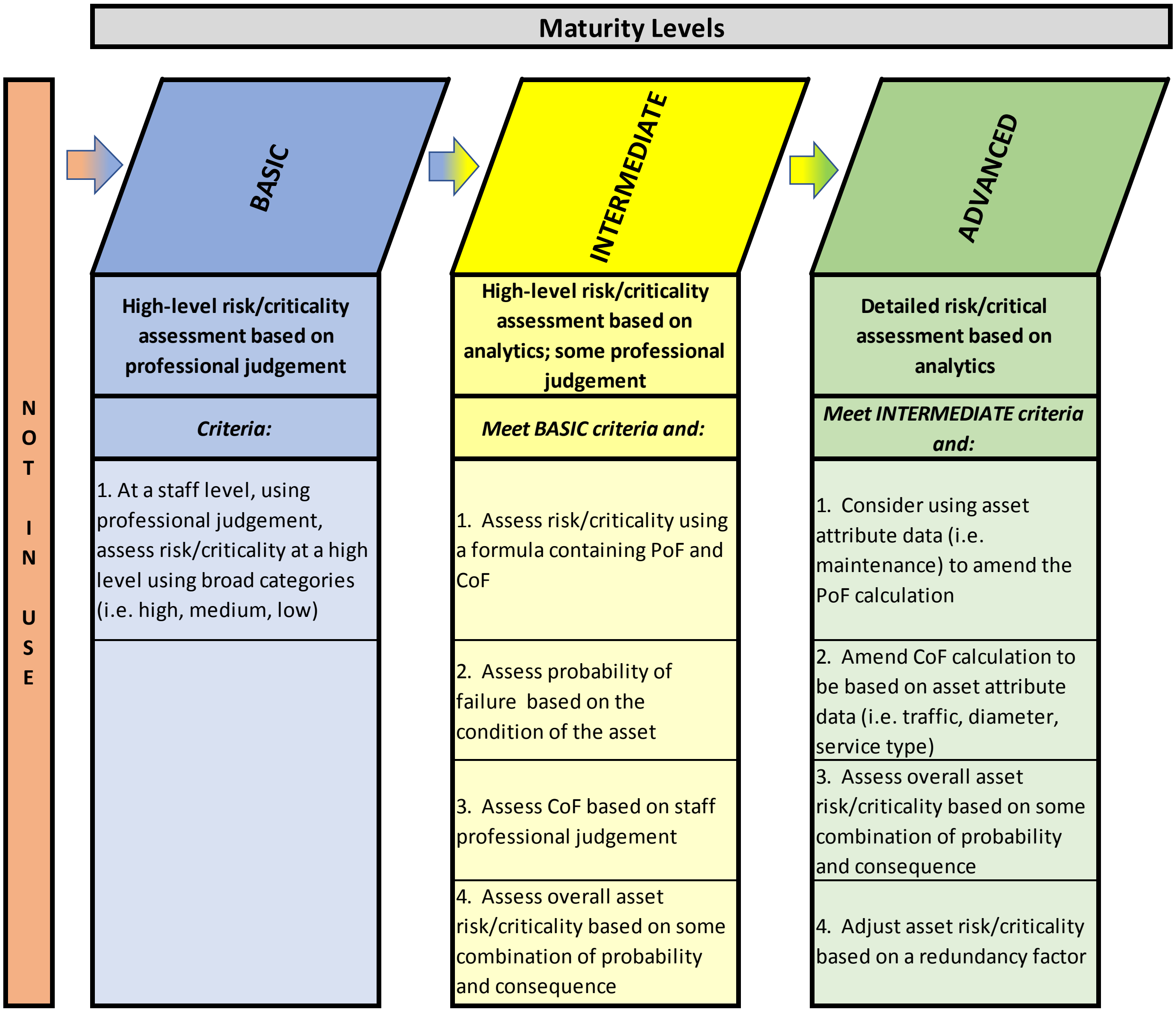
What method of risk/criticality assessment is used?

Background

Risk management and optimized informed decision making are inherently linked. Identifying and acknowledging risks and managing them appropriately helps to mitigate the implications and consequence associated with such risks. This enables municipalities to make informed decisions around how to manage assets and their associated risk.

Levels of Maturity – Assessment of Risk/Criticality

What method of risk/criticality assessment is used?



At the **basic level of maturity**, staff assess risk/criticality using their professional judgement. It would be typical at this level of maturity to see the use of broad categories for risk/criticality such as ‘high’, ‘medium’, and ‘low’ or using a numerical scale such as “0 to 3” or “0 to 5”.

At the **intermediate level of maturity**, it is expected to see the introduction of some risk/criticality assessments based on analytics, to supplement professional judgement. This would entail assessing risk using a formula based upon probability of failure (PoF) and consequence of failure (CoF). The assessment of PoF would be dependent upon, at a minimum, the condition of the asset, whereas CoF would be assessed based on staff’s professional judgement or some use of analytics. Overall risk/criticality can then be assessed based upon some combination of probability and consequence.

At the **advanced level of maturity**, a detailed risk/criticality assessment would be completed based upon analytics. This would include the use of asset attribute information to determine PoF and CoF. Overall risk/criticality can then be assessed based upon some combination of blending probability and consequence. Finally, consideration can be given to redundancy or other risk mitigation factors that may impact on the consequence assessment.

Risk and Criticality Analytics

The risk or criticality calculation determines the overall risk of asset failure. Ideally, this calculation would be performed on all municipal assets consistently. If this is achieved, the risk/criticality analytic can become a documented approach to determining capital priorities. If applied consistently across all assets, a municipality can compare priorities across asset types (i.e. what is more important, a road or a park?).

A common risk/criticality formula is provided below:

Figure 3-4
Example of Risk/Criticality Formula

Asset Risk / Criticality = **Probability of Failure** X **Consequence of Failure** X **Risk Mitigation or Redundancy**

Probability of Failure (PoF): What is the chance that the asset will fail?

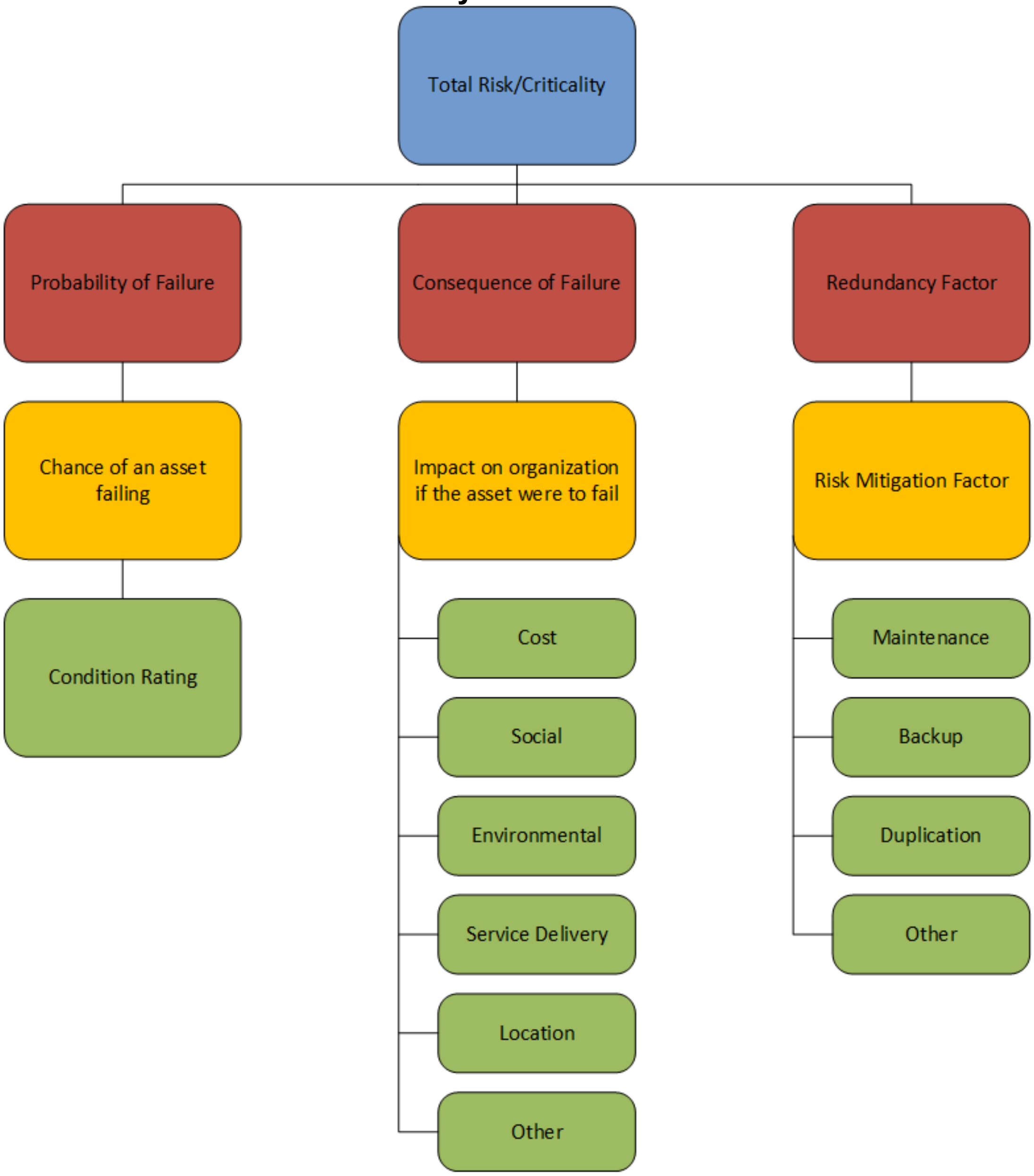
Consequence of Failure (CoF): What is the impact to the municipality if the asset does fail?

Risk Mitigation or Redundancy: Does the municipality have any risk mitigation procedures in place that reduce the overall risk or criticality rating for the asset? Examples:

- Maintenance or rehabilitation programs; and
- Backup or duplicate assets that can provide similar services (i.e. does the municipality have a fire truck that can act as a backup for another fire truck?).

The following diagram summarizes the risk/criticality calculation process:

Figure 3-5
Risk/Criticality Calculation Process



Probability of failure has commonly been linked to the condition assessment for each of the assets. For example, an asset with a condition rating of “Very Poor” would have an “Almost Certain” probability of failure, while an asset with a condition rating of “Very Good” would have a “Rare” probability of failure. Please refer to the following table for an example, both in quantitative and qualitative terms:

Table 3-29
Probability of Failure Matrix

Asset	Condition (/5)	Condition Qualitative	Probability of Failure Score (/5)	Probability of Failure Score (Qualitative)
Asset 1	5	Very Good	1	Rare
Asset 2	4	Good	2	Unlikely
Asset 3	3	Average	3	Possible
Asset 4	2	Poor	4	Likely
Asset 5	1	Very Poor	5	Almost Certain

This matrix can be scaled appropriately depending on the condition rating scale used by the municipality.

The following example of probability of failure (i.e. likelihood of failure) has been obtained from the IIMM[1]:

Table 3-30
Sample Probability of Failure – IIMM

Likelihood	Descriptor	Probability of Occurrence
Rare	May occur only in exceptional circumstances	More than 20 years
Unlikely	Could occur at some time	Within 10-20 years
Possible	Might occur at some time	Within 3-5 years
Likely	Will probably occur in most circumstances	Within 2 years
Almost certain	Expected to occur in most circumstances	Within 1 year

Function, in addition to condition, can also be considered In more advanced determinations of probability of failure, asset capacity and functionality can also play a role in the calculation. Including these variables (as discussed earlier in this chapter), it is recognized that an asset can “fail” due to the assets inability to function correctly or address the needed capacity. An asset in perfect condition can technically fail if appropriate functionality and capacity is not being addressed.

Consequence of failure can be a more subjective calculation. To determine the overall consequence of an asset failing to a municipality, the following areas should be considered:

[1] IPWEA, 2015, International Infrastructure Management Manual

- **Cost Impacts:** The cost of failure to the municipality (i.e. capital replacement, rehabilitation, fines and penalties, damages, etc.);
- **Social impacts:** The potential injury to residents or municipal staff;
- **Environmental impacts:** The impact of the asset failure on the environment;
- **Service delivery impacts:** The impact of the asset failure on the municipality's ability to provide services at desired levels, or potential service delivery interruptions; and
- **Location impacts:** The varying impact of asset failure based on the asset's location within the municipality. For example, are assets servicing hospitals or schools a higher consequence? Does the municipality have a bridge that is the only access point to a region of the municipality for residents, fire, police, school buses and snow plows?

From an impact perspective, these areas can be incorporated into a consequence of failure calculation at a high level, using the following:

Table 3-31
Consequence of Failure Matrix

Consequence of Failure	Cost Consequences	Other Consequences		
		Social	Environmental	Service Delivery
Insignificant	Negligible or Insignificant Cost	No Injury	No Impact	No Interruptions
Minor	Small/Minor Cost – within Budget Allocations	Minor Injury	Short-Term/Minor Impact – Fixable	Minor Interruptions
Moderate	Considerable Cost – Requires Revisions to Budget	Moderate Injury	Medium-Term Impact – Fixable	Moderate Interruptions
Major	Substantial Cost – Multi-Year Budget Impacts	Major Injury	Long-Term Impact – Fixable	Major Interruptions
Significant	Significant Cost – Difficult to Recover	Significant Injury	Long-Term Impact – Permanent	Significant Interruptions

Alternatively, consequence of failure can be estimated by using asset attribute information found in the municipality's asset registers for each asset class. For example, the type of road (local, collector, arterial) can play a role in establishing the consequence of failure for road assets, which assumes that there are differing consequences or criticalities for each type of road (i.e. an arterial road is more critical than a local road). For water and wastewater mains, the pipe diameter can play a role, assuming that different pipe diameters yield differing consequences/criticalities (i.e. larger diameter mains are more critical than smaller diameter mains). In these two examples, road type and pipe diameter are being used to quantify the number of residents that would be impacted by an asset failure. It is assumed an arterial road services more residents than a local road, and a larger diameter water pipe services more residents than a smaller diameter pipe.

The following table provides some examples of asset attributes that can be used to determine consequence of failure, or asset criticality:

Table 3-32
Sample Asset Attributes in Determining Consequence of Failure

Asset Type	Attribute	Example of High CoF	Example of Low CoF
Roads and Bridges	Road Type	Arterial	Local
		HCB	Gravel
	Traffic	High Traffic	Low Traffic
	Speed Limit	High Speed Limit	Low Speed Limit
	Access	Road/Bridge with only Local Access	Many Roads/Bridges with Access
	Replacement Cost	High Value	Low Value
Water, Wastewater, and Stormwater Mains	Main Diameter	High Diameter	Low Diameter
	Trunk vs. Local Main	Trunk Mains	Local Mains
	Water Crossing	Main Crosses Water	Main Doesn't Cross Water
	Replacement Cost	High Value	Low Value
Facilities, Vehicles, Equipment, and Land Improvements	Type of Service	Fire, Water, Wastewater	Parks, Recreation, Culture
	Service Delay	Long Delay	Short or No Delay
	Back-Up Asset Available?	No	Yes
	Replacement Cost	High Value	Low Value

The following example of consequence of failure has been obtained from the IIMM[2]:

[2] IPWEA, 2015, International Infrastructure Management Manual

Table 3-33
Consequence of Failure – IIMM

Consequences	Description
Insignificant	No injuries, low financial loss (less than $10,000)
Minor	First aid treatment, on-site release immediately contained, medium financial loss ($10,000 - $50,000)
Moderate	Medical treatment required, on-site release contained with outside assistance, high financial loss ($50,000 - $200,000)
Major	Extensive injuries, loss of production capacity, off-site release with no detrimental effects, major financial loss ($200,000 - $1,000,000)
Catastrophic	Deaths, toxic release off-site with detrimental effect, huge financial loss (more than $1M)

It is recommended that both probability of failure and consequence of failure be assigned either a quantitative or qualitative rating (similar to condition ratings). As shown in examples above, probability of failure can range from “Rare” to “Almost Certain” from a qualitative perspective, or quantitatively through a scale such as 0-5 or 0-10. Consequence of failure can range from “Insignificant” to “Significant” from a qualitative perspective, or quantitatively through a scale such as 0-5 or 0-10. The benefit of using a qualitative or numerical scale is the ability to mathematically incorporate both PoF and CoF into an overall risk or criticality rating.

With both probability of failure and consequence of failure documented, total asset risk or criticality can be determined using a matrix similar to the one shown below. Total risk/criticality in this example has been classified under the following categories:

- **Extreme Risk (E):** Risk well beyond acceptable levels (red);
- **High Risk (H):** Risk beyond acceptable levels (orange);
- **Medium Risk (M):** Risk at acceptable levels, monitoring required to ensure risk does not become high (yellow); and
- **Low Risk (L):** Risk at or below acceptable levels (green).

Table 3-34
Total Risk of Asset Failure Matrix

Probability of Failure	Consequence of Failure				
	Insignificant	**Minor**	**Moderate**	**Major**	**Significant**
Rare	L	L	M	M	H
Unlikely	L	M	M	M	H
Possible	L	M	M	H	E
Likely	M	M	H	H	E
Almost Certain	M	H	H	E	E

When PoF and CoF are numerical (quantitative scale), the municipality must determine the correct way to “blend” them together to determine overall risk/criticality. Some options are as follows:

1. Multiply PoF and CoF together (i.e. using PoF and CoF scales out of 10 each, total risk would be a maximum of 10 x 10 = 100).

2. Add PoF and CoF together (i.e. using PoF and CoF scales out of 10 each, total risk would be a maximum of 10 + 10 = 20).

3. Use some type of weighted average of PoF and CoF (i.e. using PoF and CoF scales out of 10 each, and an assumption that PoF is more important to the calculation, total risk would be a maximum of 10 PoF (80%) + 10 CoF (20%) = Risk 10(100%)). Please see the figure below for an additional example illustration of how to calculate risk under Option 3.

Figure 3-6
Example of Risk Rating Calculation – Weighted Average

$$\underbrace{80\%}_{\text{PoF Weight}} \times \underbrace{8}_{\text{PoF Rating}} + \underbrace{20\%}_{\text{CoF Weight}} \times \underbrace{2}_{\text{CoF Rating}} = \underbrace{6.8}_{\text{Risk Rating}}$$

Options 1 and 2 assume that both PoF and CoF are equally as important in the calculation. Option 3 allows the option of weighting PoF and CoF so that one has a larger impact on the calculation (i.e. in the example above, it is assumed that PoF has 80% of the total impact on the overall formula).

Risk levels can be reduced or mitigated through planned maintenance, rehabilitation and/or replacement. An objective of asset management planning is to reduce risk levels where they are deemed to be too high, as well as ensure assets are maintained in a way that maintains risk at acceptable levels over the forecast period.

Table 3-35 (below), illustrates an example of calculating risk/criticality for roads. In this example, probability of failure is based on asset condition (as discussed above), and consequence of failure is based on road type (in example 1) and traffic count (in example 2). The weighted approach to blending PoF and CoF together is also used (80%/20% respectively). It is important to note that municipalities should adjust and tweak the risk/criticality calculation so that it results in an accurate list of capital priorities (i.e. the highest risk assets). This can be done through trial and error. For example, a municipality can try one particular formula for assessing risk/criticality and review it with each department for accuracy. If priority projects are not coming to the top of the list, then determine why your formulas are not providing accurate results and adjust accordingly. Please note that more than one variable can be used in determining PoF or CoF. For example, if a municipality felt that both road type and traffic count should play a role in the calculation of CoF for roads, then both factors can be combined into an overall CoF calculation.

Table 3-35
Example of Risk/Criticality Calculation – Roads

Risk Calculation Example				Example 1 – CoF based on Road Type			Example 2 – CoF based on Traffic Count		
			Weight	80%	20%	100%	80%	20%	100%
Road	Type	Daily Traffic	Cond. (/10)	PoF (/10)	CoF (/10) – Based on Type	Risk / Criticality	PoF (/10)	Cof (/10) – Based on Traffic	Risk / Criticality
Road 1	Local	100	8	2	4	2.4	2	4	2.4
Road 2	Collector	500	6	4	6	4.4	4	4	4.0
Road 3	Arterial	1,000	6	4	8	4.8	4	6	4.4
Road 4	Local	50	7	3	4	3.2	3	4	3.2
Road 5	Collector	400	4	6	6	6.0	6	4	5.6
Road 6	Arterial	1,500	2	8	8	8.0	8	8	8.0
Road 7	Local	200	7	3	4	3.2	3	4	3.2
Road 8	Collector	800	6	4	6	4.4	4	6	4.4
Road 9	Arterial	1,100	9	1	8	2.4	1	8	2.4
Road 10	Local	50	10	0	4	0.8	0	4	0.8

highest priority

As discussed above, risk mitigation or redundancy adjustments can be made to account for:

- Processes the municipality has that automatically offset the risk calculation; and
- Whether redundancy/backup assets exist.

These adjustments become a direct reduction to consequence of failure.

Using Risk to Determine Treatments

According to IIMM, critical assets are defined as: “assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets”.

The level of risk or criticality is used to determine asset treatments. Treatments can range from immediate corrective action (such as stopping work or preventing use of the asset) for ‘Very High’ risks, to managing by routine procedures for ‘Low’ risks.

An asset with a ‘High’ risk rating will require ‘prioritized action’. This may include actions such as reducing the probability of the event occurring by physical methods (i.e. limiting usage to within the asset’s capacity, increasing monitoring and maintenance practices, etc.), reducing consequence of failure (i.e. limiting speed of use, preparing response plans, etc.) and/or sharing the risk with others (insuring the organization against the risk). A treatment or action table example is as follows:

Table 3-36
Sample Treatment/Action Table

Level of Risk		Action Required
VH	Very High Risk	Immediate corrective action
H	High Risk	Prioritized action required
M	Medium Risk	Planned action required
L	Low Risk	Manage by routine procedures

Keeping condition assessments and risk assessments current can also be undertaken with different approaches. Since risk is tied to condition (i.e. probability of failure is often tied to condition), these two concepts should be considered together. With condition assessments kept current, it makes the risk assessment more accurate.

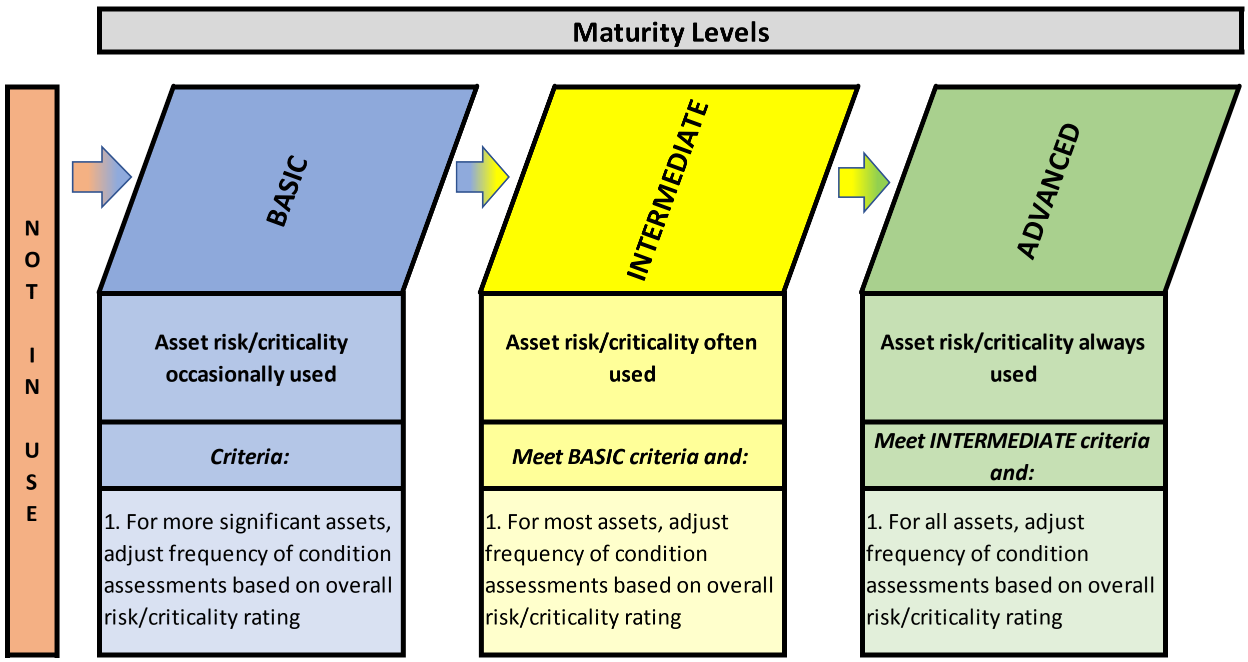
To what extent is asset risk/criticality used to determine how frequently asset conditions are assessed?

Background

An important factor in determining the frequency of performing asset condition assessments is the level of risk/criticality.

Levels of Maturity – Updating Condition Assessment Based on Risk/Criticality

To what extent is asset risk/criticality used to determine how frequently asset conditions are assessed?



At the **basic level of maturity**, overall asset risk/criticality is used occasionally to determine the frequency of condition assessments. It is suggested that at this level, the emphasis should be placed on more significant (complex) assets.

At the **intermediate level of maturity**, overall asset risk/criticality is often used in determining the frequency of condition assessments. At this level, most assets would be included in these assessments.

At the **advanced level of maturity**, overall asset risk/criticality is always used for all assets when determining the frequency of condition assessments.

Updating Condition Based on Risk/Criticality

This section focuses on a municipality's responsiveness to the results of its risk/criticality assessments in determining how often to conduct condition assessments. For example, assets may generally be assessed for condition once every five years (subject to legislative requirements). However, if a specific asset or asset type has a higher risk/criticality, the condition assessment(s) may be undertaken earlier to compensate. With this practice, it is realized that more critical assets may require more frequent condition/risk assessments in order to ensure risk is kept at acceptable levels. For example, in general a municipality may assess condition on facilities every 5 years; however, it is common to assess condition on more critical facilities every 3 years or even annually for highly critical facilities. See Table 3-37 (below) for an example:

Table 3-37
Sample Condition Assessment Timeline based on Risk Assessment

Risk Assessment	Complex Assets: Frequency of Condition Assessments
Extreme	Detailed Condition Assessment Every Year
High	Staff Inspections Every Year Detailed Condition Assessment Every 3 Years
Medium	Staff Inspections Every Year Detailed Condition Assessment Every 5 Years
Low	Staff Inspections Every Year Detailed Condition Assessment Every 7 Years

3.3.7 Age/Condition Profiles

Condition profiles provide a high-level report card on the health of a municipality's assets. A comparison to the associated age profile outlines the differences between condition assessment and asset age for each asset category

Has an age/condition profile been developed for all assets?

Background

Age and condition are important elements in assessing the state of local infrastructure.. This information allows municipalities to perform analysis of the future service potential for its assets. In general, an age profile represents the age of the assets and the proportion of asset age to expected useful life. Asset condition profiles focus on the proportion of assets that may be assessed at different levels of condition (i.e. good, fair, poor).

Levels of Maturity – Age/Condition Profiles

Has an age/condition profile been developed for all assets?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Age profile for some assets	**Age profile for most assets**	**Age/condition profile for all assets**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. For more significant assets, complete an analysis of asset age and useful life	1. For most assets, complete an analysis of asset age and useful life	1. For all assets, complete an analysis of asset age and useful life
	2. Consider how to summarize this analysis by asset category (i.e. weighted average)	2. Consider how to summarize this analysis by asset category (i.e. weighted average)	2. Compare asset age profile to asset condition
		3. Determine how and when the age profile will be updated and tracked	3. Consider how to summarize this analysis by asset category (i.e. weighted average)
			4. Determine how and when the age profile will be updated and tracked

At the **basic level of maturity**, municipalities have developed an age profile for more significant assets. Consideration should be given to summarizing this analysis by asset category to provide insight into the age profiles at that level of detail. It is common to summarize this analysis by using a weighted average, based on the cost (current valuation) of the individual assets within an asset category, when determining an overall age profile for the asset category.

At the **intermediate level of maturity**, the age profile would be determined for most assets, with the results summarized by asset category.

At the **advanced level of maturity**, the age profile would be determined for all assets, but would also include a comparison to the condition profile for these assets. As a result, a similar but more robust analysis can be prepared, showing the difference between the age-based and condition-based assessment summaries.

Age Profile and Service Potential

Service Capacity is defined as:

> *The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. (IIMM 2011)*

An asset's service capacity refers to the output that the asset is able to sustain in delivering a service. Therefore, service potential is a function of both the level of output and the remaining service life of the asset.

There are a number of ways asset service potential can be assessed and monitored. Typically, they involve some assessment of the degree to which the useful life of an asset, or group of assets, has been consumed. The simplest method to assess service potential is to compare age to useful life. Assuming both are relatively accurately recorded, the result will indicate how long an asset is likely to continue to provide service, strictly from an age perspective. Similarly, this method can be used to assess a network, either by quantifying the assets in similar ranges of life consumed, or by deriving the average (or weighted average) ratio between age and useful life. It is important to note that the 'Building Together – Guide for Municipal Asset Management Plans includes the requirement to include within an AM plan one or more tables summarizing:

> *Asset age distribution and asset age as a proportion of expected useful life.*

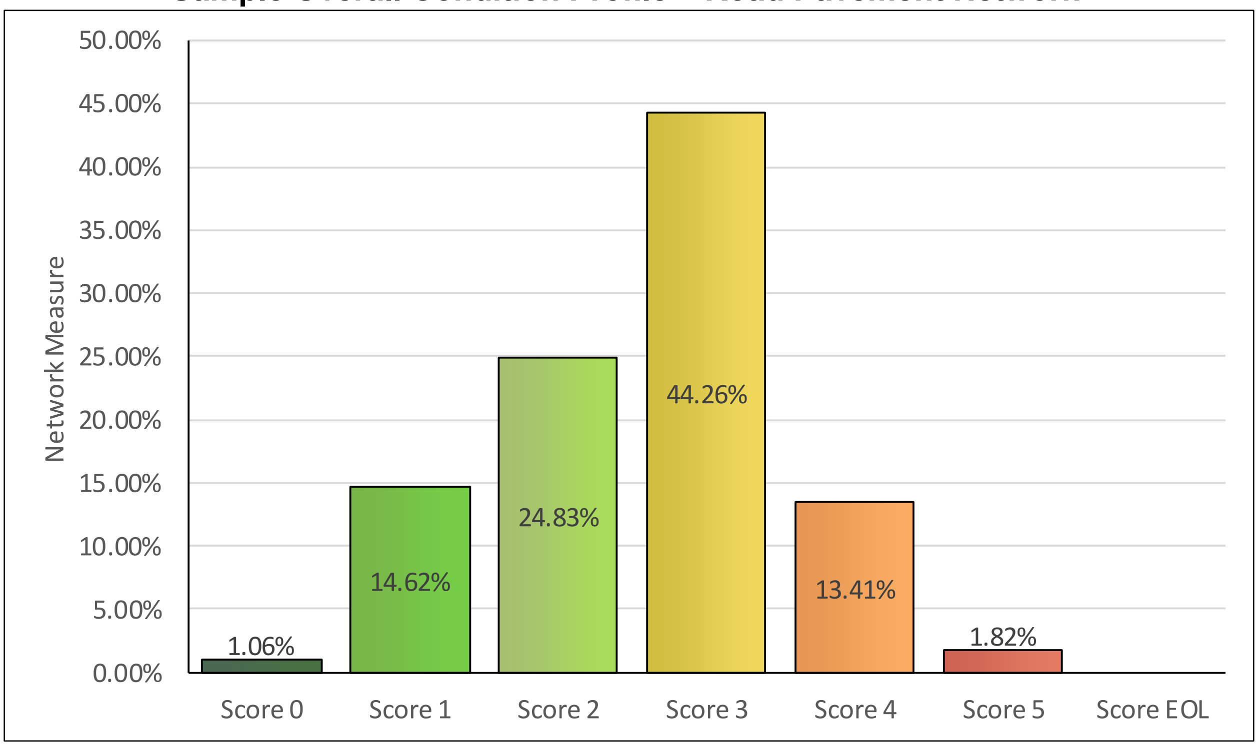
It is important to be aware that there are significant limitations with age-based assessments. Assets will often either have an actual service life significantly shorter or longer than the theoretical useful life assigned. This may occur for a number of reasons, including: greater than expected use, variations in construction, a change in the required levels of service, very good or very poor maintenance history, and/or an initial lack of understanding of the true service life.

The assessment of condition and development of condition profiles for the assets will often provide a more realistic indication of an asset's remaining life, and therefore the remaining service potential. It is clear that as condition deteriorates, the remaining life of an asset will reduce. If condition deteriorates slowly, then it is probable that the asset will exceed its expected useful life. This provides some indication that there may also be a corresponding increase to overall expected service-potential levels. Conversely, if condition deteriorates quickly, it is probable that the asset will not meet its expected useful life and anticipated service-potential levels. Verifying this deterioration can only occur if the condition is monitored over the life of the asset.

On a network or asset group basis, the overall condition profile can be analyzed to provide an indication of the remaining service potential of the entire asset stock.

The figure below shows an overall condition profile for the pavement component of a road network. In this example, condition 5 (shown in red) is the intervention level for asset replacement and condition 0 (shown in dark green) is a new asset.

Figure 3-7
Sample Overall Condition Profile – Road Pavement Network



Based on the information represented in the above figure, we can calculate the percentage service potential remaining for this asset group. The table below takes the condition profile above and applies remaining service-potential percentages (as determined by the municipality) for each rating level, to calculate the percentage service potential remaining for the pavement component of the road network:

Table 3-38
Sample Service Potential Calculation – Road Pavement Network

Rating	Network %	Service Potential %	Remaining Service Potential
0	0.13	100	0.13
1	14.62	80	11.70
2	24.83	60	14.90
3	45.26	40	18.10
4	13.41	20	2.68
5	1.75	0	0
Percentage Service Potential Remaining			47.51%

In summary, it is useful to conduct an analysis of a municipality's age profile and service potential. While an age-based approach will illustrate how old the assets are, a condition or service-potential approach will provide more accurate information with respect to the state of a municipality's assets. An example of combining an age-based and condition-based profile is provided below. Based on the colour coding identified, there can be a significant difference in remaining life when comparing an age-based assessment to a condition-based assessment.

Table 3-39
Sample Comparison of Age-based and Condition-based Assessments

Asset	Age-Based Analysis			Condition-Based Analysis		
	Useful Life	Age	Remaining Life	Condition (/10)	Condition-Based Remaining Life	Remaining Life
Asset 1	50	50	0%	3	15	30%
Asset 2	50	45	10%	1	5	10%
Asset 3	50	40	20%	3	15	30%
Asset 4	50	35	30%	4	20	40%
Asset 5	50	30	40%	6	30	60%
Asset 6	50	25	50%	4	20	40%
Asset 7	50	20	60%	7	35	70%
Asset 8	50	15	70%	6	30	60%
Asset 9	50	10	80%	8	40	80%
Asset 10	50	5	90%	9	45	90%

Good
Average
Poor

3.3.8 Updating the Asset Register

The asset register is the backbone of the AM planning process; therefore, ensuring that it accurately captures the asset portfolio is paramount. Municipalities should put in place policies that ensure changes to the asset portfolio are captured.

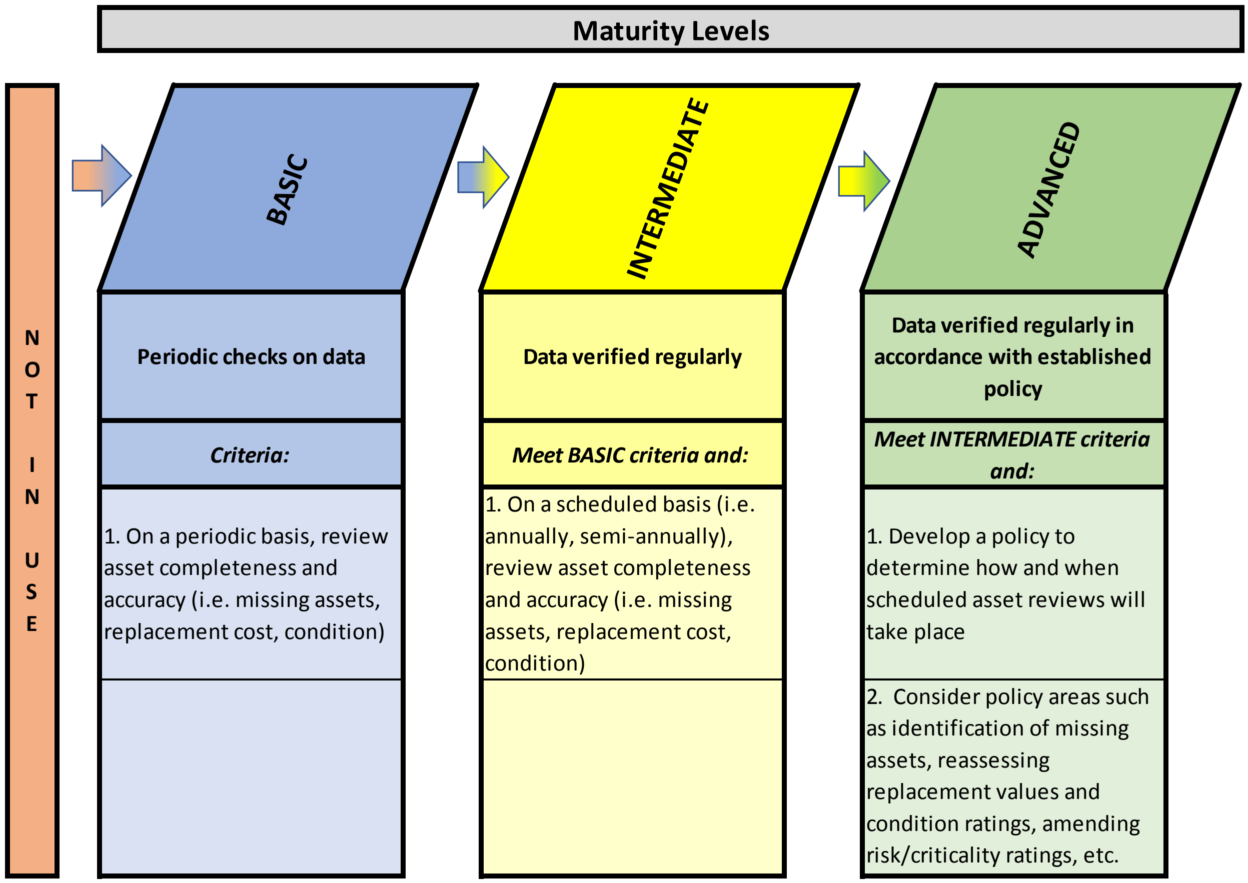
Is there a process in place to record new acquisitions/disposals in the asset register(s)?

Background

Once the asset register has been created consideration needs to be given to the process of keeping it current. Discussions regarding updating replacement cost, condition ratings, and risk assessments can be found in previous sections; however, updating the asset register for new acquisitions/disposals information is also important. This information can come from a number of sources; therefore, municipalities will have to be prepared to collect relevant details and use them to update the asset register accordingly.

Levels of Maturity – Updating Acquisitions/Disposals

Is there a process in place to record new acquisitions/disposals in the asset register(s)?



At the **basic level of maturity**, municipalities periodically update their asset data for new acquisitions/disposals. Municipalities at this level may update their PSAB 3150 asset data annually for acquisitions/disposals, betterments, etc., in order to complete financial statements and the Financial Information Return (FIR). Other asset registers, which are used for asset management purposes, would be updated periodically.

At the **intermediate level of maturity**, asset data for new acquisitions/disposals is updated on a regular basis. PSAB 3150 asset data may updated on a scheduled basis, as opposed to waiting for year end. Similarly, the asset registers would be updated on a scheduled basis.

At the **advanced level of maturity**, asset data for new acquisitions/disposals is updated regularly, in all asset registers, in accordance with established policy. This would require municipalities to review and update their asset policies to be in line with asset management needs (i.e. acquisitions, disposals, capitalization thresholds, etc.). Then, following policy requirements, all asset registers should be updated accordingly.

Asset Additions

There may be multiple sources of information related to asset additions to monitor. Most asset addition costs will flow through the accounts payable and payroll systems of a municipality's financial system. Consideration should be given to appropriate account/job costing identification within the accounting systems in order to simplify the accurate collection of costs for assets.

There are also instances where asset additions occur, but no evident costing or attribute information is available. This could occur when assets are donated (contributed) or assumed from developers. In these cases, a municipality needs a process in place to be made aware of these contribution events in order to know when to record these contributed assets, and to have access to all required information to record the applicable assets, such as benchmark costs, engineering specifications, etc.

Another type of asset "addition" is the recording of missing assets. From time to time, municipalities may find assets that they own and manage that are not recorded in the asset register. While this technically is not an asset addition for accounting purposes, it is a needed addition to the asset register. Keep capitalization thresholds in mind when deciding whether or not to record these missing assets.

Capitalization thresholds can play a significant role in determining how to update the asset register(s). Capitalization thresholds represent the amount that is significant enough to a municipality, in each asset area, to warrant a discussion regarding capitalization. Any costs below identified capitalization thresholds are simply expenses in operations. Keep in mind that capitalization thresholds are also kept for accounting (PSAB 3150) purposes, and these thresholds can differ from identified asset management capitalization thresholds, if needed.

Asset Disposals

Asset disposal can occur in a number of ways including trade-ins, asset retirement/decommissioning, removal of existing linear assets when constructing new linear assets, and selling of buildings or other assets. Each municipality must monitor the sources of information that would identify all disposals, and ensure it triggers the related changes to the asset register.

Attribute Changes

Municipalities will need to be aware of how best to share information across departments as it relates to whether work done on assets has created changes to asset attributes, thus necessitating updates to the asset register. For example, when a road is changed from gravel to a paved surface, the attribute for material type will need to be changed. Another example includes widening a bridge or a sidewalk (thus changing the dimensions of the asset).

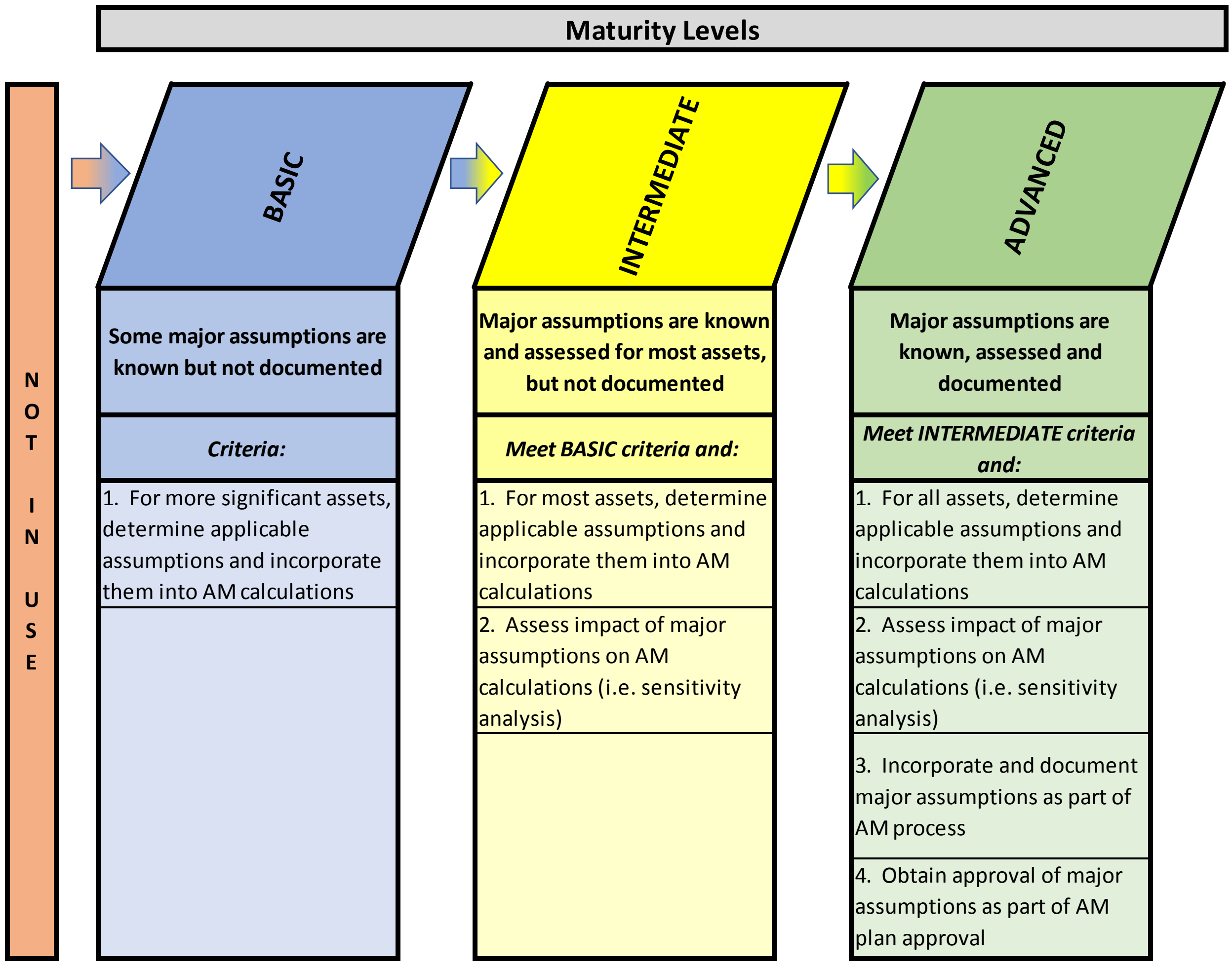
To what extent have major assumptions been assessed and documented?

Background

Within asset management data, a number of assumptions will have been made for a variety of purposes. There will be occasions when these assumptions may be questioned (i.e. from auditors or staff), or reviewed for continuing applicability by municipal staff. It is recommended that all major assumptions related to asset management data be documented to facilitate clarity and reasoning.

Levels of Maturity – Documentation

To what extent have major assumptions been assessed and documented?



At the **basic level of maturity**, municipalities make use of some major assumptions in their asset management calculations for significant assets but may not document them.

At the **intermediate level of maturity**, all major assumptions are known and assessed for asset management calculations related to most assets, but documentation may still be lacking. The impact of the major assumptions on asset management calculations may be assessed using techniques such as sensitivity analysis.

At the **advanced level of maturity**, all major assumptions are known, assessed, and documented for asset management calculations related to all assets. As with the intermediate level of maturity, the impact of the assumptions would be assessed. In moving from intermediate to advanced maturity, major assumptions should be documented (i.e. through a process manual). The major assumptions can be approved as part of the overall asset management plan approval.

Process Manual

Given the number of possible updates to the asset register, the number of sources of information, and the breadth of staff and potential consultants in an organization involved in the various aspects of asset management, a formal process manual can be beneficial to track all assumptions and ensure a consistent application of methodologies across the asset register. The manual can be used to identify how the asset register is to be updated, when updates take place and by whom. The major assumptions to be made can also be identified and documented as part of the process manual.

In order to facilitate consistency, issues such as staff/consultant hiring, training, and performance review (see Chapter 10 for more discussion on these issues) should be touched upon in the manual. Having a manual in place should assist in providing a level of consistency to the updates being performed.

3.4 Resources and References

Government of Canada, Treasury Board of Canada Secretariat Organization, https://www.canada.ca/en/treasury-board-secretariat/corporate/risk-management.html

Institute of Public Works Engineering Australasia (IPWEA), NAMS.PLUS Asset Management, https://www.ipwea.org/communities/assetmanagement/namsplus

IPWEA 2012, Long-Term Financial Planning Practice Note 6, https://www.ipwea.org/viewdocument/ipwea-long-term-fina

IPWEA, 2015, Australian Infrastructure Financial Management Manual , https://www.ipwea.org/publications/bookshop/ipweabookshop/aifmm

IPWEA, 2015, International Infrastructure Management Manual, https://www.ipwea.org/publications/bookshop/ipweabookshop/iimm

International Organization for Standardization (ISO), 2009, ISO 31000:2009, Risk management – Principles and guidelines, https://www.iso.org/iso-31000-risk-management.html

ISO, 2014, ISO 55000:2014, Asset management – Overview, principles and terminology, http://www.iso.org/iso/catalogue_detail?csnumber=55088

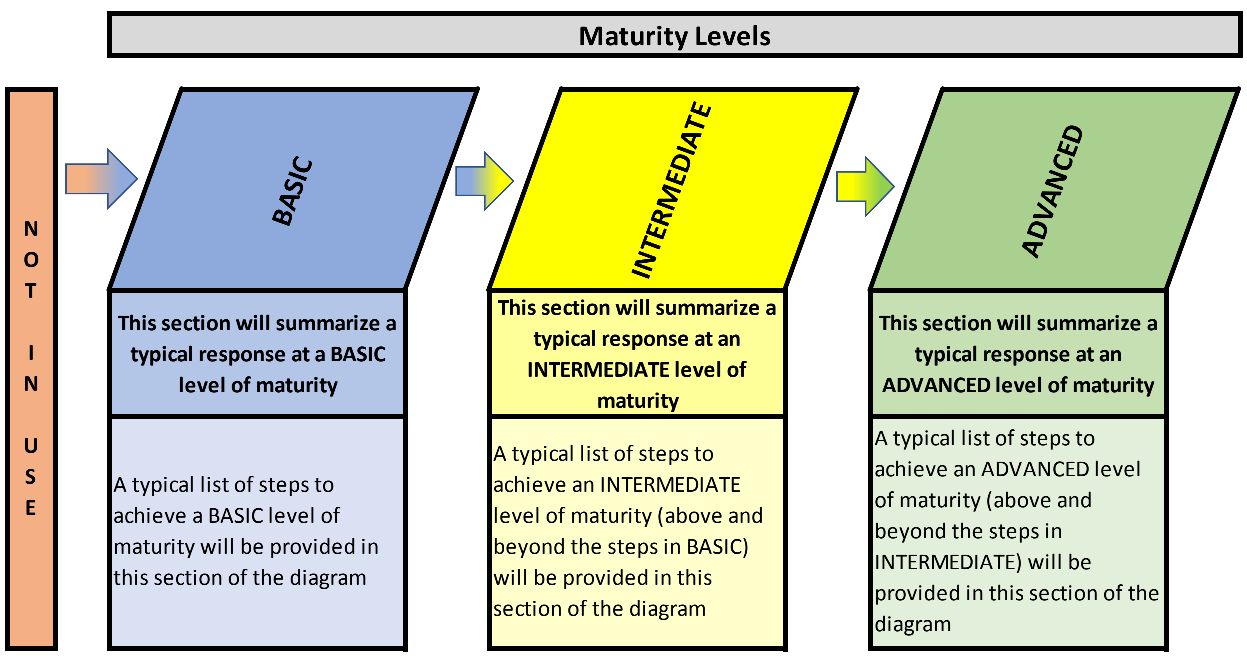
Public Sector Accounting Board, 2006, PS 3150 Tangible Capital Assets

Public Sector Accounting Group of the Canadian Institute of Chartered Accountants, 2007, Guide to Accounting for and Reporting Tangible Capital Assets, http://www.frascanada.ca/standards-for-public-sector-entities/resources/reference-materials/item14603.pdf

4 Levels of Service

4.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of maturity diagrams within this framework will assist municipalities to identify their current levels of maturity for each AM area. Furthermore, for municipalities that have a desire to move to a higher level of maturity over time, the diagrams will provide potential approaches to doing so. To more easily depict the maturity levels ascribed to specific questions posed within the framework, the following diagram will be utilized for each question:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices

to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic leve*l requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

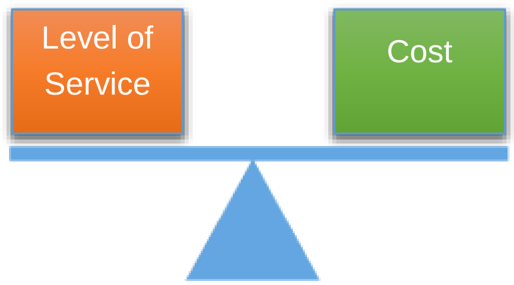
At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

4.2 Overview

Levels of Service (LOS) Analysis is a component of asset management planning that is significant and has a great deal of impact. Municipalities must not lose sight of the fact that its core purpose is to provide services to residents and other stakeholders. Assets help to provide those services and most of the resources devoted to asset management planning are spent on infrastructure. In this respect, physical assets are simply a portion of what is required to deliver the various levels of service as determined by the municipality. The municipality needs to ensure that the infrastructure performs to meet the level of service goals at an affordable and sustainable cost. An objective of an LOS analysis is to find a balance between the expected level of service and the cost of providing that level of service.

Figure 4-1
Balance between Level of Service and Cost

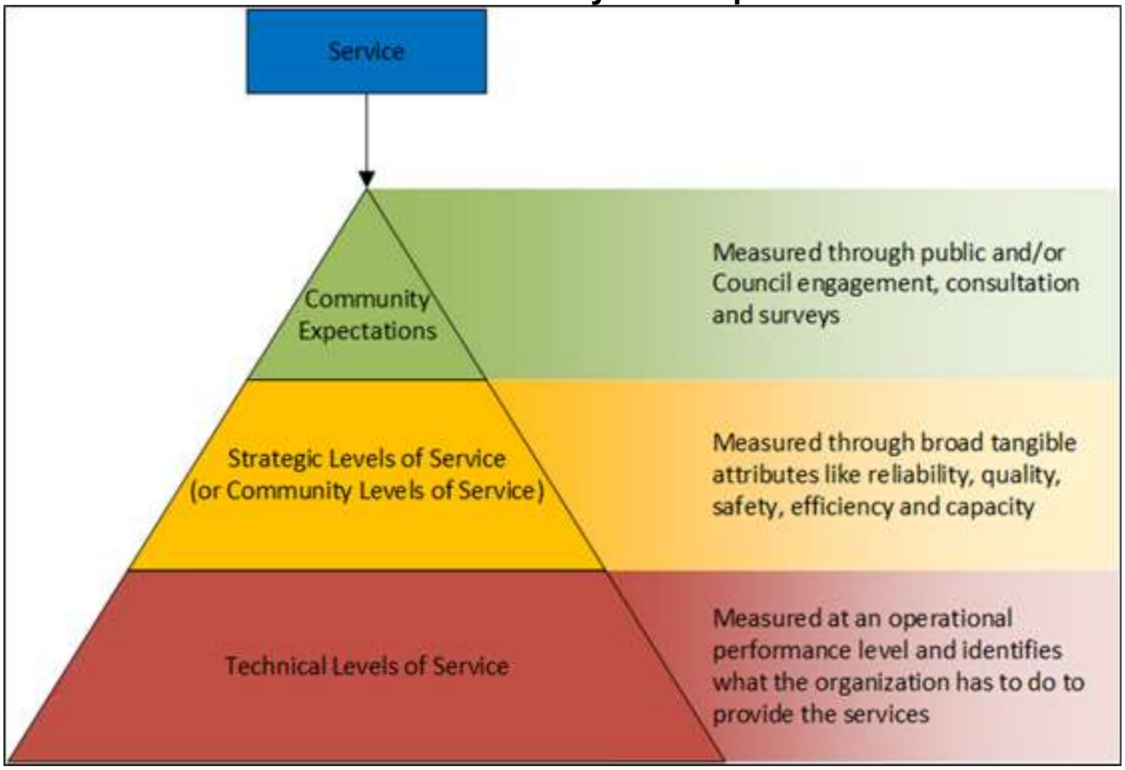


An LOS analysis includes:

- **Service identification** with the identification of assets involved in providing the services and the stakeholders impacted;
- Determination of **community expectations** with respect to services;
- Determination of **strategic levels of service**, based on community expectations (frequently referred to as customer levels of service);
- Determination of **technical levels of service** for each strategic level of service;
- **Comparison** of existing levels of service to expected strategic/technical levels of service;
- Use of **performance measures** to assist in comparing existing service levels to expected levels; and
- An assessment of the lifecycle **cost implications** of moving from existing levels of service to expected (desired) levels of service over a forecast period.

These components of the LOS analysis can be viewed from a hierarchy or pyramid perspective (see Figure 4-2 below), where the technical levels of service are needed to fulfill strategic levels of service, which are needed to satisfy community expectations, which are all based on a particular service or services being provided.

Figure 4-2
Level of Service Analysis Components



The outcome from identifying and determining levels of service can take on many forms, including:

- Qualitative descriptions of services and service levels;
- Identifications of programs, procedures, and/or activities that are required to achieve particular service levels; and
- Performance measures or key performance indicators (KPIs) that can illustrate the progression of service levels (i.e. through trending analysis) and an ultimate objective or target performance measure/KPI for which to strive.

The following sections are designed to assist municipalities understand their level of asset management maturity with respect to developing an LOS analysis within the asset management planning process. Each of the components introduced above are explained in more detail below.

Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements

O.Reg 588/17 outlines the following requirements with respect to levels of service:

Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2021, and in respect of all of its other municipal infrastructure assets by July 1, 2023.

A municipality's asset management plan must include the following:

a) For each asset category, the current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan:
    i. With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.
    ii. With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.

b) The current performance of each asset category, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency, and based on data from at most two calendar years prior to the year in which all information required under this section is included in the asset management plan.

By July 1, 2024, every asset management plan must include the following additional information:

a) For each asset category, the levels of service that the municipality proposes to provide for each of the 10 years following, determined in accordance with the following qualitative descriptions and technical metrics:
    i. With respect to core municipal infrastructure assets, the qualitative descriptions set out in Column 2 and the technical metrics set out in Column 3 of Table 1, 2, 3, 4 or 5, as the case may be.
    ii. With respect to all other municipal infrastructure assets, the qualitative descriptions and technical metrics established by the municipality.

b) An explanation of why the proposed levels of service are appropriate for the municipality, based on an assessment of the following:

i. The options for the proposed levels of service and the risks associated with those options to the long term sustainability of the municipality.
ii. How the proposed levels of service differ from the current levels of service set out.
iii. Whether the proposed levels of service are achievable.
iv. The municipality's ability to afford the proposed levels of service.

c) The proposed performance of each asset category for each year of the 10-year period, determined in accordance with the performance measures established by the municipality, such as those that would measure energy usage and operating efficiency.

Please refer to Table 4-15 below in the Performance Measures section for details regarding the contents of "Tables 1 to 5" as per O.Reg 588/17.

4.3 Identifying Services to Provide

In order to determine appropriate LOS, a municipality must first understand what services it provides and what assets are involved in delivering those services.

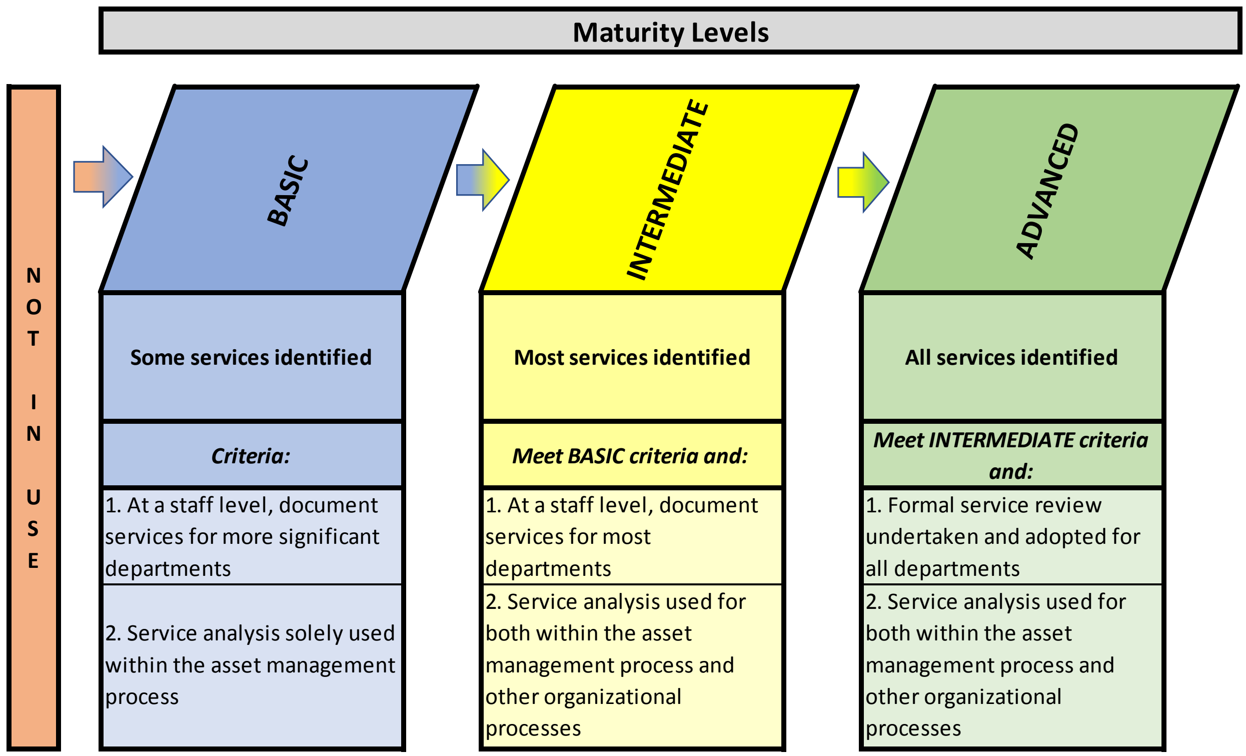
Have your services been determined?

Background

Identifying and determining services to provide is beneficial for several reasons. For asset management planning, identifying services is an important step in developing the LOS analysis. Once the municipality has identified the services it is providing and what services it wishes to provide, then the level of service to be provided can be determined. Service reviews can be undertaken by both formal and informal means and involve a number of stakeholders including staff, Council, and the public.

Levels of Maturity – Service Review

Have your services been determined?



At the **basic level of maturity**, municipalities will identify and determine the service levels of more significant services. Typically, this would occur at the staff level in an informal process and would focus on departments or services such as roads, water, and wastewater. The service analysis will likely only be used within the asset management process in completing an LOS analysis.

At the **intermediate level of maturity**, staff will identify and document most services provided by the municipality. The service analysis will be used in both the asset management process, as well as other organizational processes. At this level, the analysis is likely still informal, however, it would involve input from applicable departments within the municipality.

At the **advanced level of maturity**, all services are identified, documented and service levels determined. This is typically undertaken using a more formal service review process with the results adopted and approved by Council for all departments. This process includes the identification of assets that contribute to providing each service, detailed descriptions in relation to “how” and “why” the services are being provided, and a review of stakeholders impacted by each service area. The service analysis is used in both the asset management process, as well as other organizational processes.

Service Reviews

Given that the asset management planning process is in place to determine how assets will provide services to residents and other stakeholders, the identification of services is a critical “first step” to initiate the LOS analysis. Municipalities provide all of the legally mandated services, as well as a multitude of other services desired by the residents. The development of a “service centric” asset management process entails understanding and answering the following questions for all services:

- What are the services that we think we are to provide?
- What are the services that our customers expect?
- What are the services that we are really providing today?
- What assets are involved in providing each service?

At this stage, a municipality is not identifying how the services should be provided, or the level of that service to be provided. Identifying core services is a process of understanding and documenting the services the municipality provides today and intends to provide going forward, in addition to the assets needed to provide each service. Examples include the following:

Table 4-1
Sample Services and Related Assets

Department	Services	Applicable Assets
Transportation Services	Roads	Road base, surface, bicycle lanes, turning lanes, etc.
	Bridges and Culverts	Structure, deck, surface, etc.
	Sidewalks	Sidewalks
	Streetlights	Poles, fixtures, etc.
	Traffic Lights	Poles, lights, controllers, etc.
	Transit	Vehicles, facilities, equipment, etc.
	Parking	Lots, lights, facilities, equipment, etc.
	Winter Control	Vehicles, equipment
Environmental	Water Distribution	Water mains, wells, pumps, towers, valves, hydrants, etc.
	Water Treatment	Treatment plant (treatment systems, chlorination, pumps, chemical injection and filtration, piping, SCADA, pump houses, etc.
	Wastewater Collection	Mains, pumping systems, manholes, etc.

Department	Services	Applicable Assets
	Wastewater Treatment	Treatment plant (separators, aeration systems, pumps, chemical systems, SCADA, settlement ponds, facilities, etc.)
	Stormwater	Urban: Stormwater mains, catch basins, ponds, headwalls, etc.
		Rural: Open ditches, culverts, ponds, headwalls, etc.
	Solid Waste Collection	Vehicles, transfer stations, weigh scales, containers, etc.
	Solid Waste Disposal	Landfills, monitoring wells, compactors, bulldozers/loaders, etc.
	Solid Waste Diversion	Transfer stations, vehicles, containers, etc.
Protection Services	Fire	Vehicles, equipment, facilities, hydrants, etc.
	Police	Vehicles, equipment, facilities, etc.
	Protective Inspection and Control	
Recreation and Cultural Services	Recreation Facilities	Facilities (arenas, pools, community halls, etc.), vehicles, equipment
	Parks	Vehicles, equipment, facilities, active parks, passive parks, etc.
	Libraries	Facilities, equipment, etc.
	Museums	
Health Services	Public Health/Hospitals	Facilities, equipment, etc.
	Ambulance Services	Facilities, vehicles, equipment, dispatch equipment, etc.
	Cemeteries	Land improvements, facilities, equipment, etc.
Social Services and Social Housing	Assistance to Aged Persons	Facilities, equipment, etc.
	Child Care	Facilities, equipment, etc.
	Housing/Co-op/Rent	Facilities, equipment, etc.
Planning and Development Services	Residential/Industrial/ Commercial/Agriculture	Land, services, etc.
General Government	Administration	Equipment, vehicles, facilities, etc.

The levels of service in each area will be added to this analysis in later sections.

More comprehensive service reviews can include additional information, such as why services are being provided, as well as pros/cons associated with providing each particular service. For example, a municipality may be struggling with the idea of providing serviced industrial land to promote industrial growth. If a municipality decides not to directly provide this service, agreements can be put in place to allow local developers to provide it.

To add to the service identification process, a municipality can decide to include the identification of specific customers and other stakeholders involved in providing services. Common customer/stakeholder groups could include:

- Landowners (i.e. property taxation base);
- External users (e.g. water, wastewater, parks, recreation, library, policing, fire, solid waste, etc.);
- Internal municipal users (e.g. senior management, inter-departmental services, supervisors, technical staff, etc.);
- Elected officials;
- Regulatory agencies;
- Municipal agencies;
- Special interest groups;
- Vendors or business owners; and
- Developers.

As with the service identification outcomes, the list of customers/stakeholders can be enhanced to mention the interests and positions of each of the groups identified as well as how various levels of service may impact them.

4.4 Level of Service Analysis

Having the LOS analysis follow a well-defined process ensures that relevant stakeholders have been consulted and that there is accountability to the established LOS. It also allows for a connection between expected LOS and the cost of providing that service level.

What process was followed in developing the level of service analysis?

Background

While the later sections in this chapter focus on the specific content of an LOS analysis, this section deals with the steps involved in the process, as well as who is involved.

Levels of service relates to the overall service objectives of the organization. Therefore, it makes sense to consider the involvement of all departments that provide services within the LOS development process. Also, decisions will be made regarding the sources of information to be included in the analysis, which may include input and decisions from technical staff, management, Council, and the public.

<u>Levels of Maturity – Level of Service Analysis</u>

What process was followed in developing the level of service analysis?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	LOS analysis completed for significant departments informally	**LOS analysis completed for most departments and approved by council**	**LOS analysis completed for all departments, with public input and approved by council**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. At a staff level (i.e. by workshop), complete a LOS analysis at a basic level for significant departments	1. At a staff level (i.e.by workshop), complete a LOS analysis at a detailed level for most departments	1. At a staff level, initiate a LOS analysis at a detailed level for all departments
	2. Ensure LOS analysis meets the needs of external pressures	2. Ensure the LOS analysis provides benefit internal to the organization while meeting external pressures	2. Seek public input on LOS (i.e. by workshops, public meetings, surveys)
	3. Ensure the LOS analysis is indirectly endorsed by council through endorsement of AM plan	3. Ensure the LOS analysis is directly endorsed by council as part of a specific recommendation (part of AM plan, or independent of AM plan)	3. Ensure the LOS analysis provides benefit internal to the organization while meeting external pressures
			4. Ensure the LOS analysis is directly endorsed by council as part of a specific recommendation (part of AM plan, or independent of AM plan)

At the **basic level of maturity**, the LOS analysis is likely completed for significant departments only. The process is usually conducted informally by a group of staff through workshops, meetings, or similar types of activity. The analysis may be undertaken at a more cursory or basic level, and is primarily being undertaken due to the external pressures of having an LOS analysis within the organization's asset management plan (i.e. following O.Reg 588/17). Staff should ensure Council endorses the LOS analysis, even if done so indirectly as part of their endorsement of the overall asset management plan.

At the **intermediate level of maturity**, the LOS analysis will now be completed for most departments that provide services. With most departments included in the analysis, representatives from each department provide input in the process. Staff complete a detailed LOS analysis, ensuring both internal organizational objectives and external asset management pressures are addressed. Council should directly endorse the LOS analysis by specific recommendation, either as part of the asset management plan endorsement, or through independent report(s) completed as part of the overall asset management process.

At the **advanced level of maturity**, staff will undertake a detailed LOS analysis for all departments that provide services. Input from the public is sought through the use of workshops, public meetings, and/or surveys. The LOS analysis is undertaken taking into consideration the public input. Both internal organizational objectives and external pressures should be addressed through the LOS analysis. Council should directly endorse the LOS analysis by specific recommendation either as part of the asset management plan endorsement, or through independent report(s) completed as part of the overall asset management process.

What are Levels of Service?

An understanding of the levels of service provided by a municipality is required in order to effectively deliver services using municipal capital assets. Capital assets are only in place to deliver identified services to the community. Therefore, municipal staff and Council should have a strong understanding of the service levels expected by the community, while also taking into consideration what service levels are affordable. Although the community desires for service level can limitless, what the community is willing to pay for is often less so. Through the LOS analysis, community needs and expectations are considered, and also measure against the cost and the willingness to pay.

The IIMM defines LOS as "the defined service quality for a particular service against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental, acceptability and cost".

The IIMM notes that the LOS analysis can be used to:

- Inform customers of the proposed level of service to be offered;
- Develop asset management strategies to deliver the required level of service;
- Measure performance against defined (current and desired) levels of service;
- Identify the costs and benefits associated with the services offered; and
- Enable customers to assess the suitability, affordability, and equity of the services offered.

While these outcomes benefit the asset management process, they can also benefit other organizational processes, such as strategic planning, developing master plans, and the budget development and approval process.

Factors Affecting Levels of Service

A number of factors may affect the level of service delivery for a particular asset type. An organization’s policy objectives, community expectations, legislative requirements, and resource constraints are some of the factors that generally influence the level of service. The IIMM provides the following details on some of these factors:

- **Community Expectations**: This factor represents one of the major drivers in setting levels of service. Information is needed about the community’s expected level of service and willingness to pay for this service. A balance then needs to be determined between that expected level of service and its associated costs.
- **Legislative requirements**: Legislative standards and regulations affect the way assets are managed. These requirements stipulate the minimum levels of service. Therefore, relevant requirements must be taken into consideration in setting levels of service.
- **Policies and objectives**: Existing policies and objectives should be taken into account when developing levels of service, with care taken to remain aligned with an organization’s strategic planning documents.
- **Resource availability and financial constraints**: These constraints play a large role in an organization’s ability to provide sustainable levels of service. Therefore, resource constraints play a significant part in determining affordable levels of service.

Current vs. Expected Levels of Service

The concept of comparing current vs. expected LOS is very important to the overall LOS analysis process and will be discussed in more detail in a later section, however, it is being introduced in this section. Current levels of service are essentially the service levels that are being provided by a municipality at the present time. They can be defined through qualitative descriptions, lifecycle cost related programs, and/or performance measures. The current year's budget reflects the cost of providing current levels of service. However, the current year's budget may or may not include adequate funding to maintain current levels of service over time (more on this in the performance measures sections). Information on current levels of service enables an understanding of the difference between the service levels currently being provided and the service levels expected.

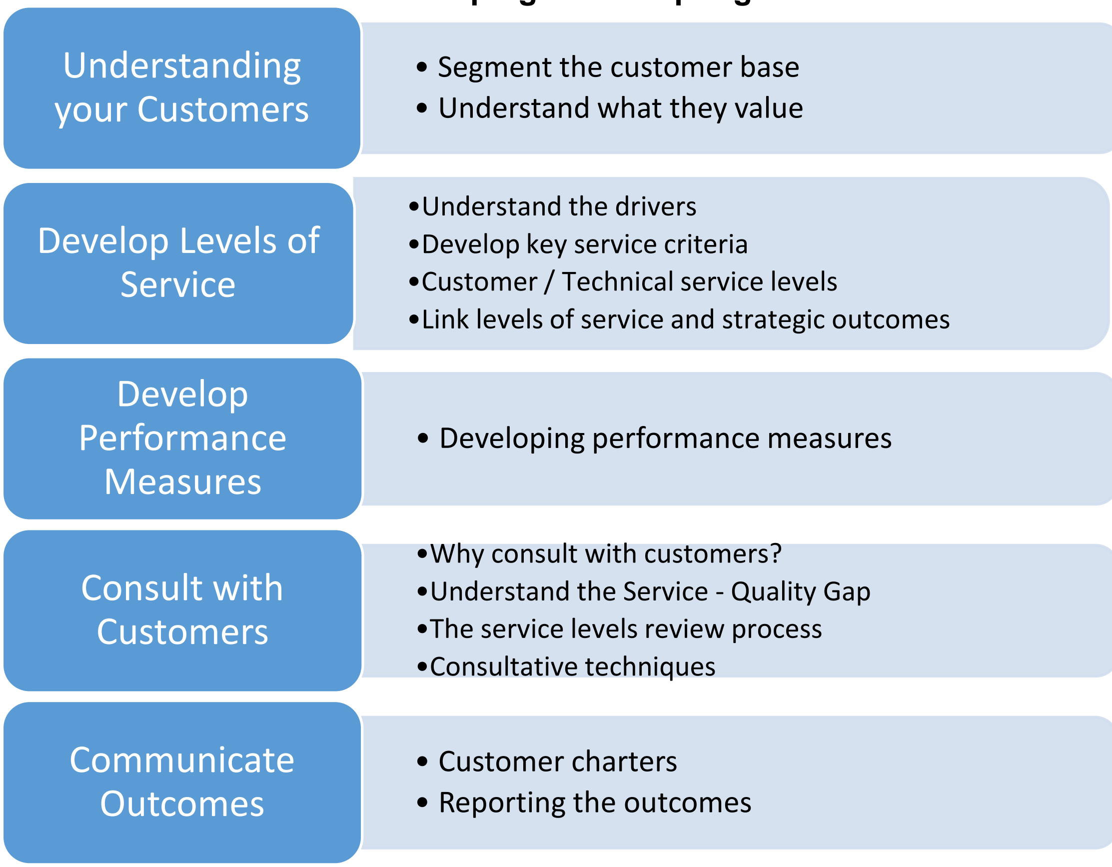
Levels of service are differentiated between:

- **Community Expectations**: Based on what the customer and community expects to receive;
- **Strategic (or Customer) Levels of Service**: Measuring community expectations against attributes such as reliability, quality, safety, efficiency, and capacity. Outlines what the customer will receive from a levels of service standpoint; and
- **Technical Levels of Service**: How the organization provides (or will provide) the levels of service, often using operational or technical measures.

The Process of Developing a Level of Service Analysis

The IIMM defines the process for developing and adopting level of service measures as follows:

Figure 4-3
IIMM Process for Developing and Adopting Levels of Service



Or, in other words, creating an LOS analysis can involve:

1. **Defining Customer Expectations**
    - Understanding your customer and their wants/needs
2. **Developing Levels of Service**
    - Customer vs. technical LOS
    - Current vs. expected LOS
    - Use of performance measures and key performance indicators (KPIs)
3. **Consultation, Communication and Approval**
    - Receiving input on the proposed LOS analysis
    - Communicating the LOS analysis to stakeholders
    - Seeking Council approval of the LOS analysis
4. **Ongoing Review, Updates and Improvements**
    - Updating the LOS analysis, as needed

Defining Customer Expectations

The process of defining customer expectations involve any or all of the following:

- Staff input;
- Use of industry/local knowledge;
- Existing reports that refer to customer expectations;
- Council input; and/or
- Seeking public input.

Involving Council and/or the public in the process of defining customer expectations provides a direct connection between the community and their expectations that may not identified through other sources. Other sources can involve assumptions and estimations of customer expectations. Therefore, direct input from the public can be more accurate, although it requires a more extensive and time-consuming process. Public input can take many forms, including:

- Public meetings;
- Specific workshops or focus groups;
- Comment submissions; and
- Surveys or questionnaires.

Developing Levels of Service

To be effective in developing levels of service, input should be gathered from and communicated to all interested parties. At this point, the services being provided and the community expectations should be documented. Using this information, the applicable departments and staff to include in the LOS discussions can be determined. This section deals only with the process of developing an LOS analysis, and further detail on the actual content of that process will be discussed below in other sections.

Consultation, Communication, and Approval

Once the LOS analysis is complete in “draft form”, decisions should be made regarding the consultation, communication, and/or approval processes that need to occur to finalize the analysis. From a consultation point of view, various stakeholders will be brought into the process to review the draft LOS analysis and provide feedback. These stakeholders may include other staff members, Council, and the public. The approval of the LOS analysis may be simply the discussion and approval at a Council (or

Committee) meeting. A more extensive process may include public workshops or online videos/reports to communicate the LOS analysis to the public and Council before it is discussed and approved. A decision on when to approve the LOS analysis, either as part of an overall asset management plan, or independently of an asset management plan, will also have to be made. An independent approval process puts a lot more focus on the LOS analysis than when noted as part of an overall asset management plan approval discussion. The additional attention may be useful in getting Council and the public to understand and buy into the analysis and its conclusions.

Ongoing Review, Updates and Improvements

The establishment of an LOS analysis is not a one-time occurrence. Rather, it is a constant and evolving process with ongoing consideration to customer expectations, legislative or technological requirements/changes, corporate strategic mission and objectives, and financial opportunities/constraints. It is recommended that municipalities review their LOS on a periodic basis (see Chapter 8 on Continuous Improvements). The frequency of these reviews should be established and followed by staff as part of the Strategic Asset Management Policy (see Chapter 2).

As a municipality moves through the maturity framework to a desired level, it is expected that the amount of public input regarding LOS will likely increase. It is important to note that although seeking public input is important, this input must be considered taking into account financial considerations. Also, the degree of public input in the asset management process will depend on the municipality’s capacity to establish a reasonable and meaningful process.

Establishing LOS targets is often an iterative process. The process starts with public (community) expectations of service levels and then measuring these expectations against constraints such as financial considerations, resourcing and affordability. Only after these constraints have been taken into account will it be determined whether public expectations can in fact be approved as expected (target) LOS for the municipality’s asset management process.

4.5 Determining Community Expectations

Having a good understanding of community expectations help ensure that the community’s true values are reflected in defining LOS in an informed manner.

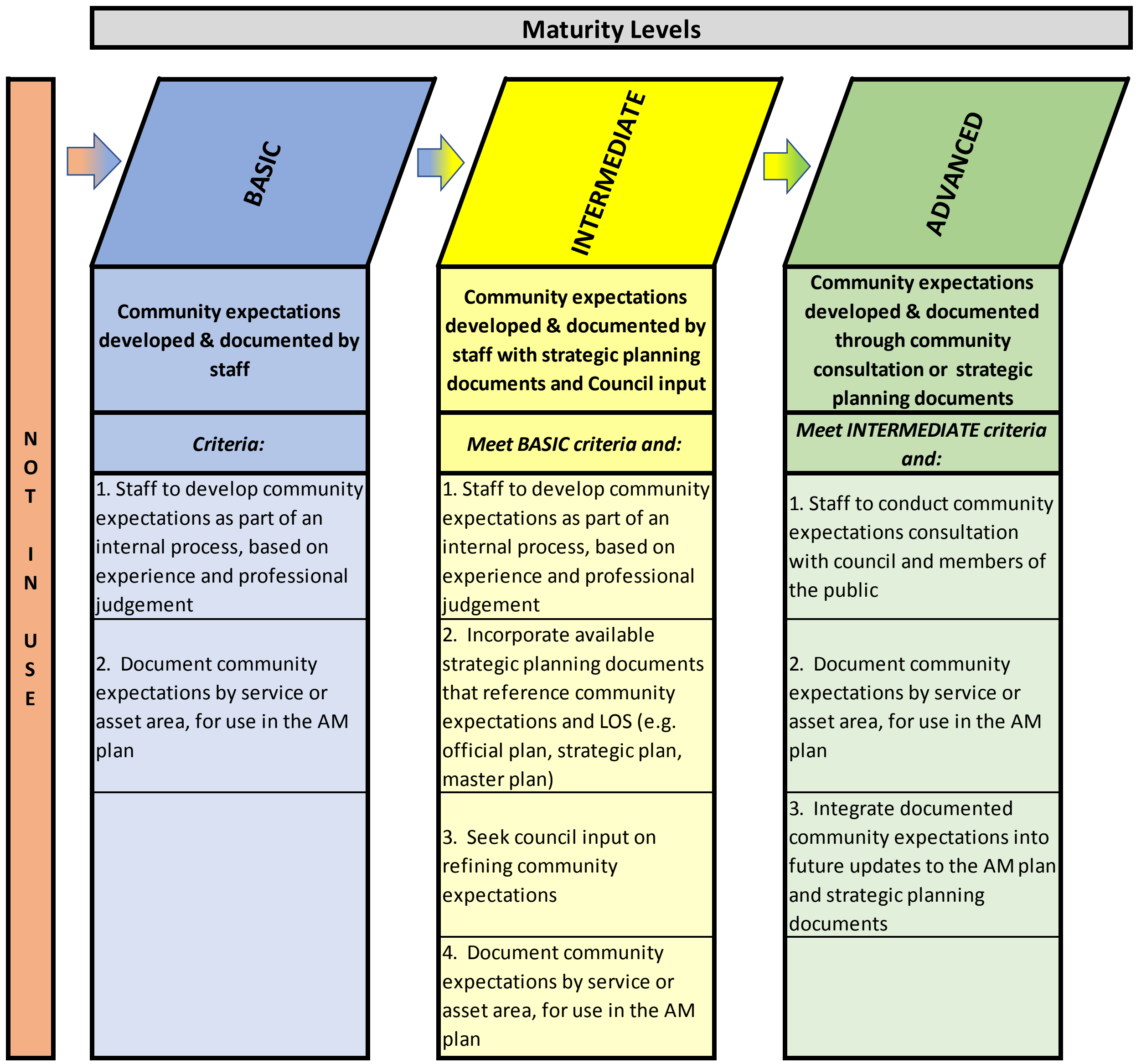
To what extent have community expectations been documented in the LOS analysis?

Background

One of the first steps in the development of an LOS analysis determining what services/service levels the community expects the municipality to provide. While there are different approaches to gathering and utilizing this information, it should be based on the service identification process discussed above. As mentioned previously, community expectations and strategic (customer) levels of service (discussed later) are documented based on how the customer and community receives the service, while technical LOS relates to how staff deliver the service.

Levels of Maturity – Community Expectations

To what extent have community expectations been documented in the LOS analysis?



At the **basic level of maturity**, community expectations are usually developed by staff, as a result of an internal (informal) process and based on staff experience and professional judgment. The community expectations are documented by service/asset area, for use within the asset management plan.

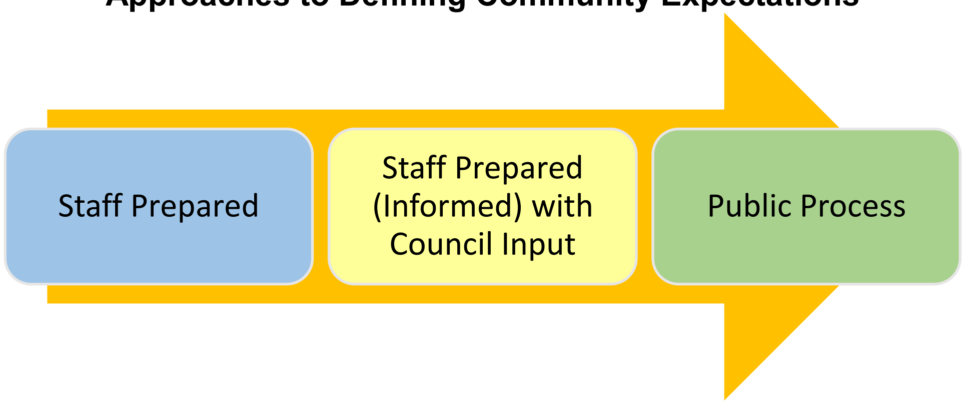
At the **intermediate level of maturity**, staff would still likely develop community expectations, but incorporate existing strategic planning documents (e.g. official plan, strategic plan, master plan, etc.). Council input will also be sought and used to refine community expectations. From this point, community expectations are documented by service/asset area, for use in the asset management plan.

At the **advanced level of maturity**, community consultations are undertaken early in the process, including Council and members of the public, to identify community expectations. The community expectations are documented by service/asset area, for use in the asset management plan. Moving forward, the community expectations are integrated into future updates to the asset management plan, as well as other strategic planning documents.

Developing Community Expectations

The process of developing community expectations can be as simple as staff completing the process or be more in depth and include Council and/or the public in the process. In addition, existing reports, processes, or meeting minutes can be used to inform the process with more detailed information already known regarding community expectations. As illustrated in Figure 4-4 (below), there is potential for increased accuracy in the process and acceptance of the results by Council and the public as the more complex public process is used.

Figure 4-4
Approaches to Defining Community Expectations



The customers who are the ultimate users of the services will have diverse needs and expectations. This underscores the need to understand the customers and connect their divers needs to the level of service being provided. It is beneficial to group the users based on their type and needs when developing community expectations. As part of this process, the community expectations of the various customer groups will need to be consolidated for use in the LOS analysis.

The actual process involved in documenting community expectations is similar, regardless of who is included in the process. It starts with the identification of services for the municipality (including applicable capital assets involved in providing that service), and then documenting what the community expectations are for each service area. The documentation should be completed in a way that reflects how the community would communicate expectations. While this sounds simplistic, this process will have a significant impact on asset management planning as a whole within the municipality. A misunderstanding of community expectations can result in the development of an asset management plan that does not meet the needs of the community.

Expanding on the table of services discussed previously, the following table provides examples of community expectations for each service area:

Table 4-2
Sample Community Expectations

Department	Services	Applicable Assets	Community Expectations
Transportation Services	Roads	Road base, surface, bicycle lanes, turning lanes, etc.	**"Smooth roads that take me where I need to go without too much congestion"**
	Bridges and Culverts	Structure, deck, surface, etc.	**"Sturdy bridges that take me where I need to go without too much congestion"**
	Sidewalks	Sidewalks	**"Sidewalks that I can walk safely on to key areas of the Community"**
	Streetlights	Poles, fixtures, etc.	**"Streetlights that work so I don't have to walk in the dark"**
	Traffic Lights	Poles, lights, controllers, etc.	**"Traffic lights are placed where needed to ensure smooth and safe traffic flow"**
	Transit	Vehicles, facilities, equipment, etc.	**"Access to public transit to allow me to get where I need to go on a reasonable schedule"**

Department	Services	Applicable Assets	Community Expectations
	Parking	Lots, lights, facilities, equipment, etc.	**"Safe and convenient parking is available, where needed"**
	Winter Control	Vehicles, equipment	**"Able to drive on roads safely in winter conditions"**
Environmental	Water Distribution	Water mains, wells, pumps, towers, valves, hydrants, etc.	**"Clean water, when I need it, that tastes good, has adequate pressure, at a reasonable cost"**
	Water Treatment	Treatment plant (treatment systems, chlorination, pumps, chemical injection and filtration, piping, SCADA, pump houses, etc.	
	Wastewater Collection	Mains, pumping systems, manholes, etc.	**"Wastewater systems that take my waste away and treats it with no harm to the environment"**
	Wastewater Treatment	Treatment plant (separators, aeration systems, pumps, chemical systems, SCADA, settlement ponds, facilities, etc.)	
	Stormwater	Urban: Stormwater mains, catch basins, ponds, headwalls, etc.	**"No flooding on our streets or properties"**
		Rural: Open ditches, culverts, ponds, headwalls, etc.	
	Solid Waste Collection	Vehicles, transfer stations, weigh scales, containers, etc.	**"My garbage and recycling to be picked up each week and processed**

Department	Services	Applicable Assets	Community Expectations
	Solid Waste Disposal	Landfills, monitoring wells, compactors, bulldozers/loaders, etc.	**with no harm to the environment"**
	Solid Waste Diversion	Transfer stations, vehicles, containers, etc.	
Protection Services	Fire	Vehicles, equipment, facilities, hydrants, etc.	**"The fire department to arrive at emergencies as fast as possible with capable firefighters"**
	Police	Vehicles, equipment, facilities, etc.	**"Police will respond to emergencies in a timely manner"**
	Protective Inspection and Control	Vehicles, equipment, facilities, etc.	**"Ability to ensure by-laws are being adhered to"**
Recreation and Cultural Services	Recreation Facilities	Facilities (arenas, pools, community halls, etc.), vehicles, equipment	**"Good recreation facilities to meet the demands of the community"** **"Access to community halls for community functions"**
	Parks	Vehicles, equipment, facilities, active parks, passive parks, etc.	**"Parks that are clean, safe, with playgrounds and open fields"**
	Libraries	Facilities, equipment, etc.	**"All facilities should be accessible"**
	Museums		
Health Services	Public Health/Hospitals	Facilities, equipment, etc.	**"Access to health services to enhance my quality of life"**
	Ambulance Services	Facilities, vehicles, equipment, dispatch equipment, etc.	**"Properly equipped ambulance personnel will be dispatched and arrive on-site when needed"**

Department	Services	Applicable Assets	Community Expectations
	Cemeteries	Land improvements, facilities, equipment, etc.	**“Availability of a well-maintained and private site for interment needs”**
Social Services and Social Housing	Assistance to Aged Persons	Facilities, equipment, etc.	**“Accessible and well-maintained housing for senior citizens”**
	Child Care	Facilities, equipment, etc.	**“Availability of child care services, so parents can pursue their careers”**
	Housing/Co-op/Rent	Facilities, equipment, etc.	**“The community should support opportunities for independent living”**
Planning and Development Services	Residential/Industrial/ Commercial/Agriculture	Land, services, etc.	**“Land should be made ready for development, as needed”**
General Government	Administration	Equipment, vehicles, facilities, etc.	**“A Town Hall that allows me to attend Council meetings, pay taxes and get my questions answered**

It is likely that the community will expect a high level of service in each area, without having an understanding of the financial consequences of providing that level of service. An opportunity to improve the public’s understanding of the relationship between service levels and cost can be added to the ongoing development and refinement of community expectations. The public will first need to understand a municipality’s asset management process (as well as the implications of plan recommendations) before clearly defined expectations can be received from them. The process of providing the connection between cost and service level will hopefully assist the public understanding which can be used to revise documented community expectations. In a later section, the process of outlining the financial impacts of levels of service will be discussed.

4.6 Developing Strategic (Customer) Levels of Service

Well-defined strategic LOS relate to community expectations and thereby clearly communicate desired customer outcomes. These levels of service are described in a manner that outlines what is being received by the customer.

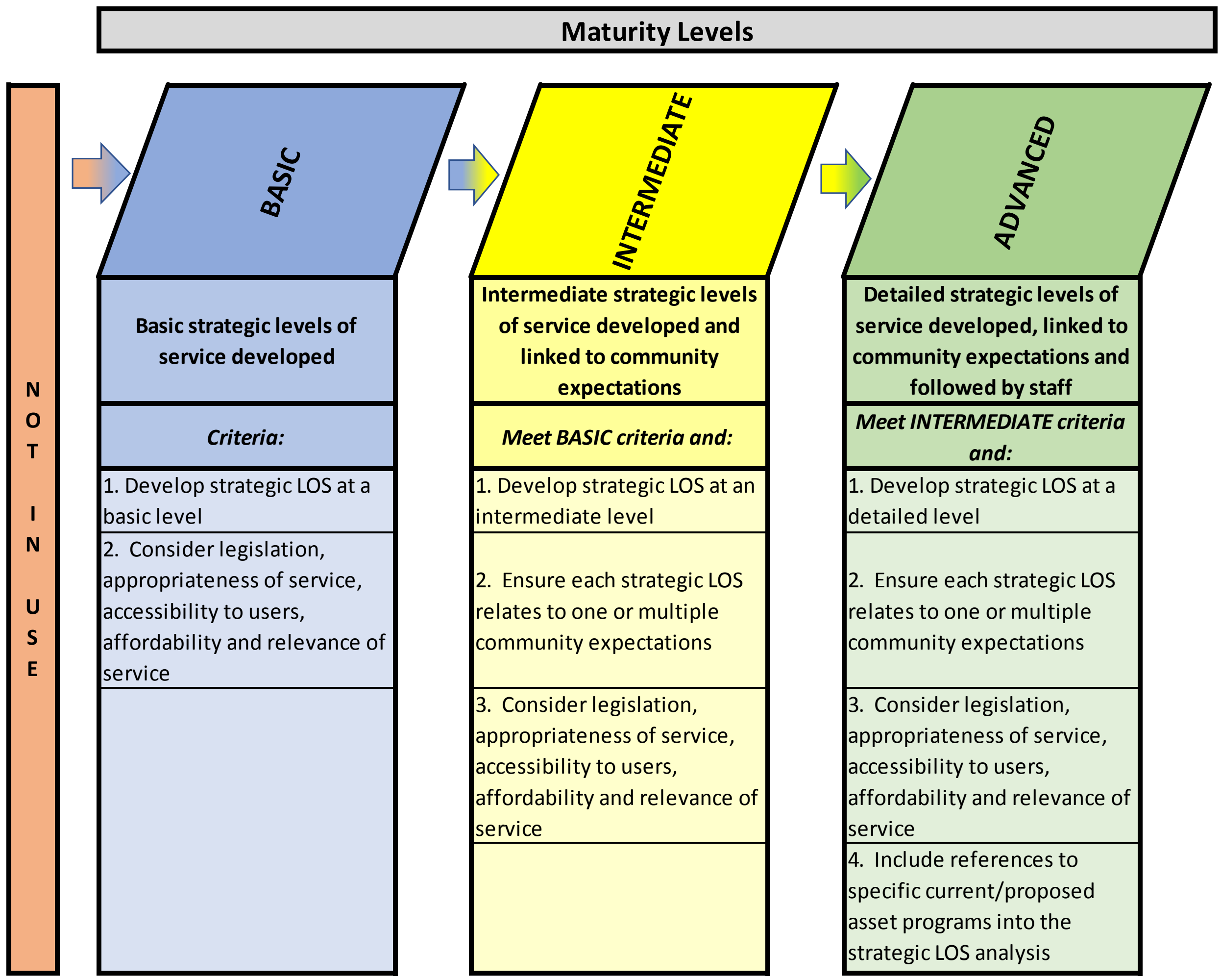
To what extent have strategic (customer) LOS categories been developed and used?

Background

Strategic (or customer) LOS relates to broad issues such as overall outcomes or services for the community. They are recorded in a manner that describes how the customers are receiving the service. This expands on the community expectations discussed earlier and attempts to describe the levels of service in terms of what is actually being provided to the customer from a strategic point of view.

Levels of Maturity – Strategic (Customer) LOS Categories

To what extent have strategic (customer) LOS categories been developed and used?



At the **basic level of maturity**, strategic (customer) LOS will be developed, but only at a high-level, with consideration given to key customer outcomes, including relevant legislation, appropriateness of service, accessibility to users, affordability and relevance of service. At this level, there is not yet direct linkage to community expectations (or the community expectations analysis is incomplete). At a minimum, the legislative requirements outlined in O.Reg 588/17 with respect to customer LOS will be met.

At the **intermediate level of maturity**, municipalities will develop strategic (customer) LOS at a more comprehensive level. Each strategic LOS would be determined with community expectations taken into account and directly linked to the analysis. As with the basic level of maturity, key customer outcomes including relevant legislation, appropriateness of service, accessibility to users, affordability and relevance of service should also be considered.

At the **advanced level of maturity**, detailed strategic LOS will be developed with both community expectations and customer outcomes taken into account. References to specific current and/or proposed asset programs that assist in providing the service will be included in the strategic LOS analysis.

<u>Developing Strategic (Customer) Levels of Service</u>

Strategic LOS (also commonly referred to as customer LOS) are documented based on how the customer and community receives the services provided by the municipality. This differs from technical LOS, which are documented based on how the municipality provides the services. To clarify, strategic (customer) LOS are from the customer's perspective while technical LOS are from the municipality's perspective.

The overview section described the ways in which strategic (customer) LOS can be documented and tracked, including:

- Qualitative descriptions of services and service levels;
- Identifications of programs, procedures and/or activities that are required to achieve particular service levels; and
- Performance measures or key performance indicators (KPIs) that can illustrate the progression of service levels (i.e. through trending analysis) and an ultimate objective or target performance measure/KPI to strive for.

This section focuses on qualitative descriptions of levels of service. Programs/procedures and performance measures will be discussed in later sections.

A number of factors may affect the strategic LOS for a particular asset type. Factors include:

- Customer expectations;
- An organization's policy and objectives;
- Legislative requirements; and
- Resource constraints.

Strategic (customer) LOS define service levels in relation to a range of attributes, for example:

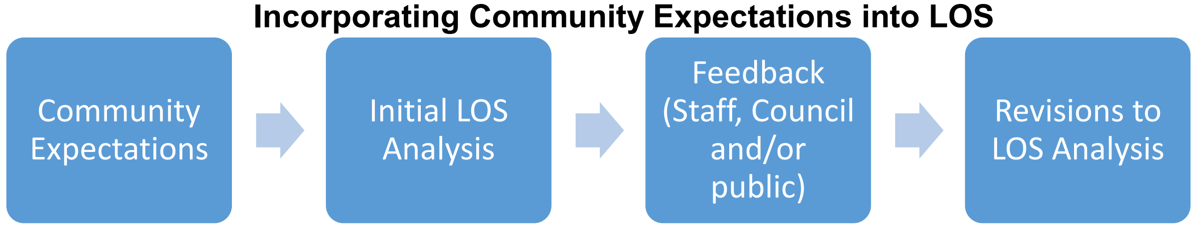
- Reliability;
- Functionality;
- Quantity;

- Quality;
- Responsiveness;
- Safety;
- Capacity;
- Environmental impacts;
- Efficiency;
- Affordability;
- Speed;
- Availability;
- Sustainability;
- Appearance;
- Comfort; and
- Efficiency.

In some cases, these attributes relate to asset performance, and in other cases they describe customer benefit. Customer benefit is very much a strategic (customer) attribute, however, asset performance can be both strategic (customer) LOS and technical LOS. If the customer directly uses the asset (e.g. roads), then the performance of that asset is more related to strategic LOS (i.e. how the customer experiences the service). If, however, the customer does not directly use the asset (e.g. a snow plow is helping provide safe roads, but the plow itself is not directly used by the customer), then the performance of that asset is more related to technical LOS (i.e. how the municipality/staff provide the service).

The act of defining strategic LOS can involve consolidating customer expectations for a particular service, and setting a level of service (using various descriptive attributes) that attempts to meet customer expectations. Customer expectations are one of the major drivers in setting levels of service (as discussed above), as it is the customer expectations that lays the foundation for service levels established from a strategic point of view. This process can assist in identifying the customer's willingness to pay for particular service levels.

Figure 4-5
Incorporating Community Expectations into LOS



Examples are as follows (attributes are underlined):

Table 4-3
Sample Strategic LOS – Expected

Services	Applicable Assets	Community Expectations	Strategic LOS Expected (Customer Perspective)
Roads	Road base, surface, bicycle lanes, turning lanes, etc.	"Smooth roads that take me where I need to go without too much congestion"	**<u>Safe</u>, <u>reliable</u> roads with <u>adequate capacity</u>**
Bridges and Culverts	Structure, deck, surface, etc.	"Sturdy bridges that take me where I need to go without too much congestion"	**<u>Safe</u>, <u>reliable</u> bridges with <u>adequate capacity</u>**
Sidewalks	Sidewalks	"Sidewalks that I can walk safely on to key areas of the Community"	**<u>Safe</u> sidewalks, <u>access</u> from subdivisions to downtown**
Streetlights	Poles, fixtures, etc.	"Streetlights that work so I don't have to walk in the dark"	**<u>Reliable</u> streetlights**
Traffic Lights	Poles, lights, controllers, etc.	"Traffic lights are placed where needed to ensure smooth and safe traffic flow"	**<u>Reliable</u> traffic lights**
Transit	Vehicles, facilities, equipment, etc.	"Access to public transit to allow me to get where I need to go on a reasonable schedule"	**<u>Reliable</u> and <u>convenient</u> transit services**
Parking	Lots, lights, facilities, equipment, etc.	"Safe and convenient parking is available, where needed"	**<u>Convenient</u> and <u>secure</u> parking locations**
Winter Control	Vehicles, equipment	"Able to drive on roads safely in winter conditions"	**<u>Safe</u> roads in winter**

Services	Applicable Assets	Community Expectations	Strategic LOS Expected (Customer Perspective)
Water Distribution	Water mains, wells, pumps, towers, valves, hydrants, etc.	"Clean water, when I need it, that tastes good, has adequate pressure, at a reasonable cost"	**Quality and efficient water supply, with adequate capacity**
Water Treatment	Treatment plant (treatment systems, chlorination, pumps, chemical injection and filtration, piping, SCADA, pump houses, etc.		
Wastewater Collection	Mains, pumping systems, manholes, etc.	"Wastewater systems that take my waste away and treats it with no harm to the environment"	**Quality wastewater collection, with adequate capacity and no environmental impacts**
Wastewater Treatment	Treatment plant (separators, aeration systems, pumps, chemical systems, SCADA, settlement ponds, facilities, etc.)		
Stormwater	Urban: Stormwater mains, catch basins, ponds, headwalls, etc.	"No flooding on our streets or properties"	**Stormwater system with adequate capacity**
	Rural: Open ditches, culverts, ponds, headwalls, etc.		

Services	Applicable Assets	Community Expectations	Strategic LOS Expected (Customer Perspective)
Solid Waste Collection	Vehicles, transfer stations, weigh scales, containers, etc.	"My garbage and recycling to be picked up each week and processed with no harm to the environment"	**Responsive and efficient solid waste collection system**
Solid Waste Disposal	Landfills, monitoring wells, compactors, bulldozers/loaders, etc.		
Solid Waste Diversion	Transfer stations, vehicles, containers, etc.		
Fire	Vehicles, equipment, facilities, hydrants, etc.	"The fire department to arrive at emergencies as fast as possible with capable firefighters"	**Responsive and quality fire services**
Police	Vehicles, equipment, facilities, etc.	"Police will respond to emergencies in a timely manner"	**Responsive and quality police services**
Protective Inspection and Control	Vehicles, equipment, facilities, etc.	"Ability to ensure by-laws are being adhered to"	**Responsive and quality inspection services**
Recreation Facilities	Facilities (arenas, pools, community halls, etc.), vehicles, equipment	"Good recreation facilities to meet the demands of the community"	**Adequate quantity and quality of recreation facilities**
		"Access to community halls for community functions"	**Reliable, safe community halls**

Services	Applicable Assets	Community Expectations	Strategic LOS Expected (Customer Perspective)
Parks	Vehicles, equipment, facilities, active parks, passive parks, etc.	"Parks that are clean, safe, with playgrounds and open fields"	**Adequate quantity and quality of parks**
Libraries	Facilities, equipment, etc.	"All facilities should be accessible"	**Safe and functional facilities**
Museums			
Public Health/Hospitals	Facilities, equipment, etc.	"Access to health services to enhance my quality of life"	**Available, quality health care**
Ambulance Services	Facilities, vehicles, equipment, dispatch equipment, etc.	"Properly equipped ambulance personnel will be dispatched and arrive on-site when needed"	**Reliable, responsive ambulance service**
Cemeteries	Land improvements, facilities, equipment, etc.	"Availability of a well-maintained and private site for interment needs"	**Available, well-maintained cemeteries**
Assistance to Aged Persons	Facilities, equipment, etc.	"Accessible and well-maintained housing for senior citizens"	**Available, functional housing for senior citizens**
Child Care	Facilities, equipment, etc.	"Availability of child care services, so parents can pursue their careers"	**Available, safe child care service locations**
Housing/Co-op/Rent	Facilities, equipment, etc.	"The community should support opportunities for independent living"	**Available, functional assisted living facilities**

Services	Applicable Assets	Community Expectations	Strategic LOS Expected (Customer Perspective)
Residential/Industrial/ Commercial/Agriculture	Land, services, etc.	"Land should be made ready for development, as needed"	**Available serviced land for development**
Administration	Equipment, vehicles, facilities, etc.	"A Town Hall that allows me to attend Council meetings, pay taxes and get my questions answered	**Safe and functional equipment and facilities**

While the examples in the table above are high level, further descriptions can be included in the identification of the strategic (or customer) LOS, such as expanding on:

- How these service attributes (e.g. reliability, functionality, etc.) will be provided to customers; and
- Breaking down community expectations by defined customer groups.

Table 4-4 (below) is an example of linking the services being provided to the assets providing the service, the defined customer groups impacted by the service and the strategic (customer) LOS established. This example labels the service being provided at a higher level, as "Transportation Services".

Table 4-4
Linking Services, Assets, Customers, and Strategic LOS

Service	Asset Type	Various Customer Groups	Strategic (Customer) LOS
Transportation Services	Road Network	• Drivers of private vehicles • Drivers of public or commercial vehicles • Motorcyclists • Local residents • Commercial • Commuters • Visitors / tourists • Emergency Services / Police • Pedestrians • Cyclists • Recreational use	• Safe, comfortable and efficient transportation system • Safe journey • Smooth ride and clear directions • Efficient, safe, and cost-effective transport of goods and services to and from customers • Cost effective transportation options • Safe access and parking

The IIMM identifies a number of important items to consider when identifying customer service levels:

- All significant activities for each service should be covered;
- The number of service criteria should be manageable and appropriate to the quality and availability of the financial and service level data;
- Service criteria should be recognizable, meaningful and assist the organization to achieve its goals; and
- Levels of service should consider: quality, quantity, safety, capacity, fitness for purpose, aesthetics, reliability, responsiveness, environmental acceptability, and cost.

As previously mentioned strategic (customer) LOS relates to how the customer receives the service, in terms of both tangible and intangible measures and criteria. Further examples of tangible measures that relate specifically to the customer include:

- Appearance of assets (e.g. facilities);
- Frequency of service disruptions;
- Accessibility to users (e.g. 24 hours a day, 7 days a week);
- Availability of a service; and
- Incidences of illness or injury.

Examples of intangible measures include:

- Appropriateness of service;
- Affordability;
- Relevance of the service being provided in terms of demand characteristics, future demographics, current back-logs and where the pressure points are;
- Speed of service; and
- Attitude and ease of dealing with the municipality.

At a strategic level, LOS will generally apply to a generic service, class or large grouping of assets and have a long-term focus. As such, they should refer to levels of services that apply to the whole of that service or asset class. Alternatively, strategic LOS can be set based on specific categories of assets within that class. For example, a municipality may set strategic LOS for water services as “to provide quality and efficient water supply, with adequate capacity”. This generic LOS statement applies to all water supply. If the municipality wanted to break down “water supply” into smaller service categories (e.g. residential vs. non-residential water supply, or large diameter mains vs. smaller diameter mains), specific levels of service could be defined at that level, if there were differing statements to make about LOS in each category.

In order to better understand the community’s expectations and limitations related to levels of service, it can be beneficial to complete a public consultation process. This process will help identify customer expectations, can help link these expectations to strategic (customer) LOS within the LOS analysis, and assist in educating the public on the financial implications of providing particular levels of service. A balance can then be made between the expected LOS and cost.

O.Reg 588/17

The IJPA through O.Reg 588/17 has incorporated some mandatory customer (community) based descriptions for core infrastructure asset categories. As these descriptions are connected with mandatory performance metrics that are to be reported on in a municipality's AM plan, both have been provided in the Performance Measures section below (see Table 4-15).

4.7 Comparing Strategic Current vs. Expected Levels of Service

Analyzing differences between current and expected LOS allows municipalities to identify areas for improvement, create priorities, and quantify financial impacts.

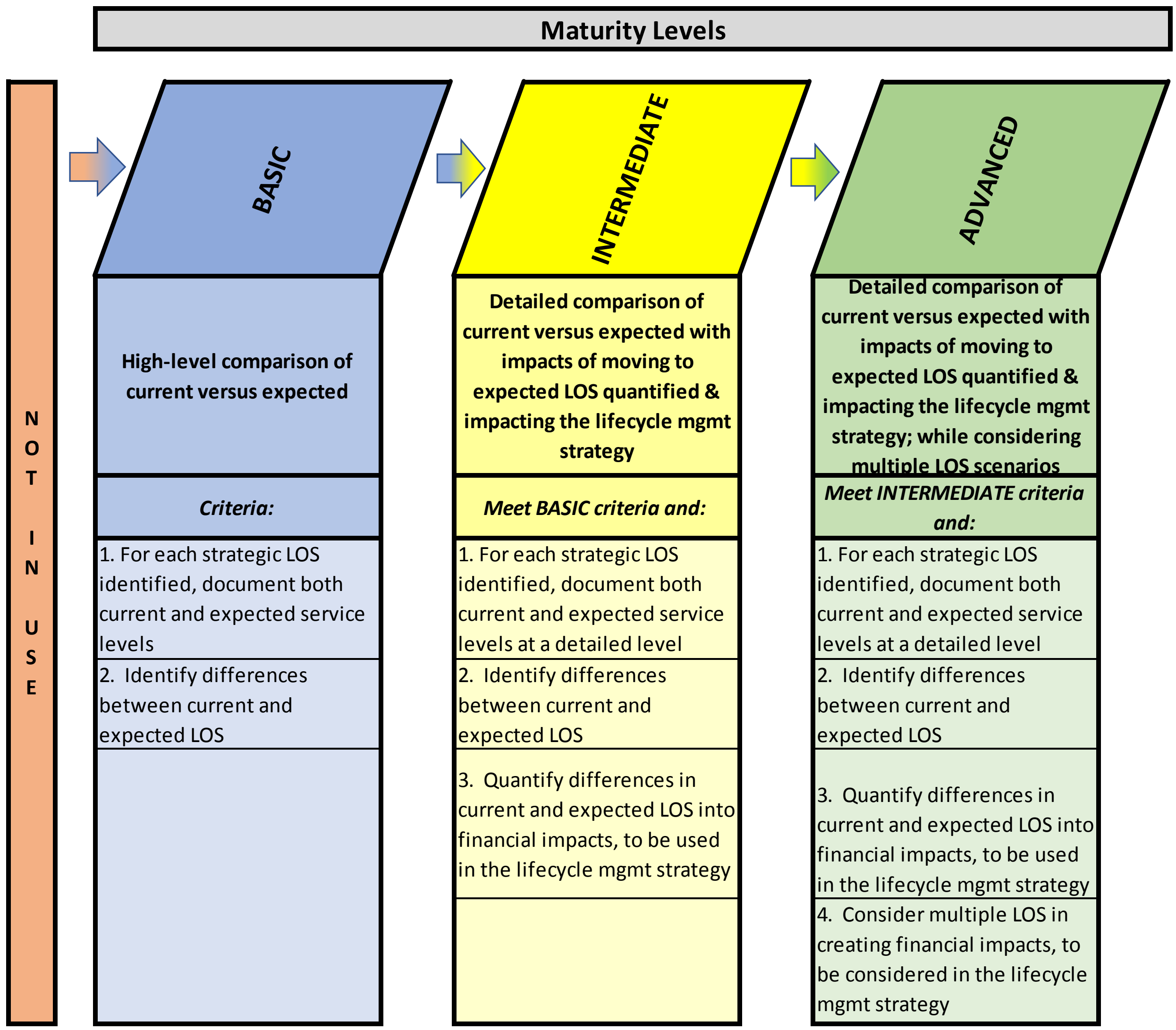
To what extent are current levels of service compared to expected levels of service at a strategic (customer) level?

Background

One of the ultimate goals of asset management planning is to move to (or towards) expected LOS. To evaluate the level of success of the asset management planning process from a level of service perspective, a comparison of current LOS to expected LOS is needed. In this manner, municipalities can identify areas of success, and assess where improvements are required, how to move to expected LOS, and at what cost.

Levels of Maturity: Current LOS vs. Expected LOS at Strategic Level

To what extent are current LOS compared to expected LOS at a strategic level?



At the **basic level of maturity**, municipalities will undertake a high-level comparison of current versus expected strategic LOS at the strategic (customer) level. The comparison is predominantly qualitative (through the use of descriptions) and the results and differences are identified and documented for use in the LOS analysis. At a minimum, the legislative requirements outlined in O.Reg 588/17 with respect to customer LOS will be met.

At the **intermediate level of maturity**, the differences between current and expected strategic LOS are also quantified into asset lifecycle impacts as well as financial impacts, and the results carried forward for implementation within the lifecycle management strategy (see Chapter 5).

At the **advanced level of maturity**, municipalities complete the additional step of considering multiple LOS when quantifying financial impacts, and consider the results within the lifecycle management strategy scenarios (see Chapter 5).

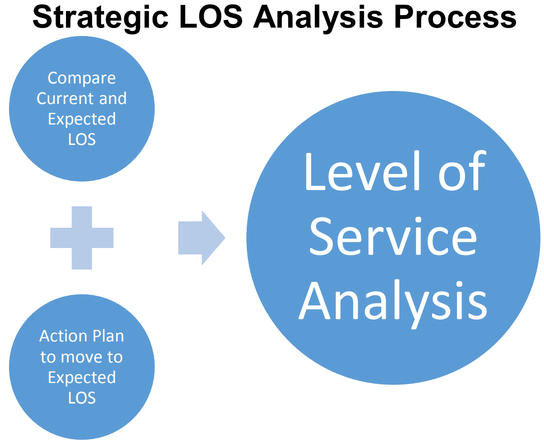
Comparing Current LOS to Expected LOS (Strategic)

As outlined earlier in this chapter, a strategic LOS analysis includes:

- An identification of existing LOS;
- A determination of expected (or desired) LOS; and
- An assessment of the implications of moving from existing LOS to expected (desired) LOS over a forecast period.

Therefore, if current LOS equates to what service level is currently provided, expected LOS outlines the overall objective or target LOS to be reached at some point in time. The amount of time it will take to reach expected LOS depends on the assumptions a municipality makes within the asset management planning process. Using different assumptions will lead to multiple scenarios and multiple timelines within the within the lifecycle management strategy. For example, a municipality could decide to meet expected LOS in a particular area in 10 years. When that scenario is assessed within the Lifecycle Management Strategy (see Chapter 5) and the Financing Strategy (see Chapter 6) and concluded to be too expensive too quickly, the LOS analysis can be updated to include another scenario to reach expected LOS in 15 or 20 years. Alternate scenarios can also represent different (e.g. higher or lower) levels of service.

Figure 4-6
Strategic LOS Analysis Process



This section deals specifically with the comparison of current and expected LOS from a strategic (customer) perspective and the associated financial implications. While the financial implications are considered in other sections of the asset management plan, identifying gaps in service levels, and understanding how they impact the customer, is critical in assessing these implications within the proper context. Table 4-5 (below) illustrates a high-level comparison of expected LOS (developed in earlier sections) to current LOS. This comparison can support an action plan that outlines what has to be done in order to move towards expected LOS. As noted earlier, the amount of time it takes to implement the action plan and the level of service defined as expected plays a role in assessing the overall financial implications of the LOS analysis. Therefore, both the amount of time and the level of service can be adjusted through the use of multiple LOS scenarios.

Table 4-5
Sample Current Strategic LOS and Action Plans

Services	Strategic LOS Expected (Customer Perspective)	Current LOS	Action Plans
Roads	Safe, reliable roads with adequate capacity	**Roads mostly safe and reliable, with some capacity issues**	**Increased rehabilitation and expansion program**
Bridges and Culverts	Safe, reliable bridges with adequate capacity	**Bridges mostly safe and reliable, with some capacity issues**	**Increased rehabilitation and expansion program**
Sidewalks	Safe sidewalks, access from subdivisions to downtown	**Safe sidewalks, access from most subdivisions to downtown**	**New sidewalk expansion program**
Streetlights	Reliable streetlights	**Reliable streetlights**	**LED program**
Traffic Lights	Reliable traffic lights	**Reliable traffic lights**	**N/A**
Transit	Reliable and convenient transit services	**Transit services mostly reliable and convenient**	**Increased inspection and maintenance**
Parking	Convenient and secure parking locations	**Parking locations convenient and secure**	**N/A**
Winter Control	Safe roads in winter	**Roads safe in winter**	**N/A**

Services	Strategic LOS Expected (Customer Perspective)	Current LOS	Action Plans
Water Distribution Water Treatment	Quality and efficient water supply, with adequate capacity	**Quality and efficient water supply, with adequate capacity**	**Water Rate Study**
Wastewater Collection Wastewater Treatment	Quality wastewater collection, with adequate capacity and no environmental impacts	**Quality wastewater collection, with adequate capacity and no environmental impacts**	**Wastewater Rate Study, Inflow and Infiltration Inspections**
Stormwater	Stormwater system with adequate capacity	**Stormwater system with adequate capacity**	**N/A**
Solid Waste Collection Solid Waste Disposal Solid Waste Diversion	Responsive and efficient solid waste collection system	**Responsive and efficient solid waste collection system**	**N/A**
Fire	Responsive and quality fire services	**Responsive and quality fire services**	**N/A**
Police	Responsive and quality police services	**Responsive and quality police services**	**N/A**
Protective Inspection and Control	Responsive and quality inspection services	**Responsive and quality inspection services**	**N/A**
Recreation Facilities	Adequate quantity and quality of recreation facilities	**Adequate quality of recreation facilities and parks, arenas beyond full capacity**	**Additional ice pad**
	Reliable, safe community halls	**Reliable, safe community halls**	**N/A**
Parks	Adequate quantity and quality of parks	**Adequate quantity and quality of parks**	**N/A**
Libraries Museums	Safe and functional facilities	**Safe and functional facilities, however, not accessible**	**Accessibility program**

Services	Strategic LOS Expected (Customer Perspective)	Current LOS	Action Plans
Public Health/Hospitals	Available, quality health care	**Available, quality health care**	**N/A**
Ambulance Services	Reliable, responsive ambulance service	**Reliable, responsive ambulance service**	**N/A**
Cemeteries	Available, well-maintained cemeteries	**Available, well-maintained cemeteries**	**N/A**
Assistance to Aged Persons	Available, functional housing for senior citizens	**Available, functional housing for senior citizens**	**N/A**
Child Care	Available, safe child care service locations	**Available, safe child care service locations**	**N/A**
Housing/Co-op/Rent	Available, functional assisted living facilities	**Available, functional assisted living facilities, however, upgrades required to meet new fire safety standards**	**N/A**
Residential/Industrial/ Commercial/Agriculture	Available serviced land for development	**Available serviced land for development**	**N/A**
Administration	Safe and functional equipment and facilities	**Safe and functional equipment and facilities**	**Upgrade non-compliant**

In Table 4-5 above, action plan items can be further detailed in terms of timing and costing. For example:

Table 4-6
Sample Strategic Action Plan Scenarios

Action Item	Scenario 1	Scenario 2	Scenario 3
New Sidewalk Expansion Program	Both sides of street, in 5 years: **$100,000 per year**	One side of street, in 5 years: **$50,000 per year**	One side of street, in 10 years: **$25,000 per year**

These scenarios can be used to educate Council and the public on the relationship between levels of service, and costs to provide expected LOS.

Action items can include:

- Non-infrastructure items;
- Maintenance items;
- Rehabilitation items/programs;
- Replacement items/programs; and/or
- Expansion items/programs.

Costing Levels of Service Action Plans

The following are required in order to cost levels of service action plans:

a) Well-defined levels of service scenarios and respective action plan items;
b) A clearly defined action plan, including what is needed, where it is needed and why;
c) A process of determining costs and unit rates associated with that action plan; and
d) Accurate cost information.

When including action items within the LOS analysis, municipalities should be mindful of:

- The total cost of implementing the action plan;
- The impact the action plan has on the future lifecycle costs of the applicable assets (more on this in Chapter 5); and
- The impact of the action plan items on projected LOS over the forecast period.

4.8 Developing Technical Levels of Service

Well-defined Technical LOS are linked to strategic LOS and define how the municipality will provide and meet expected strategic LOS. Integrating technical LOS into daily duties of operations staff can raise staff awareness of how their work contributes to providing a specific LOS to the community.

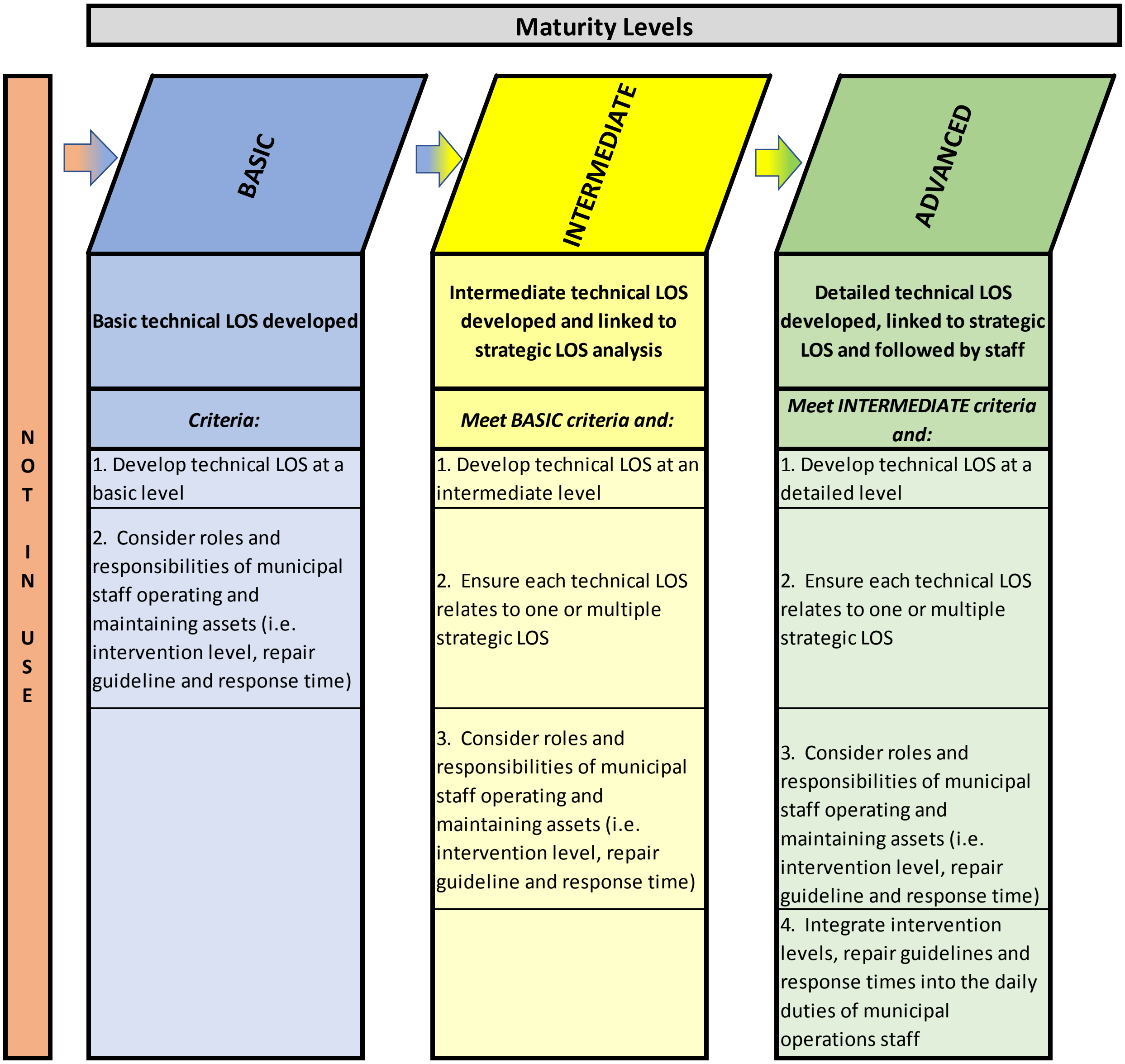
To what extent have technical LOS categories been developed and used?

Background

Technical LOS outline, from a municipal perspective, the services and service levels provided (and to be provided) to the community. This differs from strategic (customer) LOS which are more from the customer's point of view. Technical LOS should be developed and linked to the strategic (customer) LOS as well as the overall customer expectations. Technical LOS will generally be more specific than strategic LOS, relating more to the roles and responsibilities of municipal staff as well as how technical LOS differ within each broad asset category.

Levels of Maturity – Technical LOS Categories

To what extent have technical LOS categories been developed and used?



At the **basic level of maturity**, technical LOS are developed but only at a high level. Consideration is given to roles and responsibilities of municipal staff that operate and maintain assets and provide the services (i.e. intervention levels, repair guidelines and response times). At a minimum, the legislative requirements outlined in O.Reg 588/17 with respect to technical LOS will be met.

At the **intermediate level of maturity**, municipalities will develop technical LOS at a more detailed level. Each technical LOS would be considered in relation to one or more strategic (customer) LOS. Consideration would be given to roles and responsibilities of municipal staff operating and maintaining assets.

At the **advanced level of maturity**, intervention levels, repair guidelines and response times are alo integrated into the daily duties of municipal operations staff. At this level of maturity, operational staff are aware of their contribution to providing levels of service to the community.

Developing Technical Levels of Service

The discussion on strategic (customer) LOS was at a high level in the previous sections, with broad service and asset categories. For example, roads were grouped together into one category, with the following levels of service expectations:

- **Community Expectations:** “Smooth roads that take me where I need to go without too much congestion”; and
- **Strategic (Customer) LOS:** “Safe, reliable roads with adequate capacity”.

Technical LOS are documented in the same manner as strategic (customer) LOS, including:

- Qualitative descriptions of services and service levels;
- Identifications of programs, procedures and/or activities that are required to achieve particular service levels; and
- Performance measures or key performance indicators (KPIs) that can illustrate the progression of service levels (i.e. through trending analysis) and an ultimate objective or target performance measure/KPI to strive for.

This section focuses on the qualitative descriptions and programs needed from a LOS perspective. Performance measures are discussed in later sections.

While the documented structure is similar to strategic (customer) LOS, the focus for measurement has now shifted to the municipality and municipal staff. In setting technical LOS, we will think of service levels from this perspective:

- What is being done by the municipality to provide current LOS?
- What has to be done in the future in order to provide expected LOS?
- Are there performance measures that can assist in describing technical LOS?

Also, similar to strategic (customer) LOS, technical LOS define service levels in relation to a range of attributes, such as:

- Reliability;

- Functionality;
- Quantity;
- Quality;
- Responsiveness;
- Safety;
- Capacity;
- Environmental impacts;
- Efficiency;
- Affordability;
- Speed;
- Availability;
- Sustainability;
- Appearance;
- Comfort; and
- Efficiency.

As discussed in the strategic (customer) LOS section, in some cases these attributes (ab0ve) relate to asset performance, and in other cases they describe customer benefit. Customer benefit is very much a strategic (customer) attribute. However, asset performance can relate to both strategic (customer) LOS and technical LOS. If the customer directly uses the asset (e.g. roads), then the performance of that asset is more related to strategic LOS (i.e. how the customer experiences the service). If the customer does not directly use the asset (e.g. a snow plow helping to provide safe roads, but the plow is not directly used by the customer), then the performance of that asset is more related to technical LOS (i.e. how the municipality/staff provide the service).

Technical levels of service can relate to:

- Legislative compliance;
- Levels of functionality;
- Levels of financial return or asset cost;
- Reduction in the dependency for new asset solutions;
- Specific lifecycle costs (maintenance, rehabilitation, replacement, expansion);
- Levels of asset condition; and
- Risk and safety.

Specifically, technical levels of service are detailed objectives that normally relate to specific services, assets or activities. These may include such things as:

- Design standards;
- Maintenance intervention levels;
- Response times;
- Work activity standards; and/or
- Asset condition standards.

Each technical level of service is intended to ensure a particular service standard is met from a municipal or staff perspective (i.e. what an organization has to do). For example, at what point will we repair, renew or upgrade to meet the strategic (customer) LOS?

When it comes to technical LOS, it now has to be determined how municipal staff will provide this level of service. What's more, "how" may differ, depending on the road type, for example. Roads can be classified into classes or categories such as rural/semi-urban/urban or local/collector/arterial or even paved/unpaved. The technical LOS for each category may be different. For example, the attributes "safe", "reliable", and "adequate capacity" were used to describe strategic LOS. To some municipalities, these attributes can be provided by staff to all roads using the same maintenance, rehabilitation and replacement programs. However, many municipalities will consider an urban or arterial road to have a "higher" level of service than a rural or local road. In many ways, this comes back to the consequence of failure discussions outlined in Chapter 3. The consequence of failure for an arterial road that handles much more traffic at faster speeds is higher than the consequence of failure of a local road with much less traffic and reduced speeds. Differing consequences can result in differing levels of service. Going back to our road example above, providing "safe", "reliable" and "adequate capacity" roads could mean differing action plans depending on the type of road (and the risks associated with that road).

Examples for various asset categories are provided in the table below:

Table 4-7
Example of Varying Technical LOS Levels

Strategic LOS Level	Technical LOS Level
Roads and Bridges	• Local, Collector, Arterial • Rural, Semi-Urban, Urban • MMS classes 1,2,3,4,5,6 • Traffic ranges (High, Med, Low)

Strategic LOS Level	Technical LOS Level
	• By replacement cost (high value, medium value, low value)
Mains (Water, Wastewater, Storm)	• Residential, Non-Residential • By diameter (Small, Med, Large) • By replacement cost (high value, medium value, low value)
Solid Waste	• By replacement cost (high value, medium value, low value)
Facilities	• By replacement cost (high value, medium value, low value) • By the type of service being provided (high, med, low critical service)
Vehicles and Equipment	• By replacement cost (high value, medium value, low value) • By the type of service being provided (high, med, low critical service)
Land Improvements	• By replacement cost (high value, medium value, low value) • By the type of service being provided (high, med, low critical service)

One approach to identifying the correct service or asset breakdown in defining levels of service is to review maintenance, rehabilitation and replacement decisions by asset category.

- Do you perform the exact same maintenance on all roads or does it differ depending on the road type?
- Do you schedule rehabilitation and replacement needs the exact same on all roads or does it differ depending on the road type?

If you perform these lifecycle activities based on a different level or frequency, for example, on arterial roads in comparison to local roads, there is a good chance that LOS should be defined differently for each.

Table 4-8
Sample Expected Technical LOS

Services	Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)
Roads	Safe, reliable roads with adequate capacity	**Average condition rating: Local (5/10), Collector (6/10), Arterial (7/10)**

Services	Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)
		Follow Minimum Maintenance Standards
Bridges and Culverts	Safe, reliable bridges with adequate capacity	**Average condition rating: 7/10**
		Follow Minimum Maintenance Standards
Sidewalks	Safe sidewalks, access from subdivisions to downtown	**Average condition: 7/10**
		Minimize complaints
Streetlights	Reliable streetlights	**Minimize complaints**
Traffic Lights	Reliable traffic lights	**Minimize complaints**
Transit	Reliable and convenient transit services	**Inspect and perform maintenance on vehicles monthly**
		Minimize complaints
Parking	Convenient and secure parking locations	**Minimize complaints**
Winter Control	Safe roads in winter	**Follow MMS**
Water Distribution	Quality and efficient water supply, with adequate capacity	**Meet legislative requirements**
Water Treatment		**Unaccounted for water under 30%**
		Less than 5 main breaks annually, per 100 customers
Wastewater Collection	Quality wastewater collection, with adequate capacity and no environmental impacts	**Meet legislative requirements**
		Minimize incidents of bypass
Wastewater Treatment		**Less than 5 main breaks annually, per 100 customers**
Stormwater	Stormwater system with adequate capacity	**Minimize flooding incidents per 1,000 people**
Solid Waste Collection	Responsive and efficient solid waste collection system	**Minimize complaints**
Solid Waste Disposal		**Inspect and perform maintenance on vehicles monthly**
Solid Waste Diversion		
Fire	Responsive and quality fire services	**Minimize response times**
		Meet legislative requirements

Services	Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)
		Follow vehicle and equipment replacement program
Police	Responsive and quality police services	**Minimize response times**
		Meet legislative requirements
		Follow vehicle and equipment replacement program
Protective Inspection and Control	Responsive and quality inspection services	**Follow vehicle and equipment replacement program**
Recreation Facilities	Adequate quantity and quality of recreation facilities	**Utilization percentages for all facilities to be between 80% and 100%**
	Reliable, safe community halls	**Follow facility maintenance program**
		Minimize complaints
Parks	Adequate quantity and quality of parks	**Provide 1 park per 1,000 residents**
Libraries	Safe and functional facilities	**100% of facilities to pass accessibility standards**
Museums		
Public Health/Hospitals	Available, quality health care	**Meet legislative requirements**
		Follow facility maintenance program
Ambulance Services	Reliable, responsive ambulance service	**Minimize response times**
		Meet legislative requirements
		Follow vehicle and equipment replacement program
Cemeteries	Available, well-maintained cemeteries	**Minimize complaints**
Assistance to Aged Persons	Available, functional housing for senior citizens	**Meet legislative requirements**
		Follow facility maintenance program

Services	Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)
Child Care	Available, safe child care service locations	**Meet legislative requirements** **Follow facility maintenance program**
Housing/Co-op/Rent	Available, functional assisted living facilities	**Meet legislative requirements** **Follow facility maintenance program**
Residential/Industrial/ Commercial/Agriculture	Available serviced land for development	**Minimize complaints**
Administration	Safe and functional equipment and facilities	**Minimize complaints**

Expanding on the examples in the table above, technical LOS can be detailed in a manner to assist municipal staff from a day-to-day operational perspective. For example, “minimizing complaints” can be expanded to include how to deal with complaints, such as:

- Staff will respond to customer complaints within X hours;
- Staff will perform required maintenance on assets within Y days; and
- Staff will provide a response to complaints within Z hours.

It is also important to point out that many of the technical LOS illustrated in the table above refer to a service that can be measured through a key performance indicator or performance measure. For example, a technical LOS objective for water is to have “unaccounted for water under 30%”. This is a performance measure that not only can be measured each year, but can also be analysed over many years to indicate in what direction this measure is trending (e.g. upwards, downwards or staying consistent). This becomes important when discussing performance measures in a later section.

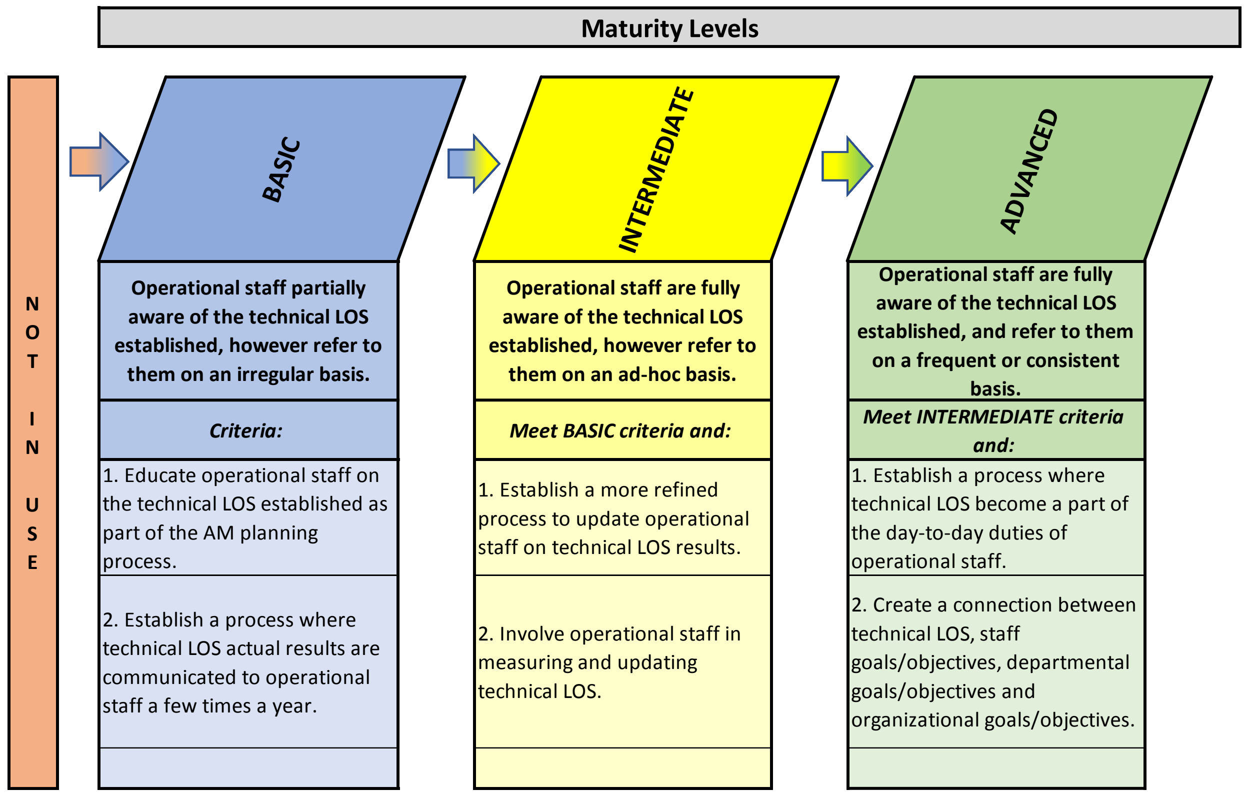
To what extent are technical levels of service followed by operational staff?

Background

Operational staff play a key role in providing various services within a municipality. The day-to-day activities of these staff contribute to the overall goals and objectives of their individual divisions and departments. They also contribute to the goals and objectives of the organization as a whole as outlined in the municipality’s strategic planning document. Linking these operational activities to the technical LOS analysis provides a direct connection between the levels of service being provided (or expected to be provided) and the effort (time, resourcing, cost, etc.) from the operational staff to provide those service levels.

Levels of Maturity

To what extent are technical levels of service followed by operational staff?



At the **basic level of maturity**, operational staff will have a high-level understanding of the technical LOS established as part of the AM planning process. This will be in the form of a high-level educational process as well as communication to relay updated results (i.e. actual technical LOS results) a few times a year.

At the **intermediate level of maturity**, operational staff will have a more detailed understanding of technical LOS established within the municipality. At this level, operational staff participate in measuring technical LOS on an annual basis.

At the **advanced level of maturity**, operational staff will have their day-to-day duties linked to the technical LOS within their department. In addition, there is a direct connection between the technical LOS and goals and objectives of the employees, the department/division and the organization as a whole.

Operational Activities and Technical Levels of Service

Technical LOS was discussed in detail in the previous section. This section relates to the integration of these technical LOS into the activities performed by operational staff. This integration allows for the ability to relate the actions of staff to the over-arching goals and objectives of the department, or even the organization as a whole. This can provide an approach to evaluating staff performance in meeting these goals/objectives. What's more, having operational staff educated and informed on technical LOS established within the AM planning process provides additional benefits, such as staff "buy-on" on the AM process.

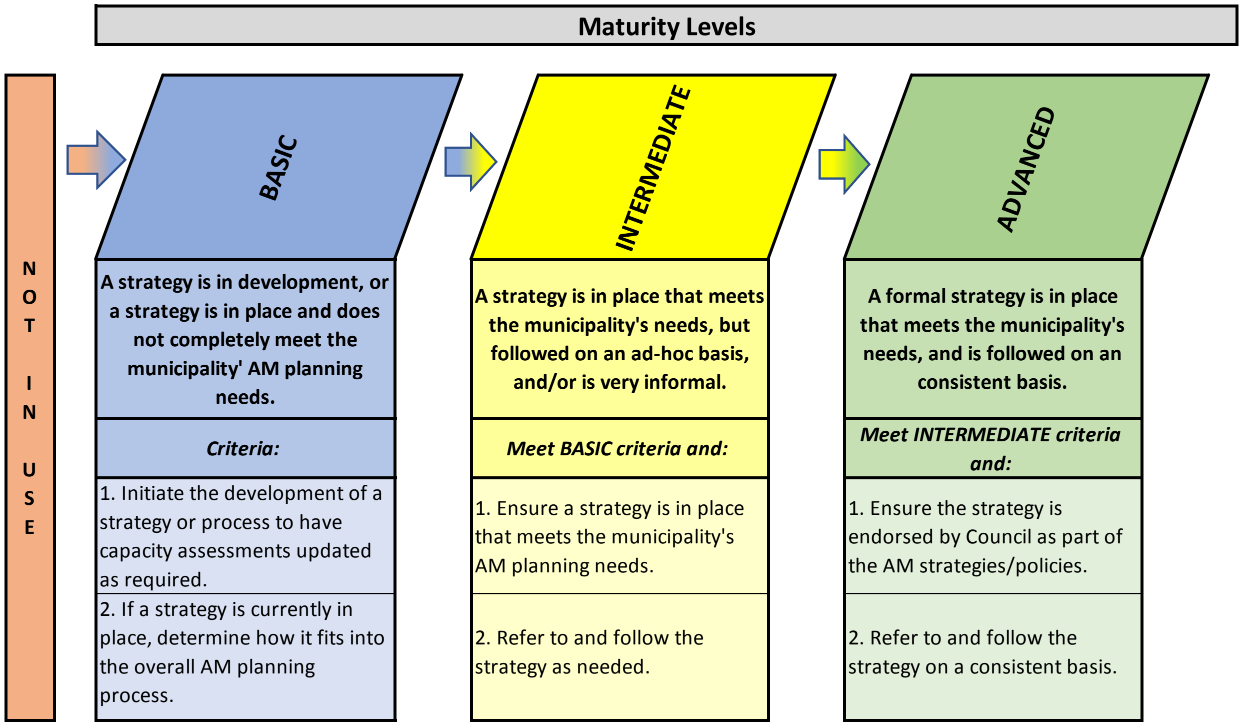
Do you have a strategy in place to determine when and how service capacity assessments are updated?

Background

Service capacity data provides critical information on municipal assets, as it relates to the maximum service each asset can provide in its current state. Having this data updated on a consistent basis assists in providing service levels at expected levels.

Levels of Maturity

Do you have a strategy in place to determine when and how service capacity assessments are updated?



At the **basic level of maturity**, municipalities initiate the development of a strategy or process to have capacity assessments updated, as required. If a strategy is currently in place, municipalities at this level will need to determine how it fits into the overall asset management planning process.

At the **intermediate level of maturity**, municipalities ensure a strategy is in place that meets its asset management planning needs and refer to it as needed.

At the **advanced level of maturity**, municipalities ensure the strategy is endorsed by Council and refer to it on a consistent basis.

<u>Updating Service Capacity Assessments</u>

As described above, an asset's service capacity refers to the "maximum output" an asset can provide on a consistent basis. Examples are as follows:

- Roads & Bridges: Traffic Volumes;
- Water, Wastewater & Storm: Flows;
- Solid Waste: Utilization or storage capacity;
- Vehicles/Equipment: Kilometers or hours;

As time passes, or as assets are used or improved, their service capacities may also change. This makes the service capacity attribute as important to update as the condition rating or replacement cost of the asset.

A strategy or process to follow to ensure service capacity data remains accurate and consistent ensures that this information can be relied upon within the asset management planning process. This process can be as simple as the need to reassess or recalculate service capacity annually, in addition to when significant events (i.e. asset addition, disposal, improvement, and write-off) occur.

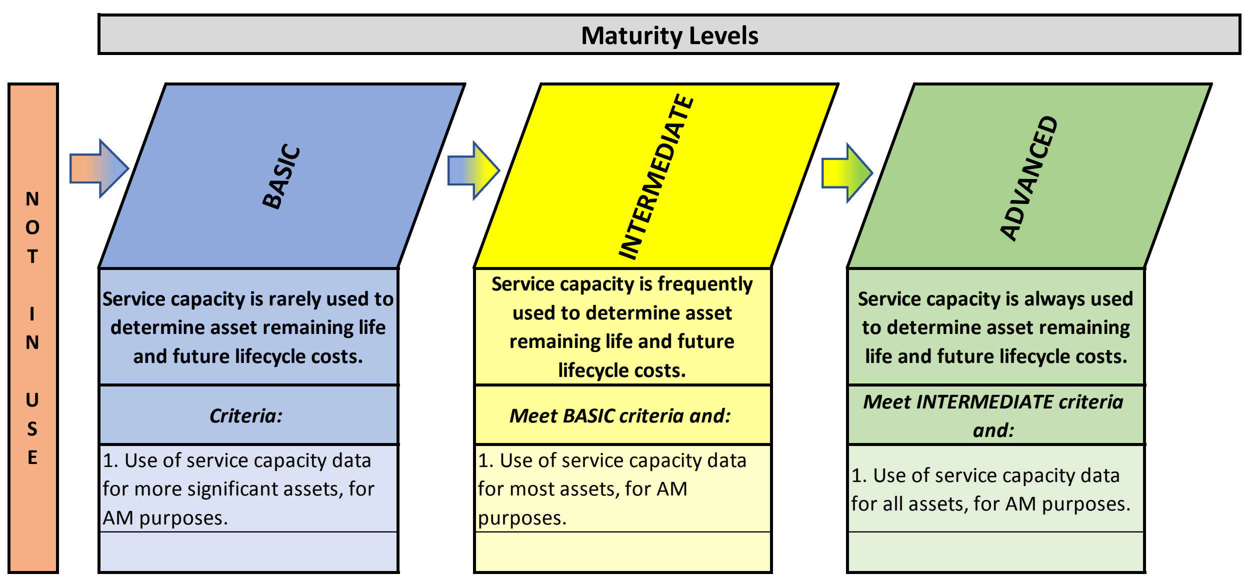
To what extent is service capacity data used to determine asset remmaining life and future lifecycle costs?

Background

Incorporating service capacity data within the technical LOS analysis provides critical information to assess asset remaining life and future lifecycle costs required. As discussed in Chapter 3, an asset can “fail” based on its condition, but also based on not providing the needed capacity to provide a service.

Levels of Maturity

To what extent is service capacity data used to determine asset remaining life and future lifecycle costs?



At the basic level of maturity, municipalities use service capacity data for more significant assets.

At the intermediate level of maturity, municipalities use service capacity data for most assets.

At the advanced level of maturity, municipalities use service capacity data for all assets.

Use of Service Capacity Data

Service capacity data can be used within the AM planning process in many ways, including:

- It is an asset attribute that can be maintained within a municipality's asset register (see Chapter 3);
- It can form part of the "risk" calculation discussed in Chapter 3;
- Can form part of the level of service analysis (i.e. technical LOS) discussed within this chapter, including the tracking and trending of this data to determine if assets can provide services at desired levels (see the performance measures section below); and
- It can be a direct criteria within the Lifecycle Management Strategy (Chapter 4) to determine timing of lifecycle costs. For example, an asset rehabilitation can be accelerated within the forecast period due to the fact that the current service capacity will not sustain desired service levels.

4.9 Comparing Technical Current vs. Expected Levels of Service

> Analyzing differences between current and expected technical LOS allows municipalities to create operational plans for moving towards expected service levels.

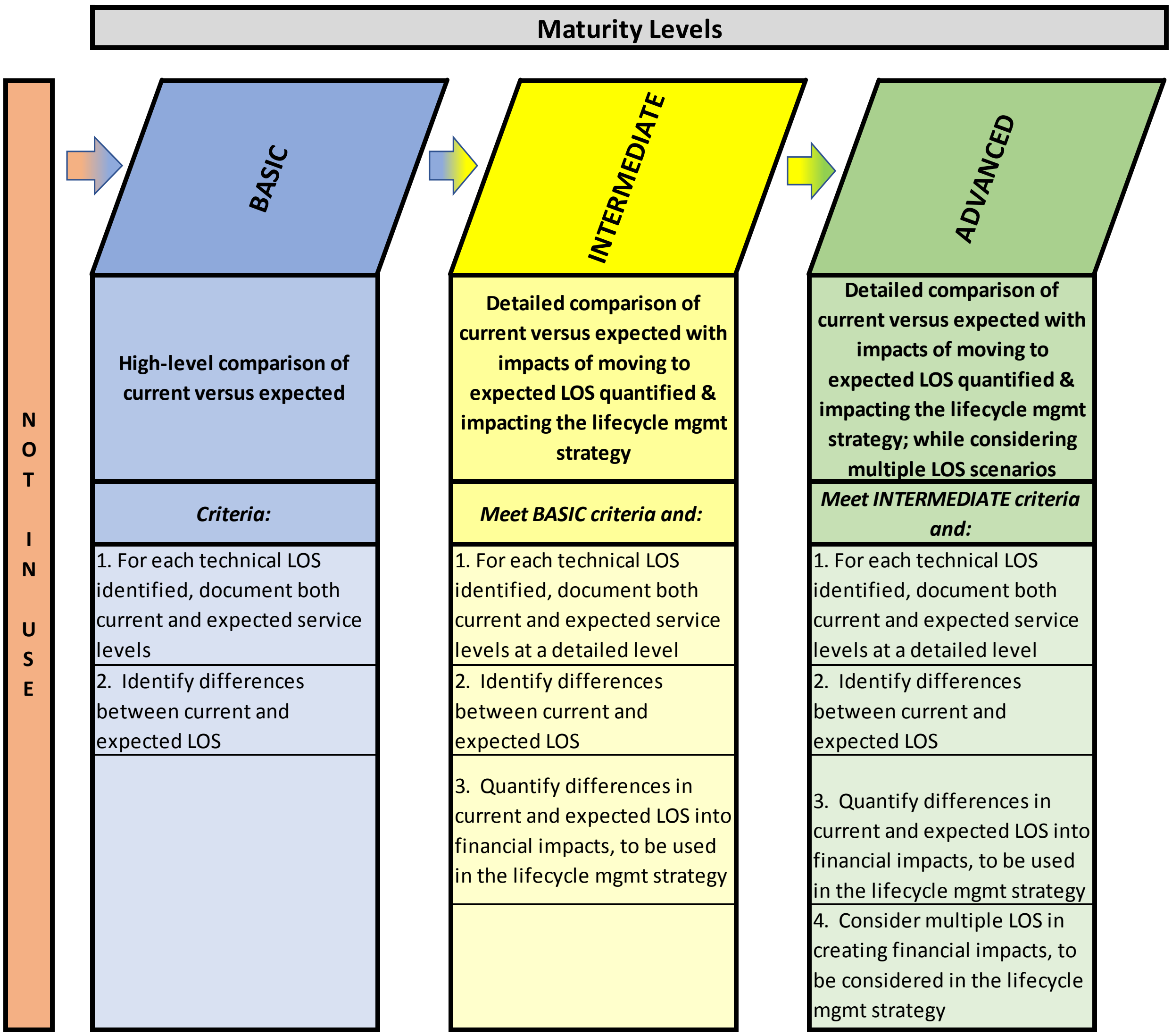
To what extent are you comparing current LOS to expected LOS at a technical level?

Background

Comparing current LOS to expected LOS at the technical level not only provides a mechanism to outline action plans to move towards expected LOS, but also assists the municipality from an operation perspective, by outlining what has to occur at a staff level to meet expected service levels.

Levels of Maturity: Current LOS vs. Expected LOS (Technical)

To what extent are you comparing current LOS to expected LOS at a technical level?



At the **basic level of maturity**, municipalities undertake a high-level comparison of current versus expected technical LOS. The results and differences should be identified and documented within the LOS analysis. At a minimum, the legislative requirements outlined in O.Reg 588/17 with respect to technical LOS should be met.

At the **intermediate level of maturity**, the differences between current and expected technical LOS are quantified into financial impacts and utilized within the lifecycle management strategy (see Chapter 5).

At the **advanced level of maturity**, municipalities take the additional step of considering multiple LOS when quantifying financial impacts and consider the results within the lifecycle management strategy (see Chapter 5).

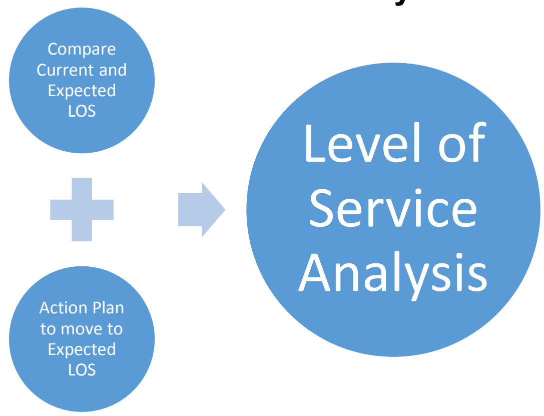
Comparing Current LOS to Expected LOS (Technical)

As outlined earlier in this chapter, a technical LOS analysis includes:

- An identification of existing LOS;
- A determination of expected (or desired) LOS; and
- An assessment the implications of moving from existing LOS to expected (desired) LOS over a forecast period.

Therefore, if current LOS equates to what service level is currently provided, expected LOS outlines the overall objective or target LOS to be reached at some point in time. The amount of time it will take to reach expected LOS depends on the assumptions a municipality makes within the asset management planning process. Using different assumptions will lead to multiple scenarios and multiple timelines within the within the lifecycle management strategy. For example, a municipality could decide to meet expected LOS in a particular area in 10 years. When that scenario is assessed within the Lifecycle Management Strategy (see Chapter 5) and the Financing Strategy (see Chapter 6) and concluded to be too expensive too quickly, the LOS analysis can be updated to include another scenario to reach expected LOS in 15 or 20 years. Alternate scenarios can also represent different (e.g. higher or lower) levels of service.

Figure 4-7
Technical LOS Analysis



This section deals specifically with the comparison of current and expected LOS from a technical perspective as well as the associated financial implications. While the financial implications are used in other sections of the asset management plan, identifying gaps in service levels is critical in assessing these implications. The table below illustrates a high-level comparison of expected LOS (developed in earlier sections) to current LOS. With this comparison in place, an action plan can be established that outlines what has to be done in order to move towards expected LOS. As mentioned earlier, the amount of time it takes to implement the action plan and the expected level of service is a factor in assessing the overall financial implications of the LOS analysis, therefore both the amount of time and the level of service can be adjusted through the use of multiple LOS scenarios.

Table 4-9
Sample Current Technical LOS and Action Plans

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Action Plans
Safe, reliable roads with adequate capacity	Average condition rating: Local (5/10), Collector (6/10), Arterial (7/10)	**Local: 4/10 Collector: 4/10 Arterial: 5/10**	**Increase funding to road rehabilitation and replacement programs**
	Follow Minimum Maintenance Standards	**Following MMS**	**N/A**
	Average condition rating: 7/10	**Current: 6/10**	**Increase bridge rehabilitation program**

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Action Plans
Safe, reliable bridges with adequate capacity	Follow Minimum Maintenance Standards	**Following MMS**	**N/A**
Safe sidewalks, access from subdivisions to downtown	Average condition: 7/10	**Current: 6/10**	**Increase sidewalk program**
	Minimize complaints	**Current: 5 complaints**	**N/A**
Reliable streetlights	Minimize complaints	**Current: 8 complaints**	**N/A**
Reliable traffic lights	Minimize complaints	**Current: 3 complaints**	**N/A**
Reliable and convenient transit services	Inspect and perform maintenance on vehicles monthly	**Inspection and maintenance plan followed**	**Increase maintenance funding**
	Minimize complaints	**Current: 14 complaints**	**N/A**
Convenient and secure parking locations	Minimize complaints	**Current: 3 complaints**	**N/A**
Safe roads in winter	Follow MMS	**Compliant with MMS**	**N/A**
Quality and efficient water supply, with adequate capacity	Meet legislative requirements	**Meeting legislative requirements**	**N/A**
	Unaccounted for water under 30%	**Unaccounted for water: 35%**	**Implement watermain looping program**
	Less than 5 main breaks annually, per 100 customers	**Breaks per 100 customers: 2**	**N/A**
Quality wastewater collection, with adequate capacity and no environmental impacts	Meet legislative requirements	**Meeting legislative requirements**	**N/A**
	Minimize incidents of bypass	**Incidents of bypass: 0**	**N/A**
	Less than 5 main breaks annually, per 100 customers	**Breaks per 100 customers: 20**	**Implement CCTV inspection program**

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Action Plans
Stormwater system with adequate capacity	Minimize flooding incidents per 1,000 people	**Flooding Incidents: 0**	**N/A**
Responsive and efficient solid waste collection system	Minimize complaints	**Current: 32 complaints**	**Review routes to reduce complaints**
	Inspect and perform maintenance on vehicles monthly	**Inspection and maintenance plan followed**	**N/A**
Responsive and quality fire services	Minimize response times	**Response times within requirements**	**N/A**
	Meet legislative requirements	**Meeting legislative requirements**	**N/A**
	Follow vehicle and equipment replacement program	**Maintenance and replacement plan followed but underfunded**	**Increase funding to equipment replacement**
Responsive and quality police services	Minimize response times	**Response times within requirements**	**N/A**
	Meet legislative requirements	**Meeting legislative requirements**	**N/A**
	Follow vehicle and equipment replacement program	**Maintenance and replacement plan followed but underfunded**	**Increase funding to equipment replacement**
Responsive and quality inspection services	Follow vehicle and equipment replacement program	**Maintenance and replacement plan followed**	**N/A**

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Action Plans
Adequate quantity and quality of recreation facilities	Utilization percentages for all facilities to be between 80% and 100%	Ice Pad: 99% utilized, demand for more capacity	Expand to 2 ice pads
Reliable, safe community halls	Follow facility maintenance program	Inspection and maintenance plan followed	N/A
	Minimize complaints	Current: 5 complaints	N/A
Adequate quantity and quality of parks	Provide 1 park per 1,000 residents	Currently 0.8 parks per 1,000 residents	1 new active park
Safe and functional facilities	100% of facilities to pass accessibility standards	40% of facilities pass accessibility standards	Accelerate accessibility compliance rehab program
Available, quality health care	Meet legislative requirements	Meeting legislative requirements	N/A
	Follow facility maintenance program	Inspection and maintenance plan followed but underfunded	Increase funding to facility maintenance
Reliable, responsive ambulance service	Minimize response times	Response times within requirements	N/A
	Meet legislative requirements	Meeting legislative requirements	N/A
	Follow vehicle and equipment replacement program	Inspection and maintenance plan followed	N/A
Available, well-maintained cemeteries	Minimize complaints	Current: 10 complaints	Increase frequency of grass cutting
Available, functional housing for senior citizens	Meet legislative requirements	Meeting legislative requirements	N/A

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Action Plans
	Follow facility maintenance program	**Inspection and maintenance plan followed**	**N/A**
Available, safe child care service locations	Meet legislative requirements	**Meeting legislative requirements**	**N/A**
	Follow facility maintenance program	**Inspection and maintenance plan followed**	**N/A**
Available, functional assisted living facilities	Meet legislative requirements	**New legislative requirements related to fire safety not being met in all facilities**	**Immediately replace components creating non-compliance**
	Follow facility maintenance program	**Inspection and maintenance plan followed**	**N/A**
Available serviced land for development	Minimize complaints	**Current: 1 complaint**	**N/A**
Safe and functional equipment and facilities	Minimize complaints	**Current: 2 complaints**	**N/A**

In the table above, action plan items can be detailed out further in terms of timing and costing. For example:

Table 4-10
Sample Technical Action Plan Scenarios

Action Item	Scenario 1	Scenario 2	Scenario 3
CCTV Inspection Program	All wastewater mains inspected in 2 years: **$250,000 per year**	All wastewater mains inspected in 5 years: **$100,000 per year**	All wastewater mains inspected in 10 years: **$50,000 per year**

These scenarios can be helpful in educating Council and the public on the relationship between levels of service, and costs to provide expected LOS. In the table above, the risks associated with delaying the CCTV inspection program can also be discussed.

Action items can include:

- Non-infrastructure items;
- Maintenance items;
- Rehabilitation items/programs;
- Replacement items/programs; and/or
- Expansion items/programs.

Costing Levels of Service Action Plans

The following steps are required to cost levels of service action plans:

- Well-defined levels of service scenarios and respective action plan items;
- A clearly defined action plan, including what is needed, where it is needed, and why;
- A process of determining costs and unit rates associated with that action plan; and
- Accurate cost information.

When including action items within the LOS analysis, municipalities should be mindful of:

- The total cost of implementing the action plan;
- The impact the action plan has on the future lifecycle costs of the applicable assets (more on this in Chapter 5); and
- The impact of the action plan items on projected LOS over the forecast period.

4.10 Performance Measures

Performance measures quantify the strategic and technical LOS measures, to enable a meaningful tracking of performance over time. This is important to ensure that the municipality is trending in the right direction towards established LOS targets.

To what extent is the LOS analysis incorporating performance measures?

Background

The technical LOS described in earlier sections are often quantified through the use of performance measures. Strategic (customer) LOS can also be quantified using performance measures. Performance measures allow municipalities to track levels of service over a number of years, which can provide a better understanding of how successful their lifecycle management strategies (e.g. long-term forecasts) have been in the past. With the correct tools, performance measures can also be used to project future levels of service. This information can inform better decision making for future long-term plans.

Levels of Maturity – LOS Performance Measures

To what extent is the LOS analysis incorporating performance measures?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Performance measures identified, although isolated to one year of analysis	**Performance measures identified and a trending analysis is included over multiple years**	**Performance measures identified, trending analysis is included over multiple years, and the trending is analysed to determine impact on lifecycle mgmt strategy**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. At a staff level, determine what performance measures best describe and quantify levels of service being provided	1. At a staff level, determine what performance measures best describe and quantify levels of service being provided	1. At a staff level, determine what performance measures best describe and quantify levels of service being provided
	2. For each asset category, compare performance measure results to staff-determined objectives	2. Prepare a table that documents the performance measures results over multiple years, and includes trending analysis	2. Prepare a table that documents the performance measures results over multiple years, and includes trending analysis
		3. For each asset category, compare performance measure results and trending analysis to staff-determined objectives	3. For each asset category, compare performance measure results and trending analysis to staff-determined objectives
			4. Quantify differences in current and trending/objectives into financial impacts, to be used in the lifecycle mgmt strategy

At the **basic level of maturity**, staff typically identify and calculate performance measures they deemed to be appropriate. At a minimum, performance measures outlined in O.Reg 588/17 are used. For each asset category, the results of the performance measures are compared to staff-determined objectives. The scope of analysis is usually focused on one year.

At the **intermediate level of maturity**, similar analyses are undertaken, and would also highlight trends in performance measures over multiple years. This can be accomplished through the use of a table that outlines performance measures over multiple years. For each asset category, performance measure results and trending analysis can be compared to staff-determined objectives.

At the **advanced level of maturity**, after completing the steps outlined above in the intermediate level, the differences between current performance measure results and performance measure objectives are quantified into financial impacts and should be used within the lifecycle management strategy (see Chapter 5).

Performance Measures

Previous sections of this chapter explored elements of defining levels of service from a qualitative point of view and assessing the associated financial implications. Performance measures or key performance indicators (KPIs) are another method of documenting and assessing levels of service. Performance measures provide a quantitative basis for analysis which enables trend analysis to determine if a municipality is moving towards or away from specified LOS objectives. For example, the use of condition ratings from a performance measure perspective allows municipalities to see what condition their assets are in now and also whether that condition rating is getting better or worse over time.

Performance measures are developed to assess the overall performance of assets, service delivery and/or business efficiency. These measures can assist in identifying action items (e.g. capital investment decisions, resource allocations, etc.) needed to move towards expected service level objectives. Technical LOS measures are needed for justification of operational decisions and to support capital investment decisions, while strategic (customer) measures are required to assess asset performance in terms of services provided to the customer. In both cases, performance measures used by a municipality should be meaningful, transparent, constant/consistent and easily measurable.

Performance measures can be used to support both the strategic and technical LOS developed for each service area. Having that direct link between the qualitative LOS measure and the quantitative performance measure provides strength and verification to the LOS analysis. This way it’s possible to identify where a level of service isn’t being met and any trends that arise over time. For example, the strategic (customer) LOS “road assets will be accessible 24 hours a day, 7 days a week” can be supported by a performance measure that tracks the “number of road or bridge closures due to poor asset condition”. In this example, if the number of road/bridge closures due to poor asset condition are increasing year over year, it indicates that the municipality is moving further away from its expected LOS objective. Essentially, a performance measure provides an indication of how well the level of service is being delivered. Below is a table expanding the technical LOS discussions in earlier section to include potential performance measures to track over time.

Table 4-11
Sample Performance Measures

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Performance Measure
Safe, reliable roads with adequate capacity	Average condition rating: Local (5/10), Collector (6/10), Arterial (7/10)	Local: 4/10 Collector: 4/10 Arterial: 5/10	**Average condition rating**
	Follow Minimum Maintenance Standards	Following MMS	**Number of MMS non-compliance events**
Safe, reliable bridges with adequate capacity	Average condition rating: 7/10	Current: 6/10	**Average condition rating**
	Follow Minimum Maintenance Standards	Following MMS	**Number of MMS non-compliance events**
Safe sidewalks, access from subdivisions to downtown	Average condition: 7/10	Current: 6/10	**Average condition rating**
	Minimize complaints	Current: 5 complaints	**Number of complaints**
Reliable streetlights	Minimize complaints	Current: 8 complaints	**Number of complaints**
Reliable traffic lights	Minimize complaints	Current: 3 complaints	**Number of complaints**
Reliable and convenient transit services	Inspect and perform maintenance on vehicles monthly	Inspection and maintenance plan followed	**Number of Out-of-Service days**
	Minimize complaints	Current: 14 complaints	**Number of complaints**
Convenient and secure parking locations	Minimize complaints	Current: 3 complaints	**Number of complaints**
Safe roads in winter	Follow MMS	Compliant	**MMS Statistics**

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Performance Measure
Quality and efficient water supply, with adequate capacity	Meet legislative requirements	Meeting legislative requirements	**Number of days of Boil Water Advisory**
	Unaccounted for water under 30%	Unaccounted for water: 35%	**% unaccounted for water**
	Less than 5 main breaks annually, per 100 customers	Breaks per 100 customers: 2	**Main breaks per 100 customers**
Quality wastewater collection, with adequate capacity and no environmental impacts	Meet legislative requirements	Meeting legislative requirements	**N/A**
	Minimize incidents of bypass	Incidents of bypass: 0	**Number of incidents of bypass**
	Less than 5 main breaks annually, per 100 customers	Breaks per 100 customers: 20	**Main breaks per 100 customers**
Stormwater system with adequate capacity	Minimize flooding incidents per 1,000 people	Flooding Incidents: 0	**Number of flooding incidents per 1,000 residents**
Responsive and efficient solid waste collection system	Minimize complaints	Current: 32 complaints	**Number of complaints**
	Inspect and perform maintenance on vehicles monthly	Inspection and maintenance plan followed	**Number of Out-of-Service days**
Responsive and quality fire services	Minimize response times	Response times within requirements	**Response times**
	Meet legislative requirements	Meeting legislative requirements	**N/A**
	Follow vehicle and equipment replacement program	Maintenance and replacement plan followed but underfunded	**Number of Out-of-Service days**

Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Performance Measure
Responsive and quality police services	Minimize response times	Response times within requirements	**Response times**
	Meet legislative requirements	Meeting legislative requirements	**N/A**
	Follow vehicle and equipment replacement program	Maintenance and replacement plan followed but underfunded	**Number of Out-of-Service days**
Responsive and quality inspection services	Follow vehicle and equipment replacement program	Maintenance and replacement plan followed	**Number of Out-of-Service days**
Adequate quantity and quality of recreation facilities	Utilization percentages for all facilities to be between 80% and 100%	Ice Pad: 99% utilized, demand for more capacity	**Facility capacity utilized**
Reliable, safe community halls	Follow facility maintenance program	Inspection and maintenance plan followed	**Number of days amenities unavailable**
	Minimize complaints	Current: 5 complaints	**Number of complaints**
Adequate quantity and quality of parks	Provide 1 park per 1,000 residents	Currently 0.8 parks per 1,000 residents	**Parks per 1,000 residents**
Safe and functional facilities	100% of facilities to pass accessibility standards	40% of facilities pass accessibility standards	**Percentage of facilities meeting accessibility standards**
Available, quality health care	Meet legislative requirements	Meeting legislative requirements	**N/A**
	Follow facility maintenance program	Inspection and maintenance plan followed but underfunded	**Number of deficiencies identified**
Reliable, responsive ambulance service	Minimize response times	Response times within requirements	**Response times**

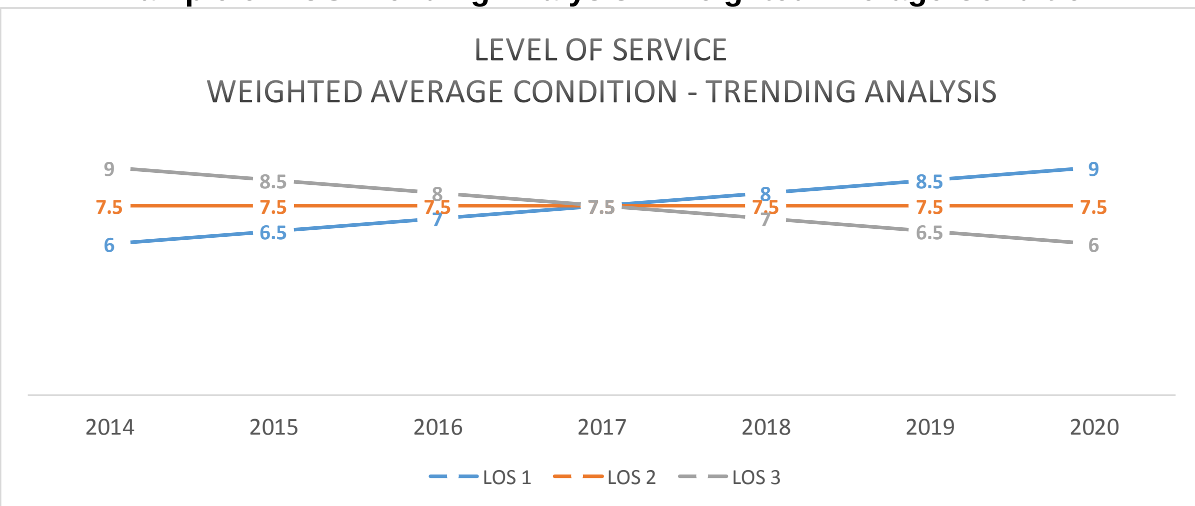
Strategic LOS Expected (Customer Perspective)	Technical LOS Expected (Staff Perspective)	Current LOS	Performance Measure
	Meet legislative requirements	Meeting legislative requirements	**N/A**
	Follow vehicle and equipment replacement program	Inspection and maintenance plan followed	**Number of Out-of-Service days**
Available, well-maintained cemeteries	Minimize complaints	Current: 1 complaint	**Number of complaints**
Available, functional housing for senior citizens	Meet legislative requirements	Meeting legislative requirements	**N/A**
	Follow facility maintenance program	Inspection and maintenance plan followed	**Number of deficiencies identified**
Available, safe child care service locations	Meet legislative requirements	Meeting legislative requirements	**N/A**
	Follow facility maintenance program	Inspection and maintenance plan followed	**Number of deficiencies identified**
Available, functional assisted living facilities	Meet legislative requirements	New legislative requirements related to fire safety not being met in all facilities	**Number of deficiencies identified**
	Follow facility maintenance program	Inspection and maintenance plan followed	**Number of deficiencies identified**
Available serviced land for development	Minimize complaints	Current: 1 complaint	**Number of complaints**
Safe and functional equipment and facilities	Minimize complaints	Current: 2 complaints	**Number of complaints**

In each of the performance measure examples above, a municipality can use an overall performance objective and trending analysis to measure its progress in moving towards expected LOS.

The Importance of Trending

If a municipality states “we have an average condition rating on our park structures of 7.5 and an objective of 9.0, they can safely say they are currently not meeting expected LOS. However, what this municipality doesn’t know is whether or not they are “trending” towards or away from the 9.0 condition objective. The graph below shows 3 different situations this municipality could be in:

Figure 4-8
Example of LOS Trending Analysis – Weighted Average Condition

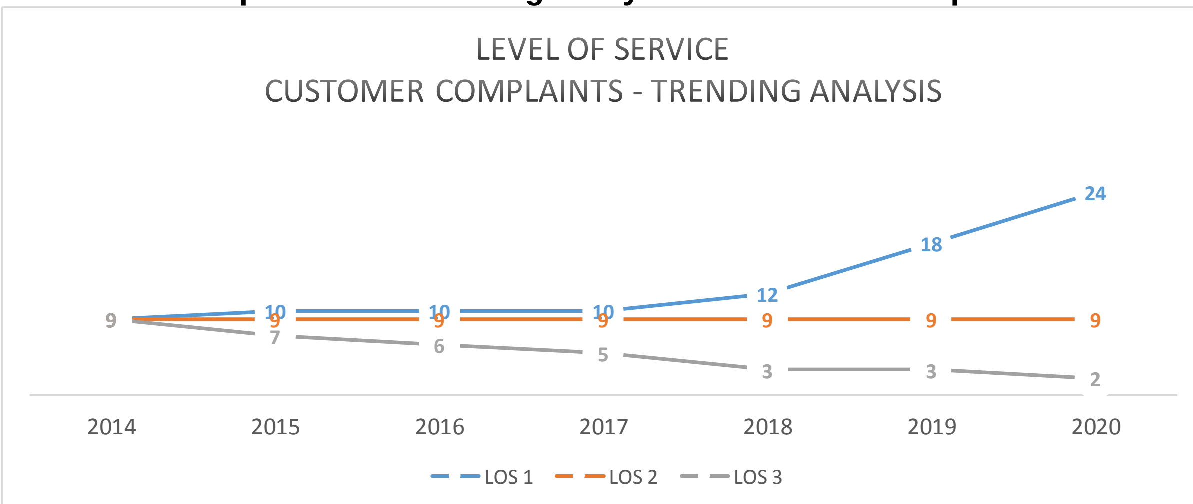


- LOS 1 (Blue): The municipality’s average condition rating is trending upwards;
- LOS 2 (Orange): The municipality’s average condition rating is remaining constant; and
- LOS 3 (Gray): The municipality’s average condition rating is trending downwards.

The municipality will not have enough information to know whether funding increases are needed for their park structures if all they know is that the current average condition rating is 7.5. Use of the trending analysis to complement this information assists in making that decision.

This trending analysis can be useful for any performance measure. The graph below illustrates the use of trending for the purpose of tracking customer complaints. This type of graph may be useful to project future potential complaints under a scenario whereby a particular maintenance or rehabilitation program is not implemented.

Figure 4-9
Example of LOS Trending Analysis – Customer Complaints



Performance measures can be categorized into groups (such as the attributes shown below).

- Quality;
- Reliability / Responsiveness;
- Customer Service;
- Sustainability;
- Safety;
- Accessibility; and
- Affordability

Customer performance measures should measure how the customer receives the service.

Technical measures provide an overall picture of organizational performance

Some important things to keep in mind when deciding on performance measures to incorporate into an asset management process. Ensure they are:

- Repeatable;
- Consistent;
- Relevant to the level of service and customer base;
- They are within your control;
- Well defined (how to calculate, what to include/exclude, etc.)
- That consideration is given to industry standards; and

- The time and cost associated with tracking and recording the measure is considered against the value attained.

The ISO 55002 also highlights the need for levels of service and performance measures to be SMART:

Figure 4-10
ISO 55002 SMART Performance Measures

Specific	• The measure is clear and unambiguous. It outlines exactly what is expected, the importance, who's responsible or involved, and how and when it's measured.
Measureable	• There is a clear procedure for measuring progress. If a goal is not measurable, it's impossible to know whether progress is being made. The procedure defines the quantity, cost or quality metrics for the measure.
Achieveable	• The measures target is realistic and attainable. It's not a 'stretch' target that is near impossible to reach, yet, not an 'easy pass' either. It should be possible to undertake as part of regular asset management processes.
Relevant	• The measure is relevant to the people responsible for achieving them, and the service being delivered.
Timely	• The measure is set with a realistic time frame in mind.

The following table provides some examples of performance measures (related to both strategic and technical LOS):

Table 4-12
Sample SMART Performance Measures

Service	Performance Measure Examples
All Assets	• Average condition assessment (by asset type or group) • Percentage of assets at or above a specified condition rating (by asset type or group) • Return on investment

Service	Performance Measure Examples
	• Operating cost per asset (or by length of asset) • Customer complaints • Response times • Availability of service (or # service disruptions) • Proportion of unplanned vs. planned maintenance each year (e.g. facilities, roads, bridges)
Roads	• Total accidents per year, per 1,000 population, relating to road conditions • Travel time or intersection delays • Percent of signs found missing or ineffective during annual inspections • Non-compliance events (or %) with Minimum Maintenance Standards
Bridges and Culverts	• Operating cost per m^2 of surface area • Percent of bridges with adequate load limits • Non-compliance events (or %) with Minimum Maintenance Standards
Facilities	• Proportion of the population living within x km of a community centre or fire hall • Percentage of facilities that meet accessibility standards • User fees as a percentage of market rates • User fees as a percentage of full cost recovery rates • Operating and maintenance costs recovered from user charges • Utilization percentages of ice pads, pools, etc. • Frequency of cleaning and maintenance activities • Number of reported accidents per year
Solid Waste	• Percent of properties that receive regular waste/recycling collection • Average volume of waste per household, per year
Stormwater	• Number of blockages or flooding incidents per year (with # residents affected) • Number of times roads closed due to flooding per year (or length of closure time)
Water	• Watermain breaks per km of pipe • Number of boil water advisories (with # residents affected) • Planned vs. unplanned shutdowns or disruptions

Service	Performance Measure Examples
	• Length of time of shutdowns or disruptions • % unaccounted for water (water billed vs. water produced) • Pressure at connection • Storage capacity • Water consumption by customer type • Percentage of facility sites with backup power • Number of incidents not in compliance with legislation
Wastewater	• Incidents of bypass • Percentage of wastewater bypassed treatment • Number of wastewater backups • Infiltration rate • Wastewater billed vs. wastewater treated • Percentage of facility sites with backup power • Number of incidents not in compliance with legislation

Prepared drawing some examples from the IIMM Manual

The following is an example of strategic (customer) levels of service performance measures for a road network.

Table 4-13
Sample Strategic LOS Performance Measures – Road Network

Key Performance Measure	Strategic Level of Service	Performance Measure Process	Performance Target
Quality	Well-maintained and suitable transport services	Customer complaints	< 30 complaints per annum for all transport asset categories
Customer Satisfaction	Condition of local roads	Customer Survey	Score >= 6 out of 10 in Annual Customer Survey
Customer Satisfaction	Condition of sidewalks	Customer Survey	Score >= 6 out of 10 in Annual Customer Survey
Accessibility	Road assets will be accessible 24 hours a day, 7 days a week	No. of road or bridge closures due to degraded asset condition	< 10 per annum

Key Performance Measure	Strategic Level of Service	Performance Measure Process	Performance Target
Function	Road line marking is well maintained	Customer Survey	Score >= 6 out of 10 in Annual Customer Survey
Function	Bridges (pedestrian and vehicular) provide safe and equitable access to all parts of the municipality to meet community needs	No. of complaints relating to bridges	< 10 per annum
Responsiveness	Response time to customer requests	Time taken to close requests	> 80% of all requests adequately responded to within target

The following is an example of technical levels of service performance measures for a road network.

Table 4-14
Sample Technical LOS Performance Measures – Road Network

Key Performance Measure	Strategic Level of Service	Performance Measure Process	Performance Target
Condition: Sealed Roads	Condition assessment of road network every 5 years	Condition Assessment	On average Pavement Condition Index and Surface Condition Index to be in condition 6 (out of 10) or better, with 10 being the best
Condition: Sidewalks	Condition assessment of sidewalk network every 5 years	Condition Assessment	On average, footpath network to be in condition 7 (out of 10) or better, with 10 being the best
Condition: Curbs	Condition assessment of curbs every 5 years	Condition Assessment	On average, curbs to be in condition 6 (out of 10) or better, with 10 being the best

Condition: Bridges	Bridge Inspection every 2 years	Condition Assessment	On average, bridge network to be in condition 6 (out of 10) or better, with 10 being the best

Table 4-15
LOS Metrics for Core Infrastructure Required Under O.Reg 588/17

Water Assets (Table 1)

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	1. Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system. 2. Description, which may include maps, of the user groups or areas of the municipality that have fire flow.	1. Percentage of properties connected to the municipal water system. 2. Percentage of properties where fire flow is available.
Reliability	Description of boil water advisories and service interruptions.	1. The number of connection-days per year where a boil water advisory notice is in place compared to the total number of properties connected to the municipal water system. *2.* The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.

Wastewater Assets (Table 2)

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are connected to the municipal wastewater system.	Percentage of properties connected to the municipal wastewater system.
Reliability	1. Description of how combined sewers in the municipal wastewater system are designed with overflow structures in place which allow overflow during storm events to prevent backups into homes. 2. Description of the frequency and	1. The number of events per year where combined sewer flow in the municipal wastewater system exceeds system capacity compared to the total number of properties connected to the municipal wastewater system.

	volume of overflows in combined sewers in the municipal wastewater system that occur in habitable areas or beaches. 3. Description of how stormwater can get into sanitary sewers in the municipal wastewater system, causing sewage to overflow into streets or backup into homes. 4. Description of how sanitary sewers in the municipal wastewater system are designed to be resilient to avoid events described in paragraph 3. 5. Description of the effluent that is discharged from sewage treatment plants in the municipal wastewater system.	2. The number of connection-days per year due to wastewater backups compared to the total number of properties connected to the municipal wastewater system. 3. The number of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the municipal wastewater system.

Stormwater Management Assets (Table 3)

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description, which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection provided by the municipal stormwater management system.	1. Percentage of properties in municipality resilient to a 100-year storm. 2. Percentage of the municipal stormwater management system resilient to a 5-year storm.

Roads Assets (Table 4)

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity.	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality.
Quality	Description or images that illustrate the different levels of road class pavement condition.	1. For paved roads in the municipality, the average pavement condition index value. 2. For unpaved roads in the municipality, the average surface condition (e.g. excellent, good, fair or poor).

Bridges and Culverts Assets (Table 5)

Column 1 Service attribute	Column 2 Community levels of service (qualitative descriptions)	Column 3 Technical levels of service (technical metrics)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists).	Percentage of bridges in the municipality with loading or dimensional restrictions.
Quality	1. Description or images of the condition of bridges and how this would affect use of the bridges. 2. Description or images of the condition of culverts and how this would affect use of the culverts.	1. For bridges in the municipality, the average bridge condition index value. 2. For structural culverts in the municipality, the average bridge condition index value.

<u>Documentation</u>

With respect to performance measures, it is important to have controls in place to ensure they are calculated in an accurate and consistent manner from year to year. Given the dynamic nature of municipalities (and asset management), it is recommended that documentation be kept that includes:

1. Which performance measures are to be calculated;
2. Which performance measures are associated with which assets;
3. How often they are to be calculated;
4. How (specifically) they are to be calculated (all variables in the calculation); and
5. All assumptions made in the calculation of each performance measure.

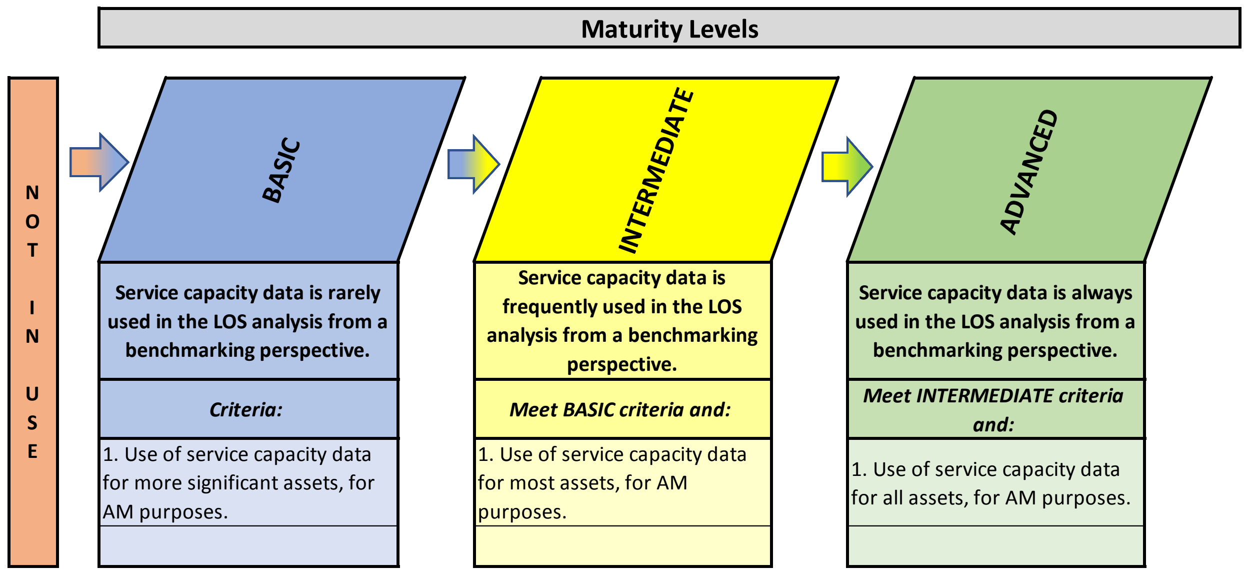
To what extent is service capacity data used in the LOS analysis with respect to benchmarking over multiple years?

<u>Background</u>

In the technical LOS section above, the concept of service capacity was introduced and the importance of using this data within the AM process was stressed. The ability to track this data over time allows municipalities to trend anticipated service capacities in the future, as well as assist in making more informed AM decisions.

Levels of Maturity

To what extent is service capacity data used in the LOS analysis with respect to benchmarking over multiple years?



At the **basic level of maturity**, municipalities use the service capacity data in the LOS analysis for more significant assets and typically only for asset management purposes.

At the **intermediate level of maturity**, municipalities use the service capacity data in the LOS analysis from a benchmarking perspective for many of the assets.

At the **advanced level of maturity**, municipalities use the service capacity data in the LOS analysis for all its assets.

Benchmarking Service Capacity Data

The concept of utilizing performance measures through trending was discussed in previous sections above. This is just as applicable in the use of service capacity data. Figure 4-9 graphically shows how trending data can assist in making decisions within the AM planning process. This graph could be useful in projecting out potential service capacity if a particular maintenance or rehabilitation program is not implemented. For example, if a municipality is considering an expansion to a water or wastewater plant, understanding the capacity of those plants is imperative to determining the timing and extent of the expansion.

4.11 Resources and References

Institute of Public Works Engineering Australasia (IPWEA), NAMS.PLUS Asset Management, https://www.ipwea.org/communities/assetmanagement/namsplus

IPWEA, 2014, Practice Note 8: Levels of Service & Community Engagement, http://www.ipwea.org/publications/bookshop/ipweabookshop/practicenotes/pn8

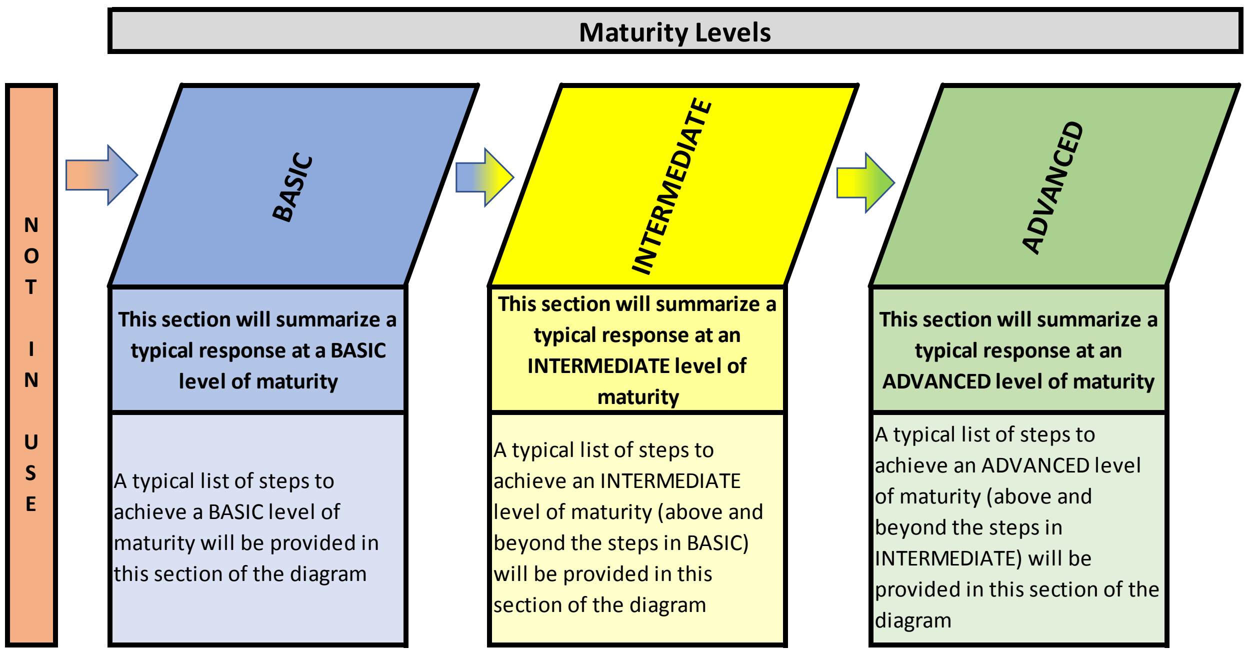
IPWEA, 2015, International Infrastructure Management Manual, https://www.ipwea.org/publications/bookshop/ipweabookshop/iimm

International Organization for Standardization (ISO), 2014, ISO 55000:2014, Asset management – Overview, principles and terminology, http://www.iso.org/iso/catalogue_detail?csnumber=55088

5 Lifecycle Management Strategy

5.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake in order to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic level* requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

5.2 Overview

The Ontario “Building Together Guide for Municipal Asset Management Plans” defines an asset management strategy as:

> *The set of planned actions that will enable the assets to provide the desired levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost.*

Moving forward, the “asset management strategy” will be referred to as the “lifecycle management strategy”, which provides a more accurate description of the requirements in this section. The actions defined and identified within the lifecycle management strategy detail how assets should be maintained, renewed/rehabilitated, replaced, disposed, or expanded upon. All strategies considered will attempt to move the municipality towards expected levels of service in an efficient and effective manner.

Lifecycle Costing

Lifecycle costing is defined by IIMM as:

> *The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.*

A "lifecycle management approach" in asset management planning not only includes estimating future lifecycle costs, but also an overview of how the asset performs over its life while providing affordable services. This is a more holistic perspective than the consideration of cost projections alone.

Within this is the true challenge of public infrastructure management which is:

> *To ensure that the assets we have now and those that will be created in the future provide suitable levels of service at a cost the community can afford.*

Lifecycle costing is comprised of the following costs over an asset's useful life:

- Acquisition or construction;
- Operating;
- Maintaining;
- Rehabilitating;
- Replacing;
- Disposing; and
- Non-infrastructure solutions.

All of the cost elements above should be considered when determining the true cost of an asset over its useful life. The resulting cost profile may look something like the following figure.

Figure 5-1
Sample Asset Cost Profile

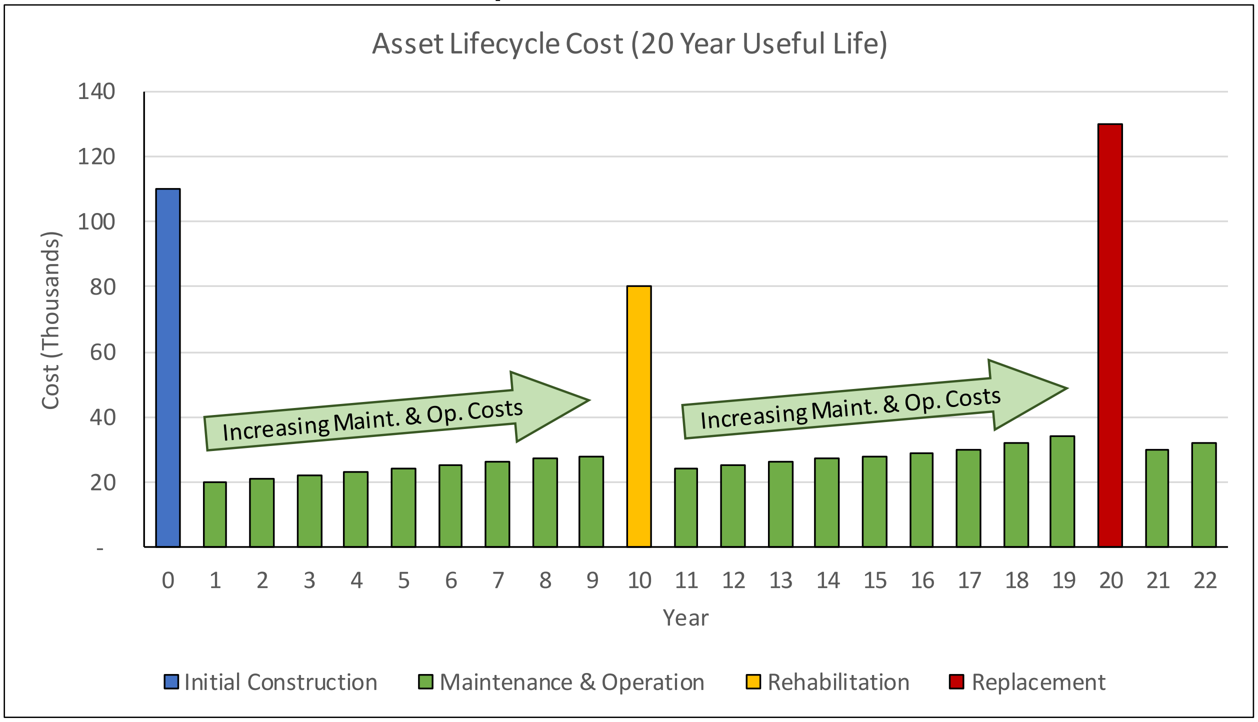


Figure 5-1 (above) illustrates:

- Initial construction of the asset occurs in year 0;
- Maintenance and operational costs are incurred annually, increasing as the asset deteriorates (from year 1 to 9);
- Rehabilitation of the asset is shown in year 10, which has the result of extending the remaining useful life of the asset and reducing annual maintenance and operational costs;
- Maintenance and operational costs are incurred annually, increasing as the asset deteriorates (from year 11 to 19);
- Complete asset replacement occurs in year 20; and
- Annual maintenance and operational costs continue forward on the new asset.

Maintenance and other interventions undertaken to sustain asset integrity and service levels occur over the life of an asset (as illustrated in Figure 5-1). Over time, these costs can outweigh the initial cost of the asset. The lifecycle management strategy helps municipalities plan for these maintenance costs over a forecast period. Because the majority of assets currently managed by a municipality are already part way through their lifecycle, the task of planning for lifecycle costs over a shortened lifecycle period can become difficult.

Using the example in Figure 5-1 (above), the existing asset could be at any point along the “time” axis, regardless of its actually age. The asset’s location on the time axis can be determined by an understanding of its behaviour as well as an interpretation of data, such as condition assessments. Age alone is not an accurate indicator of an asset’s position in its lifecycle. The timescale in the Figure 5-1 is based on an “estimated useful life” and assumes certain interventions such as maintenance and rehabilitation. This underscores why condition assessments play a key role in the lifecycle analysis. Assets will deteriorate faster or slower than expected depending on whether the asset is maintained. The condition assessment information provides a more accurate indication of lifecycle needs.

Asset managers strive to achieve the lowest lifecycle cost for all assets. The example described above provides an indication of the total lifecycle cost by summing all annual costs over the asset’s life. Comparing alternative lifecycle scenarios, such as alternative interventions and frequencies, allows municipalities to experiment with the impact of differing lifecycle forecasts on the assets themselves and the services being provided. This methodology will be expanded upon further in later sections within this chapter.

<u>Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements</u>

O.Reg 588/17 outlines the following requirements with respect to the Lifecycle Management Strategy:

Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by *July 1, 2021*, and in respect of all of its other municipal infrastructure assets by *July 1, 2023*.

A municipality’s AM plan must include the following (for each asset category):

a) The lifecycle activities that would need to be undertaken to maintain the current levels of service for each of the 10 years following the year for which the current levels of service are determined and the costs of providing those activities based on an assessment of the following:
    i. The full lifecycle of the assets.
    ii. The options for which lifecycle activities could potentially be undertaken to maintain the current levels of service.
    iii. The risks associated with the options referred to in subparagraph ii.
    iv. The lifecycle activities referred to in subparagraph ii that can be undertaken for the lowest cost to maintain the current levels of service.

b) For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, the following:
   i. A description of assumptions regarding future changes in population or economic activity.
   ii. How the assumptions referred to in subparagraph i relate to the required lifecycle activities described above.

c) For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census, the following:
   i. With respect to municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are set out in Schedule 3 or 7 to the 2017 Growth Plan, those forecasts.
   ii. With respect to lower-tier municipalities in the Greater Golden Horseshoe growth plan area, if the population and employment forecasts for the municipality are not set out in Schedule 7 to the 2017 Growth Plan, the portion of the forecasts allocated to the lower-tier municipality in the official plan of the upper-tier municipality of which it is a part.
   iii. With respect to upper-tier municipalities or single-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the municipality that are set out in its official plan.
   iv. With respect to lower-tier municipalities outside of the Greater Golden Horseshoe growth plan area, the population and employment forecasts for the lower-tier municipality that are set out in the official plan of the upper-tier municipality of which it is a part.
   v. If, with respect to any municipality referred to in subparagraph iii or iv, the population and employment forecasts for the municipality cannot be determined as set out in those subparagraphs, a description of assumptions regarding future changes in population or economic activity.
   vi. For each of the 10 years following the year for which the current levels of service are determined, the estimated capital expenditures and significant operating costs related to the lifecycle activities required to maintain the current levels of service in order to accommodate projected increases in demand caused by growth, including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets.

By *July 1, 2024*, every asset management plan must include the following additional information:

a) A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period:
   i. An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:
      A. The full lifecycle of the assets.
      B. The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.
      C. The risks associated with the options referred to in sub-subparagraph B.
      D. The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.
   ii. An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.
   iii. An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.
   iv. If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,
      A. an identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and
      B. if applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities identified in subparagraph i.

b) For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, a discussion of how the assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy.

c) For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census,
   i. the estimated capital expenditures and significant operating costs to achieve the proposed levels of service as described in paragraph 1 in order to accommodate projected increases in demand caused by population and employment growth, as set out in the forecasts or assumptions referred to in paragraph 6 of subsection 5 (2), including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets,
   ii. the funding projected to be available, by source, as a result of increased population and economic activity, and
   iii. an overview of the risks associated with implementation of the asset management plan and any actions that would be proposed in response to those risks.

5.3 Non-Infrastructure Solutions – Introduction

Incorporating non-infrastructure solutions, such as demand management and integrated infrastructure planning, into the lifecycle management strategy can introduce cost efficiencies and/or extend asset useful life.

To what extent are non-infrastructure solutions incorporated into the lifecycle management strategy?

Background

Cost reduction is a consistent driver across most municipalities, and the same is true for asset management. Investment in municipal assets is subject to limited funding, so if the same outcome can be produced at a lower cost, more can be done with the funding that is available. At the same time, care must be taken to ensure that a cost reduction today does not result in a cost escalation in the future.

Non-infrastructure solutions are actions or policies that are not capital in nature, which result in the lowering of costs and/or extend the useful life of an asset.

Levels of Maturity

To what extent are non-infrastructure solutions incorporated into the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Some or high-level incorporation	**Full incorporation at asset type level**	**Full incorporation at detailed asset level**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Engage in broad discussions on current and/or potential non-infrastructure solutions (i.e. integrated infrastructure planning, process optimization, etc.)	1. Engage in detailed discussions on current and/or potential non-infrastructure solutions (i.e. integrated infrastructure planning, process optimization, etc.)	1. Engage in detailed discussions on current and/or potential non-infrastructure solutions (i.e. integrated infrastructure planning, process optimization, etc.)
	2. Assess the impact of the non-infrastructure solutions on the asset management process at a corporate level	2. Assess the impact of the non-infrastructure solutions on the asset management process at an asset type level	2. Assess the impact of the non-infrastructure solutions on the asset management process at a detailed asset level
	3. Incorporate the non-infrastructure analysis within the AM plan calculations	3. Incorporate the non-infrastructure analysis within the AM plan calculations	3. Incorporate the non-infrastructure analysis within the AM plan calculations

At the **basic level of maturity**, non-infrastructure solutions are incorporated into the lifecycle management strategy to some extent. Municipalities may engage in broad discussions on current and/or potential non-infrastructure solutions. The impact of these solutions on the asset management process would be assessed at a corporate level. Finally, the non-infrastructure analysis are incorporated within the asset management plan calculations.

At the **intermediate level of maturity**, non-infrastructure solutions are incorporated fully into the lifecycle management strategy at the asset level. Municipalities may engage in detailed discussions on current and/or potential non-infrastructure solutions. The impact of these solutions on the asset management process is assessed at an asset level. Finally, the non-infrastructure analysis is incorporated within the asset management plan calculations.

At the **advanced level of maturity**, non-infrastructure solutions are incorporated fully into the lifecycle management strategy at a detailed asset level. Municipalities may engage in detailed discussions on current and/or potential non-infrastructure solutions. The impact of these solutions on the asset management process is assessed at a detailed asset level. Finally, the non-infrastructure analysis is incorporated within the asset management plan calculations.

Non-Infrastructure Solutions Introduction

Non-infrastructure solutions include policies, processes, or strategies that:

- Reduce asset related costs (i.e. operating, maintaining, rehabilitation, replacement, expansion); and/or
- Improve asset performance (resulting in lower costs and/or extended life).

Achieving cost reduction can come down to effective and efficient non-infrastructure solutions for asset management:

- Effectiveness involves “doing what should be done”, in terms of policies, processes, or strategies. This can come from best practices, legislation, or direction provided by policy, process, or strategy.
- Efficiency involves utilizing the policies, processes, and strategies in the best possible way.

Examples of non-infrastructure solutions include:

Table 5-1
Sample Non-Infrastructure Solutions

Solution	Example
Integrated Infrastructure Planning	Layering road, water, wastewater, and stormwater capital forecasts together. This ensures newly paved roads don’t have to be dug up for main replacements.
Land Use Planning	Manage the development of land within the municipality, ensuring an efficient use of land and the efficient construction of assets.

Solution	Example
Demand Management	Manage and forecast the demand for services within the municipality (e.g. introduce HOV lanes, offer discounts for using facilities at non-peak hours, etc.). Prepare a Development Charge Background Study to manage growth.
Insurance	Minimize unforeseen and uncontrollable asset costs through the use of insurance policies.
Process Optimization	Optimization of asset management related processes, such as “levels of service impacts” and “determining a capital forecast”. Optimizing these processes not only minimizes the time and resources required to complete them, but also generates more accurate and “real time” results. Undertake Water/Wastewater/Storm Rate Study.
Managed Failures	Use of asset condition, risk assessments, and levels of service to manage and plan for where assets are “allowed” to fail, allowing available funds to be used in more critical areas.
Procurement Policies	Streamline purchasing policies/by-law to increase the receipt of competitive bids for asset purchase or construction, including the ability to tender for “build/own/operate” agreements or “public private partnerships”. Streamlined purchasing policies assists municipalities in getting more for the funding that is available (i.e. pave 5 km of roads per year rather than 4 km, for the same price, given the competitive bid environment).

Non-infrastructure solutions can be implemented at a high (corporate) level, at the asset type level, or at the detailed asset level. The level at which the solutions are implemented depends on the municipality’s level of asset management maturity as well as the type of solution being implemented. Examples of non-infrastructure solutions are shown in Table 5-2 (below):

Table 5-2
Non-Infrastructure Solutions Implementation Levels

Maturity Level	Implementation Level	Non-Infrastructure Solution Example
Basic	Corporate (High Level)	Strategic Plan (asset management section), outlining corporate mission, goals, and action items from an asset management perspective.
Intermediate	Asset Type Level	Setting an enhanced procurement policy specifically for roads-related projects.
Advanced	Detailed Asset Level	Asset Condition/Needs Study outlining specific actions by detailed asset, asset segment, or asset component.

5.4 Non-Infrastructure Solutions – Approach

Detailed consideration of non-infrastructure solutions within the lifecycle management strategy can help municipalities accurately estimate the benefits and costs associated with these solutions.

What method is used to incorporate non-infrastructure solutions into the lifecycle management strategy?

Background

Non-infrastructure solutions may be incorporated into the lifecycle management strategy based on past historical practices or a more forward-looking approach where consideration of cost efficiencies and/or impact on asset remaining life is factored into the chosen solution(s).

Levels of Maturity

What method is used to incorporate non-infrastructure solutions into the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Based on historical practices and may include ad hoc adjustments	**Some consideration for cost efficiencies and/or impact on asset remaining life**	**Detailed consideration for cost efficiencies and/or impact on asset remaining life**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Review and document historical non-infrastructure solutions in place at the municipality	1. Discuss and document proposed non-infrastructure solutions	1. Discuss and document proposed non-infrastructure solutions
	2. Assess the impact of historical practices on the AM process	2. Assess the impact of proposed non-infrastructure solutions on the AM process, with some consideration for overall impact on costs and remaining life	2. Assess the impact of proposed non-infrastructure solutions on the AM process, with detailed consideration for overall impact on costs and remaining life
	3. Make high-level changes to the historical practices and associated impacts based on future plans		

At the **basic level of maturity**, municipalities will review and document historical non-infrastructure solutions that are in place. Municipalities will tend to incorporate non-infrastructure solutions into the lifecycle management strategy based on historical practices and may include subsequent ad hoc adjustments based on expected revisions to historical practices. The impact of these practices on the asset management process are assessed.

At the **intermediate level of maturity**, municipalities give some consideration to the impact of non-infrastructure solutions on cost efficiencies and/or impact on asset remaining life. Proposed non-infrastructure solutions are discussed and documented at a staff level. The impact of these solutions on the asset management process are assessed, with some consideration for the overall impact on costs and remaining life.

At the **advanced level of maturity**, municipalities give detailed consideration for cost efficiencies and/or impact on asset remaining life within a comprehensive non-infrastructure solutions analysis. Proposed non-infrastructure solutions are discussed and documented within this analysis. The impact of these solutions on the asset management process is assessed, with detailed consideration for the overall impact on asset-related costs and remaining life.

Non-Infrastructure Solutions Methodology

Section 5-3 (above) introduced non-infrastructure solutions with the following examples:

- Integrated infrastructure planning;
- Land use planning;
- Demand management;
- Effective use of insurance;
- Process optimization;
- Managed asset failures; and
- Procurement policies.

This section discusses the process and methods of incorporating non-infrastructure solutions into the asset management planning process. There are two impacts of non-infrastructure solutions for municipalities to consider:

1. Projecting the cost of implementing the non-infrastructure solution; and
2. Projecting the cost savings or extended asset life due to implementing the non-infrastructure solution.

Table 5-3 (below) provides examples of how non-infrastructure solutions can be summarized from cost and savings perspectives.

From a cost perspective, many non-infrastructure solutions will have ongoing and/or periodic costs throughout a forecast period, such as study or staff costs to implement integrated infrastructure planning or process optimization. If these costs are required every few years then the long-term forecast should reflect this need.

From a savings or asset life perspective, an estimation of the potential savings of each non-infrastructure solution is needed. This could be a one-time savings, but it's likely to have a more long-term impact.

Table 5-3
Sample Non-Infrastructure Solutions – Cost/Savings

Non-Infrastructure Solution	Cost	Savings
Managed Asset Failures: Condition and Risk Assessments for all Assets	$50,000 every 3 years	10-year capital forecast decreases from $50 million (inflated) to $45 million (inflated) Pick-up Truck useful life extended from 7 years to 10 years
Procurement Policies: Introduce processes to increase the number of competitive bids received	$20,000 one-time study cost in 2018 $5,000 annual increase in advertising	Pave 5 km roads per year vs. 4 km per year currently 5% reduction in salt and sand contract
Process Optimization: Automate and optimize the capital forecast, using asset management software	$70,000 one-time cost for implementation and training, plus $20,000 annual software fee	Remaining service life (avg.) of assets increases from 34 years to 48 years Infrastructure gap anticipated to be eliminated in 7 fewer years than anticipated

Once this costing analysis is completed, the results can be used to inform the overall lifecycle management strategy and be combined with other lifecycle costs anticipated over the forecast period.

5.5 Maintenance Solutions – Introduction

Incorporating planned maintenance solutions into the lifecycle management strategy ensures that these activities are funded at an appropriate level, enabling assets to reach their full service potential.

To what extent are planned maintenance solutions incorporated into the lifecycle management strategy?

Background

Municipalities will approach planned maintenance solutions in a number of ways. Some might base their plans on historical practices or broad discussions at the corporate level (i.e. more high level), while others might engage in more detailed discussions with a focus on maintenance by asset type, or possibly at a detailed asset level.

Levels of Maturity

To what extent are planned maintenance solutions incorporated into the lifecycle management strategy?

Maturity Levels

NOT IN USE	*BASIC*	*INTERMEDIATE*	*ADVANCED*
	Some or high-level incorporation	**Full incorporation at asset type level**	**Full incorporation at detailed asset level**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Engage in broad discussions on current and/or potential planned maintenance solutions	1. Engage in detailed discussions on current and/or potential planned maintenance solutions	1. Engage in detailed discussions on current and/or potential planned maintenance solutions
	2. Assess the impact of the planned maintenance solutions on the asset management process at a corporate level	2. Assess the impact of the planned maintenance solutions on the asset management process at an asset type level	2. Assess the impact of the planned maintenance solutions on the asset management process at a detailed asset level
	3. Incorporate the planned maintenance analysis within the AM plan calculations	3. Incorporate the planned maintenance analysis within the AM plan calculations	3. Incorporate the planned maintenance analysis within the AM plan calculations

At the **basic level of maturity**, there will be some incorporation or high-level incorporation of planned maintenance solutions into the lifecycle management strategy. Municipalities engage in broad discussions on current and/or potential planned maintenance solutions. The impact of these solutions on the asset management process is assessed at a high level. Finally, the planned maintenance analysis is incorporated within the asset management plan calculations.

At the **intermediate level of maturity**, there will be full incorporation of planned maintenance solutions into the lifecycle management strategy by asset type. Municipalities engage in detailed discussions on current and/or potential planned maintenance solutions at a staff level. The impact of these solutions on the asset management process is assessed by asset type. Finally, the planned maintenance analysis is incorporated within the asset management plan calculations.

At the **advanced level of maturity**, there will be full incorporation of planned maintenance solutions into the lifecycle management strategy at a detailed asset level. Municipalities engage in detailed discussions on current and planned maintenance solutions over a long-term forecast period. The impact of these solutions on the asset management process is assessed at a detailed asset level. Finally, the planned maintenance analysis is incorporated within the asset management plan calculations.

Maintenance vs. Rehabilitation

Maintenance solutions from an asset management perspective includes regularly scheduled costs to inspect or maintain assets, or in some cases, one-time repair costs that don’t meet the definition of capital/rehabilitation. Section 3150 of the PSAB handbook provides an approach to identify repairs and maintenance versus rehabilitation or “betterments” as follows:

Non-Complex Network Assets (Facilities, Vehicles, Equipment, Land Improvements):

Service potential is enhanced (i.e. costs should be capitalized as rehabilitation) when:

- There is an increase in previously assessed output or service capacity;
- Operating costs are lowered;
- Useful life is extended; or
- The quality of output is improved (if applicable).

Complex Network Assets (Roads, Watermains, Wastewater mains, Stormwater Mains):

Service potential is enhanced (i.e. costs should be capitalized as rehabilitation) when:

- There is an increase in previously assessed output or service capacity. This may or may not increase the useful life of the applicable assets.

To reiterate, the maintenance activities for complex network assets – which are assets that form a network pattern – are those that maintain the predetermined service potential of the applicable assets. This practice is in place to ensure a maintenance activity (such as road-related pothole filling or crack sealing) is recorded as maintenance, rather than recorded as rehabilitation (i.e. capital). Even though pothole filling and crack sealing can increase the remaining life of a road, these types of activities do not increase the previously assessed service capacity.

Historical Maintenance

Municipalities might first review historical maintenance data as they begin to consider the appropriate level of planned maintenance to undertake over a forecast period. The historical data may lead to a number of question related to spending patterns, such as:

- Is this the correct level of spending?
- Should spending levels be higher or lower, and if so, on which criteria should these decisions be based?
- Where should the focus be for planned maintenance spending?
- What has been the impact of historical maintenance on our assets?

If a municipality can assess the impact of current maintenance activities on service levels (through asset condition and risk), it can be determined whether the extent of those maintenance activities is acceptable going forward over the forecast period, or if changes are required. This will be discussed further in the next section.

The collection of historical maintenance data within the asset register (see Chapter 3) can provide key data to assist in developing future maintenance strategies. Areas of concern can be uncovered, providing a basis for developing priorities. For example, assets may be identified that required high maintenance historically, or the assets are experiencing increasing maintenance costs over time, which may be supported by a declining condition rating. It is incumbent upon municipalities to identify these types of assets in order to be in the best position to direct resources and attention where most needed. For example, a decision might be made to continue to maintain the asset, which may require increasing the maintenance budget. Conversely, a decision might be made to rehabilitate or replace the asset, which could reduce future projected maintenance.

Maintenance Impact on Assets

The decision to revise historical maintenance levels should be made following an analysis of all lifecycle costs and expected levels of service. For example, if an asset is not meeting expected levels of service, the municipality will need to determine the lifecycle costs necessary to reach those expected levels. These costs might include maintenance adjustments and, potentially, other lifecycle costs (such as rehabilitation and replacement). Based on a municipality's maturity level, this can be done using a more high-level (corporate) approach, a more intermediate asset type approach, or a more detailed asset approach. Examples are provided in Table 5-4 (below).

Table 5-4
Sample Maintenance Solutions – Levels of Maturity

Maturity Level	Levels of Service Comments	Maintenance Impact
Basic	Assets as a whole are not meeting expected service levels	Increase all maintenance by 5% per year and monitor impact on service levels annually
Intermediate	One particular asset type is not meeting expected service levels	Increase maintenance programs from $500,000 to $1.2 million over 10 years to provide expected levels of service (can be increases to existing programs or new programs)
Advanced	One particular asset is not meeting expected service levels	Increase maintenance programs from $5,000 to $12,000 over 10 years to provide a specific expected service level (can be increases to existing programs or new programs)

5.6 Maintenance Solutions – Approach

A detailed analysis of the relationship between maintenance levels and asset condition and risk will ensure that the proposed maintenance solutions are aligned with expected levels of service.

What method is used to incorporate planned maintenance solutions into the lifecycle management strategy?

Background

Municipalities engage in a number of approaches to determine how much maintenance should be carried out in a given year. A simple approach may be to base maintenance spending on prior years' operating budgets, apply an inflationary increase, and adjust for any necessary ad hoc adjustments for 'out of the ordinary' or 'new' spending. Other municipalities will undertake a more detailed approach, taking into account the condition of their assets, risk levels, and desired levels of service to be provided.

Levels of Maturity

What method is used to incorporate planned maintenance solutions into the lifecycle management strategy?

Maturity Levels			
NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Based on historical practices and ad hoc reactionary adjustments	**Some consideration for asset condition, risk, and level of service**	**Full consideration of asset condition, risk, and level of service**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Review and document historical maintenance solutions in place at the municipality	1. Discuss and document proposed maintenance solutions	1. Discuss and document proposed maintenance solutions
	2. Assess the impact of historical practices on the AM process	2. Ensure the proposed maintenance solutions have some consideration for asset condition, risk, and expected levels of service	2. Ensure the proposed maintenance solutions have full consideration for asset condition, risk, and expected levels of service
	3. Make high-level changes to the historical practices and determine associated impacts based on future plans	3. Assess the impact of proposed maintenance solutions on the AM process, with some consideration for overall impact on long-term forecast and asset remaining life	3. Assess the impact of proposed maintenance solutions on the AM process, with detailed consideration for overall impact on long-term forecast and asset remaining life

At the **basic level of maturity**, municipalities will tend to incorporate planned maintenance solutions into the lifecycle management strategy based on historical practices and may include subsequent ad hoc adjustments. These municipalities will review and document historical maintenance solutions that are in place. The impact of these practices on the asset management process is assessed. Past practices are updated with any high-level changes included in future maintenance plans. The associated impacts of these changes is determined and considered for use in the budgeting process.

At the **intermediate level of maturity**, municipalities incorporating planned maintenance into their lifecycle management strategy give some consideration to asset condition, risk, and levels of service. Proposed maintenance solutions are discussed and documented. Municipalities ensure the proposed maintenance solutions will lead to some improvement in asset condition, risk, and levels of service. The impact of these solutions on the asset management process is assessed, with some consideration for the overall impact on the long-term forecast and the assets' remaining life.

At the **advanced level of maturity**, municipalities incorporating planned maintenance into their lifecycle management strategy give full consideration to asset condition, risk, and levels of service. Proposed maintenance solutions are discussed and documented. Municipalities ensure the proposed maintenance solutions fully take into account impacts on asset condition, risk, and levels of service. The impact of these solutions on the asset management process is assessed, with detailed consideration for the overall impact on the long-term forecast and the assets' remaining life.

Planned Maintenance Strategy

This section introduces the concept of a "planned maintenance strategy", which identifies the role of planned maintenance in the asset management planning process. Maintenance decisions should be made in consideration with other lifecycle costs (i.e. rehabilitation and replacement), and be based on factors such as:

- Asset condition;
- Asset risk; and
- Expected levels of service.

Through this decision-making process the municipality will need to answer:

Does maintenance provide an improvement in asset condition, a mitigation of risk, and/or a movement towards expected levels of service in an efficient and effective manner?

And,

Does maintenance defer other lifecycle costs to the point where savings are projected?

These questions become more complicated when other lifecycle costs are brought into the equation. Finding the optimal level of maintenance, rehabilitation, and replacement lifecycle costs over a forecast period is the definition of lifecycle optimization. Weighing the lifecycle costs against the potential improvement in condition, mitigation of risk, and movement towards expected service levels becomes the ultimate goal within the lifecycle management strategy.

While *planned* maintenance should be integrated into the asset management process, *unplanned* maintenance should be discussed as well. Significant and dramatic increases in asset risk, even to the point of asset failure, can represent a need for unplanned maintenance. While one of the objectives of asset management planning is to minimize these events, they are not completely avoidable. In the case of asset failure, municipalities will need to assess whether the best strategy is to:

- Perform maintenance work;
- Rehabilitate;
- Replace the asset;
- Apply non-infrastructure solutions; or
- Do nothing (i.e. allow the asset to continue to fail).

While considering the strategies above, municipalities need to decide whether to base planned maintenance on historical trends or develop new maintenance strategies that take risk and/or asset condition into account. Either way, lifecycle costs should be quantified as part of the lifecycle management strategy as well as the impact on the assets themselves. (i.e. useful life, condition, risk, etc.).

5.7 Rehabilitation Solutions – Introduction

> Asset rehabilitation often extends service life and/or improves level of service, at a fraction of the cost of asset replacement. Relative to a simple replacement analysis, incorporating asset rehabilitation solutions into the lifecycle management strategy is a more accurate way of predicting future lifecycle costs.

To what extent are planned rehabilitation solutions incorporated into the lifecycle management strategy?

Background

Municipalities will approach planned rehabilitation solutions in a number of ways. Some will base their plans on broad discussions at the corporate level, whereas others will engage in more detailed discussions with a focus on the asset type, or even at a detailed asset level.

Levels of Maturity

To what extent are planned rehabilitation solutions incorporated into the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Some or high-level incorporation	**Full incorporation at asset type level**	**Full incorporation at detailed asset level**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Engage in broad discussions on current and/or potential planned rehabilitation solutions	1. Engage in detailed discussions on current and/or potential planned rehabilitation solutions	1. Engage in detailed discussions on current and/or potential planned rehabilitation solutions
	2. Assess the impact of the planned rehabilitation solutions on the asset management process at a corporate level	2. Assess the impact of the planned rehabilitation solutions on the asset management process at an asset type level	2. Assess the impact of the planned rehabilitation solutions on the asset management process at a detailed asset level
	3. Incorporate the planned rehabilitation analysis within the AM plan calculations	3. Incorporate the planned rehabilitation analysis within the AM plan calculations	3. Incorporate the planned rehabilitation analysis within the AM plan calculations

At the **basic level of maturity**, there will be some high-level incorporation of planned rehabilitation solutions into the lifecycle management strategy. Municipalities at the basic level of maturity engage in broad discussions on current and/or potentially new planned rehabilitation solutions. The impact of these solutions on the asset management process is assessed at a corporate level. Finally, the planned rehabilitation analysis is incorporated within the asset management plan calculations.

At the **intermediate level of maturity**, there will be full incorporation of planned rehabilitation solutions into the lifecycle management strategy at the asset type level. Municipalities engage in detailed discussions on current and potential planned rehabilitation solutions to be incorporated over the forecast period. The impact of these solutions on the asset management process is assessed at the asset type level. Finally, the planned rehabilitation analysis is incorporated within the asset management plan calculations.

At the **advanced level of maturity**, there will be full incorporation of planned rehabilitation solutions into the lifecycle management strategy at a detailed asset level. Municipalities engage in detailed discussions on current and potential planned rehabilitation solutions. The impact of these solutions on the asset management process is assessed at a detailed asset level. Finally, the planned rehabilitation analysis is incorporated within the asset management plan calculations.

Rehabilitation vs. Maintenance

Rehabilitation from an asset management perspective includes significant repairs that, in many cases, extend asset life. Section 3150 of the PSAB handbook provides an approach to identify rehabilitation (or “betterments”) versus repairs and maintenance, as follows:

Non-Complex Network Assets (Facilities, Vehicles, Equipment, Land Improvements):

Service potential is enhanced (i.e. costs should be capitalized as rehabilitation) when:

- There is an increase in previously assessed output or service capacity;
- Operating costs are lowered;
- Useful life is extended; or
- The quality of output is improved (if applicable).

Complex Network Assets (Roads, Watermains, Wastewater mains, Storm Mains):

Service potential is enhanced (i.e. costs should be capitalized as rehabilitation) when:

- There is an increase in previously assessed output or service capacity. This may or may not increase the useful life of the applicable assets.

To reiterate, complex network assets – which are assets that form a network pattern – rehabilitation activities increase the predetermined service potential while maintenance activities simply maintain the predetermined service potential of the applicable assets. This practice is in place to ensure rehabilitation activities such as the lining of wastewater mains are recorded as rehabilitation (i.e. capital). Conversely, maintenance activities such as road-related pothole filling or crack sealing, should be recorded as maintenance, rather than be identified as rehabilitation (i.e. capital). Although pothole filling and crack sealing could increase the remaining life of a road, these solutions do not increase the previously assessed service capacity.

Historical Rehabilitation

Municipalities might first review historical rehabilitation data as they begin to consider the appropriate level of planned rehabilitation to undertake over a forecast period. The historical data may lead to a number of question related to spending patterns, such as:

- Is this the correct level of spending?
- Should spending levels be higher or lower, and if so, on which criteria should these decisions be based?
- Where should the focus be for planned rehabilitation spending?
- What has been the impact of historical rehabilitation on our assets?

If a municipality can assess the impact of current rehabilitation practices on service levels (through asset condition and risk), it can determine whether the extent of those rehabilitation practices is acceptable going forward over the forecast period, or if changes are required. This will be discussed further in Section 5.7.

As discussed in Section 5.5, the collection of historical maintenance data within the asset register (see Chapter 3) can provide key data to assist in developing future rehabilitation strategies. Areas of concern can be uncovered, providing a basis for developing priorities. For example, assets may be identified that required high maintenance historically, or the assets are experiencing increasing maintenance costs over time, which may be supported by a declining condition rating. It is incumbent upon municipalities to identify these assets and be in the best position to direct resources and attention where most needed. For example, the decision could be made to continue to maintain the asset, which requires increasing the maintenance budget. Conversely, the decision could be made to rehabilitate or replace the asset, which could reduce future projected maintenance.

Rehabilitation Impact on Assets

The decision to revise historical rehabilitation levels should be made through an analysis of all lifecycle costs, based on expected levels of service. For example, if an asset is not meeting expected levels of service, the lifecycle costs needed to reach those levels must be determined. This could include rehabilitation and, potentially, other lifecycle costs (such as maintenance and replacement). Based on a municipality’s maturity level, this can be done using a more high-level (corporate) approach, a more intermediate asset type approach, or a more detailed asset approach. Examples are provided in Table 5-5 below:

Table 5-5
Sample Rehabilitation Impacts

Maturity Level	Levels of Service Comments	Rehabilitation Impact
Basic	Assets as a whole are not meeting expected service levels	Increase all rehabilitation programs by 5% per year and monitor impact on service levels annually for impact
Intermediate	One particular asset type is not meeting expected service levels	Increase rehabilitation from $1.0 million to $2.0 million over 10 years to provide expected levels of service (can be increases to existing programs or new programs)
Advanced	One particular asset is not meeting expected service levels	Increase rehabilitation on specific asset over forecast period to provide a specific expected service level (can be increases to existing programs or new programs)

5.8 Rehabilitation Solutions – Approach

Rehabilitation solutions embraced in the lifecycle management strategy should be driven by asset condition, risk, and expected levels of service. This will enable an accurate assessment of their impact on the assets in the long-term forecast.

What method is used to incorporate planned rehabilitation solutions into the lifecycle management strategy?

Background

Municipalities engage in a number of approaches to incorporate planned rehabilitation solutions into the lifecycle management strategy. A simple approach may be to base rehabilitation solutions on historical practices, then incorporate any necessary ad hoc adjustments for unexpected situations as they arise. Other municipalities may undertake a more detailed approach, taking into account the condition of their assets, risk levels, and desired levels of service to be provided.

Levels of Maturity

What method is used to incorporate planned rehabilitation solutions into the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Based on historical practices and ad hoc reactionary adjustments	**Some consideration for asset condition, risk, and level of service**	**Full consideration of asset condition, risk, and level of service**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Review and document historical rehabilitation solutions in place at the municipality	1. Discuss and document proposed rehabilitation solutions	1. Discuss and document proposed rehabilitation solutions
	2. Assess the impact of historical practices on the AM process	2. Ensure the proposed rehabilitation solutions have some consideration for asset condition, risk, and expected levels of service	2. Ensure the proposed rehabilitation solutions have full consideration for asset condition, risk, and expected levels of service
	3. Make high-level changes to the historical practices and associated impacts based on future plans	3. Assess the impact of proposed rehabilitation solutions on the AM process, with some consideration for overall impact on long-term forecast and asset remaining life	3. Assess the impact of proposed rehabilitation solutions on the AM process, with detailed consideration for overall impact on long-term forecast and asset remaining life

At the **basic level of maturity**, municipalities will tend to incorporate planned rehabilitation solutions into the lifecycle management strategy based on historical practices and may include subsequent ad hoc reactionary adjustments. Municipalities will review and document historical rehabilitation solutions that are in place. The impact of these practices on the asset management process is assessed. Past practices are updated with any high-level changes included in future rehabilitation plans. The associated impacts of these changes is determined and considered for use in the budgeting process.

At the **intermediate level of maturity**, municipalities incorporating planned rehabilitation into their lifecycle management strategy would give some consideration to asset condition, risk, and levels of service. Proposed rehabilitation solutions are discussed at a staff level and documented. Municipalities ensure the proposed rehabilitation solutions lead to some improvement in asset condition, risk, and levels of service. The impact of these solutions on the asset management process is assessed, with some consideration for the overall impact on the long-term forecast and the assets' remaining life.

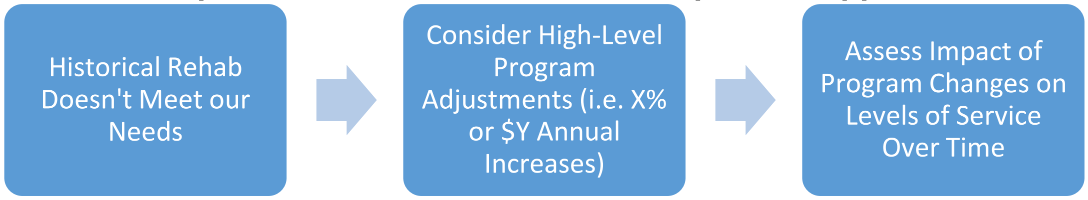
At the **advanced level of maturity**, municipalities incorporating planned rehabilitation into their lifecycle management strategy give full consideration to asset condition, risk, and levels of service. Proposed rehabilitation solutions are discussed at a staff level and documented. Municipalities ensure the proposed rehabilitation solutions take into account asset condition, risk, and levels of service. The impact of these solutions on the asset management process is assessed, with detailed consideration for the overall impact on the long-term forecast and the assets' remaining life.

Planned Rehabilitation Solutions - Approaches

Rehabilitation of certain assets can be appropriate when the asset is not maintaining or moving towards expected service levels but is not at a point in its lifecycle where replacement or maintenance is the optimal course of action. To determine appropriate planned rehabilitation solutions for the future, municipalities can follow different approaches. There are generally three broad categories for rehabilitation:

1. Top down
   Under the top down approach, historical rehabilitation programs would be used as a guide for future capital works. For example, municipalities may initiate "shave and pave" programs for some of their roads at a budgeted annual cost and would forecast continuing the program for a number of years. Similarly, a wastewater main relining program may be undertaken over a number of years. Taking these programs into account, municipalities would consider any adjustments to the programs or whether to add new programs. The municipality should assess the impact of these programs on the impacted assets' remaining useful life, replacement timelines, and the service being provided over time as the program adjustments take effect. Example:

Figure 5-2
Sample Rehabilitation Solutions – Top Down Approach

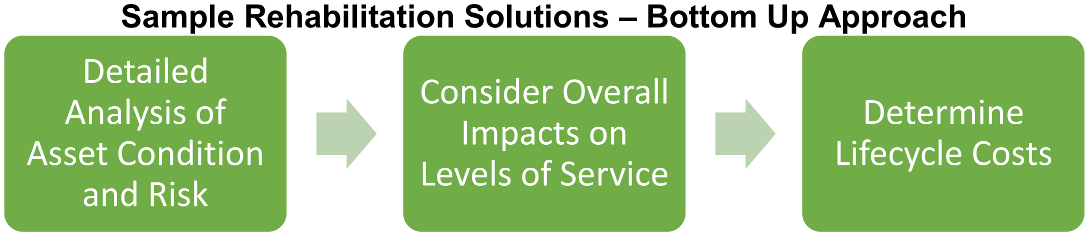


2. Predictive modelling
   The predictive modelling approach can be undertaken by municipal staff through an analysis of a set of planned actions that account for predicted effects on the assets and levels of service. This can be done at a broad level (by asset type) or at a detailed level (by detailed asset). While this can be attempted in spreadsheet format, asset management software would make this approach easier to implement. See Chapter 9 for further discussions on software as an asset management tool.

Figure 5-3
Sample Rehabilitation Solutions – Predictive Modelling Approach

3. Bottom up
   The bottom up approach is dependent on the identification of specific assets that require attention (i.e. consider specific asset risk ratings, condition ratings, and service levels). Assets identified would be scheduled for rehabilitation, with the impacts on the assets' remaining useful life and replacement timelines once again considered. Complex predictive modelling can assist with this process but is not required.

Figure 5-4
Sample Rehabilitation Solutions – Bottom Up Approach



To put these categories in context of asset management maturity:

Table 5-6
Sample Planned Rehabilitation Approaches – Level of Maturity

Maturity Level	Categories	Approach
Basic	Top Down Approach at Corporate Level	High-Level Rehabilitation Analysis (Corporate Level) Increase rehabilitation on all assets by 10%
Intermediate	Top Down or Predictive Modelling at the Asset Type Level	Rehabilitation at the Asset Type Level Increase rehabilitation on local roads by 10%
Advanced	Bottom Up or Predictive Modelling at the Detailed Asset Level	Rehabilitation at the Detailed Asset Level Increase rehabilitation on Smith St. by 10%

5.9 Replacement Solutions – Introduction

Incorporating replacement solutions into the lifecycle management strategy is important because asset replacement is often the most significant component of an asset's lifecycle cost.

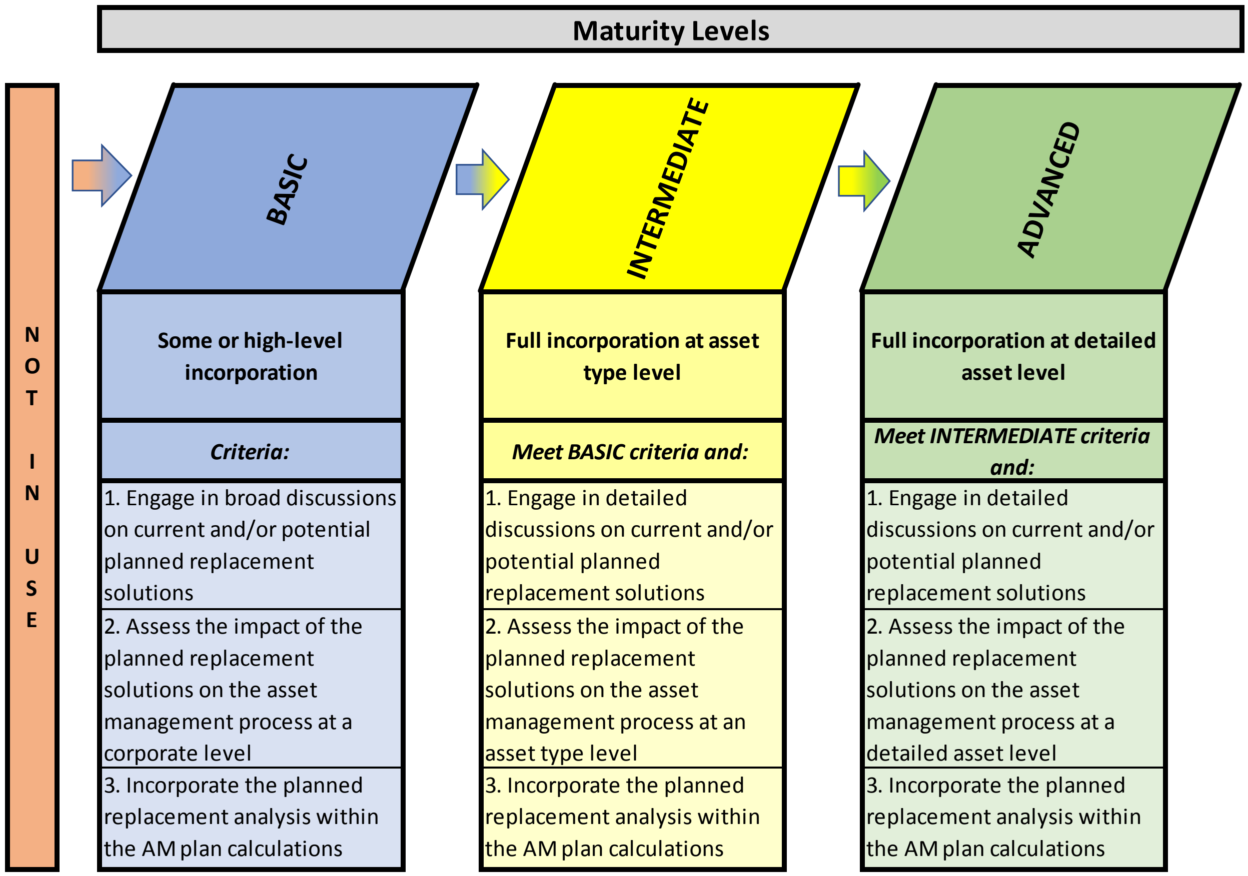
To what extent are planned replacement solutions incorporated into the lifecycle management strategy?

Background

There are a number of ways that municipalities can approach planned replacement solutions. Some may base their plans on broad discussions at the corporate level, while others may engage in more detailed discussions with a focus on the asset type, or even at a detailed asset level.

Levels of Maturity

To what extent are planned replacement solutions incorporated into the lifecycle management strategy?



At the **basic level of maturity**, there will be some high-level incorporation of planned replacement solutions into the lifecycle management strategy. Municipalities engage in broad discussions on current and potentially new planned replacement solutions to incorporate into the forecast. The impact of these solutions on the asset management process is assessed at a corporate level. Finally, the planned replacement analysis is incorporated within the asset management plan calculations.

At the **intermediate level of maturity**, there will be full incorporation of planned replacement solutions into the lifecycle management strategy at the asset level. Municipalities engage in detailed discussions on current and potential planned replacement solutions. The impact of these solutions on the asset management process is assessed at an asset type level. Finally, the planned replacement analysis is incorporated within the asset management plan calculations.

At the **advanced level of maturity**, there will be full incorporation of planned replacement solutions into the lifecycle management strategy at a detailed asset level. Municipalities engage in detailed discussions on current and potential planned replacement solutions. The impact of these solutions on the asset management process is assessed at a detailed asset level. Finally, the planned replacement analysis is incorporated within the asset management plan calculations.

Replacement Program

Contrary to maintenance and rehabilitation identification, the recognition of an asset being replaced is relatively straightforward. With maintenance and rehabilitation, it will need to be determined whether the predetermined service potential should be changed to classify a cost as maintenance *or* rehabilitation (see Sections 5.5 and 5.6). Asset replacement simply entails replacing one asset with another. The replacement asset will either provide the same service potential or a completely different service. Please refer to the discussion in Chapter 3 regarding the difference between the reproduction cost and replacement cost of an asset.

Municipalities might first review historical replacement levels undertaken over a forecast period. The historical data may lead to a number of questions related to spending patterns, including:

- Is this the correct level of spending?
- Which criteria should drive decisions regarding spending levels?
- Where should the focus be for planned replacement spending?
- What has been the impact of historical replacement spending on our assets?

If a municipality can assess the impact of current replacement practices on service levels (through asset condition and risk), a determination can be made regarding whether that level of replacement is acceptable going forward over the forecast period, or if changes are required. This analysis can also happen at the specific asset level, assessing replacement needs on an asset-by-asset basis. This will be discussed further in the next section.

As discussed in Sections 5.6 and 5.7, the collection of historical maintenance data within the asset register (see Chapter 3) can provide key insights to assist in the development of future replacement strategies. Areas of concern can be uncovered, providing a basis for developing priorities. For example, assets may be identified that required high maintenance historically, or the assets are experiencing increasing maintenance costs over time, which may be supported by a declining condition rating. It is incumbent upon municipalities to identify such assets and be in the best position to direct resources and attention where most needed. For example, the decision could be made to continue to maintain the asset, which requires increasing the maintenance budget. Conversely, the decision could be made to rehabilitate or replace the asset, which could reduce future projected maintenance.

Replacement Impact on Assets

The decision to update historical replacement levels or patterns to suit present and future needs should be based on an analysis of all lifecycle costs and expected levels of service. For example, if a particular asset is not meeting levels of service expectations, the lifecycle costs to be incurred to move that asset towards providing expected service levels will need to be determined. This could include replacement and potentially other lifecycle costs (such as maintenance and rehabilitation). Based on the maturity level of the municipality, this can be done using a more high-level (corporate) approach, a more intermediate asset type approach, or a more detailed asset approach. Table 5-7 provides examples of replacement impacts.

Table 5-7
Sample Replacement Impacts – Level of Maturity

Maturity Level	Levels of Service Comments	Replacement Impact
Basic	Assets as a whole are not meeting expected service levels	Increase all replacement programs by 5% per year and monitor impact on service levels annually
Intermediate	One particular asset type is not meeting expected service levels	Increase replacement program from $5.0 million to $9.0 million over 10 years to provide an expected level of service
Advanced	One particular asset is not meeting expected service levels	Increase replacement on specific asset over forecast period to provide a specific expected service level

5.10 Replacement Solutions – Approach

A detailed consideration of asset replacement solutions within the lifecycle management strategy will enable the impact of these solutions to be measured and accounted for in the long-term forecast.

What method is used to incorporate planned replacement solutions into the lifecycle management strategy?

Background

Municipalities engage in a number of approaches to incorporate planned replacement solutions into the lifecycle management strategy. A simple approach may be to base replacement solutions on historical practices, with any necessary ad hoc adjustments for unexpected situations as they arise. Other municipalities may undertake a more detailed approach, taking into account the condition of their assets, risk levels, and expected levels of service to be provided.

Levels of Maturity

What method is used to incorporate planned replacement solutions into the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Based on historical practices and ad hoc reactionary adjustments	**Some consideration for asset condition, risk, and level of service**	**Full consideration of asset condition, risk, and level of service**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Review and document historical replacement solutions in place at the municipality	1. Discuss and document proposed replacement solutions	1. Discuss and document proposed replacement solutions
	2. Assess the impact of historical practices on the AM process	2. Ensure the proposed replacement solutions have some consideration for asset condition, risk, and expected levels of service	2. Ensure the proposed replacement solutions have full consideration for asset condition, risk, and expected levels of service
	3. Make high-level changes to the historical practices and associated impacts based on future plans	3. Assess the impact of proposed replacement solutions on the AM process, with some consideration for overall impact on long-term forecast and asset remaining life	3. Assess the impact of proposed replacement solutions on the AM process, with detailed consideration for overall impact on long-term forecast and asset remaining life

At the **basic level of maturity**, municipalities will tend to incorporate planned replacement solutions into the lifecycle management strategy based on historical practices and may include subsequent ad hoc reactionary adjustments. Municipalities will review and document historical replacement solutions that are in place. The impact of these practices on the asset management process is assessed. Past practices are updated with any high-level changes included in future replacement plans. The associated impacts of these changes is determined and considered for use in the budgeting process.

At the **intermediate level of maturity**, municipalities incorporating planned replacement into their lifecycle management strategy would give some consideration to asset condition, risk, and levels of service. Proposed replacement solutions are discussed at a staff level and documented. Municipalities ensure the proposed replacement solutions lead to some improvement in asset condition, risk, and levels of service. The impact of these solutions on the asset management process is assessed, with some consideration for the overall impact on the long-term forecast and the assets' remaining life.

At the **advanced level of maturity**, municipalities incorporating planned replacement into their lifecycle management strategy would give full consideration to asset condition, risk, and levels of service. Proposed replacement solutions are discussed at a staff level and documented. Municipalities ensure the proposed replacement solutions have full consideration for asset condition, risk, and levels of service. The impact of these solutions on the asset management process is assessed, with detailed consideration for the overall impact on the long-term forecast and the assets' remaining life.

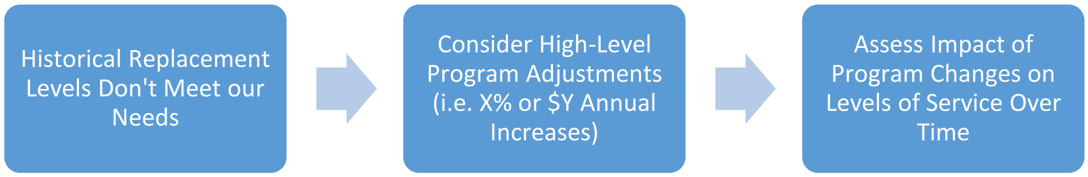
Planned Replacement Solutions - Approaches

Replacement of assets can be appropriate when the asset is not maintaining or moving towards expected service levels and has reached a point in its lifecycle where rehabilitation or maintenance are no longer optimal courses of action. In determining appropriate planned replacement solutions for the future, municipalities can follow different approaches (similar to the approaches identified for rehabilitation solutions above). There are generally three broad categories:

1. Top down
   Under the top down approach, historical replacement programs would be used as a guide for future capital works. For example, municipalities may initiate a road surface replacement program for their roads at a budgeted annual cost, and would forecast continuing the program for a number of years in the forecast. Similarly, a wastewater main replacement program may be undertaken over a

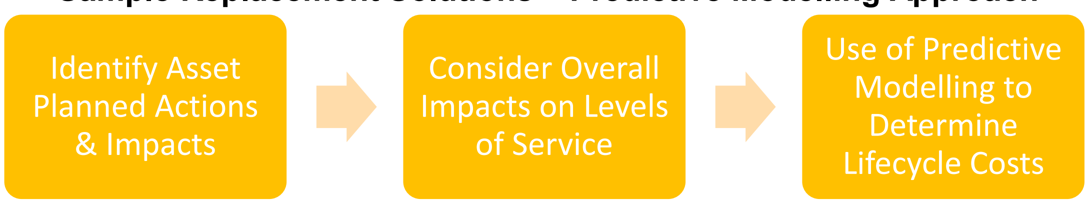
number of years. Taking these programs into account, municipalities would consider any adjustments to the programs or whether to add new programs. The municipality should assess the impact of these programs on the impacted assets' remaining useful life, replacement timelines, and the service being provided over time as the program adjustments take effect. Example:

Figure 5-5
Sample Replacement Solutions – Top Down Approach



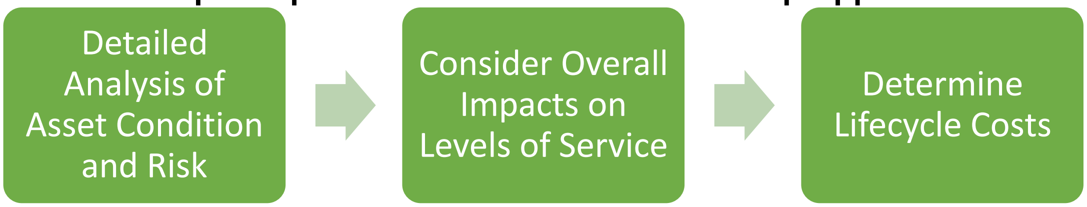
2. Predictive modelling
   The predictive modelling approach can be undertaken by municipal staff through an analysis of a set of planned actions that account for predicted effects on the assets and levels of service. This can be done at a broad level (by asset type) or at a detailed level (by detailed asset). While this can be attempted in spreadsheet format, asset management software would make this approach easier to implement. See Chapter 9 for further discussions on software as an asset management tool.

Figure 5-6
Sample Replacement Solutions – Predictive Modelling Approach



3. Bottom up
   The bottom up approach is dependent on the identification of specific assets that require attention (i.e. consider specific asset risk ratings, condition ratings, and service levels). Assets identified would be scheduled for replacement, with the impacts on the assets' remaining useful life, and replacement timelines once again considered. Complex predictive modelling can assist with this process but is not required.

Figure 5-7
Sample Replacement Solutions – Bottom Up Approach



To put these categories in context of asset management maturity:

Table 5-8
Sample Planned Replacement Solutions – Level of Maturity

Maturity Level	Categories	Approach
Basic	Top Down Approach at Corporate Level	High-Level Replacement Analysis (Corporate Level) Increase replacement on all assets by 10%
Intermediate	Top Down or Predictive Modelling at the Asset Type Level	Replacement at the Asset Type Level Increase replacement on local roads by 10%
Advanced	Bottom Up or Predictive Modelling at the Detailed Asset Level	Replacement at the Detailed Asset Level Increase replacement on Smith St. by 10%

5.11 Asset Expansion

Incorporating growth into the lifecycle management strategy ensures that the additional lifecycle costs associated with newly constructed/acquired assets and/or new services are accounted for in the long-term forecast.

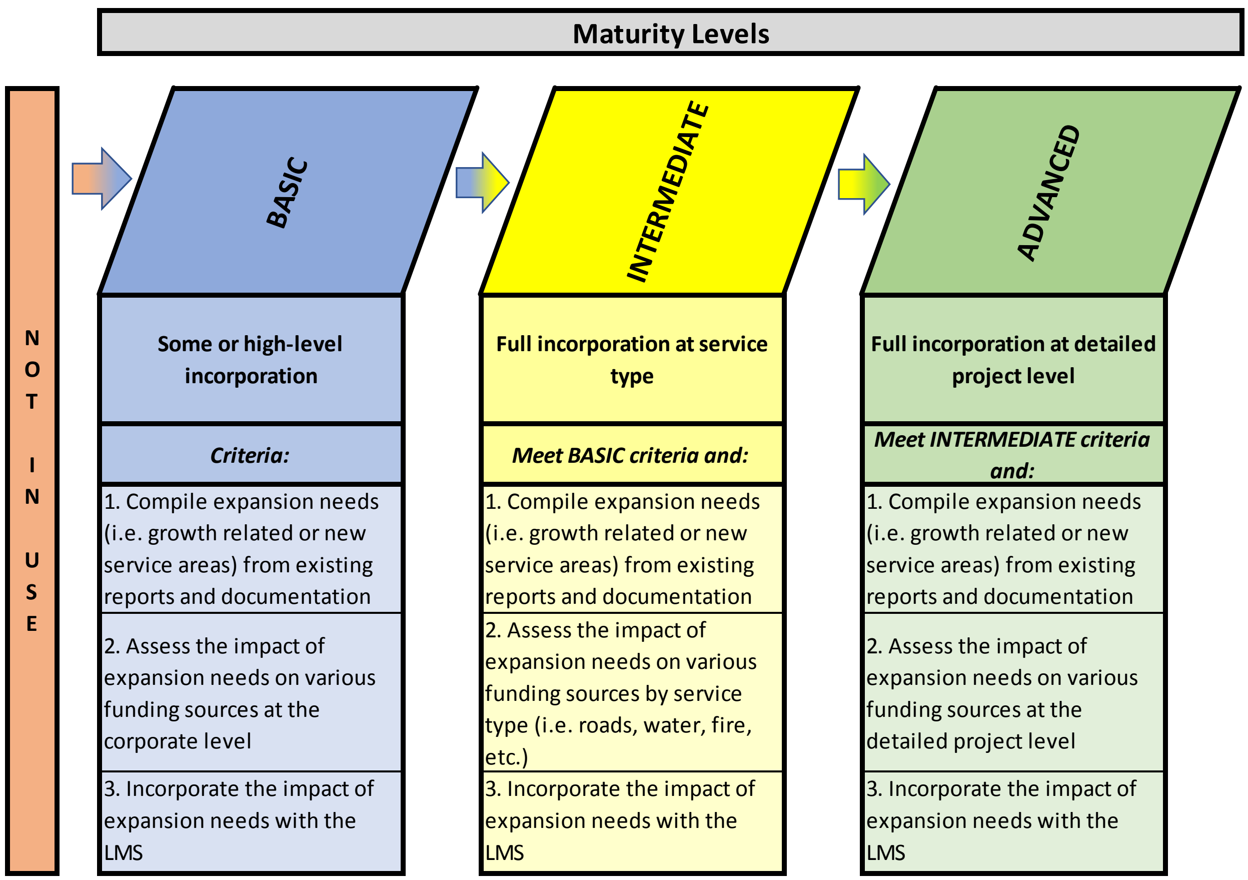
To what extent are growth and/or new service areas incorporated into the lifecycle management strategy?

Background

Municipalities can approach the incorporation of growth and/or new service areas in a number of ways. After compiling expansion needs from existing reports and documentation, some will assess the impacts on funding sources but only at the corporate level; some may take it a step further by assessing impact on funding sources by service type area; whereas others will go further still and assess impact on funding sources at the detailed project level.

Levels of Maturity

To what extent are growth and/or new service areas incorporated into the lifecycle management strategy?



At the **basic level of maturity**, there will be some incorporation or high-level incorporation of growth and/or new service areas into the lifecycle management strategy. Municipalities compile expansion needs (i.e. growth related or new service areas) from existing reports and documentation. The impact of these expansion needs on various funding sources is assessed, but generally at a high level only. The impact of the expansion needs are incorporated into lifecycle management strategy.

At the **intermediate level of maturity**, there will be full incorporation of growth and/or new service areas into the lifecycle management strategy by service type. Municipalities compile expansion needs (i.e. growth related or new service areas) from existing reports and documentation. The impact of these expansion needs on various funding sources is assessed by service type (i.e. roads, water, fire, etc.). The impact of the expansion needs is incorporated into lifecycle management strategy.

At the **advanced level of maturity**, there will be full incorporation of growth and/or new service areas into the lifecycle management strategy at the detailed project or asset level. Municipalities compile expansion needs (i.e. growth related or new service areas) from existing reports and documentation. The impact of these expansion needs on various funding sources is assessed at the detailed project level. The impact of the expansion needs is incorporated into the lifecycle management strategy.

Assets Expansion

Previous sections have detailed elements of lifecycle costing of existing assets within the context of the lifecycle management strategy. This section explores how to handle new and/or expanded assets in regards to upgrading, creating, purchasing, constructing, or receiving contributed assets (with contributed assets discussed more fully later in this chapter). As municipalities grow, become more complex, and receive demands from residents, expansion-related asset needs become a mechanism for allowing growth to occur and to provide new or expanded services.

Sources of New and Upgraded Assets

The demand for new assets, or the requirement to upgrade assets, can come from multiple sources, including:

1. **Future Growth Planning**: A process which can identify the need for new or expanded assets to meet increasing demands of providing existing services to an expanding population. For example:
    - A requirement to increase the stormwater drainage capacity in a high growth development area; or
    - The need to increase a two-lane road to a four-lane road due to traffic congestion as a result of an increase in residents and housing in the area.

2. **Gaps in the Levels of Service Provided**: When comparing current service levels to expected service levels,it may be determined that new or expanded assets are necessary. For example:
   - The proposed level of service is to maintain parks every week. Currently, parks are maintained every 2 weeks. To increase service levels, an additional mower is needed.
3. **Decision to Provide a New Service**: A municipality may decide that a new service is required within the municipality (or a previously contracted service may become a direct municipal service), resulting in the need for new or expanded assets to support this service. For example:
   - A municipality may decide to run and operate their water and wastewater systems, which was previously a contracted service. This requires additional vehicles and equipment.

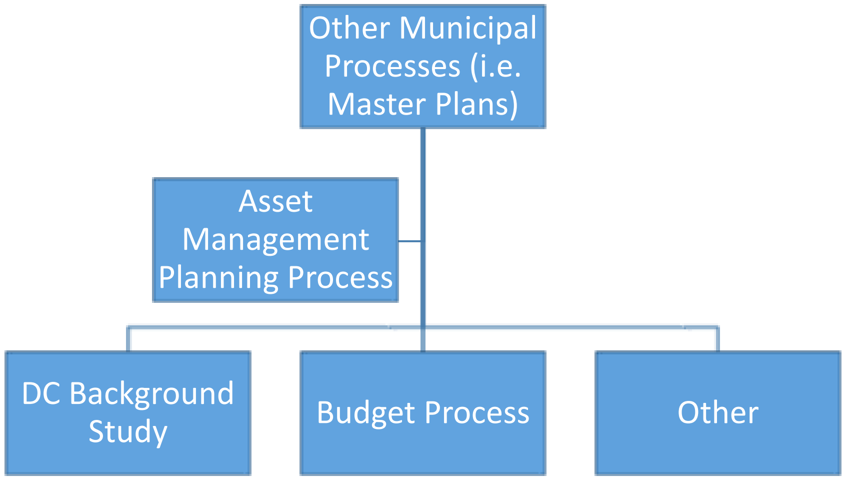
<u>Determining Expansion Needs</u>

Additional assets may be required as a result of the following expansion-related circumstances:

1. **Growth Planning and New Services**: Typically, these expansion needs are determined outside of the asset management planning process. Municipalities will have other various plans, policies, and strategies that deal with the concept of how that particular municipality is to grow. This can include:
   - Strategic Plans;
   - Official Plans;
   - Secondary Plans;
   - Master Plans; and
   - Other (i.e. Capital Plans).

   As illustrated in Figure 5-8 below, these plans, policies, and strategies feed growth planning and new service needs into the asset management process, as well as other processes, such as preparing a Development Charge (DC) Background Study. It is, then, these other processes, such as the DC Background Study, that can assist in determining allowable funding sources within the Financing Strategy (see Chapter 6).

Figure 5-8
Growth Planning and New Services Process



2. **Gaps in Levels of Service**: These expansion needs can come from the asset management planning process (such as the levels of service analysis – see Chapter 4), or can be supported by other municipal processes such as organizational reviews or efficiency/effectiveness reports.

5.12 Contributed Assets

Incorporating contributed assets into the lifecycle management strategy ensures that the additional lifecycle costs associated with these assets, beyond initial acquisition/construction, are accounted for in the long-term forecast.

To what extent are contributed assets incorporated into the lifecycle management strategy?

Background

Municipalities can approach the incorporation of contributed assets in a number of ways. After compiling details of anticipated contributed assets from existing reports and documentation, some municipalities will assess their impact on lifecycle management costs at the corporate level, whereas others will focus on their impact on the lifecycle management costs by asset type, or even at a detailed asset level.

Levels of Maturity

To what extent are contributed assets incorporated into the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Some or high-level incorporation	**Full incorporation at asset type level**	**Full incorporation at detailed asset level**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Compile details of anticipated contributed assets from existing reports and documentation	1. Compile details of anticipated contributed assets from existing reports and documentation	1. Compile details of anticipated contributed assets from existing reports and documentation
	2. Assess the impact of anticipated contributed assets on future lifecycle costs at the corporate level	2. Assess the impact of anticipated contributed assets on future lifecycle costs by asset type	2. Assess the impact of anticipated contributed assets on future lifecycle costs at the detailed asset level
	3. Incorporate the impact of expansion needs with the lifecycle management strategy	3. Incorporate the impact of expansion needs with the lifecycle management strategy	3. Incorporate the impact of expansion needs with the lifecycle management strategy

At the **basic level of maturity**, there will be some incorporation or high-level incorporation of contributed assets into the lifecycle management strategy. Municipalities at the basic level of maturity will compile details of anticipated contributed assets from existing reports and documentation. The impact on future lifecycle costs of these anticipated contributed assets is assessed, but generally at the corporate level only. The impact of the expansion needs is incorporated into the lifecycle management strategy.

At the **intermediate level of maturity**, there will be full incorporation of anticipated contributed assets into the lifecycle management strategy at the asset type level. Municipalities at the intermediate level of maturity will compile details of anticipated contributed assets from existing reports and documentation. The impact of these expansion needs on future lifecycle costs is assessed by asset type. The impact of the expansion needs is incorporated into the lifecycle management strategy.

At the **advanced level of maturity**, there will be full incorporation of anticipated contributed assets into the lifecycle management strategy at the detailed asset level. Municipalities at the advanced level of maturity will compile details of anticipated contributed assets from existing reports and documentation. The impact of these expansion needs on future lifecycle costs is assessed at the detailed asset level. The impact of the expansion needs is incorporated into the lifecycle management strategy.

Contributed Assets

Contributed assets can include:

- Assets assumed by a municipality, built by a developer (i.e. completion of a subdivision where roads, stormwater, water, wastewater, parks, etc. were included in the construction); and
- Assets donated to a municipality (i.e. a community group), or a community group agreeing to pay for a portion of an asset's purchase or rehabilitation.

The future lifecycle impact of contributed assets should be accounted for within the asset management planning process. While the municipality may not be responsible for the initial purchase or construction of the asset, other lifecycle costs such as operations, maintenance, and future rehabilitation or replacement will likely be the responsibility of the municipality.

Each municipality should identify a consistent approach to accounting for contributed assets from an asset management perspective. While, for accounting purposes, these assets don't have to be recorded until the date of assumption, asset management consideration can occur before this event, if desired. If the municipality has the ability to estimate the assets being contributed (in terms of asset types and date of contribution), these estimates can be used to start planning for future lifecycle costs within the lifecycle management strategy (long-term forecast). The municipality's approach to determine the specific point in time to account for contributed assets in the asset management process should be consistently applied, considering options such as:

- As soon as the municipality learns of the contributed assets;
- The year (or year before) the contributed asset is anticipated to be received/assumed; or

- As soon as the contributed asset is recorded for accounting purposes (typically date of assumption/receipt).

For this process to work, effective communication is needed between municipal departments to ensure future contributed assets can be identified in an appropriate manner, and at the right point in time.

5.13 Risk Assessments within the Lifecycle Management Strategy

Developing a framework for assessing risk can help municipalities to set priorities and appropriate treatment intervention points for specific assets.

How are risk assessments used within the lifecycle management strategy?

Background

The previous sections of this chapter dealt with the lifecycle cost categories that make up the lifecycle management strategy. This section will explore how risk assessments are used to identify areas for focus and priorities within the lifecycle management strategy. This will allow a municipality to effectively mitigate risk while moving towards expected levels of service from an asset management perspective.

During the management and maintenance of assets there is an inherent risk associated with each activity. ISO 31000 – Risk management defines risk as:

"The effect of uncertainty on objectives"

Acknowledging risks and managing them appropriately helps to mitigate any implications associated with that risk, which enables municipal staff and Council to make informed decisions around how to manage infrastructure assets and their associated risks.

Levels of Maturity

How are risk assessments used within the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Risk assessment used to determine corporate risk	**Risk assessment used to set priorities within the lifecycle management strategy**	**Risk assessment used to set priorities and specific asset lifecycle needs within the lifecycle management**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Utilize risk assessment to create an overall corporate risk assessment	1. Utilize risk assessment to identify priority projects	1. Utilize risk assessment to identify priority projects, and determine impacts on lifecycle cost timing by asset
	2. Incorporate the corporate risk assessment into the AM plan, providing a high-level indication of service areas upon which to focus	2. Incorporate a list of priority projects into the AM plan	2. Incorporate a list of priority projects into the AM plan
		3. Utilize the list of priority projects to populate the short-term capital forecast and identify projects for grant eligibility	3. Utilize the list of priority projects to populate the short-term capital forecast and identify projects for grant eligibility
			4. Utilize the asset lifecycle cost timing adjustments to populate the long-term forecast

At the **basic level of maturity**, municipalities use risk assessment to determine corporate risk by service area. The resulting corporate risk assessment is incorporated into the asset management plan, providing a high-level indication of service areas upon which to focus in the lifecycle management strategy.

At the **intermediate level of maturity**, risk assessments are used to set priorities within the lifecycle management strategy. This is accomplished by utilizing risk assessment to identify priority projects, and then incorporating the list of priority projects into the lifecycle management strategy. The list of priority projects is utilized to populate the short-term capital forecast and to form the basis for determining grant eligibility.

At the **advanced level of maturity**, risk assessments are used to set priorities, as well as specific asset lifecycle needs within the lifecycle management strategy. Municipalities utilize risk assessments to identify priority projects, and determine the related impacts on lifecycle cost timing by specific asset. The list of priority projects is incorporated into the lifecycle management strategy. The list of priority projects is also used to populate the short-term to medium-term capital forecast and form the basis for determining grant eligibility.

Risk Management Approach

A risk management approach essentially defines what risk management means to the organization.

For the purposes of asset management, there are two types of risk:

1. **Corporate Risk**: The corporate level risk assessment looks at risks that affect the organization as a whole.
2. **Asset (Service) Risk**: The activity level risk assessment looks at risks affecting the management of a service and any associated infrastructure. This level of risk assessment also considers corporate risk and is the level most relevant to asset management.

One of the first steps in risk management is to understand the organization and define the risk context. Factors that influence risk management are identified through this process and a risk tolerance can be defined.

Three steps can be followed for this process.

1. Conduct a review that identifies internal and external factors that need to be considered when managing risks corporately.
2. Determine the organization’s risk tolerance, which can be expressed from the perspective of the organization, or for different types of services/risk.
3. Develop an overall risk management policy statement that is supported by staff and Council.

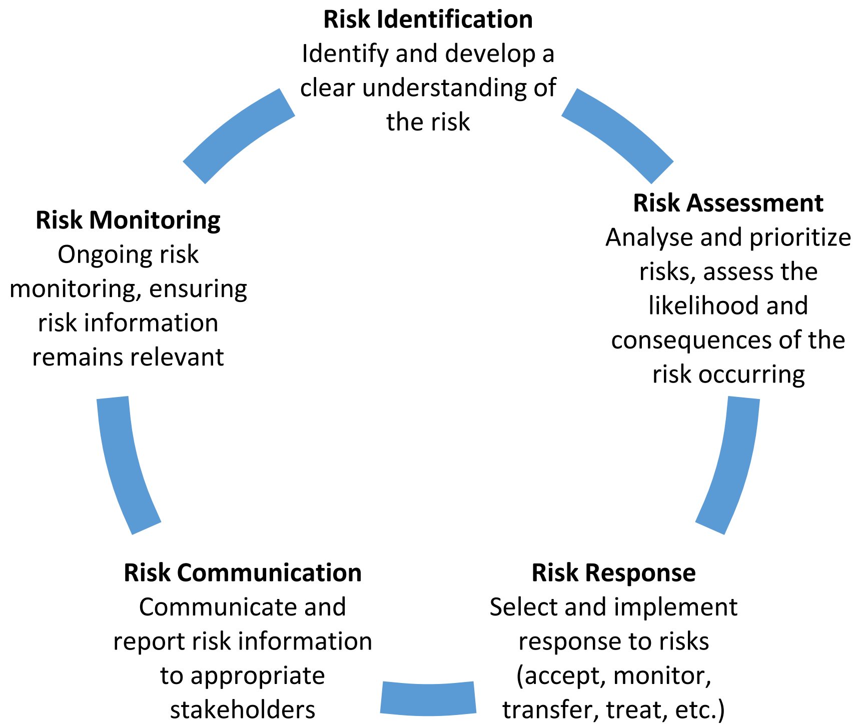
In understanding the organization from a risk perspective, a municipality should be able to describe the risk drivers affecting each service area. As discussed in Chapter 3, this includes determining the probability of assets failing as well as the consequence of assets failing, which results in services “failing”. For services that utilize assets with a high probability and/or consequence of failure, the minimization of risk can become a significant objective of asset management planning. Please refer to Chapter 3 for details on assessing asset risk.

Risk Management Process

A risk management process is usually established as a procedure and should be referred to in the asset management planning process and be integrated into decision-making to assist in mitigating risk.

A risk management process is a series of inter-related steps that guide the identification, assessment, response, communication, and monitoring of risks. The risk management process outlined in the Treasury Board of Canada Secretariat's (TBS) *Guide to Integrated Risk Management* (Section 4.6) is summarized in Figure 5-9 (below).

Figure 5-9
Risk Management Process



Uncertainty, from a risk perspective, results from a lack of information or some degree of unpredictability; while an effect is the change in expected outcomes as a result of something happening. To be effective when analyzing risks, both the possibility of risks occurring and the uncertainty of an organization meeting their objectives should have risk treatments applied to manage risk effects. Actions to minimize negative impacts should be included in an initial risk assessment to manage effects from possible risks and uncertainties.

Essentially, this recognizes that whenever one tries to meet an objective there's a chance that things won't go according to plan. There is always an element of risk and the outcomes are generally uncertain. A municipality can attempt to mitigate this and reduce uncertainty as much as possible through risk management.

Risk Assessment

Once the risk management process has been defined, the next step is to assess which risks are the most severe. An organization can then determine the level of exposure to each risk, and from there, the actions necessary from a lifecycle costing perspective to mitigate that risk. From an asset management perspective, since service levels are directly tied to assets, risk is applied to specific assets, depending on both probability and consequence of failure.

As described in Chapter 3, risk can be assessed using a risk matrix as detailed in Table 5-9 (below), whereby:

$$Probability\ of\ Failure \times Consequence\ of\ Failure = Asset\ Risk\ Score$$

There are also various deviations from this calculation (as described in Chapter 3), but all approaches focus on probability and consequence factors.

Table 5-9
Risk Assessment Matrix

Probability of Failure	Consequence of Failure				
	Insignificant	Minor	Moderate	Major	Significant
Rare	Low	Low	Medium	Medium	High
Unlikely	Low	Medium	Medium	Medium	High
Possible	Low	Medium	Medium	High	Extreme
Likely	Medium	Medium	High	High	Extreme
Almost Certain	Medium	High	High	Extreme	Extreme

Setting Priorities Using Risk

In previous sections, it was discussed that risk management and informed decision making are inherently linked. The simplest way to use risk to set priorities is through a risk matrix similar to the one shown above. The suggested steps to incorporate risk into the lifecycle management strategy include:

1. Identify the probability of asset failure;
2. Identify the consequence of that failure;
3. Combine the probability and consequence factors to obtain a risk ranking;

4. The asset or project with the highest risk should be attended to first through some type of lifecycle activity (non-infrastructure solutions, maintenance, rehabilitation, replacement, or expansion); and
5. Lifecycle activity costs identified are included in the lifecycle management strategy.

Please refer to Chapter 3 for more details on this calculation.

The *International Infrastructure Management Manual* (IIMM) provides a good illustration of this process from another perspective, shown below in Figure 5-10:

Figure 5-10
Work Prioritization Based on Risk – IIMM

(i) Probability of Failure

Failure Likely	Probability
Within 1 year	0.9
Within 2 years	0.7
Within 3 years	0.4
Within 4 - 5 years	0.2
Within 6 - 10 years	0.1
Within 11 - 20 years	0.05
Within 20 years plus	0.02

(ii) Consequence of Failure

Costs of Repair	Impact of Failure/ Customer Hours Affected			
	Less than 2,000	2,000 - 20,000	20,000 - 200,000	Over 200,000
Less than $10,000	0	2	4	6
$10,000 - $50,000	2	4	5	7
$50,000 - $500,000	5	7	8	9
Over $500,000	8	8	9	9

(iii) The probability and consequence factors are combined to rank each risk

Example	Probability	Consequence of Failure	Risk	Priority
1	0.05	9	0.45	3
2	0.9	2	1.8	2
3	0.4	7	2.8	1

Figure 3.4.9: Work Prioritisation Based on Risk

5.14 Multiple Lifecycle Management Strategy Scenarios

Developing and accessing multiple lifecycle management strategies ensures that an appropriate balance of costs and service levels can be achieved. In addition, multiple scenarios can assist municipalities in finding the most cost effective approach to providing the desired levels of service.

Has the municipality considered multiple lifecycle management strategy scenarios within its asset management plan?

Background

Municipalities can benefit from considering multiple lifecycle management strategy scenarios within their asset management plan. Comparing lifecycle cost forecasts versus asset performance (or service levels) over time for alternative strategies can assist municipalities to ensure that the most beneficial strategies are implemented.

Levels of Maturity

Has the municipality considered multiple lifecycle management strategy scenarios within its asset management plan?

Maturity Levels

NOT IN USE

BASIC	INTERMEDIATE	ADVANCED
One detailed lifecycle management strategy in place	**One detailed lifecycle management strategy in place, with a high-level sensitivity analysis of alternative strategies**	**Multiple lifecycle management strategies considered at a detailed level, with one approved by council**
Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
1. Consolidate lifecycle costing needs for each asset area into a long-term forecast	1. Consolidate lifecycle costing needs for each asset area into a long-term forecast	1. Consolidate lifecycle costing needs for each asset area into a long-term forecast
2. Ensure the long-term forecast considers expected levels of service	2. Prepare a sensitivity analysis on the forecast based on service level adjustments or different approaches to attaining expected LOS	2. Prepare alternate strategies based on service level adjustments or different approaches to attaining expected LOS
3. Attain staff support of the lifecycle management strategy across all departments	3. Attain staff support of the lifecycle management strategy across all departments	3. Attain staff support on preferred lifecycle management strategies across all departments
	4. Include the sensitivity analysis within the lifecycle management strategy	4. Include all relevant lifecycle management strategies within the lifecycle management strategy, and obtain council approval of a strategy through the AM plan

At the **basic level of maturity**, municipalities will typically have one detailed lifecycle management strategy in place. Lifecycle costing needs for each asset area are consolidated into a long-term forecast. The long-term forecast is developed with consideration for expected levels of service. Staff support for the lifecycle management strategy should be attained across all departments.

At the **intermediate level of maturity**, municipalities will have one detailed lifecycle management strategy supplemented by a high-level sensitivity analysis of alternative strategies. Lifecycle costing needs for each asset area are consolidated into a long-term forecast. A sensitivity analysis on the forecast is prepared based on service level adjustments, or alternative lifecycle costing approaches to achieving expected levels of service. Staff support for the lifecycle management strategy should be attained across all departments. The sensitivity analysis will form part of the lifecycle management strategy.

At the **advanced level of maturity**, multiple lifecycle management strategy scenarios are considered at a detailed level. Alternative strategies are prepared based on service level adjustments, or alternative lifecycle costing approaches to achieving expected levels of service. Lifecycle costing needs for each asset area are consolidated into long-term forecasts (one for each scenario). Staff support for the preferred lifecycle management strategy should be attained across all departments. All relevant strategy scenarios is included within the lifecycle management strategy, and Council approval of preferred scenarios should be obtained through the asset management plan.

Determining Lifecycle Management Strategy Scenarios

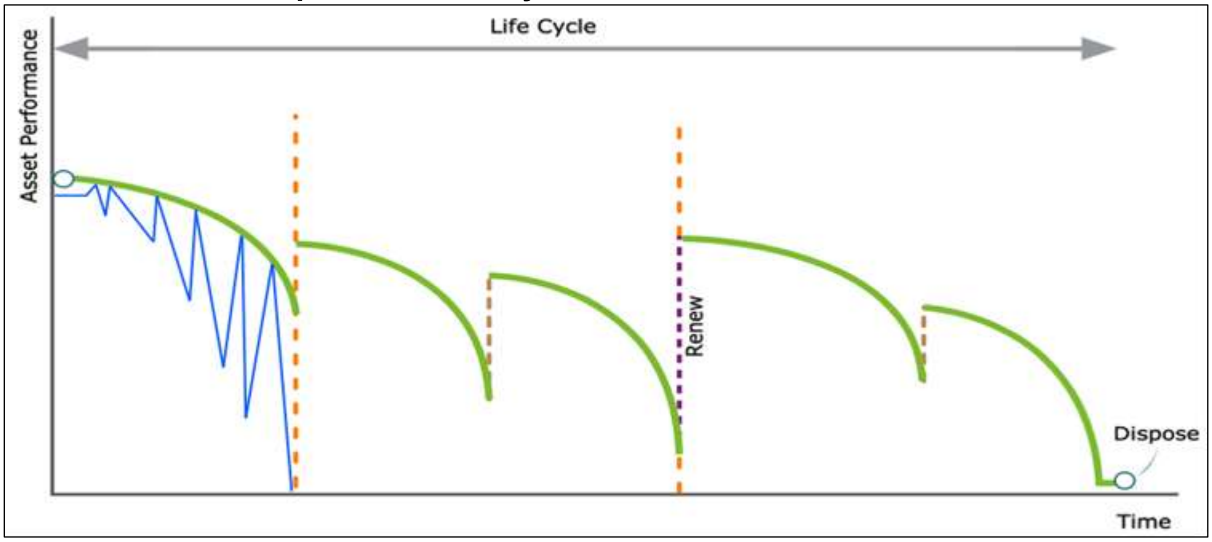
An optimal lifecycle management strategy would entail finding the most efficient/effective approach to managing assets throughout their life. The assets should be used in such a manner as to be as cost effective as possible (considering lifecycle costs), while delivering expected levels of service and mitigating risk. To facilitate this strategy, municipalities need to predict what lifecycle costs are needed, and when, including:

- Non-infrastructure solutions;
- Maintenance and operations;
- Rehabilitation;
- Replacement and disposal; and
- Expansion.

The lifecycle management strategy is the set of planned actions that will enable the assets to provide the desired levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost

Figure 5-11 (below) represents a sample asset's lifecycle. The degradation line (green) depicts the performance/ condition levels at various stages throughout the asset' life. As expected, the performance/condition of the asset reduces as time passes. Scheduled condition assessments can provide important insights into the degradation curve.

Figure 5-11
Sample Asset Lifecycle with Planned Intervention



The blue line represents maintenance completed in the first segment of the graph (in reality this would continue over the entire life of the asset). The length of the blue lines represents the amount of maintenance required as the asset deteriorates. As the degradation curve slopes down on the *Asset Performance* axis, the total amount of maintenance increases.

The dashed lines (orange) represent asset renewal and rehabilitation. These types of activities enhance the asset's performance and service life. This is evidenced by the position of the degradation curve immediately following the dashed lines along the *Time* axis. By actively managing the lifecycle management strategy for this asset, it has had its performance and service life maximized. However, eventually, the asset is disposed of and replaced. Creating an optimal lifecycle management strategy entails this type of analysis for all assets of the municipality.

Table 5-10 (below) outlines a number of approaches available for municipalities, when considering how to manage a particular asset's lifecycle needs.

Table 5-10
Sample Lifecycle Management Scenarios

	Strategy	Considerations
Asset Based Solutions	Do nothing	Always consider 'doing nothing' as an option. This position would be the baseline against which other options are compared. In some cases, risk levels or levels of service requirements offer 'do nothing' as a legitimate alternative.
Asset Based Solutions	Operational procedures	Operational management changes to limit peak demand, such as minimizing leakage (i.e. water), or modifying schedules for use of an asset, could be employed. Contingency plans can improve recovery times and reduce impacts of failure.
Asset Based Solutions	Maintenance procedures	The level and timing of maintenance can improve asset performance and/or extend its useful life.
Asset Based Solutions	Asset rehabilitation/renewal	Depending upon where an asset is on its lifecycle, rehabilitation may be an option to maintain service levels, or extend service life.
Asset Based Solutions	Expansion	Where demand exists, investment may be required to create new assets, or to augment/enhance existing ones.
Asset Based Solutions	Asset replacement/disposal	An asset which is no longer providing adequate service levels may have to be disposed of and replaced, or reconfigured to meet alternative business needs.
Non-Asset Based Solutions	Reduce demand for service	Strategies to reduce demand can be employed such as pricing incentives and provision of alternative services (i.e. promote several parks).
Non-Asset Based Solutions	Reduce levels of service	Accept lower levels of service for certain identified assets (i.e. pavement surfaces could be allowed to deteriorate to a lower condition level for certain local roads).
Non-Asset Based Solutions	Educate customers	Use communication/information to allow customers to manage their use of assets (i.e. carpooling or water conservation) and their expectations of asset performance and failure rates.

Comparing Lifecycle Scenarios: Net Present Value

With multiple lifecycle management scenarios possible within an asset management plan, a methodology is required to compare these scenarios to determine the scenario with the “lowest lifecycle cost”. One possible methodology is a *net present value* analysis.

The timing and cost of interventions and maintenance, and therefore the real lifecycle costs, are impacted by the time value of money. In simple terms, this means that to be able to have \$1.00 to spend in the future, you would have to invest less than \$1.00 today. As a result, to compare future expenditures over a lifecycle, the value of all expenditures need to be discounted back to a current-day value. This is called Net Present Value (NPV), also known as Net Present Worth (NPW).

The formula for NPV is:

$$\sum_{n=0}^{N} \$C_n \left[\frac{1}{(1+r)^n}\right]$$

Where:

- $0 =$ year 0 of the analysis period;
- $N =$ the number of years in the analysis period;
- $\$C_n =$ the cost in year n;
- $r =$ the discount (inflation) rate as a decimal (e.g. 0.03 for 3%); and
- $n =$ the number of years into the future from year 0.

NPV is used to compare strategies that have the same duration (i.e. 2 scenarios that cover a 20-year forecast period). Applying the concept of NPV assists in determining the scenario with the lowest lifecycle cost. From a common-sense point of view, this approach is taking the inflated lifecycle costs in each year of the forecast and deflating them to put all into current year terms. In the example below, Table 5-11, scenario 1 and scenario 2 have the same inflated lifecycle costs over the 5-year forecast (\$400,000), however scenario 2 has a lower NPV.

Table 5-11
Sample Net Present Value Scenarios

year	0	1	2	3	4	5	TOTAL
Scenario 1 Inflated		50,000	65,000	80,000	95,000	110,000	400,000
Scenario 1 NPV (yr = 0)		48,544	61,269	73,211	84,406	94,887	362,317
Scenario 2 Inflated		40,000	45,000	60,000	130,000	125,000	400,000
Scenario 2 NPV (yr = 0)		38,835	42,417	54,908	115,503	107,826	359,490

Therefore, creating and selecting lifecycle management scenarios entails looking at many objectives, such as:

- The levels of service provided;

- The risk being mitigated; and
- Minimizing lifecycle costs in current year dollars (i.e. through NPV calculations).

Why Optimize?

Municipalities must make good decisions as to how, where, and when they spend the limited funds available for infrastructure (capital and operating). This means gaining the most benefit from capital expenditure and minimizing maintenance costs without compromising service or risk levels over a long period. Therefore, a primary objective of asset management planning is to achieve the best cost versus service outcome.

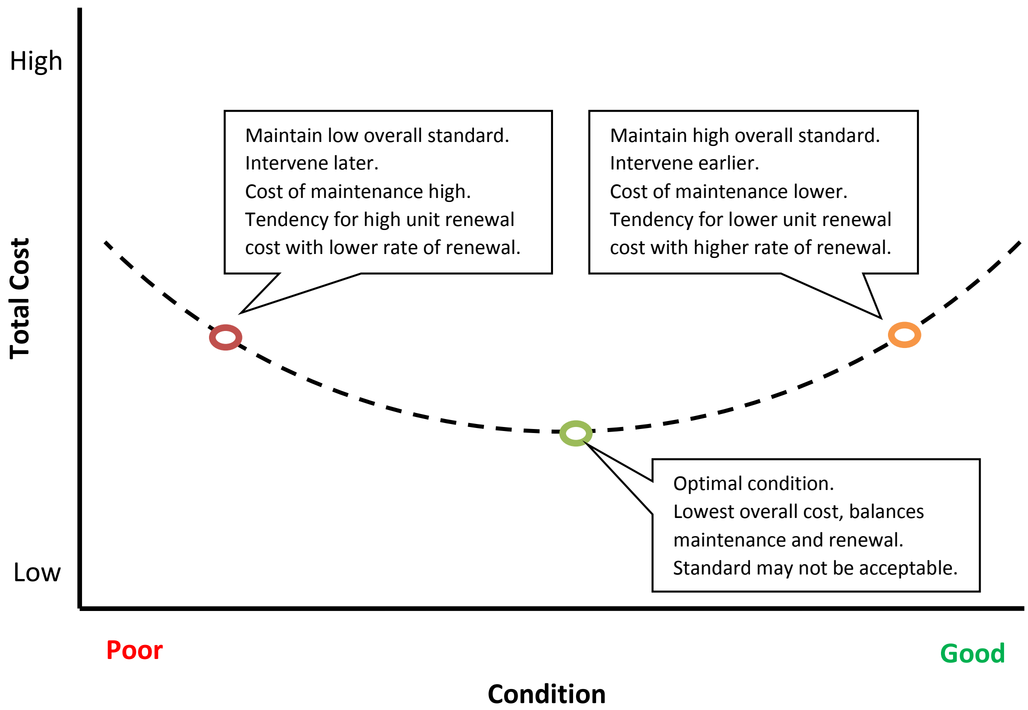
There are numerous asset management software packages that use deterministic, and/or probabilistic, techniques to model asset behaviour to predict future capital and operating budgets as well as asset condition. Many asset management software packages also include the ability to optimize aspects such as cost, risk, and other benefits. Concepts of modelling optimization are dealt with in more detail in Chapter 9.

What is Optimal?

Optimal outcomes for asset managers can mean different things. In previous sections of this chapter, lifecycle costing types were discussed. The lowest lifecycle cost could be termed as an optimal outcome from a finance point of view. If, however, the lowest lifecycle cost strategy does not deliver satisfactory levels of service, it would be a sub-optimal outcome from the customer's point of view.

This is demonstrated by Figure 5-12 below. The figure is based on the theory used by most modelling tools that costs are high to support a network in poor condition due to higher maintenance costs. Further, maintaining a network in very good condition also leads to high costs due to the need for more frequent renewal. Under this concept, the optimal cost level will be at some point between good and poor condition (the lowest point of the curve). The condition that correlates to that cost, however, may not be acceptable. So, a sub-optimal cost would be arrived at for the desired condition.

Figure 5-12
Lifecycle Management Scenarios – Optimal



Essentially, what asset managers should be striving for are levels of service that are either at the optimal point, or somewhere to the right of optimal, based on the example above.

Optimization is often constrained by available funding. For instance, it is not possible to fully optimize a condition outcome if funds are insufficient for the total maintenance and capital required. In these circumstances, the optimization will likely be the achievement the best all-round service outcome with the limited funding and involves balancing maintenance and capital costs with a number of benefits related to condition, risk, and other service aspects.

Typically, when using predictive modelling tools and optimization, a number of scenarios should be developed to evaluate differing funding levels and timing, differing service targets, and trade-offs between funding and service. After evaluation, a final scenario will be adopted as the preferred lifecycle management strategy.

5.15 Identifying Capital Priorities

Clear identification of capital priorities, spanning multiple years of the forecast period allows municipalities to outline critical projects within the asset management plan. It also provides a mechanism for determining projects eligible for grant funding, and provides linkages to key projects within the budget process.

Are clear capital priorities established within the lifecycle management strategy?

Background

Capital investment is typically a combination of capital asset rehabilitations, replacements, and expansions. A methodology was introduced in the risk discussion in the section above that can assist municipalities to establish clear priorities based on a risk management approach. The clear identification of capital priorities is critical for the lifecycle management strategy, as it is a prerequisite for provincial grant funding applications and federal gas tax funding reporting.

Levels of Maturity

Are clear capital priorities established within the lifecycle management strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Capital priorities identified for first year of the forecast period, based on staff estimates	**Clear capital priorities identified for multiple years of the forecast period, based on staff estimates**	**Clear capital priorities identified for multiple years of the forecast period, based on asset condition, risk, and level of service**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. At a staff level, determine priority capital needs at a high level, for the upcoming year	1. At a staff level, determine specific priority capital projects over multiple years	1. Determine specific priority capital projects over multiple years, based on asset condition, risk, and level of service
	2. Incorporate capital priorities into long-term forecast	2. Incorporate capital priorities into long-term forecast	2. Incorporate capital priorities into long-term forecast

At the **basic level of maturity**, municipalities will identify capital priorities for the first year of the forecast period only. Typically, at this level of maturity, this is done at a high level, based on staff estimates rather than a more documented and defined approach. The priorities are included in the first year of the lifecycle management strategy and identified as priorities within the asset management plan.

At the **intermediate level of maturity**, municipal staff will clearly determine specific priority capital projects over multiple years. Staff estimates are used as a foundation for the priority capital spending identification, which is documented by project or asset. This process is undertaken based on staff estimates rather than a more documented and defined approach. The priorities are included in the lifecycle management strategy and identified as priorities within the asset management plan.

At the **advanced level of maturity**, specific capital priorities are determined based on an assessment of asset needs in regards to condition, risk, and levels of service (i.e. documented and defined approach, such as risk management based). The priorities are included in the lifecycle management strategy and identified as priorities within the asset management plan.

Identifying Capital Priorities

Capital projects to be identified for current or future attention can come from a number of sources. The following list provides some areas of consideration:

- **Risk Management Assessments**: Identify assets (or service areas) with high risk of failure with the intent of mitigating risk, while providing expected levels of service;
- **Future Expansion Planning**: Identify areas where current asset capabilities will be insufficient to deliver expected levels of service, resulting in the identification of expansion-related priorities;
- **Asset Lifecycle Analysis**: Replacement/rehabilitation scenario models may identify assets as priorities (based on asset condition), in accordance with lowest lifecycle costs;
- **Asset Obsolescence**: Assets that no longer provide levels of service, or can no longer be maintained, rehabilitated or replaced given obsolescence, may be identified as priority projects;
- **Technological Advancements**: Opportunities may arise to deliver better service levels at a lower lifecycle cost;
- **Operational**: Municipal staff may identify potential priority projects to reduce asset operational costs; and
- **Land-use Plan**: Land-use planning may present new opportunities for existing assets or identify priority projects.

Depending on the availability of resources and/or the sophistication of asset management processes and tools, a municipality may prioritize decisions at the individual asset level, or at the asset type level. The latter approach will require some generalized assumptions to be made and followed for all assets of that asset type. This will potentially result in a lesser degree of accuracy than under the individual asset approach. However, making rehabilitation decisions at the asset type level can be appropriate for lower cost assets, where the cost of collecting individual cost information is not warranted, or reasonably attainable.

Examples:

Table 5-12
Asset Priority – Level of Detail

Level	Priority Project
Asset Type Level	Arterial Road Reconstruction Program

Individual Asset Level	Smith Street Reconstruction

From an asset management plan perspective, it is suggested that a subsection of the lifecycle management strategy be dedicated to discussing and identifying priorities. This subsection provides a clear and transparent priority identification for:

- Future budget consideration;
- Gas tax funding consideration; and
- Potential capital grant application process.

5.16 Resources and References

Government of Canada, 2016, Treasury Board of Canada Secretariat Organization, Guide to Integrated Risk Management, https://www.canada.ca/en/treasury-board-secretariat/corporate/risk-management/guide-integrated-risk-management.html

Institute of Public Works Engineering Australasia, 2015, International Infrastructure Management Manual, https://www.ipwea.org/publications/bookshop/ipweabookshop/iimm

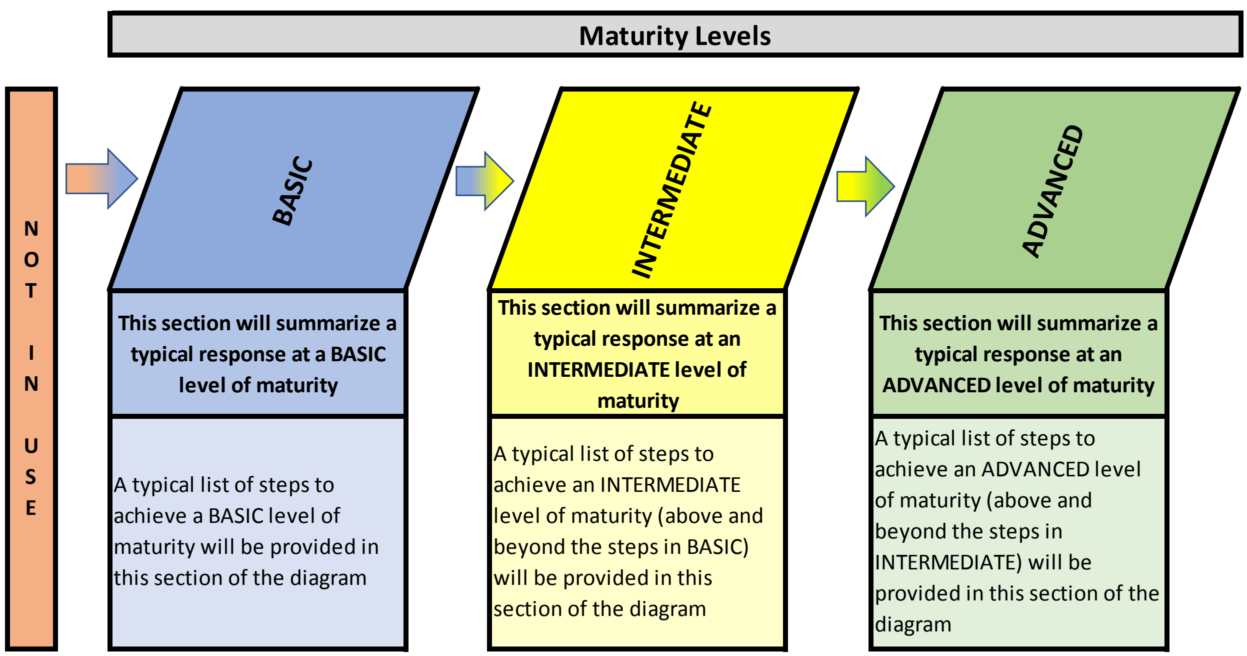
Province of Ontario, Ministry of Infrastructure, 2012, Building Together: Guide for Municipal Asset Management Plans, https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans

Public Sector Accounting Board, 2006, PS 3150 Tangible Capital Assets

6 Financing Strategy

6.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of maturity diagrams within this framework will assist municipalities to identify their current levels of maturity for each AM area. Furthermore, for municipalities that have a desire to move to a higher level of maturity over time, the diagrams will provide potential approaches to doing so. To more easily depict the maturity levels ascribed to specific questions posed within the framework, the following diagram will be utilized for each question:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices

to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic leve*l requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

6.2 Overview

An asset management financing strategy outlines the suggested approach to funding the lifecycle management strategy (i.e. long-term forecast, see Chapter 5) that is proposed to be adopted by the municipality. The financing strategy forms an integral framework for ensuring the municipality makes optimal use of the various funding sources that it has at its disposal. It will provide a foundation for preparing other long-term financial plans including operating and capital budgets and forecasts, and financial policies, such as the use of debt and reserve/reserve funds. Further, it provides an opportunity for important analyses to be performed, including taxation and user fee rate impacts, other rate sensitivity analysis, and determination of both the infrastructure gap and funding gap.

Figure 6-1
Financing Strategy Impacts

Key Assumptions

Key assumptions related specifically to the financing strategy should be carefully considered by municipalities. When creating a plan that spans 10, 20, or more years, the slightest change in one variable can drastically change the outcome. Some key variables to consider:

- Capital inflation rate;
- Operating inflation rate;
- Debt term and rate;
- Rate of return on investments (i.e. reserve funds); and
- Growth (i.e. assessment growth for taxation and customer growth for user fees).

To provide an example of the impact and importance of determining a reasonable and defensible value for each variable (in this case, capital inflation rate), consider the following. The replacement cost today of a $1 million asset would in 20 years be valued at:

- $1.49 million using 2% annual capital inflation;
- $1.81 million using 3% annual capital inflation; or
- $2.19 million using 4% annual capital inflation.

This demonstrates the importance of determining a reasonable and defensible value for each of the variables from the list above – in this example, capital inflation rate.

Changing one variable in the calculation results in a substantial difference in cost estimates. Multiply this one example by the thousands of capital assets a municipality may own and the impact of adjusted variables will be significant.

When creating a financing strategy for a long forecast period, consider not what those variables are today, but what they could be over the forecast period (e.g. 20 years). If anticipating the variables proves to be difficult, one approach entails looking at historical results for the same time period (e.g. the last 20 years). For example, to forecast capital inflation for the next 20 years, the results of construction price indexes can be analyzed for the last 20 years. The estimates of these variables should be updated periodically to reflect the most recent historical data available.

Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements

O.Reg 588/17 outlines the following requirements with respect to the Financing Strategy:

Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets by July 1, 2021, and in respect of all of its other municipal infrastructure assets by July 1, 2023.

A municipality’s AM plan must include the following with respect to a financing strategy by July 1, 2024:

a) A lifecycle management and financial strategy that sets out the following information with respect to the assets in each asset category for the 10-year period:
    i. An identification of the lifecycle activities that would need to be undertaken to provide the proposed levels of service described in paragraph 1, based on an assessment of the following:
        A. The full lifecycle of the assets.
        B. The options for which lifecycle activities could potentially be undertaken to achieve the proposed levels of service.

C. The risks associated with the options referred to in sub-subparagraph B.

D. The lifecycle activities referred to in sub-subparagraph B that can be undertaken for the lowest cost to achieve the proposed levels of service.

ii. An estimate of the annual costs for each of the 10 years of undertaking the lifecycle activities identified in subparagraph i, separated into capital expenditures and significant operating costs.

iii. An identification of the annual funding projected to be available to undertake lifecycle activities and an explanation of the options examined by the municipality to maximize the funding projected to be available.

iv. If, based on the funding projected to be available, the municipality identifies a funding shortfall for the lifecycle activities identified in subparagraph i,

A. an identification of the lifecycle activities, whether set out in subparagraph i or otherwise, that the municipality will undertake, and

B. if applicable, an explanation of how the municipality will manage the risks associated with not undertaking any of the lifecycle activities identified in subparagraph i.

b) For municipalities with a population of less than 25,000, as reported by Statistics Canada in the most recent official census, a discussion of how the assumptions regarding future changes in population and economic activity informed the preparation of the lifecycle management and financial strategy.

c) For municipalities with a population of 25,000 or more, as reported by Statistics Canada in the most recent official census,

i. the estimated capital expenditures and significant operating costs to achieve the proposed levels of service as described in paragraph 1 in order to accommodate projected increases in demand caused by population and employment growth, as set out in the forecasts or assumptions referred to in paragraph 6 of subsection 5 (2), including estimated capital expenditures and significant operating costs related to new construction or to upgrading of existing municipal infrastructure assets,

ii. the funding projected to be available, by source, as a result of increased population and economic activity, and
iii. an overview of the risks associated with implementation of the asset management plan and any actions that would be proposed in response to those risks.

6.3 Consideration of All Funding Sources

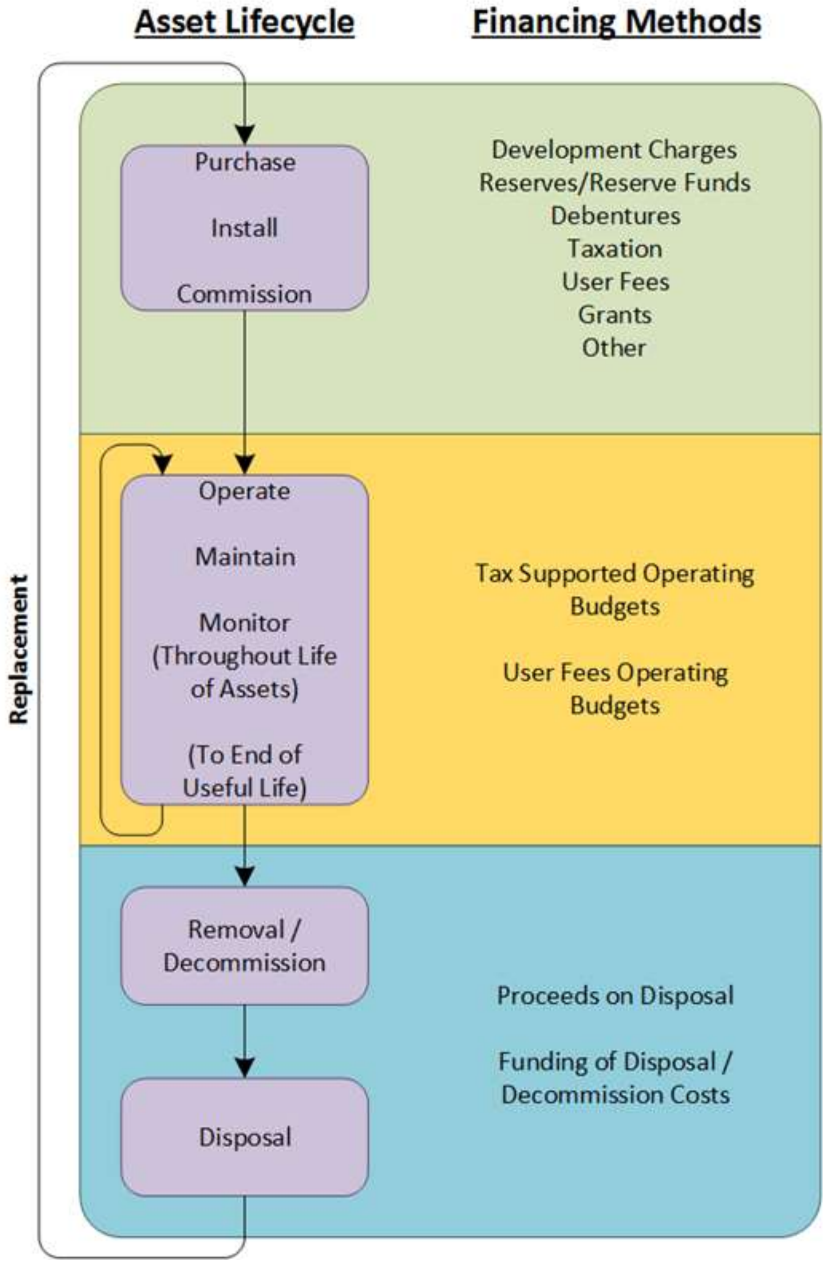
Developing a funding strategy for all available funding sources enables a municipality to more accurately quantify the impacts on each funding source as well as any funding shortfalls (i.e. “funding gap”).

Does the municipality have a financing strategy that considers all applicable funding sources?

Background

When considering various funding alternatives within the financing strategy, it is important for a municipality to consider all available revenue and financing tools, including taxation, reserves, reserve funds, debt, user fees, grants, etc. Figure 6-2 (below) illustrates how various financing methods can be used for both initial asset purchases as well as asset replacements over a lifecycle period. The initial capital purchase or construction cost is generally a larger investment of funds, requiring consideration of funding from various sources as available. Ongoing costs to operate, maintain, and monitor capital assets are generally funded through the operating budget (taxation or user fee) annually. Costs to repair are typically capital in nature, and disposal/decommissioning costs need to be taken into account when ultimately replacing the asset.

Figure 6-2
Sample Asset Lifecycle and Associated Financing Methods



Levels of Maturity – Consideration of Funding Sources

Does the municipality have a financing strategy that considers all applicable funding sources?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	High-level funding strategy for more significant funding sources	**Detailed funding strategy for more significant funding sources**	**Detailed funding strategy for all funding sources**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Determine significant funding sources that are available (i.e. taxation, user fees, etc.)	1. Determine significant funding sources that are available (i.e. taxation, user fees, etc.)	1. Determine all funding sources that are available (i.e. taxation, user fees, etc.)
	2. Identify current funding levels for each funding source, and project each funding source over the forecast period	2. Create various funding scenarios through varying use of significant funding sources to finance the lifecycle management strategy	2. Create various funding scenarios through varying use of all funding sources to finance the lifecycle management strategy
	3. Identify annual funding shortfall in comparing the lifecycle management strategy to the available funding amounts	3. Prepare continuity schedules and impact tables showing the long-term impact on each significant funding source	3. Prepare continuity schedules and impact tables showing the long-term impact on all funding sources
		4. Identify annual funding shortfall in comparing the lifecycle management strategy to the available funding amounts	4. Identify annual funding shortfall in comparing the lifecycle management strategy to the available funding amounts

At the **basic level of maturity**, municipalities typically follow a high-level funding strategy for only the more significant funding sources. The focus would first be on determining the significant funding sources related to capital requirements, such as taxation, user fees, grants, etc. The current funding levels of each funding source would be identified and projected increases shown over the forecast period. At this point, by comparing the cost of necessary capital works from the lifecycle management strategy against the available funding dollars, the municipality will have identified its annual funding shortfall or “funding gap”.

At the **intermediate level of maturity**, municipalities undertake a detailed funding strategy but only for more significant funding sources. The focus would first be on determining the significant funding sources related to capital requirements, such as taxation, user fees, grants, etc. Various funding scenarios would be created to assess long-term impacts of using varying levels of funding from different significant funding sources. This would generally be accomplished through the use of continuity schedules and impact tables created for each significant funding source. At this point, by comparing the cost of necessary capital works from the lifecycle management strategy against the available funding dollars, the municipality will have identified its annual funding shortfall or “funding gap”.

At the **advanced level of maturity**, municipalities undertake a detailed funding strategy for all funding sources. The focus would first be on determining all funding sources related to capital requirements. Various funding scenarios would be created to assess long-term impacts of using varying levels of funding from different funding sources. This would generally be accomplished through the use of continuity schedules and impact tables created for each funding source. At this point, by comparing the cost of necessary capital works from the lifecycle management strategy against the available funding dollars, the municipality will have identified its annual funding shortfall or “funding gap”.

Available Funding Sources

The funding strategies for the municipality’s capital investment should be considered in order to determine the most appropriate and sustainable options. Two common approaches are:

- Pay as you go; and
- Funding from capital reserves/reserve funds.

Pay as you go

“Pay as you go” funding methods are capital costs being funded by taxation and/or user fees at the time that the capital acquisitions are made, in addition to the issuance of debt for the remaining unfunded amounts. The debt payments (principal and interest) will then form part of future operating budget expenditures. Pay as you go is typically a more suitable strategy for shorter life and/or lower value assets. Using this approach on higher value assets could lead to the over utilization of debt financing, based on a municipality’s available debt capacity.

Funding from Capital Reserves/Reserve Funds

Another funding strategy can be established whereby an annual transfer from the applicable operating budgets to capital reserves or reserve funds is undertaken, to build a source of funds for future capital works. The creation of capital reserve funds (as opposed to reserves) provides the opportunity to earn interest, and therefore, compounds the benefits of contributions made.

Summary

A municipality will have to decide whether to base their financing strategy on the “pay as you go” methodology, “reserve/reserve fund” methodology, or a combination of the two.

In addition to debt and reserve/reserve funds, a municipality should consider other funding sources, such as taxation, user fees, grants, third party contributions, development charges, municipal act charges, donations, and any other appropriate sources. As will be illustrated in future sections to this chapter, each funding source can be analyzed using continuity schedules and other methodology to determine the optimal use within the asset management plan financing strategy.

Financing Policies

To provide the necessary guidance and support in further developing funding strategies, it is recommended that financial policies be developed, implemented, and utilized both in the asset management process and budget process. Financial policies are uniquely crafted and aimed at detailing the principles that a municipality will follow in order to reach their funding strategy goals and objectives. Most importantly, funding strategy policies will detail all requirements that must be met throughout the financing strategy development process, whether related to legislated requirements, organizational mandates, or best practices.

For examples of relevant policies, consider the following:

- Self-sustaining funds;
- Reserves & reserve funds;
- Use of debt financing; and
- Allocation of annual surplus.

Self-Sustaining Funds

Municipalities' budgets generally consist of services supported by taxation, and services supported by user fees, such as water services, wastewater services, parking services, etc. In some municipalities, these service areas may be combined with "cross-subsidization" occurring between the areas (i.e. taxation funding a portion of water costs). Best practices involve treating services supported by taxation, water user fees, and wastewater user fees as three distinct and self-sustaining budgets. Any other self-sustaining service should be treated in a similar manner.

Reserves and Reserve Funds

Municipalities use various reserves and reserve funds for both capital and operating needs. Developing reserve and reserve fund policies can assist in managing the amount of contributions to be budgeted annually and thus facilitate predictable and consistent budget impacts. Also, optimal reserve/reserve fund balances can be discussed within the policy. The use of reserve funds allows for the accrual of interest earned on reserve fund balances on an annual basis. Thus, reserve fund balances will grow with their share of interest earned.

Use of Debt Financing

Debt can be used as an effective source of capital funding when significant capital projects are required that exceed other available sources of financing. The use of debt enables the impact of capital financing to be spread over a longer period of time, resulting in future residents sharing in the cost of capital projects. The Province establishes a debt annual repayment limit (ARL) of 25% of municipal revenues.[1] Municipalities can implement an internal debt policy which further restricts debt costs annually, if deemed necessary.

Allocation of Annual Surplus[2]

At the end of each year, municipalities are in a position to determine whether actual annual revenues and expenses either exceed or fall short of annual budgeted amounts. This analysis determines the annual surplus or deficit for the year. Municipalities can

---

[1] It is noted that exceptions to this rule may be made through appeal to the Ontario Municipal Board.
[2] Surplus in this context refers to modified accrual (budget) surplus. Please refer to a comparison of accounting methods at http://www.mah.gov.on.ca/Page15030.aspx

have multiple annual surplus/deficits based on the various self-sustaining funds they manage. Some municipalities will use annual surpluses as a funding source in the subsequent year. This approach can result in fluctuating impacts on the operating budget each year that can make balancing the budget difficult. Alternatively, year-end surpluses can be transferred to the appropriate reserves and reserve funds, for future use. While a portion of these funds can be directed to operating-related reserves/reserve funds (such as rate stabilization funds and working capital reserves), funds can also be used for capital-related initiatives, such as funding the asset management plan. In the event that a deficit is calculated, the deficit could be funded by the appropriate reserves or reserve funds.

6.4 Expansion Needs

Expansion needs identified in existing studies/reports and through the levels of service analysis can have significant financial implications. Therefore, the full lifecycle costs of expansion needs as well as applicable funding sources (i.e. DCs) should be incorporated into the financing strategy.

What method is used to incorporate expansion needs (i.e. growth and/or new service areas) into the financing strategy?

Background

Municipalities may need to expand their asset holdings for a number of reasons. Council may decide that they wish to add new service areas (e.g. skateboard parks, theatres, etc.), or enhance current services (e.g. upgrade gravel roads to paved roads, enhanced transit services, etc.) for existing taxpayers and citizens. Additionally, more assets may be required as a result of growth in the community.

In each case, municipalities should incorporate expansion needs and expansion-related funding sources into the financing strategy. In addition, expansion of assets translates into additional lifecycle costs of which a municipality must be aware (e.g. costs to operate, maintain, and eventually rehabilitate/replace these assets). The impacts of expansion needs are usually significant, and as such, should be managed in a prudent manner.

Levels of Maturity – Expansion Needs

What method is used to incorporate expansion needs (i.e. growth and/or new service areas) into the financing strategy?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Expansion incorporated based on high-level staff projections	**Expansion incorporated based on staff projections and existing studies/reports**	**Expansion incorporated based on staff projections, existing studies/reports and level of service analysis**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. At a staff level, determine where existing services need to be expanded, or where new services are required over the forecast period	1. At a staff level, determine where existing services need to be expanded, or where new services are required over the forecast period	1. At a staff level, determine where existing services need to be expanded, or where new services are required over the forecast period
	2. Determine the lifecycle cost and funding implications of the expansion needs for inclusion in the financing strategy	2. Take into consideration existing studies/reports (i.e. DC studies, etc.) and integrate into forecast, where appropriate	2. Take into consideration existing studies/reports (i.e. DC studies, etc.) and integrate into forecast, where appropriate
		3. Determine the lifecycle cost and funding implications of the expansion needs for inclusion in the financing strategy	3. Take into consideration level of service analysis and integrate into forecast, where appropriate
			4. Determine the lifecycle cost and funding implications of the expansion needs for inclusion in the financing strategy

At the **basic level of maturity**, municipalities incorporate expansion needs into the financing strategy based on high-level staff projections. Staff will determine, for the forecast period, where either existing services need to be expanded or where new services will be required. Staff will then project the lifecycle cost and funding implications of these expansion needs for inclusion in the financing strategy. At a minimum, the growth requirements outlined in O.Reg 588/17 will be followed.

At the **intermediate level of maturity**, expansion needs will be incorporated into the financing strategy based on both staff projections and existing studies/reports. Staff will determine, for the forecast period, where either existing services need to be expanded or where new services will be required. Further consideration will be given to existing studies and/or reports (e.g. DC studies, planning reports, etc.), and incorporated into the capital forecast, where appropriate. Staff will then project the lifecycle cost and funding implications of these expansion needs for inclusion in the financing strategy.

At the **advanced level of maturity**, expansion needs will be incorporated into the financing strategy based on staff projections, existing studies/reports, and levels of service analysis. Staff will determine, for the forecast period, where either existing services need to be expanded or where new services will be required. Further consideration will be given to existing studies and/or reports (e.g. DC studies, planning reports, etc.), and incorporated into the capital forecast, where appropriate. As an additional step, consideration will also be given to any levels of service analysis undertaken, with related impacts also added into the capital forecast. Staff will then project the lifecycle cost and funding implications of these expansion needs for inclusion in the financing strategy.

Expansion Needs

In the absence of reports or studies (e.g. master plans, DC studies, etc.) that outline expansion needs of a municipality, staff will have to determine potential impacts of expansion needs at a high-level for inclusion into the asset management process. While the initial assessment of expansion needs takes place both in the levels of service analysis (Chapter 4) and the lifecycle management strategy (Chapter 5), the financing strategy must consolidate and list these expansion needs, and also project the funding implications. For example, if a municipality wishes to construct a skateboard park (and has never provided that service in the past), it could be viewed as an asset expansion. From a financing strategy perspective, the following questions should be considered:

- How is the initial construction of the skateboard park going to be funded? Are there DC funds available for use?
- What are the ongoing operating and maintenance costs identified in the lifecycle management strategy, and how will they be funded?
- At what point is rehabilitation or replacement needed? What is the impact on budgets between now and then, given a municipality’s funding strategies?

Development Charges

In cases where growth is a driver for additional capital needs, many municipalities will implement development charge (DC) background studies (and DC by-laws) to help finance growth-related capital costs. This allows the municipality to collect DCs on growth that occurs and use those DCs to fund projects that are either fully or partially driven by growth. The DC background study typically lists not only the capital projects anticipated to be related to growth, but also a projection of the anticipated growth over a defined period.

A municipality can use the information contained within their DC background study to project the impacts of growth on the asset management plan. Similar to the generic expansion project discussion above, each growth-related project can have the following impacts:

- Initial construction funding (other than DCs)? The non-growth share of these projects can be significant and needs to be funded through other sources.
- Ongoing operating and maintenance costs, once the assets are purchased or constructed.
- Future rehabilitation or replacement costs.

These future lifecycle costs can be estimated within the asset management process and funded through the financing strategy.

6.5 Contributed Assets

> Incorporating contributed assets into the financing strategy can provide greater accuracy of the plan by recognizing the future lifecycle costs that the municipality will be responsible for funding after assets are assumed.

What method is used to incorporate contributed assets into the financing strategy?

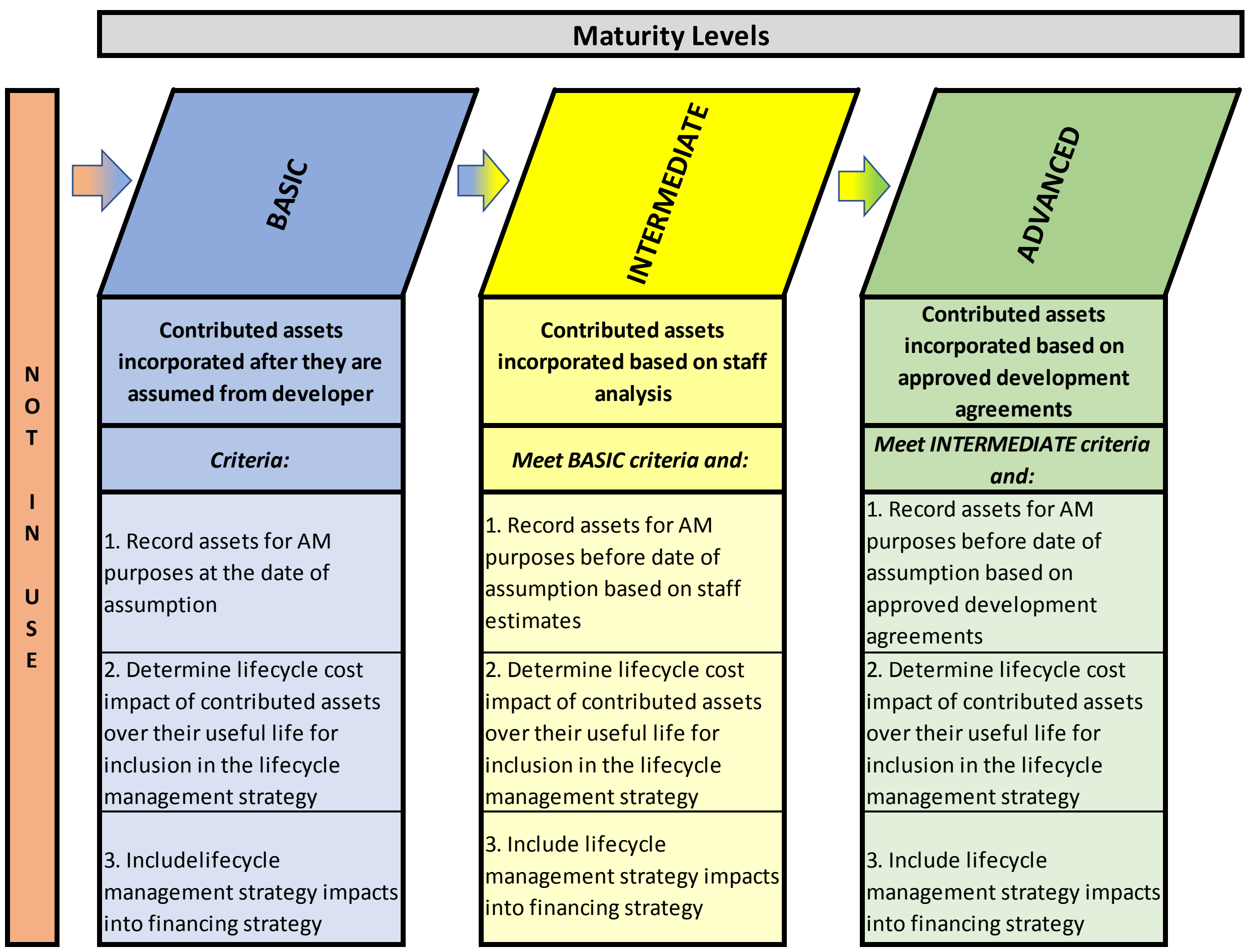
Background

Contributed assets are typically assumed by a municipality as part of a development-related agreement or a donation. They can have a substantial impact on asset management plans since they need to be operated, maintained, and eventually replaced. However, there are other assets that are contributed or donated outside of the development process (e.g. from community groups) and these situations must be taken into account within the asset management plan as well.

For contributed assets, often key asset data related to costs, dates of construction/acquisition, material, remaining useful life, condition rating, etc., must be drawn from outside sources and may require some review by municipal staff for reasonableness and accuracy. This information forms the basis for the financial impact over the asset management forecast period.

Levels of Maturity – Contributed Assets

What method is used to incorporate contributed assets into the financing strategy?



At the **basic level of maturity**, municipalities incorporate their contributed assets into the financing strategy, but only after the assets have been assumed (i.e. from the developer or community group). The contributed assets, once assumed, would be recorded for asset management purposes. The lifecycle cost impact would then be able to be determined over the assets' useful lives and included in the lifecycle management strategy. At this point, these impacts could be included in the financing strategy.

At the **intermediate level of maturity**, a more proactive approach is undertaken. Contributed assets are incorporated in the financing strategy based on staff analysis. The contributed assets would be recorded for asset management purposes before the date of assumption, based on staff estimates. Using these staff estimates, the lifecycle cost impacts of contributed assets over their useful lives can be included in the lifecycle management strategy, and from there, into the financing strategy.

At the **advanced level of maturity**, contributed assets would be incorporated into the asset management plan based on information obtained from approved development agreements. This would provide an opportunity for municipalities to record fairly detailed information about the contributed assets before the date of assumption. As with prior levels of maturity, the lifecycle cost impacts would then be included in the lifecycle management strategy, and from there, into the financing strategy.

Incorporating Contributed Assets into Financing Strategy

Information on future contributed assets can be difficult to obtain or estimate. Development agreements (and the developers themselves) can provide information on the assets that will be assumed by the municipality. However, date of assumption is usually based on the date when the terms and conditions of the development agreement are satisfied (which can be years after asset construction). This may delay the recording of contributed assets for accounting purposes, but it doesn't have to delay recording the assets for asset management purposes. The moment information is known about a contributed asset (i.e. either development-related or other contributed assets), they can be established in the asset management plan.

Contributed assets can have the following asset management impacts:

- Initial purchase or construction (either fully or partially paid for by other parties): If there is a portion to be paid for by the municipality, what funding sources will be used?
- Ongoing operating and maintenance costs: What impact on these costs once the assets are assumed? Any operating costs before assumption?
- Future rehabilitation or replacement costs. As with any capital asset, contributed assets will need to be considered within the lifecycle management strategy to understand their future lifecycle needs.

These future lifecycle costs can be estimated within the asset management process, and funded through the financing strategy.

6.6 Debt Financing

Including a detailed debt analysis in the financing strategy is important to understand projected debt servicing costs and their impact on the operating budget. This analysis should also consider projected debt needs in relation to the municipality's annual repayment limit and internal debt policy limits.

Does your financing strategy include a detailed debt analysis?

Background

In order to forecast and assess the impact of future activities on the operating budget and debt capacity, it is recommended that a detailed debt analysis be undertaken.

In cases where significant capital needs are identified, it may be beneficial to fund large expenditures through debt financing. This has the advantage of spreading the costs of costly capital projects over time so that current and future customers can share the burden. With debt financing, municipalities must consider:

- The annual repayment limit (ARL) imposed by the province;
- Whether internal debt limits need to be derived or updated;
- If existing debt strategies need to be revised (i.e. no debt policies);
- The impact of debt on future operating costs (i.e. debt principal and interest payments); and
- Intergenerational equity, whereby the timing of the benefits gained from acquiring/constructing capital assets does not correspond to the timing of the costs of paying off the related debt. This highlights that future generations will be responsible for impacts of both past and future assets.

Levels of Maturity – Debt Financing

Does your financing strategy include a detailed debt analysis?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	High-level analysis of future debt needs and its impact on operating budgets	**High-level analysis of current and future debt needs and its impact on operating budgets**	**Detailed analysis of current and future debt needs and its impact on operating budgets plus annual repayment limit analysis (ARL)**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Determine amount, use and timing of proposed debt to fund capital within the financing strategy	1. Determine amount, use and timing of proposed debt to fund capital within the financing strategy	1. Determine amount, use and timing of proposed debt to fund capital within the financing strategy
	2. Quantify and consider the impacts of proposed debt on operating budgets (i.e. principal and interest costs)	2. Combine proposed debt with current debt impacts into a consolidated debt schedule	2. Combine proposed debt with current debt impacts into a consolidated debt schedule that compares annual debt payments to estimated ARL
		3. Quantify and consider the impacts of current and proposed debt on operating budgets (i.e. principal and interest costs)	3. Quantify and consider the impacts of current and proposed debt on operating budgets (i.e. principal and interest costs)

At the **basic level of maturity**, municipalities perform a high-level analysis of their future debt needs and consider the impacts on future operating budgets. This can be accomplished by assessing how much debt will be required to be issued for proposed capital works and the anticipated timing of debt issuance. This will provide enough information to calculate estimated annual principal and interest payments. With these annual costs calculated, the impacts on the operating budget can be quantified and considered.

At the **intermediate level of maturity**, municipalities perform a high-level analysis of both its current and future debt needs and consider the impacts on future operating budgets. As with the basic level of maturity, the first step would be assessing the amount of debt required to be issued for proposed capital works and the anticipated timing of debt issuance. This will provide enough information to calculate estimated annual principal and interest payments for proposed debt, which could then be included with current debt principal and interest payments as part of a consolidated debt schedule or analysis. With these consolidated annual costs calculated, the impacts on the operating budget can be quantified and considered.

At the **advanced level of maturity**, municipalities perform a detailed analysis of both current and future debt needs, consider the impacts on future operating budgets, and additionally, include an annual repayment limit analysis. As with the previous levels of maturity, the first step would be assessing the amount of debt required to be issued for proposed capital works and the anticipated timing of debt issuance. This will provide enough information to calculate estimated annual principal and interest payments for proposed debt. Proposed debt principal and interest payments could then be included with current debt principal and interest payments as part of a consolidated debt schedule or analysis. With these consolidated annual costs calculated, a comparison to the estimated annual repayment limits in the future can be made to ensure compliance. Finally, the impacts of the consolidated debt costs on the operating budget can be quantified and considered.

Debt Analysis - Example

The following tables demonstrate an approach to preparing a debt schedule or analysis.

1. Determine proposed debt financing required:

Table 6-1
Sample Debt Financing Required

Description	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Capital Financing										
Provincial / Federal Grants	-	-	-	-	-	-	-	-	-	-
Debt (Non-Growth)	-	550,000	900,000	700,000	500,000	400,000	250,000	200,000	-	-
Debt (Growth)	-	-	-	-	-	-	-	500,000	300,000	-
Reserve Fund: Development Charges	-	30,000	-	500,000	200,000	-	40,000	-	400,000	-
Reserve Fund: Gas Tax	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Reserve Funds: Capital Related	4,130,000	3,754,000	3,585,000	3,973,200	4,368,900	4,672,400	5,034,300	5,304,400	5,733,700	5,971,900
Total Capital Financing	**4,350,000**	**4,554,000**	**4,705,000**	**5,393,200**	**5,288,900**	**5,292,400**	**5,544,300**	**6,224,400**	**6,653,700**	**6,191,900**

2. Estimate annual principal and interest payments for proposed debt (the following assumes debt over 20 years at 5%):

Table 6-2
Sample Non-Growth Debt Payments – Principal and Interest

New Debt (Non-Growth) Year	Principal (Inflated)	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	-		-	-	-	-	-	-	-	-	-
2019	550,000			44,133	44,133	44,133	44,133	44,133	44,133	44,133	44,133
2020	900,000				72,218	72,218	72,218	72,218	72,218	72,218	72,218
2021	700,000					56,170	56,170	56,170	56,170	56,170	56,170
2020	500,000						40,121	40,121	40,121	40,121	40,121
2023	400,000							32,097	32,097	32,097	32,097
2024	250,000								20,061	20,061	20,061
2025	200,000									16,049	16,049
2026	700,000										-
2027	-										
Total Charges	**3,500,000**	**-**	**-**	**-**	**44,133**	**116,352**	**172,522**	**212,643**	**244,740**	**264,801**	**280,849**

Table 6-3
Sample Growth Debt Payments – Principal and Interest

New Debt (Growth) Year	Principal (Inflated)	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	-		-	-	-	-	-	-	-	-	-
2019	-			-	-	-	-	-	-	-	-
2020	-				-	-	-	-	-	-	-
2021	-					-	-	-	-	-	-
2020	-						-	-	-	-	-
2023	-							-	-	-	-
2024	-								-	-	-
2025	500,000									40,121	40,121
2026	300,000										24,073
2027	-										
Total Charges	**800,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**40,121**	**64,194**

3. Prepare and consolidate continuity schedules for proposed and existing debt. This will result in a calculation of total debt principal and interest costs over the forecast period, with outstanding debt also projected for each year. The chart below also includes a ratio of total debt outstanding as a percent of ‘capital asset cost’ (i.e. TCA replacement cost), which can be also calculated as a financial indicator:

Table 6-4
Sample Debt Continuity Schedules

Existing Debt:	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Opening Balance (Principal)	2,481,300	2,175,280	1,865,790	1,552,830	1,236,400	916,500	614,250	308,750	-	-
Principal Payment	306,020	309,490	312,960	316,430	319,900	302,250	305,500	308,750	-	-
Interest Payment	40,980	37,510	34,040	30,570	27,100	22,750	19,500	16,250	-	-
Total Payment (Principal & Interest)	347,000	347,000	347,000	347,000	347,000	325,000	325,000	325,000	-	-
Ending Balance (Principal)	2,175,280	1,865,790	1,552,830	1,236,400	916,500	614,250	308,750	-	-	-
New Debt:	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Opening Balance (Principal)	-	-	550,000	1,433,367	2,088,683	2,520,596	2,833,983	2,980,942	3,565,188	3,722,478
New Debt Proceeds	-	550,000	900,000	700,000	500,000	400,000	250,000	700,000	300,000	-
Principal Payment	-	-	16,633	44,683	68,087	86,613	103,041	115,753	142,711	158,919
Interest Payment	-	-	27,500	71,668	104,434	126,030	141,699	149,047	178,259	186,124
Total Payment (Principal & Interest)	-	-	44,133	116,352	172,522	212,643	244,740	264,801	320,970	345,043
Ending Balance (Principal)	-	550,000	1,433,367	2,088,683	2,520,596	2,833,983	2,980,942	3,565,188	3,722,478	3,563,558
Total Debt:	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Opening Balance (Principal)	**2,481,300**	**2,175,280**	**2,415,790**	**2,986,197**	**3,325,083**	**3,437,096**	**3,448,233**	**3,289,692**	**3,565,188**	**3,722,478**
New Debt Proceeds	**-**	**550,000**	**900,000**	**700,000**	**500,000**	**400,000**	**250,000**	**700,000**	**300,000**	**-**
Principal Payment	**306,020**	**309,490**	**329,593**	**361,113**	**387,987**	**388,863**	**408,541**	**424,503**	**142,711**	**158,919**
Interest Payment	**40,980**	**37,510**	**61,540**	**102,238**	**131,534**	**148,780**	**161,199**	**165,297**	**178,259**	**186,124**
Total Payment (Principal & Interest)	**347,000**	**347,000**	**391,133**	**463,352**	**519,522**	**537,643**	**569,740**	**589,801**	**320,970**	**345,043**
Ending Balance (Principal)	**2,175,280**	**2,415,790**	**2,986,197**	**3,325,083**	**3,437,096**	**3,448,233**	**3,289,692**	**3,565,188**	**3,722,478**	**3,563,558**
Debt as a % of Capital Asset Cost	1.1%	1.2%	1.4%	1.6%	1.6%	1.5%	1.4%	1.5%	1.5%	1.4%

4. The estimated annual repayment limit (ARL) can be compared to the consolidated principal and interest from the debt schedule (above). It is important for annual projected debt payments to remain less than the ARL for each year. (Note: for proper calculation of projected ARL, schedule 81 of the Financial Information Return provides details. For this example, 25% of estimated future revenue was used):

Table 6-5
Sample ARL/Debt Schedule Comparison

Debt Payment Analysis	**Forecast**									
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Existing Debt - Non-Growth:										
Fire	32,500	32,500	32,500	32,500	32,500	32,500	32,500	32,500	-	-
Public Works	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000	-	-
Parks & Recreation	97,500	97,500	97,500	97,500	97,500	97,500	97,500	97,500	-	-
Existing Debt - Growth:										
Fire	4,400	4,400	4,400	4,400	4,400	-	-	-	-	-
Public Works	17,600	17,600	17,600	17,600	17,600	-	-	-	-	-
Parks & Recreation	-	-	-	-	-	-	-	-	-	-
New Proposed Debt - Non-Growth	-	-	44,133	116,352	172,522	212,643	244,740	264,801	280,849	280,849
New Proposed Debt - Growth	-	-	-	-	-	-	-	-	40,121	64,194
Total	347,000	347,000	391,133	463,352	519,522	537,643	569,740	589,801	320,970	345,043
Estimated Annual Repayment Limit (ARL)*	2,104,000	2,234,000	2,371,000	2,519,000	2,676,000	2,786,000	2,906,000	3,033,000	3,175,000	3,320,000
Under / (Over) ARL	1,757,000	1,887,000	1,979,867	2,055,648	2,156,478	2,248,357	2,336,260	2,443,199	2,854,030	2,974,957
Percent of ARL Used	16.5%	15.5%	16.5%	18.4%	19.4%	19.3%	19.6%	19.4%	10.1%	10.4%

* Municipal Internal Debt Policy is to follow external debt restrictions imposed by the Province.

6.7 Reserve/Reserve Fund Planning

In many municipalities, funding for capital assets will flow through reserves and reserve funds. Developing reserve continuity schedules to monitor balances can be critical to ensuring a sustainable financing strategy as well as appropriate reserve balances.

Does your financing strategy include a continuity schedule for all applicable reserve/reserve funds (RRF)?

Background

To forecast and assess the impact of future activities on reserves and reserves funds, municipalities should develop continuity schedules detailing projected:

- Opening balances;
- Contributions to/from reserves and reserve funds;
- Interest earned; and
- Closing balances.

These continuity schedules can then be compared to applicable reserve/reserve fund policies to ensure the use of the funds meets all requirements (such as minimum balances, optimal balances and how the funds are to be used).

Levels of Maturity – Reserve/Reserve Fund Planning

Does your financing strategy include a continuity schedule for all applicable reserve/reserve funds (RRF)?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	High-level analysis of future activities of significant RRF	**Analysis of future activities of significant RRF, with some detailed analysis**	**Detailed analysis of future activities of all applicable RRF**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Determine amount, use and timing of proposed RRF contributions to fund capital within the financing strategy	1. Determine amount, use and timing of proposed RRF contributions to fund capital within the financing strategy	1. Determine amount, use and timing of proposed RRF contributions to fund capital within the financing strategy
		2. Prepare high-level RRF continuity schedules to track opening balances, transfers in/out, and closing balances over the forecast period	2. Prepare detailed RRF continuity schedules to track opening/closing balances, as well as transfers in/out by type, taking into account optimal RRF balance strategies
		3. Quantify and consider the impacts of proposed RRF activities on operating budgets	3. Measure RRF balances over the forecast period through use of performance measures (i.e. RRF balance as % of TCA replacement cost)
			4. Quantify and consider the impacts of proposed RRF activities on operating budgets

At the **basic level of maturity**, municipalities only perform a high-level analysis of activities of significant reserves/reserve funds. Typically, this analysis would be restricted to determining the amount, use, and timing of proposed reserve/reserve fund contributions to fund capital within the financing strategy.

At the **intermediate level of maturity**, some analysis of the impact of future activities may be performed for significant reserves/reserve funds, including some detailed analysis. In addition to determining the amount, use, and timing of proposed reserve/reserve fund contributions to fund capital within the financing strategy, high-level reserve/reserve fund continuity schedules would be prepared for the forecast period. These schedules would include opening balances, transfers in/out, and closing balances. Municipalities could then quantify and consider impacts of proposed reserve/reserve fund activities on operating budgets.

At the **advanced level of maturity**, detailed analysis would be completed of future activities of all applicable reserves/reserve funds. In addition to determining the amount, use, and timing of proposed reserve/reserve fund contributions to fund capital within the financing strategy, detailed reserve/reserve fund continuity schedules would be prepared for the forecast period. These schedules would include opening balances, transfers in/out by type (including interest earned) and closing balances. The resulting projected reserve/reserve fund balances would be measured against optimal balance and/or minimum balance strategies. Performance measures would be identified to be compared to projected reserve/reserve fund balances to ensure the municipality is providing sufficient available funds for future commitments. For example, a municipality may decide that capital lifecycle reserve funds must reach a balance of at least 1% of the capital asset replacement cost within 10 years. Municipalities could then quantify and consider impacts of proposed reserve/reserve fund activities on operating budgets.

Reserves/Reserve Funds

Reserves and reserve funds are funds that have been set aside to meet future funding requirements. They may be set aside by Council by-law or legislation. Council may set up a reserve or reserve fund for any purpose for which they have the authority to spend money.

“Reserves” are set aside by Council at their own discretion to be available to meet future needs. These future needs do not have to be specific projects/assets and one reserve can serve multiple purposes. Generally, reserves do not accumulate interest earned on annual balances unless deemed by policy.

On the other hand, “reserve funds” are set up by Council resolution or by-law for a specific purpose, which makes them harder to reallocate to other uses. Reserve funds accumulate (accrue) interest earned on balances, thereby increasing the amount of future funding available. Reserve funds are considered either obligatory (i.e. required by legislation) or discretionary (i.e. set up at the discretion of Council).

Some strategies utilized to strengthen contributions to reserves and/or reserve funds are to:

- Transfer annual modified accrual (budget) surpluses to reserves and reserve funds. This approach can be applied within each self-sustaining fund (e.g. tax supported, water, wastewater, etc.); and
- When debt obligations get repaid, continue to include the annual debt servicing amounts in the budget and transfer the funds to reserves and reserve funds.

Lifecycle Reserve Funds

Lifecycle reserve funds are used to fund the ongoing capital replacement, rehabilitation, and preventive maintenance of capital assets over their useful lives. Contributions are typically calculated based on "sinking fund" calculations (to be discussed further in a later section). This requires an analysis to determine:

- Future replacement cost of capital assets;
- Assumed inflation applicable to the capital assets to be replaced; and
- Expected interest rates to be earned on reserve funds.

This calculation quantifies the annual funding required to pay for the future replacement or rehabilitation costs, when needed.

Federal/Provincial Transfer Payments (e.g. Gas Tax)

These types of reserve funds support municipal infrastructure projects that contribute to a number of national and provincial objectives. As an example, Table 6-6 lists the federal gas tax funds national objectives. Federal funding is provided twice a year to provincial and territorial governments, or to the municipal associations which deliver this funding within a province. Projects are chosen locally and prioritized according to need. Municipalities can pool, bank, and borrow against this funding, providing significant financial flexibility. Gas tax funding received but not spent in any given year must be kept in a reserve fund that accrues interest annually.

Table 6-6
Federal Gas Tax Fund National Objectives

Increased Economic Growth and Prosperity	Cleaner Environment	Stronger Cities and Communities
Local Roads and Bridges	Community Energy Systems	Capacity Building
Public Transit	Drinking Water	Disaster Mitigation
Local and Regional Airports	Wastewater	Recreation Infrastructure
Broadband Connectivity	Solid Waste	Culture Infrastructure
Short-Sea Shipping	Brownfield Redevelopment	Tourism Infrastructure

Short-Line Rail		Sport Infrastructure

Gas tax funds can be included as a stable and sustainable funding source within the asset management financing strategy.

Reserve/Reserve Fund Analysis - Example

The following table provides sample reserve fund continuity schedules. The first two continuity schedules illustrate development charges reserve funds and gas tax reserve funds, respectively. The proceeds and use of these reserve funds will be restricted according to rules and regulations applying to each. For gas tax funds, the schedule is showing that the municipality will fully utilize all funds received each year.

The third sample continuity schedule illustrates a capital-related reserve fund. This reserve fund will have been established by the municipality as part of the asset management financing strategy. In this example, the municipality is working to increase the balance of this reserve fund such that it achieves its goal of 1% of capital asset replacement cost in ten years. This performance measure is displayed below the continuity schedule.

Table 6-7
Sample RRF Schedules

	Forecast									
Development Charges Reserve Funds	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Opening Balance	505,000	572,771	613,041	686,235	257,383	129,566	227,014	287,460	391,335	54,251
Development Charge Proceeds	84,100	86,200	88,400	90,600	92,900	95,200	97,600	100,000	102,500	105,100
Transfer to Capital	-	30,000	-	500,000	200,000	-	40,000	-	400,000	-
Transfer to Operating (Debenture Payments - Growth)	22,000	22,000	22,000	22,000	22,000	-	-	-	40,121	64,194
Interest Earned	5,671	6,070	6,794	2,548	1,283	2,248	2,846	3,875	537	952
Closing Balance	572,771	613,041	686,235	257,383	129,566	227,014	287,460	391,335	54,251	96,108

	Forecast									
Gas Tax Reserve Fund	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Opening Balance	-	-	-	-	-	-	-	-	-	-
Transfers From Operating	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Transfer to Capital	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Interest Earned	-	-	-	-	-	-	-	-	-	-
Closing Balance	-	-	-	-	-	-	-	-	-	-

	Forecast									
Capital Related Reserve Funds (All Tax Supported)	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Opening Balance	2,070,500	772,092	253,067	297,566	272,309	210,500	249,110	185,179	135,507	288,156
Transfers from Operating	2,823,948	3,232,469	3,626,552	3,945,247	4,305,007	4,708,543	4,968,536	5,253,386	5,883,496	6,218,751
Transfer to Capital	4,130,000	3,754,000	3,585,000	3,973,200	4,368,900	4,672,400	5,034,300	5,304,400	5,733,700	5,971,900
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Interest Earned	7,644	2,506	2,946	2,696	2,084	2,466	1,833	1,342	2,853	5,350
Closing Balance	772,092	253,067	297,566	272,309	210,500	249,110	185,179	135,507	288,156	540,357
Note: Closing reserve fund balances as a percentage	**0.39%**	**0.13%**	**0.14%**	**0.13%**	**0.10%**	**0.11%**	**0.08%**	**0.06%**	**0.12%**	**0.21%**

6.8 Other Funding Sources

A detailed analysis of other less significant funding sources within a financing strategy allows municipalities to project the use of these funding sources over the forecast period. This practice increases the overall accuracy of the financing strategy.

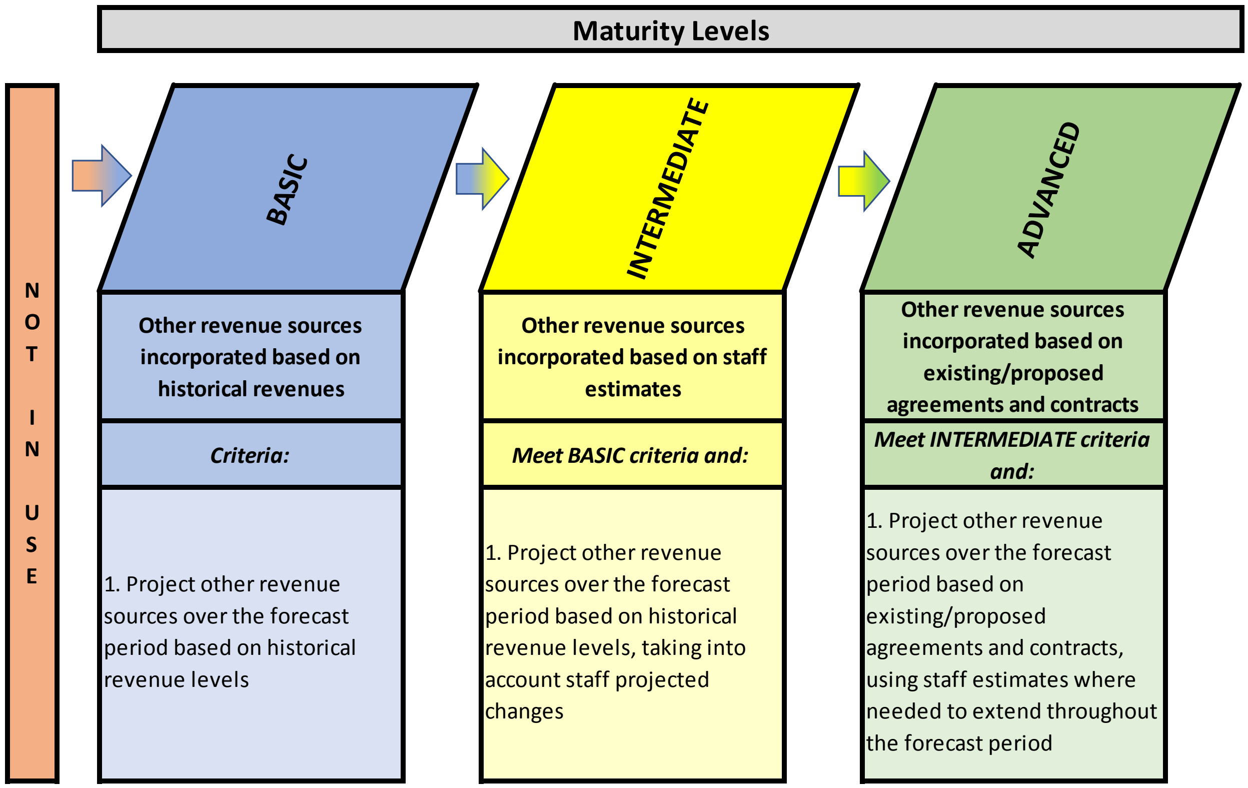
Does your financing strategy include a detailed analysis of other funding sources, such as donations, municipal act charges/landowner recoveries, grants, etc.?

Background

In addition to regularly utilized sources of funding, such as taxation, user fees, debt, and reserves/reserve funds, municipalities have limited opportunities to take advantage of other funding sources. These sources should not be overlooked when developing a financing strategy.

Levels of Maturity – Other Funding Sources

Does your financing strategy include a detailed analysis of other funding sources, such as donations, municipal act charges/landowner recoveries, grants, etc.?



At the **basic level of maturity**, municipalities incorporate a projection of other revenue sources based on historical levels into the financing strategy. A common method used to accomplish this would be the creation of a spreadsheet with historical costs input for other revenues. The forecasted amounts for other revenues would be simply based on percentage increase/decreases of the historical costs, based on staff estimates.

At the **intermediate level of maturity**, other revenue sources are incorporated into the financing strategy based on more detailed staff estimates. Typically, municipalities would start with a projection of other revenues based on historical revenue levels, but would then consider potential changes in related legislation, continuing availability of revenue source(s), and any other relevant factors. The projection of other revenues would be amended accordingly.

At the **advanced level of maturity**, other revenue sources are incorporated into the financing strategy in a more formal manner, with consideration for relevant existing/proposed agreements, contracts, or other source documents. Other revenues arising from these agreements and contracts would be calculated and included in the financing strategy. Where there are no agreements and contracts, staff would use their professional judgment to estimate the amounts and timing of other revenues.

Other Funding Sources

Grants

Current and proposed grant programs from other levels of government is one such source for which municipalities should keep attuned. It is important to understand the criteria for acceptance of capital projects for grant money. For example, many grant programs now require a formal asset management plan to be in place before any grant funds will be released. It is prudent for municipalities to ensure they have an early understanding of the criteria for acceptance when applying for grant funding. This preparation will help to ensure they are compliant with grant funding requirements as the grant programs become available, thereby avoiding any delays.

A municipality should not list grants as a funding source unless there is reasonable assurance that the grant will be approved and received. Including grants when they are not yet confirmed has the obvious effect of an overly optimistic financing strategy.

Local Improvement Charges

The legislation allowing for the imposition of local improvement charges provides an opportunity to fund capital from benefitting taxpayers under specific circumstances. There are instances when landowners in a municipality may specifically benefit from local improvements to sidewalks, roads, water systems, or wastewater systems. In these cases, a local improvement charge can be imposed by the municipality to cover all or part of the cost of construction. To help alleviate the financial burden on benefitting landowners, local improvement charges can be collected over a number of years, allowing financing terms and favourable interest rates. Municipalities contemplating a local improvement charge should consider whether the related capital works undertaken benefit only specific landowners or whether there is a more general benefit to the community. This may guide the decision as to whether a local improvement charge would be appropriate in the circumstances.

Fundraising

In some cases, citizen groups may have an interest in fundraising for community projects, such as recreation centres, libraries, park equipment, etc. Caution should be exercised in projecting anticipated funding from this source. Unless firm agreements are in place, with guaranteed amounts of funding identified, a conservative approach should be taken to quantifying donations as part of the financing strategy.

6.9 Rate Impacts (Taxation, User Fees, etc.)

A long-term analysis of taxation levy and user fee impacts is a critical component of a good financing strategy. This allows the financial feasibility of the lifecycle management strategy to be assessed in relation to the impacts on more significant funding sources.

Does the financing strategy detail out a long-term impact analysis on taxation/user fees?

Background

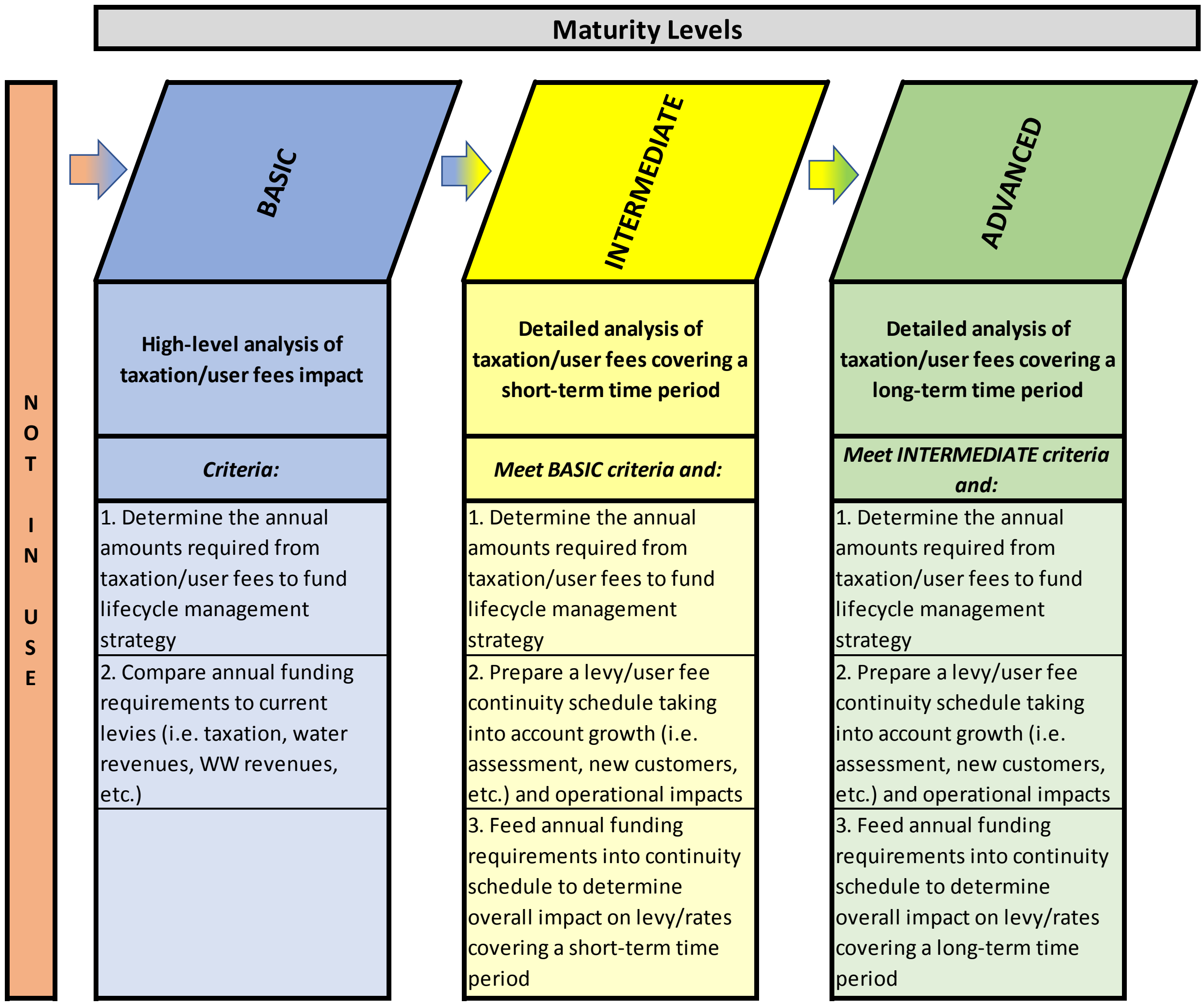
An important part of any financing strategy is the determination of long-term impacts of funding strategies on tax rates and user fees, such as water and wastewater rates. Under the pay-as-you-go approach, tax rates and user fees are not impacted until capital investment occurs. Typically, this results in fluctuating budgetary impacts that can create large year-over-year differences. The additional cost of debt interest will also be incurred and have to be included in the operating budget.

Another approach is to create and maintain capital reserves/reserve funds to fund future capital expenditures. This has the advantage of providing a more predictable tax/user fee impact, with an opportunity for a more gradual year-over-year change. This approach also minimizes the cost of debt interest, especially in later years when reserves/reserve funds are more established. However, this methodology requires that tax/user fee budgets be increased in years prior to the capital investment being made.

One important tool in measuring the impact on rates of the different funding methods is the long-term rate impact analysis. A rate impact analysis may apply to tax rates or user fee rates. In order to assess the impacts of the various approaches to financing strategy, an analysis can be created that measures how varying amounts of contributions to capital, debt costs, and capital reserve transfers, as well as changes in levels of service, would affect the operating budget and rates over time.

Levels of Maturity – Rate Impacts

Does the financing strategy detail out a long-term impact analysis on taxation/user fees?



At the **basic level of maturity**, municipalities perform a high-level analysis of taxation/user fees impacts. This analysis would entail the determination of the annual amounts required from taxation or user fees to fund the lifecycle management strategy and compare this amount to the related current tax levy or user fee revenue. The resulting percentage would be considered the rate impact.

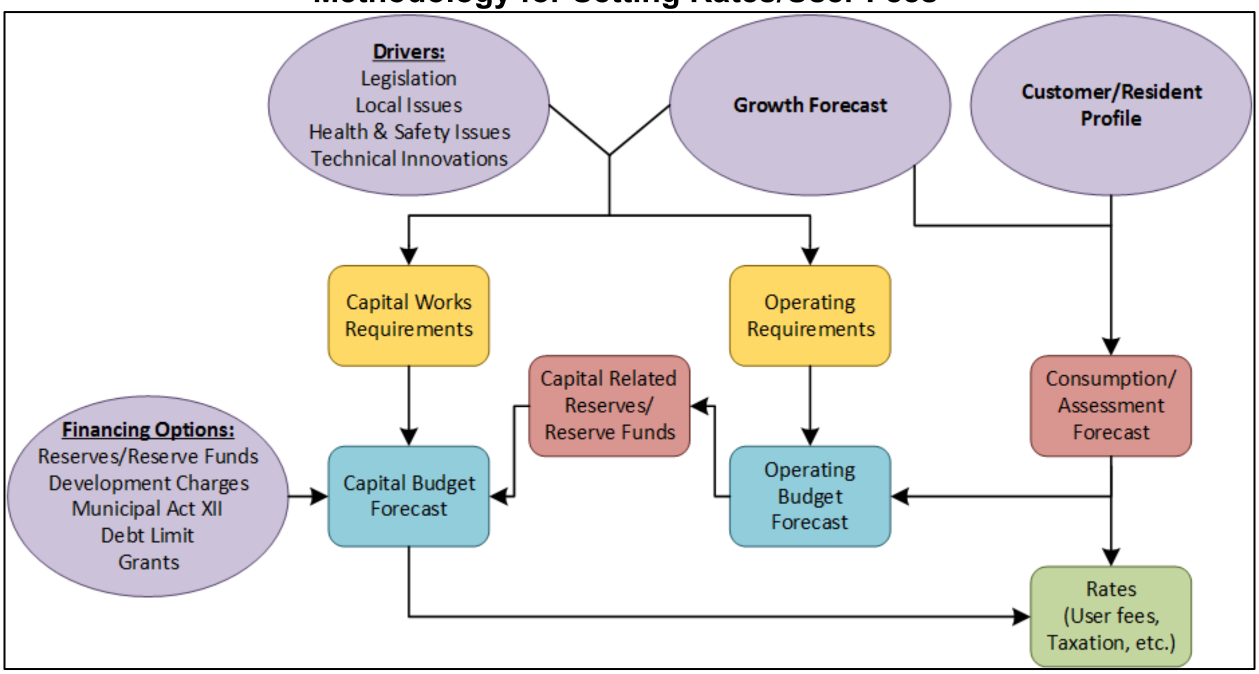
At the **intermediate level of maturity**, a detailed analysis of rate impacts is performed, but only for a short-term timeframe. This analysis first determines the annual amounts required from taxation or user fees to fund the lifecycle management strategy. A continuity schedule would be prepared for annual tax levies and/or user fee revenue, taking into account future assessment growth (taxation), changes in customer base (user fees), and operational impacts. Then, the identified funding requirements for the lifecycle management strategy would be introduced into the continuity schedule to determine the related rate impacts.

At the **advanced level of maturity**, a detailed analysis of rate impacts is performed over a long-term timeframe. This analysis would first entail the determination of the annual amounts required from taxation or user fees to fund the lifecycle management strategy. A continuity schedule would be prepared for annual tax levies and/or user fee revenue, taking into account future assessment growth (taxation), changes in customer base (user fees), and operational impacts. Then, the identified funding requirements for the lifecycle management strategy would be introduced into the continuity schedule to determine the related rate impacts.

Rate Impact Analysis - General

Figure 6-3 (below) illustrates the general methodology used in determining a tax or user fee rate forecast:

Figure 6-3
Methodology for Setting Rates/User Fees



Tax Rate Impact Analysis

The methodology employed generally consists of 5 major elements:

1. Capital Budget Forecast

The capital budget is developed to measure program/service level adjustments, lifecycle requirements, and growth-related needs. Capital expenditures will consider capital asset renewal/rehabilitation, replacement, and expansion-related costs. The capital forecast should be developed with inflationary adjustments based on relevant capital costs indices.

2. Capital Funding Plan

The capital funding plan considers the potential funding sources available to address the capital needs forecast. The sources of capital funding include taxation-based support, reserves/reserve funds, debt for program/service level improvements, and grants. The use of funding from taxation is measured against the revenue projections and affordability impacts on taxpayers. Planned funding from reserve/reserve fund sources is measured against the sustainability of these funds relative to lifecycle demands, revenue projections, and affordability impacts. Debt financing is considered for significant capital expenditures when funding is required beyond long-term lifecycle needs, or to facilitate rate transition policies. Projected impacts of debt financing should be measured against the municipality’s debt policies and annual repayment limits to ensure a practical and sustainable funding mix.

3. Operating Budget Forecast

The operating budget forecast considers adjustments to the municipality’s base budget by reflecting program/service level changes, operating fund impacts associated with infrastructure, and financing for capital needs. The operating expenditures should be forecast with inflationary adjustments and growth in service demand, based on fixed and variable cost characteristics. The operating budget forecast ties the capital funding plan and reserve/reserve fund continuity forecast to the rate-based revenue projections. This ensures sufficient funding for both the ongoing annual operation and maintenance of services supported by taxation, as well as the capital cost requirements, to ensure appropriate service delivery. Tax revenues are projected, net of anticipated operating revenues, such as user fees, rental fees, and other miscellaneous revenues.

4. Assessment Forecast

The assessment forecast is developed based on current assessment with assumed future assessment growth applied over the forecast period. Consideration should be given to known or expected future developments and the anticipated impact on assessment.

5. Tax Rate Forecast

At this stage in the analysis, the full costs of services supported by taxation are measured against total tax assessment with projected growth incorporated to determine anticipated tax rate increases.

User Fee Rate Impact Analysis

Figure 6-3 also applies to the general methodology used in determining the full cost recovery of user fees, such as water and wastewater rates.

The methodology employed generally consists of 5 major elements:

1. Customer Demands and Consumption Forecast

This first step in the analysis is important as it calculates the current base revenue by source and all assumptions for forecasting purposes. Any base charge revenues are forecast with customer growth. The customer profile forecast is modeled based on a municipality’s anticipated growth forecast, by customer type. Moreover, the customer forecast is modelled for the user fee systems independently to identify differences in service demands, if any.

The consumption forecast (e.g. water) is developed by applying average annual consumption estimates to future development. The consumption estimates are based on average consumption levels by customer type, as found in customer records. The forecast may adjust the base consumption levels for anticipated conservation based on historical trends and practices witnessed in industry.

2. Capital Budget Forecast

The capital budget is developed to measure program/service level adjustments, lifecycle requirements, and growth-related needs. Capital expenditures will consider capital asset renewal/rehabilitation, replacement, and expansion-related costs. The capital forecast should be developed with inflationary adjustments based on relevant capital costs indices.

3. Capital Funding Plan

The capital funding plan considers the potential funding sources available to address the capital needs forecast. The sources of capital funding include rate-based support, reserves/reserve funds, debt for program/service level improvements, and grants. The use of rate-based funding is measured against the revenue projections and affordability impacts on ratepayers. The reserve/reserve fund sources are measured against the sustainability of these funds relative to lifecycle demands, revenue projections, and affordability impacts. Debt financing is considered for significant capital expenditures where funding is required beyond long-term lifecycle needs, or to facilitate rate transition policies. Debt financing projected impacts should be measured against the municipality's debt policies and annual repayment limits to ensure a practical and sustainable funding mix.

4. Operating Budget Forecast

The operating budget forecast considers adjustments to the municipality's user rate base budget by reflecting program/service level changes, operating fund impacts associated with infrastructure, and financing for capital needs. The operating expenditures are forecast with inflationary adjustments and growth in service demand, based on fixed and variable cost characteristics. The operating budget forecast ties the capital funding plan and reserve/reserve fund continuity forecast to the rate-based revenue projections. This ensures sufficient funding for both the ongoing annual operation and maintenance of water and wastewater services, as well as the capital cost requirements, to ensure service sustainability. Operating revenues are projected to identify the base charge and consumptive rate components net of anticipated operating revenues, such as connection fees, rental fees, and other miscellaneous revenues.

5. Rate Forecast and Structure

The rate forecast and structure component of the analysis considers various rate structures that could be utilized to recover the forecast rate-based revenue from the projected customer demands. At this stage in the analysis the full costs of service are measured against the customer growth and consumption demands to determine full cost recovery rates. The analysis may consider alternative structures for base charge and consumptive components of the rates, consistent with municipal policies/strategies, industry practice, and customer affordability.

Rate Impacts – Example

In order to project rate impacts (either taxation or user fee) due to activities related to asset management, a financial forecast will need to be created. In order to represent asset management impacts clearly in the forecast, it is advisable to separately report costs by lifecycle category. In the example tax rate forecast below, maintenance and non-infrastructure solutions are each detailed separately from existing operational costs.

Since levels of service (LOS) decisions relate to asset management strategies, they have also been separately reported in the forecast. Table 6-8 represents the LOS impacts considered for this example.

Table 6-8
Sample Rate Impact Analysis – LOS Impacts

	Levels of Service (LOS) Analysis				
	Current LOS	Expected LOS	Type	Est. Cost to Move to Exp. LOS	Cost Description
Fire	Fire equipment inspections twice per year	Fire equipment inspections monthly	Non-Infrastructure Solution	5,000	Staff time
Fire	Current fire vehicle maintenance schedule	Accelerated fire vehicle maintenance schedule	Maintenance	30,000	Maintenance costs, staff time
Public Works	No demand management program re. use of private cars	Institute demand management program to promote alternative transportation choices other than private cars	Non-Infrastructure Solution	15,000	Promotional material, advertising in media, staff time
Public Works	Crack and Seal Program – based on visual inspection (5%/yr.). Collector / Arterial Rds. – within 2 yrs. of resurface. Other Roads – at 20 yrs.	Expand Crack and Seal and Patching Program – based on visual inspection (10%/yr.). Collector / Arterial Rds. – within 1 yr. of resurface. Other Roads – at 10 yrs.	Maintenance	55,000	Staff time, materials
Parks and Recreation	No discounts for non-peak hours at recreation facilities	Introduce discounts for non-peak hours at recreation facilities	Non-Infrastructure Solution	10,000	Loss of revenues
Parks and Recreation	Current facility maintenance program	Accelerated facility maintenance program	Maintenance	42,000	Materials, contractor costs

The forecast (Table 6-9 below) should be created such that the tax levy (or user fee revenue, if applicable) is calculated for each year of the forecast period. In the forecast, the total annual taxation levy line is highlighted. It is also recommended that any projected assessment growth (for taxation forecasts) or consumption growth (for user fee forecasts) be accounted for. The assumptions for assessment growth are included at the end of the forecast below.

Once the above information is completed, the tax rate impact (or user fee impact, if applicable) can be determined. The annual percentage increase has also been highlighted in the forecast below.

Table 6-9
Sample Rate Impact Analysis

Net Impact on Taxation	Forecast									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Expenditures (excluding Maintenance):										
Council & CAO	277,000	283,000	289,000	295,000	301,000	307,000	313,000	319,000	325,000	332,000
Clerks	530,000	541,000	552,000	563,000	574,000	585,000	597,000	609,000	621,000	633,000
Finance	574,000	585,000	597,000	609,000	621,000	633,000	646,000	659,000	672,000	685,000
Fire	718,000	732,000	747,000	762,000	777,000	793,000	809,000	825,000	842,000	859,000
Public Works	1,269,000	1,294,000	1,320,000	1,346,000	1,373,000	1,400,000	1,428,000	1,457,000	1,486,000	1,516,000
Parks & Recreation	960,000	979,000	999,000	1,019,000	1,039,000	1,060,000	1,081,000	1,103,000	1,125,000	1,148,000
Other	691,000	705,000	719,000	733,000	748,000	763,000	778,000	794,000	810,000	826,000
Revenues (Other than Taxation):										
Grants	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)
User Fees	(700,000)	(711,000)	(722,000)	(733,000)	(744,000)	(755,000)	(766,000)	(777,000)	(789,000)	(801,000)
Penalties & Interest	(130,000)	(132,000)	(134,000)	(136,000)	(138,000)	(140,000)	(142,000)	(144,000)	(146,000)	(148,000)
Other	(80,000)	(81,000)	(82,000)	(83,000)	(84,000)	(85,000)	(86,000)	(87,000)	(88,000)	(89,000)
Maintenance (Current Levels):										
Fire	85,000	87,000	89,000	91,000	93,000	95,000	97,000	99,000	101,000	103,000
Public Works	145,000	148,000	151,000	154,000	157,000	160,000	163,000	166,000	169,000	172,000
Parks & Recreation	120,000	122,000	124,000	126,000	129,000	132,000	135,000	138,000	141,000	144,000
LOS: Non-Infrastructure Solutions:										
Fire	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Public Works	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700
Parks & Recreation	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
LOS: Maintenance & Operations:										
Fire	30,000	30,600	31,200	31,800	32,400	33,000	33,700	34,400	35,100	35,800
Public Works	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Parks & Recreation	42,000	42,800	43,700	44,600	45,500	46,400	47,300	48,200	49,200	50,200
Transfers to Reserve Funds:										
Transfer to Gas Tax Reserve	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Transfer to Capital Related Reserve Funds	2,823,948	3,232,469	3,626,552	3,945,247	4,305,007	4,708,543	4,968,536	5,253,386	5,883,496	6,218,751
Debentures Payments:										
Debt Payments (Non Growth)	325,000	325,000	369,133	441,352	497,522	537,643	569,740	589,801	280,849	280,849
Debt Payments (Growth)	22,000	22,000	22,000	22,000	22,000	-	-	-	40,121	64,194
Growth Debt Recovery - DCs	(22,000)	(22,000)	(22,000)	(22,000)	(22,000)	-	-	-	(40,121)	(64,194)
Total Taxation Levy	**7,534,948**	**8,039,569**	**8,577,986**	**9,069,098**	**9,588,329**	**10,137,286**	**10,537,776**	**10,954,087**	**11,386,845**	**11,836,700**
Taxation Levy Analysis										
Prior Year Taxation Levy	7,062,000	7,534,948	8,039,569	8,577,986	9,069,098	9,588,329	10,137,286	10,537,776	10,954,087	11,386,845
Add: Provision for Assessment Growth (see below)	105,930	113,024	120,594	128,670	136,036	143,825	152,059	158,067	164,311	170,803
Current Year Taxation Levy at 0.0% Increase	7,167,930	7,647,972	8,160,163	8,706,656	9,205,135	9,732,154	10,289,346	10,695,842	11,118,398	11,557,648
Additional Increase in Taxation Levy for the year	367,018	391,597	417,823	362,443	383,194	405,133	248,430	258,245	268,447	279,052
Total Taxation Levy	7,534,948	8,039,569	8,577,986	9,069,098	9,588,329	10,137,286	10,537,776	10,954,087	11,386,845	11,836,700
Annual Percentage Increase	**5.1%**	**5.1%**	**5.1%**	**4.2%**	**4.2%**	**4.2%**	**2.4%**	**2.4%**	**2.4%**	**2.4%**

	Forecast									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Assessment Growth Estimate (%)	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%

6.10 Integrated Funding Analysis

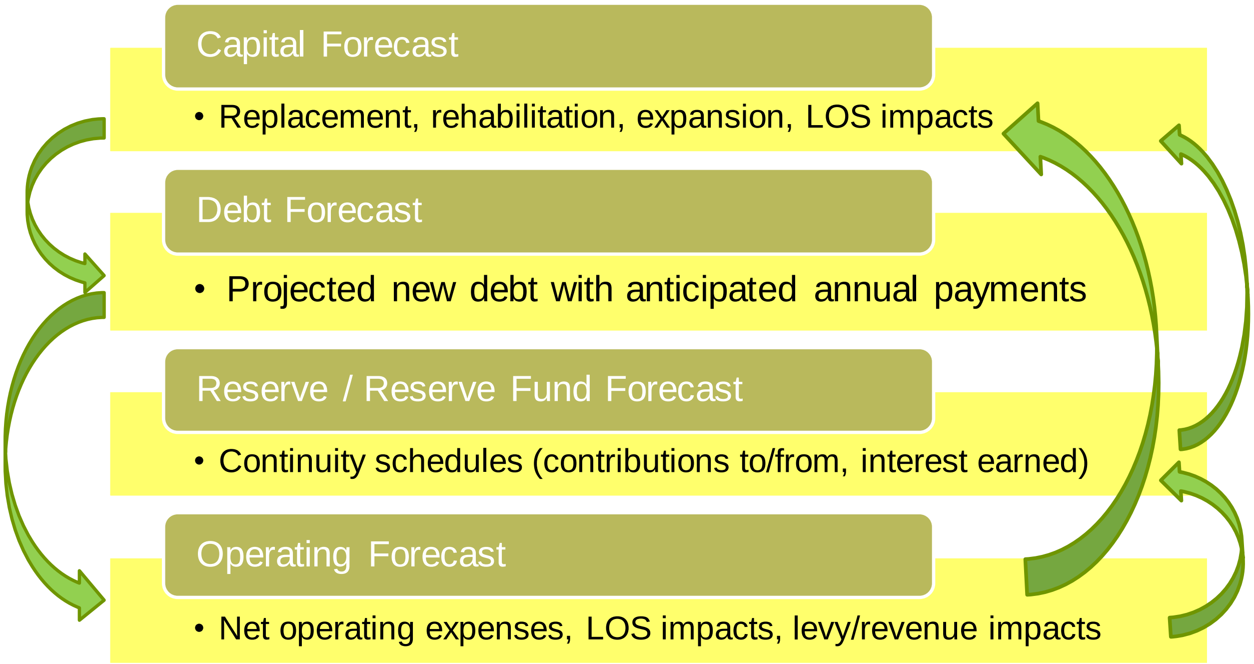
Combining all funding sources into an integrated funding analysis enables a comparison of different funding scenarios and a determination of the optimal funding strategy.

Does your financing strategy combine all individual funding source analyses into an integrated combined analysis?

Background

Any financing strategy includes interaction between the capital forecast, debt forecasts, reserve and reserve fund forecasts, and operating forecasts. Figure 6-4 (below) illustrates this interaction:

Figure 6-4
Integrated Financing Strategy Interactions

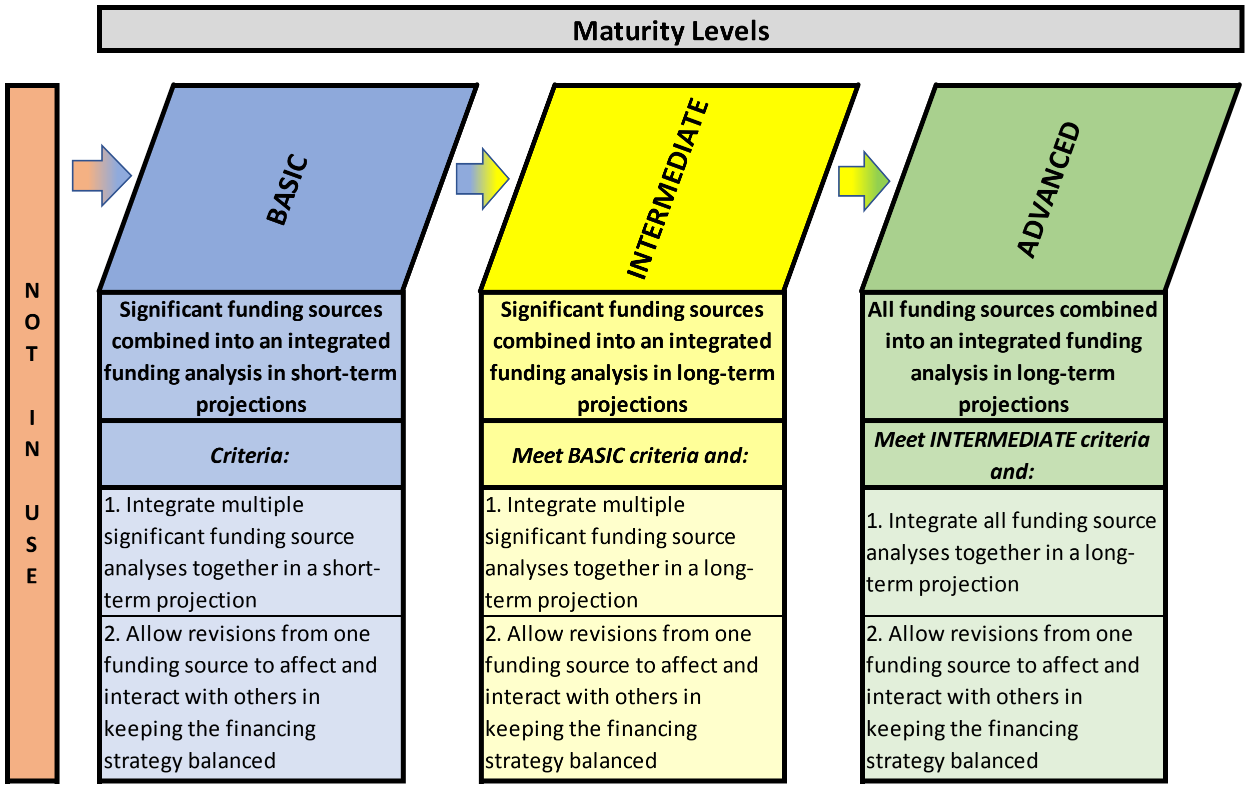


In this figure, all four sections can potentially impact each other. If the financing strategy can be modelled so that these impacts are automated, it makes balancing the financing strategy much easier.

Once the mechanisms are in place to perform an integrated funding analysis, the opportunity to assess and compare the results of different funding scenarios becomes available. It is this opportunity that puts the municipality in the best position to determine an optimal financing strategy.

Levels of Maturity – Revenue Reporting

Does your financing strategy combine all individual funding source analyses into an integrated combined analysis?



At the **basic level of maturity**, municipalities combine significant funding sources into an integrated funding analysis as part of short-term projections. Typically, this would be accomplished by integrating multiple significant funding source analyses together in a table. The table would only be used for short-term projections. Different funding scenarios could be assessed by varying the amounts of one funding source (e.g. debt financing) and ascertaining what impacts would be required on other funding sources (e.g. reserves/reserve funds, contributions from operating, etc.) to keep the financing strategy in balance.

At the **intermediate level of maturity**, municipalities combine significant funding sources into an integrated funding analysis as part of long-term projections. Typically, this would be accomplished by integrating significant funding source analyses together in a table. The table would be developed to represent long-term projections. Different funding scenarios could be assessed by varying the amounts of one funding source (e.g. debt financing) and ascertaining what impacts would be required on other funding sources (e.g. reserves/reserve funds, contributions from operating, etc.) to keep the financing strategy in balance.

At the **advanced level of maturity**, municipalities combine all funding sources into an integrated funding analysis as part of long-term projections. Typically, this would be accomplished by integrating all funding source analyses together in a table. The table would be developed to represent long-term projections. Different funding scenarios could be assessed by varying the amounts of one funding source (e.g. debt financing) and ascertaining what impacts would be required on other funding sources (e.g. reserves/reserve funds, contributions from operating, etc.) to keep the financing strategy in balance.

Integrated Funding Analysis – Example

To demonstrate an integrated funding analysis, consider the following assumptions:

- A municipality anticipates capital needs of $35.3 million over five years and $63.3 million over ten years to meet optimal expected levels of service.
- Due to fiscal constraints, some capital works are deferred until later years. Only $24.3 million is considered available to be completed within five years and $54.2 million within ten years.
- This creates an infrastructure gap representing the amount required to be spent to bring the assets up from current levels of service to optimal expected levels of service. This is summarized in Table 6-10 below:

Table 6-10
Sample Integrated Funding Analysis

Category	Optimal Expected LOS	Scenario 1 Capital Deferral, Use of External Debt	Scenario 2 Capital Deferral, No External Debt
Capital (Inflated) over 5 Years	$35,300,000	$24,291,100	$24,291,100
Capital (Inflated) over 10 Years	$63,300,000	$54,197,800	$54,197,800
Infrastructure Gap (Inflated)	None	$11,008,900 – First 5 Years	$11,008,900 – First 5 Years
		$9,102,200 – Next 5 Years	$9,102,200 – Next 5 Years

For the purposes of this example, the municipality is considering two scenarios:

1. Issue $3.5 million in debt for non-growth capital expenditures; or
2. No debt to be issued.

Scenario 1 – Issue $3.5 Million in Debt over Ten Years:

The following represents the capital forecast for ten years (2018 to 2027), with capital financing including a total of $3.5 million in new debt for projects not related to growth. (Note: debt financing for growth-related projects in the total amount of $800,000 in 2025 and 2026 is assumed to represent internally financed debt via DCs).

The impacts of the new debt issuance are highlighted in yellow in the tables. Transfers between funds which are affected by the different financing scenarios are colour coded to match. In this way, the key differences between scenarios can be more easily identified.

Table 6-11
Scenario 1 – Supported Capital Forecast

Scenario 1: Use of Debt

2017 Asset Management Plan
Financing Strategy

Table 1: Tax Supported Capital Forecast

Description	Forecast									
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Historical Capital										
General Government / Administration	-	-	-	-	-	-	-	-	-	-
Roads	-	-	-	-	-	-	-	-	-	-
Bridges	-	-	-	-	-	-	-	-	-	-
Storm Mains	-	-	-	-	-	-	-	-	-	-
Facilities	-	-	-	-	-	-	-	-	-	-
Vehicles & Equipment	-	-	-	-	-	-	-	-	-	-
Land Improvements	-	-	-	-	-	-	-	-	-	-
Replacement (and Disposal) Forecast										
General Government / Administration	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Roads	2,500,000	2,600,000	2,704,000	2,812,200	2,924,700	3,041,700	3,163,400	3,289,900	3,421,500	3,558,400
Bridges	400,000	416,000	432,600	449,900	467,900	486,600	506,100	526,300	547,400	569,300
Storm Mains	400,000	416,000	432,600	449,900	467,900	486,600	506,100	526,300	547,400	569,300
Facilities	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Vehicles & Equipment	70,000	72,800	75,700	78,700	81,800	85,100	88,500	92,000	95,700	99,500
Land Improvements	60,000	62,400	64,900	67,500	70,200	73,000	75,900	78,900	82,100	85,400
Rehabilitation Forecast										
General Government / Administration	-	-	-	-	-	-	-	-	-	-
Roads	300,000	312,000	324,500	337,500	351,000	365,000	379,600	394,800	410,600	427,000
Bridges	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Storm Mains	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Facilities	150,000	156,000	162,200	168,700	175,400	182,400	189,700	197,300	205,200	213,400
Vehicles & Equipment	50,000	52,000	54,100	56,300	58,600	60,900	63,300	65,800	68,400	71,100
Land Improvements	20,000	20,800	21,600	22,500	23,400	24,300	25,300	26,300	27,400	28,500
Expansion Forecast										
General Government / Administration	-	-	-	-	-	-	-	-	-	-
Roads	-	-	-	500,000	-	-	-	-	700,000	-
Bridges	-	-	-	-	200,000	-	-	-	-	-
Storm Mains	-	-	-	-	-	-	-	-	-	-
Facilities	-	-	-	-	-	-	-	500,000	-	-
Vehicles & Equipment	-	30,000	-	-	-	-	40,000	-	-	-
Land Improvements	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**4,350,000**	**4,554,000**	**4,705,000**	**5,393,200**	**5,288,900**	**5,292,400**	**5,544,300**	**6,224,400**	**6,653,700**	**6,191,900**
Capital Financing										
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-
Debt (Non-Growth)	-	550,000	900,000	700,000	500,000	400,000	250,000	200,000	-	-
Debt (Growth)	-	-	-	-	-	-	-	500,000	300,000	-
Reserve Fund: Development Charges	-	30,000	-	500,000	200,000	-	40,000	-	400,000	-
Reserve Fund: Gas Tax	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Reserve Funds: Capital Related	4,130,000	3,754,000	3,585,000	3,973,200	4,368,900	4,672,400	5,034,300	5,304,400	5,733,700	5,971,900
Total Capital Financing	**4,350,000**	**4,554,000**	**4,705,000**	**5,393,200**	**5,288,900**	**5,292,400**	**5,544,300**	**6,224,400**	**6,653,700**	**6,191,900**
Total Capital Expenses less Capital Financing	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table 6-12
Scenario 1 – Debt Schedules

Table 2: New Debt Requirements

New Debt (Non-Growth) Year	Principal (Inflated)	Forecast 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	-			-	-	-	-	-	-	-	-	-
2019	550,000				44,133	44,133	44,133	44,133	44,133	44,133	44,133	44,133
2020	900,000					72,218	72,218	72,218	72,218	72,218	72,218	72,218
2021	700,000						56,170	56,170	56,170	56,170	56,170	56,170
2022	500,000							40,121	40,121	40,121	40,121	40,121
2023	400,000								32,097	32,097	32,097	32,097
2024	250,000									20,061	20,061	20,061
2025	200,000										16,049	16,049
2026	-											-
2027	-											
Total Annual Non-Growth Related Debt Charges	**3,500,000**	-	-	-	44,133	116,352	172,522	212,643	244,740	264,801	280,849	280,849

New Debt (Growth) Year	Principal (Inflated)	Forecast 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	-			-	-	-	-	-	-	-	-	-
2019	-				-	-	-	-	-	-	-	-
2020	-					-	-	-	-	-	-	-
2021	-						-	-	-	-	-	-
2022	-							-	-	-	-	-
2023	-								-	-	-	-
2024	-									-	-	-
2025	500,000										40,121	40,121
2026	300,000											24,073
2027	-											
Total Annual Internal Debt Charges	**800,000**	-	-	-	-	-	-	-	-	-	40,121	64,194

Table 6-13
Scenario 1 – Reserve/Reserve Fund Schedules

Table 3: Reserve and Reserve Fund Continuity Schedules

Development Charges Reserve Funds	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Opening Balance	505,000	572,771	613,041	686,235	257,383	129,566	227,014	287,460	391,335	54,251
Development Charge Proceeds	84,100	86,200	88,400	90,600	92,900	95,200	97,600	100,000	102,500	105,100
Transfer to Capital	-	30,000	-	500,000	200,000	-	40,000	-	400,000	-
Transfer to Operating (Debenture Payments - Growth)	22,000	22,000	22,000	22,000	22,000	-	-	-	40,121	64,194
Interest Earned	5,671	6,070	6,794	2,548	1,283	2,248	2,846	3,875	537	952
Closing Balance	572,771	613,041	686,235	257,383	129,566	227,014	287,460	391,335	54,251	96,108

Gas Tax Reserve Fund	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Opening Balance	-	-	-	-	-	-	-	-	-	-
Transfers From Operating	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Transfer to Capital	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Interest Earned	-	-	-	-	-	-	-	-	-	-
Closing Balance	-	-	-	-	-	-	-	-	-	-

Capital Related Reserve Funds (All Tax Supported)	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Opening Balance	2,070,500	772,092	253,067	297,566	272,309	210,500	249,110	185,179	135,507	288,156
Transfers from Operating	2,823,948	3,232,469	3,626,552	3,945,247	4,305,007	4,708,543	4,968,536	5,253,386	5,883,496	6,218,751
Transfer to Capital	4,130,000	3,754,000	3,585,000	3,973,200	4,368,900	4,672,400	5,034,300	5,304,400	5,733,700	5,971,900
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Interest Earned	7,644	2,506	2,946	2,696	2,084	2,466	1,833	1,342	2,853	5,350
Closing Balance	772,092	253,067	297,566	272,309	210,500	249,110	185,179	135,507	288,156	540,357
Note: Closing reserve fund balances as a percentage of capital asset current cost	**0.39%**	**0.13%**	**0.14%**	**0.13%**	**0.10%**	**0.11%**	**0.08%**	**0.06%**	**0.12%**	**0.21%**

Table 6-14
Scenario 1 – Operating Budget Summary

Table 4: Tax Supported Operating Budget Forecast Summary

Net Impact on Taxation	Forecast									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Expenditures (excluding Maintenance):										
Council & CAO	277,000	283,000	289,000	295,000	301,000	307,000	313,000	319,000	325,000	332,000
Clerks	530,000	541,000	552,000	563,000	574,000	585,000	597,000	609,000	621,000	633,000
Finance	574,000	585,000	597,000	609,000	621,000	633,000	646,000	659,000	672,000	685,000
Fire	718,000	732,000	747,000	762,000	777,000	793,000	809,000	825,000	842,000	859,000
Public Works	1,269,000	1,294,000	1,320,000	1,346,000	1,373,000	1,400,000	1,428,000	1,457,000	1,486,000	1,516,000
Parks & Recreation	960,000	979,000	999,000	1,019,000	1,039,000	1,060,000	1,081,000	1,103,000	1,125,000	1,148,000
Other	691,000	705,000	719,000	733,000	748,000	763,000	778,000	794,000	810,000	826,000
Revenues (Other than Taxation):										
Grants	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)
User Fees	(700,000)	(711,000)	(722,000)	(733,000)	(744,000)	(755,000)	(766,000)	(777,000)	(789,000)	(801,000)
Penalties & Interest	(130,000)	(132,000)	(134,000)	(136,000)	(138,000)	(140,000)	(142,000)	(144,000)	(146,000)	(148,000)
Other	(80,000)	(81,000)	(82,000)	(83,000)	(84,000)	(85,000)	(86,000)	(87,000)	(88,000)	(89,000)
Maintenance (Current Levels):										
Fire	85,000	87,000	89,000	91,000	93,000	95,000	97,000	99,000	101,000	103,000
Public Works	145,000	148,000	151,000	154,000	157,000	160,000	163,000	166,000	169,000	172,000
Parks & Recreation	120,000	122,000	124,000	126,000	129,000	132,000	135,000	138,000	141,000	144,000
LOS: Non-Infrastructure Solutions:										
Fire	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Public Works	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700
Parks & Recreation	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
LOS: Maintenance & Operations:										
Fire	30,000	30,600	31,200	31,800	32,400	33,000	33,700	34,400	35,100	35,800
Public Works	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Parks & Recreation	42,000	42,800	43,700	44,600	45,500	46,400	47,300	48,200	49,200	50,200
Transfers to Reserve Funds:										
Transfer to Gas Tax Reserve	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Transfer to Capital Related Reserve Funds	2,823,948	3,232,469	3,626,552	3,945,247	4,305,007	4,708,543	4,968,536	5,253,386	5,883,496	6,218,751
Debentures Payments:										
Debt Payments (Non Growth)	325,000	325,000	369,133	441,352	497,522	537,643	569,740	589,801	280,849	280,849
Debt Payments (Growth)	22,000	22,000	22,000	22,000	22,000	-	-	-	40,121	64,194
Growth Debt Recovery - DCs	(22,000)	(22,000)	(22,000)	(22,000)	(22,000)	-	-	-	(40,121)	(64,194)
Total Taxation Levy	**7,534,948**	**8,039,569**	**8,577,986**	**9,069,098**	**9,588,329**	**10,137,286**	**10,537,776**	**10,954,087**	**11,386,845**	**11,836,700**
Taxation Levy Analysis										
Prior Year Taxation Levy	7,062,000	7,534,948	8,039,569	8,577,986	9,069,098	9,588,329	10,137,286	10,537,776	10,954,087	11,386,845
Add: Provision for Assessment Growth (see below)	105,930	113,024	120,594	128,670	136,036	143,825	152,059	158,067	164,311	170,803
Current Year Taxation Levy at 0.0% Increase	7,167,930	7,647,972	8,160,163	8,706,656	9,205,135	9,732,154	10,289,346	10,695,842	11,118,398	11,557,648
Additional Increase in Taxation Levy for the year	367,018	391,597	417,823	362,443	383,194	405,133	248,430	258,245	268,447	279,052
Total Taxation Levy	7,534,948	8,039,569	8,577,986	9,069,098	9,588,329	10,137,286	10,537,776	10,954,087	11,386,845	11,836,700
Annual Percentage Increase	**5.1%**	**5.1%**	**5.1%**	**4.2%**	**4.2%**	**4.2%**	**2.4%**	**2.4%**	**2.4%**	**2.4%**

	Forecast									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Assessment Growth Estimate (%)	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%

Scenario 2 – No Debt

The following represents the capital forecast for ten years (2018 to 2027) with no debt issued. (Note: debt financing for growth in the total amount of $800,000 in 2025 and 2026 represents internally financed debt via DCs).

The impacts of the municipality not issuing new debt are highlighted in yellow in the tables. Transfers between funds which are affected by the different financing scenarios are colour coded to match. In this way, the key differences between scenarios can be more easily identified.

Table 6-15
Scenario 2 – Supported Capital Forecast

Scenario 2: No Debt

2017 Asset Management Plan
Financing Strategy

Table 1: Tax Supported Capital Forecast

Description	Forecast									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Historical Capital										
General Government / Administration	-	-	-	-	-	-	-	-	-	-
Roads	-	-	-	-	-	-	-	-	-	-
Bridges	-	-	-	-	-	-	-	-	-	-
Storm Mains	-	-	-	-	-	-	-	-	-	-
Facilities	-	-	-	-	-	-	-	-	-	-
Vehicles & Equipment	-	-	-	-	-	-	-	-	-	-
Land Improvements	-	-	-	-	-	-	-	-	-	-
Replacement (and Disposal) Forecast										
General Government / Administration	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Roads	2,500,000	2,600,000	2,704,000	2,812,200	2,924,700	3,041,700	3,163,400	3,289,900	3,421,500	3,558,400
Bridges	400,000	416,000	432,600	449,900	467,900	486,600	506,100	526,300	547,400	569,300
Storm Mains	400,000	416,000	432,600	449,900	467,900	486,600	506,100	526,300	547,400	569,300
Facilities	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Vehicles & Equipment	70,000	72,800	75,700	78,700	81,800	85,100	88,500	92,000	95,700	99,500
Land Improvements	60,000	62,400	64,900	67,500	70,200	73,000	75,900	78,900	82,100	85,400
Rehabilitation Forecast										
General Government / Administration	-	-	-	-	-	-	-	-	-	-
Roads	300,000	312,000	324,500	337,500	351,000	365,000	379,600	394,800	410,600	427,000
Bridges	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Storm Mains	100,000	104,000	108,200	112,500	117,000	121,700	126,600	131,700	137,000	142,500
Facilities	150,000	156,000	162,200	168,700	175,400	182,400	189,700	197,300	205,200	213,400
Vehicles & Equipment	50,000	52,000	54,100	56,300	58,600	60,900	63,300	65,800	68,400	71,100
Land Improvements	20,000	20,800	21,600	22,500	23,400	24,300	25,300	26,300	27,400	28,500
Expansion Forecast										
General Government / Administration	-	-	-	-	-	-	-	-	-	-
Roads	-	-	-	500,000	-	-	-	-	700,000	-
Bridges	-	-	-	-	200,000	-	-	-	-	-
Storm Mains	-	-	-	-	-	-	-	-	-	-
Facilities	-	-	-	-	-	-	-	500,000	-	-
Vehicles & Equipment	-	30,000	-	-	-	-	40,000	-	-	-
Land Improvements	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**4,350,000**	**4,554,000**	**4,705,000**	**5,393,200**	**5,288,900**	**5,292,400**	**5,544,300**	**6,224,400**	**6,653,700**	**6,191,900**
Capital Financing										
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-
Debt (Non-Growth)	-	-	-	-	-	-	-	-	-	-
Debt (Growth)	-	-	-	-	-	-	-	500,000	300,000	-
Reserve Fund: Development Charges	-	30,000	-	500,000	200,000	-	40,000	-	400,000	-
Reserve Fund: Gas Tax	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Reserve Funds: Capital Related	4,130,000	4,304,000	4,485,000	4,673,200	4,868,900	5,072,400	5,284,300	5,504,400	5,733,700	5,971,900
Total Capital Financing	**4,350,000**	**4,554,000**	**4,705,000**	**5,393,200**	**5,288,900**	**5,292,400**	**5,544,300**	**6,224,400**	**6,653,700**	**6,191,900**
Total Capital Expenses less Capital Financing	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table 6-16
Scenario 2 – Debt Schedules

Table 2: New Debt Requirements

New Debt (Non-Growth)	Principal	Forecast									
Year	(Inflated)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	-		-	-	-	-	-	-	-	-	-
2019	-			-	-	-	-	-	-	-	-
2020	-				-	-	-	-	-	-	-
2021	-					-	-	-	-	-	-
2022	-						-	-	-	-	-
2023	-							-	-	-	-
2024	-								-	-	-
2025	-									-	-
2026	-										-
2027	-										
Total Annual Non-Growth Related Debt Charges	-	-	-	-	-	-	-	-	-	-	-

New Debt (Growth)	Principal	Forecast									
Year	(Inflated)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	-		-	-	-	-	-	-	-	-	-
2019	-			-	-	-	-	-	-	-	-
2020	-				-	-	-	-	-	-	-
2021	-					-	-	-	-	-	-
2022	-						-	-	-	-	-
2023	-							-	-	-	-
2024	-								-	-	-
2025	500,000									40,121	40,121
2026	300,000										24,073
2027	-										
Total Annual Internal Debt Charges	**800,000**	-	-	-	-	-	-	-	-	40,121	64,194

Table 6-17
Scenario 2 – Reserve/Reserve Fund Schedules

Table 3: Reserve and Reserve Fund Continuity Schedules

Development Charges Reserve Funds	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Opening Balance	505,000	572,771	613,041	686,235	257,383	129,566	227,014	287,460	391,335	54,251
Development Charge Proceeds	84,100	86,200	88,400	90,600	92,900	95,200	97,600	100,000	102,500	105,100
Transfer to Capital	-	30,000	-	500,000	200,000	-	40,000	-	400,000	-
Transfer to Operating (Debenture Payments - Growth)	22,000	22,000	22,000	22,000	22,000	-	-	-	40,121	64,194
Interest Earned	5,671	6,070	6,794	2,548	1,283	2,248	2,846	3,875	537	952
Closing Balance	572,771	613,041	686,235	257,383	129,566	227,014	287,460	391,335	54,251	96,108

Gas Tax Reserve Fund	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Opening Balance	-	-	-	-	-	-	-	-	-	-
Transfers From Operating	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Transfer to Capital	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Interest Earned	-	-	-	-	-	-	-	-	-	-
Closing Balance	-	-	-	-	-	-	-	-	-	-

Capital Related Reserve Funds (All Tax Supported)	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Opening Balance	2,070,500	975,282	341,162	234,759	271,491	463,413	824,454	1,155,985	1,454,857	2,045,291
Transfers from Operating	3,025,126	3,666,502	4,376,273	4,707,244	5,056,233	5,425,278	5,604,386	5,788,867	6,303,883	6,499,600
Transfer to Capital	4,130,000	4,304,000	4,485,000	4,673,200	4,868,900	5,072,400	5,284,300	5,504,400	5,733,700	5,971,900
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Interest Earned	9,656	3,378	2,324	2,688	4,588	8,163	11,445	14,405	20,250	25,730
Closing Balance	975,282	341,162	234,759	271,491	463,413	824,454	1,155,985	1,454,857	2,045,291	2,598,721
Note: Closing reserve fund balances as a percentage of capital asset current cost	0.50%	0.17%	0.11%	0.13%	0.21%	0.36%	0.49%	0.60%	0.83%	1.02%

Table 6-18
Scenario 2 – Operating Budget Summary

Table 4: Tax Supported Operating Budget Forecast Summary

Net Impact on Taxation	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Expenditures:										
Council & CAO	277,000	283,000	289,000	295,000	301,000	307,000	313,000	319,000	325,000	332,000
Clerks	530,000	541,000	552,000	563,000	574,000	585,000	597,000	609,000	621,000	633,000
Finance	574,000	585,000	597,000	609,000	621,000	633,000	646,000	659,000	672,000	685,000
Fire	801,000	817,000	833,000	850,000	867,000	884,000	902,000	920,000	938,000	957,000
Public Works	1,414,000	1,442,000	1,471,000	1,500,000	1,530,000	1,561,000	1,592,000	1,624,000	1,656,000	1,689,000
Parks & Recreation	1,082,000	1,104,000	1,126,000	1,149,000	1,172,000	1,195,000	1,219,000	1,243,000	1,268,000	1,293,000
Other	691,000	705,000	719,000	733,000	748,000	763,000	778,000	794,000	810,000	826,000
Revenues (Other than Taxation):										
Grants	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)	(450,000)
User Fees	(700,000)	(711,000)	(722,000)	(733,000)	(744,000)	(755,000)	(766,000)	(777,000)	(789,000)	(801,000)
Penalties & Interest	(130,000)	(132,000)	(134,000)	(136,000)	(138,000)	(140,000)	(142,000)	(144,000)	(146,000)	(148,000)
Other	(80,000)	(81,000)	(82,000)	(83,000)	(84,000)	(85,000)	(86,000)	(87,000)	(88,000)	(89,000)
LOS: Non-Infrastructure Solutions:										
Fire	5,000	5,100	5,200	5,300	5,400	5,500	5,600	5,700	5,800	5,900
Public Works	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700
Parks & Recreation	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
LOS: Maintenance & Operations:										
Fire	30,000	30,600	31,200	31,800	32,400	33,000	33,700	34,400	35,100	35,800
Public Works	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Parks & Recreation	42,000	42,800	43,700	44,600	45,500	46,400	47,300	48,200	49,200	50,200
Transfers to Reserve Funds:										
Transfer to Gas Tax Reserve	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Transfer to Capital Related Reserve Funds	3,025,126	3,666,502	4,376,273	4,707,244	5,056,233	5,425,278	5,604,386	5,788,867	6,303,883	6,499,600
Debentures Payments:										
Debt Payments (Non Growth)	325,000	325,000	325,000	325,000	325,000	325,000	325,000	325,000	-	-
Debt Payments (Growth)	22,000	22,000	22,000	22,000	22,000	-	-	-	40,121	64,194
Growth Debt Recovery - DCs	(22,000)	(22,000)	(22,000)	(22,000)	(22,000)	-	-	-	(40,121)	(64,194)
Total Taxation Levy	**7,736,126**	**8,474,602**	**9,283,573**	**9,715,744**	**10,168,033**	**10,641,378**	**10,928,886**	**11,223,767**	**11,524,383**	**11,833,700**
Taxation Levy Analysis										
Prior Year Taxation Levy	7,062,000	7,736,126	8,474,602	9,283,573	9,715,744	10,168,033	10,641,378	10,928,886	11,223,767	11,524,383
Add: Provision for Assessment Growth (see below)	105,930	116,042	127,119	139,254	145,736	152,520	159,621	163,933	168,357	172,866
Current Year Taxation Levy at 0.0% Increase	7,167,930	7,852,168	8,601,721	9,422,826	9,861,480	10,320,554	10,800,999	11,092,819	11,392,124	11,697,249
Additional Increase in Taxation Levy for the year	568,196	622,435	681,851	292,917	306,553	320,824	127,887	130,948	132,260	136,451
Total Taxation Levy	7,736,126	8,474,602	9,283,573	9,715,744	10,168,033	10,641,378	10,928,886	11,223,767	11,524,383	11,833,700
Annual Percentage Increase	**7.9%**	**7.9%**	**7.9%**	**3.1%**	**3.1%**	**3.1%**	**1.2%**	**1.2%**	**1.2%**	**1.2%**

	Forecast 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Assessment Growth Estimate (%)	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%

<u>Comparison of Scenarios</u>

The above analyses allow the municipality to better assess the impacts of the two financing strategies. Table 6-19 (below) summarizes the results.

Table 6-19
Scenario Impact Comparison

Category	Optimal Expected LOS	Scenario 1 Capital Deferral, Use of External Debt	Scenario 2 Capital Deferral, No External Debt
Capital (Inflated) over 5 Years	$35,300,000	$24,291,100	$24,291,100
Capital (Inflated) over 10 Years	$63,300,000	$54,197,800	$54,197,800
External Debt Issued (Non-Growth)		$3,500,000	-
Capital Reserve Funds – After 10 Years		$540,357	$2,598,271
2027 Reserve Fund Balance, % Asset Cost		0.21%	1.02%
Tax Rate Impacts (Annual % Increase)		5.1% - First 3 Years	7.9% - First 3 Years
		4.2% - Next 3 Years	3.1% - Next 3 Years
		2.4% - Last 4 Years	1.2% - Last 4 Years
Infrastructure Gap	None	$11,008,900 – First 5 Years	$11,008,900 – First 5 Years
		$9,102,200 – Next 5 Years	$9,102,200 – Next 5 Years

Depending on the municipality’s financial targets, an assessment can be made as to the most optimal financing strategy. Decisions can be made related to the sensitivity to rate impacts, the level of reserve fund availability, and debt levels over the forecast period.

6.11 Identifying Funded Capital Priorities

With capital priorities identified within the Lifecycle Management Strategy (see Chapter 5) based on the optimal forecast, it is important to identify the capital priorities that are actually funded within the Financing Strategy.

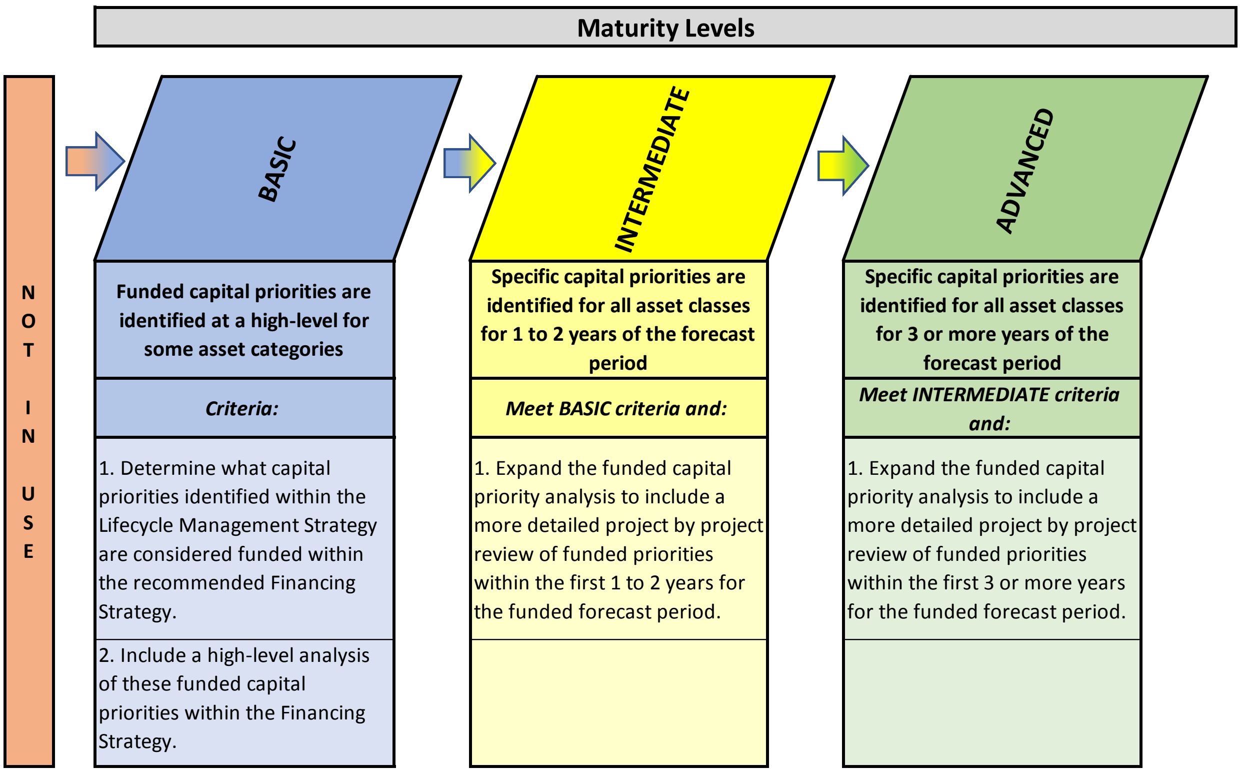
Are clear capital priorities established in the short-term within the Financing Strategy?

Background

Including funded capital priorities within the Financing Strategy allows municipal staff to identify what capital priorities included in the Lifecycle Management Strategy are actually unfunded versus funded. This assists in outlining the consequences of not being able to fund the optimal long-term forecast.

Levels of Maturity – Identifying Funded Capital Priorities

Are clear capital priorities established in the short-term within the Financing Strategy?



At the **basic level of maturity**, municipalities include a high-level analysis of capital priorities that are funded within the Financing Strategy. This analysis would be non-project specific and/or provide no timing with respect to the priorities.

At the **intermediate level of maturity**, the analysis of capital priorities that are funded will be more detailed within the Financing Strategy. This would include project or asset specific priorities and be outlined based on timing of the priority. Priorities would be identified as funded for 1 to 2 years of the funded forecast period.

At the **advanced level of maturity**, the analysis of capital priorities that are funded will be more detailed within the Financing Strategy. This would include project or asset specific priorities and be outlined based on timing of the priority. Priorities would be identified as funded for 3 or more years of the funded forecast period.

Funded Capital Priorities

Capital priority identification, as discussed in Chapter 5, is critical in that it provides valuable information relating to:

- Determining capital projects or assets to include in upcoming budgets;
- Identifying capital projects or assets to fund through Gas Tax Funding; and
- Selecting which capital projects or assets to include in Provincial grant funding applications.

Capital project or asset priorities are identified within the Lifecycle Management Strategy (see Chapter 5) under the preferred or optimal forecasts discussion. If these forecasts can't be fully funded under the recommended Financing Strategy, then it is important to outline the funded versus unfunded components of the priority list. This funded identification can play a number of important roles:

- Ensure Council, the public and other stakeholders understand the implications of not funding the optimal forecast; and
- Identify capital projects or assets that should be funded, if additional funding becomes available (such as grants).

6.12 Performance and Sustainability Measures

Developing and continuously tracking objective performance measures can assist with assessing the effectiveness and sustainability of the financing strategy as well as the overall asset management plan.

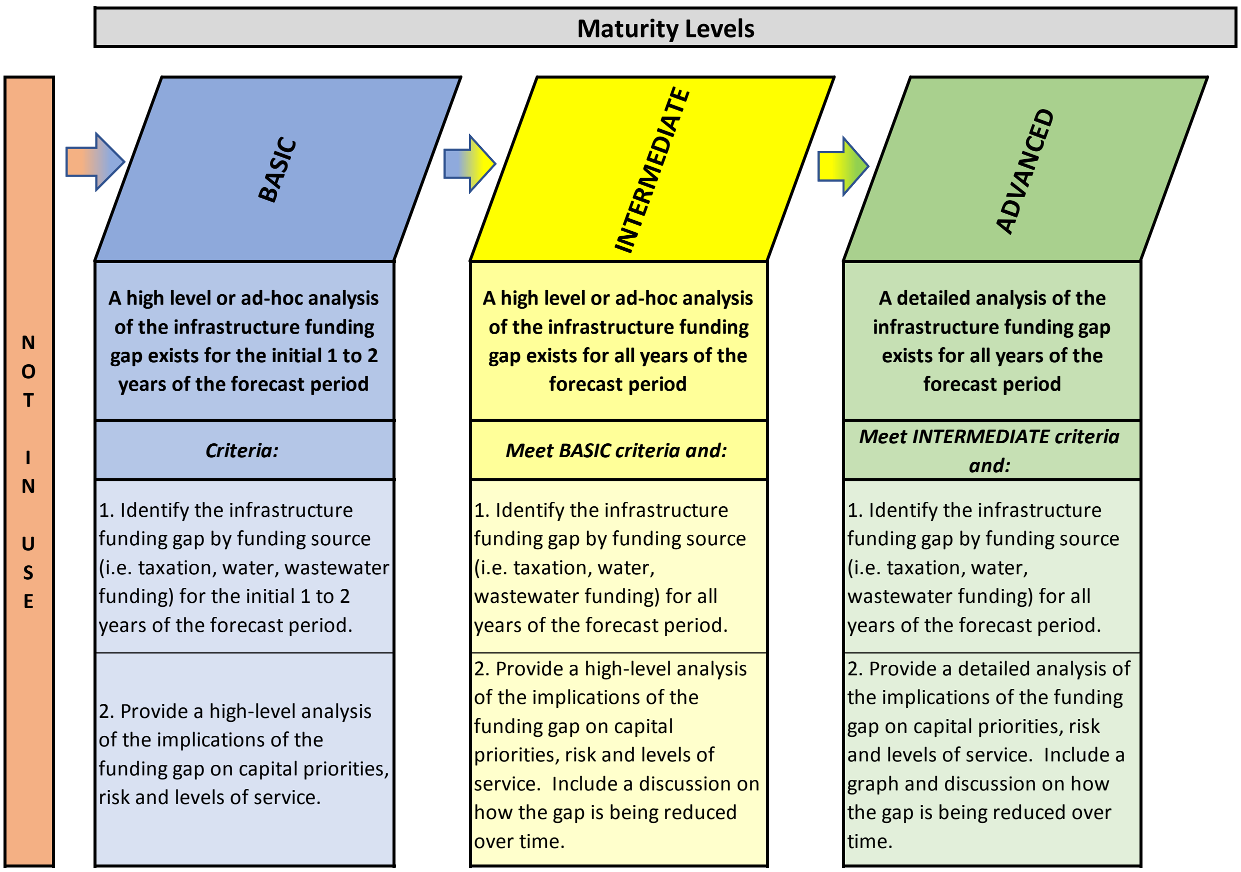
Does your financing strategy include a detailed analysis of your infrastructure funding gap?

Background

Identifying and analyzing the various infrastructure funding gaps within an asset management process provides a significant performance/sustainability measure that can be used to measure the overall success of the recommendations within the entire AM process.

Levels of Maturity – Infrastructure Funding Gap

Does your financing strategy include a detailed analysis of your infrastructure funding gap?



At the **basic level of maturity**, municipalities identify the infrastructure funding gaps for the first 1 to 2 years of the forecast period. This calculation would typically be carried out for preferred financing strategies in order to provide a metric for assessing the relative impacts of these financing strategies. A high-level analysis and discussion on the infrastructure funding gap would be included.

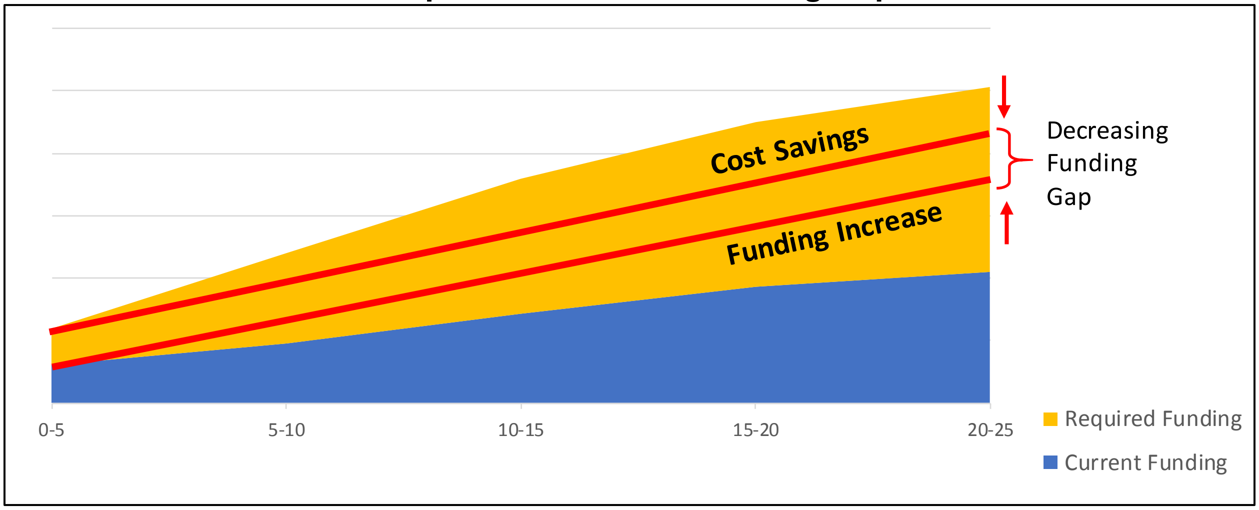
At the **intermediate level of maturity**, municipalities identify the infrastructure funding gaps for all years of the forecast period. This calculation would typically be carried out for preferred financing strategies in order to provide a metric for assessing the relative impacts of these financing strategies. A high-level analysis and discussion on the infrastructure funding gap would be included, including a discussion of how the funding gaps are being reduced over time.

At the **advanced level of maturity**, municipalities identify the infrastructure funding gaps for all years of the forecast period. This calculation would typically be carried out for preferred financing strategies in order to provide a metric for assessing the relative impacts of these financing strategies. A detailed analysis and discussion on the infrastructure funding gap would be included, including a discussion of how the funding gaps are being reduced over time. This information would be shown visually (i.e. graphically) within the Financing Strategy.

Infrastructure Funding Gap

As part of a long-term funding strategy, municipalities should determine the level of annual investment in capital assets that is required as determined by the asset management plan and compare to the amount of annual capital investment included in the operating budget/forecast. The difference between these amounts represents the annual infrastructure funding gap. This is illustrated in Figure 6-5 (below). In order to reduce the gap, either some cost savings must be achieved in the overall required lifecycle costs, or the amount of the annual capital funding must be increased.

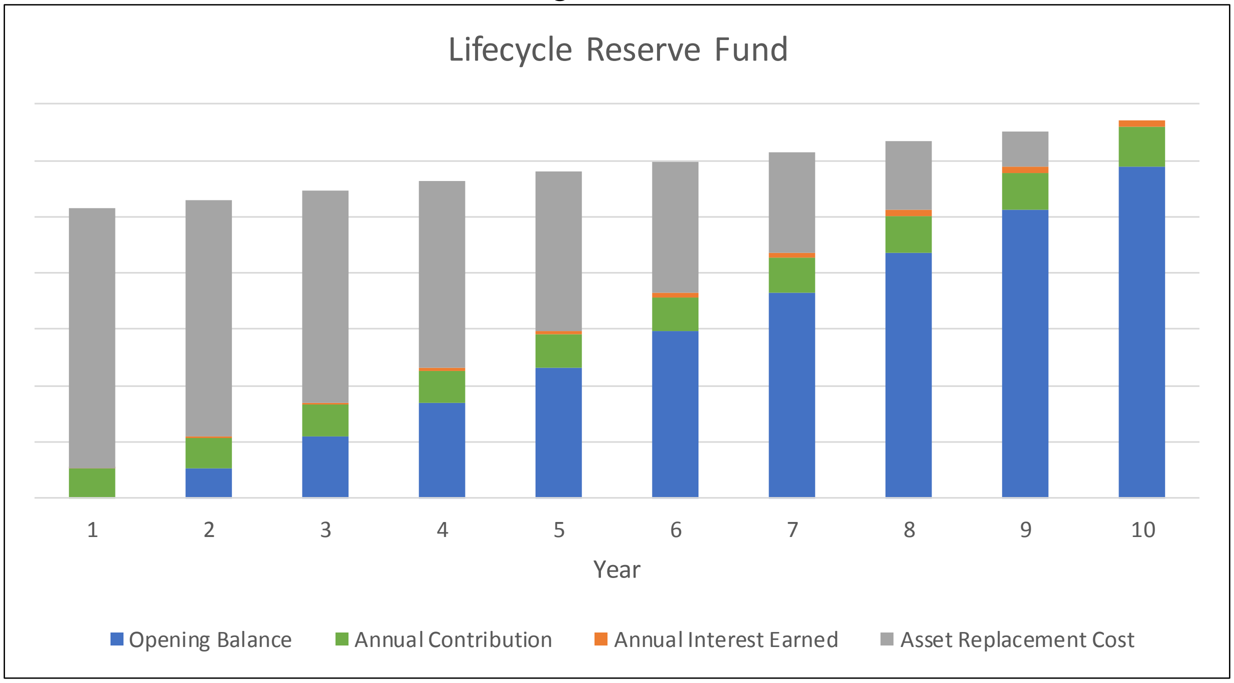
Figure 6-5
Sample Infrastructure Funding Gap



A fundamental approach to calculating the cost of using a capital asset, and for the provision of the revenue required when the time comes to retire and replace it, is the “sinking fund method”.

- This method first estimates the future replacement cost of the asset at the time of replacement by inflating the current replacement cost of the asset at an assumed annual capital inflation rate.
- A calculation is then performed to determine annual contributions which, when invested in a reserve fund, will grow with interest to a balance equal to the future replacement cost.
- The contributions are calculated such that they also increase annually with inflation.
- Under this approach, an annual capital investment amount is calculated where funds are available for short-term needs while establishing a funding plan for long-term needs.
- Annual contributions in excess of capital costs in a given year would be transferred to a “capital replacement reserve fund” for future capital replacement needs.
- This approach provides for a stable funding base and eliminates variances in annual funding requirements, particularly in years when capital replacement needs exceed typical capital levy funding. Please refer to Figure 6-6 (below) for an illustration of this method.

Figure 6-6
Sinking Fund Method



Under this approach, funding is available in reserves/reserve funds based on the estimated date of requirement. This methodology represents the “reserve/reserve fund” financing strategy discussed earlier in this chapter and would not be used by municipalities under a “pay as you go” strategy. Alternatively, a hybrid approach can be used where a portion of the lifecycle costs are planned for in reserve/reserve fund contributions, with other portions treated as “pay as you go” strategy.

An illustrative example of a funding gap diagram is as follows:

Example – Funding Gap

In order to mitigate the funding gap (as defined above), it is typical to approach it with a long-term view. A multi-year plan could be instituted which would allow for annual contributions that increase steadily such that the annual funding deficit shrinks.

The figures below represent the funding gaps resulting from the scenarios outlined in the previous sections. It is assumed that the municipality represented in this example wishes to mitigate its infrastructure funding gap by the year 2027 under either scenario.

In these figures, the different components of capital investment are stratified by colour, which indicate:

- Blue: Current capital investment amounts, shown increasing at inflationary levels;
- Green: Grants that are expected to remain consistent over the forecast period;
- Light Orange: External debt maintaining slightly above historical levels until later in the forecast period then decreasing;
- Dark Orange: Indicates the result of implementing recommended increases in available funding sources as outlined within the asset management financing strategy (resulting in increases in capital investment annually); and
- Grey: Represents optimal annual capital investment amounts (as defined/described above). Please note “optimal” capital investment funding can come from a number of additional sources, such as grants, donations, and other contributions.

As can be seen from the figures, the infrastructure funding gap continues to 2027 under Scenario 1. However, under scenario 2 where no additional debt is issued, the gap is mitigated by the year 2023.

Figure 6-7
Scenario 1 – Annual Infrastructure Funding Gap

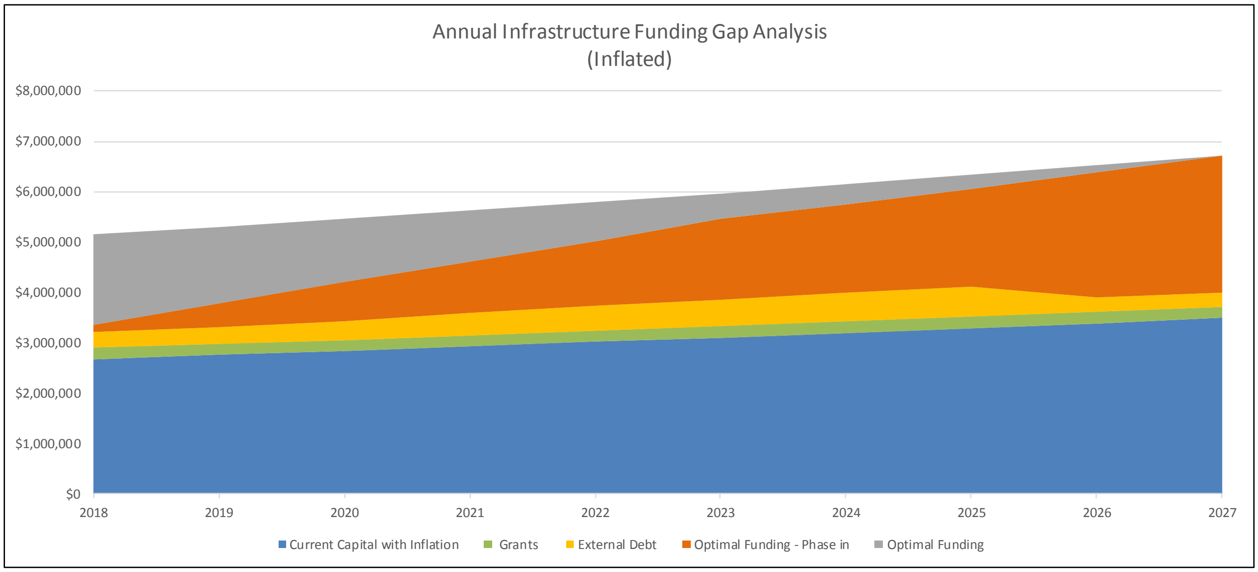
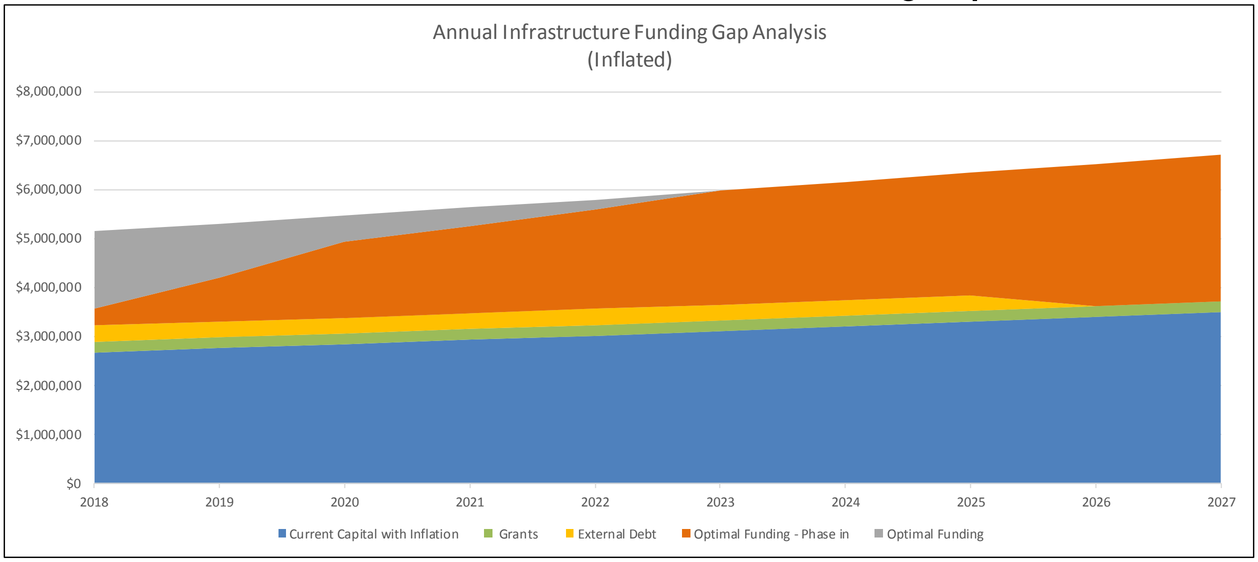


Figure 6-8
Scenario 2 – Annual Infrastructure Funding Gap



Does your financing strategy include other performance and sustainability measures?

Background

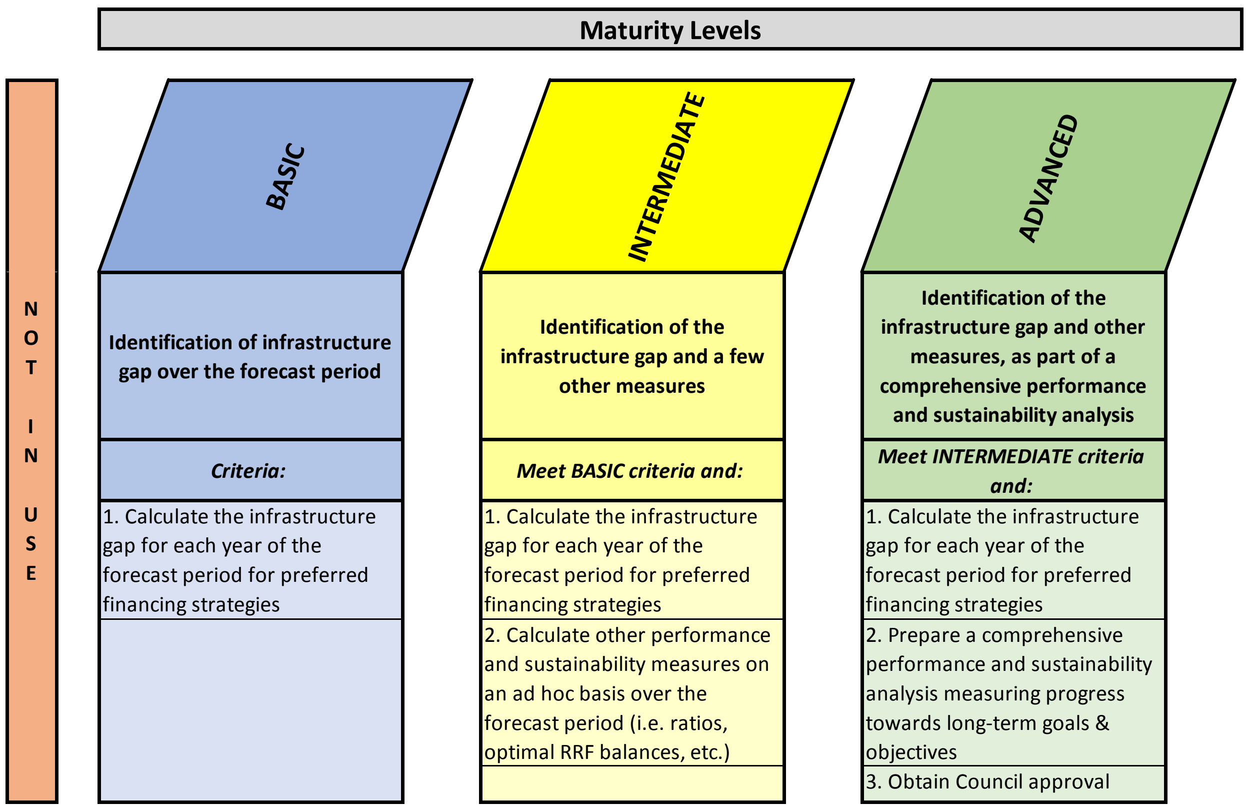
The current and ongoing performance of the asset management financing strategy as well as the level of sustainability that is being achieved can be evaluated by a number of financial indicators. It is important to develop objective measures and track them over time to identify areas in need of improvement and evaluate progress towards meeting targets. Therefore, performance measures should be developed that are SMART:

- Specific;

- Measurable;
- Achievable;
- Relevant; and
- Timebound.

<u>Levels of Maturity – Performance and Sustainability Measures</u>

Does your financing strategy include other performance and sustainability measures?



At the **basic level of maturity**, municipalities identify the amount of the infrastructure gap for each year of the forecast period. This calculation would typically be carried out for preferred financing strategies in order to provide a metric for assessing the relative impacts of these financing strategies.

At the **intermediate level of maturity**, not only would the infrastructure gap be calculated for preferred financing strategies for each year of the forecast period, but additional performance and sustainability measures would also be calculated. These additional measures would include calculations of ratios, optimal reserve/reserve fund balances, etc., and be generally done on an ad hoc basis over the forecast period.

At the **advanced level of maturity**, the identification of the infrastructure gap and other measures as identified in the intermediate level of maturity would be undertaken, but as part of a comprehensive performance and sustainability analysis. To accomplish this, municipalities would undertake the calculation of the infrastructure gap for each year of the forecast period for preferred financing strategies. A comprehensive performance and sustainability analysis would be prepared with the objective of measuring progress towards long-term goals and objectives. Finally, the results of the analysis would be presented to Council regularly (i.e. annually) for their approval.

<u>Infrastructure Gap</u>

As municipalities strive to balance the desire to maintain an affordable tax rate (and/or user fee rate) with the annual funding requirements identified in the asset management plan, often, the resulting strategy is to defer significant capital replacements in order to minimize short-term budget impacts. This approach creates an infrastructure gap, which affects levels of service, creates a higher risk of asset failure, and/or results in increased costs associated with maintaining an asset past its useful life. Municipalities often have not other option, even with these disadvantages considered.

For example, a municipality may be aware that a $1 million asset is in need of replacement this year to maintain expected levels of service. However, due to financial constraints, the municipality has decided not to replace the asset. This means an infrastructure gap of $1 million has been created. An illustrative example is provided below, at the end of this section.

<u>Other Performance/Sustainability Measures</u>

Other performance measures can also be used to evaluate the financing strategy effectiveness. For example:

1. <u>Customer affordability</u> comparison of rates/fees to neighbouring municipalities or provincial averages.
2. <u>The ratio of total capital reserves/reserve fund balances to total assets' replacement cost</u> (inflated) provides an indication of sustainability and the financial preparedness of a municipality to cover lifecycle costs without the expectation of taking on debt.
3. <u>The ratio of total debt outstanding to tangible capital assets</u> (at replacement cost) provides another measure of sustainability and the financial preparedness of a

municipality to cover lifecycle costs without the expectation of taking on additional debt.

4. The calculation of the availability of annual debt capacity, as described earlier in this Chapter. Municipalities must ensure they remain below the annual repayment limit, and therefore, it is prudent to analyse impacts of the financing strategy on this constraint.

Example – Infrastructure Gap

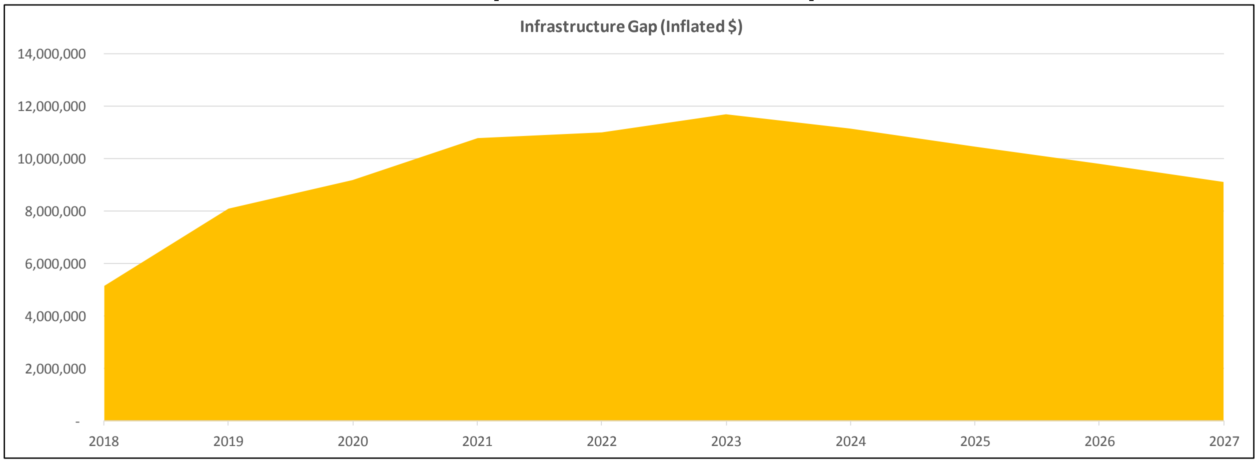
Under both scenarios, the infrastructure gap is identical, as shown in Table 6-20 (below) (and previously discussed in other sections):

Table 6-20
Sample Scenario Comparison – Infrastructure Gap

Category	Optimal Expected LOS	Scenario 1 Capital Deferral, Use of External Debt	Scenario 2 Capital Deferral, No External Debt
Capital (Inflated) over 5 Years	$35,300,000	$24,291,100	$24,291,100
Capital (Inflated) over 10 Years	$63,300,000	$54,197,800	$54,197,800
Infrastructure Gap (Inflated)	None	$11,008,900 – First 5 Years	$11,008,900 – First 5 Years
		$9,102,200 – Next 5 Years	$9,102,200 – Next 5 Years

Figure 6-9 provides a graphical representation of the infrastructure deficit over the forecast period under either scenario. The cumulative infrastructure gap is projected to grow until 2023, and then begins to reduce annually thereafter. However, by 2027, an infrastructure gap still remains. While the infrastructure funding gap outlined in Figures 6-7 and 6-8 reflect the municipality reaching optimal annual investment amounts by 2027, an infrastructure gap still exists from a cost perspective as a “backlog” of infrastructure accumulated while the municipality increased investments levels over time towards optimal levels. This outlines the benefit of calculating gaps, both from an investment (i.e. funding) and from an infrastructure (i.e. cost) perspective within the asset management plan. Target years can be documented, outlining the desired years that both the infrastructure funding gap and the infrastructure gap are eliminated. Alternatively, a municipality’s goal could be to illustrate gaps that are consistently being mitigated over the forecast period.

Figure 6-9
Sample Infrastructure Gap



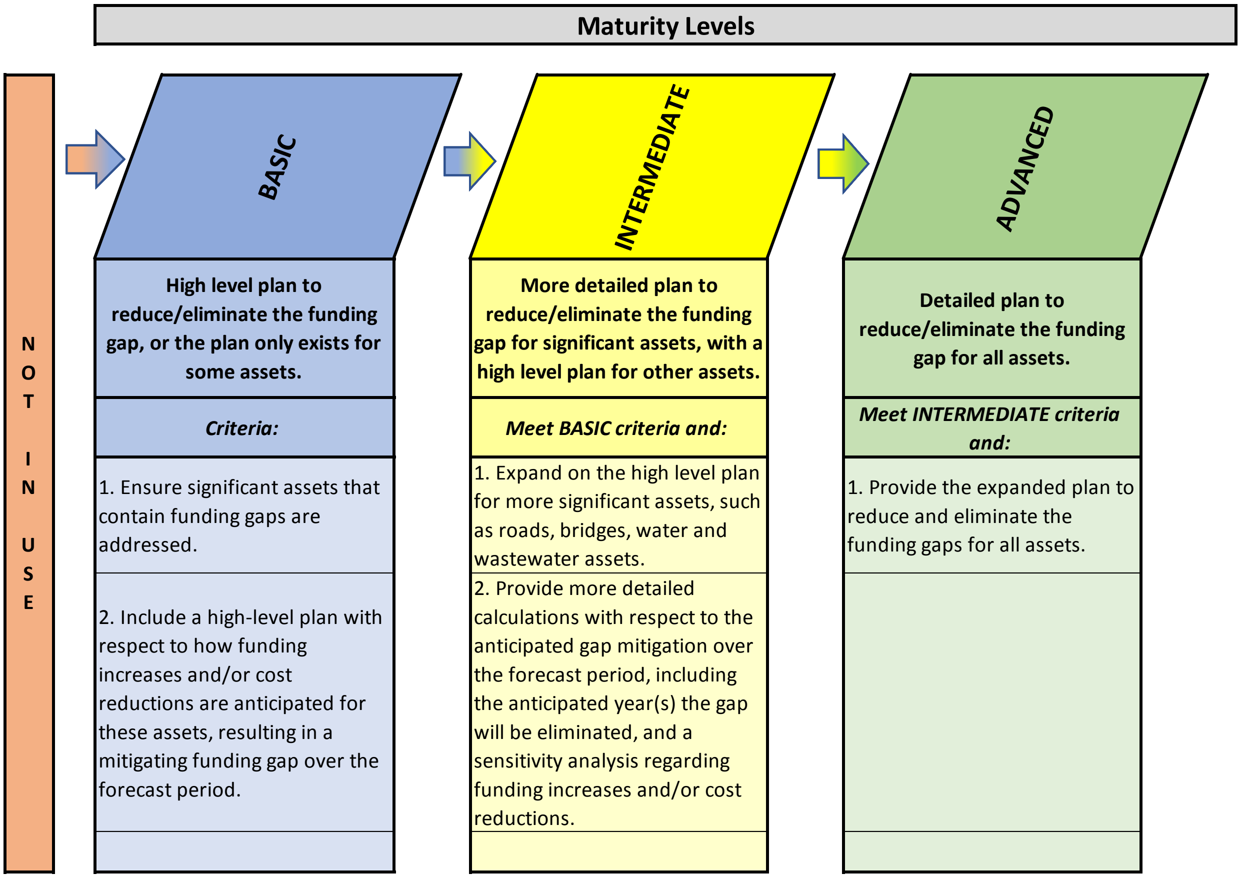
Does your infrastructure funding gap analysis consider how the gap will be managed?

<u>Background</u>

In the section above, the importance of including a funding gap analysis within the Financing Strategy was discussed. Taking this one step further, the ability to plan how that funding gap will be reduced and eventually eliminated over the forecast period (or beyond) provides significant performance metrics with respect to the overall success of the AM plan.

<u>Levels of Maturity</u>

Does your infrastructure funding gap analysis consider how the gap will be managed?



At the **basic level of maturity**, municipalities have a high-level plan in place to reduce or eliminate the funding gap. The plan may not cover most assets, but it should address funding gaps for *significant* assets. The plan should detail approaches for mitigating funding gaps during periods of anticipated funding increases/reductions.

At the **intermediate level of maturity**, municipalities have a moderately detailed plan to reduce or eliminate the funding gap for significant assets, such as bridges, water and wastewater assets. The plan should include a sensitivity analysis regarding funding increases/reductions as well as detailed calculations to reduce the gap over the forecast period. At this level, municipalities also have a high-level plan for other assets.

At the **advanced level of maturity**, municipalities have a detailed plan to reduce or eliminate the funding gap for all assets.

Mitigating the Infrastructure Funding Gap

The ability to forecast the planned reduction in the infrastructure funding gaps allows municipalities to illustrate the overall effectiveness of a recommended financing strategy over AM plan itself. The use of the terminology "gaps" refers to the fact that municipalities can have multiple funding gaps, such as tax supported and user fee supported (i.e. water, wastewater, solid waste, parking, etc.).

Including a sensitivity analysis within this area also provides a "cause/effect" or consequence of decisions to both Council and the public. For example, if a municipality is recommending a 2.0% capital levy increase to support the AM plan and Council is willing to adopt a 1.0% increase, the following information can be provided:

- 1.0% Capital Levy Increase: Anticipated Funding Gap Elimination: 2055
- 1.5% Capital Levy Increase: Anticipated Funding Gap Elimination: 2045
- 2.0% Capital Levy Increase: Anticipated Funding Gap Elimination: 2035

This data, along with the other implications of a reduced Financing Strategy (asset condition, risk and level of service) can be presented to Council and the public during budget deliberations.

6.13 Expenditure Reporting

A systematic approach to reporting historical and forecast expenditures by lifecycle cost category allows trends to be analyzed and promotes discussions regarding future asset investment levels.

Does your financing strategy include a yearly expenditure breakdown (both historical and forecast) by lifecycle category?

Background

To complete many of the analyses detailed in this chapter, the necessary background financial information will need to be documented as part of the asset management plan. It may be useful to complete the financial information separately for activities supported by taxation versus user fee(s).

To integrate the financial strategy into the asset management plan, a long-term forecast of expenditures and revenues will be required. The forecast should cover a minimum of ten years, but best practice would suggest using a timeframe that coincides with the lifecycle time period of all capital assets.

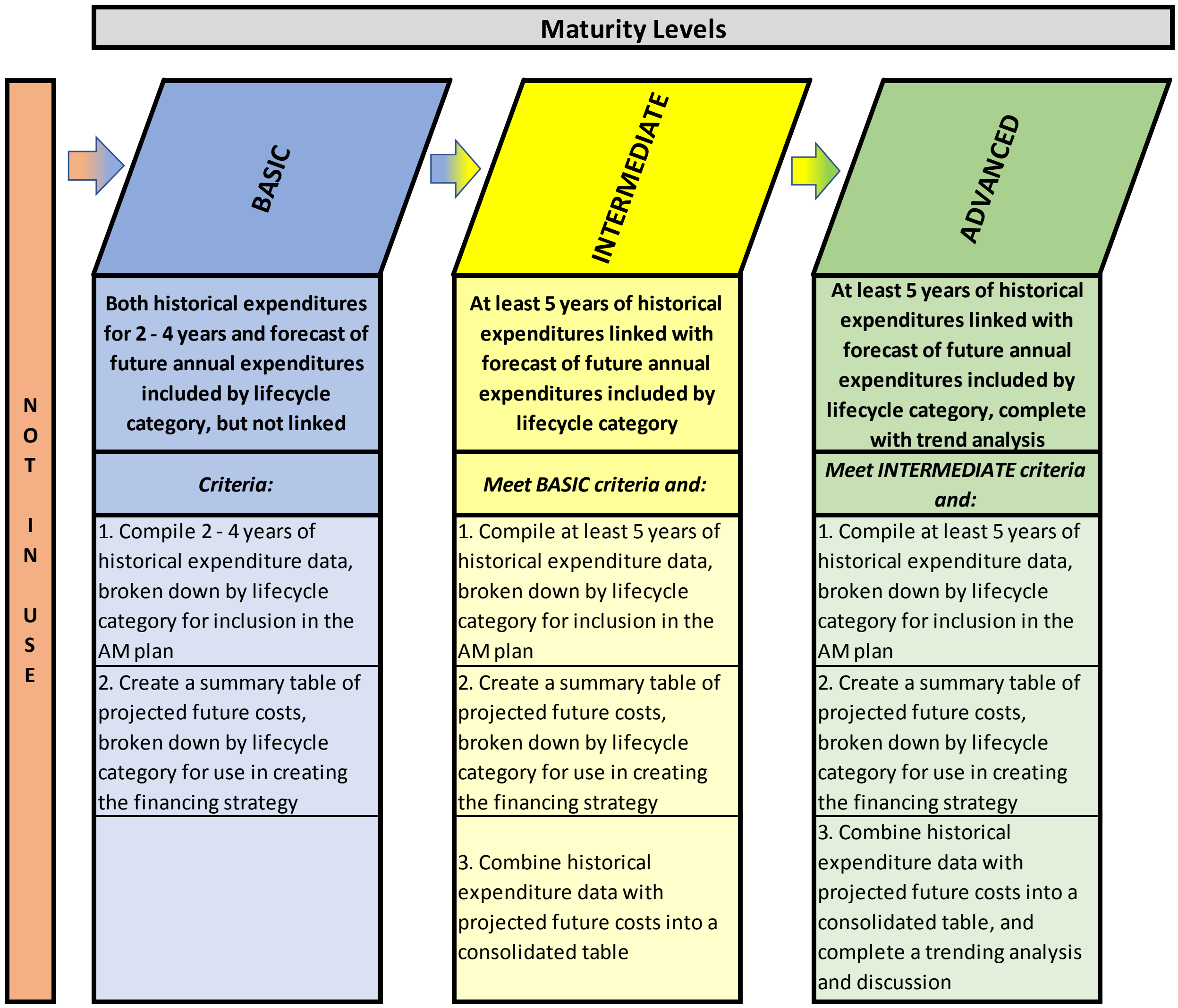
Annual expenditures should be forecasted for the following lifecycle categories:

a) Non-infrastructure solutions;
b) Maintenance activities;
c) Renewal/Rehabilitation activities;
d) Replacement activities;
e) Disposal activities; and
f) Expansion activities.

To provide historical perspective, the actual expenditures for the above categories should also be included for a defined period.

Levels of Maturity – Expenditure Reporting

Does your financing strategy include a yearly expenditure breakdown (both historical and forecast) by lifecycle category?



At the **basic level of maturity**, municipalities prepare two expenditure summaries by lifecycle category, with one representing historical annual expenditures and the second including projected annual expenditures. The two summaries would be prepared in isolation and not linked. The historical annual expenditures for the past two to four years would be compiled by lifecycle category and included in the asset management plan. A summary table would also be created of the projected future annual costs which would be broken down by lifecycle category for use in creating the financing strategy.

At the **intermediate level of maturity**, expenditures are summarized by lifecycle category, with at least five years of historical expenditures being linked with a forecast of future annual expenditures. This would require the municipality to compile at least five years of historical expenditure data by lifecycle category and include this information in the asset management plan. Projected annual future costs summarized by lifecycle category would be included in a summary table for use in creating the financing strategy. These two expenditure summaries would be combined into a consolidated table, providing a more comprehensive and informative representation.

At the **advanced level of maturity**, the same steps undertaken at the intermediate level of maturity are followed. However, once the consolidated table of historical and projected expenditures was prepared, a trend analysis would be undertaken. This would provide the opportunity to identify any tendencies that need further investigation and to promote discussion about opportunities for managing costing levels.

Expenditure Reporting – Example

The example tables and figures below are based on the financing strategy example (Scenario 1 – Issue Debt) outlined in other sections above:

Table 6-21
Sample Capital Expenditure Reporting – Table Format

Capital (Historical & Forecast)

	Historical					Forecast		
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Replacement	1,848,000	2,330,000	1,928,000	2,357,000	3,032,000	3,630,000	3,775,200	3,926,200
Rehabilitation	372,000	440,000	442,000	513,000	568,000	720,000	748,800	778,800
Expansion	-	-	-	-	-	-	30,000	-
Total	**2,220,000**	**2,770,000**	**2,370,000**	**2,870,000**	**3,600,000**	**4,350,000**	**4,554,000**	**4,705,000**
	Forecast							
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	
Replacement	4,083,200	4,246,500	4,416,400	4,593,200	4,776,800	4,968,100	5,166,900	
Rehabilitation	810,000	842,400	876,000	911,100	947,600	985,600	1,025,000	
Expansion	500,000	200,000	-	40,000	500,000	700,000	-	
Total	**5,393,200**	**5,288,900**	**5,292,400**	**5,544,300**	**6,224,400**	**6,653,700**	**6,191,900**	

Figure 6-10
Sample Capital Expenditure Reporting – Chart Format

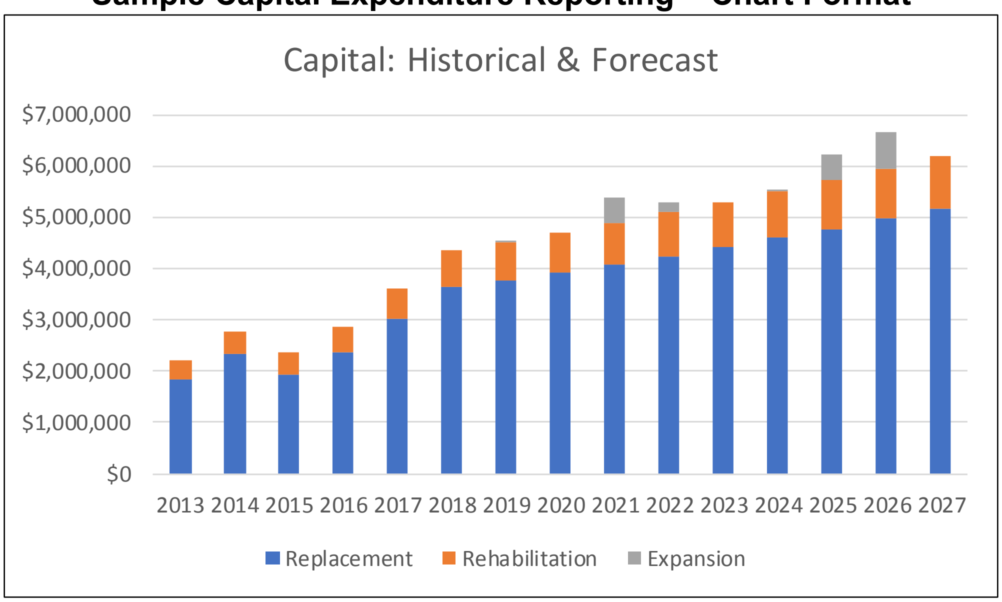
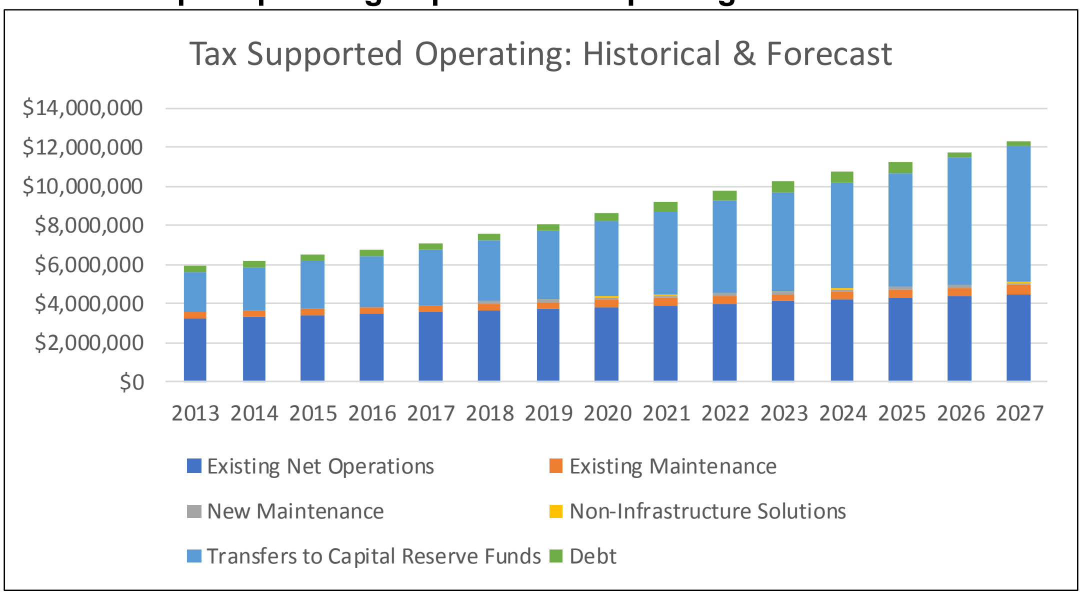


Table 6-22
Sample Operating Expenditure Reporting – Table Format

Tax Supported Operating (Historical & Forecast)

	Historical					**Forecast**		
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Existing Net Operations	3,252,000	3,330,000	3,410,000	3,492,000	3,574,000	3,659,000	3,745,000	3,835,000
Existing Maintenance	315,000	322,000	329,000	336,000	343,000	350,000	357,000	364,000
New Maintenance	-	-	-	-	-	127,000	129,500	132,100
Non-Infrastructure Solutions	-	-	-	-	-	30,000	30,600	31,200
Transfers to Capital Reserve Funds	2,070,000	2,220,000	2,420,000	2,620,000	2,820,000	3,051,261	3,468,082	3,871,552
Debt Payments	325,000	325,000	325,000	325,000	325,000	325,000	325,000	369,133
Total	**5,962,000**	**6,197,000**	**6,484,000**	**6,773,000**	**7,062,000**	**7,542,261**	**8,055,182**	**8,602,985**
	Forecast							
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	
Existing Net Operations	3,925,000	4,017,000	4,111,000	4,208,000	4,308,000	4,408,000	4,511,000	
Existing Maintenance	371,000	379,000	387,000	395,000	403,000	411,000	419,000	
New Maintenance	134,700	137,400	140,100	142,900	145,700	148,700	151,700	
Non-Infrastructure Solutions	31,800	32,400	33,000	33,600	34,200	34,800	35,400	
Transfers to Capital Reserve Funds	4,284,191	4,749,566	5,063,425	5,403,705	5,775,523	6,499,708	6,936,600	
Debt Payments	441,352	497,522	537,643	569,740	589,801	280,849	280,849	
Total	**9,188,043**	**9,812,888**	**10,272,168**	**10,752,945**	**11,256,223**	**11,783,057**	**12,334,549**	

Figure 6-11
Sample Operating Expenditure Reporting – Chart Format



6.14 Revenue Reporting

Providing a summary of historical and forecast revenues by source will enable municipalities to analyze trends in significant funding sources, and the ability to outline the contribution of each funding source to the overall asset management plan financing strategy over the long-term forecast period.

Does your financing strategy include yearly revenues broken down by confirmed source?

Background

Annual revenues by confirmed source should be reported as part of the asset management plan. This includes revenue sources such as taxation, user fees, debt, gas tax, other grants, reserves/reserve funds, etc. In addition, both historical and projected future revenue need to be represented in the analysis, either independently or in a combined analysis.

Levels of Maturity – Revenue Reporting

Does your financing strategy include yearly revenues broken down by confirmed source?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Both historical revenues of 2 - 4 years with forecast of future annual revenues included by confirmed source	**At least 5 years of historical revenues linked with forecast of future annual revenues by confirmed source**	**At least 5 years of historical revenues linked with forecast of future annual revenues included by confirmed source, complete with trend analysis**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Compile 2 - 4 years of historical revenue data, broken down by confirmed source for inclusion in the AM plan	1. Compile at least 5 years of historical revenue data, broken down by confirmed source for inclusion in the AM plan	1. Compile at least 5 years of historical revenue data, broken down by confirmed source for inclusion in the AM plan
	2. Create a summary table of projected future revenues, broken down by confirmed source for use in summarizing the financing strategy	2. Create a summary table of projected future revenues, broken down by confirmed source for use in summarizing the financing strategy	2. Create a summary table of projected future revenues, broken down by confirmed source for use in summarizing the financing strategy
		3. Combine historical revenue data with projected future revenues into a consolidated table	3. Combine historical revenue data with projected future revenues into a consolidated table, and complete a trending analysis and discussion

At the **basic level of maturity**, municipalities prepare two revenue summaries by confirmed source, with one representing historical annual revenues and the second including projected annual revenues. The two summaries would be prepared in isolation and not linked. The historical annual revenues for the past two to four years would be compiled by confirmed source and included in the asset management plan. A summary table would also be created of the projected future annual revenues, by confirmed source, for use in summarizing the financing strategy.

At the **intermediate level of maturity**, revenues are summarized by confirmed source with at least five years of historical revenues being linked, with a forecast of future annual revenues. This would require the municipality to compile at least five years of historical revenue data, by confirmed source, and include this information in the asset management plan. Projected annual future revenues summarized by confirmed source would be included in a summary table for use in summarizing the financing strategy. These two revenue summaries would be combined into a consolidated table, providing a more comprehensive and informative representation.

At the **advanced level of maturity**, the same steps undertaken at the intermediate level of maturity are followed. However, once the consolidated table of historical and projected revenues was prepared, a trend analysis would be undertaken. This would provide the opportunity to identify any tendencies that need further investigation, and to promote discussion about opportunities for managing revenue levels.

Revenue Reporting - Example

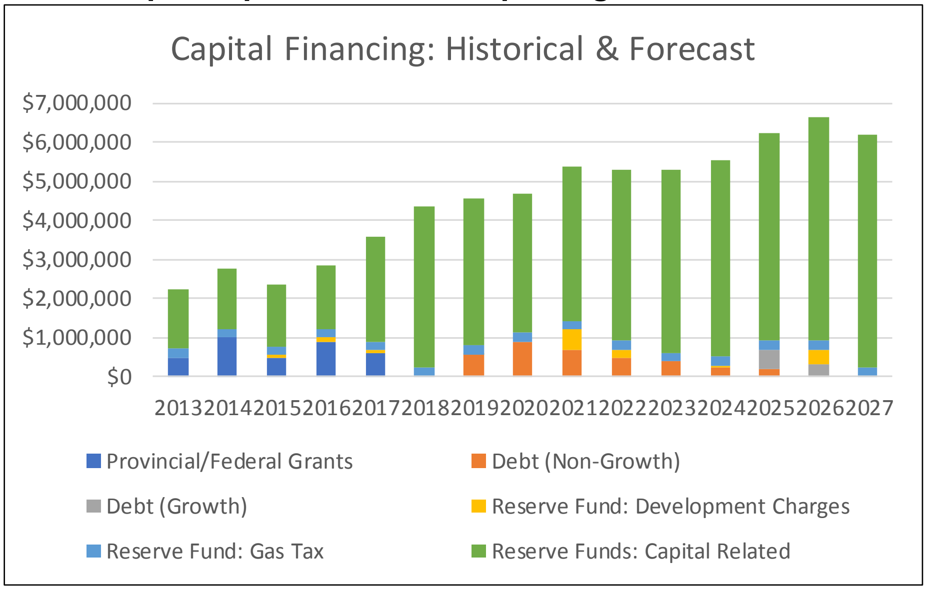
Table 6-23 and Figure 6-12 below are based on the financing strategy example (Scenario 1 – Issue Debt) outlined in other sections above:

Table 6-23
Sample Capital Revenue Reporting – Table Format

Capital Financing: Historical & Forecast

	Historical					Forecast		
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Provincial/Federal Grants	500,000	1,000,000	500,000	900,000	600,000	-	-	-
Debt (Non-Growth)	-	-	-	-	-	-	550,000	900,000
Debt (Growth)	-	-	-	-	-	-	-	-
Reserve Fund: Development Charges	-	-	50,000	100,000	80,000	-	30,000	-
Reserve Fund: Gas Tax	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000
Reserve Funds: Capital Related	1,500,000	1,550,000	1,600,000	1,650,000	2,700,000	4,130,000	3,754,000	3,585,000
Total	**2,220,000**	**2,770,000**	**2,370,000**	**2,870,000**	**3,600,000**	**4,350,000**	**4,554,000**	**4,705,000**
	Forecast							
	2021	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	
Provincial/Federal Grants	-	-	-	-	-	-	-	
Debt (Non-Growth)	700,000	500,000	400,000	250,000	200,000	-	-	
Debt (Growth)	-	-	-	-	500,000	300,000	-	
Reserve Fund: Development Charges	500,000	200,000	-	40,000	-	400,000	-	
Reserve Fund: Gas Tax	220,000	220,000	220,000	220,000	220,000	220,000	220,000	
Reserve Funds: Capital Related	3,973,200	4,368,900	4,672,400	5,034,300	5,304,400	5,733,700	5,971,900	
Total	**5,393,200**	**5,288,900**	**5,292,400**	**5,544,300**	**6,224,400**	**6,653,700**	**6,191,900**	

Figure 6-12
Sample Capital Revenue Reporting – Chart Format



6.15 Resources and References

Institute of Public Works Engineering Australasia, 2015, International Infrastructure Management Manual, https://www.ipwea.org/publications/bookshop/ipweabookshop/iimm

International Organization for Standardization (ISO), 2014, ISO 55000:2014, Asset management – Overview, principles and terminology, http://www.iso.org/iso/catalogue_detail?csnumber=55088

Province of Ontario, 1997, Development Charges Act, https://www.ontario.ca/laws/statute/97d27

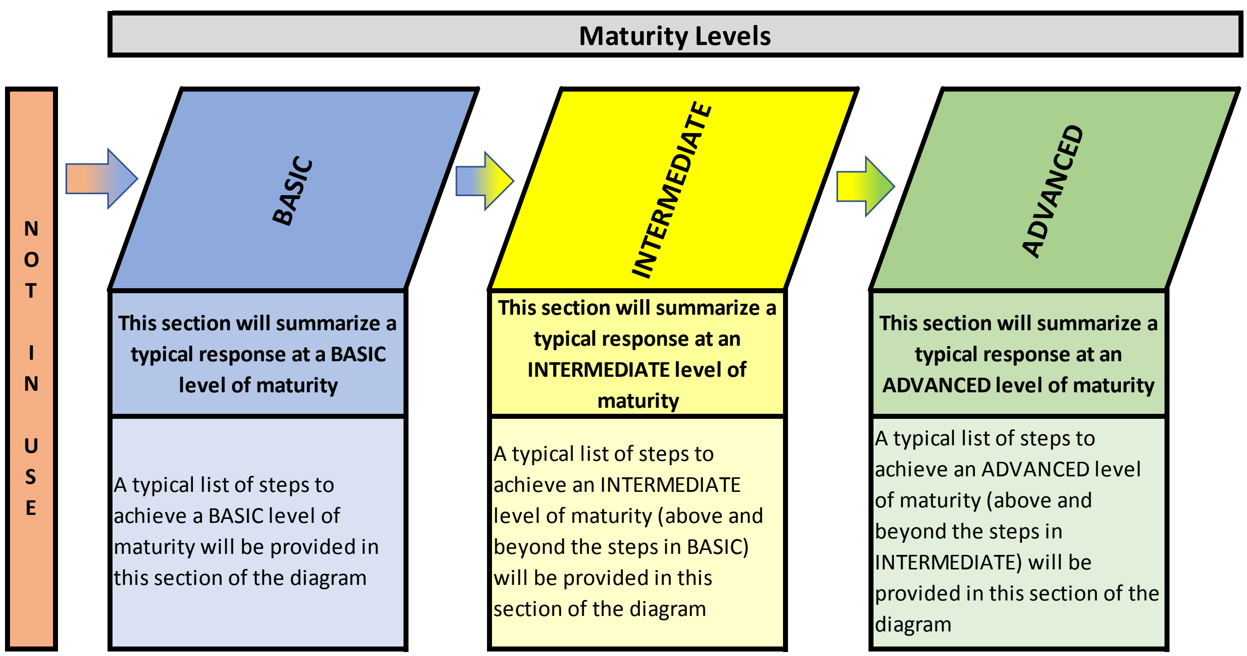
Province of Ontario, 2001, Municipal Act, 2001https://www.ontario.ca/laws/statute/01m25

Province of Ontario, Ministry of Infrastructure, 2012, Building Together: Guide for Municipal Asset Management Plans, https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans

7 Asset Management Integration

7.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices

to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic level* requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

7.2 Overview

Asset management should not be conducted as a stand-alone process. The elements of asset management, including identifying capital and operating budget requirements, financing options, delivery of services, risk assessment, and stewardship of assets impact other key processes across a municipality, and in some cases, are indelibly linked. As a municipality pursues its strategic goals, the integration of asset management with other processes helps facilitate a co-ordinated and consistent approach to meeting these goals.

From an operational perspective, integrating systems with common data can provide an opportunity for identifying efficiencies that may otherwise be missed. For example, by integrating related systems, data may only need to be recorded and updated once for various uses. This may reduce the staff effort needed to perform related data management duties. Further, having a more integrated set of systems reduces the chance for inconsistencies and errors between systems. In addition, integrated systems may facilitate more timeliness and help to ensure consistency of outputs when reporting is required from these systems.

When considering integration, it is important to keep in mind that this could entail a two-way interaction between asset management and other related processes. The impacts of changes to any one process should automatically trigger consideration of making corresponding adjustments to related policies and/or procedures. This chapter discusses the importance of integrating asset management planning with:

- Capital budget;
- Operating budget;
- Strategic plan; and
- Other policies and processes.

<u>Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements</u>

O.Reg 588/17 outlines the following requirements with respect to AM Integration:

A Strategic Asset Management Policy (SAMP) must be developed and adopted by *July 1, 2019* and reviewed and updated at least every 5 years. The SAMP should outline a number of potential areas of integration, including the requirement to/ for:

1. Identify which municipal goals, plans or policies the AM plan would support (e.g. official plan, strategic plan, master plans, etc.);
2. A process for how the AM plan is to be considered in the annual budget and any applicable long-term financial plans;
3. The principles to guide AM planning in the municipality, including principles identified in section 3 of the IJPA;
4. A process to ensure alignment of AM planning with water and wastewater financial plans, including any financial plans prepared under the Safe Drinking Water Act, 2002.
5. A process to ensure alignment of AM planning with Ontario's land-use planning framework, including any relevant policy statements issued under section 3(1) of

the *Planning Act*; Provincial plans as defined in the *Planning Act*; and, municipal official plans;

6. A discussion of capitalization thresholds used to determine which assets should be included in the AM plan and how the thresholds compare to the municipality's Tangible Capital Asset policy;
7. A commitment to coordinate planning between interrelated infrastructure assets with separate ownership structures by pursuing collaborative opportunities with upper-tier municipalities, neighbouring municipalities, and jointly-owned municipal bodies.

Every municipality shall prepare an asset management plan in respect of its core municipal infrastructure assets, as defined in the Regulation, by *July 1, 2021*, and in respect of all of its other municipal infrastructure assets by *July 1, 2023*.

7.3 Capital Budget Integration

Integrating the asset management plan with the capital budget process ensures that the asset management forecast is implemented. Conversely, updating the AM plan to reflect capital budget decisions allows a municipality to understand the long term impacts of those budget decisions.

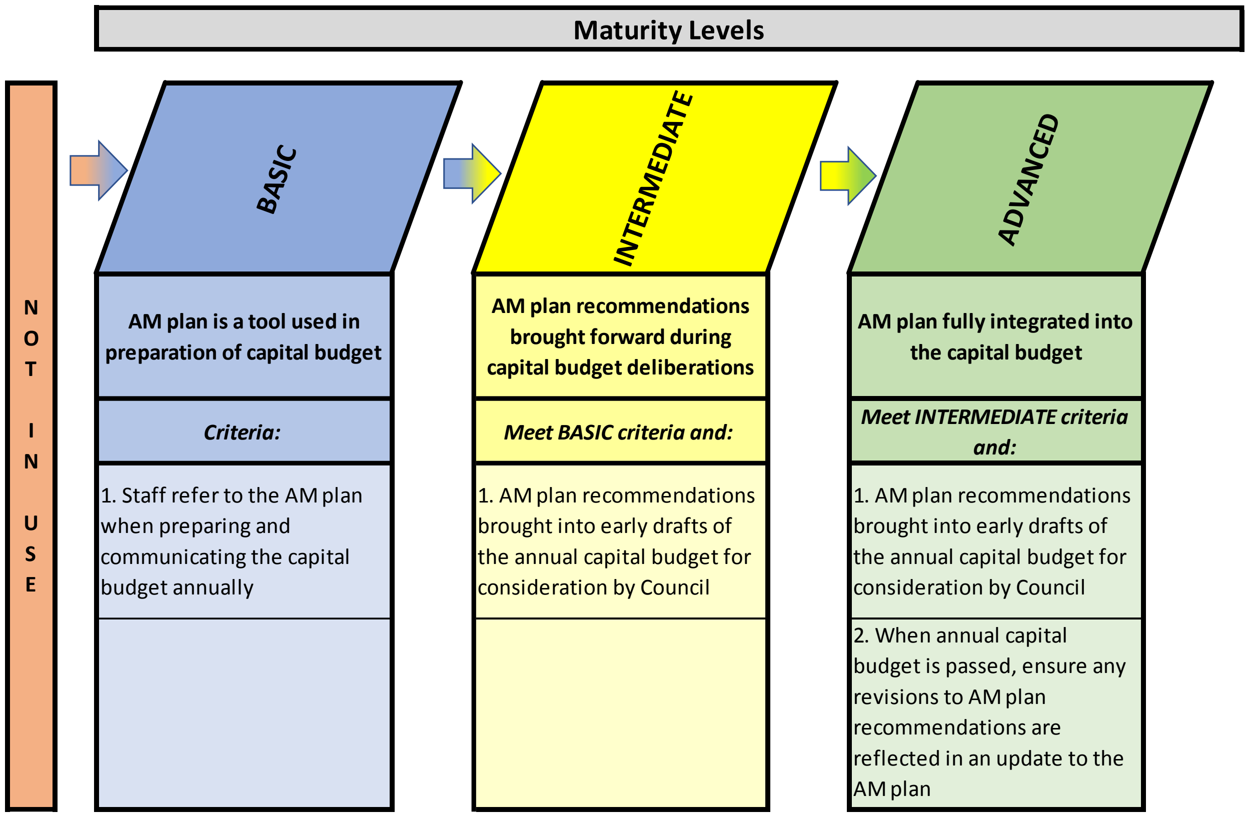
To what extent is the asset management plan integrated into the capital budget?

Background

The asset management plan forms the foundation for prioritizing long-term capital project requirements. Capital priorities and spending can be forecasted through the preparation of lifecycle management strategies, taking factors such as risk, condition, and service levels into account. This mirrors many of the decisions made when preparing a capital budget and long-term forecast each year as part of the budget process.

Levels of Maturity

To what extent is the asset management plan integrated into the capital budget?



At the **basic level of maturity**, the asset management plan is used as a source of information in preparing the capital budget. Typically, staff refer to relevant elements of the asset management plan as they prepare and communicate details related to the capital budget. However, at the basic level of maturity, as the capital budget progresses through the deliberation process, the connection to the asset management plan may be lost.

At the **intermediate level of maturity**, asset management recommendations are brought forward during the early drafts of the annual capital budget deliberations with Council. This provides the opportunity to link the benefits gained from proper asset management into the capital budget process, and the opportunity to assess the related impacts on each at the Council level. At the intermediate level of maturity, as the capital budget process progresses its connection and relationship to the asset management plan may still be broken.

At the **advanced level of maturity**, the asset management plan is fully integrated into the annual capital budget. Asset management recommendations are brought forward during the early drafts of the annual capital budget deliberations with Council. This provides the opportunity to link the benefits gained from proper asset management into the capital budget process, and the opportunity to assess the related impacts on each at the Council level. When the annual capital budget is passed, any impacts to the asset management plan recommendations should be identified and included in an update to the asset management plan.

Asset Management and the Capital Budget

The capital budget preparation process mirrors the processes required to prepare an asset management plan. In a way, they can be treated as one and the same process, in that:

- Capital assets are analyzed to identify priorities;
- Service levels to be provided to the community are identified; and
- A recommended approach to financing capital priorities is determined.

The combination of the state of local infrastructure, levels of service analysis, lifecycle management strategies, and financing strategies outlined in the asset management plan form a logical foundation upon which the capital budget (and long-term capital forecast) can be prepared.

As municipalities deliberate on the capital budget, it is common for capital priorities to change or for financing alternatives to be amended based on ongoing communication and interaction with Council. This can occur for many reasons such as new financial constraints, changing direction from Council, legislative changes, levels of service amendments. Depending on the municipality's level of integration, updates to both the capital budget and AM plan may be required to keep them aligned when the capital budget is passed. Keeping these processes aligned allows staff to coordinate the impact of Council decisions on the capital budget over a long-term time horizon from an asset condition/risk, service level, and available financing perspective, all within the AM plan.

7.4 Operating Budget Integration

Similarly to the capital budget integration, integrating the AM process with the operating budget ensures the implementation of AM recommendations and an understanding of the impacts of operating budget decisions on AM performance.

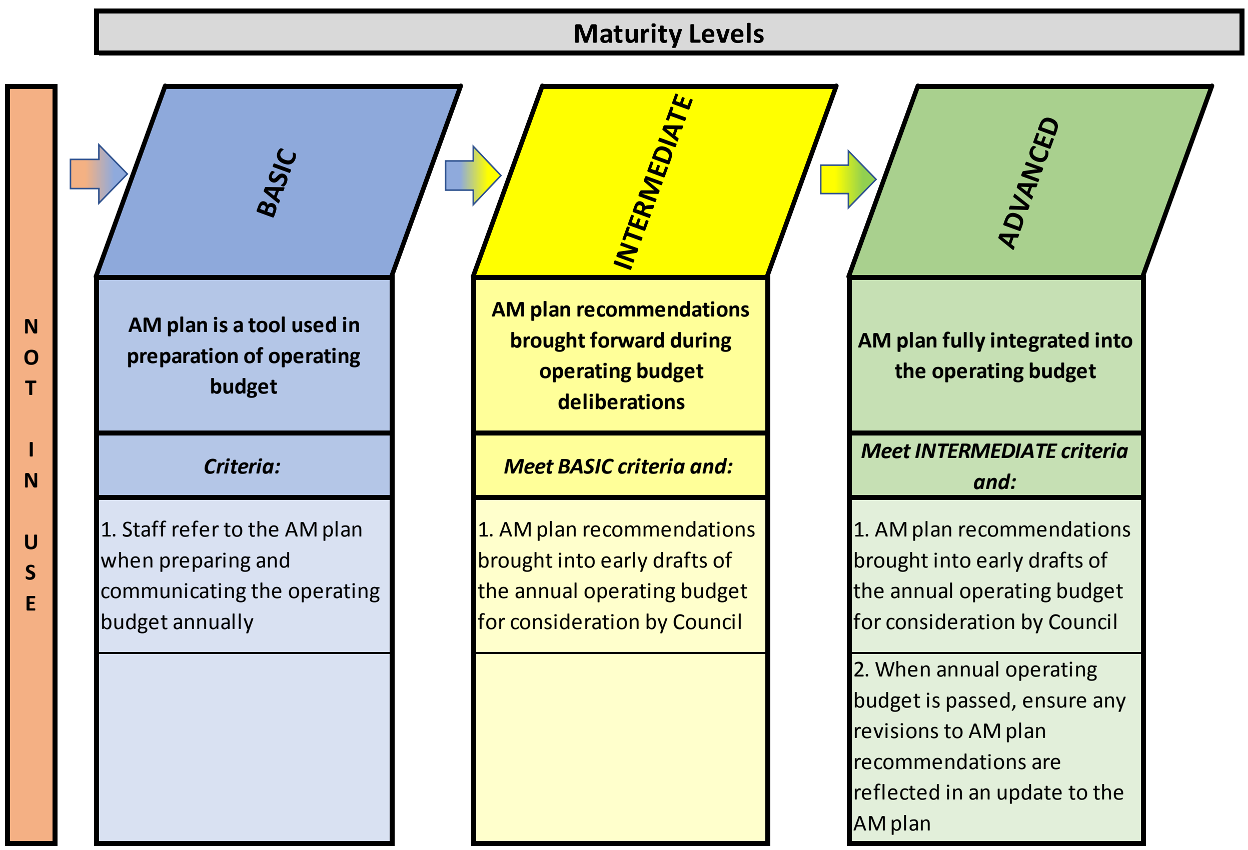
To what extent is the asset management plan integrated into the operating budget?

Background

Asset management plans provide key inputs into the operating budget. This is due to the fact that lifecycle management strategy outlines non-infrastructure solutions, asset maintenance needs, and other operational costs, which provides a more exact level of operating expenditure requirement than simply basing maintenance budgets on previous year plus an inflationary increase.

Levels of Maturity

To what extent is the asset management plan integrated into the operating budget?



At the **basic level of maturity**, the asset management plan is used as a source of information in the preparation of the operating budget. Typically, staff refer to relevant elements of the asset management plan as they prepare and communicate details related to the operating budget. However, at the basic level of maturity, the connection to the asset management plan may be lost as the operating budget progresses through the deliberation process.

At the **intermediate level of maturity**, asset management recommendations are brought forward during the early drafts of the annual operating budget deliberations with Council. This provides the opportunity to link the benefits gained from proper asset management into the operating budget process, and the opportunity to assess the related impacts on each at the Council level. At the intermediate level of maturity, as the operating budget process progresses its connection and relationship to the asset management plan may be broken.

At the **advanced level of maturity**, the asset management plan is fully integrated into the annual operating budget. Asset management recommendations are brought forward during the early drafts of the annual operating budget deliberations with Council. This provides the opportunity to link the benefits gained from proper asset management into the operating budget process, and the opportunity to assess the related impacts on each at the Council level. When the annual operating budget is passed, any impacts to the asset management plan recommendations are identified and reflected in an update to the asset management plan.

Asset Management and the Operating Budget

Operating impacts identified though the asset management process include:

- Non-infrastructure solutions;
- Asset maintenance and operating needs; and
- Financing strategy related implications.

Non-infrastructure solutions that are considered part of the lifecycle management strategy will generally have operating-related financial impacts, while affecting capital related decisions, such as useful life and lifecycle costing. Non-infrastructure solutions may include additional costs (e.g. study costs), or cost savings (e.g. fewer inspections of low risk assets). In either circumstance, these impacts should be reflected in the lifecycle management strategy of the AM plan and will have implications on future operating budgets. Non-infrastructure solutions are discussed in more detail within Chapter 5.

Similar to non-infrastructure solutions, asset maintenance and operating-related needs have financial impacts on the operating budget. These impacts may be in the form of costs (e.g. road crack sealing program) or savings (e.g. hydro impacts from LED streetlight program). Whether costs or savings, the impacts are reflected in the lifecycle management strategy and have implications on future operating budgets.

A funding analysis is useful to undertake as part of the financing strategy of the AM plan and as part of the operating budget (i.e. analyses of taxation, user fees, other revenue, debt, and reserves/reserve funds). Both processes can have very similar funding strategies. However, Council may ultimately pass an operating budget that could look quite different from the AM plan estimates. Some areas of impact include:

- **Taxation levy and user fee amounts:** The operating budget will determine the actual taxation levy or user fee rates (e.g. water and wastewater, recreation facilities, etc.) for the year which might differ from estimates within the AM plan.
- **New debt:** The anticipated issuance of debt to fund budgeted capital projects will create future principal and interest costs to be included in current and future budgets. These financial impacts may not have been anticipated in the preparation of the AM plan, or proposed debt within the AM plan may not be approved within the budget process.
- **Reserve/reserve funds:** The reserve/reserve fund strategies will also impact on the operating budget, as the funding of the capital reserve funds from the operating budget will need to be incorporated. These strategies may differ between what has been originally projected in the AM plan and what is ultimately approved to be included in the operating budget.
- **Other revenues**: Grants or other irregularly available revenues may become known during the budget process that may not be reflected in the AM plan, or vice versa.

As municipalities deliberate on the operating budget, it is common for operating priorities to change, variables (such as inflation) to be amended, or financing alternatives to be edited. These changes can occur for many reasons such as new financial constraints, changing direction from Council, legislative changes, or levels of service amendments. It is important to revise the asset management plan accordingly to ensure consistency between the asset management plan and final operating budget passed by Council.

Timing and sequence determines whether or not the AM plan or budget is most accurate (i.e. which one was created last, based on most recent data, assumptions and variables?). Full integration of the operating budget with the AM plan ensures both use consistent and accurate results. Therefore, it is recommended that as one is updated, the other is also.

7.5 Strategic Plan Integration

Integration with the strategic plan ensures that the asset management process is aligned with the municipality's overall goals and objectives.

To what extent is the asset management plan integrated with the municipality's strategic plan?

Background

A strategic planning process can help a municipality establish an overall corporate vision, mission, and goal. It is a critical process that examines where a municipality is now, where it wants to go, and how it should get there. It will help the municipality identify action priorities that are consistent with the established corporate goals. A strategic plan is a "living document" that is regularly updated (usually every 5 years). AM-related missions and goals can become a component of the overall corporate strategic plan. Moreover, the decisions made within the strategic planning process can provide valuable input into the AM planning process.

Levels of Maturity

To what extent is the asset management plan integrated with the municipality's strategic plan?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Some strategic plan recommendations are brought forward during AM plan preparation	**All strategic plan recommendations are brought forward during AM plan preparation**	**Strategic plan is fully integrated into the AM plan**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Staff refer to the strategic plan when preparing and communicating any AM plan updates	1. All strategic plan recommendations brought into the AM plan for consideration by Council	1. All strategic plan recommendations brought into the AM plan for consideration by Council
			2. When strategic plan is updated, ensure any revisions to AM plan are reflected in an update to the AM plan

At the **basic level of maturity**, some strategic plan recommendations are brought forward during the preparation of the asset management plan. Typically, staff refer to relevant elements of the strategic plan as they prepare or update the asset management planning process. However, there may be some gaps or inconsistencies between the strategic plan and the asset management planning process. At this level, asset management is likely not a key component to the strategic plan.

At the **intermediate level of maturity**, all strategic plan recommendations are brought forward during the preparation of the asset management plan. Staff should be aware of all interrelated strategic plan recommendations and should strive to maintain consistency between the objectives of the strategic plan and the asset management planning process, where applicable. This should allow Council to consider the asset management plan since they will know that it conforms to provisions of the strategic plan.

At the **advanced level of maturity**, all strategic plan recommendations are brought forward during the preparation of the asset management plan. Staff are aware of all interrelated strategic plan recommendations and strive to maintain consistency between the objectives of the strategic plan and the asset management plan. This should allow Council to consider the asset management plan since they will know that it conforms to provisions of the strategic plan. In addition, when there are updates to the strategic plan, possible updates to related provisions in the asset management planning process should be considered.

Asset Management and Strategic Planning

The overall corporate vision, mission, and goals of the municipality should be considered when updating or creating an asset management plan. Typically this information is recorded in a municipality's strategic plan. Like the strategic plan, the asset management planning process has a long-term view. To meet strategic planning goals, all necessary infrastructure must be in place to successfully provide necessary service levels. Thus, there must be a connection between the two processes. Such connection can happen by updating related provisions of the asset management plan any time the strategic plan is modified. Doing so will maintain consistency between the plans. This can be done by aligning the timing of a new strategic plan with a corresponding planned update to a municipality's AM plan. It should be noted, however, that aligning the timing does not necessarily mean undertaking both at the same time as this could be difficult to do. Alignment in this context refers to the need to recognize the latest updates of the other document, whenever these take place.

The levels of service analysis is a key component to asset management (see Chapter 4). Initial sections of Chapter 4 discuss the identification of municipal services and the process of determining community expectations on those services. This process, while directly related to asset management, can also form future updates to the strategic plan. If the ultimate objective of a municipality is to provide services to the community, overall levels of service and changes to levels of service should be reflected in the strategic plan. Conversely, to initiate the process in Chapter 4 (of establishing a levels-of-service analysis), future anticipated strategic plan updates could form the foundation of this analysis. This methodology can produce the additional benefit of ensuring that the levels of service expectations would have been discussed and approved by Council before making its way into the AM planning process. Consequently, the levels of service analysis would then be consistent with Council's vision for the municipality.

A second aspect to the strategic planning process is the possibility to link the strategic plan to departmental goals and objectives and then link individual staff goals and objectives to these departmental goals and objectives. With this philosophy, municipal staff work towards departmental goals, which in turn assists departments in working towards corporate goals, which in turn are in line with the overall organizational mission and vision within the strategic plan. This extended process could also be used to enhance the levels of service analysis within AM planning, as discussed in Chapter 4. What the various departments and staff members do on a day-to-day basis to meet respective departmental goals and objectives could inform the technical levels of service analysis, which demonstrates what the municipality will do to move towards expected levels of service.

7.6 Integration with PSAB 3150 (Tangible Capital Assets)

Integration with a municipality's tangible capital asset listing (used for accounting purposes) assists with a more efficient upkeep of all asset data.

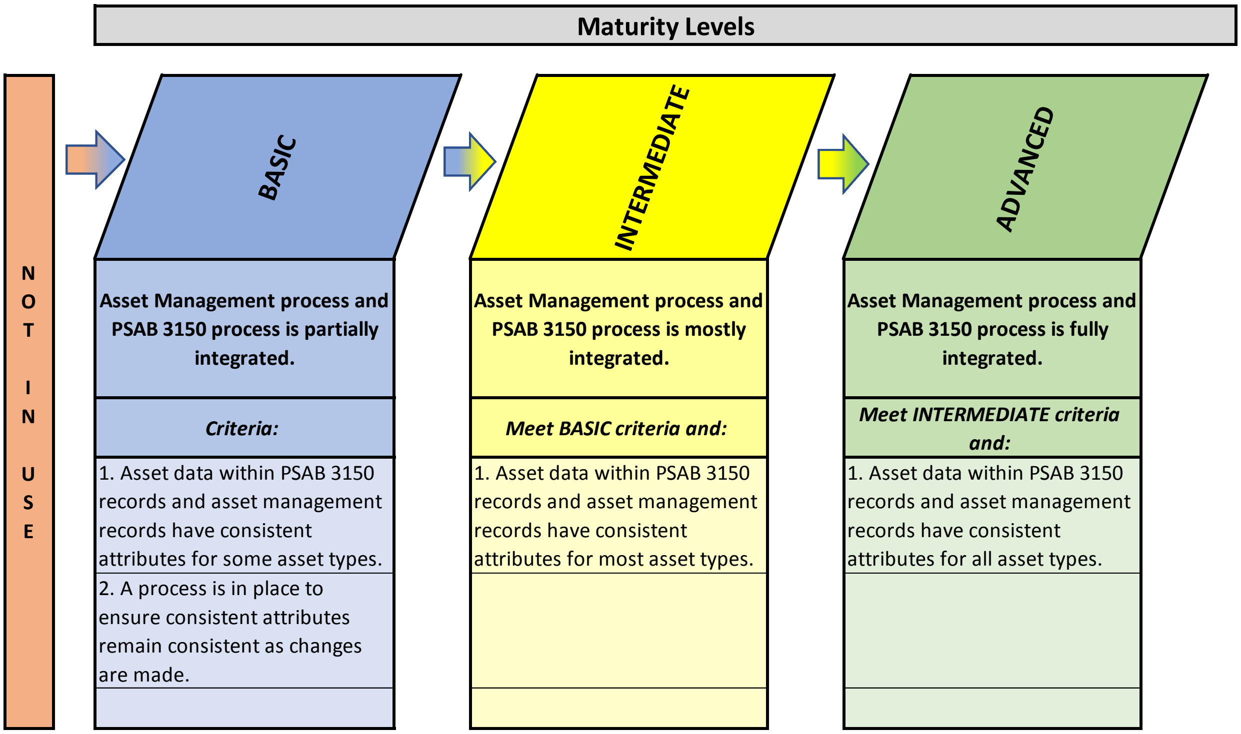
To what extent is the asset management plan integrated with PSAB 3150 asset data?

Background

Both the PSAB 3150 requirements and the asset management requirements are based on a list of assets with key attributes and asset costing. However, the approaches of attribute identifying and costing differ in each requirement. Both require the ability to keep the asset listing up-to-date and accurate, so that resulting calculations are accurate. Municipalities must determine if there is enough commonality among the PSAB 3150 process and AM process to justify integration.

Levels of Maturity

To what extent is the asset management plan integrated with PSAB 3150 asset data?



At the **basic level of maturity**, the asset management process is partially integrated with PSAB 3150. Asset attributes are consistent for some asset types, and a process exists to ensure consistency as change occurs.

At the **intermediate level of maturity**, the asset management process is mostly integrated with PSAB 3150. Asset attributes are consistent for most asset types, and a process exists to ensure attribute consistency as changes are made.

At the **advanced level of maturity**, the asset management process is fully integrated with PSAB 3150. Asset attributes are consistent for all asset types.

Asset Management and PSAB 3150

Integrating the asset management and PSAB processes enables a municipality to use asset attributes that are consistent between processes to perform calculations and meet legislative requirements. While the calculations (i.e. lifecycle costing versus amortization) and the costing (replacement cost versus historical cost) are quite different, information such as asset additions, disposals, asset impairments, length, width, and material type can be useful in both cases. Rather than having this data updated and maintained twice each time an asset changes, integration allows the ability to only update and maintain this data once.

Some areas to consider when determining whether to integrate asset management and PSAB 3150 data:

- **The level of effort to establish the integration**. Some municipalities have determined that the most efficient approach to this integration is to use a municipality's asset management data to "restate" PSAB 3150 asset data. This involves recalculating historical cost, accumulated amortization, net book value, etc. based on asset management data. External auditors should be consulted during this exercise.
- **The amount of savings (time and resources) from having the integration in place**. If a municipality has under a dozen capital transactions a year, the amount of time it takes to establish the integration may greatly exceed the annual savings with respect to time and resources.
- Establishing a common asset identifier (see Chapter 3).
- **What will the relationship be between asset processes?** Will the asset data reside in one consolidated register, or will the data reside in multiple registers that "speak to each other"?
- Determine if any asset management tools may make this process more efficient (see Chapter 9).

7.7 Integration with Other Processes/Documents

Integration with broader municipal processes and documents enables more consistent and efficient organizational planning towards stated corporate objectives.

To what extent is the asset management plan integrated with other policies/processes?

Background

A municipality ability to meet its goals and service levels largely depends on whether it has sufficient infrastructure/assets with appropriate conditions, functionalities and capacities, and whether it can mitigate risk. This infers that many policies and processes, from all aspects of the municipality, will have a connection to elements of the asset management planning process. The more asset management is integrated into the fabric of municipal operations, the more efficient and effective these policies and processes become.

Levels of Maturity

To what extent is the asset management plan integrated with other policies/processes?

	Maturity Levels		
NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	Some organizational policies and processes are brought forward during AM plan preparation	**All relevant organizational policies and processes are brought forward during AM plan preparation**	**Relevant organizational policies and processes are fully integrated into the AM plan**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Staff refer to relevant organizational policies and processes when preparing and communicating any AM plan updates	1. All relevant organizational policies and processes brought into the AM plan for consideration by Council	1. All relevant organizational policies and processes brought into the AM plan for consideration by Council
			2. When relevant organizational policies and processes are updated, ensure any revisions to AM plan are reflected in an update to the AM plan

At the **basic level of maturity**, some organizational policies and processes are brought forward into the asset management planning process. Typically, staff refer to relevant organizational policies and processes as they prepare or update the asset management plan. However, staff may not be in a position to be aware of all potentially interrelated policies and processes, and thus some inconsistencies may occur between objectives of these policies and processes and the asset management planning process.

At the **intermediate level of maturity**, all organizational policies and processes are brought forward within the asset management planning process. Staff are aware of all interrelated policies and processes and strive to maintain consistency between the objectives of these policies and processes and the asset management planning process. This allows Council to consider the asset management plan, since they will know that it conforms to provisions of other policy directions.

At the **advanced level of maturity**, all organizational policies and processes are brought forward during the asset management planning process. Staff are aware of all interrelated policies and processes and strive to maintain consistency between the objectives of these policies and processes and the asset management plan. This allows Council to consider the asset management plan, since they will know that it conforms to provisions of other policy directions. In addition, when there are updates to other policies and processes, consideration can be given to making corresponding updates to related provisions in the asset management planning process. In essence, full integration of policies and plans across the municipality is the goal.

Asset Management and Other Municipal Processes

The following list provides examples of municipal processes, policies or strategies that have some connection to the AM process:

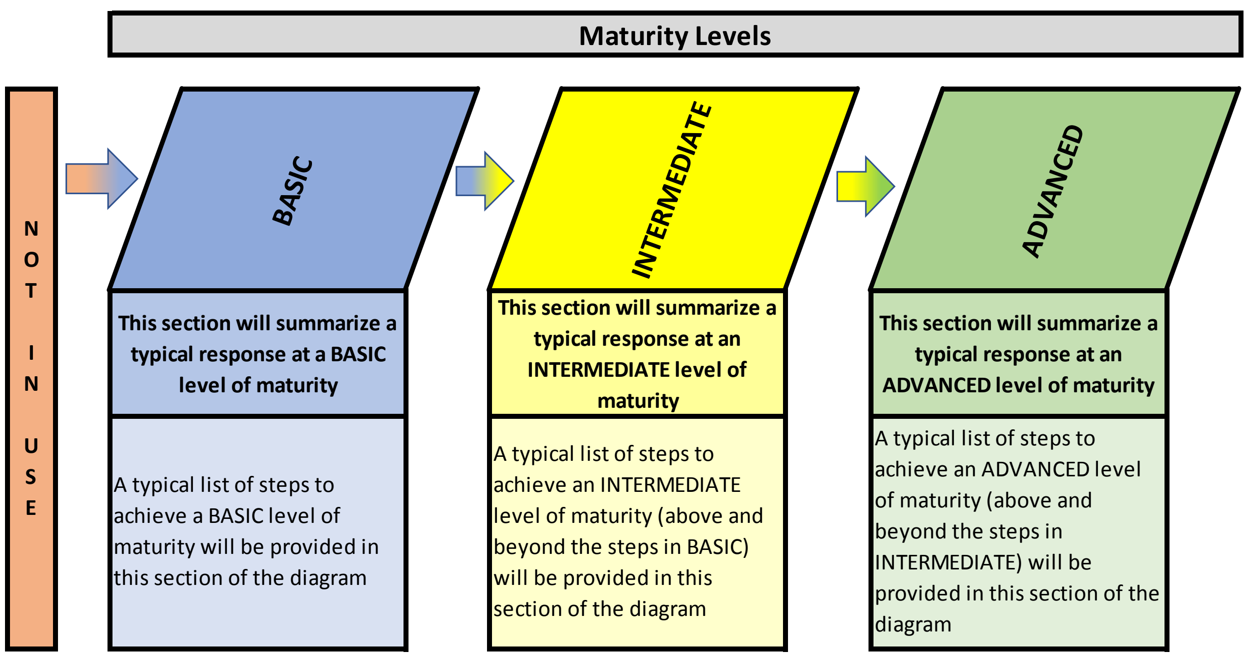
- Official Plan (and Secondary Plans);
- Purchasing (Procurement) Policy;
- Service Standards Policy;
- Master Plans (Transportation, Fire, Parks, Recreation, etc.);
- Fees & Charges Bylaws/Studies;
- Growth/Servicing Plans;
- Financial Policies/Strategies:
    - Use of reserves/reserve funds;
    - Use of debt;
    - Use of Gas Tax funds;
    - Grant application policy;
    - Overall budget funding (or Council direction) policies.

These processes, if used and integrated into the asset management planning process, ensure not only increased accuracy of future asset management plans, but they also provide Council with the comfort that all municipal policies they have approved were followed in the development of the AM plan.

8 Continuous Updates and Improvements

8.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake in order to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices

to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic leve*l requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

8.2 Overview

Asset management planning is a continuous process, meaning municipalities should view their asset management plans as “living documents”, which will need continuous updates and improvements. Maintaining and updating the various tools, plans, policies, and strategies of an asset management plan is a major part of the ongoing work required to keep an asset management process operational. Furthermore, implementing improvements to the asset management process introduced brought about by innovation, technological and process advancements, or upgrades to existing assets are necessary in order to ensure optimal planning over time.

This chapter discusses ideas and strategies of how to navigate the analysis, planning, and execution needed in order for a municipality to nurture its asset management process over time.

Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements

O.Reg 588/17 outlines the following requirements with respect to AM Updates and Improvements:

A Strategic Asset Management Policy (SAMP) must be developed and adopted by *July 1, 2019* and reviewed and updated at least every 5 years. The SAMP outlines the requirement to consider the municipality's approach to continuous improvement and adoption of best practices regarding AM planning.

In addition, a municipality's AM plan must be reviewed and updated at least every 5 years.

8.3 Updates to Asset Management Planning Process

Continuous updates to the asset management planning process are needed due to changes in asset data, calculation assumptions, policies and strategies, and overall corporate direction.

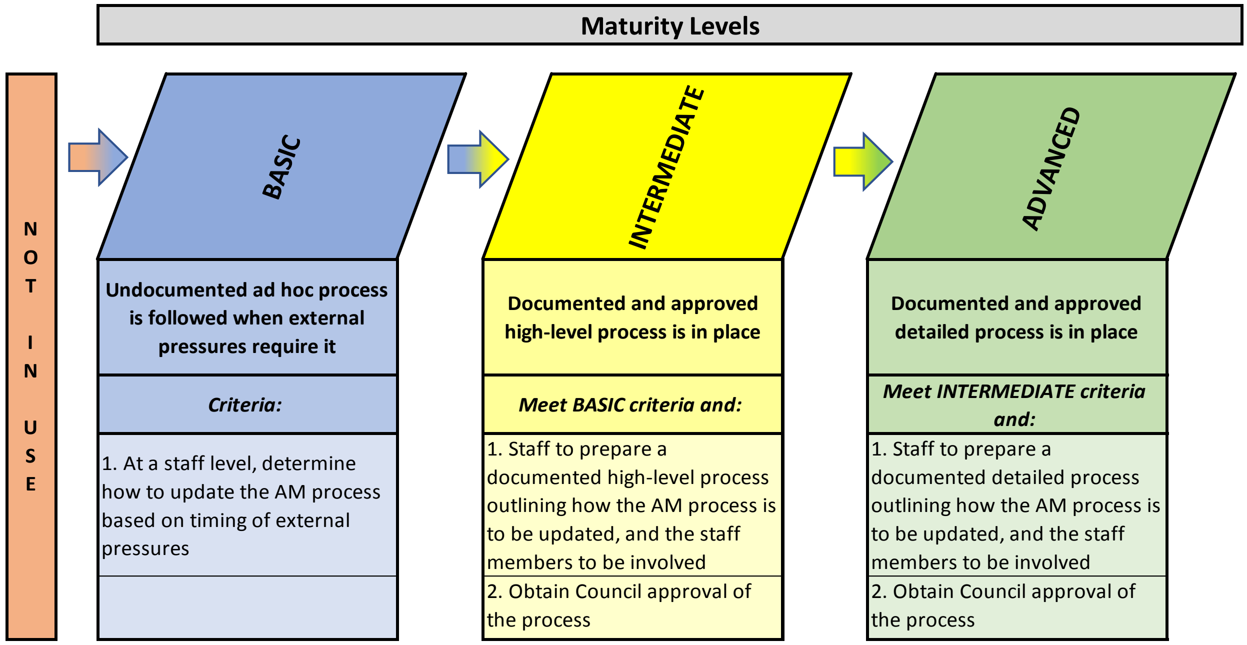
Does the municipality have a process in place to update the asset management planning process?

Background

A municipality that has an established long-term asset management process will, over time, encounter situations where updates to the assumptions, variables, and content need to be made. These types of updates are vital for the AM process as it ensures all planned actions are based on the most current data available. To this end, this section discusses updates that a municipality may undertake to ensure its asset management process can remain accurate.

Levels of Maturity – Updating the Asset Management Planning Process

Does the municipality have a process in place to update the asset management planning process?



At the **basic level of maturity**, municipalities update the asset management planning process when external pressures necessitate it (such as applying for a capital grant). Further, there is typically no documentation available to outline the process to follow when updating the asset management planning process (including the AM plan). As such, updates to the asset management planning process are typically carried out on a reactionary basis. Municipal staff determine how and when to update the asset management process based on the timing of external pressures. Some high level commentary on AM updates can be found in the municipality's AM policies/strategies (see Chapter 2) as required in O.Reg 588/17.

At the **intermediate level of maturity**, municipalities have an approved and documented high-level process in place to guide updates to the asset management planning process (including the AM plan). To reach this level, staff will need to prepare a document that outlines how the asset management process is to be updated, and which staff members should be involved in the process.

At the **advanced level of maturity**, municipalities have an approved, documented and detailed process in place to guide updates to the asset management planning process in place (including the AM plan). Staff prepare a document that outlines how the asset management planning process is to be updated, the schedule to which to adhere for the updates, and which staff members should be involved in the updates.

Strategy and Policy Updates

As discussed in *Chapter 2: Policies*, asset management strategies and policies guide the development and ongoing maintenance of the asset management process. This document (or documents) should mandate the frequency and content of asset management updates (both process related and asset management plan related). Municipal staff should use the strategies and policies in place as a starting point on how to initiate updates. Strategies and policies may suggest the timing of a review process for all components of the asset management process, including: plans, inventories, tools, and the strategies and policies themselves. For example, a potential policy could be to “perform a comprehensive review of all components of the asset management process every four years”.

Another purpose of performing updates to asset management policies and strategies is to ensure the asset management process remains consistent with overall corporate strategies and objectives. As corporate strategies change, corresponding changes should be made to the asset management process.

Asset Management Plan Updates

Updates to an asset management plan can come in formats and complexities that can result in a wide range of actions necessary to implement them. For instance, a municipality that has recently discovered that it will receive increased grant funding for a major capital project may have to look into updating the lifecycle management strategy for updated project costing and timing, and the financing strategy to account for the grant itself. This is more of a “self-contained” update that flows through the entire asset management plan. However, if a municipality identifies that a specific level of service in a particular area is no longer sufficient, it may require the entire asset management plan to be updated (i.e. a more comprehensive update).

A clearly defined process should be included in the asset management policies and strategies that spells out who is responsible for carrying out updates, and how frequently these updates should be performed. Examples are as follows:

- Identify roles of staff who are responsible for updates.
- Determine how frequently staff should be performing updates while considering future needs. This could be tied to legislative requirements, such as updating condition assessments for bridges every 2 years in line with Ontario Structure

Inspection Manual (OSIM) requirements, or recording asset acquisitions and disposals annually in accordance with financial reporting (PSAB) requirements.
- Outline exactly what is to be updated, and how. This ensures consistency from one update to the next.
- Document the approval process needed for each update (including Council input/approval and public involvement). This will be discussed in more detail in later Chapters.

Examples of asset management plan updates include:

<u>State of Local Infrastructure (see Chapter 3)</u>

- How and when asset acquisitions and disposals should be monitored and updated (i.e. is this in conjunction with annual PSAB updates?);
- Asset condition, risk, and current valuation are constantly evolving and should be reviewed/updated;
- Remaining service life should be updated annually (as condition is updated); and
- Other asset attributes that a municipality may collect should be reviewed and updated (e.g. asset maintenance levels, capacity, functionality, etc.).

<u>Levels of Service (see Chapter 4)</u>

- How and when to review and reassess services being provided, and community/customer expectations for each service;
- How and when to review strategic (community) LOS and technical LOS including whether or not “current LOS” has changed since the last update, and if “expected LOS” is any different than originally stated;
- Update performance measures, review the trending analysis to determine progress towards expected service levels, and determine if new performance measures are needed; and
- Reassess the overall impact the LOS analysis has on the lifecycle management strategy.

<u>Lifecycle Management Strategy (see Chapter 5)</u>

- Review projected lifecycle costs (non-infrastructure solutions, maintenance and operations, rehabilitation, replacement, and expansion) over the forecast period based on:
  - Revised asset data;

- Updated LOS analysis;
- Updates to other inter-related processes (master plans, capital needs studies, expansion related studies, budget process, etc.); and
- Updates to the municipality's capital priorities.

Financing Strategy (see Chapter 6)

- Updates from other sections of the asset management plan (State of Local Infrastructure, Levels of Service, and the Lifecycle Management Strategy) and how they impact potential funding sources;
- Updates to other inter-related processes (budget process, rate studies, etc.);
- Updates due to new information on available funding sources (grants, third party contributions, taxation, user fees, debt, etc.);
- Adjustments to financial indicators (i.e. infrastructure gap, funding gap, other ratios) due to actual results; and
- Updates to historical operating and capital information due to actual results.

8.4 Improvements to the Asset Management Process

Continuous improvements to the AM process ensure that it keeps pace with the changing needs of the organization, as well as with evolving best practices, legislative requirements, and new technologies.

Does the municipality have a process in place to incorporate improvements into the asset management planning process?

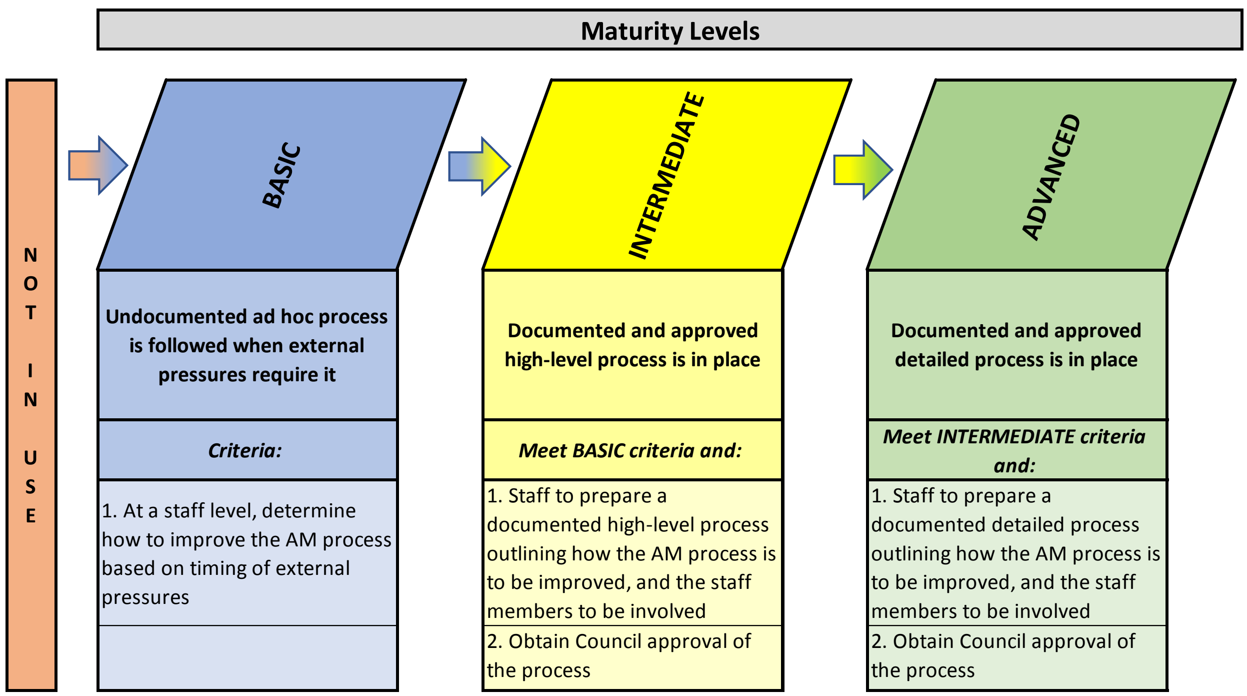
Background

Improvements to elements of an asset management process are important for ensuring that it is meeting the evolving needs of the municipality. Remaining in line with best practices, new technologies, and legislative changes is key to meeting these needs. Networking with colleagues in other municipalities, attending relevant seminars/conferences, remaining current with related technological journals and/or magazines, and becoming involved in professional organizations can provide different approaches and strategies to succeeding in asset management planning.

This section on updates and improvements differs from the previous section (which focused on "updates" to your asset management *process*), and focuses instead on updates related to ensuring your *existing strategies*, *policies*, *data*, and *variables* are updated as needed over time. Improvements relate to evolving and changing a municipality's strategies, policies, and asset management framework to make them better. "Better" in this context can mean more effective, more efficient, more informative, more accurate, and so forth. It is safe to say that a municipality will never be "done" implementing asset management planning. It is a process that develops and evolves over time.

Levels of Maturity – Asset Management Planning Improvements

Does the municipality have a process in place to incorporate improvements into the asset management planning process?



At the **basic level of maturity**, municipalities incorporate improvements into the asset management planning process when external pressures necessitate it. Further, there would be no documentation available which would outline how to incorporate improvements into the asset management planning process. As such, asset management planning improvements are done on a reactionary basis with municipal staff determining how and when to incorporate improvements into the asset management process based on the timing of external pressures. Some high level commentary on AM improvements can be found in the municipality's AM policies/strategies (see Chapter 2) as required in O.Reg 588/17.

At the **intermediate level of maturity**, municipalities have an approved and documented high-level process in place for incorporating improvements into the asset management planning process. To implement improvements, staff prepare a document outlining how the asset management process is to be updated to reflect improvements as well as the staff members to be involved in the process.

At the **advanced level of maturity**, municipalities have an approved and documented detailed process in place for incorporating improvements into the asset management planning process. To accomplish this, staff need to prepare a document that outlines how the asset management process should be updated to reflect improvements, the schedule to adhere to for implementing the improvements, and for which staff members should be involved in the improvements.

Identifying Areas of Improvement

There are challenges that come from improving an asset management process, including: identifying where areas of weakness are; what "ideal" means specifically to the municipality: how to provide solutions to bridge any gaps: and which improvement solution is right to pursue. In addition, the frequency of implementing improvements should be identified. The following represents a suggested approach:

- **Develop an Asset Management Improvement Strategy**: An improvement strategy should be included in a municipality's overall asset management strategies and policies. Aspects of the improvement strategy might include an indicator for how and when asset management improvements are to be sought out and implemented. For example, if a municipality decides to complete a full update of their asset management plan every "X" years at a minimum, the improvement strategy should require an analysis of ways to improve the process before the update is started.
- **Identify Shortcomings and Weaknesses**: Locating all shortcomings may not be an easy task, especially if the outputs from the system appear to be functioning adequately. However, "functioning adequately" does not necessarily translate into "functioning optimally".
    - This guide provides differing levels of maturity (basic, intermediate, and advanced) for many asset management components and can be a useful tool in identifying areas of improvement in a municipality's current processes.

   - A municipality should look at asset management areas that, if improved, could provide increased benefit inside the organization (both in asset management and in other areas). An approach for assessing weaknesses/deficiencies would be to identify areas of the asset management process that the municipality struggled with during the last round of updates.
- **Identify Optimal or Ideal Solutions**: With a weakness identified, the municipality should attempt to define what the asset management area should look like or how it should function in order to provide increased or optimal benefit to the organization. A review of asset management best practices or discussing asset management with other municipalities could identify improvements that were not considered in the past. It should be noted that there may be multiple approaches to dealing with a single issue. In such cases, each municipality will need to determine what the optimal solution is, based on their specific circumstances.
- **How to Close the Gap**: A potential improvement to the asset management process involves closing (or minimizing) the gap between what is currently being done and what is considered optimal. This is a vital step in understanding the divide between what improvements would look like and where a municipality currently resides in specific asset management process areas. With this information, a municipality is better able to understand what solutions are appropriate for implementing asset management improvements.
- **Cost-Benefit Analysis**: Once weaknesses have been identified and compared to optimal, and once potential solutions drafted, the final step in the improvement process is to determine the solutions to implement. A proposed solution may easy to implement for the municipality, and may also bridge the gap between what is current and desired (optimal).But the municipality may still choose to forgo implementation due to the cost, time and/or resources associated. In addition, solutions to numerous problems may be identified, but it may not be feasible to implement all of them at once. In such a situation, performing cost-benefit analysis allows a municipality to apply a priority ranking to improvement solutions and determine which solutions would be most beneficial to pursue in the short term versus long-term. This cost-benefit analysis should be performed for each proposed improvement solution to ensure that the costs of implementation do not exceed the benefits. In determining this cost-benefit analysis, a municipality should pay particular attention to:

Benefits

- Cost savings;
- Time/effort efficiency savings;
- Increased accuracy and completeness to the asset management process;
- Improved integration with other municipal processes;
- Added transparency/understanding of resultant outputs;
- Risks mitigated; and
- Legislative adherence.

Costs

- Monetary costs;
- Risks involved;
- Time horizon;
- Staff/Council resourcing required; and
- Difficulty inserting into current operational workflows.

Examples of improvements that could be made to an asset management process include:

- Creating a business process manual for inclusion with the asset management policies and strategies;
- Introducing methods of evaluating and tracking asset management progress over time;
- Developing a more efficient and effective condition assessment process for assets; and
- Enhancing the level of service analysis to incorporate input from Council and new performance measures.

Summary

The improvement review process is a framework for staff and Council to follow that guides how to execute overall asset management objectives. Identifying the areas that need improvement is an important step that outlines what needs to be done to move towards that asset management vision.

This review process should specify the frequency at which it should occur and identify the roles of staff and Council during the improvement process. It should state how to evaluate the municipality’s maturity levels, past performance, identify best practices that are currently not being employed, and perform a cost-benefit analysis in order to determine which solutions to employ. It should be a formalized process that is included in the municipality's asset management strategies and policies (see Chapter 2). It may be prudent to synchronize the schedules of the improvement process and the timing for updating the asset management plan, as scheduling the improvement process to run preceding any updates to the asset management plan will ensure any improvements make their way into the newest iteration of the plan.

8.5 Frequency of Updates/Improvements to the Asset Management Process

The frequency of updates and improvements is an important factor to the overall AM process. Ensuring the AM process and plan consistency meet internal needs as well as external pressures ensures its overall usefulness.

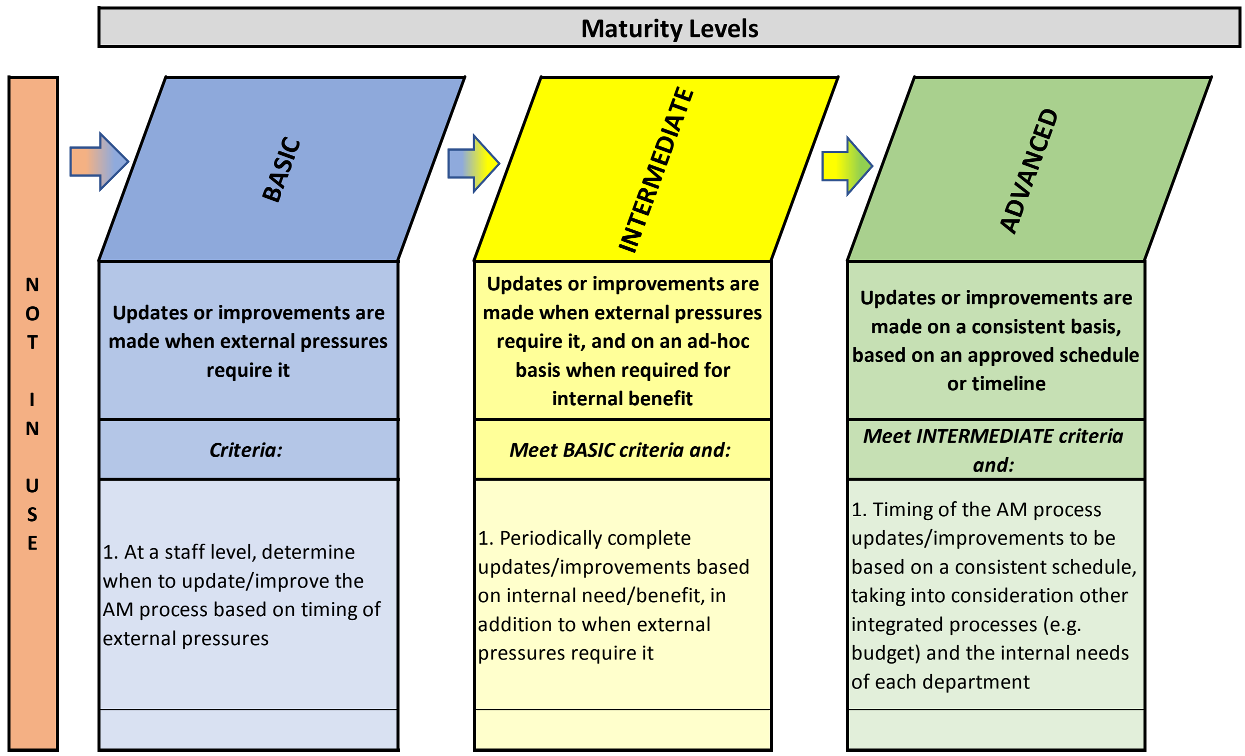
How often are asset management updates or improvements implemented/integrated into the AM process?

Background

AM updates and improvements (as discussed above) are important to the overall AM process. The ongoing needs of the municipality are constantly evolving to the point where many policies and strategies corporately have to be reviewed and updated on a periodic basis. As technology, existing processes/policies, services offered, and staff change, the AM process should also change to adapt to the municipality.

Levels of Maturity – Frequency of Updates/Improvements

How often are asset management updates or improvements implemented/integrated into the AM process?



At the **basic level of maturity**, municipalities incorporate updates/improvements into the asset management planning process on an ad hoc basis when external pressures necessitate it. Asset management planning updates/improvements are done on a reactionary basis.

At the **intermediate level of maturity**, municipalities update/improve the asset management process both based on external pressures (i.e. reactionary changes), and occasionally as needed for significant changes to internal needs.

At the **advanced level of maturity**, municipalities update/improve the asset management process based on a consistent and regular schedule. The schedule would account for any externally required changes as well as regular updates/improvements for internal needs. The types of updates and/or improvements would also been planned for and tracked.

Frequency of Updates and Improvements

With the increasing importance to asset management planning and the associated regulation in place under IJPA, municipalities will be searching for approaches to make their process more efficient and more effective. In addition, municipalities will not put in place perfect AM processes during regulation implementation. Therefore, there should be processes in place to look at the strengths, weaknesses, opportunities and threats of the overall AM process and plan in order to determine what updates or improvements are needed, and when. This should take into account both external and internal needs.

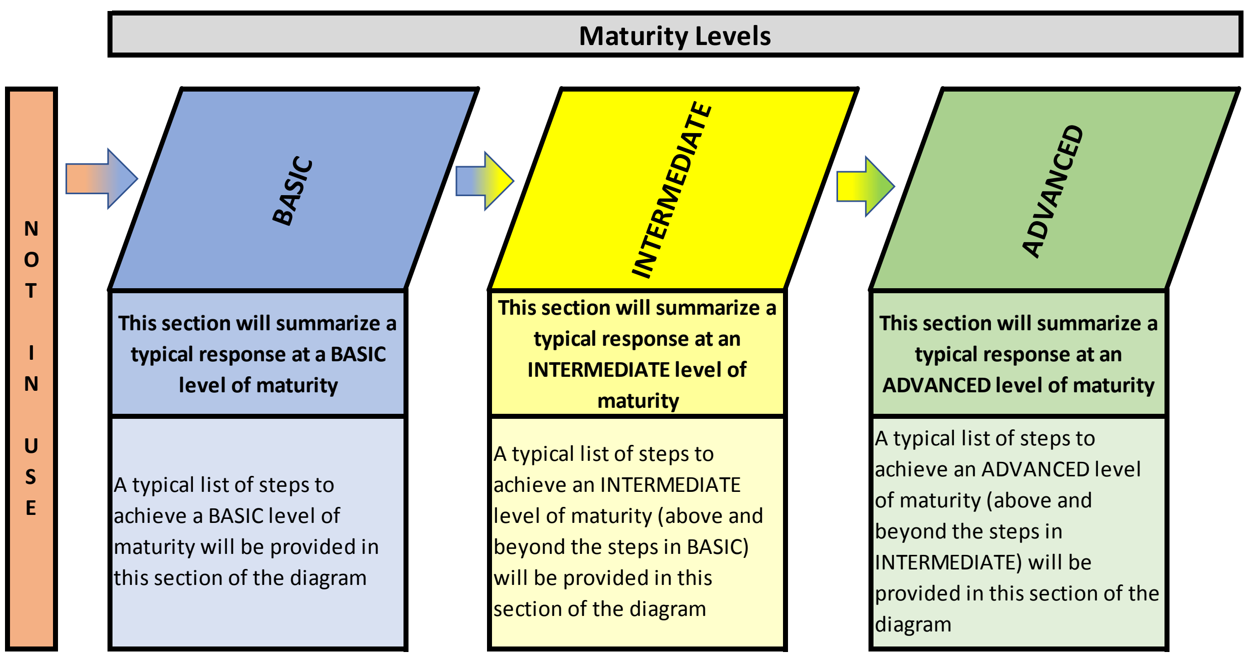
The need to continuously update and improve a municipality's AM process is consistent with Ontario Regulation 588/17 requirements for a "strategic asset management policy". Therefore, each municipality has a requirement to have a process in place to incorporate updates and improvements as needed. Examples are as follows:

- Update the AM plan:
    - Annually?
    - Every 2 to 3 years?
    - Every 5 years? (Ontario Regulation 588/17 requires updates to occur, at a minimum, every 5 years).
- Improve the AM process and plan:
    - Annually?
    - Every 2 to 3 years?
    - Every 5 years?
    - When a planned significant improvement is needed? (Ontario Regulation 588/17 requires municipalities to incorporate improvements, however a frequency is not provided).

9 Asset Management Tools

9.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake in order to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management

should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic level* requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

9.2 Overview

In the context of this chapter, *asset management tools* refer to any tool that allows a municipality to more efficiently and accurately manage and execute actions throughout the course of asset management planning. These tools often support data management and modelling of asset lifecycle needs to ensure that available data is used effectively to make informed decisions. They can vary greatly in complexity -- from simple spreadsheets to sophisticated software that can fulfill numerous functions within and beyond asset management. Each municipality will need to determine which tools are most appropriate for its asset management needs given its circumstances and desired asset management maturity level. Some municipalities may have staff with adequate technical skills and time capacity to develop tools internally, while others may have to rely on commercially available off-the-shelf software to meet their needs. The purpose of this chapter is not to advocate for the use of certain tools versus others. Instead, this chapter attempts to highlight what these various tools can accomplish for municipalities and some of the specific tools that municipalities should consider using as they determine what is appropriate for asset management purposes.

Similar to general trends in the IT industry, many asset management software tools have migrated from desktop applications, maintained locally by a municipality's IT staff/department, to cloud-based services. While these tools may not be physically located on a municipality's premises, the data are still generated, maintained, and utilized by a municipality's staff, which may lower the ongoing implementation resources and costs for a municipality. Whether a tool is a local or cloud-based system, it will ultimately make it easier for a municipality to effectively execute their asset management process.

Additionally, it is critical that any asset management tool used by the municipality has the ability to be versioned, indexed, and backed-up. Data loss disasters can still occur, but they can be avoided or mitigated with proper systems and controls in place. Any tool employed by a municipality should have the capability to perform these vital functions.

Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements

While O.Reg 588/17 does not specify a need to use "tools" in a municipality's AM process, there are a number of requirements within the regulation that may become less time and resource intensive if a municipality considered the use of various tools to assist in meeting the requirements.

9.3 Asset Register Form

Asset information is a key input into the asset management process. Therefore, a well-structured asset register that can be utilized by all relevant municipal staff and that ensures data integrity is foundational to good asset management.

In what form is the asset register kept?

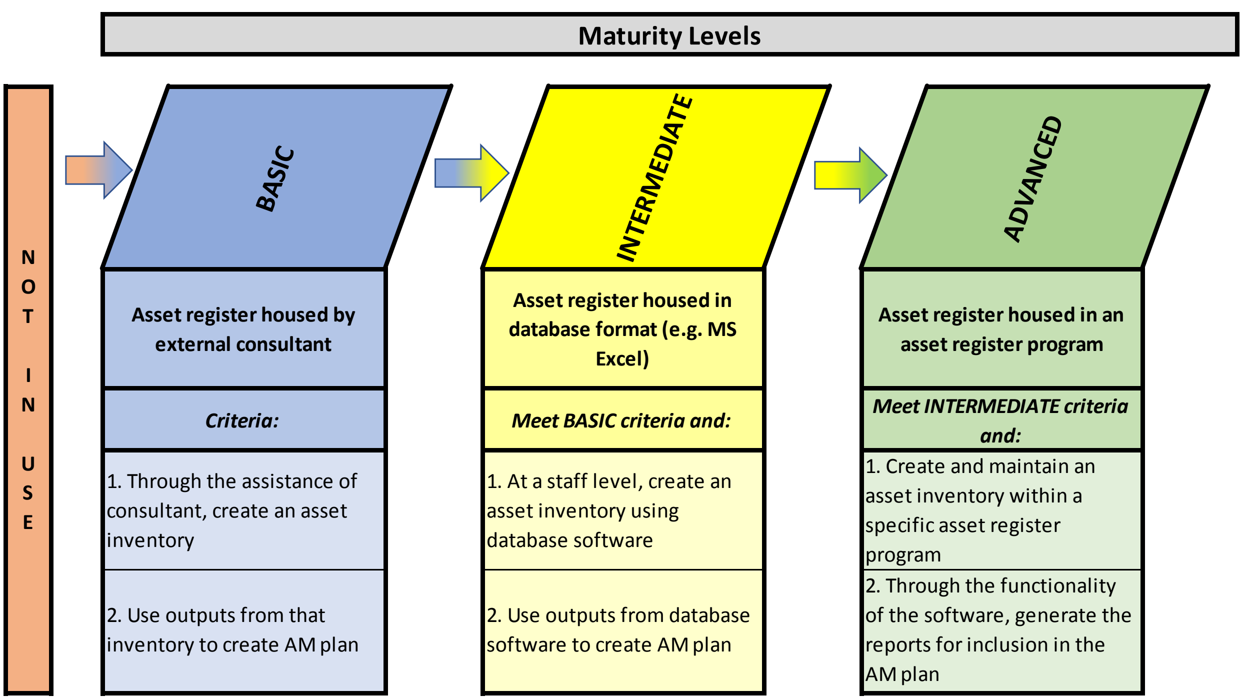
Background

As discussed in Chapter 3, an asset register is a list of municipal capital assets and related attribute data (e.g. cost, condition, quantity, size, etc.) for each individual asset. The mechanism by which the asset register is housed can vary greatly in form -- from state-of-the-art integrated asset management programs, to spreadsheet solutions (e.g. Microsoft Excel), to contracting out the maintaining of asset data to a consultant. Further, it is common for municipalities to have more than one repository of asset data, and therefore different technologies may be in use at one municipality.

Municipalities must decide how they will develop and store these inventories, given the availability and usability of the various computer software and spreadsheet solutions. As part of the decision-making process, consideration should be given to either the integration of asset register(s) within a municipality, or a reconciliation of differences between alternative systems where they overlap. Having confidence that the asset register is accurate, timely, and complete is critical in ensuring optimal use of its information for asset management planning purposes.

Levels of Maturity

In what form is the asset register kept?



At the **basic level of maturity**, staff create an asset register with assistance from an external consultant. The complete register, or inventory, is likely housed externally with the consultant. The asset inventory is used to generate outputs that can be included in the development of a municipal asset management plan.

At the **intermediate level of maturity**, the development/maintenance of the register is completed by municipal staff and is housed internally in a database format (e.g. Microsoft Access or Excel spreadsheet). Direct involvement by staff in the creation of the asset register ensures a better understanding of the resources required to keep an up-to-date inventory. The outputs from the register that feed into the asset management plan may be more customized to the needs of a municipality due to more direct involvement by staff.

At the **advanced level of maturity**, the development/maintenance of the register is co-ordinated between staff and the vendor/implementation partner of specialized asset management inventory software. By using the software, staff should be able to exert less effort to maintain an accurate register. Additionally, the software package should be able to generate specialized outputs that can be easily inserted into an asset management plan and other reporting needs. An asset register solution developed in-house can also demonstrate qualities associated with an advanced level of maturity. However, many municipalities may not have the internal capacity to develop solutions that would fully meet their own needs.

Types of Asset Register

There are generally two types of asset register: those housed in databases (e.g. spreadsheets), and those housed in specialized asset register software. Databases are often constructed within a municipality to host the asset register. Some pros and cons of using databases are:

Database Pros:

- Relatively inexpensive to use with minimal training;
- Freedom to structure the asset register in a desired format (within limits); and
- A good approach when establishing an initial asset register before deciding on whether to proceed to formal software.

Database Cons:

- These databases are often not designed to be updated by multiple users (not without significant manipulation);
- Can require more effort to ensure that only accurate data is permitted; and
- Very easy to make mistakes/errors, and difficult to control the editing/updating process.

Asset register software is an “off-the-shelf” tool that allows more seamless user control, better data integrity, and greater access to the latest technology. These software databases are purpose-built tools by software vendors that specialize in creating custom asset registers for municipalities. Some pros and cons of utilizing asset register software are:

Software Pros:

- Designed to be used and updated by multiple users;
- Data controls are natively built into the software, restricting editing capabilities and read capabilities (while data validation is possible in databases and spreadsheets, there is more effort required to set this up);
- Editing process is automated, minimizing mistakes/errors;
- Task of maintaining the asset data’s accuracy and completeness is more efficient than databases;
- Reports tend to be generated automatically;
- Some software includes other enhanced asset management capabilities, such as integration with other systems; and
- Availability of updates to address issues and advancements.

Software Cons:

- More expensive than databases (actual cost depends on the software used);
- Software can have some freedom in how the asset register is setup, however there is usually a basic structure that must be adhered to; and
- Training and implementing the software takes extra time and effort.

9.4 Asset Register as a Dynamic Tool

An ability of the asset register to function as a dynamic tool that is easy to update and seamlessly integrates with other systems further enhances the asset management process.

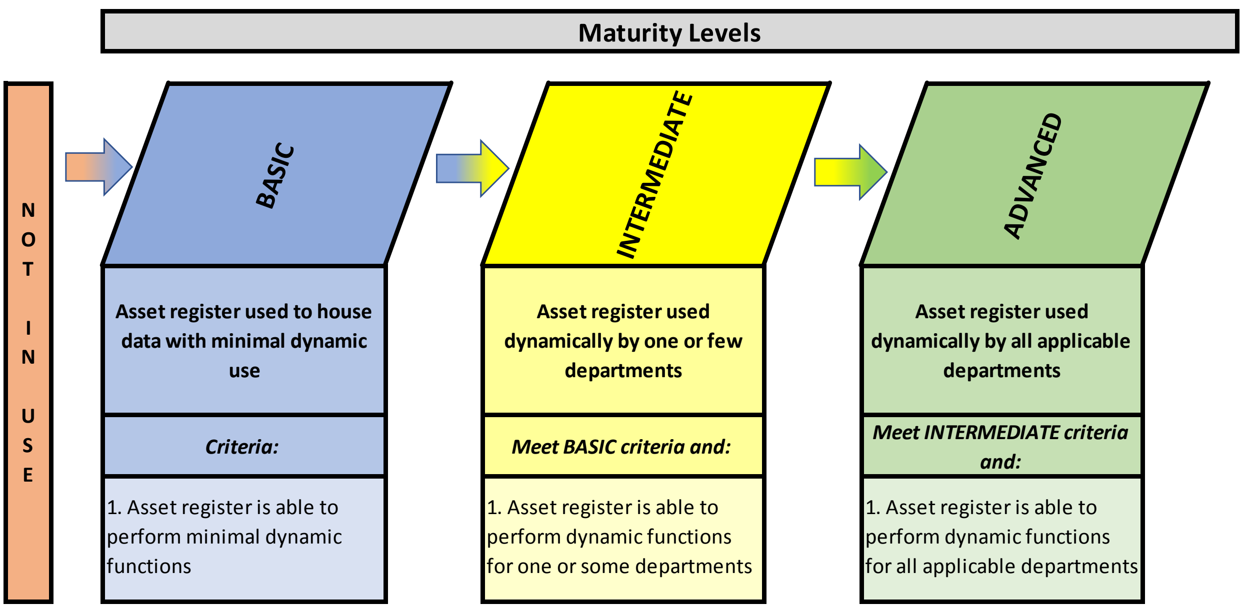
To what extent is the asset register used as a dynamic tool?

Background

The definition of dynamic is "constant change, activity, or progress". The ability for an asset register to be dynamically updated is an important consideration. A static inventory provides a snapshot of the state of assets at a fixed point in time (i.e. the view of assets only as of when the register was created or last updated). A dynamic register allows for updates to easily be integrated, and calculated data to be updated instantaneously. This is not to say that a static inventory cannot be updated or is not recommended, but that it requires more manual effort to update all values for all assets over time.

Levels of Maturity

To what extent is the asset register used as a dynamic tool?



At the **basic level of maturity**, the asset register has little to no dynamic functionality. In other words, most of the work involved with updates to the inventory is manually entered throughout the register. This may lead to future problems due to time commitments necessary to maintain the asset inventory.

At the **intermediate level of maturity**, dynamic functions are fully integrated for a few asset classes or assets belonging to specific departments. When an asset class is dynamic, updates to specific variables will force updates to other parts of the system that are dependent on these variables. These dynamic functions may only be developed for certain departments or assets of the municipality, while other areas rely on static updates.

At the **advanced level of maturity**, all aspects of the asset register are dynamic, for all departments and assets. Updates to any metric will propagate to all other areas of the asset register that depend on that metric. Hence, the burden of ensuring that the asset register is maintained and reflective of the current state of infrastructure is minimized.

Dynamic Function Examples

The examples below should help readers visualize an asset register with dynamic functions It should be noted that while a broad cross-section of examples are provided, this is not an exhaustive list of all possible dynamic functions.

A dynamic function might:

- Update all age-related metrics (e.g. service life remaining, age, age-based condition, etc.) upon receiving date of implementation and useful life parameters.
- Automatically perform financial calculations (e.g. net book value, amortization, additions, disposals, betterments, etc.) necessary for PSAB 3150 reporting requirements for each fiscal cycle.
- Automatically update replacement cost metrics, every year, based on capital inflation or when new benchmark cost data are input (e.g. cost per m^2 of local road).
- Update complex calculations, such as asset risk, when updating condition data.
- Read and store pertinent data from other systems. Data from another software tool may provide some of the updates to the asset register. A dynamic link between these systems ensures the register stays up-to-date and eliminates a point of human error, as duplication of work is prevented.
- Update data from another system. In more sophisticated business cases, data from another data store may need to be updated from the asset register if the asset register is the main point-of-input for all inventory-related tasks. In these cases, special database/software instructions may propagate the updates from the register to other systems.

9.5 Geographic Information System (GIS)

GIS is a tool that can assist with both visually locating and presenting asset management decisions.

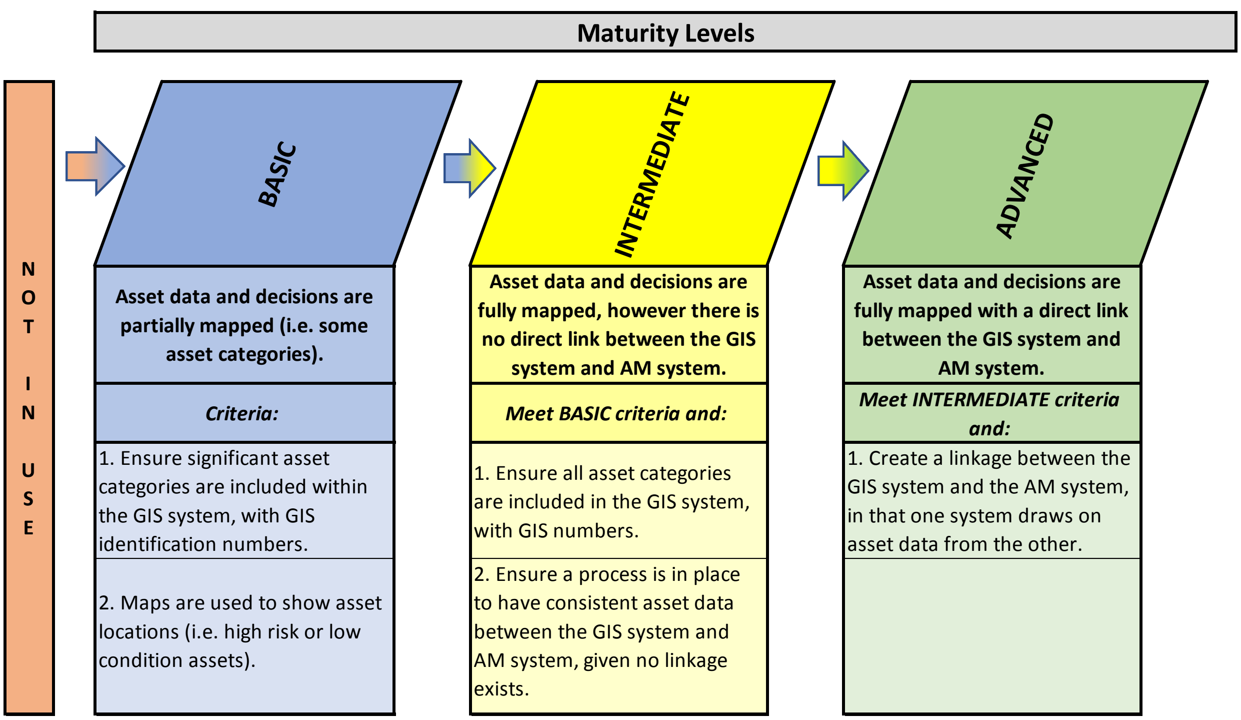
Is the asset data and decisions spatially mapped?

Background

Geographic Information System (GIS) is a tool that spatially maps assets such that the location of assets can be overlaid on a map of a municipality. Other information can be spatially mapped, such as the condition of the asset (i.e. red indicating a poor asset condition, green indicating a good asset condition).

Levels of Maturity

Are the asset data and decisions spatially mapped?



At **the basic level of maturity**, municipalities have partially mapped asset data. Municipalities at this level should ensure that the significant asset categories are included within the GIS system. Maps should also be used to show asset locations, and should be easily categorized by high risk, or low condition.

At the **intermediate level of maturity**, municipalities have fully mapped asset data. Municipalities at this level should ensure that all asset categories are included in the GIS system, and should establish a process that maintains consistent data between the GIS and AM systems.

At the **advanced level of maturity**, municipalities have fully mapped asset data with a direct link between the GIS and AM systems. Municipalities at this level should also develop their GIS and AM linkage to draw asset data from each other.

Geographic Information System (GIS)

As mentioned above, a GIS spatially maps assets such that the location of assets can be overlaid on a map of a municipality. Most assets owned by a municipality are fixed in terms of geography, be it roads, water and/or sewer mains, or facilities. Therefore, it can be easier to interpret the data when the assets are presented visually on a map. Some municipal assets (such as vehicles and equipment) do “travel”. However, these assets can be spatially mapped based on their “home” location.

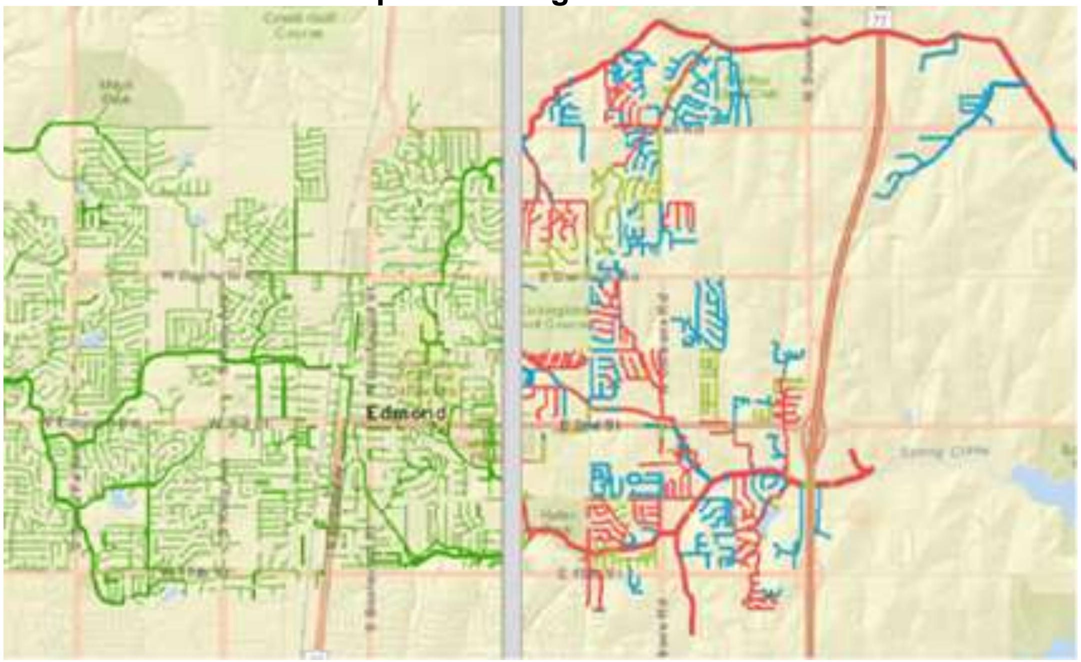
A properly configured GIS file should allow all assets contained in the asset register to be tagged with geographical data so they can be tied to physical locations. Therefore, maps of the municipality can be drawn and assets can be visually represented where they actually reside.

Once these maps are created, the GIS allows for analytics to be performed that may reveal new insights into decision-making processes. The priority and timing of executing projects can be an important decision for municipalities to make, which can be made easier when utilizing a GIS. For example, it may be easier to make decisions developing strategies and plans when presented with GIS data that highlights the condition of all assets in a specific area, or highlights nearby assets. This can be useful because the timing of applying lifecycle management strategies to these assets can be clustered to promote efficiency. This capital forecast integration was discussed in Chapter 5 (non-infrastructure solutions).

The GIS is only as good as the data recorded within it. To accurately map these assets, the exact GPS locations must be recorded. Therefore, it may take a significant amount of resources to map out all assets in a municipality if this data is not already available.

Figure 9-1 (below) is an example of a GIS image depicting one area of a municipality (roads highlighted in red) in poor condition:

Figure 9-1
Sample GIS Image – Condition



9.6 Other Asset-Related Systems/Tools

Other asset-related tools can provide additional information and/or clarity into the asset management process. These additional tools often augment the asset register to leverage different types of data, based on a municipality's needs.

Are there other asset-related systems/tools utilized by your municipality and how connected are they to the asset register?

Background

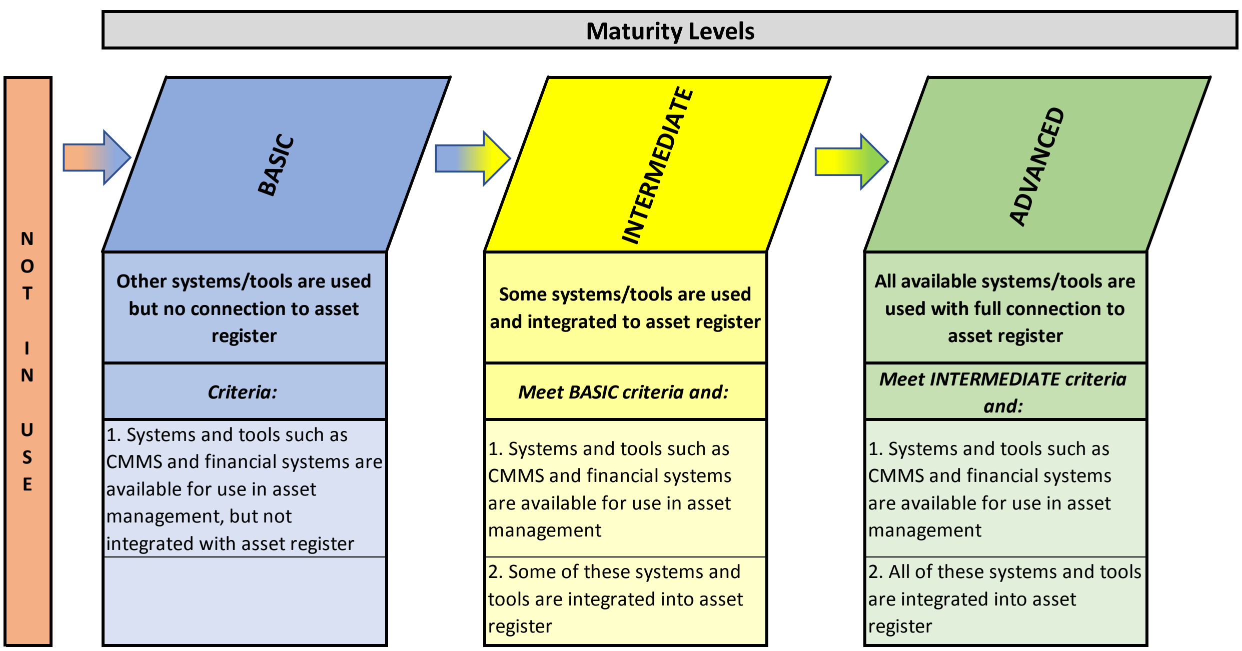
Additional technological tools can be adopted by a municipality to expand functionality, or provide ease-of-use, when managing the asset register or the overall asset management process. These tools may already be implemented within a municipality with other primary functions outside of asset management. Examples of each are discussed in this section.

1. **Computerized Maintenance Management System (CMMS):** CMMS allows a municipality to plan and track the maintenance, repair, and rehabilitation operations it performs on its assets on an ongoing basis.
2. **Financial reporting tools:** Financial reporting tools are often used to produce the outputs necessary to complete legislated annual financial reporting requirements, and these systems can be integrated with an asset register to more easily generate these outputs.

Whatever tools a municipality ultimately decides to use, they all intend to enhance the ability of a municipality to manage its assets through the asset register.

Levels of Maturity

Are there other asset-related systems/tools utilized by your municipality and how connected are they to the asset register?



At the **basic level of maturity**, a municipality has at least one type of asset management tool. However, these tools are typically not integrated with the asset register (i.e. no dynamic linkages exist). The result is that the tools can inform staff on asset characteristics and forecasts, but all insights must be manually inputted into the asset register or the overall asset management process on a continual basis.

At the **intermediate level of maturity**, a municipality has some of the asset management tools in place, but only a few of these tools are linked to the asset register or asset management process.

At the **advanced level of maturity**, a municipality has implemented all types of software tools (e.g. CMMS and financial reporting) and has created dynamic linkages between the asset register and each distinct system. A municipality at the advanced level is therefore able to provide its Council and staff with up-to-date snapshots of its assets in unique and insightful ways without the burden of maintaining the asset register.

Computerized Maintenance Management System (CMMS)

As discussed above, a CMMS is a tool that allows a municipality to track the maintenance, repair, and rehabilitation operations that it performs on all its assets on an ongoing basis. A well integrated system might tie into a municipality's existing asset register and other IT systems. This provides the municipality the ability to effectively plan and manage their assets on an ongoing basis, minimizes the chances that maintenance activities are overlooked, and helps staff coordinate operations in an efficient manner.

A CMMS allows "work orders" to be automatically generated based on asset condition or the existing risk data found in the asset register. The plans and schedules developed by the system can either be set by staff recommendations, maintenance schedules (as set forth in the lifecycle management strategy), or from reports/readings taken from the assets themselves.

A CMMS will keep an accurate historical record of any actions performed on all assets, which easily allows auditors to verify what has occurred to each asset. This data can be used by a municipality to estimate asset condition. In addition, a CMMS helps manage inventory, as it can document the amount of inventory that is warehoused and in the field. This can provide ease in the process of restocking assets that are frequently used (e.g. water meters).

CMMS's can be a vital component of the ongoing process of updating the asset register. Inspections are common actions to maintain an accurate and up-to-date snapshot of an asset's condition. A modern CMMS could be responsible ensuring contents of the asset register are updated. Additionally, with mobile technology, these updates could be performed ‘on location’ by maintenance staff, potentially increasing efficiency, mitigating data gaps, and reducing the potential for error.

A functional CMMS may look different for any given municipality, as the greatest value of such a system is determined by how easy it is to implement given municipal structure, existing IT environment, and the features it provides.

9.7 Modelling and Optimization

Modelling can assist with developing lifecycle management strategies that make sense to the municipality and optimize the allocation of scarce financial resources to provide the best possible service outcomes at the lowest cost.

Does your municipality have the ability to perform modelling optimization?

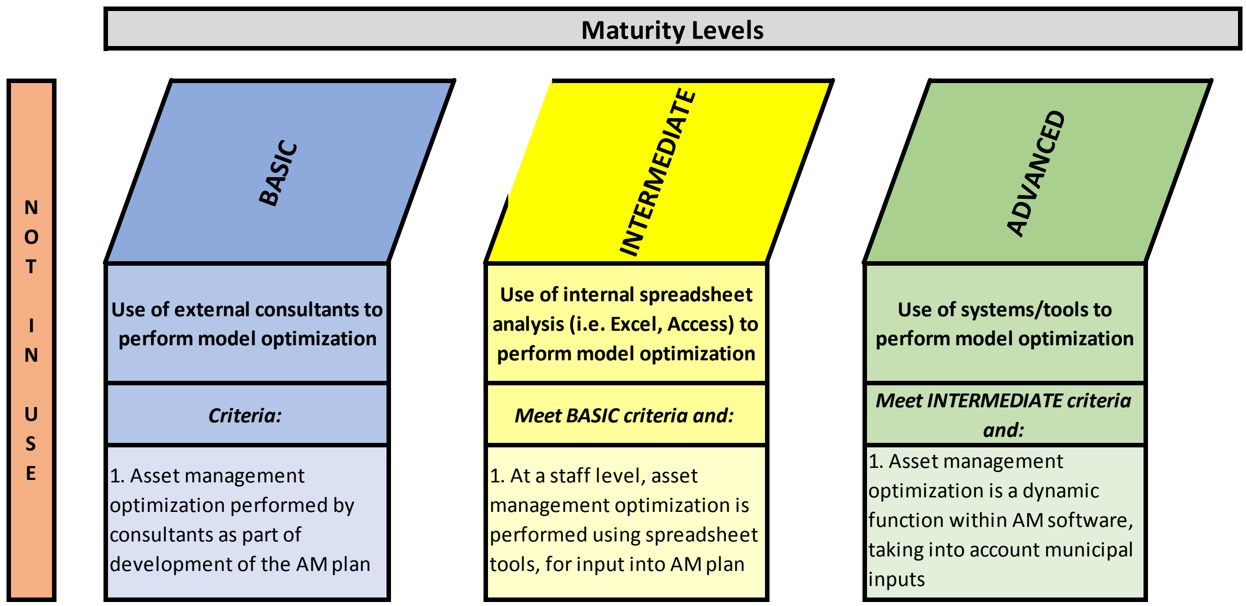
Background

Modelling uses tools to optimally allocate a municipality’s resources in their ongoing asset management practices. In simple terms, modelling optimization is using software that helps develop the lifecycle management strategy (e.g. long term forecast) in the most optimal way, given a set of instructions and parameters supplied by a municipality.

Ideally, optimization considers factors such as asset deterioration characteristics, treatment costs, treatment effects, and takes this and other criteria into account. Modelling tools should enable the optimization of the lifecycle management strategy so that the timing and extent of proposed lifecycle activities achieves service level targets at the lowest cost. Modelling optimization tools can assist municipalities determine where they should be spending limited resources to achieve the highest possible returns, whether measured by level of service, risk, or another metric.

Levels of Maturity

Does your municipality have the ability to perform modelling optimization?



At the **basic level of maturity,** municipalities hire outside consultants to perform modelling optimization. This process is generally performed by the consultant(s) who is preparing the asset management plan (or components of an asset management plan). For example, a road asset will require a study that optimizes roads needs, which should be used in the asset management plan.

At the **intermediate level of maturity**, municipalities use internal tools (e.g. spreadsheets) to perform modelling optimization. At this level, municipalities use the knowledge and experience of their staff to ‘fine tune’ their model and generate outputs, which should be used in the asset management plan.

At the **advanced level of maturity**, municipalities use purpose-built tools (e.g. asset management software) that apply advanced statistical techniques to perform the modeling optimizations. At this level, municipalities set criteria and parameters for the software to adhere to and with this information, the software will calculate the most efficient path.

Modelling Optimization Tools

Modelling optimization tools allocate a municipality’s resources in their ongoing asset management practices. Optimization tools, whether developed in house or in the form of commercially available software, should be able to easily interface with the asset register to perform this function (or already be imbedded into the asset register itself). Further, the outputs should easily integrate into existing municipal reporting practices.

Budgeting and other constraints can make it impossible to complete all required capital projects in any given year, which requires the use of selective criteria to determine what projects to undertake. Weighing the benefits of projects and factoring in levels of service further compounds the difficulty and complexity of creating strategies and plans. The next step of forecasting these models to ensure the municipality can provide the resources to maintain and provide specific service levels can be a difficult task to tackle manually.

Scenario modelling can be an effective approach for assessing and developing solutions to complex issues. Scenario modelling can reveal the optimal course of action that provides the greatest benefit to the municipality with the lowest risk. Since this method relies heavily on logic, there is a reasonable measure of accountability with this approach.

Effective use of the modelling tool requires a considerable amount of specialized knowledge. The inputs used in modeling tools should come from the raw register data as well as staff decisions. This is important to note since the process of verifying the results/outputs of the model without knowledge of the data sources/inputs is very difficult. Inputs are usually logical criterion, such as the various criterion associated with the decision-making process around asset maintenance, rehabilitation, or replacement.

For example:

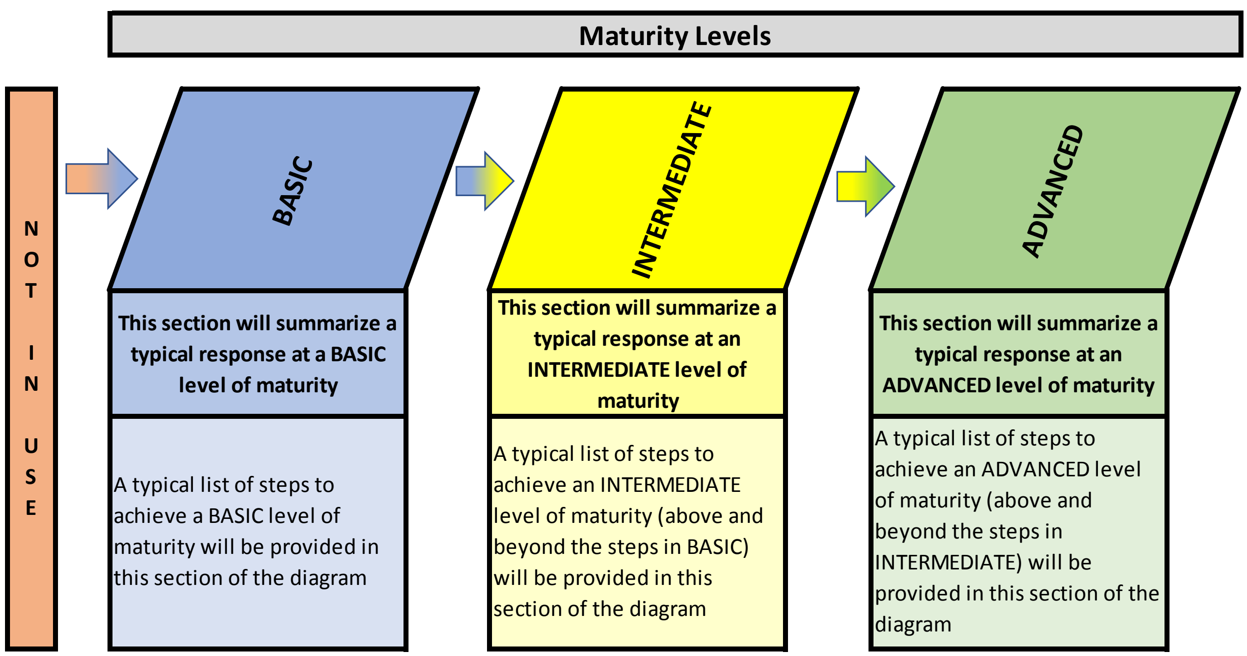
- When asset risk or condition falls under a set score;
- When connected assets' risk or condition falls under a set score (i.e. attempting to integrate roads, stormwater, water, and wastewater capital needs);
- When maintenance levels reach a certain level; and/or
- When customer complaints reach a certain level.

Through the use of well-defined decision criteria in combination with the right formulas and algorithms, a municipality can ensure that the asset management tool provides appropriate optimized outputs.

10 Internal Governance and Ownership

10.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management

should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic level* requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

10.2 Overview

A key element of a successful asset management planning process is the effective assignment of roles and responsibilities to ensure that the process is being properly followed and maintained, once in place. To take this one step further, staff need to embrace their own specific roles and responsibilities within the asset management process and take ownership.

Municipalities should consider developing a strong framework for leadership and staff support within the asset management process. The design of this framework will vary from municipality to municipality because they differ in size, staff complement, available skill sets, and organizational structure, and, as a result, the design of this framework will need to be dependent.

In larger municipalities, an asset management department or steering committee may be formed to provide leadership and decision-making capabilities, with dedicated asset management staff to carry out the day-to-day duties. In small to medium municipalities, existing management and/or support staff might be called upon to incorporate asset management responsibilities into their other job duties (with the ability to create a multi-departmental asset management committee). In either case, there are strategies and actions available that can enhance the foundation for success.

Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements

O.Reg 588/17 outlines the following requirements with respect to AM Internal Governance:

A Strategic Asset Management Policy (SAMP) must be developed and adopted by *July 1, 2019* and reviewed and updated at least every 5 years. The SAMP outlines a requirement to include:

1. A commitment to coordinate planning between interrelated infrastructure assets with separate ownership structures by pursuing collaborative opportunities with upper-tier municipalities, neighbouring municipalities, and jointly-owned municipal bodies; and
2. Identification of who would be responsible for AM planning, including an executive lead.

In addition, a municipality's AM plan must adhere to the following:

1. Review and update the asset management plan at least every 5 years.
2. The asset management plan (or update) must be endorsed by the executive lead of the municipality and approved by Council resolution.
3. Municipalities are required to provide Council with an annual update on asset management planning progress, by *July 1st of each year*.

4. Municipalities are required to post their strategic asset management policy and asset management plan on the municipality’s website, if one exists, and make copies of these documents available to the public, if requested.

10.3 Organizational Awareness of Asset Management

Using a corporate perspective to asset management ensures that specific departmental expertise is embedded into the decision making process.

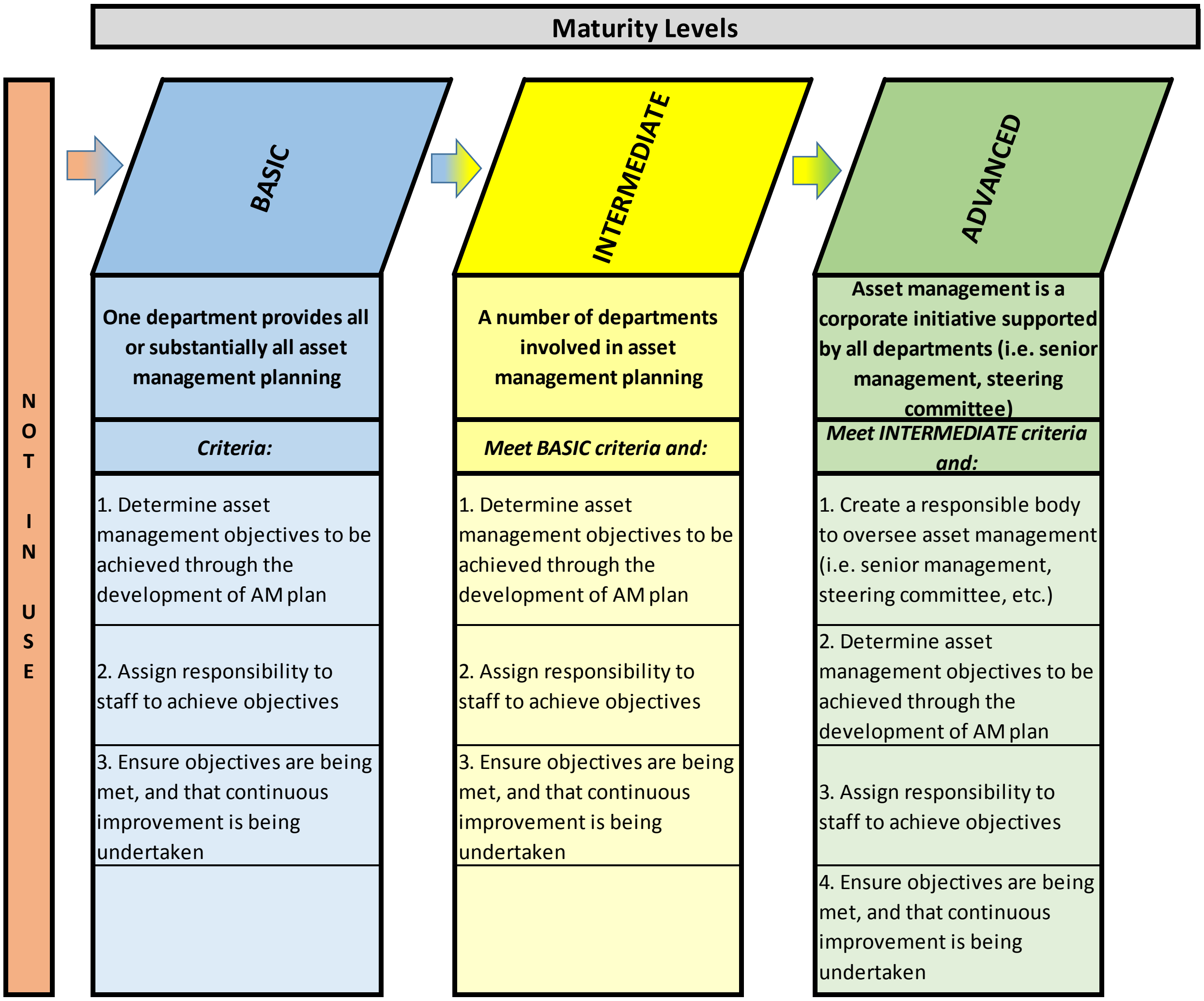
To what extent is the asset management planning process embedded within the organizational structure?

Background

Organizational awareness in the context of asset management planning relates to whether this process is managed and updated by one department, several departments, or corporately. Ideally, asset management planning should be considered a corporate initiative.

Levels of Maturity Asset Management Planning and Organization Structure

To what extent is the asset management planning process embedded within the organizational structure?



At the **basic level of maturity**, municipalities typically have all, or almost all, of their asset management planning undertaken by one department (with very little assistance from other departments). The department will determine the objectives to be achieved through the development and maintenance of the asset management process, assign responsibility to staff within the department for achieving these objectives, ensure the objectives are being met, and ensure that continuous improvement is being undertaken.

At the **intermediate level of maturity**, municipalities undergo the same steps as those at the *basic level* of maturity, however, multiple departments will be involved in asset management planning. At this level, there are still some departments that manage assets that are largely excluded from the asset management development process.

At the **advanced level of maturity**, municipalities establish the asset management planning process as a corporate initiative and have support from all departments. A responsible body, such as the senior management team or an asset management steering committee, oversees asset management activities by:

- Establishing the objectives to be achieved through the development and maintenance of the asset management planning process;
- Assigning responsibility to staff across multiple departments for achieving these objectives;
- Ensuring the asset management objectives are being met: and
- Ensuring that continuous improvements are being undertaken.

Organizational Awareness of Asset Management

Senior management should be responsible for providing the leadership and commitment necessary for a municipality to effectively manage the asset management process. Senior management here also includes Council (which will be discussed in the next chapter). This leadership structure helps ensure that the objectives of asset management planning, including strategies and risk management, are consistent with those of the municipality as a whole. Also, it is the responsibility of senior management to get buy-in and stress the importance of asset management to other staff and take ownership of the process. There are several ways to undertake this responsibility, including:

- Develop a corporate asset management strategy that assigns roles and responsibilities from an asset management perspective;
- Assign more specific roles and responsibilities for asset management functions to staff across functional areas;
- Ensure the availability of sufficient and effectively deployed resources to asset management;
- Communicate to staff and stakeholders the objectives of the asset management process and the importance of effective asset management;
- Ensure asset management objectives are being met, and that continuous improvement is being undertaken; and
- Ensure departments are making optimal use of the asset management process internally, and are effectively co-ordinating their asset management activities with each other.

There are numerous methods to promote awareness of the asset management process with all staff and other stakeholders. Some examples include:

- Internal municipal newsletters and/or website posts;
- Internal corporate asset management workshops, lectures, and meetings (i.e. education process);
- Incorporation of staff into the implementation of asset management activities, or changes/reviews to these activities; and
- Advising suppliers through the tender/ RFP process.

Departmental Involvement

The involvement of all departments in creating and updating the asset management process can support enhanced accuracy and completeness. Departments should already have detailed knowledge of the assets they maintain and operate in providing services to the community. Using this knowledge in the asset management process ensures more realistic asset data, levels of service analysis, and lifecycle management strategies. An additional advantage of this approach is that if departments are involved in the creation and updates to the asset management process, they are more likely to use the asset management process to make decisions within each department.

10.4 Asset Management Use

Having all departments use the AM process for asset-based decisions ensures consistency in achieving organizational and departmental goals and objectives.

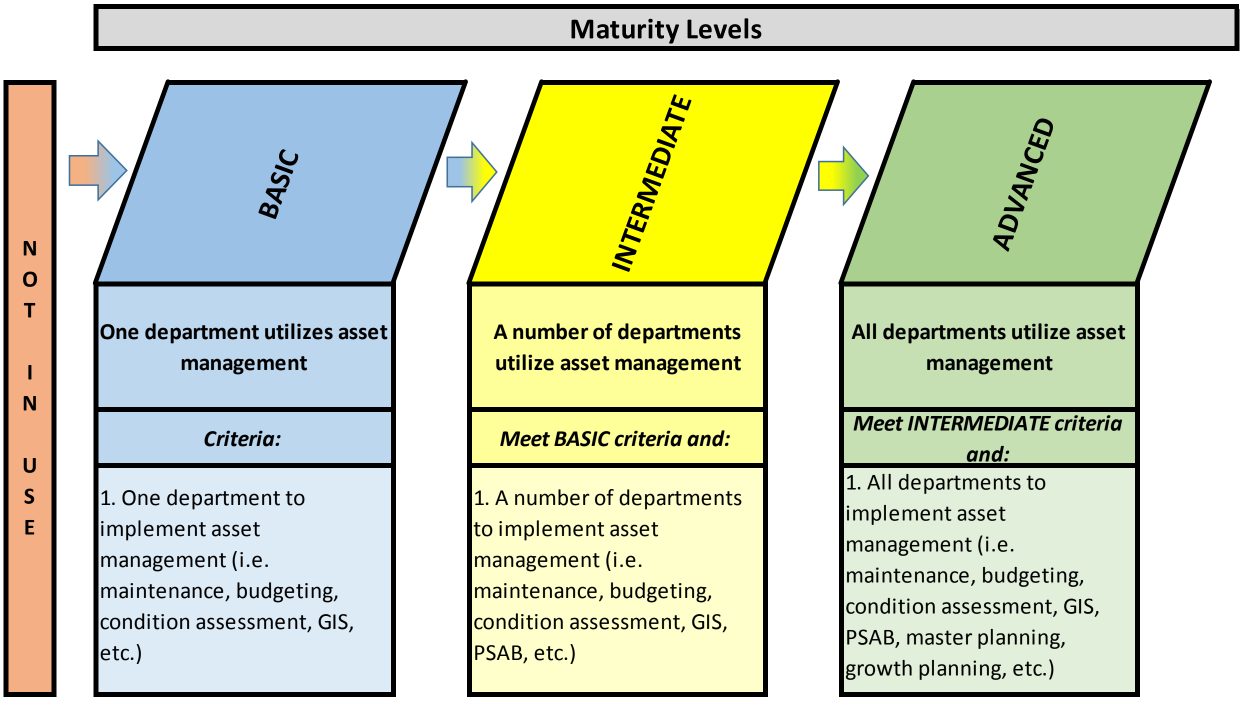
What is the level of use of asset management within all applicable municipal departments?

Background

There are many asset-based decisions that municipal departments make on a day-to-day basis in order to provide services to the community. Effective asset management can significantly assist each department in making these decisions.

Levels of Maturity Departmental Use of Asset Management

What is the level of use of asset management within all applicable municipal departments?



At the **basic level of maturity**, municipalities typically have one department using asset management. This type of use may include: planning all maintenance programs, performing condition assessments, maintaining the GIS, and preparing the budget requirements for managing the assets.

At the **intermediate level of maturity**, municipalities have a number of departments using asset management. In addition to the actions noted under the basic level of maturity, it would be expected that the asset data be used for PSAB 3150-related purposes within the Finance department.

At the **advanced level of maturity**, municipalities have all departments using asset management. In addition to the actions included under the intermediate level of maturity, advanced municipalities would be expected to integrate the asset management process with its master planning and growth planning.

Asset Management Use

Examples of the asset-based decisions that departments already make on a day-to-day basis include:

- Public Works and/or Engineering departments have the responsibility of constructing/rehabilitating capital assets such as roads, storm water, water, wastewater, solid waste, and facilities;

- Other service delivery departments also construct facility-related assets (e.g. Parks and Recreation, Fire, Police, etc.).
- All service delivery departments (e.g. Public Works, Parks and Recreation, Fire, Police, etc.) perform maintenance on assets and purchase more minor assets such as vehicles, equipment, and land improvements;
- Information Technology departments purchase and maintain assets (e.g. hardware and software) directly, and in some cases, in more of a support function to other departments;
- Finance departments may use asset management data for financial planning, budgeting, and/or accounting requirements; and
- Planning departments may incorporate growth planning into asset management planning.

The following are examples of departmental activities or processes that could already be in place that can be integrated into the corporation's asset management process:

- Performing visual inspections on assets (e.g. playground equipment, vehicles/equipment);
- Conducting condition assessments on assets (e.g. roads and bridges);
- CCTV inspections (e.g. wastewater mains and storm mains);
- Responding to community complaints (e.g. potholes);
- Mapping assets spatially in a GIS system;
- Calculating user fee rates (e.g. water, wastewater, storm water, parks and recreation);
- Preparing a DC Background Study, Master Plan or Strategic Plan; and
- Preparing the annual budget and long-term capital forecast.

Please see Chapter 7 for more discussions on integration.

The breadth of involvement of asset-related activities across an organization underscores the need for departments to use an asset management planning process to assist in making asset-based decisions. Communication by senior management to outline the importance and benefits of the asset management planning process to all staff, and how staff's work contributes to its effectiveness, can assist in promoting adoption. In addition, it can be useful to regularly communicate how the municipality is doing in relation to its asset management objectives for the purpose of facilitating organization-wide interest in the results.

10.5 Asset Management Resourcing

Allocating the right resources to AM planning ensures accountability and ownership of the AM process.

What resourcing is dedicated to asset management planning?

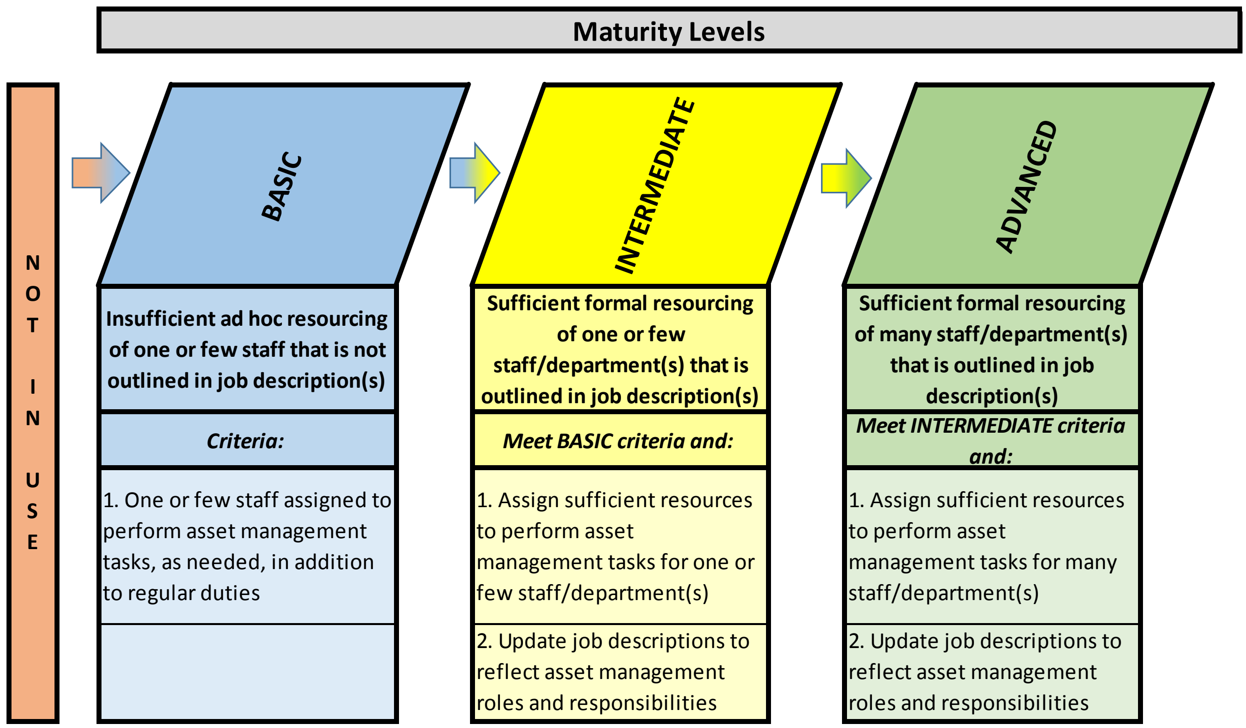
Background

As noted in the previous section, many departments can potentially be impacted by the asset management process, which highlights the importance of assigning resources to asset management and clearly defining roles and responsibilities. Additionally, co-ordination of the asset management resources/activities carried out in many departments should be a priority in order to promote efficiency, ensure adequate resourcing dedicated to asset management, and enhance clarity of responsibilities.

The first step to carry out the roles and responsibilities inherent in asset management planning is to ensure that sufficient staff resources have been allocated and assigned. This does not necessarily mean the assignment of full-time equivalents, but minimum means including asset management duties in staff job description(s).

Levels of Maturity Resourcing

What resourcing is dedicated to asset management planning?



At the **basic level of maturity**, municipalities typically perform asset management work on an ad hoc basis. The staff assigned to perform the work (i.e. municipal staff, not hired consultants) generally do not have these duties specified in their job descriptions. However, some form of asset management work constitutes part of their annual duties. As a result, the amount of resourcing at the basic level of maturity could be classified as minimal and insufficient.

At the **intermediate level of maturity**, one or more staff member(s) are formally assigned to carry out asset management duties. Asset management roles and responsibilities are outlined within the job description of the identified employee(s), in many cases along with other assigned duties (i.e. staff can be dedicated to asset management or do asset management in addition to other responsibilities). Sufficient staff resources are made available for performing asset management duties -- but typically one for several departments.

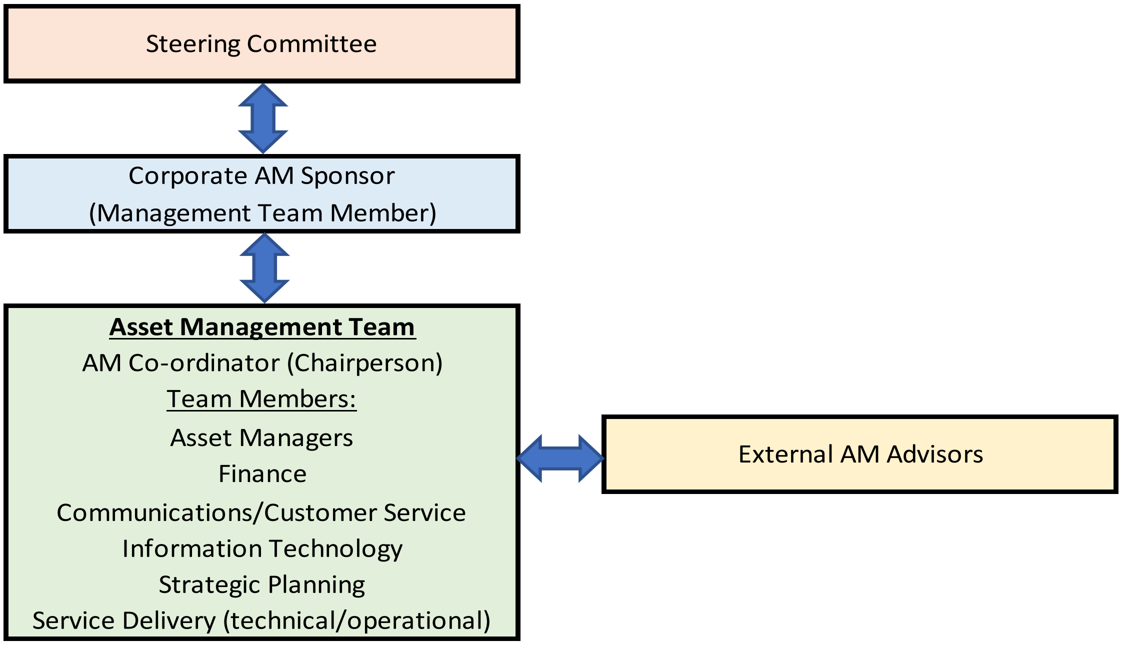
At the **advanced level of maturity**, asset management duties are formally assigned to many staff in applicable departments. The asset management roles and responsibilities are outlined in the job description of the identified employees. Sufficient staff resources are made available for performing asset management duties.

Asset Management Resourcing

Asset management resourcing requires an asset management project “champion” or “sponsor” to effectively gain resources and buy-in from the organization. The sponsor or champion should already be a leader within the municipality, such as the entire senior management, one (or a few) senior managers, or an asset management committee. The champion or sponsor helps ensure that communication, planning, and assessment of outcomes are being undertaken and that a manager(s) or committee is accountable for its success. In a committee setting, it would be beneficial to include representation from all applicable departments.

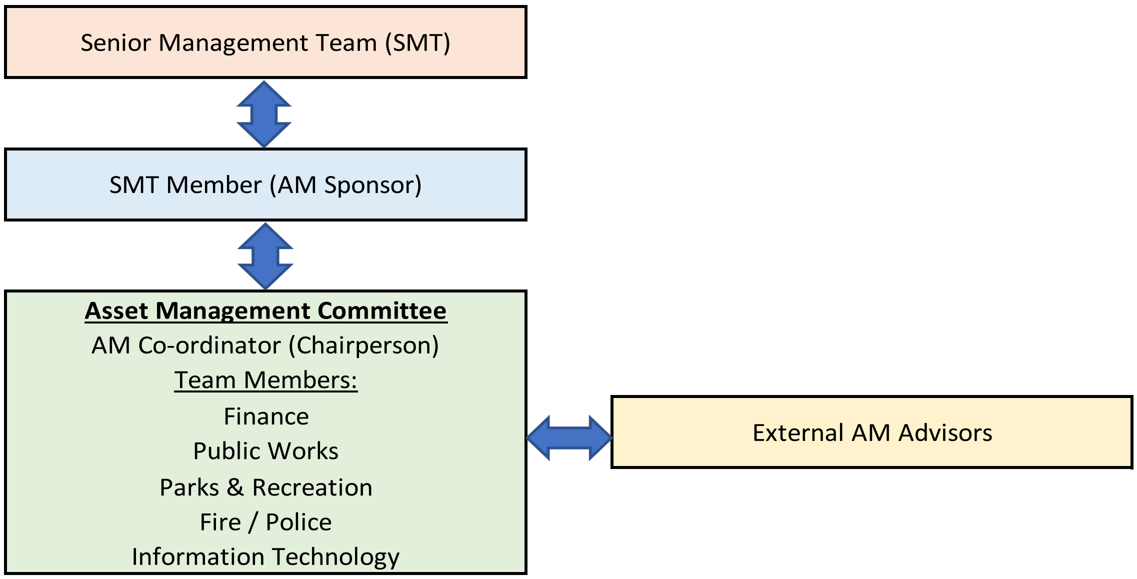
Depending on the complexity of the municipality, it may also be beneficial to assign the responsibility for facilitating the asset management process to an *Asset Management Coordinator* who reports to the manager(s) or committee representing the corporate asset management sponsor. The Asset Management Coordinator can lead the staff members who have been tasked with asset management (i.e. the asset management team), ensure that asset management is an integrated part of relevant municipal processes, and assist in promoting best practices. This position should also be responsible for liaising with external advisors, communicating asset management issues to affected departments, developing asset management plans and strategies, and ensuring sufficient staff and technology are available to meet goals. Figure 10-1 (below) provides a sample Asset Management Team structure:

Figure 10-1
Sample AM Project Team Hierarchy Large/Medium Municipalities



This team structure can also work in smaller municipalities with fewer departments and stakeholders involved. Figure 10-2 (below) shows a modified team structure to demonstrate how a smaller municipality can implement an Asset Management Team with representatives from all departments working on asset management on a part-time basis:

Figure 10-2
Sample AM Project Team Hierarchy Small Municipalities



An important role of the Asset Management Committee and the Asset Management Coordinator is to assess the amount of effort and resources needed to carry out asset management responsibilities within the municipality. Often, the ultimate success or failure of the asset management process hinges on the allocation of staff resources and the continued attention to staff skill levels.

International standards on asset management also stress the need for adequate asset management resources. According to ISO 55001:2014 (E) S.7.1:

> *The organization shall determine and provide the resources needed for the establishment, implementation, maintenance and continual improvement of the asset management system.*
>
> *The organization shall provide the resources required for meeting the asset management objectives and for implementing the activities specified in the asset management plan(s).*

Each municipality needs to determine how best to incorporate asset management roles and responsibilities into their organization structure. This decision often shaped by the size of the municipality. For example, although more easily instituted in larger municipalities, a separate asset management department, or asset management staff within an existing department, can bring benefits to a municipality. These benefits include the provision of specialized asset management expertise, clarity of reporting lines for asset management responsibility, ease of communication, and focused attention on meeting asset management objectives. While in smaller municipalities, asset management responsibilities are often integrated into existing job responsibilities of asset managers, engineering, and/or finance staff. In this case, it is important to ensure that the staff impacted by the additional duties have the necessary asset management competencies and time available to meet asset management objectives. An additional or supplementary approach might be to engage an external source of expertise (i.e. consultant) to provide guidance where necessary. However, it should be noted that it is important to ensure that the scope of work/responsibilities and expectations of outcomes are clearly defined and communicated when external consultants are used.

10.6 Staff Asset Management Capabilities

Given the evolution of AM best practices in Ontario, municipalities should encourage staff involved in the AM process to enhance their competencies through ongoing participation in educational opportunities.

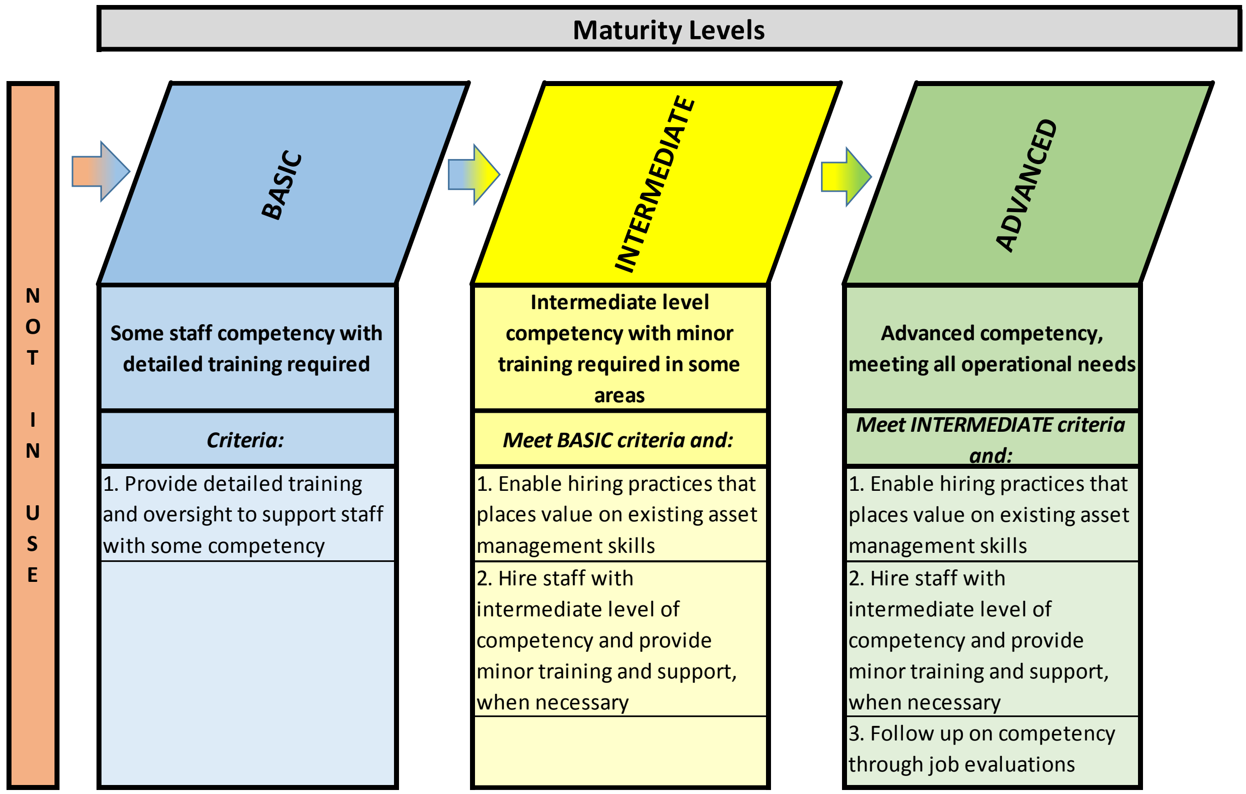
Are there sufficient staff with core competency skills in key operational activities with respect to asset management planning?

Background

Soft skills are important for asset management, regardless of the number of staff involved in asset management or the organizational structure in place. Job descriptions and job postings should be developed with asset management duties and both hard and soft skills clearly outlined. Once hired, it is important to create a framework for staff success in meeting asset management objectives. Training and mentoring of staff involved in asset management activities should be encouraged.

Levels of Maturity Core Competencies

Do staff possess or have sufficient opportunity to gain core competency skills in key operational activities with respect to asset management planning?



At the **basic level of maturity**, municipalities have some staff with competencies to carry-out asset management activities (i.e. maintenance, condition assessment, valuation, financial, etc.). However, the staff require detailed training and regular oversight to support them in these (as well as other) asset management duties.

At the **intermediate level of maturity**, municipalities employ staff with mid-level core competencies in operational asset management duties. Hiring practices should place value on candidates with existing asset management skills. This HR practice should create an environment where staff have sufficient ability to perform their duties with minor training and ongoing support, where needed.

At the **advanced level of maturity**, staff with high-level competencies are assigned to asset management duties. Appropriate hiring practices should be in place to fulfill this level of staffing, which should mean that employees only require training to keep up with the continuous evolution of asset management practices. As an additional step, employees should be provided with regular job evaluations to ensure competency levels and job goals are being met on an ongoing basis.

Asset Management Operational Capabilities

With asset management becoming an emerging topic in the municipal sector, it is likely that existing staff will require education and training on the subject through training courses, seminars, conferences, and webinars. In addition, a significant amount of training will occur during the development of a municipality's asset management process and asset management plan (i.e. learn through actual implementation). Some suggested approaches are:

- Establish a process for municipal staff to shadow external consultants (if used/hired), to assist in the implementation of asset management. Also have staff take on specific roles and responsibilities during the implementation process;
- Take advantage of available asset management courses, lectures/seminars, conferences, and webinars;
- Become familiar with online resources that provide tools and tips with respect to asset management;
- When hiring staff, pay attention to specific asset management expertise of the candidates;
- Conduct internal workshops on asset management to review both asset management concepts and approaches, and the internal workings of asset management within the organization. If one or many staff have asset management expertise, use them as a resource to train other staff; and
- Involve all applicable staff in the processes of ongoing asset management updates and improvements so they can learn while implementing asset management.

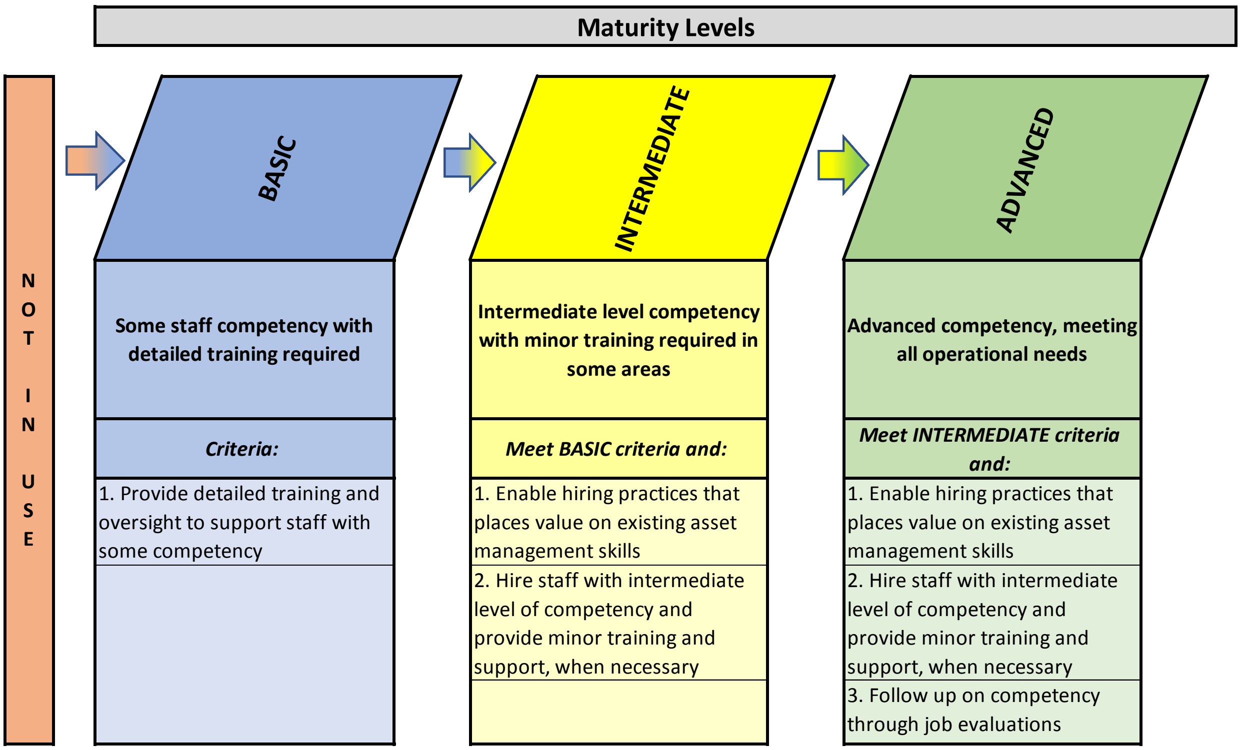
Are there sufficient staff with core competency skills in key financial activities with respect to asset management planning?

Background

Financial skills are required to conduct complete AM planning. Job descriptions and job postings should be developed with asset management financial duties and skills clearly outlined. Training and mentoring of staff involved in financial asset management activities should be encouraged, and it is important to create a framework for staff success in meeting asset management objectives.

Levels of Maturity Core Competencies

Do staff possess or have sufficient opportunity to gain core competency skills in key financial activities with respect to asset management planning?



At the **basic level of maturity**, municipalities have some staff with asset management competencies, but on a whole require further detailed training. To advance from the basic level, municipalities will need to provide detailed training and oversight to staff.

At the **intermediate level of maturity**, municipalities have staff with moderate asset management competencies, but still require some minor training in certain areas. Municipalities at this level have hiring practices that place value on candidate's existing asset management skills, and engage new staff in minor training and support, when necessary.

At the **advanced level of maturity**, municipalities have staff with proficient asset management competencies. Municipalities at this level have hiring practices that place value on candidates existing asset management skills, and engage new staff in minor training and support, when necessary. Competencies should be consistently assessed through on-going job evaluations.

Asset Management Financial Capabilities

As with soft skills (discussed above), it is likely that existing staff will require education and training from a financial perspective related to asset management through training courses, seminars, conferences, and webinars. In addition, a significant amount of training will likely occur during the development of a municipality's asset management process and asset management plan (i.e. learn through actual implementation). Some suggested approaches include:

- Establish a process for municipal staff to shadow external consultants (if used/hired) to assist in the implementation of asset management. Also have staff take on specific roles and responsibilities during the implementation process;
- Take advantage of available asset management courses, lectures/seminars, conferences, and webinars (with a financial focus);
- Become familiar with online resources that provide tools and tips with respect to asset management from a financial perspective, such as the Municipal Finance Officers' Association of Ontario (MFOA) website;
- Pay attention to specific asset management expertise of candidates when hiring staff;
- Conduct internal workshops on asset management to review both asset management concepts and approaches, and the internal workings of asset management within the organization. If one or many staff have asset management expertise, use them as a resource to train other staff; and
- Involve all applicable staff in asset management updates and improvements so they can learn from the process while implementing asset management.

10.7 Resources and References

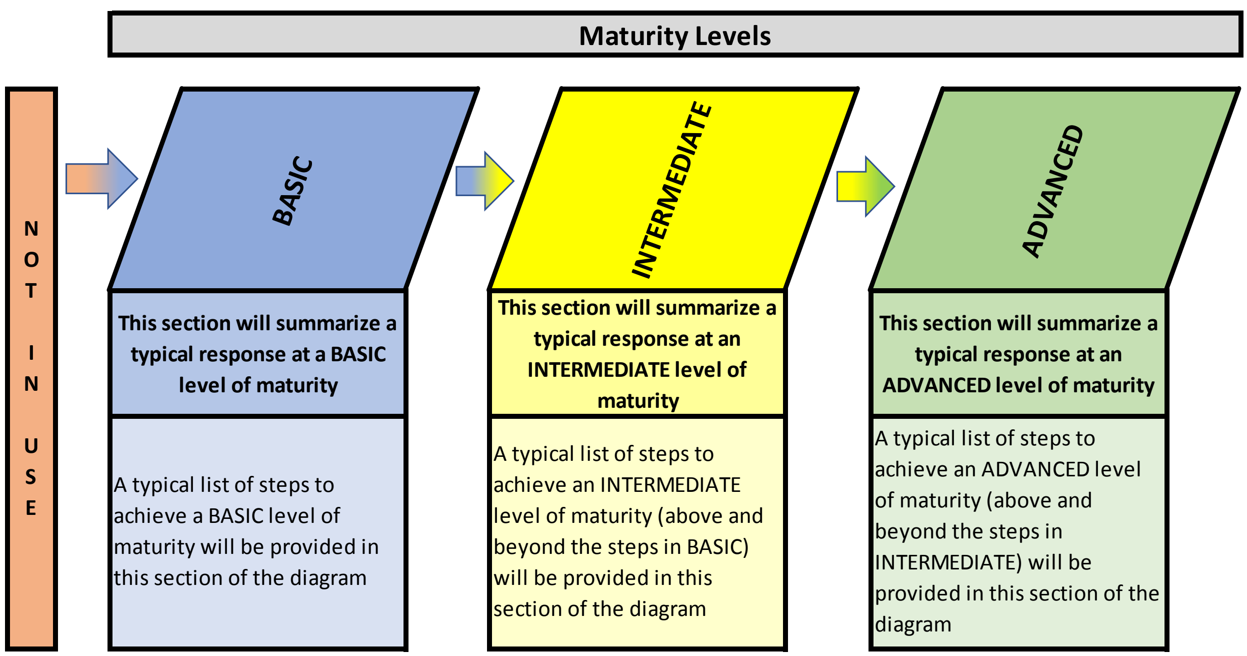
Institute of Public Works Engineering Australasia, 2015, International Infrastructure Management Manual, https://www.ipwea.org/publications/bookshop/ipweabookshop/iimm

International Organization for Standardization (ISO), 2014, ISO 55000:2014, Asset management – Overview, principles and terminology, http://www.iso.org/iso/catalogue_detail?csnumber=55088

11 Council Approval and Support

11.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake in order to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices

to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic leve*l requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

11.2 Overview

In *Chapter 10: Internal Governance*, the role of staff and the management team was discussed in relation to the success of the asset management process. This chapter discusses Council's role in relation to the success of the asset management process. Council can assume a simple "approval" role, whereby asset management related plans, reports, and policies are endorsed by Council resolution. Or, Council can assume a more direct, supportive role in asset management planning.

<u>Infrastructure for Jobs and Prosperity (IJPA) Act and O. Reg 588/17 Requirements</u>

O.Reg 588/17 outlines the following requirements with respect to AM Council Approval and Support:

A Strategic Asset Management Policy (SAMP) must be developed and adopted by *July 1, 2019* and reviewed and updated at least every 5 years. The SAMP outlines a requirement to include an explanation of Council's involvement in AM planning within the municipality.

In addition:

1. The asset management plan (or update) must be endorsed by the executive lead of the municipality and approved by Council resolution.
2. Municipalities would be required to provide Council with an annual update on asset management planning progress, by July 1st of each year.

11.3 Council Approval of the Asset Management Plan/Process

The extent to which Council adopts the AM process (including the AM plan) indicates their commitment to the AM recommendations and outcomes.

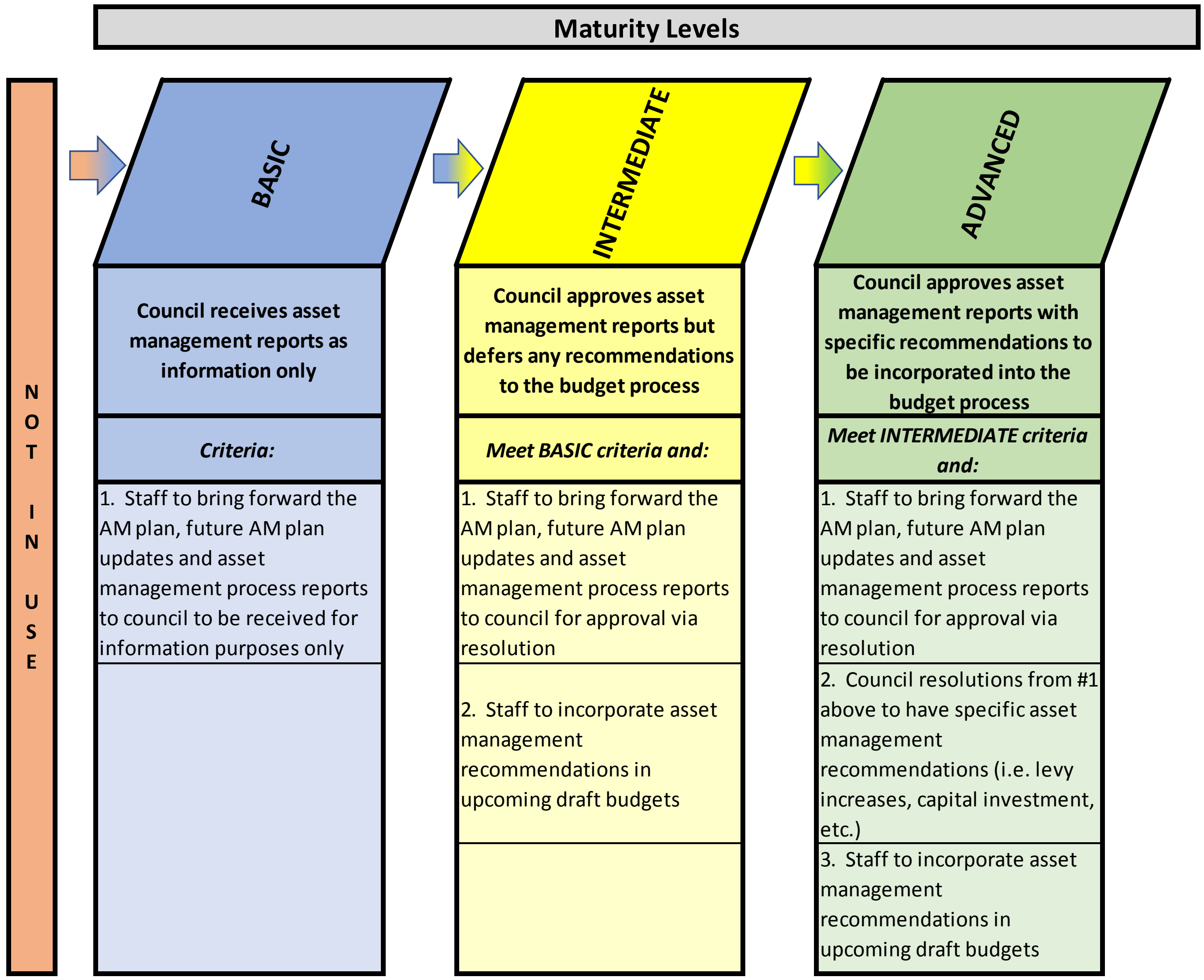
To what extent does Council approve the asset management plan?

Background

Council is responsible for approving the municipality's strategic goals and priorities. The strategic planning process puts a spotlight on service delivery outcomes expected by the community. Municipalities rely heavily on their capital assets to carry out service delivery to the public. As a result, the asset management process supports the goals of service delivery and is fundamentally linked to many service delivery outcomes. This makes the asset management plan a key document that underpins Council's strategic directions. Therefore, obtaining Council approval of the asset management process and the asset management plan ensures the asset management direction aligns with Council's corporate strategic direction.

Levels of Maturity Council Approval

To what extent does Council approve the asset management plan?



At the **basic level of maturity**, Council receives asset management related reports as information only.

At the **intermediate level of maturity**, Council approves asset management reports by resolution. However, specific recommendations are deferred to future budget processes.

At the **advanced level of maturity**, Council approves asset management reports and provides specific recommendations to include in the budget process. The recommendations are specific and include priority project identification, lifecycle cost investment levels, estimated impacts on rates, amongst others. Municipal staff would then incorporate the asset management recommendations into future budgets.

Council Approval

Council approval of the asset management plan/process provides a number of advantages, including:

- Staff will ensure the asset management process/plan is consistent with Council's corporate strategic directions;
- Council will have a better understanding of the contribution of capital assets in providing services for which they are the stewards;
- Council will know the planned approach to maintain capital assets in accordance with expected levels of service, and the corresponding impacts on rates to provide expected levels of service;
- Council and staff will have an established framework for future budgeting and planning processes; and
- Staff will have clarity on Council expectations related to asset management.

As discussed above, the levels of maturity change Council's approval process with respect to asset management as shown in Figure 11-1 and Table 11-1:

Figure 11-1
Sample Council Approval Process Level of Maturity

Table 11-1
Council Approval Process Pros/Cons Level of Maturity

Level of Approval	Pros	Cons
BASIC: Information only	Council is recognizing the existence of the AM Planning Process	No endorsement or commitment to AM
INTERMEDIATE: Approval, no specific recommendations	High-level endorsement and commitment to AM Process	No specific direction given to staff regarding action items
ADVANCED: Approval, with specific recommendations	Specific endorsement and commitment to AM, with action items	Can be difficult to obtain Council approval on specific recommendations

It should be noted that even at an *advanced level* of maturity (with specific asset management recommendations), there should be some type of follow-up on the specific recommendations as part of the budget process. For example, a Council may endorse a recommendation to increase capital investments by 3% per year over the next 5 years. This specific recommendation should be brought into the draft budget process and adjusted for any new asset management information that became available since asset management plan approval. In addition, any adjustments to the recommendation that are needed as a result of other budget recommendations should be brought back to the AM process.

11.4 Council Support of the Asset Management Process

To what extent does Council support the asset management process?

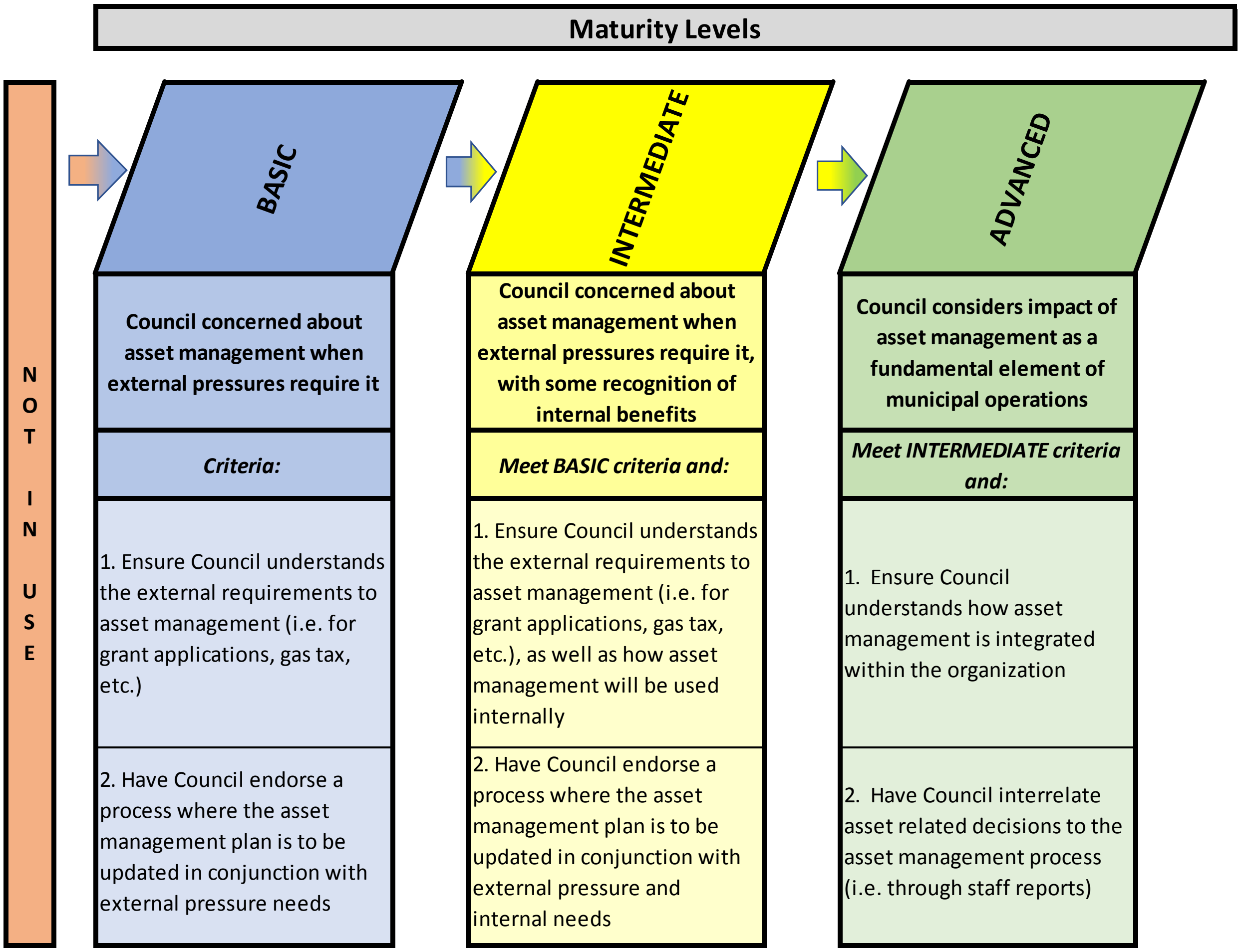
Having council support for the AM process ensures that asset-based decisions are being made in a consistent and informed manner.

Background

Once Council has approved the asset management process/plan, staff are able to undertake ongoing asset management actions knowing that they have Council's support/direction, and that they are operating in a manner consistent with the municipality's overall strategic direction. Going forward, where asset management related issues are brought to Council, the asset management process provides context for discussions between Council, staff, and the public. However, the question becomes, "How will Council use this asset management process as a tool to make decisions on an ongoing basis?"

Levels of Maturity Council Support

To what extent does Council support the asset management process?



At the **basic level of maturity**, municipalities have Council support of their asset management processes when external pressures require it. Examples of external pressures include: submission of asset management plans with grant applications, or meeting gas tax reporting requirements. Council will have endorsed a process whereby the asset management plan is updated in conjunction with external pressure needs.

At the **intermediate level of maturity**, Council becomes supportive of asset management processes when external pressures or internal needs require it (such as the budget process). Municipal staff must ensure Council understands both external pressures and internal benefits of asset management planning. Council will have endorsed a process whereby the asset management plan is updated in conjunction with external pressures and internal needs.

At the **advanced level of maturity**, Council considers the impact of asset management planning as a fundamental element of municipal operations. To reach this level of maturity, Council understands how asset management is integrated into the organization. Council also integrates asset-related decisions to the asset management process and asset management plan. This can be accomplished through appropriate wording within staff reports (referring to implications on the asset management process) and through discussions during meetings between Council, staff, and the public.

Types of Council Support

Council support of the asset management process on an ongoing basis demonstrates Council's trust in not only the asset management process, but the data, assumptions, and projections that result in the asset management recommendations. When Council and staff are consistently referring to the asset management process (when discussion topics warrant), an enhanced level of asset management integration in the municipal decision-making process is achieved.

As discussed above, the levels of maturity change Council's support with respect to asset management as shown in Figure 11-2 and Table 11-2:

Figure 11-2
Sample Council Support of AM Process Level of Maturity

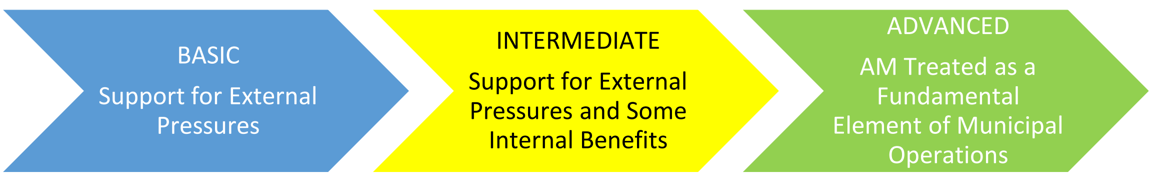


Table 11-2
Council Support of AM Process Pros/Cons Level of Maturity

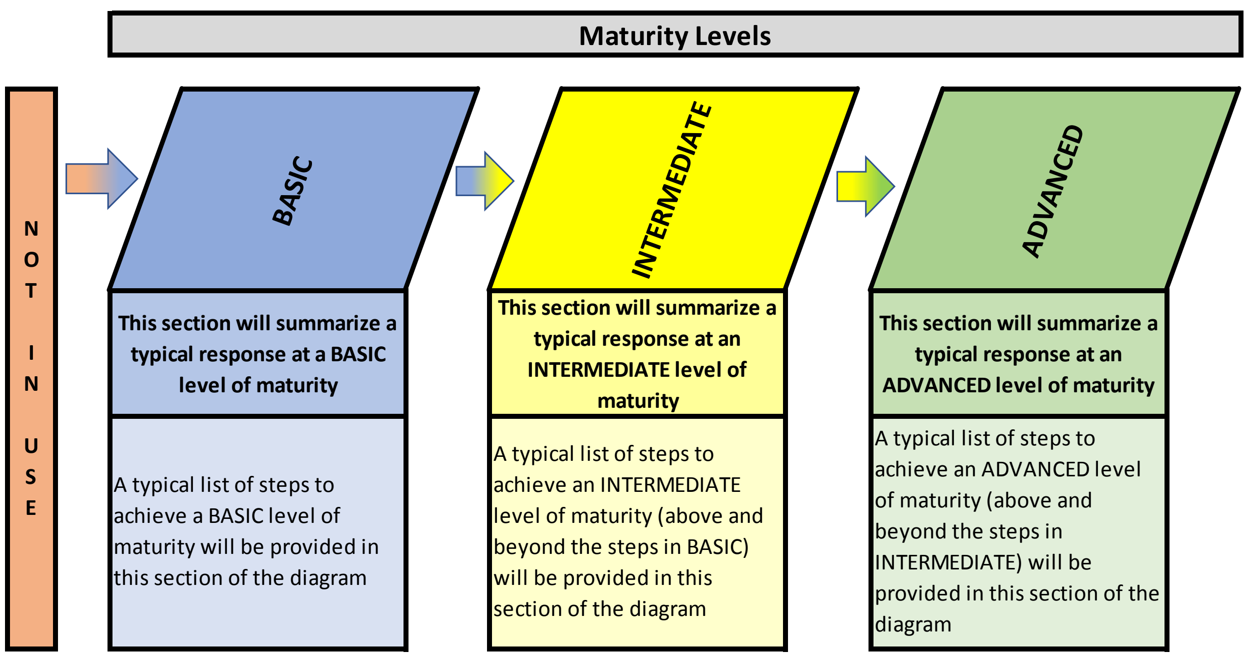
Level of Support	Pros	Cons
BASIC: External pressures only	Council is recognizing the benefits of the AM plan in applying for grants and meeting gas tax eligibility requirements	No reliance on the AM process internally, underutilization of a great planning and decision-making tool
INTERMEDIATE: External pressures and some internal benefits	Council is recognizing the benefits of the AM plan in meeting external pressures and some significant internal processes, such as the annual budget Opportunity to significantly improve the budget process	Full integration of asset management planning not utilized at this point Other internal processes may still benefit the AM process

Level of Support	Pros	Cons
ADVANCED: Fundamental element of municipal operations	Council and staff refer to the AM process whenever a decision impacts it All staff reports include a sub-section entitled “AM Implications” Potential processes directly tied to AM process: • Budget Process; • Strategic Planning; • Master (and Growth) Planning; and • All Asset/Financial Decisions	Additional time and effort required to assess AM impacts on decisions made

12 Public Engagement

12.1 Using this Framework

This framework is intended for municipalities of all sizes and maturity levels. The use of the maturity diagrams within this framework can help municipalities identify their current levels of maturity for each AM area. In addition, the diagrams provide possible approaches for municipalities to undertake to move to a higher level of maturity over time. Adaptations of the following diagram are used throughout this document to summarize maturity levels according to the themes and questions explored in each chapter:



This document is intended to help municipalities make progress on their asset management planning. By enhancing the readers' understanding of asset management maturity, they can more accurately determine their current, and work toward achieving the desired or appropriate, level of maturity for their municipality.

The asset management framework can be likened to a continuum, whereby municipalities should aim to implement the components described in a subsequent maturity level. For example, municipalities that are not practicing asset management

should strive to meet components at the *basic level*, and likewise, municipalities that currently meet the *basic* or *intermediate* levels should strive to advance their practices to meet the components of the next level. However, it should be noted that during this self-assessment process a municipality may decide to skip over maturity levels (i.e. move from basic to advanced, skipping intermediate). This is perfectly acceptable. Further, not every municipality will need to strive for the highest level of maturity in every area. For example, it may not make sense for a small municipality to meet certain advanced level components.

Readers can use the following descriptions of the maturity levels to guide their assessment throughout the various sections of this framework:

Municipalities that are not undertaking the components described in a particular section of this framework should focus on meeting the *basic level* requirements outlined in the maturity level diagram.

At the **basic level of maturity**, a municipality is undertaking the components of asset management shown in blue and will take steps to advance their asset management by implementing the components described under the *intermediate level* heading.

At the **intermediate level of maturity**, a municipality is currently meeting the requirements shown in yellow and to advance their asset management will take steps to implement the components described under the *advanced level* heading.

At the **advanced level of maturity**, a municipality is currently meeting the requirements shown in green.

These maturity framework visuals are found throughout this document. Preceding all maturity level diagrams is a self-assessment question for the reader to consider to help determine where their municipality best fits within the framework.

12.2 Overview

Municipalities can benefit from seeking the public's involvement in developing, reviewing, and approving various aspects of the asset management process. The public's input may be directly sought as part of asset management plan discussions concerning levels of service, lifecycle management strategy scenarios, various financing strategy options, and/or other elements of the asset management process. In addition, feedback related to asset management plan issues can be indirectly derived from other public processes such as budget approvals or master plan approvals. Overall, ensuring some level of public engagement throughout the asset management process not only assists in gaining a level of public acceptance on asset management, but also a level of public ownership in the process.

Infrastructure for Jobs and Prosperity Act (IJPA) and O. Reg 588/17 requirements

O.Reg 588/17 outlines the following requirements with respect to AM Public Engagement:

A Strategic Asset Management Policy (SAMP) must be developed and adopted by *July 1, 2019* and reviewed and updated at least every 5 years. The SAMP outlines a requirement to include a commitment to provide opportunities for municipal residents and other interested parties to provide input into AM planning

Municipalities will be required to post their SAMP and asset management plan on the municipality's website, if one exists, and make copies of these documents available to the public, if requested.

12.3 Benefits of Public Engagement

Facilitating public engagements within the AM process ensures consideration is given to stakeholder expectations.

To what extent is the public involved in the asset management process?

Background

Citizens of a municipality are in the best position to develop an overarching vision of the type of community in which they want to live, work, and play. Undoubtedly, at the core of these visions are municipal services. The asset management process sets out long-term strategies in order to ensure the assets will perform sufficiently to meet service delivery objectives. By involving the public in developing this vision for the municipality, the public will become educated in the various pressures and impacts associated with asset management. The public has the opportunity to shape both the direction of the municipality, as well as to understand the underlying asset management implications.

Levels of Maturity Public Engagement

To what extent is the public involved in the asset management process?

Maturity Levels

NOT IN USE	BASIC	INTERMEDIATE	ADVANCED
	The public can attend meetings where asset management is being discussed or approved	**The public can attend meetings where asset management is being discussed or approved, and**	**The public is invited to provide input into asset management during initial stages of development**
	Criteria:	***Meet BASIC criteria and:***	***Meet INTERMEDIATE criteria and:***
	1. Ensure the public is aware when asset management is to be discussed in a council or committee meeting (eg. agenda item, public notice, etc.)	1. Ensure the public is aware when asset management is to be discussed in a council or committee meeting (e.g. agenda item, public notice, etc.)	1. Provide opportunities for the public to directly participate in the asset management process (e.g. committee, workshop, detailed survey, etc.)
	2. Ensure that documents or reports being discussed are available to the public before the meeting (e.g. reports, AM plan, etc.)	2. Provide mechanisms for the public to provide comments on asset management related topics (e.g. delegations, written comments, surveys, etc.).	2. Ensure the public is aware when asset management is to be discussed in a council or committee meeting (e.g. agenda item, public notice, etc.)
		3. Ensure that documents or reports being discussed are available to the public before the meeting (e.g. reports, AM plan, etc.)	3. Provide mechanisms for the public to provide comments on asset management related topics (e.g. delegations, written comments, surveys, etc.)
			4. Ensure that documents or reports being discussed are available to the public before the meeting (e.g. reports, AM plan, etc.)

At the **basic level of maturity** municipalities ensure the public has an opportunity to attend council or committee meetings where asset management is discussed or approved. This can be facilitated through public notices, making the agenda public before the meeting, and encouraging attendance. Any asset management documents or reports could also be made available to the public prior to the meeting, to promote understanding and preparation for the meetings.

At the **intermediate level of maturity**, the public is invited to participate in an additional step to provide feedback on asset management topics prior to the council/committee approval meetings. Various methods can accomplish this including providing surveys, accepting delegations, or requesting written feedback.

At the **advanced level of maturity**, the public is invited to provide input during the development stages of asset management planning. In this manner, the public will have the opportunity to shape the fundamental direction of asset management processes.

Increasing Levels of Maturity for Public Engagement

As a municipality moves from basic to intermediate to advanced maturity, the level of public engagement increases, which provides the community with increased awareness and education on the intended asset management process. Moreover, increased public engagement can lead to increased acceptance of the proposed asset management recommendations, such as rate increases.

Some of the forms of public engagement are as follows:

Table 12-1
Sample Forms of Public Engagement

Engagement Type	Level of Engagement	Maturity Level
Attendance at Council/Committee meetings	Public received information only	Basic
Newspaper ads, fact sheets, website postings, videos, etc.	Public received information only	Basic
Surveys, questionnaires, etc.	Public provides comments	Intermediate
Community meetings, information session with questions and answers, delegations, etc.	Public provides comments	Intermediate
Community working groups	Public included in meetings with departments	Advanced
Asset Management Committee (with public members)	Public included in AM Committee meetings	Advanced

The degree of public participation and consultation can vary based on specific components to the asset management process. For example, varying degrees of public participation may be determined for:

- Creating asset management policies and strategies;
- Levels of service (in defining community expectations);
- Deciding on the most effective Lifecycle Management Strategy (i.e. long-term forecast);
- Agreeing on optimal Financing Strategies; and
- Reviewing and approving an AM Plan.

A municipality may decide that simply informing the public is acceptable for most asset management components but may prefer more public engagement when it comes to setting policies, strategies and determining community expectations.

It is important to note that members of Council are elected to make decisions on behalf of the public. However, those decisions should also be informed by information gathered from the public on a variety of issues. Therefore, if a municipality is not ready to move towards full public engagement within the AM process, a potential intermediate step would be to engage Council actively during the AM process, and thereby incorporate the public's view indirectly.

STAFF REPORT #T2021-17
Standing Committee 10/4/2021
Council 10/18/2021
Amendments: no

Submitted to: Strategic Initiatives Standing Committee | Council

Submitted by: Dennis Sloan, Manager, Capital and Financial Planning
Monica Quinlan, Treasurer

Subject: Asset Management Plan – Update Part 2

PURPOSE

The purpose of this report is to provide an update on the status of the Asset Management Plan (AMP) with respect to the requirements of the 2022 Budget for Core Assets.

RECOMMENDATION

THAT Staff Report T2021-17, Asset Management Plan Status be received;

AND Further that staff be directed to include the AMP findings in the 2022 Budget process.

AMENDMENTS

None.

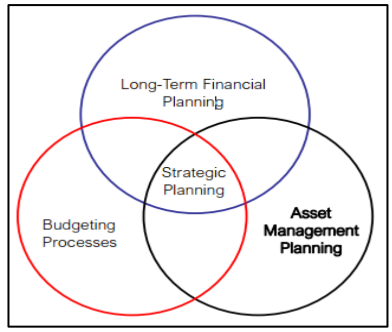
1. BACKGROUND

"Asset Management Planning is part of a strategic planning process that is integrated with budgeting processes and long-term financial planning. Good asset management planning helps municipalities make well-informed and evidence-based decisions about their infrastructure assets[1]."

A primary accountability of the Town is the oversight and care of the assets that provide the services taxpayers need and rely on. In turn, the ultimate goal of asset management planning is to ensure and be able to demonstrate the financial sustainability of all those assets.

There are four key components of an asset management plan:

1. Asset Inventory
2. Levels of Service
3. Asset Management strategy
4. Financial Strategy



Asset management encompasses the renewal/maintenance/rehabilitation of assets the Town **owns at this time** and doesn't take into consideration the growth or expansion of a community. Growth is covered through separate financial plans such as development charge studies.

Asset Management planning differs from the financial audits and reporting that governments carry out under Public Sector Accounting Board (PSAB) standards and are shown in Annual Audited Financial Statements.

These statements show the cost of acquisition or construction of an asset spread over the asset's estimated useful life, generally using a straight-line depreciation. While these accounting assumptions are mandatory and are useful to help understand the general financial valuation of an entity and its income tax assessments, they do not consider many of the factors that Asset Management does to develop realistic investment plans, such as the actual condition, changing rates of deterioration over the life cycle, the different treatments available and their benefits depending upon when they are applied (e.g. crack sealing vs. shave and pave vs. rebuild), life expectancy and future plans (replacement or other) of each specific asset, and the coordination of work with other department (e.g. updating sanitary sewers, stormwater and the road pavement together).

Asset management is intended to aid the owners of multiple assets to:

- Think about the capital investments needed in these assets over their full life cycle, so that sufficient funding is available when it is needed, and
- Consider how these assets contribute (or not) to the desired outcomes of their owners.

Ontario regulation 588/17 was passed in 2017 which made it mandatory for municipalities to develop and adopt AMPs. The following are the key deadlines that the Town must adhere to:

[1] Ministry of Infrastructure presentation September 19, 2018.

1. Phase I would be to address core infrastructure assets (i.e. roads, bridges, culverts, wastewater, water, and stormwater) and would be required to completed by July 1st, 2022.
    a. Requires an asset inventory(registry), including replacement cost, age, and condition;
    b. Current level of service and performance metrics;
    c. Estimated lifecycle costs by asset category to maintain current levels of service for 10 years;
    d. For municipalities with populations over 25,000: Population and employment forecasts (from Growth Plans, official plans, etc.), and the lifecycle costs required to maintain current levels of service in order to accommodate projected increases in demand caused by growth.

2. Phase II would expand on Phase I by including all infrastructure assets in the plan by July 1, 2024
3. Phase III would require further details to be provided for all infrastructure assets by July 1, 2025.

Since staff's last report to Council in May 2021 on the status of the Town's AMP, staff have continued to update and refine the models and data required. There has been significant progress made with respect to core linear assets with a thorough review of treatment types, matching of projects across asset types, current levels of service and the initial preparation of creating the report that is required to meet the regulations. There have been some unexpected delays with respect to the facility condition assessments, and these reports are expected later in the fall or early winter.

What follows is a comprehensive review of the Town's core assets[2] so as to provide an update on meeting the 588/17 regulations but also so as to provide some context for the 2022 Budget process. Note that the facilities included are aged-based evaluations, until the state of the buildings are known through the Facility Assessment Condition report.

2. INPUT FROM OTHER SOURCES

The information included in this document has been reviewed by the AMP team.

3. APPLICABLE POLICY OR LEGISLATION

O.Reg 588/17

[2] Core Assets defined as Roads, Bridges, Stormwater, Water Treatments, and Wastewater Treatment assets.

4. ANALYSIS

Roads

State of Infrastructure/Level of Service (LOS)

Collingwood's roads on average are in good to very good condition which has been demonstrated consistently in the completed road condition assessment studies; the Town has conducted 4 assessments in the last 8 years, with the most recent being completed in 2020.

The results are shown below:

Asset Class	Class Description	# of KMs	Average PCI	Replacement Cost
HCB-H-R	HCB, low volume, rural/SU	28.65	83.40	$ 34,285,260
HCB-H-U	HCB High Volume Urban	20.79	87.96	48,809,979
HCB-L-R	Low volume rural/semi-urban	65.46	78.74	66,730,468
HCB-L-U	HCB, Low Volume, Urban	30.92	82.71	42,608,010
HCB4-U	Urban HCB-Collector/Local	0.74	56.72	729,753
	Grand Total Road Network	146.56	81.90	$ 193,163,470

*PCI = Pavement Condition Index; ** HCB = High Class Bituminous/Asphalt

Road Condition assessment studies look at many different variables when assessing a road's condition, however, the overall condition of a road segment is summarized with one number known as the Pavement Condition Index (PCI). This overall rating is a useful tool for tracking road conditions over time and so this is the primary metric that staff are using for a roads level of service policy. However, not all roads are the same and staff propose that in addition, tracking PCI condition by road asset class be adopted as a LOS metric. In other words, a PCI of 60 (out of 100) for an Urban arterial road would have a different response in terms of refurbishment or renewal then the same score on a non-Urban local road. This is because additional factors such as road volume and financial return on investment would differ greatly by these asset classes. This concept has been applied to the strategy being reviewed.

The roads have been maintained in good to very good condition on average due primarily to the following factors:

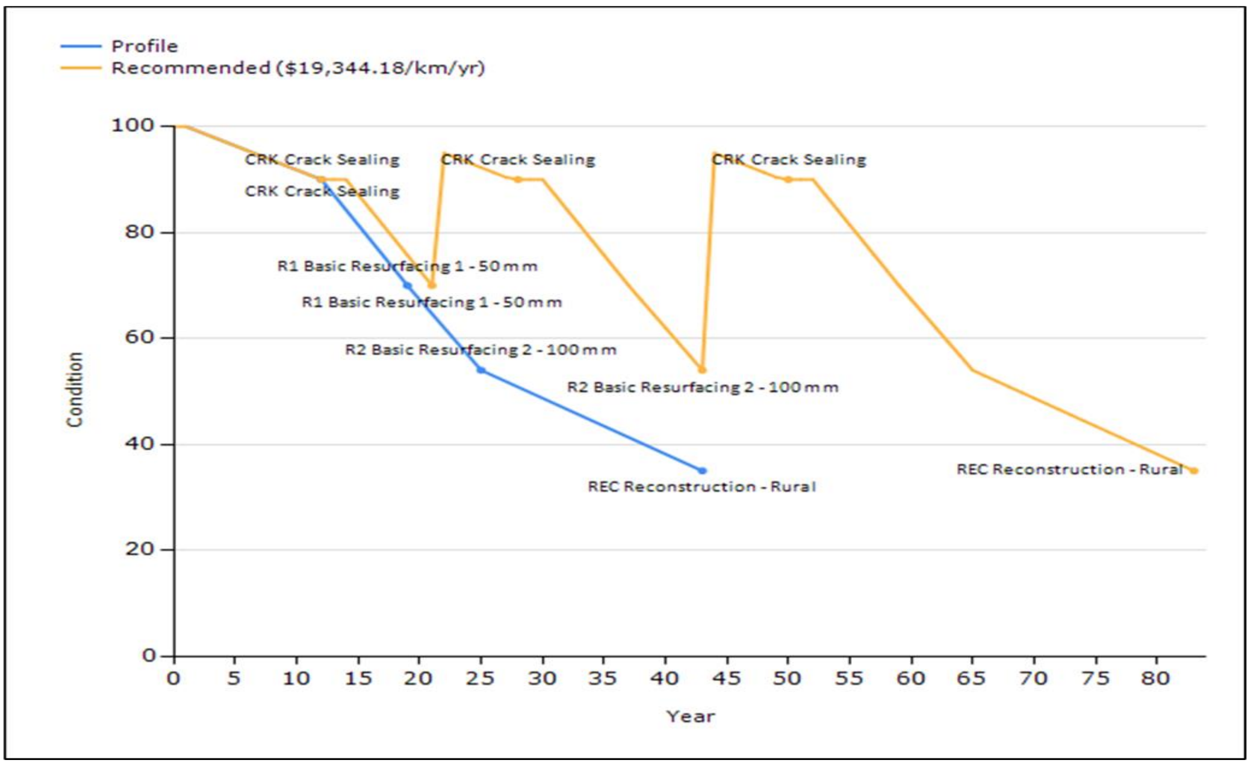
- Growth:
  - Older roads have been reconstructed/rehabilitated (earlier) when they were expanded to accommodate growth.
- Grant Funding:
  - Collingwood has been successful over the past 5 years in securing grant funding;
  - Consistent Federal Gas Tax and OCIF grant funding programs have contributed towards road resurfacing and reconstruction. This is a key factor in the overall funding model for asset management.

- Lifecycle Capital Reserve Fund:
  - Beginning in 2014 with a contribution of $1.6M (now > $2M in 2021 Budget), Collingwood has consistently increased contributions to this reserve fund each year.
- Ongoing Capital Budget programs:
  - Sanitary Reconstruction Program:
    - While this ongoing annual program is intended to address ageing linear sanitary infrastructure, it has also contributed to road reconstruction.
  - Annual asphalt resurfacing program:
    - The town has consistently conducted a resurfacing program of critical roads as part of the annual capital budget.

Over the last several months staff have been focused on developing the appropriate treatments and reconstruction cycles to ensure the longevity of roads while maintaining the level of service as well as matching the life cycle of the underground works. Based on the staff developed plan there are 3 types of treatment applied at optimal times to maintain the condition of the road, they are as follows:

1) Crack Sealing; 2) Resurfacing – 50 mm; and 3) Resurfacing – 100 mm.

This equates to roads lasting approximately 80 years and provides for a deterioration curve as follows:

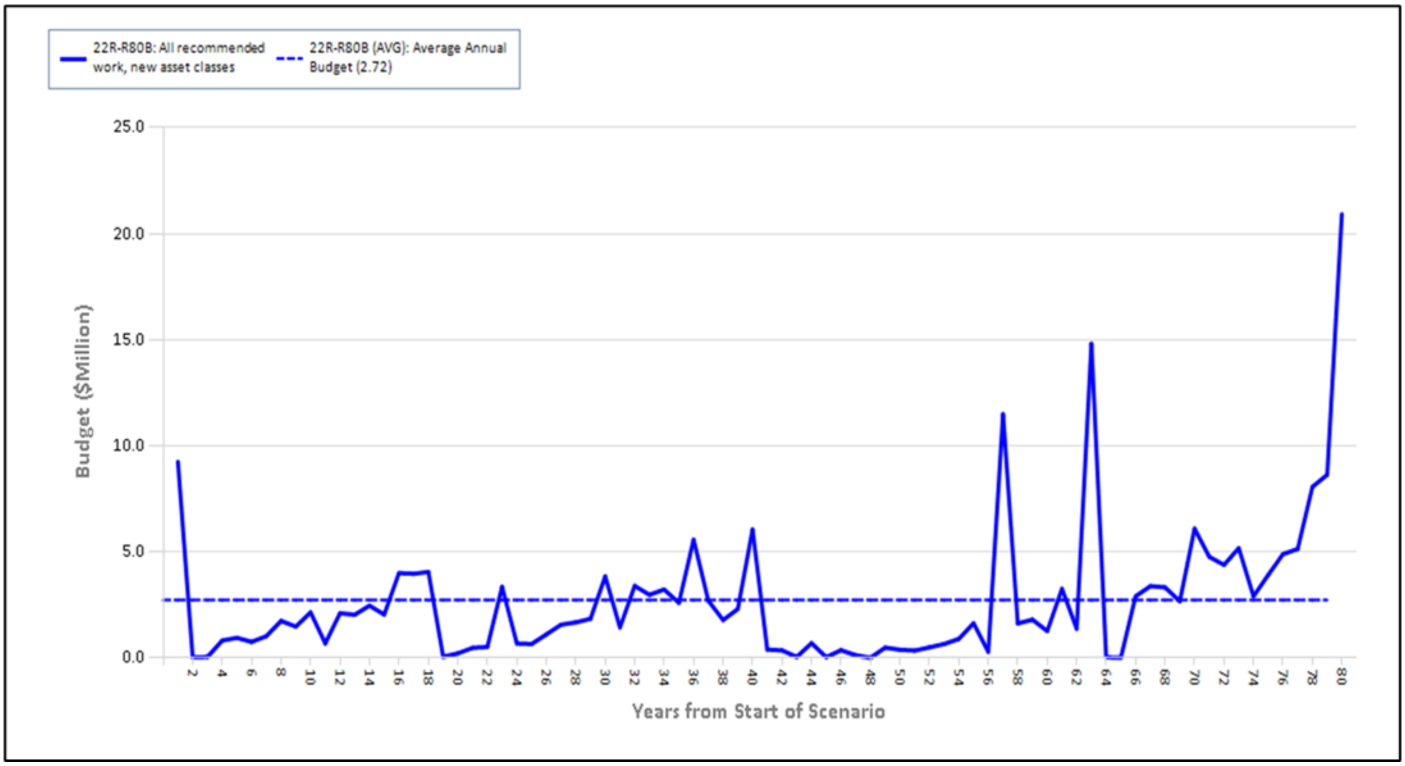


<u>A key factor of true asset management is understanding how an asset performs and what type of treatments provide for the most optimal life span, and lower costs since reconstruction is delayed significantly</u>. The graph above depicts how this class of assets (HCBL-R – Low volume Semi-Urban = 44% of our roads) will perform over the life by applying the treatments recommended, if we do not follow these optimal treatments it results in much lower levels of service and almost 40 years less in asset life. This means that reconstruction will occur much earlier resulting in greater costs over the asset life and depleted levels of service.

At this time staff have modeled the asset performance to do the "right things at the right time" which means that the LOS for the different classes are maintained at above 70 PCI over the next 60 years. This model also provides for a return on investment (Asset Value at the end of the planning period vs. Asset value if nothing is done) of $86M. Additionally, it means a savings of $181M – this translates to savings by doing the right treatments versus doing nothing at all.
As an aside, it is of interest that the above analysis shows the cost per km over time is about $19,344 per year for the class of road shown, which provides a motivation for a compact development pattern that balances not only new infrastructure initial costs, but also its ongoing life cycle Asset Management needs.

<u>Financing</u>

Staff have continued to review and refine the data in the Roads inventory (and all core assets) with a more concerted effort in the past year and half so as to meet the targets of the Ontario regulations 588/17. While the focus of the AMP has been to plan and work through the details of the next 10 years **<u>it is imperative that as a municipality we are concentrating on the overall life span of each asset, to meet the goal of full asset management</u>**.
The graph below shows the investment in today's dollars over the 80 year lifecycle:



You will note that the average investment over 80 years equates to $2.72M per year and is broken down in the table below.

Improvement	Lifespan Average
Crack Sealing	$ 40,032
R1 - 50MM	421,004
R2 - 100MM	831,261
Reconstruction	1,423,786
Grand Total	$ 2,716,082

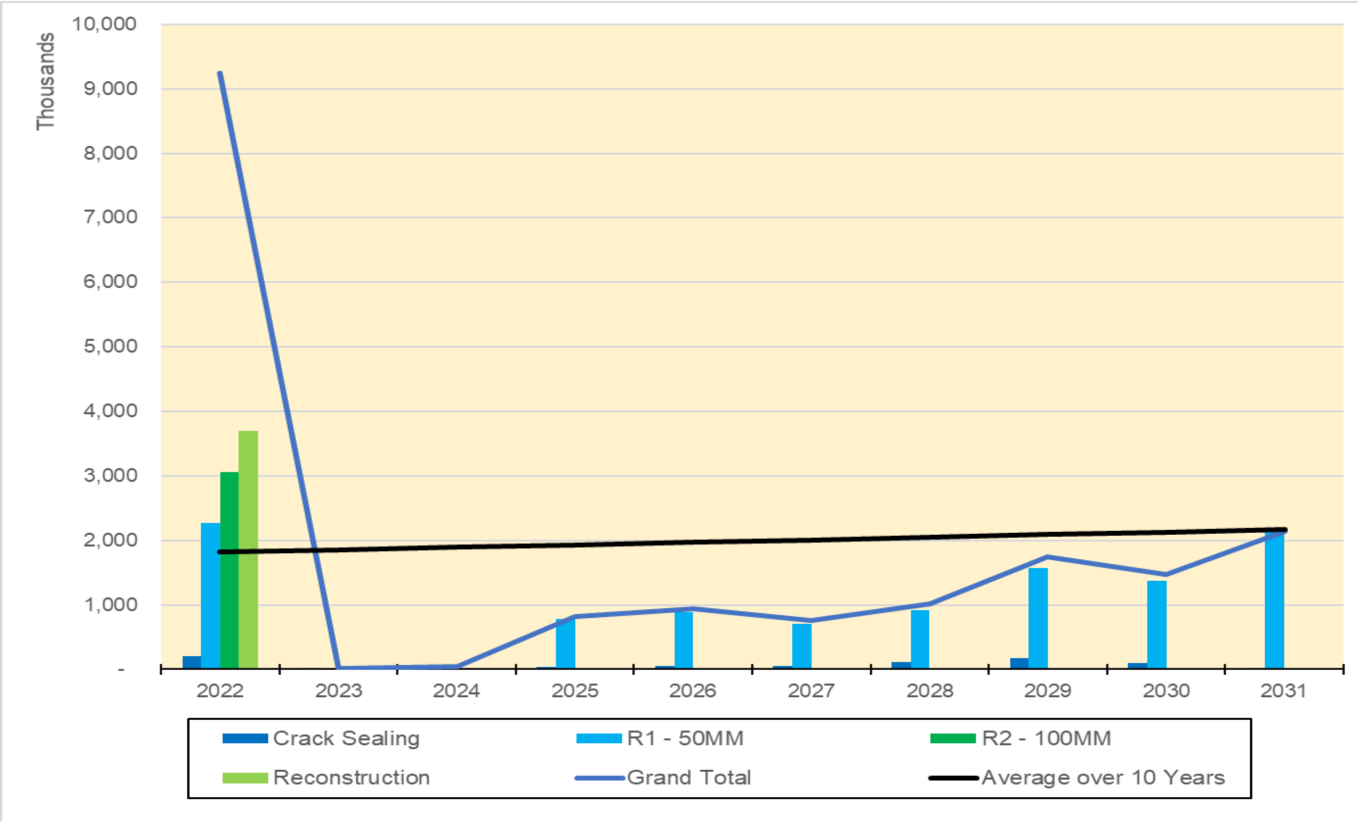
You can see that there is a significant backlog showing in 2022 based on the current results, this however will be spread over the next several years to ensure the Town is achieving its' asset management goals while planning for an appropriate average spend. Additionally, some projects that are identified within 2022 can and will be delayed due to other development occurring that will directly affect timing of the rehabilitation.

It is important to note that this amount is presented using today's dollars with no inflationary measure, if we add inflationary amounts at 2.0% per year over the next 10 years the results are as follows:

Improvement	Lifespan Average	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Crack Sealing	$ 40,032	$ 40,832	$ 41,649	$ 42,482	$ 43,332	$ 44,198	$ 45,082	$ 45,984	$ 46,904	$ 47,842	$ 48,798	$ 49,774
R1 - 50MM	421,004	429,424	438,012	446,773	455,708	464,822	474,119	483,601	493,273	503,139	513,201	523,465
R2 - 100MM	831,261	847,886	864,844	882,141	899,783	917,779	936,135	954,857	973,955	993,434	1,013,302	1,033,568
Reconstruction	1,423,786	1,452,261	1,481,307	1,510,933	1,541,151	1,571,974	1,603,414	1,635,482	1,668,192	1,701,556	1,735,587	1,770,299
Grand Total	$ 2,716,082	$2,770,404	$2,825,812	$2,882,328	$2,939,975	$2,998,774	$3,058,750	$3,119,925	$3,182,323	$3,245,970	$3,310,889	$3,377,107

The initial $2.7M is a great start, however we still have to be concerned with inflationary increases. These may be partly offset by appropriate investments with respect to the reserve funds, new treatments and gained efficiencies, however staff want to stress the importance of inflation. As new infrastructure is added due to growth, over time it will also be added to the portfolio being renewed and its lifecycle costs will also affect the annual totals.

10 Year Work Plan



While the 10 Year Plan costs are reasonable (at ~ $2.0M/year) as shown above and within the means of our current reserves and funding model, it is key that we do start now to ensure our reserves are sufficient for future needs. With a good investment policy and program, the financial impact of **consistent contributions now will ensure financial sustainability is achieved for the full lifecycle of the road assets in the future**.

The modelling results have stayed consistent with an estimated annual investment requirement of just under $2M annually over the next 10 year (see 10 Year Work Plan Graph). This is also consistent with staff's expectations and is in-line with current average spending on road refurbishment and reconstruction in the Town's operating and 10 year capital budgets.

Finally, note that the average amount over 10 years has been **inflated by 2% per year, which means that by the end of 2031 the average value has increased to $2.2M.**

Bridges

State of Infrastructure/Level of Service (LOS)

The Town owns and maintains 25 bridges and has a legislative requirement to conduct bridge studies every 2 years to assess the condition and renewal or rehabilitation needs. Bridges are complex multi faceted structures with different elements requiring maintenance and renewal programs (deck, concrete, beams) and are assessed according to their own assessment criteria under Ontario Structure Inspection Manual (OSIM).

The level of service for bridges is defined by the results of the town's OSIM reports which also produces a 10-year plan for rehabilitation and renewal.

Financing

According to the 2020 OSIM report the town's bridges will require $8.6M in improvements. This equates to $860K /year. The town has relied heavily on grant funding in the past as the costs exceed the means of our lifecycle reserve funding. One replacement is identified (Ontario Street) and staff will be endeavoring to secure grant funding for this. The chart following provides the details of the work plan.

Additional simplified analysis indicated that a full life cycle analysis for all structures would end up in with a similar amount per year in needs over the longer term.

Name	Replacement Cost	Average Condition	Average Age	10 Year Capital Plan
Pretty River Bridge - Bridge 1	$ 3,030,500	72	50	$ 456,000
Hume Street Bridge	2,122,500	84	61	-
Highway 26 Bridge	947,500	100	61	-
Ontario Street Bridge	4,772,500	36	81	4,772,500
Huron Street Bridge over Station Creek	812,500	73	91	-
Hurontario Street Bridge	1,067,500	75	15	-
First Street Bridge over Oak Street Canal	5,869,500	70	51	415,000
Second Street Bridge over Oak Street Canal	576,500	67	55	202,000
Third Street Bridge over Oak Street Canal	981,500	67	61	247,000
Fourth Street Bridge over Oak Street Canal	962,500	97	7	-
Fifth Street Bridge over Oak Street Canal	1,022,500	97	6	-
Sixth Street Bridge over Oak Street Canal	801,500	72	50	219,000
First Street Bridge over Hickory Street	766,500	88	12	-
Mountain Road Bridge over Black Ash Creek	1,818,500	72	43	1,106,500
Highway 26 Bridge over Black Ash Creek	3,196,500	75	25	-
Sixth Street Bridge over Underwood Creek	1,326,500	73	21	238,500
Mountain Road Bridge over Silver Creek	1,088,500	66	38	342,000
Highway 26 West Bridge over Silver Creek	1,806,500	70	37	229,000
Highway 26 West Bridge over Silver Creek Ext.	1,268,500	74	31	284,000
Hwy 26 Cranberry - bridge 23	906,500	74	61	130,000
Hume St at Minnesota - bridge 25	597,500	98	6	-
Grand Total	$ 35,742,500	76	41	$ 8,641,500

Environmental Services

Water – Linear

State of Infrastructure/Level of Service (LOS)

With underground linear infrastructure it can be challenging to properly assess the condition and thus AMP plans are often based on the age of the assets. However, there are more factors that can help with the assessment of mains, such as material types, soil conditions or depth of installation, as well as the number of breaks experienced. Taking these additional factors into consideration the water department has developed a water priority weighting tool which assigns a weighted value score to asset segments based on age, number of breaks per 100 meters, main depth, and pressure issues in order to identify the most critical renewal requirements. Using this tool helps to address the level of service we are trying to achieve.

The table below illustrates the conditions as well as the age and replacement costs of each asset class. Over 70% of the town's inventory is 28 years or less and has an average condition rating of between 65/100 and 81/100 (fair to very good).

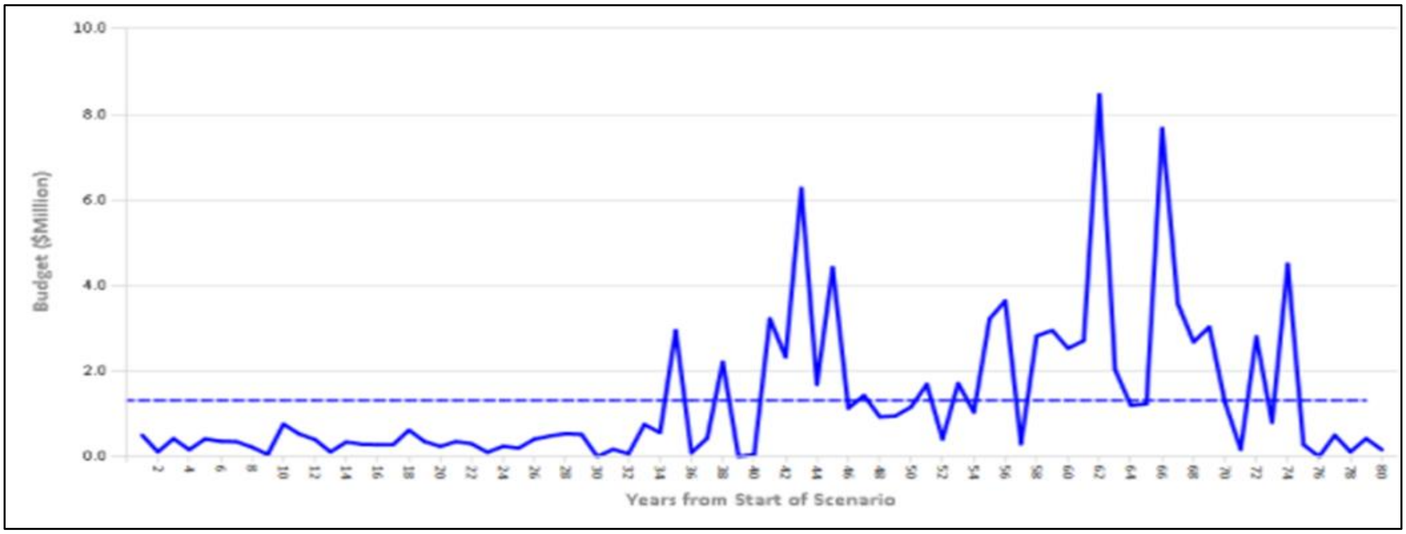
Asset ID	Length in Meters	Average Condition	Replacement Cost	Average of age
WM-CI-250	2,942	14.6	$ 1,672,672	65.5
WM-CI-400	604	26.0	481,694	59.2
WM-CI-150	25,522	24.9	12,464,731	56.9
WM-CI-300	11,531	27.0	7,106,929	56.0
WM-CI-200	4,357	26.3	2,190,980	55.7
WM-CON-400	3,040	31.0	3,967,753	54.2
WM-CON-450	893	33.8	1,502,044	53.0
WM-PVC-300	107	64.6	48,986	28.3
WM-DI-300	25,241	66.0	15,624,211	26.9
WM-DI-250	2,393	67.3	1,385,654	25.8
WM-CON-600	4,885	68.8	9,279,545	25.0
WM-DI-150	56,986	69.4	27,821,901	24.3
WM-DI-200	19,739	72.7	9,865,244	21.4
WM-DI-400	7,064	74.5	5,667,405	20.4
WM-CU-50	531	70.9	9,920	19.3
WM-PVC-150	1,453	77.6	709,515	17.9
WM-DI-500	3,290	81.6	3,621,445	14.8
Grand Total	170,578	59.3	$ 103,420,629	31.7

*WM = Watermain, CON = concrete, CU copper, DI ductile iron, PVC Plastic

In addition, the water department coordinates with the public works sanitary program to match main replacements that correspond with sanitary priorities.

Financing Strategy

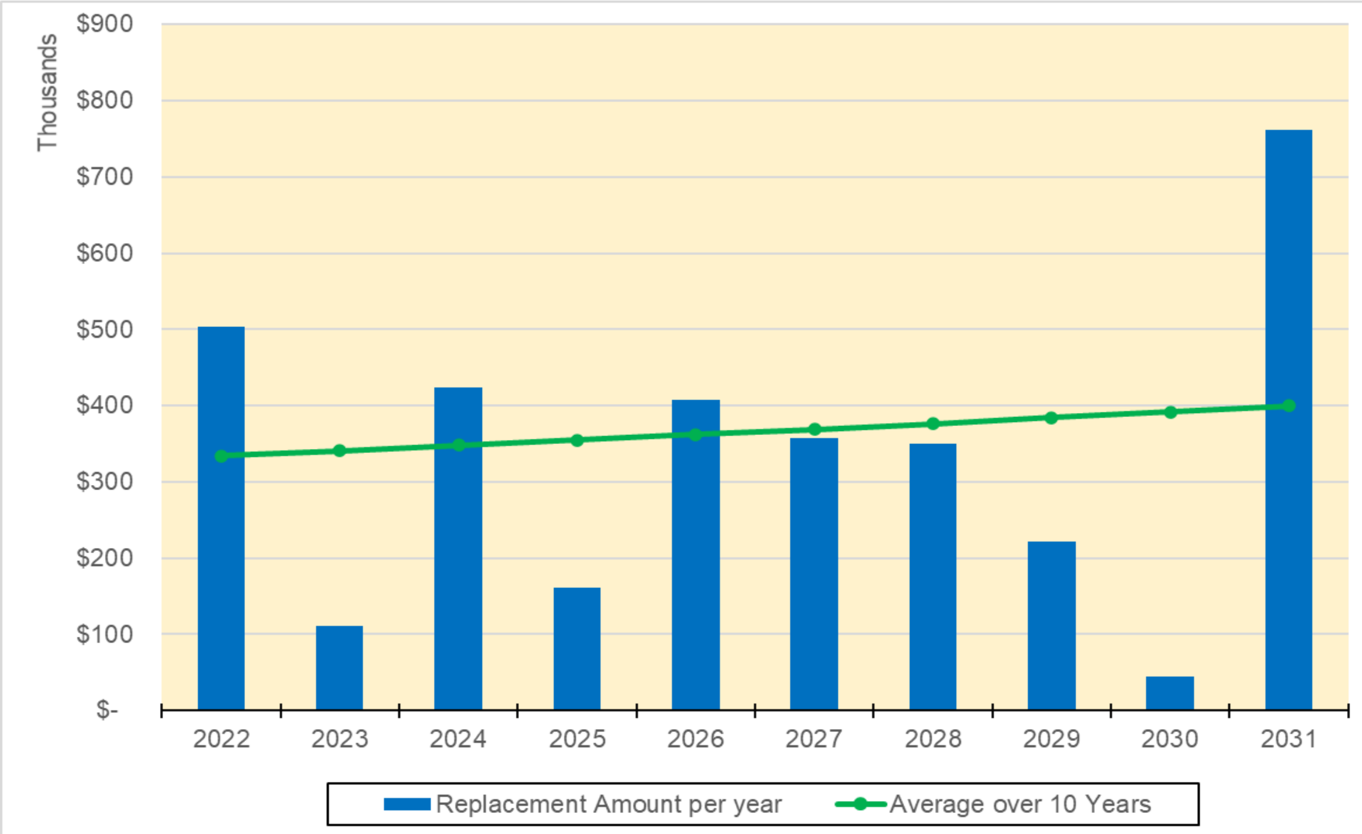
Over a full lifecycle view, the annual investment requirements have also been consistent with further revisions and refinement of the AMP at approximately $1.34M/year as illustrated in the graph below, in today's dollars.



The same concerns for inflationary factors apply here as discussed under the roads section. Adding a 2% inflationary factor over the next 10 years results in the following:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Average over 10 Years - inflated	$1,341,510	$1,368,340	$1,395,707	$1,423,621	$1,452,094	$1,481,135	$1,510,758	$1,540,973	$1,571,793	$1,603,229

However, in spite of known specific issues break tracking, (again based on depth, break and pressure history) the watermain system has a relatively lower short term (10 years) annual investment need of approximately $0.3M annually which is a significant change from previous AMP update reports. As mentioned above, this is also due to water staff being able to assess some older mains thought to be due for replacement and found them to be in good condition. The 10 Year Work plan is illustrated below and includes an inflationary factor each year in the amount of 2%.



As mentioned previously in the roads financing strategy, it is critical that we start making consistent contributions to the reserve funds for those future growing liability as assets reach their end of useful life. As early as the next update of this AMP, ongoing amounts should be considered for the significant needs emerging in the longer term (30 years or more).

Water - Vertical

The Water Treatment Plant facility, as well as associated reservoirs and booster stations has a current estimated replacement cost (without expansion – note that the expansion will be included upon the next update to the AMP) of $36.9M. At this time a town-wide facility condition assessment is being conducted and until this is completed (late Fall 2021), the amount determined for the lifecycle portion has been based solely on age and useful life of the facilities.

Based on the current replacement costs and useful life of the asset as detailed below the average amount that will need to be maintained is $1.06M/year, when a 2% inflationary factor is included this amount grows to $1.26M/year by 2031. As members of council may be aware all water contributions for lifecycle amounts are collected through water rates and form part of the rates studies that occur periodically.

Asset	Average Age	Average Service Life	Replacement Value 2021 $	Annual investment Required
Georgian Meadows Booster Station	18	47	$ 483,905	$ 10,369
Osler Bluff Booster Station	21	47	486,331	10,421
South End Reservoir	13	40	4,350,297	108,757
Water Filtration Plant - Facility	24	100	3,668,000	36,680
Water Filtration Plant - Intake Pipe	71	125	2,341,808	18,734
Water Filtration Plant - Vertical Works	24	23	16,752,512	723,404
Water Tower	91	150	3,170,247	21,135
West End Reservoir	30	45	5,721,968	127,155
Grand Total	**26**	**40**	**$ 36,975,069**	**$ 1,056,656**

Sanitary - Linear

State of Infrastructure/Level of Service (LOS)

The sanitary inventory layer has benefited from extensive review and updating thanks to the hard work of the GIS staff and updates[3] from the Master Servicing Plan being conducted by Public Works. That said, the additional updates have not yielded any surprises and the estimated needs of the system have stayed consistent with earlier estimates. The system has also benefited from the commitment of the ongoing Sanitary renewal capital program (10+ years now) which has addressed the most critical needs. At this point in time the average condition of the sanitary sewers is 75/100 which means the system is relatively young, these conditions are based solely on age at this time and Public Works has identified the possible need to conduct another video scope condition assessment as the last one was completed in 2009.

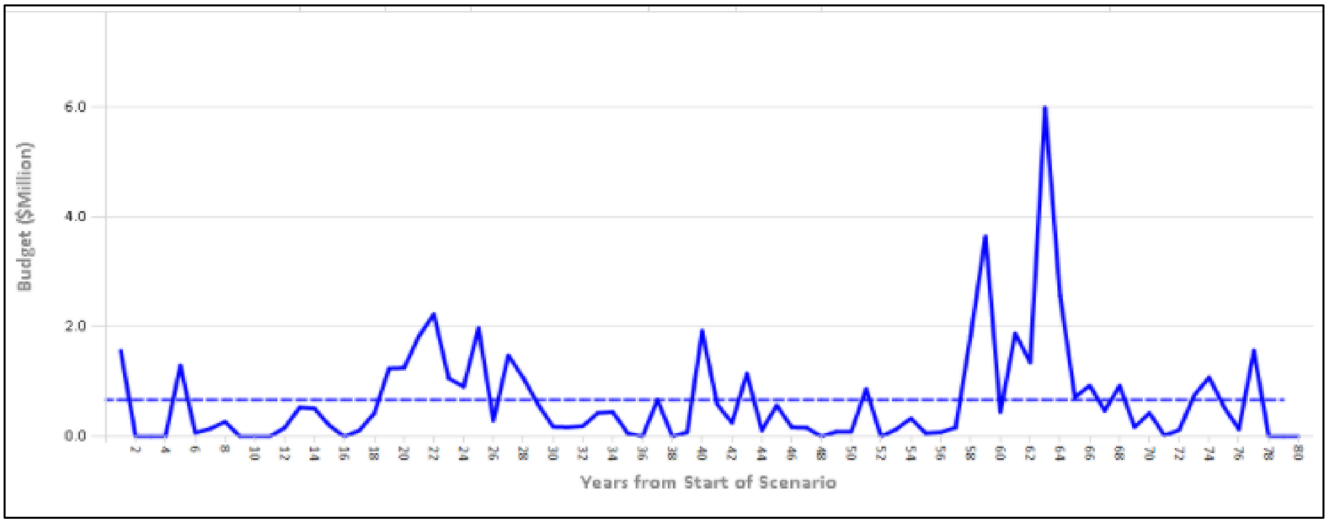
Sanitary Mains	Meters	Average Condition	Average age	Replacement Cost - 2021$
SAN-150	1,151	88.9	21.5	$ 507,158
SAN-200	37,443	80.4	29.5	14,133,914
SAN-250	30,669	69.2	41.7	15,479,200
SAN-300	11,384	74.3	36.0	6,077,214
SAN-375	9,912	76.1	33.3	5,501,710
SAN-450	16,440	77.0	33.0	10,686,027
SAN-525	3,556	67.7	46.0	2,658,134
SAN-600	783	75.6	37.3	687,082
SAN-675	540	88.4	19.4	561,338
SAN-750	5,202	72.0	40.5	6,424,488
Grand Total	117,080	75.4	35.1	$ 62,716,265

Financing Strategy

The review and updates to the inventory of the sanitary system as a result of the master servicing plan have resulted in a marginal decrease in the average annual cost to maintain the system in

[3] Over 20,000 meters of updates added to system since 2019. The linear inventory is now > 117,000 meters.

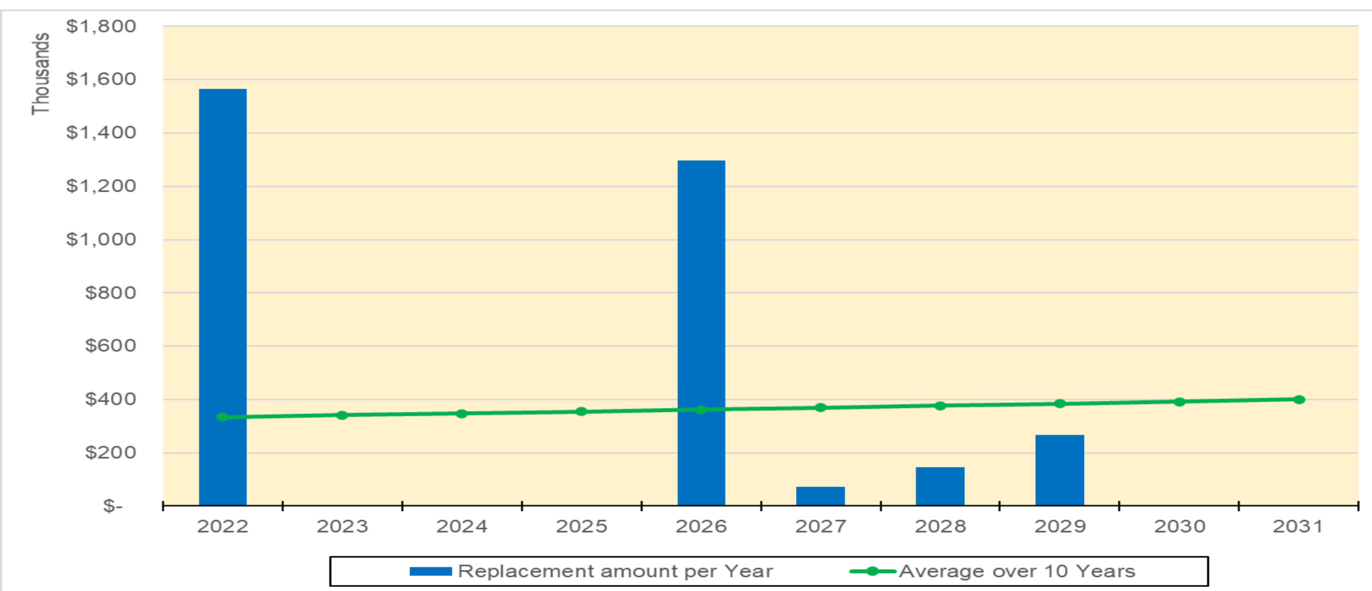
2021 dollars is just under $700k down from the $850k/year (2019). The graph below illustrates over the lifecycle of these assets (80 years) the amounts required.



The same concerns for inflationary factors apply here and adding a 2% inflationary factor over the next 10 years results in the following:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
10 Year Average - inflated	$ 671,787	$ 685,223	$ 698,927	$ 712,906	$ 727,164	$ 741,707	$ 756,542	$ 771,672	$ 787,106	$ 802,848

As discussed previously a concerted effort has been placed on reviewing and understanding the projects over the next 10 years and will continue to be the focus for planning of projects, to ensure optimal capital expenditures. The chart below details the work required over the next 10 years and provides an average amount of $335k/year.



Sanitary - Vertical

Much of the wastewater treatment facilities are nearing the end of their original estimated useful life; however these facilities are being impacted more so by growth with a major expansion project already being planned to start in 2026 with an estimated cost of $67.8M (largely covered by development charges). Similar to the Water Treatment Plant, the greater cost of the plant is the equipment with relatively shorter service lives then the facility itself (20-30 years) and therefore is critical in terms of a financing strategy to ensure adequate reserve funds. Once again as we await the condition assessments for town facilities, the amount determined for the lifecycle portion has been based solely on age and useful life.

Based on the current replacement costs and useful life of the asset as detailed below the average amount that will need to be maintained is $2.18M/year ($220k/year for pumping stations + $1.96M/year for the WWTP), when a 2% inflationary factor is included this amount grows to $2.6M/year by 2031. As members of council may be aware all wastewater contributions for lifecycle amounts are collected through wastewater rates and form part of the rates studies that occur periodically.

Asset	Asset item	Average Age	Average Service Life	Replacement Value $2021	Annual Investment Required
Black Ash Creek SPS	Electrical (incl. generator)	37	20	$ 230,720	$ 11,536
	Forcemain	6	75	230,720	3,076
	Pumps, Piping and Mechanical	37	20	230,720	11,536
	Structural	37	75	385,280	5,137
	Variable Frequency Drive	8	20	38,080	1,904
Cranberry Trail SPS	Electrical	5	20	164,640	8,232
	Forcemain (PVC)	5	75	339,360	4,525
	Pumps, Piping and Mechanical	5	20	180,320	9,016
	Structural and Architectural	5	75	203,840	2,718
Minnesota St. SPS	Electrical (incl. generator)	29	20	230,720	11,536
	Forcemain	4	75	200,480	2,673
	Pumps, Piping and Mechanical	40	20	308,000	15,400
	Structural	60	75	385,280	5,137
	Variable Frequency Drives	9	20	77,280	3,864
Paterson St. SPS	Electrical	14	20	113,120	5,656
	Forcemain (PVC)	4	75	132,160	1,762
	Pumps, Piping and Mechanical	14	20	218,400	10,920
	Structural	14	75	278,880	3,718
St.Clair St. SPS	Electrical/Scada	4	20	846,720	42,336
	Forcemain (HDPE)	4	75	1,182,720	15,770
	Pumps, Piping and Mechanical	4	20	703,360	35,168
	Structural	4	75	648,480	8,646
Grand Total		16	45	$ 7,329,280	$ 220,267

Asset	Asset item	Average Age	Average Service Life	Replacement Value $2021	Annual Investment Required
Water Pollution CP	Electrical	22	20	$ 11,558,400	$ 577,920
	Mechanical	22	30	30,822,400	1,027,413
	Structural	27	75	34,675,200	462,336
Grand Total		23	39	$ 77,056,000	$ 1,961,425

Storm Water

State of Infrastructure/Level of Service (LOS)

The storm water system has had the most dramatic amount of updates due to the Master Servicing Plan review and the efforts of our GIS staff (In 2019, we didn't have sufficient data to do reasonable analysis). Much of the storm network has been built over the years on an ad hoc basis and can often be as simple as a corrugated pipe in a culvert and as a result the full network and its current status may not have been fully understood and so not surprisingly, it also has the highest annual estimated cost for renewal and refurbishment of all the linear assets with a significant amount of "immediate needs" catch up work. However, as Collingwood grows and becomes increasingly urbanized, the importance of this system is becoming more obvious. This asset class has not benefited as much from the higher profile ongoing sanitary renewal capital program which has addressed many critical sanitary, water and roads needs already. And, as was recently demonstrated with the emergency Minnesota Storm sewer repair project, these projects can be significantly expensive. [4]

The condition of these assets are based solely on age and the town is benefitting from a fairly young system. The table below details the average conditions/age and replacement value.

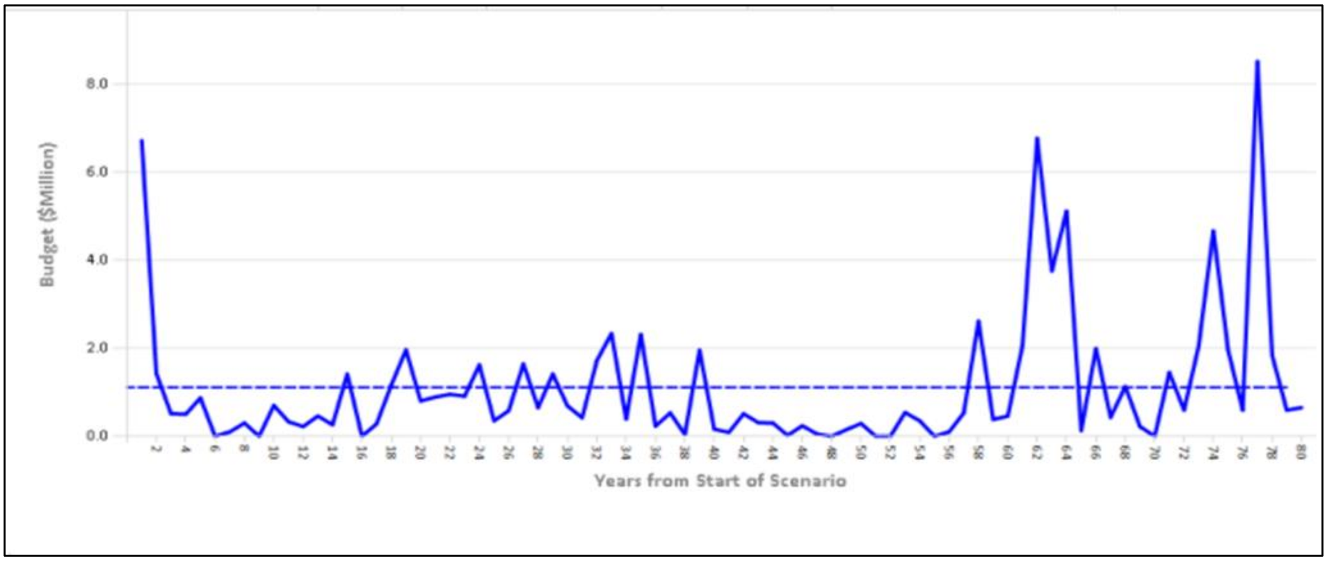
Asset	Number of Segments	Average Condition	Replacement Cost - 2021$	Average Age	Length in Meters
STS-1050	38	75	$ 5,556,368	38	2,728
STS-1050-CSP	3	1	208,880	57	103
STS-1200	12	85	2,174,094	22	862
STS-1350	32	81	5,981,137	28	2,103
STS-1500	7	52	2,199,899	57	672
STS-1500-CSP	4	24	1,995,841	40	610
STS-300	619	86	12,359,987	23	13,055
STS-300-CSP	239	17	4,252,063	46	4,885
STS-375	168	88	6,502,750	21	6,324
STS-375-CSP	109	16	4,943,091	47	4,906
STS-450	159	89	7,809,078	19	7,335
STS-450-CSP	165	20	6,857,865	45	6,520
STS-525	127	83	6,922,913	28	6,295
STS-525-CSP	10	6	356,392	51	324
STS-600	161	85	10,986,719	24	8,520
STS-600-CSP	27	27	1,356,942	38	1,052
STS-750	134	79	10,862,638	29	7,222
STS-750-CSP	11	50	824,852	26	548
STS-900	79	82	7,196,676	26	4,391
STS-900-CSP	11	43	1,059,309	29	643
STS-975	6	92	407,554	16	228
Grand Total	2,121	67	$ 100,815,048	30	79,323

Financing Strategy

The stormwater network has the highest annual average estimated cost of any of the underground linear systems at $1.1M. The graph below illustrates the average amount as well as the high contributory years. You will note that the 2022 amount is quite high and reflects a

[4] 2014 Town of Collingwood replacement cost of Storm sewer network was $25M.

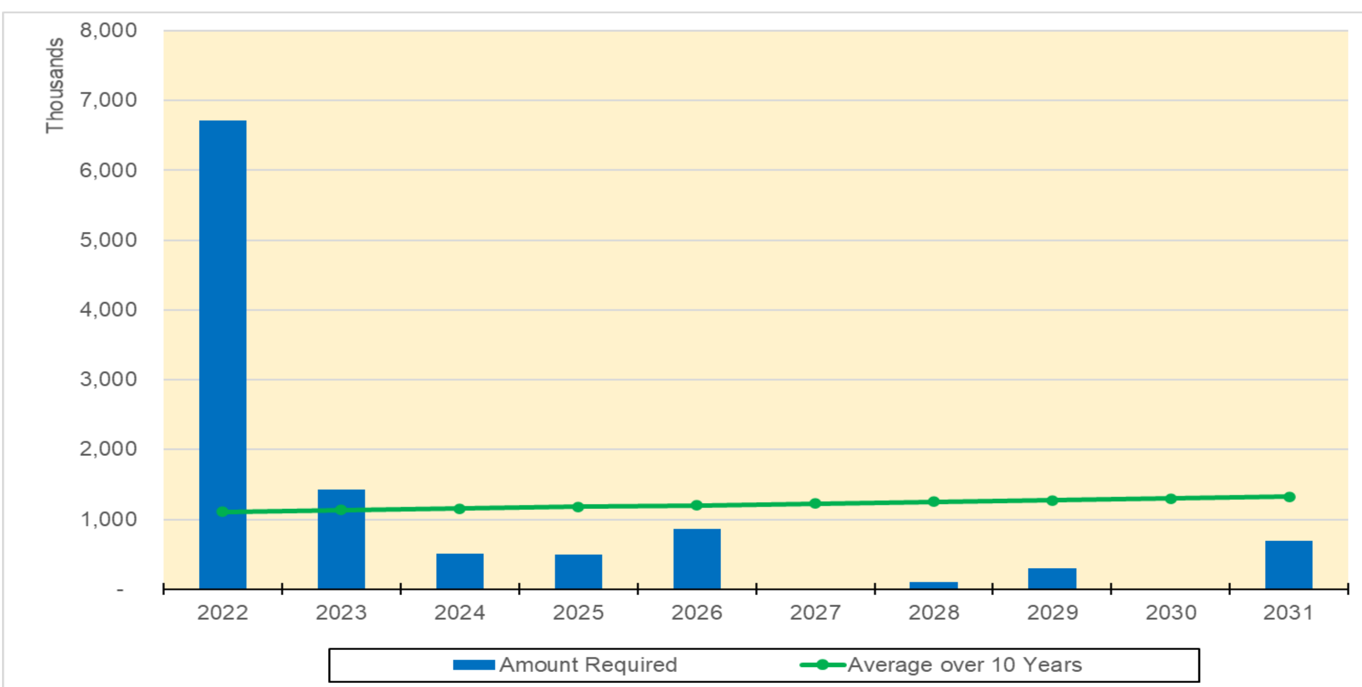
backlog of works, however the projects will continue to be monitored and the focus should be on the total lifecycle of works, rather than a particular year.



Once again inflationary factors apply here and adding a 2% inflationary factor over the next 10 years results in the following:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
10 Year Average Inflated	$ 1,114,235	$ 1,136,520	$ 1,159,250	$ 1,182,435	$ 1,206,084	$ 1,230,205	$ 1,254,809	$ 1,279,906	$ 1,305,504	$ 1,331,614

The 10 Year Work Plan is provided below, note again that because of the backlog showing in 2022 there is not a great difference between the required amounts here versus the 80 year full lifecycle.



Overall Summary – Total Core Assets – Financing Strategy

As we have reviewed each individual asset category on its own the final step of understanding the needs of the AMP is to combine the information and review the different available financing options. The chart below summarizes the discussions held above, and totals nearly $10M.

Asset Group	Annual Lifecycle Amount - 2021$
Roads	$ 2,716,082
Bridges	864,150
Water - Linear/Vertical	2,398,166
Wastewater - Linear/Vertical	2,853,479
Stormwater	1,114,235
Grand Total	**$ 9,946,112**

Although $10M is a large amount of funds to manage and comprehend, it is crucial that we recognize the multiple sources of funding and then clearly define the gap between what is needed and what we currently spend/generate each year. There are multiple sources of funding and they include:

- Reserves/Reserve Funds
- Grants
- Debt Financing – both internal and external
- Tax Levy
- User Fees

Roads/Bridges and Stormwater (Tax-supported assets)

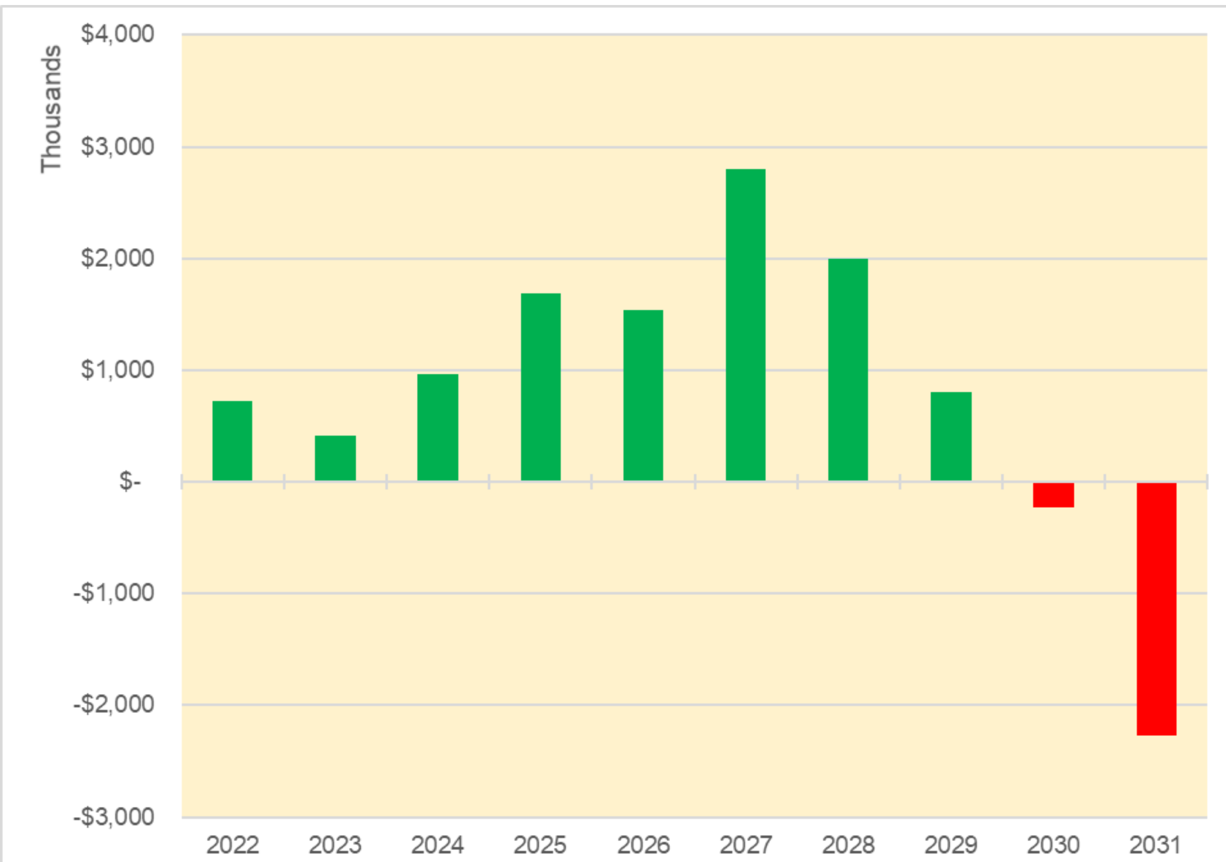
The town has primarily used contributions to reserves, grants, debt financing and the tax levy to fund or support capital projects. The total required for these assets equates to $4,694,467, the current reserve funds that are applicable to this include: the Special Capital Levy and Lifecycle Replacement Reserve Fund. On an annual basis the amounts that are added to both of these funds (on average over the last 2 years) is $2.2 M, additionally the town has used both the OCIF fund and the Federal Gas Tax to supplement and finally there are funds within the operational budget such as paving and asphalt spray and patch that contribute as well. The chart below details the net funding gap for these assets, note however this is based on the $2.2M continuing for reserve funding each year:

Roads/Bridges/Stormwater	Amount
Annual Lifecycle Amount - 2021$	$ 4,694,467
Less:	
Reserve Contribution per year	2,200,000
OCIF Funding	900,000
Federal Gas Tax (50%)	315,000
Amounts in Operational Budget	356,785
Financing Gap	**$ 922,682**

Once again this amount is excluding inflation and is reported in 2021 dollars. Using this information and holding the current contributions as detailed above, below is a table showing the forecast of our reserve funds for the next 10 years:

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Beginning Balance	$ 5,214,765	$ 728,698	$ 410,421	$ 968,078	$ 1,689,402	$ 1,536,859	$ 2,795,187	$ 2,001,877	$ 806,570	-$ 224,377
Add Contributions: Grants/Reserve	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785	3,771,785
Add Interest	52,148	7,287	4,104	9,681	16,894	15,369	27,952	20,019	8,066	- 2,244
Less Expenditures + Inflation	8,310,000	4,097,349	3,218,232	3,060,142	3,941,222	2,528,825	4,593,047	4,987,111	4,810,798	5,816,506
Closing balance	$ 728,698	$ 410,421	$ 968,078	$ 1,689,402	$ 1,536,859	$ 2,795,187	$ 2,001,877	$ 806,570	-$ 224,377	-$ 2,271,342

You will note that beginning in year 2030 if we do not increase the contributions (and exclude debt) we begin to see a deficit in the reserves. A graphical demonstration is below:



The town is fortunate that there have been sound financial decisions over the last several years and have been able to build a balance in the reserve funds to begin the AMP program, however as can be seen these amounts can become quickly depleted if we do not increase the contributions. Additionally, there is some element of risk as grants are not guaranteed and may at some time either go away altogether or decrease significantly. Note again that this does not include any debt being issued, however for simplicity purposes they have been excluded.

Given all the information and the understanding of how vitally important it is that we continue to invest today to protect the future sustainability of the town. It is also important to understand that there are ways to assist in closing the gap of $922K going forward to ensure that it is not overly burdensome to the taxpayer for example:

1) Add small increases to the Special Capital Levy over the next 5 – 10 years:

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Rate as % of Tax Rate	0.75%	0.79%	0.83%	0.87%	0.91%	0.96%	1.01%	
Amount	$ 264,000	$ 277,200	$ 291,060	$ 305,613	$ 320,894	$ 336,938	$ 353,785	
Estimated Change Amount		$ 13,200	$ 13,860	$ 14,553	$ 15,281	$ 16,045	$ 16,847	$ 89,785
Estimated Change %		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	34.0%

2) As old debt expires use the tax levy component to create a future Debt Reserve (to assist in Asset Management). More details will come forward as the Debt Policy is reviewed however to provide some context – the current debt levy requirement is approximately $1.5M over time this will deteriorate by about 15% per year which would mean the following:

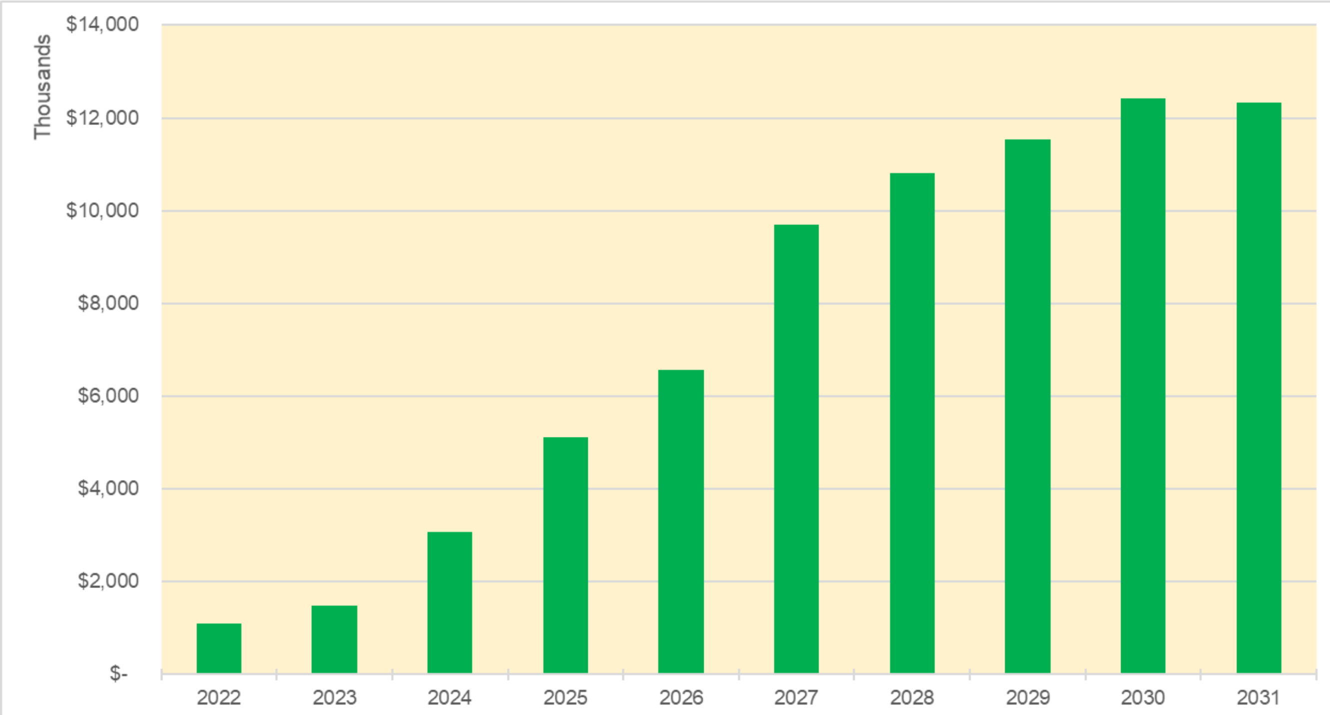
	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount	$ 1,500,000	$ 1,275,000	$ 1,083,750	$ 921,188	$ 783,009	$ 665,558	$ 565,724	
Estimated Change Amount		-$ 225,000	-$ 191,250	-$ 162,563	-$ 138,178	-$ 117,451	-$ 99,834	-$ 934,276

This of course assumes that no new debt is issued however, even if 50% was available it would bring the Town to approximately $500K available for Asset Management. Moreover, given that the internal debt requirements have been completed through the Asset Sale Proceeds this frees up an additional $150K per year previously included in the tax levy.

3) Slowly raise the contribution to Reserve Funds over time. Today 1% point increase of the tax rate equates to approximately $350K, if we exclude growth and we increase the reserve contribution by 5% over the next 6 years this would mean a total tax rate impact of approximately 2%. However, if we include growth as part of the contribution, it is possible that the tax rate is not impacted. The table below shows the values of the contribution over time.

	2021	2022	2023	2024	2025	2026	2027	Difference from 2021
Amount	$ 2,000,000	$ 2,100,000	$ 2,205,000	$ 2,315,250	$ 2,431,013	$ 2,552,563	$ 2,680,191	
Change Amount		$ 100,000	$ 105,000	$ 110,250	$ 115,763	$ 121,551	$ 127,628	$ 680,191
Est. Impact on Tax Rate (excluding Growth)		0.28%	0.30%	0.31%	0.33%	0.35%	0.36%	1.94%

These examples demonstrate that small changes each year can accumulate to large payoffs in the future. Using all three methods described above would have an enormous impact as illustrated in the graph below.



Water/Wastewater (User Fee supported assets)

Similar to tax-supported assets the town has used a combination of contributions to reserves (through user-fees), grants and debt financing to fund or support capital projects. The total required for these assets equates to $5,251,645, the current reserve funds that are applicable to this include: the Water and Wastewater Reserve Funds. On an annual basis the amounts that are added to both of these funds (on average over the last 2 years) is $4.1 M, additionally the town has used grant funding to support this as well. The chart below details the net funding gap for these assets, note however this is based on the $4.1M continuing for reserve funding each year:

Water/Wastewater Assets	Amount
Annual Lifecycle Amount - 2021$	$ 5,251,645
Less:	
Reserve Contribution per year (average)	4,184,682
Federal Gas Tax (50%)	315,000
Financing Gap	**$ 751,964**

You will note that the reserves continue to build over the next 10 years which is positive, since spending for these areas really builds in the next 20 – 30 years where amounts required increase dramatically. However, again given that the average gap is $751K, it is in the later years (2050 and beyond) where financial sustainability would be difficult to maintain. Increasing the total amount contributed slightly over the next 5-10 years through user fee increases will help establish financial stability greatly in the future.

5. EFFECT ON TOWN FINANCES

The amounts included in this report will be considered as part of the Draft 2022 Municipal Budget.

6. CONSIDERATIONS

Community Based Strategic Plan:	☐ N/A or ☒ Explain: Progresses towards achieving CBSP Goal
Climate Change / Sustainability:	☒ N/A or ☐ Explain: Choose an item.
Accessibility:	☒ N/A or ☐ Explain: Choose an item.
Communication / Engagement:	☒ N/A or ☐ Explain: Choose an item.
Accountability / Transparency:	☒ N/A or ☒ Explain: Enhances Accountability and Transparency

7. APPENDICES & OTHER RESOURCES

Appendix A	Asset Management Plan Update Presentation December 2019
Appendix B	T2019-14 Strategic Asset Management Policy
Appendix C	MFOA Asset Management Framework

SIGNATURES

Prepared by:		Department Head:
Dennis Sloan, *Manager, Capital and Financial Planning* *Monica Quinlan,* *Treasurer*		*Monica Quinlan,* *Treasurer* *Sonya Skinner,* *CAO*
Town of Collingwood		Town of Collingwood