



Town of Riverview

Asset Management Plan

December 2017





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Executive Summary

This Asset Management Plan (AMP) is a long-range planning document which is intended to improve the Town of Riverview's (the Town's) ability to meet its strategic, sustainability, and long-term goals and objectives in a way that best serves the community. The AMP outlines the management strategy and investment plan for the Town's asset portfolio and provides a guide to understanding key items such as:

- **Level of Service:** Describes the services provided by the municipality for the community and how the infrastructure portfolio supports their delivery. Service levels help establish a measurable requirement that can inform investment need and quantify when sustainable service levels are met.
- **State of Infrastructure:** Aid in understanding the current state of the Town's infrastructure and recognize where current condition and portfolio value may be deficient, and gain insight on potential investment needs to address any current deficits.
- **Asset Management Strategy:** Describes management tactics for different infrastructure types in the portfolio as well as establishes a strategic management strategy for the Town's assets that aligns with their goals and objectives, and helps the Town meet a defined service level.
- **Financing Strategy:** Determines a plan for how the Town will pay for the long-term capital investment required for existing assets in their portfolio moving forward that supports the achievement of their goals and objectives and is sustainable over the long term.

This AMP for the Town of Riverview is the first such plan which largely aligns with the provincial guideline established by the Province of New Brunswick for Gas Tax Agreement compliance. It establishes a long-term funding strategy, documents current decision-making practices being employed by the Town, and identifies potential improvements to advance asset management practices. It sets an initial strategy to help the Town's decision-makers make more objective, informed decisions that align with desired community outcomes. While this first iteration of the Plan is a starting point, it is important that the Town treat this plan as one that governs a continuous process that strives to improve their management practices and supports delivery of municipal services over time.

The current structure of the AMP has been developed to align to requirements adopted by Ontario municipalities for compliant asset management plans. Future revisions of the Plan will be refined to fully align with New Brunswick requirements that have been established since this Plan's development was initiated.

Introduction

This first AMP documents how the Town will manage their infrastructure to support the achievement of strategic and sustainability goals, as outlined in both the Strategic Plan (2016-2020) and Sustainability Plan (2015). The Introduction section within the Plan offers some context about the Plan's development, an overview of the Plan, and an outline of the Plan contents. It describes the purpose, intent, and importance of an AMP, how it fits with other planning and policy documents adopted by the Town, and some description of the Plan development process.

The AMP has four main sections, consisting of an initial chapter that focusses on the state of the Town's infrastructure, followed by one that describes the current service levels delivered by the Town. Service levels are articulated through initial service level statements, and performance indicators considered by Town personnel when making decisions. The next section describes the Town's asset management strategy, and finally a financing strategy for the existing infrastructure portfolio. A list of key improvement actions and recommendations that chart a course forward for the Town is also included in the Plan, which includes actions to consider for improving asset management practices in the future. The intent of the AMP is for it to be a living document which will be updated periodically and form a reference for managers throughout its life. In addition to the AMP, an AM Policy has been developed to reflect the Town's commitment to a set of principles that support consistent, sustainable, and holistic decision-making in how the Town manages their infrastructure.

State of Infrastructure

The purpose of the State of Infrastructure (SOI) component of the Plan is to describe the current state of the infrastructure that is managed by the Town. This chapter includes an overview of the asset valuation and asset

condition, and describes the current process for inferring asset condition and remaining life. As the first chapter of the AMP, the SOI aids in identifying which assets may need replacement in future periods and ensures that the Town understands the current state of their infrastructure.

Level of Service

Municipalities deliver services for the community, usually through a mixture of external service providers, consisting of a portfolio of infrastructure and internal resources and personnel who manage service delivery and supporting infrastructure. The purpose of the Level of Service (LoS) chapter is to describe these services in a way that helps frame decisions about supporting infrastructure. Understanding service levels that are provided by the Town of Riverview is a first step in determining the sustainable level of investment and risk for the Town. This chapter details the service levels for those areas where infrastructure is important, how they are used, and how they are aligned with the strategic and sustainability objectives. Alignment between organization and asset management objectives is important to ensure infrastructure investment aligns with the mission and vision that have been developed by the Town. In addition to the initial service level statements established for this Plan, this chapter details the key performance measures that are intended to be used in the Town's decision-making process.

Asset Management Strategy

The Plan's Asset Management Strategy outlines and documents a set of planned actions or interventions that are used by the Town to manage their assets, and when investment is required to provide an agreed level of service for citizens.

To provide context to the asset management strategy, this chapter discusses the different service methods the Town uses, the high-level assumptions that are used in developing the asset management strategy, and the typical lifecycle management of the Town's assets that is used to derive the financial strategy of the Town. Lifecycle management includes strategies to deliver required services from assets throughout their lifecycle, from construction through operations and maintenance, and renewal or disposal. These strategies provide an understanding of what must be done to the assets to achieve their useful life and maintain consistent service delivery, even as the assets age. The final section of the AM strategy focusses on decision making and details a proposed framework to be used by the Town to prioritize infrastructure investment projects.

Financing Strategy

The purpose of the financing strategy is to describe the long-term financial plan that has been developed as part of the Plan. This section outlines any existing financial planning, policies, processes, planning assumptions, or constraints that are inputs to the Plan's modelling approach. Model limitations, investment scenarios, current financial statements, and the funding strategy and risk management plan have also been incorporated into this section. A financial strategy is a funding plan for implementing the identified asset management strategies outlined in the previous section. The intent of this strategy is to quantify the current long-term investment required to ensure the existing portfolio can continue to support an acceptable level of service that customers are willing to fund. A sustainable strategy is one that balances service level expectations, the asset's ability to support the desired service, and the customer's willingness to fund an agreed service level. This financial strategy quantifies the long-term investment requirements for the existing infrastructure portfolio, compares it to current funding levels, highlights potential effects the plan could have on debt, and underlines that more work is required to quantify the sustainable level of investment required to support planned growth objectives.

Improvement Plan

An AMP is a living document that continues to expand and grow as a municipality matures in their AM journey. During the first iteration of the AMP, there are various improvement actions that have been identified that the Town can use to build on their initial AMP, improve their level of asset management maturity, and make more informed decisions through improved data and analysis. The Improvement Actions section lists both high-level and technical improvements that affect the Town's practice of managing assets and their organizational structure. Included in the improvement actions are recommendations that the Town should consider to ensure the Plan informs investment to support growth objectives, and be refined in the future to better align with the province's new guideline for asset management planning.

Recommendations and Conclusions

Several key findings associated with the Plan should be noted:

- While the Town's infrastructure portfolio is relatively new and in a good-fair state of repair, some focussed investment in key asset areas (e.g. undergrown infrastructure) may be merited based on the state of the infrastructure assessment.
- Improved condition information for some high-risk or high-value assets will enhance the Town's ability to refine their investment forecast to reflect better information about asset performance and condition.
- While service level statements and potential performance indicators have been developed as part of this Plan, ongoing tracking of current service levels and cost of service is the next step. This helps establish sustainable service level targets and is an improvement that the Town can work toward over the next 2-3 years before the next update of this Plan.
- The Town has employed a relatively informal decision-making process for capital investment project prioritization. The Plan establishes an initial methodology that links prioritization to service delivery priorities and the corporate goals and objectives of the Town. Adoption of a more formalized approach to decision making is a key improvement for the Town.
- Increased investment is likely required to ensure renewal investment keeps pace with forecasted requirements to maintain the current portfolio. There remains some uncertainty around the sufficiency of the recommended 2.5% increase in the financial strategy. Condition data and a more refined framework that sets service levels will help refine the required sustainable level of funding for the portfolio.
- Future revisions of the Plan should encompass growth requirements for the Town. The current Plan focusses on the existing portfolio with the exception of the Wellness Centre and some road improvements. Riverview is expected to face sustained growth for the foreseeable future, and the Plan will add additional value if it can better forecast the financial implications of anticipated growth in Town infrastructure.
- Finally, this Plan was developed in advance of the Province of New Brunswick's guideline for asset management planning. Future revisions of the Plan should ensure complete alignment with the new guideline. Climate change, risk and other requirements were not incorporated into this initial Plan.

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Glossary of Terms

Acronym	Definition
AM	Asset Management
AMP	Asset Management Plan
AMS	Asset Management Strategy
CCTV	Closed-circuit television
CIR	Cold in-place recycling (asphalt)
CSP	Corrugated Steel Pipe
DMS	Document Management System
GIS	Geographic Information Systems
GTF	Gas Tax Fund
HDPE	High-density Polyethylene
HIR	Hot in-place recycling (asphalt)
HMA	Hot mix asphalt
HPS	High pressure sodium
HR	Human Resources
IAM	Institute of Asset Management
IIMM	International Infrastructure Management Manual
ISO	International Organization for Standardization
KPI	Key Performance Indicator
LED	Light-emitting diode
LOS	Level of Service
MCA	Multi Criteria Analysis
NBDELG	New Brunswick Department of Environment and Local Government
NPV	Net Present Value
NRBCPI	Non-Residential Building Construction Index
PSAB 3150	A Bulletin (standard) issued by the Public-Sector Accounting Board of Canada (PSAB) regarding reporting requirements for Tangible Capital Assets
PV	Present Value
PVC	Polyvinyl chloride
ROW	Right-of-way
RFP	Request for Proposal
Riverview	Town of Riverview
SOI	State of Infrastructure
TCA	Tangible Capital Assets
Town	Town of Riverview

1 Introduction

The Asset Management Plan (AMP) established in 2017 is the first of its kind for the Town of Riverview (the Town). The AMP addresses the following topics: assets the Town uses to deliver services, the current state or condition of the infrastructure, the levels of service the Town aims to provide, the asset management strategy to deliver on the set levels of service, and the financing strategy to fund the current infrastructure and known future growth. In addition to the AMP, an AMP Policy has been established to help identify the purpose and future of asset management (AM) and decision making regarding the Town's assets.

The first AMP developed by the Town will satisfy the provincial guidelines and requirements in addition to documenting the existing AM practices currently used. While documenting existing practice, the AMP incorporates improvements to be made, including a decision-making framework which can be used to score proposed projects against both strategic and sustainability objectives.

1.1 Alignment with existing documents

When creating an AMP, it is essential to ensure alignment of Strategies, Policies, and Business Drivers to Business Planning and Budgeting documents. Figure 1-1 outlines how documentation used by the Town is aligned and demonstrates how the AMP connects Strategic Planning to Delivery.

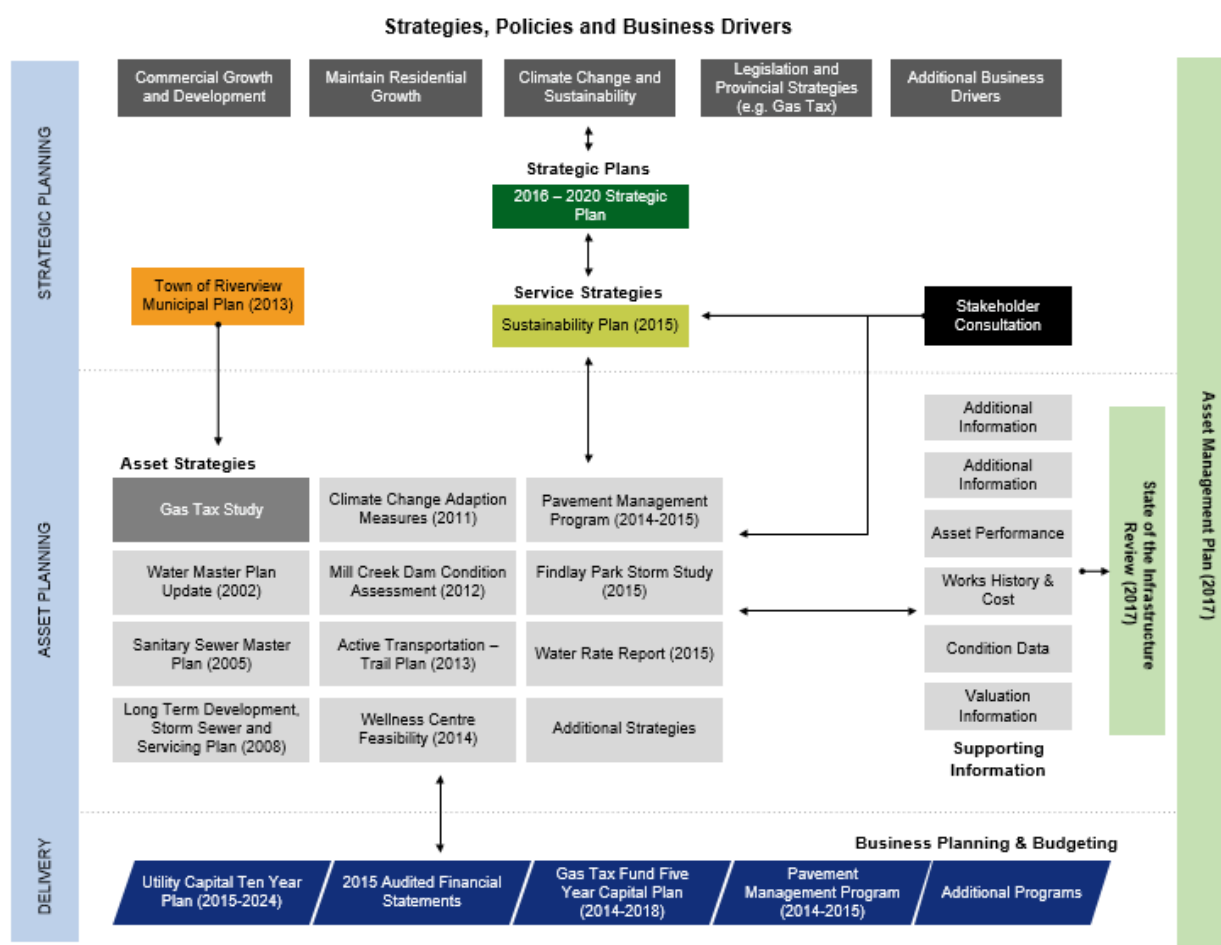


Figure 1-1: Town of Riverview artifacts

Using the 2016-2020 Strategic Plan and Sustainability Plan developed in 2015, asset-specific service levels were developed. This creates continuity throughout the organization and ensures the delivery of assets aligns with strategic goals created by council, elected officials, and Town staff.

The state of infrastructure, which is a section in the first iteration of the Plan, is an asset-planning document which will provide asset managers with a snapshot of the current condition of their infrastructure. This will help identify asset strategies and which assets should be prioritized.

1.2 Strategic and sustainability plan

The strategic and sustainability plans developed by the Town outline eight themes which were key in defining the services delivered by the Town.

- A safe and welcoming community
- Planning for the future
- Smart and sustainable growth
- Fiscal responsibility and service excellence
- Built infrastructure: Complete neighbourhoods
- Culture and arts: Creating connections through diversity and art
- Education: Life-long learning
- Energy: Investing in a cleaner tomorrow

The plan is intended to facilitate the delivery of the eight themes outlined above, which are directly linked to the asset-specific service levels discussed in the level of service section of the Plan.

1.3 Assets included in the Plan

The first version of the AMP primarily focusses on four asset categories: water and wastewater, transportation and drainage, parks and recreation, and facilities. The four categories were split into asset groups, asset types, and asset subtypes (when possible), allowing for more detailed current replacement values and condition by asset type. A formal hierarchy for classifying assets should be used and repeated for any subsequent AMPs, with new assets being added as either asset types or subtypes.

While the entire Plan focusses on these four core asset classes, the asset group fleet was included in the state of infrastructure and financing strategy chapters. An improvement recommendation that should be included in the second iteration of the Plan would be to create service levels and asset strategies specifically for the fleet-related assets (snow plows, public works vehicles, etc.). Like the four core asset classes, the Town will be able to manage and make decisions regarding their fleet using the service levels as a benchmark, and asset management strategies as a guide.

2 State of Infrastructure

The purpose of this chapter is to describe the current state of the assets that are managed by the Town of Riverview (the Town). The chapter includes an overview of the asset valuation and asset condition, as well as age-based asset-level condition and asset valuations. The asset types detailed in this chapter include transportation and drainage, facilities, potable and wastewater, parks and recreation, and fleet assets.

2.1 What is it and how is it used?

The State of the Infrastructure is an assessment of the Town's current infrastructure assets against their maximum potential. It provides a benchmark evaluation of the infrastructure and describes the age, condition profile, and current replacement values of the assets. By creating and tracking asset-related information, the Town understands what it has, where it is, how much it would cost to replace it, and what condition it is in. These four pieces of data are core asset management requirements. By understanding and tracking these requirements over time, the Town can appreciate the investments that are required to achieve the stated service levels.



Figure 2-1: Aerial Map of the Town of Riverview

2.2 Overview of services and asset-related data

This section summarizes the following details:

- Asset types (e.g. urban arterial road, rural arterial road, watermain) and quantity / extent (e.g. length in metres for linear assets).
- Financial accounting and replacement cost data.
- Age distributions and age as a proportion of expected useful life for assets.
- Estimated asset condition profiles (e.g. proportion of assets in “very good”, “good”, “fair”, “poor”, and “very poor” condition) based on remaining useful life (RUL).

Detail of asset types

The Town owns and maintains various types of infrastructure assets both above and below ground. These assets support the delivery of the various services the municipality provides.



These infrastructure assets are grouped by service area as follows:

1. Transportation and drainage

- All assets in the right-of-way (ROW) (i.e. street lights, traffic lights, and the electrical associated with the light), roads, sidewalks, drainage (i.e. the storm water system), and any stationary assets associated with the transportation system.

2. Facilities

- All buildings owned by the Town including the components within each building, the surrounding landscape, hardscaping, and parking lots associated with individual facilities, and any other infrastructure assets that have an effect on the service level delivered by facilities.

3. Potable and wastewater

- This category includes all linear pipe as well as the stationary assets which contribute to the potable and wastewater systems (i.e. lift stations, water towers, etc.); and all stationary items within the linear system (manholes, fire hydrants, gate valves, etc.).

4. Parks and recreation

- All parks, sports courts, sports fields, playgrounds, trails, and park facilities (parking lots, sheds, buildings, etc.).

5. Vehicle fleet

- Fleet assets are categorized based on the service they are providing (e.g. all fleet that service the fire department are listed in the category "Fire Department"). The fleet assets only include the vehicle and do not include any additional parts, equipment, tools, etc.

Asset quantities

The following tables present an overview of the quantity of assets at the “Asset Type” level in each of the five identified categories included within the scope of the AMP.

Table 2-1: Transportation & drainage asset quantities

Asset group	Asset type	Unit	Quantity
Roadway	Arterial	m	21621
Roadway	Collector	m	9254
Roadway	Local	m	98377
ROW features	Sidewalks	m	32733
ROW features	Street lights	each	391
ROW features	Traffic controllers	each	9
ROW features	Traffic signals	each	9
Storm water management	Culverts	each	12
Storm water management	Storm sewers	m	101251

Table 2-2: Facilities asset quantities

Asset group	Asset type	Unit	Quantity
Buildings	Community	each	6
Buildings	Municipal	each	4
Buildings	Emergency services (includes rental)	each	2

Table 2-3: Potable water & wastewater asset quantities

Asset group	Asset type	Unit	Quantity
Water structures	Booster station	each	2
Water mains	Distribution main	m	114468
Water mains	Transmission main	m	8005.6
Wastewater management	Forcemain	m	2664.6
Wastewater management	Lift station	each	1
Wastewater management	Local sewer	m	106654
Wastewater management	Trunk sewer	m	14703

Table 2-4: Parks & recreation quantities

Asset group	Asset type	Unit	Quantity
Recreation	Athletic fields	each	26
Recreation	Courts	each	13
Parks & playgrounds	District parks	each	11
Parks & playgrounds	Linear parks	each	8
Parks & playgrounds	Neighbourhood parks	each	12
Parks & playgrounds	Regional park	each	3
Parks & playgrounds	Miscellaneous	each	16
Parks & playgrounds	Special neighbourhood parks	each	9
Parks & playgrounds	Town parks	each	17
Parks facilities	Signage	each	9

Table 2-5: Vehicle fleet asset quantities

Asset group	Asset type	Unit	Quantity
Fleet	Fire department	each	18
Fleet	Public works trucks	each	16
Fleet	Snow removal equipment	each	17
Fleet	Heavy equipment	each	6
Fleet	Buses	each	2
Fleet	Parks & recreation trucks and vans	each	17
Fleet	Other	each	12

Asset valuation

Asset valuations are used by asset managers to inform investment planning and decision making.

The Public-Sector Accounting Board (PSAB) Standard 3150 requires municipalities to financially report on the historical purchase price and depreciated value of their tangible capital assets (TCA), which are the infrastructure assets of the municipality. For PSAB 3150, the annual depreciation value is calculated using a straight-line method over the average expected life of the asset. The book value (depreciated cost) of the asset is decreased proportionally each year (depreciated) until the end of its expected life (where its book value is nil).

This financial reporting, although required for compliance with PSAB 3150, does not provide decision-makers with appropriate information for investment planning. Current replacement value provides a more accurate context for these decisions. This is because PSAB 3150 is based on original purchase price, which would be insufficient to replace the assets.

To estimate the current replacement cost of each asset type, one of three methods were used depending on the level of information that was available. These methods are as follows:

- Unit rates, as determined by recent local costs associated with construction and / or replacement of the asset. If no information was available, a unit rate provided by the Town was applied to similar assets.
- Historical construction cost information was used if no unit rates were available. The rates were based on the period between 2007 and 2017. For older information, unit rates were inflated to 2017 costs using the Non-Residential Building Construction Price Index (NRBCPI), which determines an increase of 3% has occurred since 2007. In some cases, the NRBCPI resulted in a replacement cost much lower than what was expected. Thus, it is recommended that the Town review the 2017 valuation using known costs of the assets in 2017.
- If no valuation information was available or the data was considered inaccurate, an estimate based on professional opinion or research from other sources was used.

Asset valuation results

Using the unit price methods detailed above, Figure 2-2 (below) shows the replacement cost for the Town's portfolio. The total current depreciated replacement cost of the Town's tangible assets is approximately \$172.3 M, while the total asset value based on the 2017 replacement cost data is \$298.6 M for the assets covered in this AMP. Transportation & Drainage and Potable Water & Wastewater account for most of the asset portfolio, representing 74% of the 2017 replacement costs. The 2017 replacement costs provide a limited snapshot of the municipality's asset portfolio. An improvement action would be to review the costs of the assets (primarily facilities) and identify the actual replacement costs of these facilities. The Financing Strategy section of the AMP provides further context into understanding the future costs required to provide, at a minimum, the services that the Town is currently providing.

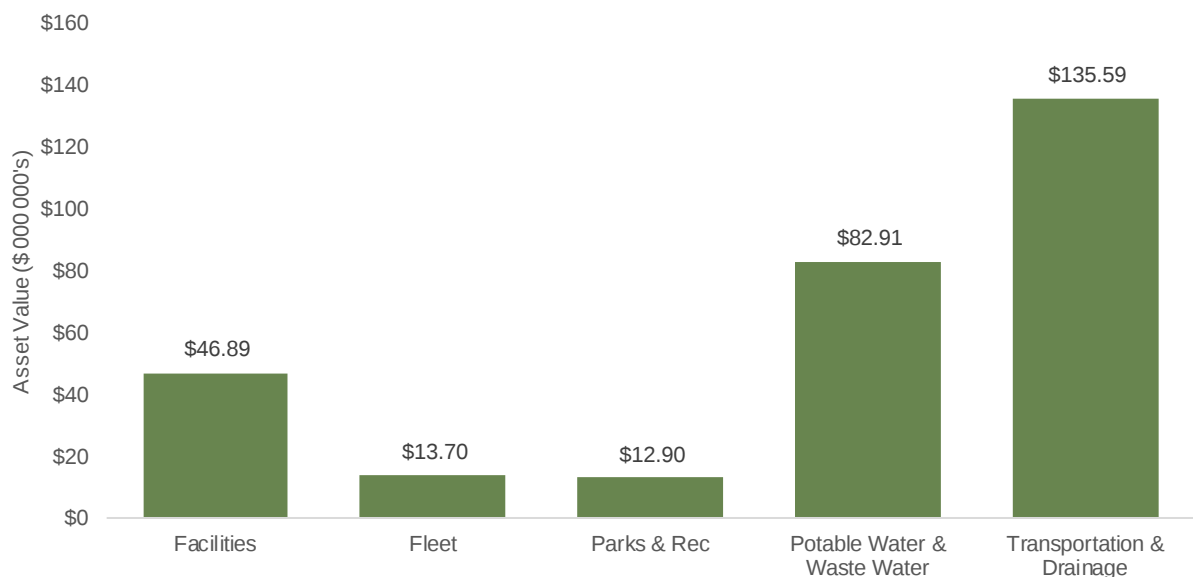


Figure 2-2: 2017 Replacement costs by asset group

Figure 2-3 demonstrates the age of the assets and their associated replacement costs. This is an accurate representation of the age distribution of the Town's assets given the age of the municipality and the expected useful life of its assets.

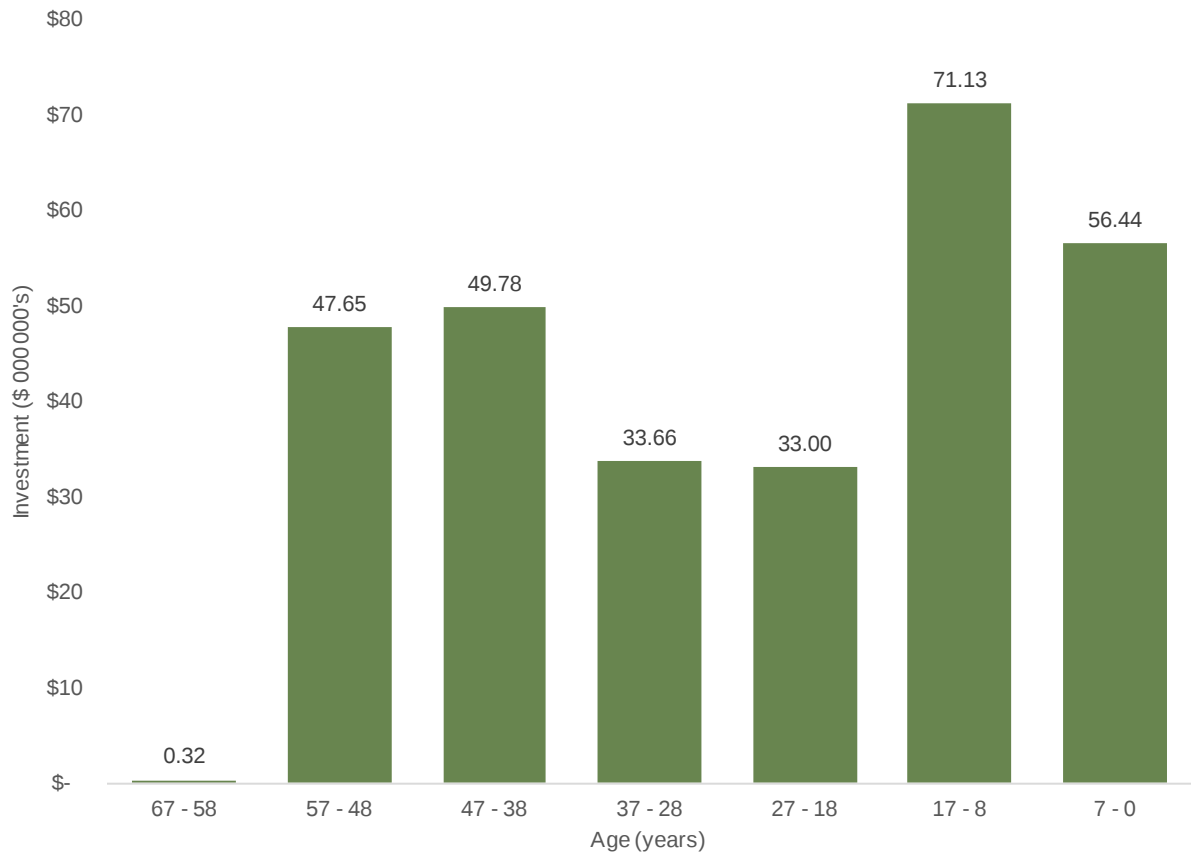


Figure 2-3: Age distribution of 2017 replacement value of assets by decade

The following table provides a summary of the asset valuations for each asset group.

Table 2-6: Asset valuations by asset group

Asset group	2017 Replacement cost	2017 Depreciated replacement cost	2017 Accumulated depreciation	Annual depreciation
Transportation & drainage	\$135.59 M	\$79.92 M	\$55.67 M	\$2.05 M
Facilities	\$46.89 M	\$33.14 M	\$13.75 M	\$1.25 M
Potable water & wastewater	\$82.91 M	\$42.44 M	\$40.47 M	\$1.39 M
Parks & recreation	\$12.90 M	\$7.62 M	\$5.28 M	\$0.69 M
Fleet	\$13.70 M	\$6.90 M	\$6.80 M	\$1.34 M
Total	\$291.99 M	\$170.02 M	\$121.97 M	\$6.71 M

2.3 Overview of asset condition

The following section details the method used to determine asset condition. It also provides further detail into specific condition by asset type, and summarizes the costing information associated with the assets.

Asset condition

Due to insufficient condition data, asset condition was based on the age of the asset. Where recent condition assessment reporting is unavailable, it is typical to make an age-based determination of condition. In the case of this report, the age-based condition ratings were estimated using a default deterioration curve, which has been determined to provide a good representation of the condition of municipal assets.

The ratings are derived from the age-based data shown in Figure 2-4, where the percentage of age expired (horizontal axis) is calculated in order to estimate a condition out of 5 (vertical axis). Each asset was assigned a number from 1 to 5 depending on the age of the asset. The rating definition can be found in Table 2-7, where a recommendation is made based on the asset condition. In the absence of reliable condition assessment information, it is considered good practice to use a default deterioration curve which can be calibrated for each type of asset class for future state of infrastructure reports. Figure 2-4 represents an example of a default deterioration curve which was developed for municipal infrastructure assets.

Table 2-7: Asset condition definition

Rating	Rating description	Remaining useful life (%)	Rating definition
1	Very good: Fit for the future	Age $\geq$ 75	The infrastructure in the system or network has greater than or equal to 75% of its remaining service life. It is generally in very good condition, typically new or recently rehabilitated.
2	Good: Adequate for now	75 > Age $\geq$ 65	The infrastructure in the system or network has less than 75% and greater than or equal to 65% of its remaining service life. It is in good condition.
3	Fair: Require attention	65 > Age $\geq$ 13	The infrastructure in the system or network has less than 65% and greater than or equal to 13% of its remaining service life. It is in fair condition.
4	Poor: At risk	13 > Age $\geq$ 3	The infrastructure in the system or network has less than 13% and greater than or equal to 3% of its remaining service life. It is in poor condition and mostly below standard, with many elements approaching the end of their service life.
5	Very poor: Unfit for sustained service	Age < 3	The infrastructure in the system or network has less than 3% of its remaining service life. It is in very poor, unacceptable condition and should be replaced or rehabilitated.

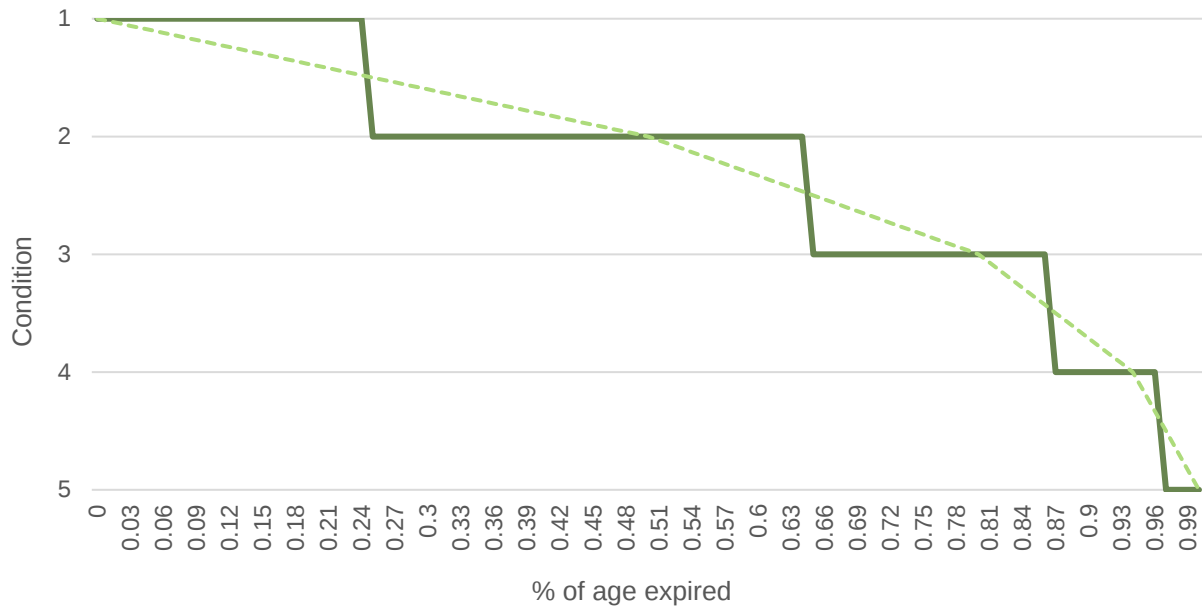


Figure 2-4: Example default deterioration curve

Using the default deterioration curve enables the condition of the assets to be estimated. Prior to summarizing the condition ratings based on each asset group, it is important to know the age distribution between assets and their 2017 replacement value. Since deterioration is based on age, knowing the replacement value by age distribution provides an estimate of which assets may need immediate replacement and the costs to replace those assets in 2017 dollars.

Condition analysis results

Figure 2-5 illustrates the overall condition of the assets based on the 2017 replacement values. Their condition is represented in colour to demonstrate which assets may need treatment in the short-term.

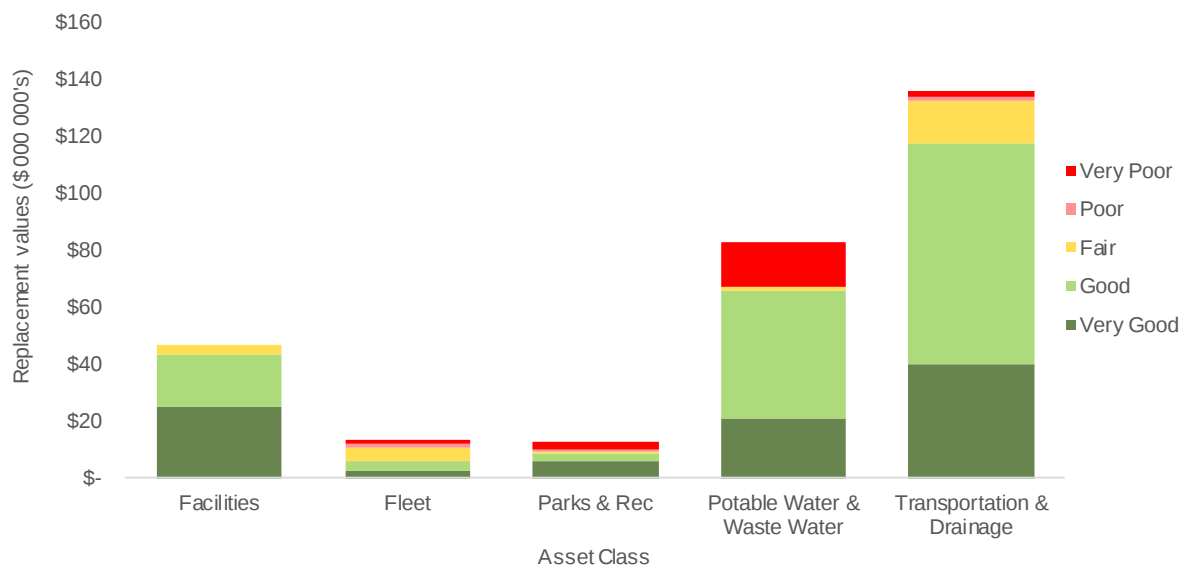


Figure 2-5: Asset condition distribution



As shown in Figure 2-5, most assets are in very good (1) or good (2) condition. The distribution shows that, although they represent the smallest portion of the portfolio, the Fleet and Parks & Recreation asset groups are in the worst condition. The low overall condition rating for Fleet could be attributed to the two firetrucks, which comprise 12% of the total fleet replacement value in poor or very poor condition (based on age). Since the total replacement value for Fleet and Parks & Recreation is relatively small when compared to the three other asset groups, the percentage considered very poor (5) or poor (4) may be due to only one or a few high-value assets being in the last 13% of their remaining useful life (RUL).

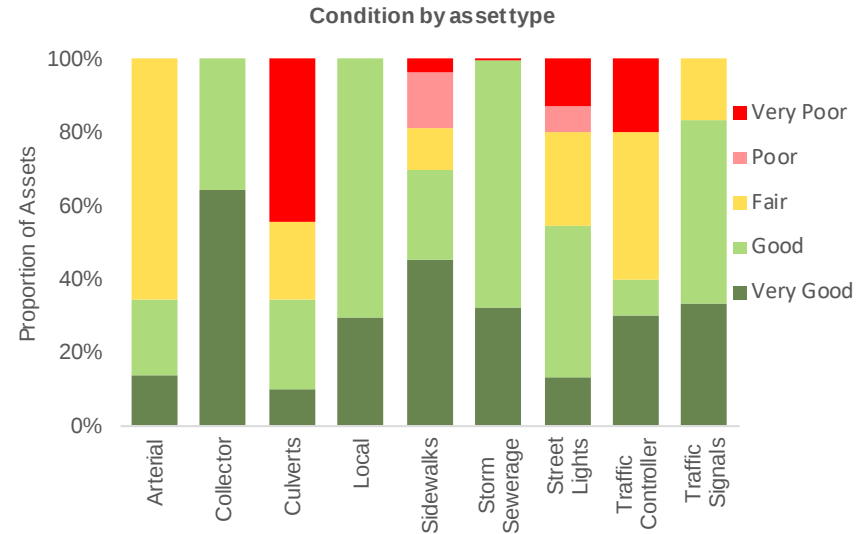
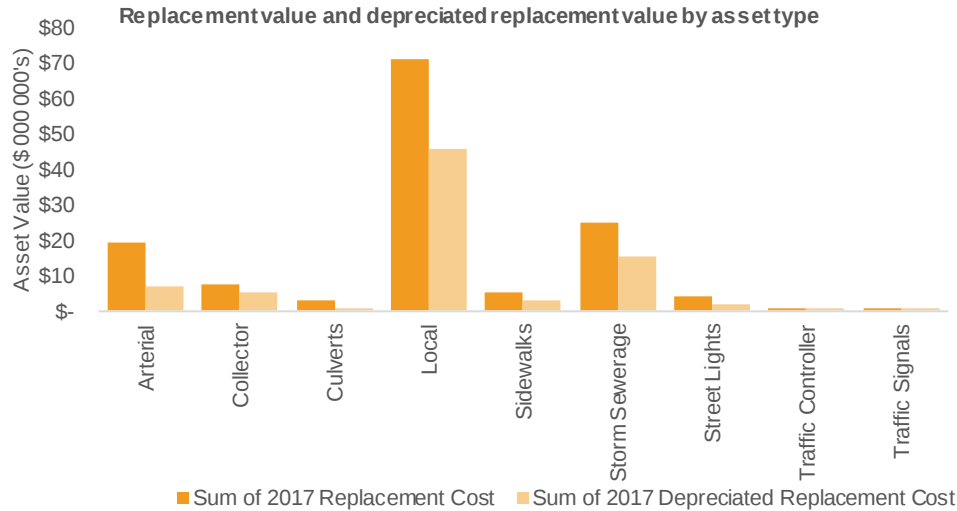
As expected, the Transportation & Drainage and Potable Water & Wastewater assets are primarily in good (2) condition. Through discussions with Town staff, this was predicted given the age of the Town and the expected life of most of the assets falling in these two asset groups.

It is anticipated that the Town will go through several iterations of a state of infrastructure and will have fully developed deterioration curves for all asset groups. This is primarily relevant for Potable Water & Wastewater and Transportation & Drainage, as these two groups account for 74% of the total asset portfolio value.

2.4 Asset dashboards

The following section contains the asset dashboards which offer more information on each asset, down to the asset type level.

Transportation and drainage	Average condition	Percent poor or very poor	2017 Replacement value	Percent of total asset portfolio
	Good	3%	\$ 133.9 M	44%



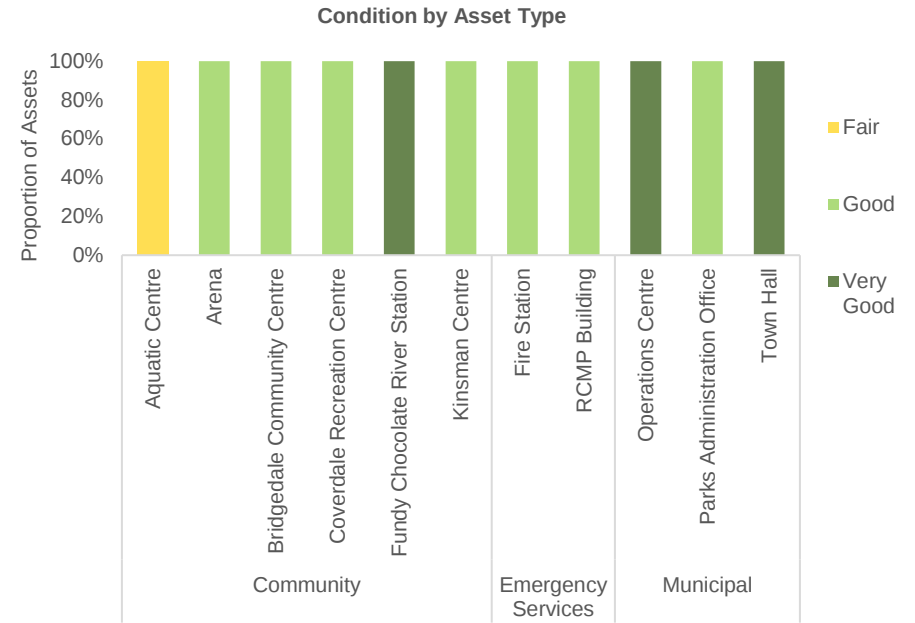
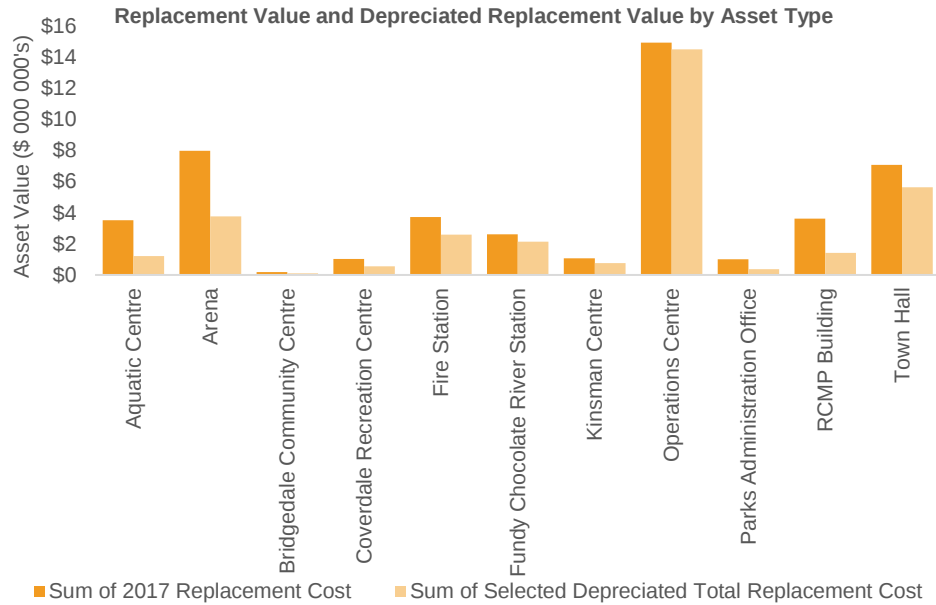
Asset group	Asset type	Quantity	Units	Average age	Average condition	2017 Replacement cost	Annual depreciated value	2017 Depreciated value
Roadway	Arterial	21.6	km	37.4	2.4	\$ 19.4 M	\$ 319,762	\$ 7.0 M
	Collector	9.3	km	20.2	1.4	\$ 7.3 M	\$ 133,023	\$ 5.1 M
	Local	98.4	km	27.2	1.7	\$ 70.8 M	\$ 31,061	\$ 45.9 M
ROW features	Sidewalks	32.7	km	11.3	1.6	\$ 5.2 M	\$ 884,709	\$ 3.1 M
	Street lights	429	each	13.5	2.3	\$ 4.2 M	\$ 130,542	\$ 1.7 M
	Traffic controller	14	each	13.1	3.4	\$ 34,660	\$ 313,081	\$ 15,944
	Traffic signals	14	each	14.7	1.9	\$ 896,952	\$ 168,926	\$ 599,837
Storm water	Culverts	13	each	19.7	2.6	\$ 2.9 M	\$ 3,235	\$ 1.0 M
	Storm sewerage	101,251	m	24.5	1.6	\$ 24.9 M	\$ 29,899	\$ 15.5 M
Totals						\$ 135.6 M	\$ 7.0 M	\$ 79.9 M

Storm water management assets were categorized by material, and the 2007 replacement costs were averaged and converted to 2017 dollars to take into account life expectancy materials.

Recent cost data was used for Beacon street lights and converted to 2017 dollars. An average of recent construction cost was used for crosswalk street lights. Recent data and averaged historical construction cost was calculated for traffic controllers. The data since 2007 was averaged to calculate a 2017-unit replacement cost.

Overall, Riverview's transportation and drainage inventory is considered to be in good condition, with only 3% rated in poor or very poor.

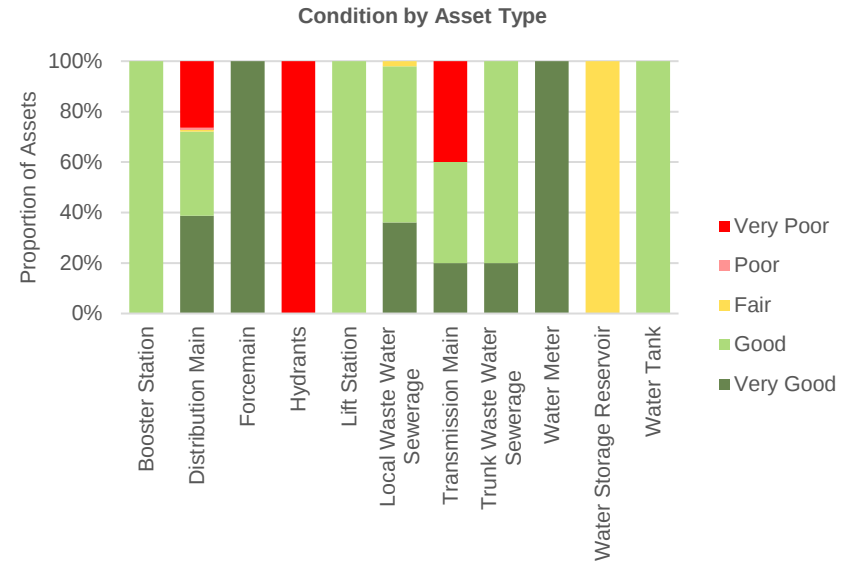
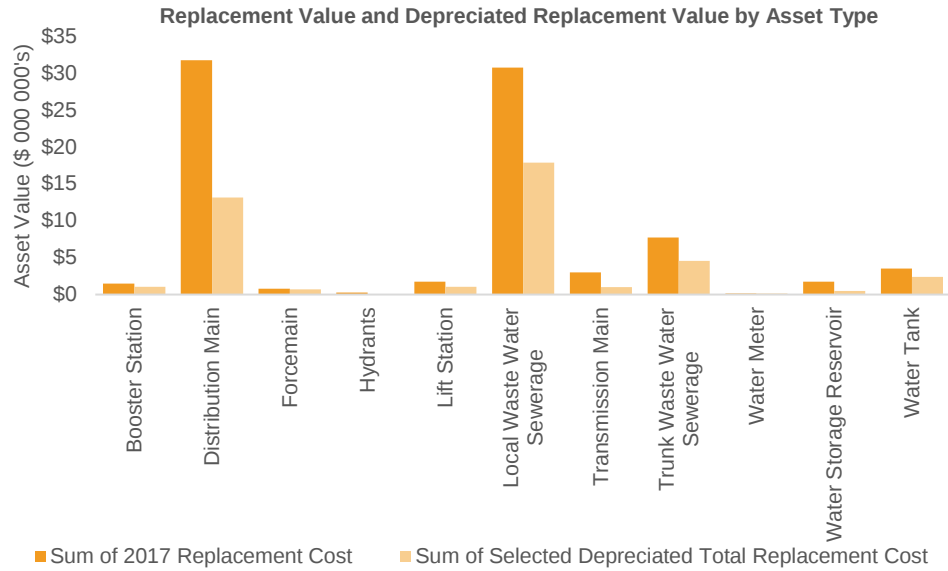
Facilities	Average condition	Percent poor or very poor	2017 Replacement value	Percent of total asset portfolio
	Good	0%	\$ 49.7 M	17%



Asset group	Asset type	Quantity	Units	Average age	Average condition	2017 Replacement cost	Annual depreciated value	2017 Depreciated value
Buildings	Community	6	each	13.1	2.0	\$ 16.5 M	\$ 432,137	\$ 8.6 M
	Emergency services	2	each	16.1	2.0	\$ 7.4 M	\$ 186,777	\$ 4.0 M
	Municipal	3	each	16.6	1.4	\$ 25.8 M	\$ 707,348	\$ 21.1 M
Totals						\$ 49.7 M	\$ 1.3 M	\$ 33.7 M

Local unit rates were not available for the facilities; therefore, historical construction costs were used as a unit-cost source. The condition distribution of the facilities is shown in terms of asset type. The condition was calculated using a weighted average of all asset sub-types within each asset type. For example, if the diving board were to be replaced in the aquatic centre, it would have a resulting positive effect on the condition, but only relative to the asset's value. Therefore, the increase in condition is weighted relative to the 2017 replacement value of the asset.

Potable water and wastewater	Average condition	Percent poor or very poor	2017 Replacement value	Percent of total asset portfolio
	Good	13%	\$ 82.9 M	30%



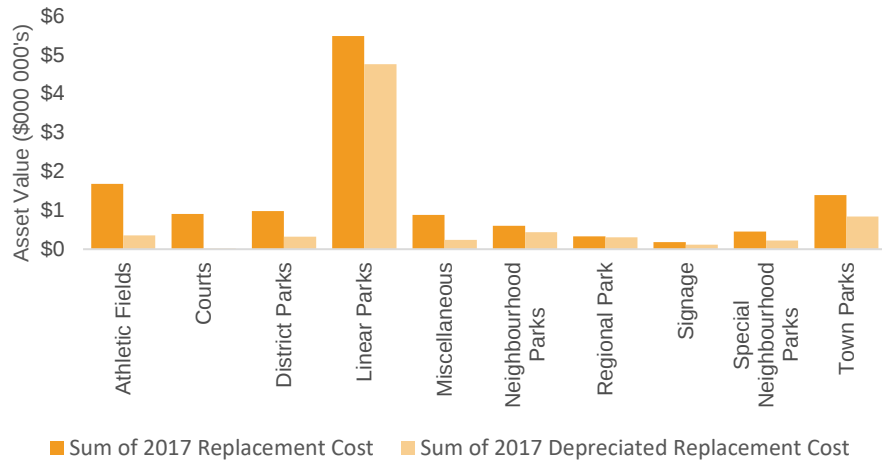
Asset group	Asset type	Quantity	Units	Average age	Average condition	2017 Replacement cost	Annual depreciated value	2017 Depreciated value
Wastewater	Forcemain	2664.6	m	7	1	\$ 778,063	\$ 9,726	\$ 709,983
	Lift station	1	each	7	2	\$ 1.7 M	\$ 43,532	\$ 1.0 M
	Local sewerage	105,839	m	28	2	\$ 30.7 M	\$ 387,251	\$ 17.9 M
	Trunk sewerage	14,703	m	29	2	\$ 7.7 M	\$ 96,684	\$ 4.5 M
Water mains	Distribution	114,468	m	27	2	\$ 31.8 M	\$ 596,255	\$ 13.1 M
	Transmission	8,006	m	36	3	\$ 3.0 M	\$ 58,814	\$ 1.0 M
Water structures	Booster station	1	each	11	2	\$ 1.5 M	\$ 36,775	\$ 1.1 M
	Water storage reservoir	1	each	29	4	\$ 1.8 M	\$ 43,684	\$ 480,524
	Water tank	1	each	10	2	\$ 3.5 M	\$ 88,183	\$ 2.4 M
	Water meter	300	each	1	1	\$ 160,000	\$ 6,400	\$ 153,600
Totals						\$ 82.9 M	\$ 1.4 M	\$ 42.4 M

Most of the unit costs were provided by the Town. Costs were not provided for the following pipe diameter sizes: 100mm, 450mm, and 525mm; therefore, the replacement costs were assumed to be equal to those for similar-sized pipes. For pipes with diameters greater than 750mm, the average of the 2017-converted historical cost average was used. Water meter age was assumed to be 2016 with life expectancy of 25 years.

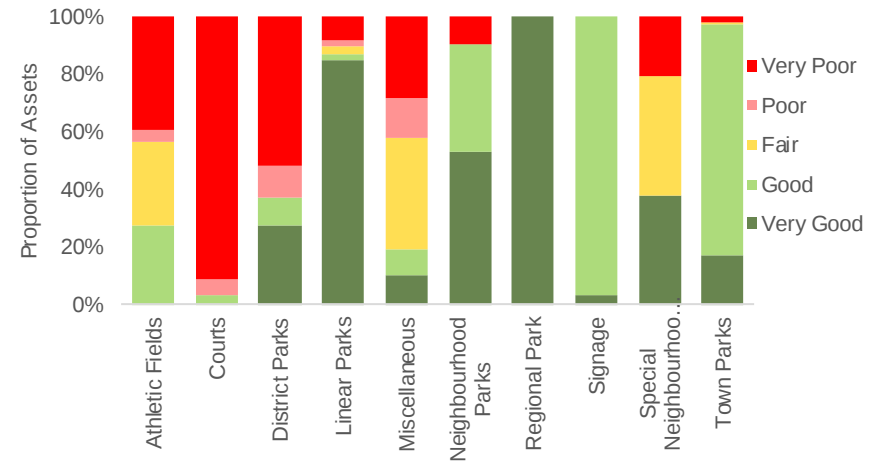
Overall, Riverview's Potable Water & Wastewater inventory is in good condition, with only 13% rated as poor or very poor.

Parks and recreation	Average condition	Percent poor or very poor	2017 Replacement value	Percent of total asset portfolio
	Fair	48%	\$ 12.9 M	4%

Replacement Value and Depreciated Replacement Value by Asset Type



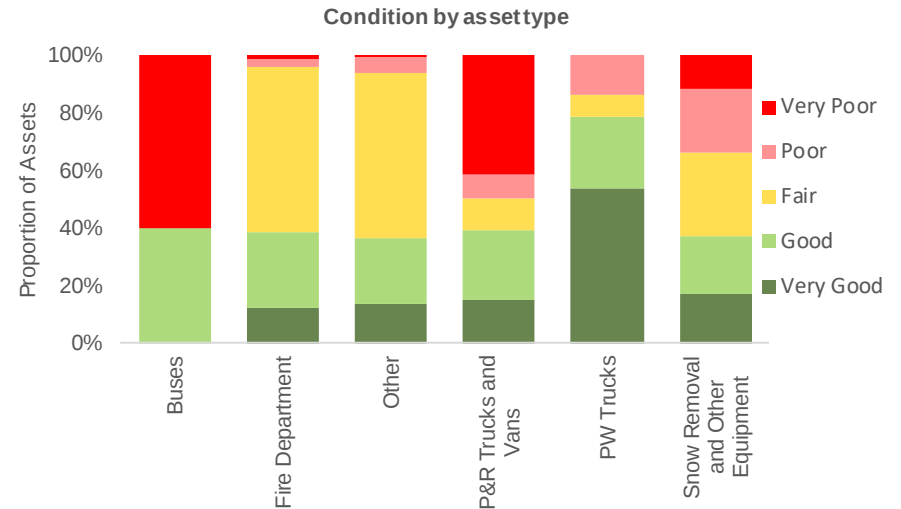
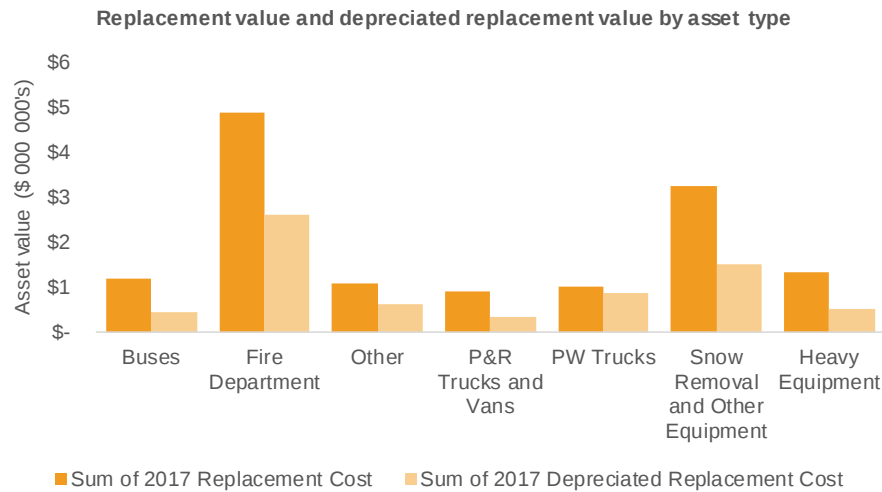
Condition by asset type



Asset group	Asset type	Quantity	Units	Average age	Average condition	2017 Replacement cost	Annual depreciated value	2017 Depreciated value
Recreation	Athletic fields	14	each	22.3	4.3	\$ 1.7 M	\$ 86,958	\$ 358,919
	Courts	15	each	24.1	4.5	\$ 904,134	\$ 52,901	\$ 21,060
Parks and playgrounds	Neighbourhood parks	12	each	6.5	2.0	\$ 601,253	\$ 42,522	\$ 434,487
	Linear parks	59,908	m	14.1	1.9	\$ 5.5 M	\$ 270,861	\$ 4.8 M
	District parks	11	each	10.0	2.7	\$ 984,137	\$ 53,324	\$ 322,675
	Regional parks	3	each	1.3	1.0	\$ 327,778	\$ 16,389	\$ 306,107
	Special neighbourhood parks	9	each	11.8	2.8	\$ 457,064	\$ 32,165	\$ 219,999
Parks and facilities	Town parks	17	each	9.2	1.9	\$ 1.4 M	\$ 66,230	\$ 840,445
	Signage	6	each	3.6	1.9	\$ 184,204	\$ 18,420	\$ 119,179
Totals				14.0	2.9	\$ 12.9 M	\$ 687,286	\$ 7.6 M

Local unit rates were not available for facilities; therefore, historical construction costs were used as a unit-cost source. Unit costs for trails were assumed based on paving rates. Courts and athletic fields were found on the Town's website. There are 14 athletic fields, 5 walk-on tennis courts, and 2 multisport courts which have 5 sports courts per multisport court. All values were taken from the TCA spreadsheet to calculate age, condition, and monetary values. Trails were assumed to have been acquired in 2017 due to minimal availability of information. Overall, Riverview's Parks & Rec inventory is in fair condition, with 48% rated as declining.

Fleet	Average condition	Percent poor or very poor	2017 Replacement value	Percent of total asset portfolio
	Fair	54%	\$ 15.1 M	5%



Asset group	Asset type	Quantity	Units	Average age	Average condition	2017 Replacement cost	Annual depreciated value	2017 Depreciated value
Fleet	Buses	2	each	9.5	3.5	\$ 1.2 M	\$ 83,968	\$ 439,413
	Fire department	18	each	6.6	2.4	\$ 4.9 M	\$ 343,917	\$ 2.6 M
	P & R trucks and vans	17	each	5.8	3.1	\$ 926,318	\$ 159,754	\$ 338,505
	PW trucks	16	each	3.8	2.2	\$ 1.0 M	\$ 140,948	\$ 856,649
	Snow removal and other equipment	17	each	6.9	2.5	\$ 3.3 M	\$ 364,880	\$ 1.5 M
	Heavy Equipment	6	Each	7	3.0	\$ 1.3 M	\$ 136,080	\$ 511,407
	Other	12	each	7.8	2.6	\$ 1.1 M	\$ 109,416	\$ 629,121
Totals				6.0	2.8	\$ 13.7 M	\$ 1.3 M	\$ 6.9 M

The unit costs for fleet assets were provided separately and are the actual costs paid by the Town (for vehicles). The age of the fleet was based on how long the Town expects to use the vehicles, and is based on the historical age of similar vehicles that the Town has owned in the past. Overall, Riverview's fleet inventory is considered to be in fair condition, with 31% in poor or very poor.

3 Levels of Service

The purpose of this chapter is to describe the service levels provided by the Town of Riverview. The chapter details the service levels, how they are used, and the organization and asset management objectives that have been developed by the Town. In addition to this, the chapter offers the key performance measures intended for use in the Town's decision-making process.

3.1 What are they and how are they used?

*"Levels of service are the outcomes an organization delivers and are directly related to the asset management objectives set by the organization"*ⁱ. Levels of service are one of the key drivers for making decisions on future asset-related investments. As such, service levels must be clearly articulated in terms that end users, the wider community, government officials, and decision-making staff can understand and communicate. By developing and clearly articulating service levels, the Town of Riverview can work with its stakeholders to identify the appropriate balance between affordability and the service level that is being provided. The development of service levels is therefore a step towards a fiscally responsible approach to building and maintaining sustainable public infrastructure.

3.2 The wider organizational objective framework

To-date, the Town of Riverview has created its sustainability planⁱⁱ, strategic planⁱⁱⁱ and municipal development plan^{iv}, which outline the actions to be implemented by the Town to improve the service that is provided to the community. These plans, and the actions presented in them, are covered in more detail in this section. The three plans, along with the state of the infrastructure report card (refer chapter 2), and the asset management strategy (refer chapter 4), form the basis of an integrated management framework that helps the Town understand the current state of its infrastructure and the required level of investment to maintain the services provided by this infrastructure.

To define the overall future state of Riverview, the Town has developed a strategic plan, which incorporates vision and mission statements. The vision for the Town of Riverview is *"to be a thriving, safe and welcoming community where present and future generations live well and the local economy prospers"*. The strategic plan consists of four key organizational themes that support the vision. These themes are:

- A safe and welcoming community
- Planning for the future
- Smart and sustainable growth



Figure 3-1: Strategic Plan 2016-2020 document

ⁱ NAMS (2015), *International Infrastructure Management Manual (version 5.0)*, National Asset Management Steering Group, Wellington, New Zealand.

ⁱⁱ Riverview (2015), *Integrated Community Sustainability Plan*

ⁱⁱⁱ Riverview (2015), *Town of Riverview: Strategic Plan (2016-2020)*

^{iv} Riverview (2013), *Town of Riverview Municipal Development Plan 2013*

- Fiscal responsibility and service excellence

To help realize the vision, the Town's mission is to provide “*strong leadership, good governance and quality municipal services that make for a vibrant, friendly and safe community for residents and business owners*”. Table 3-1 details the organizational themes and asset-related goals that are presented in the Strategic Plan.

Table 3-1: Organizational strategic themes from the Town of Riverview: Strategic Plan (2016-2020)

Theme	Asset-related strategic actions associated with themes
A safe and welcoming community	• Promote opportunities to maintain community safety. • Continue to deliver popular recreational programs and services to the residents. • Continue to work with the Friends of Mill Creek on the long-term development of this key community asset. • Work with the community to ensure the Town has the recreational infrastructure necessary to deliver the appropriate recreation programs to the community (i.e. Wellness Centre; Mill Creek; Lion's pool).
Planning for the future	• Complete an asset management plan regarding infrastructure needs. • Invest in maintaining and growing the Town's road network to attract business investment and support economic growth. • Take a fiscally responsible approach to building and maintaining public infrastructure. • Increase investment in technology for future infrastructure projects. • Develop a facilities master plan for the Town's buildings. • Upgrade the energy efficiency of facilities through the exploration of program and third-party initiatives. • Continue the annual capital dollar investment for street pavement programs and local improvements. • Invest in the maintenance and upgrades of existing parks equipment. • Evaluate road, recreation, and trail requirements as related to provincial / federal causeway / bridge upgrades. • Develop an infrastructure / economic development plan to develop commercial land off Gunningsville and Bridgedale area. • Update the Town's Sanitary Sewer and Storm Sewer Master Plans. • Continue investment of required infrastructure to support the Active Transportation Plan. • Continue to invest in infrastructure development of Mill Creek Nature Park.
Smart and sustainable growth	• Increase tourism opportunities in Riverview through growth of Fundy trail network. • Enhance the Town's trail network (including Mill Creek and Riverfront) to align with a larger eco-tourism strategy for the region.
Fiscal responsibility and service excellence.	• Develop a Town Asset Management Plan by 2018 that will guide Council's investment decisions on infrastructure requirements and the level of service it provides to residents and commercial rate payers.



Figure 3-2: Community Sustainability Plan - Sustaina-Palooza

along with the associated actions. Figure 3-2 depicts the source of the identified systems, and is based on the community's feedback that was provided at the *sustaina-palooza* event – an innovative way of obtaining community input.

To support the implementation of the strategic plan and to ensure that the corporate vision is aligned with the community's expectations, the Town created their Integrated Community Sustainability Plan (September 2015). The community themes (called systems) that are identified in the Sustainability Plan are presented in Table 3-2,

Table 3-2: Community driven themes identified in the Sustainability Plan

Theme	Asset-related actions associated with themes	Key Stakeholders
Built infrastructure: Complete neighbourhoods	- Prioritize opportunities for underused infrastructure. - Implement the current transportation plans. - Create incentives for green buildings and infrastructure. - Review the Town's land use documents to align with the Community Sustainability Plan. - Engage with developers to encourage complete, walkable, vibrant neighbourhoods. - Use smarter and cost-effective infrastructure. - Ensure that street trees are an integral part of all newly developed areas, and develop a conservation policy and regulation around trees.	- Town council and staff. - Local designers, developers, builders, bankers, real estate agents. - Residents and business owners. - Community groups.
Culture and Arts: Creating connections through diversity and art	Integrate public art in the building fabric and in important spaces.	- Town council, staff, and elected officials. - Moncton and Dieppe communities (neighbours).
Education: Life-long learning	- Promote / host workshops on sustainable habits (i.e. waste management, local food, alternative transport, sustainable design) - Model, celebrate, and invest in sustainable actions (i.e. micro grant program)	- Town council and staff - Schools - Sustainability educators - Non-profits
Energy: Investing in a cleaner tomorrow	Create strategy for new and existing buildings and infrastructure to reduce energy demand.	Town council and staff.

The Municipal Development Plan is the primary document that translates strategic objectives into the defined actions and policies. The plan provides details on a range of subjects including planning and development goals, municipal infrastructure, and residential development policies. Accordingly, the plan directly influences the type and specification of proposed asset-related actions. By creating the Municipal Development Plan, the Town sets the wider legislative requirements that must be met by developers, and furthermore, defines the minimum level of service to be achieved by each new development.

3.3 The community's view

In 2015 the Town carried out a satisfaction survey. The survey, which is based on the perceptions of the whole community including the Town's council and staff, reported on the quality of life, satisfaction with services, financial planning, communication, perceptions of council and staff, priorities and infrastructure, and recreation and wellness. The asset-related feedback is presented below.

The community's priorities are presented in Figure 3-3, below. The survey question asked: "In your opinion, what is the most important issue facing the community?" In the figure below, the asset-related priorities are highlighted in green. It is evident that the community's main priorities are transportation infrastructure and the condition of the streets and sidewalks. These two areas account for almost 30% of the areas listed. Asset management-related areas account for 48% of those listed.

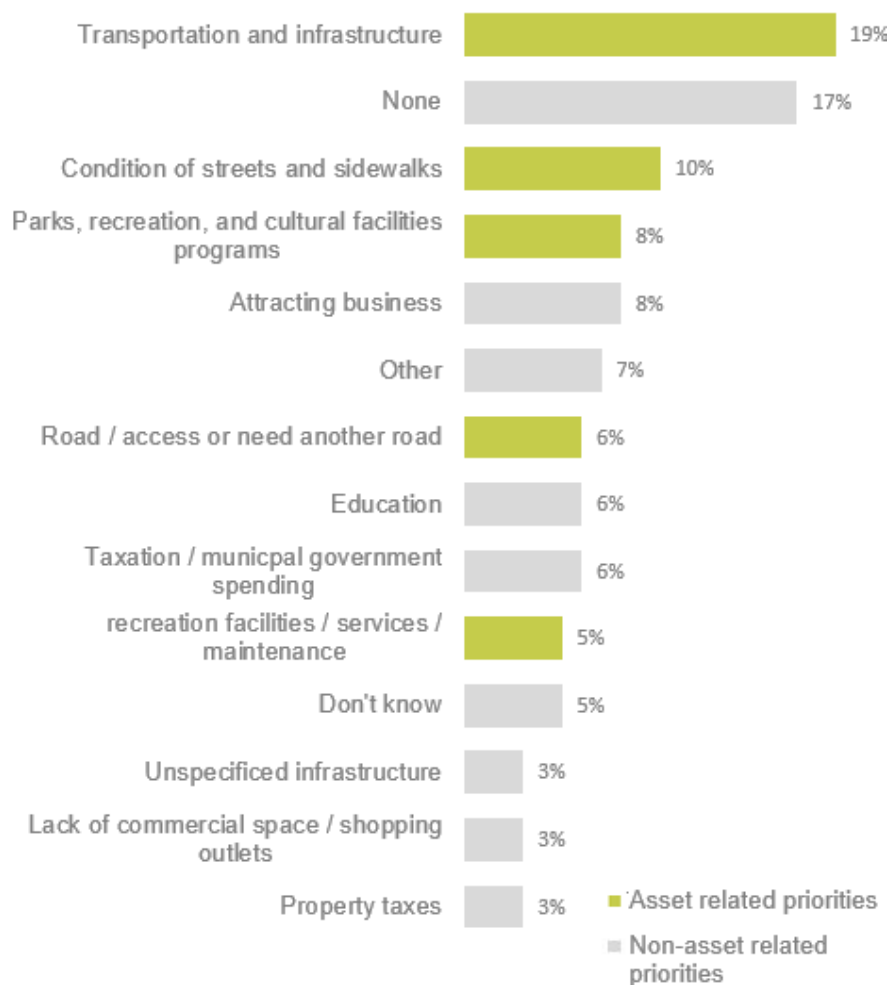


Figure 3-3: The community's priority areas from the Riverview Citizen Satisfaction Survey (2015)

Based on the community's feedback, the majority are happy with both the recreational and public works services that are being provided. The proportion of the community responding with very satisfied or somewhat satisfied is a strong indication that the priorities identified in Figure 3-4 are being delivered. The survey question asked, "Is the Town doing a good job managing the identified services?"

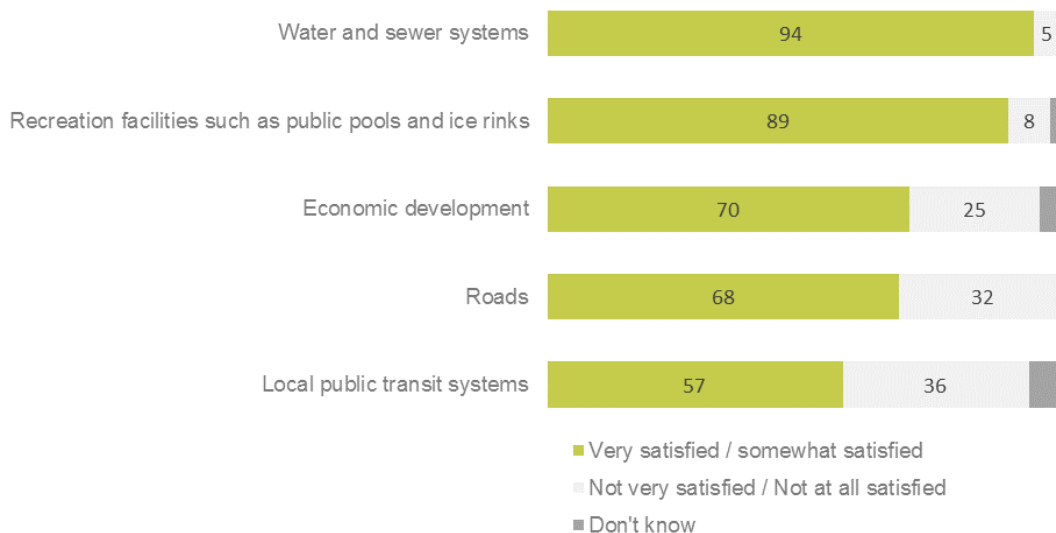


Figure 3-4: The community's satisfaction with the Town's asset-related services

3.4 The level of service framework

To understand how well the Town's assets are contributing to the strategic and community goals, a set of service level statements and associated performance measures have been created.

In order to develop the service level statements and to ensure they align with the community's expectations, a three-stage process was used. This process consisted of the identification of key stakeholders and their interests, the development of service level statements to represent these interests, and the development of performance measures to monitor the Town's success in delivering the identified services. Presently, no performance targets have been set, as these targets will be addressed as part of the on-going improvement to the wider asset management process being implemented by the Town.

The following section details the Town's service level framework that was developed. The assets covered in this framework include transportation and drainage assets, potable water assets, wastewater assets, and parks and recreations assets. These service level statements consider several factors including good stewardship requirements (which is part of the asset management process) and legislative and compliance requirements.

The service levels detailed below will be regularly reviewed and updated to reflect the changing expectations of those living, working and visiting the Town of Riverview. In developing the service level statements, the following key stakeholder groups were considered:

- Those who use the asset / service that is provided.
- Those who provide a service in the Town.
- Compliance and standard setting groups.
- The wider Riverview community.
- Neighbouring communities.

By considering these groups, the key stakeholders presented in the Strategic Plan and again in Table 3-2 are accounted for.

The following tables describe the services provided by each of the identified asset types. The first table (Table 3-3) is the service statement table which details the key stakeholder groups, the stakeholders represented in these groups, and a statement that represents the stakeholder's viewpoint. The final column is the performance measure column, which identifies the ID number in Table 3-4 along with the associated performance measures that are used to understand how well the service is being delivered. The second table (Table 3-4) is the performance measure table which details the service attribute and the performance measures associated with each service level statement. The importance of the performance measure to the decision-making process is highlighted in the weight column. The weight is scored out of 100. The weightings were selected through a collaboration process, where known high, medium and low priority projects were used to assess the relative importance of each Key Performance Indicator (KPI). These weights are provisional and will be changed in light of operational usage. The two tables are repeated to account for the service statements in all asset groups.



Figure 3-5: Sustaina-Palooza Day

The following two tables identify the service level statements and the provisional performance measures associated with the parks and recreation asset.

Table 3-3: Parks and recreation service statements

Users groups	Specific user types	Service statements	Performance measure ID
Those who use the service provided by the asset	User groups and families	An asset that is safe to use.	1: Compliance 2: Risk
	Sports organizations, runners and walkers, dog walkers, seniors, and other residents	Services that meet the requirements of the varied user base.	4: Effective decision-making
Service providers	Sports organizations delivering programs	A reliable asset with scheduled access times.	3: Availability
Compliance groups / standards	Provincial organizations and departments	An asset that complies with good practice guidelines and standards.	1: Compliance
The wider Riverview community	Rate payers	Effective and efficient use of the public funds that are invested in the parks and recreation asset.	4: Effective decision-making

Table 3-4: Parks and recreation provisional performance measures

ID	Service attribute	Performance measure	Weight
1	Compliance	Compliance & guidelines required performance $\geq$ current performance.	20 %
2	Risk	Risk = consequence of asset failure x likelihood of failure.	40 %
3	Availability (i.e. sports organizations)	Hour's available / total planned hours available.	20 %
4	Effective decision-making (i.e. good stewardship)	Customer survey: the service we provide meets the needs of the customer.	20 %

The following two tables detail the service level statements and the provisional performance measures associated with the wastewater (Sanitary) asset.

Table 3-5: Wastewater service statements

User groups	Specific user types	Service statements	Performance measure ID
Those who use the service provided by the asset	Residents, commercial & industrial businesses	The provision of a reliable affordable service.	1: Service Reliability
Service providers	Town of Riverview	Effective long-term planning that addresses climate change.	3: Risk
	The asset management team	A safe place to work as well as the budget, tools, and resources necessary to effectively manage the asset.	4: Coordination
The wider Riverview community	Rate payers	Effective and efficient use of the public funds that are invested in the waste and storm water assets and services.	2: Sustainable Management

Table 3-6: Wastewater provisional performance measures

ID	Service attribute	Performance measure	Weight
1	Service reliability	Number of times the service is not available.	28 %
2	Sustainable management (customer)	Customer survey: the service we provide is affordable.	18 %
3	Risk	Risk = consequence of asset failure x likelihood of failure	36 %
4	Coordination	Stakeholder survey: As a group, we work in a coordinated and collaborative way.	18 %

The following two tables describe the service level statements and the provisional performance measures associated with the water services asset.

Table 3-7: Water services service statements

User groups	Specific user types	Service statements	Performance measure ID
Those who use the service provided by the asset	Schools, businesses and residents	Reliable access to safe, affordable drinking water that meets current and future demands.	2: Service reliability
	Town and firefighting services	Reliable access to water at a sufficient pressure that meets current and future demands.	2: Service reliability
	The asset management team	The budget, tools and resources to effectively manage the asset. A safe place to work.	4: Coordination
Compliance groups / standards	Department of the environment and the Health Department	Drinking water that complies with legislation, standards and guidelines.	1: Compliance
The wider Riverview community	Rate payers	Effective and efficient use of the public funds that are invested in the water asset / service.	3: Sustainable management
Neighbouring communities	Other municipalities	Services and rates structures that are comparable across neighbouring communities.	3: Sustainable management
	Development community	Clear development requirements and sufficient capacity in the system to support the growth of Riverview.	2: Service reliability

Table 3-8: Water services provisional performance measures

ID	Service attribute	Performance measure	Weight
1	Compliance	Compliance (e.g. water testing, boil orders etc.): required performance $\geq$ current performance.	10 %
2	Service reliability	Number of times the service is not available (Number of breaks, service outages and duration of outages).	40 %
3	Sustainable management (customer)	Customer survey: Comparability with neighbouring cities. The service we provide is affordable.	10 %
4	Coordination	Stakeholder survey: As a group, we work in a coordinated and collaborative way.	40 %

The following two tables detail the service level statements and the provisional performance measures associated with the transportation and drainage assets.

Table 3-9: Transportation and drainage service statements

User groups	Specific user types	Service statements	Performance measure ID
Those who use the service provided by the asset	Commuters and transit users (buses)	A reliable service that has consistent travel times.	1: Service reliability
	Cyclists, pedestrians and residents	A system that has defined separation from the road network, is well lit, and is well connected across the region.	2: Connectivity
Service providers	Codiac transport and taxis	A well-connected network with reliable travel times that provides modal choice.	1: Service reliability
	The asset management team	The budget, tools and resources to effectively manage the asset. A safe place to work.	4: Asset condition 6: Coordination
The wider Riverview community	Cycling community and advocacy groups	An interconnected network of bike lanes and trails.	3: Accessible
	Mobility impaired	An accessible transport system.	3: Accessible
	Transit advocacy groups	A safe integrated network of transport services.	3: Accessible
	Insurance and safety advocates	A safe network.	5: Safety
	Property owners	Reliable access to a well-maintained network of transportation assets.	4: Asset condition

Table 3-10: Transportation and storm water provisional performance measures

ID	Service attribute	Performance measure	Weight
1	Service reliability	Number of times the facility is not available.	6 %
2	Connectivity	Percentage of the network that is linked by safe defined paths.	6 %
3	Accessible	Located near to all residents and users of the transport system.	6 %
4	Asset condition (good stewardship)	Average condition of the asset and the individual component condition.	20 %
5	Safety	Crash statistics (annual rate and total count per year).	31 %
6	Coordination	Stakeholder survey: As a group, we work in a coordinated and collaborative way.	31 %

When forming the service statements, it is essential to ensure there is a direct relationship between these measures and the corporate and community themes which, in this case, are presented in the Strategic and Sustainability Plans. The following four tables identify the relationship that directly links the service statement, strategic themes, and sustainability themes. The first three columns to the left identify the service group, the percentage of the community that were satisfied with this service (as noted in Figure 3-3), and the service statements for each service. The final eight columns to the right identify the strategic and sustainability themes where the orange circle, grey circle or no circle represents the service statement fully contributes, partially contributes or does not contribute respectively to the corresponding theme in that column.

Table 3-11: Relationship between parks and recreation service statements and themes

Citizens satisfied (%)	Service statement	Strategic themes				Sustainability themes			
		A safe and welcoming community	Planning for the future	Smart and sustainable growth	Fiscal Responsibility and service excellence	Built Infrastructure: Complete neighbourhoods	Culture and Arts: Creating connections thru diversity and art	Education: Life-long learning	Energy: Investing in a cleaner tomorrow
89%	An asset that is safe to use.	●		●	●	●			
	Services that meet the requirements of the varied user base.	●	●	●		●	●		●
	A reliable asset with scheduled access times.		●		●	●			
	An asset that complies with good practice guidelines and standards.	●	●	●	●	●			●
	Effective and efficient use of the public funds that are invested in the parks and recreation asset.		●	●	●				

Table 3-12: Relationship between wastewater service statements and themes

Citizens satisfied (%)	Service statement	Strategic themes				Sustainability themes			
		A safe and welcoming community	Planning for the future	Smart and sustainable growth	Fiscal Responsibility and service excellence	Built Infrastructure: Complete neighbourhoods	Culture and Arts: Creating connections thru diversity and art	Education: Life-long learning	Energy: Investing in a cleaner tomorrow
94%	The provision of a reliable affordable service.	●	●	●	●	●			●
	Effective long-term planning that addresses climate change.		●	●	●	●		●	●
	A safe place to work as well as the budget, tools and resources necessary to effectively manage the asset.		●	●	●	●			●
	Effective and efficient use of the public funds that are invested in the waste and storm water assets and services.		●	●	●	●			●

Table 3-13: Relationship between water service statements and themes

Citizens satisfied (%)	Service statement	Strategic Themes				Sustainability Themes			
		A safe and welcoming community	Planning for the future	Smart and sustainable growth	Fiscal Responsibility and service excellence	Built Infrastructure: Complete neighbourhoods	Culture and Arts: Creating connections thru diversity and art	Education: Life-long learning	Energy: Investing in a cleaner tomorrow
94%	Reliable access to safe, affordable drinking water that meets current and future demands.	●	●	●	●	●			●
	Reliable access to water at a sufficient pressure that meets current and future demands.		●	●	●	●			●
	The budget, tools and resources to effectively manage the asset. A safe place to work.		●	●	●	●			●
	Drinking water that complies with legislation, standards and guidelines.	●	●	●	●	●			●
	Effective and efficient use of the public funds that are invested in the water asset / service.		●	●	●	●			●
	Services and rates structures that are comparable across neighbouring communities.				●	●			
	Clear development requirements and sufficient capacity in the system to support the growth of Riverview.	●	●	●	●	●			

Table 3-14: Relationship between transportation service statements and themes

Citizens satisfied (%)	Service statement	Strategic themes				Sustainability themes			
		A safe and welcoming community	Planning for the future	Smart and sustainable growth	Fiscal Responsibility and service excellence	Built Infrastructure: Complete neighbourhoods	Culture and Arts: Creating connections thru diversity and art	Education: Life-long learning	Energy: Investing in a cleaner tomorrow
68%	A reliable service that has consistent travel times.	●	●	●	●	●	●	●	●
	A system that has defined separation from the road network, is well lit, and is well connected across the region.	●	●	●	●	●			
	A well-connected network with reliable travel times that provides modal choice.	●	●	●		●			●
	A safe place to work and the budget, tools and resources to effectively manage the asset.		●	●	●	●			●
	An interconnected network of bike lanes and trails.	●	●	●	●	●	●		●
	An accessible transport system.	●		●	●	●		●	●
	A safe integrated network of transport services.	●	●	●	●	●			
	A safe network.	●		●	●	●		●	
	Reliable access to a well-maintained network of transportation assets.		●	●					

Further to the list of service statements in Tables 3-3, 3-5, 3-7, and 3-9 are additional service criteria that are sometimes used in decision making. Table 3-15 shows the specific user types and the service provided to these users:

Table 3-15: Additional service criteria for decision making

Specific user types	Service statements
Schools and daycare centres	A service that is available during school hours.
The asset management team including mowing contractors	A safe place to work as well as the budget, tools and resources to effectively manage the asset.
Businesses including caterers and wedding planners	Increased use of the asset for non-sports related events.
Insurance companies	Access to the facilities.
Development community	Spaces that are aesthetically pleasing to the community.
Regional commission	Work with the regional commission in a coordinated and collaborative way.
Dieppe / Moncton / Salisbury / Hillsborough	A connected group of communities that provide shared access to the regional parks and recreation facilities.
Parks and Trails Users; Friends of Mill Creek	The asset is developed in a sustainable way that considers environmental effects.
Development community	Fairly-priced work, which has consistent and clear requirements. Sufficient capacity in the system to support the Town's growth.
Local service district	Work with the district in a coordinated and collaborative way.
Landscaping companies	Reliable access to affordable water that meets current and future demands.
Telecommunication companies	The ability to mount telecommunications equipment on water towers.
Utility providers	A reliable service with minimal service interruptions.
Moncton	A continued supply of complaint drinking water that meets current and future demands.
Local service district	Drinking water that complies with legislation, standards and guidelines.
Tourists and visitors	An aesthetically pleasing transport system that is easy and intuitive to navigate.

Specific user types	Service statements
Commercial trucking and delivery	Consistent travels times across an easily navigated network that is accessible to all vehicle types.
Utilities (Enbridge and NB Power)	Well-planned works that provide clear guidance on timing.
Insurance and safety advocates	A safe network.
Rate payers	Effective and efficient use of the public funds that are invested in the transportation asset / service.
Property owners	Reliable access to a well-maintained network of transportation assets.
Development community	Fairly-priced work, which has consistent and clear requirements. Sufficient capacity in the system to support the Town's growth.
Dieppe / Moncton / Salisbury / Hillsborough	A well-connected group of communities that have shared reliable access to a network of transportation services.

The Town of Riverview owns and manages several facilities including the Byron Dobson Arena, the new Operations Centre, as well as fleet for multiple departments in the municipality. These assets are covered in the State of the Infrastructure section, the Asset Management Strategy section, and in the forward works Financial Strategy. In a future iteration of the asset management plan, the Town will develop service level statements for buildings and the vehicle fleet.

3.5 Integrating performance measures and decision-making

A recurrent idea in the planning for the future theme is prioritizing the investment in key infrastructure such as parks, pavements, active transportation plans and improving the energy efficiency of facilities. To ensure alignment with the four key themes presented in the Strategic Plan, each project will be assessed against these themes and the key performance measures within each asset group, identified in the previous section. By using this approach, each project, in each asset class, can be considered fairly against other projects. Using such an approach will allow the Town to focus on key projects that meet the strategic themes while balancing service outcomes and affordability.

It is envisioned that each member of the asset management steering committee will identify several critical projects that contribute to the identified performance measures and the four key strategic themes as part of their everyday work. As these projects are identified, they will be assessed against the asset specific performance measures, and a weighted rating calculated. The asset management steering committee at the Town will then assess how well the projects align with the stated strategic themes from their existing Strategic Plan.

A set of scoring criteria has been included that can be used to assess how well a project contributes to the identified performance measures and the strategic themes outlined in the Town's Strategic Plan. The following table details the scoring criteria. Each of these criteria use a 0 to 3 rating scale.

Table 3-16: Project scoring criteria

Scoring criteria	
#	Definition
3	The project strongly contributes to the achievement of the identified criteria
2	The project contributes to the achievement of the identified criteria
1	The project weakly contributes to the achievement of the identified criteria
0	The project does not contribute to the achievement of the identified criteria

Using the scoring criteria listed above, a project can be scored on a consistent basis – allowing for all projects to be compared fairly against other projects while aligning with the themes from the Strategic Plan. At the end of the decision-making process, the steering committee will have scored all proposed projects against the five themes, resulting in a comparable table. An example of the scoring process is presented in Table 3-17.

Table 3-17: Example of the scoring process

Project description	Strategic plan: key organizational themes (3 = highest, 0 = lowest)				
	Asset management measures	A safe and welcoming community	Planning for the future	Smart and sustainable growth	Fiscal responsibility and service excellence
Wentworth Drive Rehabilitation	3	2	1	0	1
Lions Community Park Pool Improvements	2	0	0	1	1
Booster Station	0	0	2	1	0
Gunningsville Intersection	0	1	1	1	2

Note: This is an example and does not reflect the actual scoring performed by the Asset Management team.

From this example, it is noted that the Wentworth Drive Rehabilitation projects results in the highest for asset management measures and has the highest score overall. This means that this project has the greatest strategic fit, in turn, aligning with the themes outlined in the Strategic Plan.

A beneficial improvement that has been implemented by other organizations, would be to further develop the project prioritization process so it can be used not only to compare projects within the *same* asset type, but also to compare the relative effectiveness of projects for *different* asset types. Such a process facilitates the distribution of the asset management budget to the assets that most require it.

4 Asset Management Strategy

The objective of the Asset Management Strategy (AMS) is to outline and establish a set of planned actions that can be used by the Town to manage their assets, and in doing so provide an agreed level of service to its citizens.

To provide context for the AM strategy, this chapter first details the different service methods the Town uses. The high-level assumptions that were used in developing the AM strategy are then outlined. Lifecycle management, as it relates to the Town's assets, is then discussed. Lifecycle management includes management strategies to deliver required services from assets throughout the lifecycle of those assets. The phases of this lifecycle are: construction, operations and maintenance, and renewal or disposal. These strategies provide an understanding of what must be done to optimize an asset's useful life and maintain consistent service delivery, even as the assets age. The final section of this chapter, the decision-making section, details the framework the Town can use to prioritize projects.

4.1 Service delivery methods

Like most municipalities, the Town procures services using several approaches. This section explains these approaches, because they directly affect the type of interventions that could be applied to different asset types.

The Town's many capital projects are delivered through contractual relationships with a variety of private partners. For parks and recreation assets, facilities, snow removal, the fire department and fleet assets, the town uses its own resources. In addition, the Town has partnered with the tri-community (Riverview, Moncton, and Dieppe) to provide their potable water and wastewater, transit, solid waste, and policing services. The Town receives its potable water from the City of Moncton, shares a wastewater facility with the tri-community area, utilizes Codiac Transit for transport services, has partnered with Southeast eco360 for solid waste disposal, and shares an agreement with the tri-community and the Royal Canadian Mounted Police for the provision of policing services. Sharing services across the three communities helps distribute the associated costs, ensures a consistent service level is provided across the region, and offers citizens with best value for money.

As the Town grows and its service requirements change, it is recommended that the blend of service delivery approaches is reviewed to ensure that the Town continues to achieve best value services for its citizens.

4.2 Demand projections and planning assumptions

Asset management planning includes forecasting future events (capital renewals, operations and maintenance needs, future demand, capital new assets, and all the costs and lifespans associated with these). Some assumptions are required to develop these forecasts and the overarching asset management strategy for service delivery.



Figure 4-1: Riverview Town Hall

The scope of this current asset management strategy focuses solely on the management of existing infrastructure, known projects, and planned construction of assets that were specified by the Town. Unspecified population growth leading to an increase in asset inventory or service demand has not been considered. Following discussions with the Town, it was determined that projects already identified to be delivered in the next 5 years will be included in the planning forecasts for this current asset management strategy.

Examples of known future projects that are included in the plan are:

- The construction of the Wellness Centre;
- The sale of the RCMP building, which will eliminate the future capital expenses for the building;
- The completed demolition of the Public Works and Engineering Building
- The replacement of the Town's Aquatic Centre with the Wellness Centre which, in turn, will eliminate the capital expenses related to the Aquatic Centre; and
- An allowance for the 500 m of road that is typically added each year.

As an improvement item, any future asset management strategies should include an allowance for the effects of population growth, new or increased standards and technology changes (to the extent that these can reasonably be predicted), and the impacts of other predictable trends, such as climate change, zero waste initiatives, carbon reduction, and demographic and socio-economic changes. These effects may include higher design standards for roads, greater allowance for the number of road users, or volume of heavy vehicles, greater capacity in the water and wastewater network, higher environmental standards or energy efficiency requirements, modifications to pipe networks for increased or decreased flow, or changing community needs for different types of parks or recreation facilities.

Additional to demand projections based on existing infrastructure, known projects, and planned construction of assets specified by the Town, other assumptions outlined in Tables 4-1 to 4-6 were made and incorporated into the Financial Strategy (Refer Chapter 5 - Financial strategy). It is recommended that all the listed assumptions are reviewed when a new plan is developed and updated as relevant for the service levels reflected in the new plan.

Table 4-1: Asset statements

Statements
All costs were inflated to the year of the assessment (2017) using NRBCPI.
Costs were used based on what was provided in the tangible capital asset spreadsheet provided by the Town.
The rating was based on an assumed relationship between age and condition.
The sub-asset types that make up an asset category were assumed to be those detailed in the tangible capital asset spreadsheet.
Costs of assets added to the Town network (i.e. growth) will be the same as replacement costs of similar assets owned by the town.
The renovations or capital improvements were based off the tangible capital asset spreadsheet provided by the Town unless noted otherwise in the assumptions tables above.

Table 4-2: General assumptions

Assumptions
The expected useful life from the Town's tangible capital assets was assumed to be correct unless noted during the asset management strategy workshop.
The relationship between expected useful life and condition was assumed for all assets except asphalt.

Table 4-3: Transportation and Drainage Assumptions

Asset type	Assumption
Roads	The Town will raise their road networks average pavement condition from 64 to 71 using the treatments listed in the Pavement Management Program.
Parking Lots	Parking lots are already included in the cost of maintaining the facility unless the parking lot was identified as a separate line item in the tangible capital asset spreadsheet provided by the Town.
Curbs and Gutters	The expected life for local, collector and arterial is the same.
Sidewalks	The expected life for local, collector and arterial is the same.
Traffic Controllers and Signals	The traffic controllers and signals will be replaced at the end of their useful life.
Street Lights	Street lights will be replaced at the end of their expected useful life using the specific cost to construct street lights as listed in the tangible capital asset spreadsheet provided by the Town.
Culverts	The expected useful life of corrugated steel pipe (CSP) culverts is 25 years. CSPs will be replaced with concrete or HDPE culverts.
Storm-Sewers	The expected useful life of corrugated steel pipe (CSP) culverts is 25 years. CSPs will be replaced with PVC. All storm-water nodes (i.e. manholes, catch basins, etc.) are included in the linear pipe price.

Table 4-4: Facilities assumptions

Asset type	Assumption
Town Hall	The sum of the cost of the Town Hall and components for renovations done to Town Hall equal the total cost to replace the facility.
Public Works and Engineering Building	The building was demolished in 2017 and will not be reflected in the strategy or financial plan.
Operations Centre	The expected useful life of 50 years will be achieved and there will be no capital upgrades throughout the useful life.
RCMP Building	The RCMP building will be sold in year 2022. No revenue implications included in the model.
Parks Administration Office	The expected useful life of 40 years will be achieved and there will be no capital upgrades throughout the useful life.
Byron Dobson Arena	The Town will follow the recommended upgrades from the condition assessment report. Assume the arena will be repurposed at the end of the useful life at the cost to replace the facility which was found in the tangible capital asset spreadsheet.
Fire Station	A useful life of 20 years for fire station was assumed due to current condition of the facility.
Coverdale Recreation Centre	The Coverdale Recreation Centre will be replaced like for like at the end of its expected useful life.
Bridgedale Community Centre	The Bridgedale Community Centre will be replaced like for like at the end of its expected useful life.
Fundy Chocolate River Station	The Fundy Chocolate River Station will be replaced like for like at the end of its expected useful life.

Table 4-5: Potable water and wastewater

Asset type	Assumption
Distribution Mains	All potable water nodes (i.e. water valves, fire hydrants, etc.) are included in the linear pipe price. All pipes will be replaced with PVC.
Booster Stations and Water Towers	The Booster Stations and Water Towers will be replaced like for like at the end of their expected useful life.
Local Sewers	All pipes will be replaced with PVC. All wastewater nodes (i.e. manholes, catch basins, etc.) are included in the linear pipe price.
Sewer Lift Stations	Only one (Mill Creek) will need to be replaced at the end of its useful life. The Pine Glen lift station will be sold, thus any costs to maintain the land and lift station are not included.
Mill Creek Dam	The dam will be rehabilitated using the recommendations from the Mill Creek Dam Report provided by the Town.

Table 4-6: Parks and recreation assumptions

Asset type	Assumption
Lions Club Pool	The cost to replace the pool as well as all components throughout the lifecycle is equal to the cost to replace the whole facility. The pool and facilities associated with it (i.e. pool shed, pool deck, fencing, etc.) will be replaced like for like at the end of their expected useful life.
Event and Tourist Facilities	The event and tourist facilities will be replaced like for like at the end of their expected useful life.
Multi-Use Trails	Existing trails and signs will be replaced like for like at the end of their expected useful life.
Sports Fields and Courts	Existing sports fields and courts will be replaced like for like at the end of the expected useful life.
Parks including Play Structures and Fencing	Existing playgrounds including play structures and fencing will be replaced like for like at the end of their expected useful life.
Buildings	Buildings only include shelters, huts, washrooms, security compound and gazebos that were their own line item in the tangible capital asset spreadsheet provided by the Town. Existing playgrounds, including play structures and fencing will be replaced like for like at the end of their expected useful life.

Table 4-7: Vehicle fleet assumptions

Asset type	Assumption
Buses	All vehicular fleet is assumed to be replaced at the end of its remaining useful life with no additions. An improvement action would be to complete service statements for all vehicle asset types and plan treatments around the service statements to ensure service levels and performance measures are met.
Fire Department	
P and R Trucks and Vans	
Snow Removal and Heavy Equipment	
Other	

4.3 Lifecycle management plan

Lifecycle management refers to the different phases through which an asset passes as it ages. An awareness of these phases is important because different management interventions are appropriate (or required) for different lifecycle phases, and this will affect the content and structure of the financial

strategy. There are eight lifecycle phases (refer Figure 4-2), although not all are relevant for all asset types in all services.

The first phase is pre-construction, and begins with identifying a need for a new asset. The driver for a 'new' asset can be a result of the current asset or system not meeting demand or risk criteria, new requirements (legislation), or other factors such as climate change. Once the need for a new asset has been identified, the asset planning stage commences, which is followed by the asset design and construction or installation phase.

After construction or installation and as the asset ages, the asset is operated, inspected, and repaired as needed. In this operational phase, condition inspections are used in conjunction with planning tools such as lifespan and deterioration modelling, to estimate future work requirements and end of useful life. The number and types of interventions that are considered in the operational management phase are guided by how important the asset is to the community, agreed standards and levels of service, and regulatory requirements. Depending on the type, age, performance, and condition of the asset, a mixture of capital projects such as rehabilitation, modification, or renewal projects may be appropriate. These would occur after the periodic, routine, and reactive maintenance employed in the 'Operate / Maintain / Monitor' phase is no longer adequate (or cost effective) to ensure the asset continues to supply the agreed service level.

At the end of the asset's life, there are often several potential solutions. These include re-purposing the asset, divesting of the asset, or demolishing the asset, and if required, constructing a new asset that meets the current demands of the community.

Figure 4-2 combines the ideas presented in the 2015 version of the International Infrastructure Management Manual and those presented in Leadership in Asset Management Program documentation. After initial design and construction, many assets will cycle through the 'Operate / Maintain / Monitor' and 'Modify / Rehabilitate / Renew' several times before there is a need to 'Repurpose / Dispose / Divest' or replace with a different asset to deliver a different service level or manage increased demand.

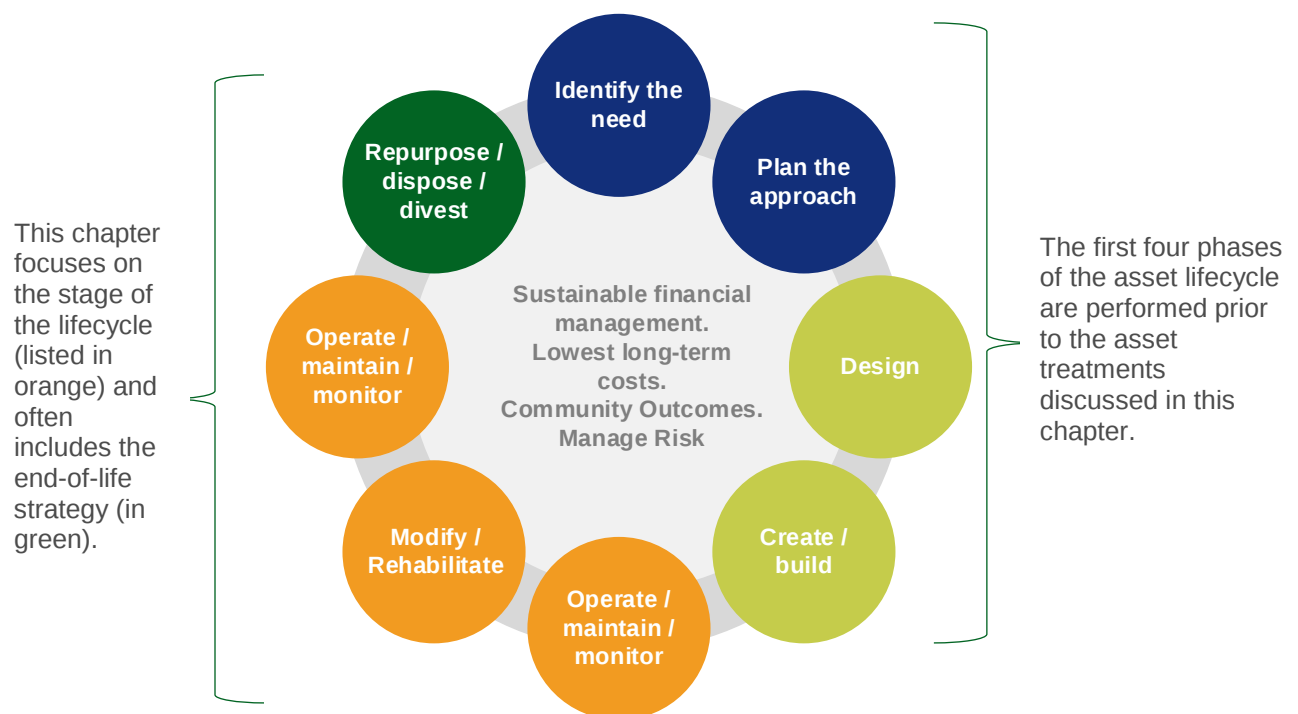


Figure 4-2: The eight phases of an asset's lifecycle

The following sections describe the practices used to manage each of the asset types the Town is responsible for, including transportation and drainages assets, facilities, potable water and wastewater, parks and recreation and vehicular fleet.

Transportation and drainage

As described in the State of the Infrastructure, the Town's transportation and drainage assets have the highest replacement value. Given the age distribution of these assets, they are in a mix of the eight stages of the full lifecycle. The management of this asset group is detailed in several pavement and storm water management plans including:

- The Storm Water Management Review (1993);
- The Findlay Park Storm Study (2007);
- The Long-term Development, Storm Sewer and Servicing Plan (2008); and
- Pavement Management Program (2014).

By completing these plans, the Town has demonstrated evidence of lifecycle planning. Given that the state of the asset is continuously changing, the specific asset strategies documented by the Town's asset management steering committee should be reviewed and updated by the Town every one to five years depending on how much the content of each document changes over time. By periodically reviewing these lifecycle management plans, the Town can adapt more easily to change in service levels and demand of the community, to provide services for the least total lifecycle cost. Given the right information, the Town can make the best investment decisions, determine the most appropriate treatments to use on different assets, and develop operational management plans that are optimized for cost, service delivery, and risk. To assist the Town in this regard, a timeline was developed for various asset types. Figure 4-3 represents an example of a timeline for the Town's roads.

The treatments listed in Figure 4-3 were recommended to the Town in their Pavement Management Program, which the Town is in the process of implementing. In this example:

- The x-axis, shown in years, represents the life expectancy of the road (assumed to be 50 years);
- The green sticky notes above the axis identify on-going annual labour maintenance activities (i.e. annual inspections);
- The blue sticky notes above the axis identify on-going periodic maintenance activities (i.e. crack sealing or patching) which is considered maintenance and not included in the treatment strategy;
- The yellow sticky notes below the axis identify the capital expenditures associated with that particular asset group (i.e. full reconstruction, HMA overlay, etc.) which are presently being used by the Town at varying times of the assets lifecycle; and
- The orange sticky notes either below or above the axis identify suggested activities from the Pavement Management Program (maintenance or capital) that have been recommended to the Town but may have not been implemented at present (i.e. micro-surfacing was recommended as a maintenance activity for roads).

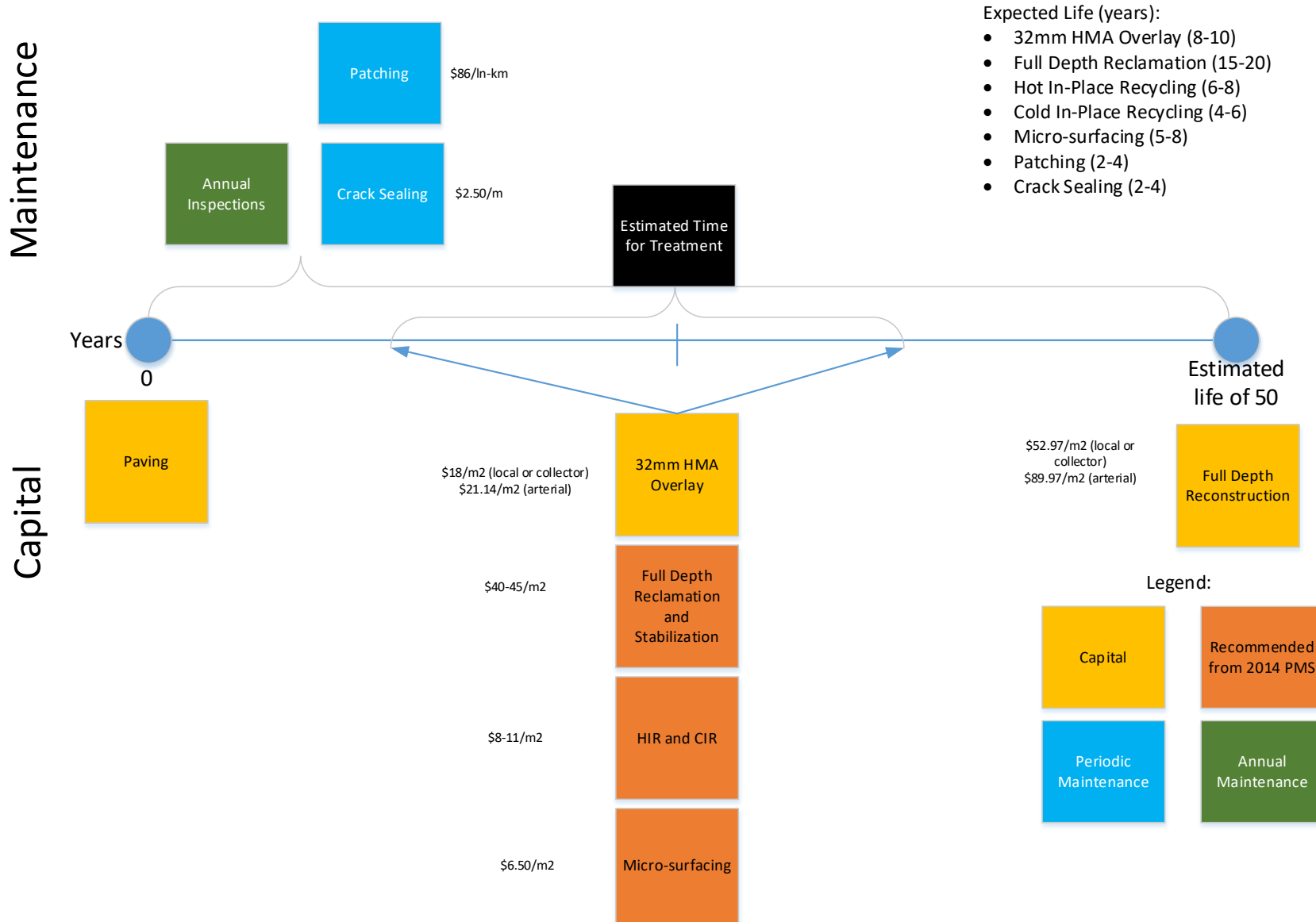


Figure 4-3: Roads asset timeline

The Town's current Pavement Management includes the following types of treatments, which fall under the modify/rehabilitate section of the asset lifecycle:

- Annual crack sealing program (maintenance);
- Annual patching program (maintenance);
- 50mm resurfacing (minor capital treatment);
- 32mm overlay (minor capital treatment);
- Microsurfacing (minor capital treatment);
- Hot in-place recycling (minor capital treatment);
- Cold in-place recycling (minor capital treatment);
- Full depth reclamation (major capital treatment);
- Reconstruction (major capital treatment);

Presently, the Town only uses some of the treatments considered in the pavement management program – some are not used due to either being unavailable in the area or the Town not having the means to perform this type of work. The financial strategy completed in chapter 5 follows the Town's pavement management program. A future improvement for the Town would be to implement a form of pavement management that includes additional treatments listed in their program, update their road condition assessments annually, and revise the types of treatments that could be used in their area to optimize the Town's road network.

Facilities

The Town's facilities consist of municipal, community, and emergency services-type buildings. At present, the Town does not have a formal treatment strategy for their facilities, nor do they have personnel with responsibilities specifically focused on maintaining their facilities. At present, they replace components of the facilities at their end of life through the operations and maintenance phase of the asset lifecycle. In the financial strategies, the expected useful life was estimated to be 40 years for all facilities except the Operations Centre, which was estimated to be 50 years. Unfortunately, the fire station, which has an expected life of 40 years and was constructed in 2007, is deteriorating faster than expected, thus shortening the useful life of that facility. The Town has had to do major capital work to the fire station and has had a complete condition assessment of the facility performed.

Presently, the Town is preparing to build a Wellness Centre which will replace the Aquatic Centre and lead to a potential repurposing of the arena. This will lead to a change in service levels and treatment required for both facilities. In the Financial strategy (Chapter 5), it was assumed that no capital expenditure would occur on the Aquatic Centre after 2022, but the Arena will receive regular upgrades. Prior to constructing the Wellness Centre, it is recommended that the Town identify the full lifecycle costs of this type of facility and gain an understanding of the additional costs the Town will incur from maintaining both the Arena and the Wellness Centre.

The Town has begun by performing in-depth condition assessments of facilities that are nearing the end of their useful life. This information is documented in the following reports:

- Wellness Centre Feasibility Study (2014);
- Byron Dobson Arena Building Condition Assessment (2014);
- Fire Station Truss Bracing Report (2017); and
- Fire Station Building Assessment Report (2016).

Prior to the above reports being published, Building Condition Reports were performed in 2002. To continue the process of lifecycle management for their facilities, the Town will need to periodically update their condition assessments. The frequency of updates should be relevant to the age, condition, and importance of the facility/building.

Improvement actions include identifying a resource solely focused on managing the Town's facilities who will be responsible for creating formal inspection timelines, compliance with required warranties, checks, calibration and testing, and reporting of these and all other issues relating to facilities.

Potable water and wastewater

The Town's potable water and wastewater assets have the second highest replacement value among the five categories of asset classes. Given the age of the Town, many of the linear assets were constructed in the same decade, meaning that they are cycling through the phases of the asset lifecycle at a similar rate. Besides the linear assets, the age and distribution of the other assets (such as pump stations, water towers, water tanks, etc.) in this asset class are in varying stages of the asset lifecycle. The management and development plans for these assets have been detailed through various reviews performed by the Town, including:

- Water Master Plan update (2002);
- Sanitary Sewer Master Plan (2005);
- Municipal Plan (2013);
- Mill Creek Dam Assessment (2014); and
- Water Rate Report performed by the City of Moncton (2015).

As previously mentioned, the linear assets were constructed in a relatively short period of time. This could lead to financial and service delivery issues in the future, as indicated in the long-term forecast in Chapter 5, because most of the linear assets will be nearing the end of their life in the same decade. It is recommended that the Town begin preparing for the replacement of these assets and identify potential treatment strategies that could prolong the life of some assets. By completing early replacements on critical assets, this would allow the Town to stagger the major rehabilitation of linear assets and reduce potential funding peaks.

Parks and recreation

The Town's park and recreation assets, similar to facilities, are replaced as a result of safety concerns, change in laws and standards, or change in service demand. The Town has begun the process of lifecycle management of their parks and recreation assets by assigning resources that are primarily focused on the management of the parks. This helps ensure the goals and objectives outlined in the Strategic Plan and Sustainability Plans are being met. Recently, the Town has started to provide the community with more green space through the development of various trails and the Mill Creek nature park.

The Town has begun the process of managing their Parks through the eight phases of the asset lifecycle by prioritizing recreation facilities and trail development throughout the community. This was evident during the process of developing the asset timelines. Presently, the Town is growing and expanding in population, thus increasing the demand for active transportation and recreational activities. In order to develop a healthy community, the Town has prioritized various projects including the Mill Creek Trail Development and the Wellness Centre. It is important that the Town understands the lifecycle cost of their parks assets in order to maintain, operate and rehabilitate their parks for future generations. In the future, it is recommended the Town updates their long-term plans for their parks. As a start, the Town will be able to use the decision-making tool and long-term planning tools found in Appendix B.

Vehicle fleet

The Town owns several vehicles that have been divided into asset types depending on the service the vehicle provides. Presently, the Town maintains a spreadsheet, which is used to track vehicle age. The Town manages their fleet based on historical data trends, expected useful life of a certain type of vehicle compared to age, and budget parameters. These factors are used to forecast the replacement of these

vehicles. Similar to other municipalities, the Town documents the maintenance performed on their vehicular fleet and ensures regular maintenance is performed.

At present, the Town has not completed a thorough review of potential rehabilitation treatments that could be performed to extend the life of their fleet, nor have they created service levels to gain an understanding of the demand on their fleet assets. As mentioned in the level of service chapter, it is recommended that the Town create performance measures and identify a level of service they intend to provide using fleet. As an example, the Town presently has a policy where prioritized roads are cleared within 8 hours following a snowstorm. Based on this service level, the Town may realize that they need to either purchase more snow removal vehicles or identify that they have too many snow removal vehicles, leading to an increase or decrease in costs and an effect on the service level provided. Creating level of service statements for all the Town's vehicle fleet is an improvement action, which will aid the Town in determining the total cost of their fleet lifecycle and help them provide residents with the service levels they expect.

4.4 Risk management

The Town has developed a decision-support framework based on the multi-criteria analysis (MCA) as shown in Appendix B. With the creation of this decision-support framework, the Town will begin to make more decisions that align with the service levels the Town intends to provide. It is expected that the Town will continue to build on their first iteration of the decision-support framework by incorporating risk in the next version/update. By doing this, the Town will align with good-practice decision making and be able to prioritize work on assets in a more robust way. It will give the Town confidence that these decisions are providing best guidance for optimized least lifecycle costs, consistent quality of service, and prudent management of risks. To begin the process of incorporating risk, it is recommended that the Town identify service level failure and the probability of an asset failing as well as the potential consequences. The following primary risks have been identified for each asset class.

Transportation and drainage

- Not following the pavement management program leading to reduced driver comfort;
- Trip hazards or insufficient sidewalk network leading to safety hazards for pedestrians;
- Insufficient lighting in turn lowering pedestrian safety and reducing driver visibility;
- Incorrectly timed controllers or signals increasing queues and reducing service level for commuters; and
- Road washouts, flooding, reduced user safety due to potential hydroplaning and increased outfall to rivers due to climate change.

Vehicle fleet

- Increased wait times for users of public transit;
- First-responders not having the necessary equipment resulting in issues with answering emergency calls;
- Parks and recreation vehicles breaking-down leading to the Town not being able to provide the service level the Town expects; and
- Not having sufficient snow removal and heavy equipment leading to safety hazards for motorists or service level not being provided.

Facilities

- Facilities such as the Aquatic Centre getting closed by the province, leading to the indoor pool service not being provided to the community;
- Temporary closure of the arena resulting in recreation organizations not being provided to the community;

- Various recreation centres being repurposed or renovated leading to the services not being provided to the community;
- Closing or replacing the carpentry shop with the operations centre;
- Potential loss in revenue from tourists if tourist facilities and buildings do not offer the services expected by travellers;
- Major renovations to buildings that the Town intends to close or sell (RCMP building) leading to changes in the Town's short-term budgets; and
- Potential risks associated with building the Wellness Centre include increased costs to provide sports and recreational activities as well as the reputation of the civil servants working for the Town. Leading to deferred work on current assets and increased uncertainty regarding the finances in the Town.

Parks and recreation

- Trip hazards, user safety, and failure of an asset within the park (i.e. culverts) that support the playgrounds, trails, fields and courts leading to temporary closures and reduced service level of these assets.

Potable water and wastewater

- Temporary closure due to potable water tests failing;
- Fracturing or breaking of critical pipes such as trunk sewers, transmission and distribution mains, etc. leading to a temporary closure of the service and reduction in reliability of service delivery;
- Traffic disruption and long wait times for commuters;
- Inadequate capacity to mitigate the effects of climate change causing increased frequency or extent of flooding in the community;
- Over-demand of service leading to issues in providing the service to the community; and
- Changes in the tri-community agreement leading to a change in the way the service is provided to the Town or the way the Town's staff are structured.

Future iterations of the asset management strategy require an assessment of risks associated with each asset class. Although risk is not the only reason for making an asset-level or project-level decision, it is a key indicator that a certain project or treatment may need to be completed.

Assigning risk as a weighting-factor when making decisions should be considered when using the decision framework created in Appendix B.

Outcomes from the decision-support framework

The decision-support framework, originally introduced in the Level of Service chapter, comprises a set of weighted criteria that is used by individual asset managers to prioritize their projects. The first iteration of the decision-support framework prioritized projects against corporate and strategic objectives. From the workshop, the Town was tasked with identifying planned projects and applying weighting factors based on criteria from their sustainability and strategic plans. The Town was then asked to score their projects against service delivery (0 to 3) and strategic alignment (0 to 10). The results of this exercise are shown in both Table 4-8 and Figure 4-4, where projects that align with service delivery are high on the vertical axis, projects that align with strategic themes are right on the horizontal axis. The cost to perform each project is reflected in the size of the bubble.

Table 4-8: Results from decision-making workshop

Project name	Asset class	Service delivery (out of 3)	Strategic alignment (out of 10)	Project cost
Wentworth Dr.	Wastewater	2.8	2	\$200,000.00
Old Coach Rd.	Wastewater	2.2	2	\$80,000.00
Hawkes St.	Wastewater	2.8	5	\$130,000.00
Wentworth Dr.	Potable Water	2.7	5	\$760,000.00
Harvey Rd.	Potable water	1.9	5	\$360,000.00
Warren Rd.	Potable water	1.5	4	\$500,000.00
Hillsborough Rd.	Potable water	1.6	7	\$500,000.00
Booster Station	Potable water	2.1	7	\$4,600,000.00
Nature Park	Parks and recreation	2.4	8	\$700,000.00
Wentworth Park	Parks and recreation	2.6	9	\$2,500,000.00
Lions Club Pool	Parks and recreation	2.0	9	\$1,300,000.00
Byron Dobson Arena	Facilities	1.8	8	\$1,700,000.00
Local Improvement A	Transportation and drainage	2.2	10	\$625,000.00
Gunningsville Intersection	Transportation and drainage	1.9	10	\$1,500,000.00
Pinewood / Pine Glen Roundabout	Transportation and drainage	1.2	10	\$600,000.00
LED light replacement	Transportation and drainage	0.8	8	\$250,000.00

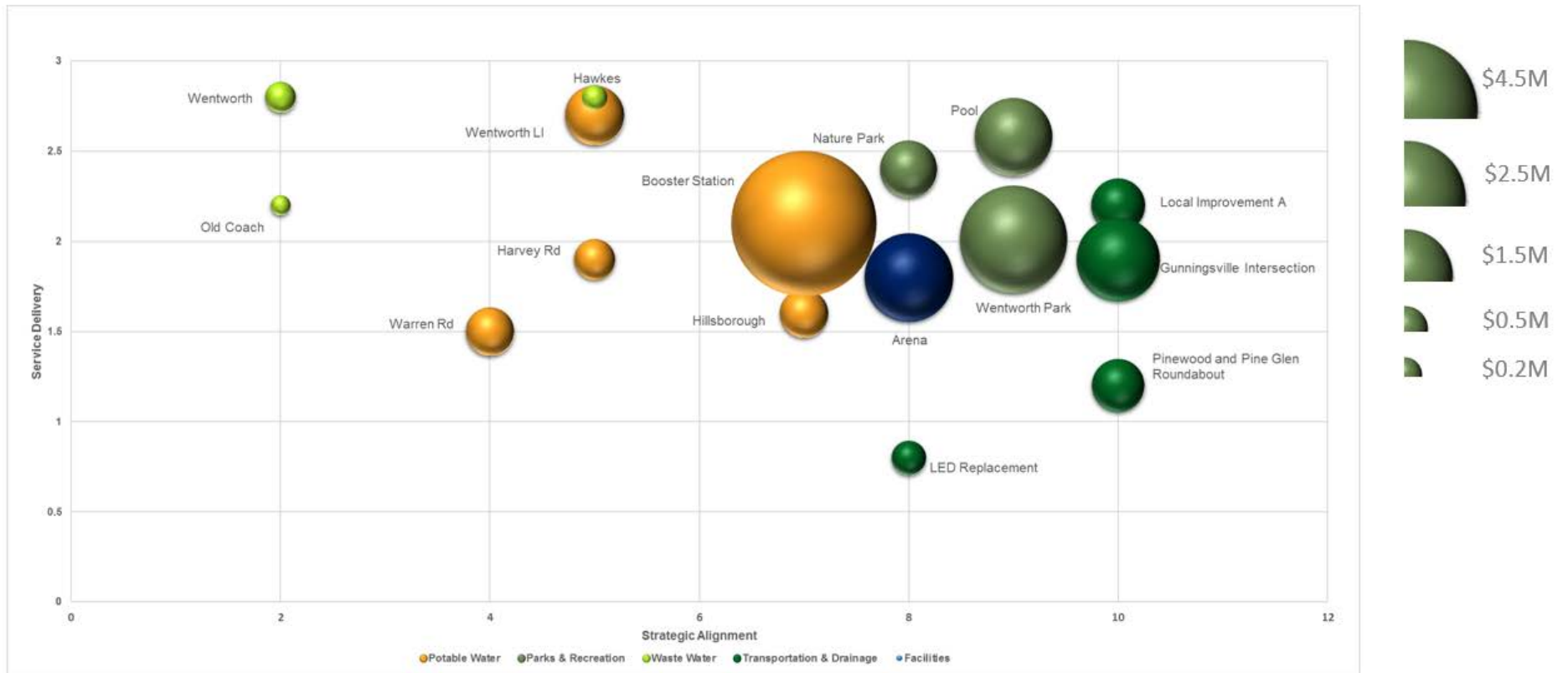


Figure 4-4: Service delivery and strategic alignment

(note: legend on the right demonstrates relative project size, more specific figures can be found in previous table)

From Figure 4-4, it can be seen that parks and recreation projects most reflect the corporate and strategic objectives outlined. As previously mentioned, the intent for this decision-support framework is to prioritize individual projects and understand which should be done first. Appendix B provides further detail as to why decision-support frameworks are useful and more specifically, what was developed for Riverview.

5 Financial strategy

The purpose of this chapter is to describe the financial strategies that were investigated. The chapter details the following:

- Financial planning, policies and processes;
- Financial planning assumptions and constraints;
- Modelling approach and limitations;
- Investment scenarios;
- Current financial statements; and
- The funding strategy.

5.1 What is a financial strategy?

A financial strategy is a funding plan for implementing the identified asset management strategies (Refer to Chapter 4). The goal of a financial strategy is to determine the acceptable level of service that customers are willing to fund through taxes and other revenue sources. A sustainable strategy is one that balances 1) stakeholder service level expectations, 2) the assets ability to support the desired service, and 3) the customer's willingness to fund an agreed service level. Thus, a financial strategy considers the goals and objectives that are being targeted, the current asset inventory, its performance and condition, and known and potential revenue sources.

5.2 Financial planning, policies and processes

The following section details Riverview's existing financial planning, policies, and processes that have a direct impact on the financial strategy, and includes the consolidated financial statement, the federal gas tax fund, and asset management processes. The following items can be categorized as asset management processes that are used to define need, aspects related to revenue sources, and the overall assessment of financial sustainability. The Town currently follows a financial planning process that has evolved over the past several years. There is an intention to more formally embed long-term investment needs assessment for infrastructure into the annual process. There are currently several components that relate to infrastructure that are already part of the process.

One recognized part of the Town's asset management processes is the **condition assessment**. Condition assessment is used to understand the asset's state of repair and the work required to bring the state of repair to a desired level, and is thus central to the financial planning process. For example, on a regular basis, the Town develops its five-year pavement management program. The last pavement management program was developed in 2015. An updated version will be created soon.

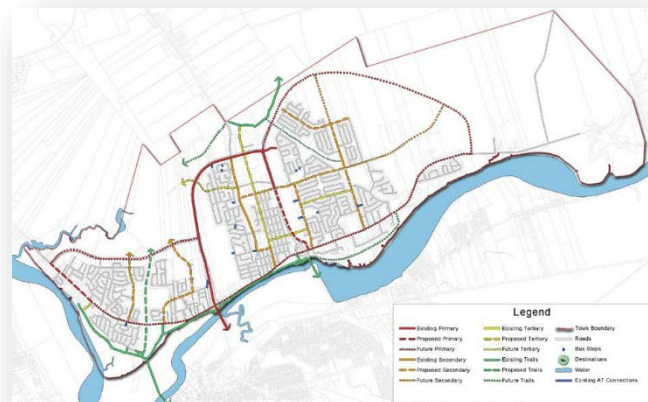


Figure 5-1: Active transport plan

Condition inspections have been carried out to provide insights into other facilities and infrastructure assets. These inspections serve to understand the current state of the asset as reported in the State of Infrastructure chapter. The Town will continue to complete performance condition and performance assessments of their infrastructure portfolios to assist in long-term financial planning.

The **municipal plan** also forms part of the asset management process, as it sets out development policies and rules. By setting development rules, the municipal plan influences the type of asset management strategies that are used. **Other plans** that affect asset management strategies and future budget requirements include the wastewater master plan, storm-water management review, the trail plan, the water master plan, and the long-term development storm sewer and servicing plan.

While asset management activities lead to operating expenditures, there are several ways of generating revenue to pay for services including **property taxes**, **water rates**, and the federal **Gas Tax Fund (GTF)**. As highlighted on the Town's website, to actively manage the future effects arising from aging infrastructure, the Town councillors and management agreed to a 1.582 percent tax rate. The 2015 Greater Moncton Water Rate Study highlighted that the wholesale rate, which is \$0.603/m³ should be 18 % higher and that by 2028, the rate should rise to \$0.830/m³. Again, these proposed increases in part reflect the need to pay for "projected existing system asset management investments". Residential property owners currently pay a flat rate for water and sewer service totalling \$845 per year, and commercial property owners pay a metered rate for water and sewer service at \$2.97 per cubic meter.

Not all revenue has to be generated from Town taxpayers, as long-term funding is also committed from the federal GTF. The federal GTF is a permanent source of funding provided up front, twice a year, to provinces and territories who in turn flow this funding to their municipalities to support local infrastructure priorities. The fund is useful because municipalities can pool, bank, and borrow against this funding, providing significant financial flexibility. In line with the GTF requirements, the funding must lead to beneficial impacts on the community or support improvements in local government planning and asset management. The Town's GTF five-year capital plan sets out projects to be completed and their expected outcomes, which include the replacement of aging watermain to improve service reliability, and pavement programs to enhance the service that is being provided.

To provide ongoing insight into the financial state of the Town and in line with accounting standards, an **audit of the consolidated financial statement** is undertaken on an annual basis. The statement is developed in accordance with the Public Sector Accounting Board (PSAB) standards and its development is the responsibility of the Council members and Town management. The specific accounting policy items covered by the consolidated statement include government transfers, deferred revenue, non-financial

assets including tangible capital assets, and reserve funds. The financial statement was a primary input into the development of this financial strategy.

5.3 Current financial statements

The following section details the financial statements for the period 2014-2016. These financial records have been provided for comparison with the modelled plans detailed in the following sections. The financial records that are covered below include the revenue summary, the operating expenditure summary, and the change in net debt summary. The proposed five-year capital plan is also detailed.

Table 5-1: The Town's revenue summary 2014-2016

Revenue (\$)	2016	2015	2014
Warrant of assessment	23,067,570	22,907,219	21,787,350
Unconditional transfers from provincial government	1,950,460	1,691,386	1,887,016
Other contributions and government transfers	3,813,933	2,099,529	3,702,348
Sales of services	1,460,356	1,392,707	1,342,119
Other revenue from own sources	390,150	713,140	586,484
Water and sewer revenue	6,582,227	6,372,351	6,261,963
Total revenue	37,264,696	35,176,332	35,567,280

Table 5-2: The Town's operating expenditure summary 2014-2016

Operating expenditures (\$)	2016	2015	2014
General government services	2,250,865	2,165,001	2,258,250
Protective services	6,530,331	6,376,786	5,824,913
Transportation services	3,496,599	3,502,876	3,212,857
Environmental health and development services	1,905,073	1,886,109	1,901,011
Recreation and cultural services	4,353,093	4,266,577	4,184,450
Water supply	2,744,642	2,811,481	2,705,873
Sewage collection and disposal	2,414,383	2,329,047	2,243,490
Amortization of tangible capital assets	4,412,771	4,296,938	3,904,593
Interest expense and miscellaneous	879,701	844,456	1,050,452
Total operating expenses	28,987,458	28,479,271	27,285,889

Table 5-3: Change in net debt summary 2014-2016

Changes in net debt (\$)	2016	2015	2014
Surplus (revenue less operating expenses)	8,277,238	6,697,061	8,281,391
Acquisition of tangible capital assets	(23,658,440)	(3,836,298)	(6,313,088)
Amortization of tangible capital assets	4,412,771	4,296,938	3,904,593
Loss on sale of tangible capital assets	82,332	4,252	65,318
Proceeds on sale of tangible capital assets	70,962	23,102	27,291
Change in assets under construction	7,262,004	(6,953,366)	(278,346)
Change in inventories and supplies	(123,846)	25,411	(29,318)
Change prepaid expenses and deposits	714	25,800	359,137
Net debt at beginning of Year	(17,801,216)	(18,084,116)	(24,101,094)
Net debt at end of year	(21,477,481)	(17,801,216)	(18,084,116)

Table 5-4: The first 5 years of the Town's current 10 Year capital plan.

Item	Proposed expenditure (\$)				
	2017	2018	2019	2020	2021
General government services	712,205	703,160	45,000	45,000	125,000
Protective services	354,000	332,000	460,000	0	100,000
Parks, recreation and community relations	1,404,000	2,219,300	1,908,500	224,000	500,000
Transportation services	7,805,000	6,557,500	6,135,000	6,330,000	8,545,000
Utility (water and wastewater*)	2,720,000	2,830,000	2,960,000	2,700,000	2,635,000
Total General and Utility Capital	12,995,205	12,641,960	11,508,500	9,299,000	11,905,000

* From the general and utility fund, ten-year capital plan

It is important to note that the proposed expenditure includes new construction and upgrades, and as such has an allowance for growth embedded within it. Although currently somewhat difficult to separate definitively, an analysis of the Town's capital budget plan revealed that the budget for existing asset replacement is between \$5.0 M and \$10.0 M. More discussion on this is included in proceeding section.

5.4 Modelling approach and limitations

A financial model was used to investigate potential investment strategies for Riverview. By developing such a model, insight can be provided into the effect of potential future changes such as community

growth and variable community service expectations. Creating a model is the first step to be able to gain these insights.

An age-based model was chosen for this initial plan given available data. This is in exception of pavements, where a more detailed modelling approach was possible given available information. In an age-based model, interventions are typically carried out at fixed points in time and replacement occurs at the end of the asset's useful life. Useful life can be defined by the observed mean time to failure for that asset type, based on expert judgement or, in the case of specific components, manufacturer data. The age data that were used in the financial model were those reported in the PSAB financial report. In the current model, assets are assumed to be replaced at the end of their useful life with no intermediate interventions. In the pavement management plan, a set of pavement management strategies were detailed. These were used as inputs into the financial model.

When infrastructure models are created to assist financial planning, they typically follow a developmental cycle. A basic model is one that reflects a management strategy of simply fixing all identified defects, and may delay/defer defects when no budget is available. The find-and-fix approach costs more (and therefore is not optimal, or the best strategy), mainly because treating assets in poor condition is costlier than treating assets in good condition. An age-based model is a form of find-and-fix model in which useful life or time-to-treatment is used to estimate the future work program. This is a common initial model type undertaken for an initial asset management plan.

Future enhancements in modelling are required to improve the effectiveness of spending toward an optimal work program. More advanced modelling approaches would typically include deterioration models and a full set of interventions for any assets which are considered as investment alternatives. These interventions were created for some of the Town's assets (See Chapter 4), thus providing the starting point for developing more advanced asset management models in future revisions of the asset management plan.

The following points should be considered when using the plan to develop future management strategies:

- The financial strategy is a high-level plan. Accordingly, the plan should be used to gather general trends and to manage future financial risk, rather than for planning annual work plans.
- Understanding what level of service is being delivered is integral to understanding the associated cost of delivering the service. Currently, the service level costs are only known for a few assets.
- Provides input into the rate setting processes. Rate setting involves examining all the costs of delivering a service and establishing a fair and equitable rate. Quality information is essential for identifying the actual cost of an asset's management.
- Investment requirements are not uniform over the planning horizon, but revenue tends to come in at a steady rate. An understanding of how reserves or debt will fluctuate over time is an important input into decision-making.

As detailed in the State of Infrastructure chapter, Riverview's available data are mainly the result of the town complying with PSAB requirements for tangible capital assets. This data is required for accounting purposes and is primarily a report on existing assets and their value based on their cost at the time of their acquisition. While the data serves its financial reporting purpose well, it does not fully satisfy long-term planning requirements. No information is provided in specific asset investments, the timing of these investments is not detailed, and replacement cost are not used for depreciation. Future asset management plans for Riverview will improve model accuracy. This will include improved or new asset management strategies developed in the model and corresponding updates for pavement assets.

5.5 Key financial planning assumptions and constraints used in the model

All financial models require some assumptions. The assumptions and constraints used in the asset management plan's financial model are detailed below.

Modelling assumptions

- Replacement costs detailed in the PSAB Total Cost Accounting (TCA) submissions are reflective of current and future replacement costs.
- The financial model is based on 2016 costs and as such, no inflation or depreciation should be incorporated.
- The financial forecast is for the management of existing assets only. Accordingly, no growth was allowed for in the plan, with two exceptions. An allowance of 500 m per year of new pavement construction has been included in the model, as well as an allowance for the initial construction of the Wellness Centre. This is clearly a constraining assumption. Future revisions of the model will incorporate holistic growth assumptions where information is available.
- All assets are replaced at the end of their life, as reported in the state of infrastructure section.
- All assets were assumed to reach their full design lives. Accordingly, the model does not address impairment resulting from increased service level expectations. Changes in service level can affect replacement dates, as the asset may no longer provide the service that is required. As a result, the service life can be shortened.
- Assets were assumed to be replaced with the most appropriate type that provides the same level of service. Often, this is called the optimized replacement cost. If growth is allowed in future models, the potential increase in design standards and associated replacement costs must be addressed.
- Pavement management costs and the pavement management scenarios detailed in the pavement management plan were used in the model. The plan was assumed to provide a fair reflection of future work requirements.

Constraints

- A high-level view was taken where five-year, ten-year, and long-term trends are used to gain insight into the sustainability of a financial strategy. A high-level view is appropriate because this financial strategy is meant to guide policy, planning, and budgeting, rather than provide insight into specific annual plans.
- The model used a 100-year planning horizon. Typically, when modelling many assets, groups of assets aggregate at similar points in time, which can result in cyclical funding peaks. To gain insight into these peaks and the long-term operational expenditure effects of a strategy, an extended time horizon was used and seeks to capture at least one lifecycle for all assets in the portfolio. *The use of a 100-year planning horizon does not imply a 100-year plan.*
- The derived financial forecasts were based on the available information. Accordingly, future plans may change as new information comes to light. Such information could include up-to-date pavement reports or other condition assessments.

5.6 Investment scenarios and financial modelling

The following section provides details of several investment scenarios that were considered. These scenarios are as follows:

- Assessing the baseline funding requirements to understand future capital expenditure;
- Assessing the impact of asset investment on debt; and
- Investigation of future revenue requirements.

Baseline funding requirements

To understand the level of funding required over the long-term, a 100-year estimate was developed. The following assessment does not include growth other than the annual increase in pavement assets highlighted previously, and the Wellness Centre. See the stated assumptions above for more details.

To calculate the annual operating expenditure, the total replacement cost for the 100-year program was calculated for the existing portfolio. A 100-year time horizon was employed in the analysis because, as detailed in Figure 5-2, there are significant numbers of assets which must be replaced at similar times. This can trigger multiple renewals over time, with different asset types requiring renewal at the same time over the analysis period. The forecasted annual investment required for the existing portfolio is represented in the figure as individual grey bars. The mean investment over the 10-year period for the existing portfolio (excluding pavements) is represented as a yellow area. Average pavement investment over the planning horizon is in blue. The total average investment for the portfolio, then, is the total over these two areas (stated another way, it is the annual average of the grey bars).

The cost of the proposed Wellness Centre, as well as all new capital projects (projects which increase the infrastructure portfolio, or enhance service levels) in the Town's current 10-year budget has been highlighted separately in green for comparison. These items are not included in the average investment as they are considered investment for growth, above and beyond investment required for the existing portfolio.

Based on the assessed long-term funding average, the estimated annual investment for assets in the existing portfolio such as utilities, facilities and recreational facilities is \$4.73 M, and the annual average estimated investment for pavement assets is \$1.64 M. This gives a total annual average investment of \$6.37 M. The total of \$6.37 M is relatively aligned to existing capital investment currently allocated by the Town to the existing portfolio. The baseline average would increase substantially if it also included renewal costs for the Wellness Centre and other investments related to growth in the current 10-year plan, as well as any future non-renewal investments beyond the current budget that the Town intends to create. These investments would increase the size of the portfolio and increase the long-term average investment required.

In the following figure, it is indicated that in year one, several assets require replacement. Peaks like this in an age-based model indicate that several assets require replacement. With alternative investment planning, however, these assets will likely have different condition states and thus can be replaced at different points in time beyond the initial year. Condition-based prioritization and planning can spread these peaks. Similarly, for year 32, there are many water and wastewater assets that reach the end of their useful life. The same grouping of assets occurs in year 49, 70, and 99. Assuming the peak can be distributed over a five-year period, the five-year average cost of replacement provides insight into the potential maximum funding that will be required in any given year.

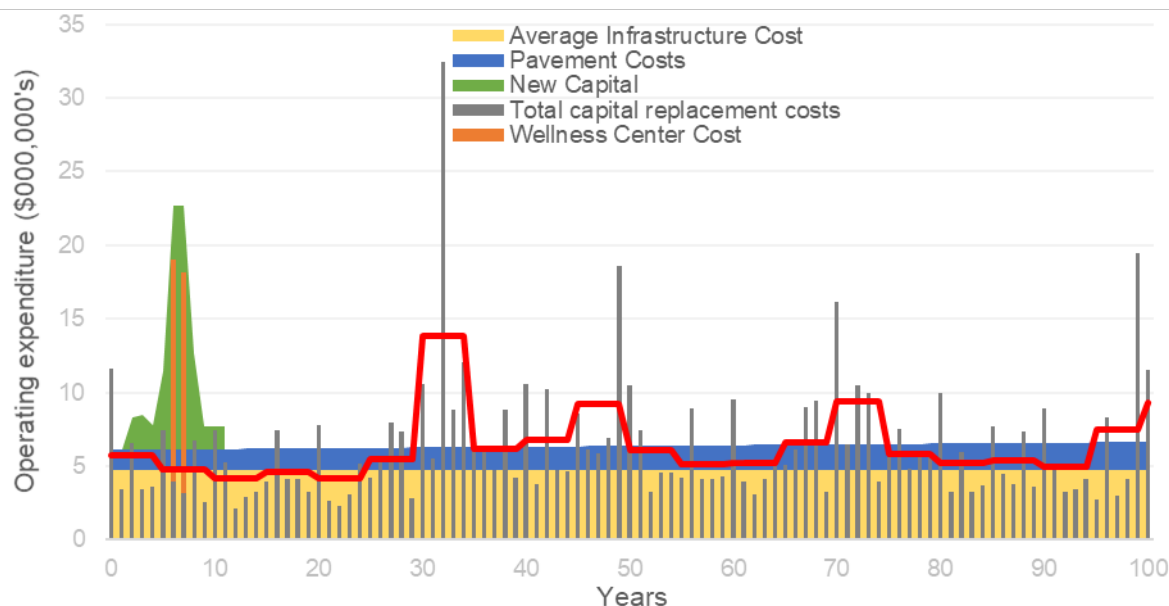


Figure 5-2: The baseline capital spending forecast

The expenditure for the first ten years for each asset type is detailed in Table 5-5. This table includes only existing infrastructure. When comparing the plans, the greatest difference is the parks and recreation asset category, with 48 % of the modelled amount being funded. In the following table, the estimate for water-related assets was based on the average spend for the period 2015-2024.

Table 5-5: Comparing modelled and planned expenditure (2018-2028)

Asset	Modelled expenditure (\$)	Capital or utility plan (\$)
Facilities	12,450,505	165,000
Facilities improvements	0	30,100,000
Fleet	11,313,443	11,507,000
Parks and recreation	9,727,617	4,421,800
Parks and recreation improvements	0	1,662,000
Potable water and wastewater	916,737	5,470,000
Transportation and drainage	17,051,807	26,145,000
Transportation and drainage improvements	0	34,815,000
Total without improvement costs	51,460,108	47,708,800
Total with improvement costs		114,285,800

Assessing the impact of asset investment on debt

Every municipality must balance investment requirements that support growth, investing in existing infrastructure, tax revenues, and debt levels. In the following section, the impact that the forecasted infrastructure asset investment program has on net debt is illustrated.

Based on the 2016 financial statement, the current net debt position for the town was \$21.5 M. Using the age-based forecast, an analysis was performed to determine the effect of the investment equivalent to the average investment required over the planning horizon as summarized in Figure 5-2 (\$7.0 M annually). In the analysis, debt was diminished or increased in any year, if required spending was under (or over) the average level of investment.

As illustrated in Figure 5-3, while debt position improves initially, the same debt increases substantially over the next several decades. This forecast relates to investment in the Town's existing infrastructure portfolio, as well as the Wellness Centre and other road improvements as defined in the pavement management plan.

While this analysis is simplistic and excludes the effect of financial impacts of new infrastructure due to growth and other factors, it provides several insights:

- The Town would need to increase its investment associated with its existing infrastructure portfolio if it wishes to have a financial position that is equivalent to or better than its current level of debt.
- A small increase in investment in the near term, if allocated to renewing the existing portfolio, will be sufficient to achieve a sustainable level of investment.
- Increases in investment (and corresponding tax increases) will be required to continue to support growth in the portfolio.

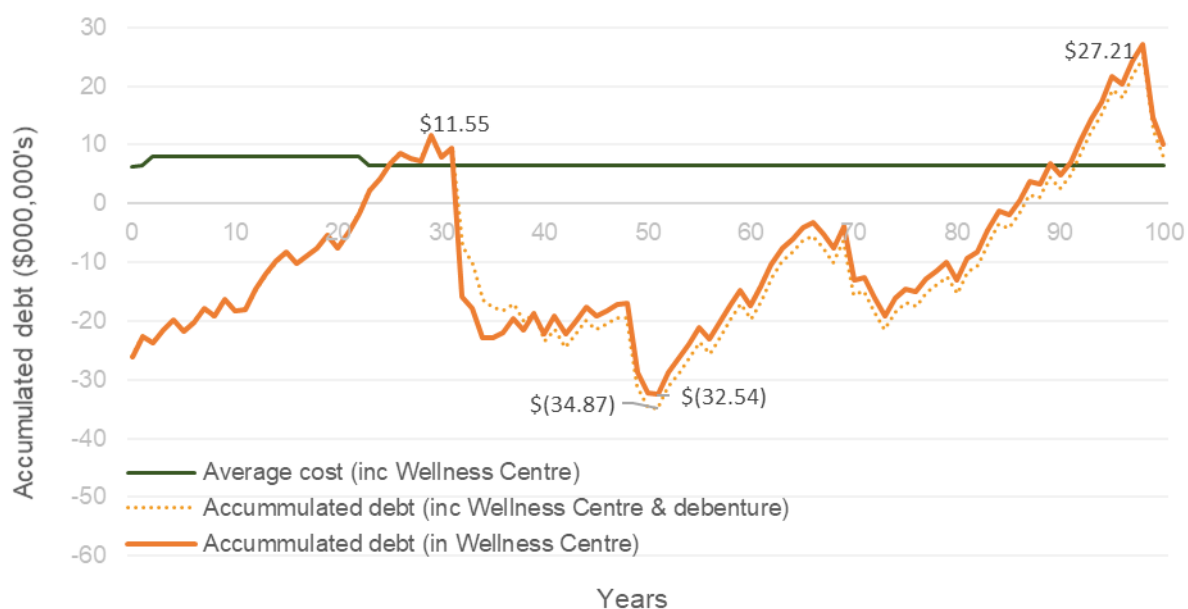


Figure 5-3: Net debt projections with a \$7.0 M surplus

Investigation of future revenue requirements

The following section investigates the scale of potential increase in revenue that would be required to establish a relatively sustainable level of funding for the existing portfolio.

Figure 5-4 summarizes the forecasted capital expenditures associated with the portfolio. As can be seen, large investment increases are associated with water and wastewater assets. In total, \$15.3 M is due to water-related assets, which is 49 % of the \$31.8 M that was forecasted.

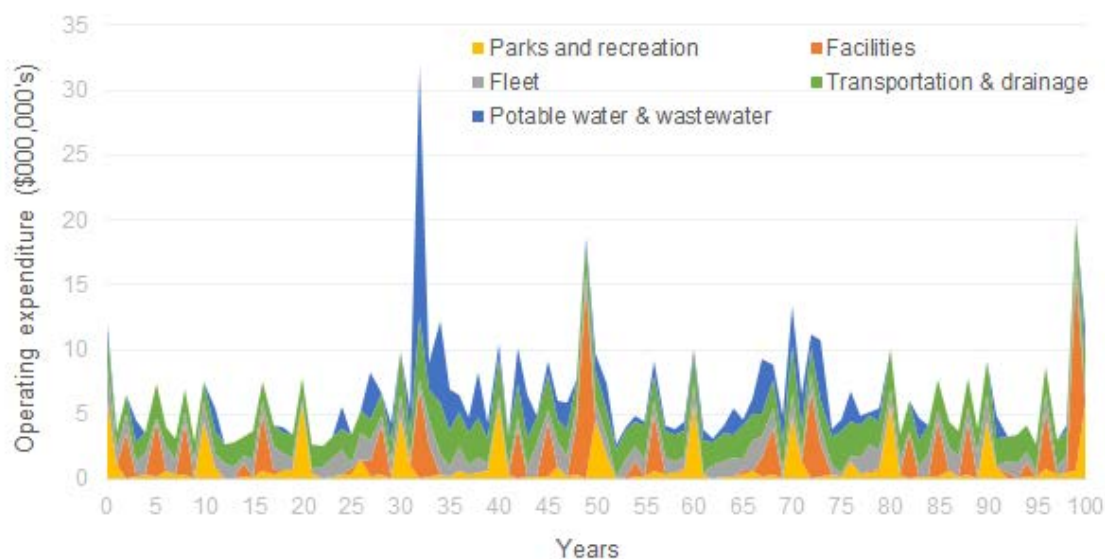


Figure 5-4: Operating expenditure by asset type

The Town's current proposed 10-year capital budget was reviewed and segmented between renewal investments in existing infrastructure, and investments creating new infrastructure associated with growth or service level enhancement. These amounts are presented in green (utility renewal), purple (other infrastructure renewal), and red (growth), respectively. For comparison, the forecasted average annual investment has also been included in Figure 5-5 for the existing portfolio.

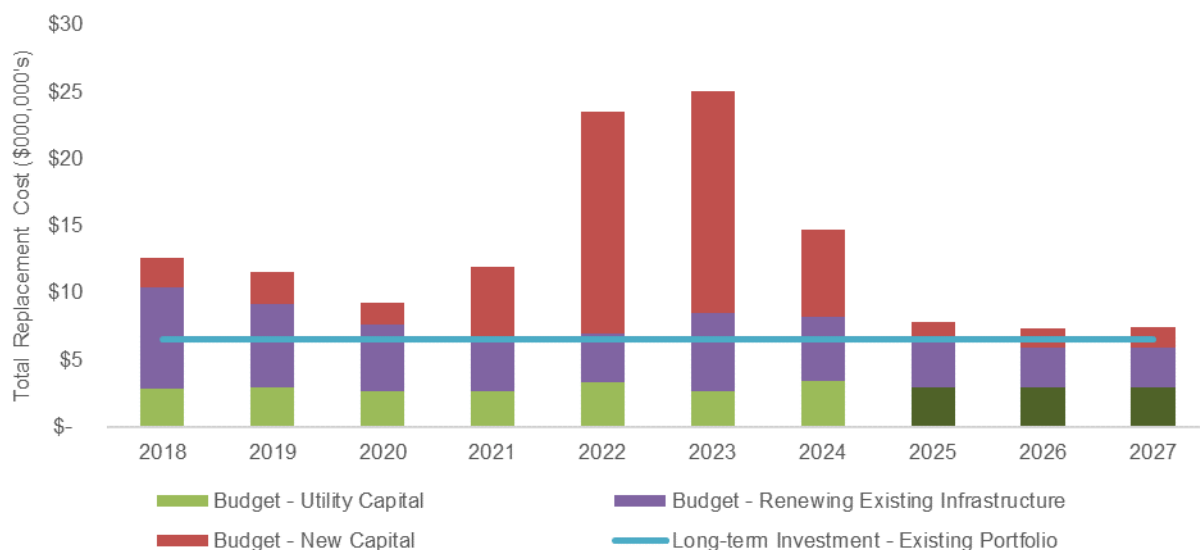


Figure 5-5: The Town's current 10-year capital budget

While the existing renewal budget aligns closely with average long-term investment, it is not sufficient to accommodate large investment peaks that will arise over the next 30 years and beyond, based on the forecasting model. It certainly does not accommodate anticipated growth. The model was evaluated to estimate an increase in investment that would provide a long-term sustainable level of funding for the existing portfolio, manage debt levels, and provide adequate reserves or strategic investment to

accommodate future renewal needs. An estimate of 2.5 % increase in annual renewal spending (\$576,000) was determined to be the sustainable level required, based on model outputs.

Figure 5-6 illustrates the effect of this annual increase in long-term funding. The figure forecasts the current level of debt carried by the Town if the \$7.58 M was budgeted or allocated to reserves (or used to reduce debt) annually, where required investment (as determined by the model) was below the budget in any given year. As the figure illustrates, the proposed funding level (\$7.58 M annually) improves the financial position of the Town over the planning horizon. This illustration does not include or account for any required investment for growth or service enhancement. This will be addressed in future updates of the AMP.



Figure 5-6: Net debt projections with a \$7.0 M surplus and increased revenue

5.7 Funding strategy and risk management plan

The following section outlines the funding strategy to be used to pay for future asset management operating expenditure.

Based on the above analysis, there is significant water and wastewater renewal required in 2049 (year 32). To address this future investment, the revenue generated by the Town must be increased, otherwise peak net debt will increase from the current \$21.5 M and deteriorate the financial position of the Town relative to today. To meet these future asset-related expenses, a 2.5 % increase in tax revenues was identified. Alternatively, revenue can be generated through water rate increases. Using the age-based financial model, it is considered that both the water rate and property tax increases would provide sufficient operational expenditure to minimize the peak net debt.

To minimize the long-term surplus, it is recommended that water-related works that occur in year 32 are accelerated. Detailed inspections will be required for water and wastewater assets to understand the timing of replacements.

6 Improvement Actions

6.1 Future recommendations State of Infrastructure

The state of the infrastructure chapter provides a snapshot of the condition of the current infrastructure portfolio and provides details on the replacement value and depreciated replacement value of the assets. While it is a good first step to perform an initial state of infrastructure, it is important to reassess these metrics and update reporting periodically. A time series of snapshots of the Town's infrastructure can reveal trends and inform decision making.

Prior to future updates to the state of infrastructure, it is recommended that the Town take the following improvement actions into consideration:

Valuation

- Plan to review and periodically update valuation methods with the goal of utilizing the most recent and accurate unit rates available to the Town.
- Review the Town's facilities through a more integrated componentized approach and consider each component as a "child" of its parent facility, rather than a separate asset. Componentization helps refine and validate long-term investment requirements for facilities and more accurately reflects management practice.
- Determine actual replacement costs based on a complete technical assessment for the facility's asset class. Replacement costs for assets in this group are currently based entirely on historical construction costs, which may not be reflective of actual costs of replacement.
- Update transportation asset replacement costing using a componentized approach. This could include different unit costing and service lives for curb and gutter, road subgrade, road subbase, road base, and road surface.

Condition ratings

- Within this initial AMP, generally, asset condition has been determined based on remaining useful life of the asset, rather than through direct observation. This is a good starting point, and can be improved by enacting an infrastructure assessment program that considers condition assessment, history of upgrades, and expert opinion. Proceeding with such a program will improve available recent condition information and, over time and with successive iterations of the state of infrastructure, provide adjustment to modelling tools such as deterioration curves to show a more accurate lifespan of Town-managed assets. These curves help more accurately forecast asset condition over time, including when treatments or interventions are carried out on the asset.
- Potable Water & Wastewater, and Transportation & Drainage asset classes account for 74% of the Town's total asset portfolio value. It is recommended to prioritize the development of a regular inspection program for all asset types within these groups to provide more current and accurate data. This will help calibrate deterioration curves, thus providing more accurate information for most future investment decisions.
- Where more robust modelling is merited for high-value portfolios, calibrate derived deterioration curves for each asset type regularly by updating the database as more historical condition data becomes available.

The Town has demonstrated its commitment to good asset stewardship through its Pavement Management Program developed in 2014, and now by creating its first iteration of the state of infrastructure. As part of the condition assessment program, where possible, it is recommended that the Town create asset-specific management programs (like the Pavement Management Program developed

in 2014) for all asset types in the Potable Water & Wastewater and Transportation & Drainage asset classes prior to performing the next iteration of the state of infrastructure.

6.2 Levels of service improvement actions

The following section provides a list of potential actions that would improve the quality of the service level section of the asset management plan.

Table 6-1: Level of service improvement actions

No.	Description
1	Identify performance targets for each of the asset performance measures.
2	Regularly review the service level statements to ensure they continually align with the organization's and the community's expectations.
3	Regularly review the weights and the KPIs that are used to aggregate them to ensure the asset-specific performance measures reflect current asset management objectives.
4	Add facilities to the service level assessment process.
5	Add the vehicle fleet to the service level assessment process.
6	Review, update, finalize and implement the identified project prioritization process.
7	Consider developing a framework where all projects across all asset types can be assessed and prioritized. This will assist in investment decision making and allow budget allocation / distribution to be completed more easily.

6.3 Asset management strategy improvement actions

The following is a list of potential actions that would improve the decision-support process.

Table 6-2: Asset management strategy improvement actions

No.	Description
1	Refine and agree to a final set of common criteria to be used across infrastructure portfolios that can be used by each service area. This will allow projects in one service area to be traded off against projects in another stream.
2	Future asset management strategies should include an allowance for population and service / infrastructure growth.
3	Review all assumptions and refine these to accurately reflect current knowledge prior to updating a new second strategy.
4	Complete service statements and performance measures, and create a treatment strategy for all Town vehicles.
5	Consider designating / recruiting a facilities manager and create an intervention strategy that includes a formal inspection practice and reporting method for comparing facilities (i.e. keep a componentized database and update condition periodically). With current and planned improvements, facilities will continue to constitute a large portion of the asset portfolio by value, and a much larger proportion of operations and maintenance budgets. A facilities management plan may be merited for some key facilities.

No.	Description
6	Review weightings used in decision-making framework and reassess to minimize subjectivity and ensure alignment with strategic and corporate objectives.
7	Include risk criteria in the decision-making framework.
8	Recent assessments for Park assets or other infrastructure and any other inventory data should be integrated into the AM process and systems. Data such as this can be used to update all aspects of the AMP.
9	Update the pavement management plan, condition assessments, and utilize a PMS (MicroPAVER) to enhance decision-making for this aspect of the portfolio over time.

6.4 Financial strategy improvement actions

The following are the recommendation and improvement actions that were identified during the development of the financial strategy.

- Where asset portfolio value and complexity justify, the Town should consider the next level of infrastructure financial modelling. A deterioration model uses more detailed asset behaviour knowledge to best forecast condition changes in an asset, as compared to an aged-based model that was used for this plan. While it requires a greater level of data (which the Town has not compiled to date) it would provide greater insight into the likely timing of asset interventions. Such a model will be more accurate as the interventions that increase and assets life can be more readily incorporated. This results in a more accurate financial forecast.
- Carry out detailed condition surveys for all asset groups where intermediate interventions are detailed in the asset management strategy. Pavements is one example where this already occurs. Condition surveys and deterioration model work in parallel to develop a more accurate assessment of future operating expenditure.
- Define the level of service for each asset group and identify the maintenance strategies required to maintain the level of service. This correlation will form part of an improved deterioration model, and thereby a more refined financial forecast.
- Using the above undertake more detailed deterioration modelling to understand the magnitude of the investment required for the current portfolio, as well as incorporate anticipated growth targets that the Town wishes to prepare for their financial forecast.

7 Recommendations and Conclusions

Several key findings associated with the Plan should be noted:

- While the Town's infrastructure portfolio is relatively new and in a good-fair state of repair, some focussed investment in key asset areas (e.g. undergrown infrastructure) may be merited based on the state of the infrastructure assessment.
- Improved condition information for some high-risk or high-value assets will enhance the Town's ability to refine their investment forecast to reflect better information about asset performance and condition.
- While service level statements and potential performance indicators have been developed as part of this Plan, ongoing tracking of current service levels and cost of service is the next step. This helps establish sustainable service level targets and is an improvement that the Town can work toward over the next 2-3 years before the next update of this Plan.
- The Town has employed a relatively informal decision-making process for capital investment project prioritization. The Plan establishes an initial methodology that links prioritization to service delivery priorities and the corporate goals and objectives of the Town. Adoption of a more formalized approach to decision making is a key improvement for the Town.
- Increased investment is likely required to ensure renewal investment keeps pace with forecasted requirements to maintain the current portfolio. There remains some uncertainty around the sufficiency of the recommended 2.5% increase in the financial strategy. Condition data and a more refined framework that sets service levels will help refine the required sustainable level of funding for the portfolio.
- Future revisions of the Plan should encompass growth requirements for the Town. The current Plan focusses on the existing portfolio with the exception of the Wellness Centre and some road improvements. Riverview is expected to face sustained growth for the foreseeable future, and the Plan will add additional value if it can better forecast the financial implications of anticipated growth in Town infrastructure.
- Finally, this Plan was developed in advance of the Province of New Brunswick's guideline for asset management planning. Future revisions of the Plan should ensure complete alignment with the new guideline. Climate change, risk and other requirements were not incorporated into this initial Plan.

Appendix A – Treatment strategy tables

Transportation and drainage

Roadways – Arterial and Collector				
Description	Expense type	Sub-type	Age range	Delivery
Construction of a new road	Capital	Establishment	0	Contract
Annual Inspection	Maintenance	Annual	All	Contract
Surface maintenance. Service and life cycle enhancement	Maintenance	Annual	All	Contract
Patching	Maintenance	Periodic	All	Contract
Crack sealing	Maintenance	Periodic	All	Contract
Resurface	Capital	Renewal	Unknown	Contract
Full depth reconstruction	Capital	Reconstruction	60	Contract
Roadways – local				
Description	Expense type	Sub-type	Age range	Delivery
Construction of a new road	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Contract
Surface maintenance. Service and lifecycle enhancement	Maintenance	Annual	All	Contract
Patching	Maintenance	Periodic	All	Contract
Crack Sealing	Maintenance	Periodic	All	Contract
Resurface	Capital	Renewal	All	Contract
Full depth reconstruction	Capital	Reconstruction	80	Contract
Sidewalks				
Description	Expense type	Sub-type	Age range	Delivery
Installation of sidewalk	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Grinding for trip hazards	Maintenance	Periodic	All	Contract
Remove and Reconstruct	Capital	Disposal	40	Contract

Street lights

Description	Expense type	Sub-type	Age range	Delivery
Installation of street light	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	40	Contract

Notes: There are two types: High Pressure Sodium (owned by Town) and LED (rented from NB Power). There is no intention to replace HPS with LED within next 10 years. Both HPS and LED lights are inspected monthly, the Town replaces approximately 10 poles/year (for a budgeted amount of about \$30,000). The wiring to rented poles is owned by the Town.

Street lights - crosswalk

Description	Expense type	Sub-type	Age range	Delivery
Installation of crosswalk light	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	25	Contract

Traffic controllers

Description	Expense type	Sub-type	Age range	Delivery
Installation of traffic controller	Capital	Establishment	0	Contract
Conflict test performed	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	15	Contract

Traffic signals

Description	Expense type	Sub-type	Age range	Delivery
Installation of traffic signals	Capital	Establishment	0	Contract
Inspection	Maintenance	Periodic	All	Internal
Maintenance	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	40	Contract

Culverts - concrete				
Description	Expense type	Sub-type	Age range	Delivery
Installation of culvert	Capital	Establishment	0	Contract
Maintenance	Maintenance	Periodic	All	Contract
Inspections	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	50	Contract
Culverts – corrugated steel				
Description	Expense type	Sub-type	Age range	Delivery
Installation of culvert	Capital	Establishment	0	Contract
Maintenance	Maintenance	Periodic	All	Contract
Inspections	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	25	Contract
Storm sewerage – concrete and PVC pipes				
Description	Expense type	Sub-type	Age range	Delivery
Concrete and PVC pipes	Capital	Establishment	0	Contract
Maintenance	Maintenance	Periodic	All	Contract
Inspections	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	80	Contract
Strom sewerage – corrugated steel pipes				
Description	Expense type	Sub-type	Age range	Delivery
Corrugated steel pipes	Capital	Establishment	0	Contract
Maintenance	Maintenance	Periodic	All	Contract
Inspections	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	30	Contract

Facilities

Community				
Description	Expense type	Sub-type	Age range	Delivery
Construction	Capital	Establishment	0	Contract
Regular maintenance	Maintenance	Annual	All	Contract
Roof	Capital	Renewal		Contract
Electrical	Capital	Renewal		Contract
HVAC	Capital	Replacement		Contract
Windows	Capital	Replacement		Contract
Sheathing	Capital	Replacement		Contract
Plumbing and fixtures	Capital	Renewal		Contract
Removal of building	Capital	Disposal	40	Contract
Emergency services				
Description	Expense type	Sub-type	Age range	Delivery
Construction	Capital	Establishment	0	Contract
Regular maintenance	Maintenance	Annual	All	Contract
Roof	Capital	Renewal		Contract
Electrical	Capital	Renewal		Contract
HVAC	Capital	Replacement		Contract
Windows	Capital	Replacement		Contract
Sheathing	Capital	Replacement		Contract
Plumbing and fixtures	Capital	Renewal		Contract
Removal of building	Capital	Disposal	40	Contract

Municipal				
Description	Expense type	Sub-type	Age range	Delivery
Construction	Capital	Establishment	0	Contract
Regular maintenance	Maintenance	Annual	All	Contract
Roof	Capital	Renewal		Contract
Electrical	Capital	Renewal		Contract
HVAC	Capital	Replacement		Contract
Windows	Capital	Replacement		Contract
Sheathing	Capital	Replacement		Contract
Plumbing and fixtures	Capital	Renewal		Contract
Removal of building	Capital	Disposal	40	Contract

Potable water and wastewater

Forcemain				
Description	Expense type	Sub-type	Age range	Delivery
Installation of forcemain	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	80	Contract
Notes: There are two (2) 350mm PVC forcemains.				
Lift station				
Description	Expense type	Sub-type	Age range	Delivery
Construct lift station	Capital	Establishment	0	Contract
Inspect electrical components	Maintenance	Annual	All	Contract
Inspect structural components	Maintenance	Annual	All	Contract
Inspect mechanical components	Maintenance	Annual	All	Contract
Pull pumps out for inspection	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	40	Contract

Local wastewater (100 – 600mm)

Description	Expense type	Sub-type	Age range	Delivery
Construction of sewer	Capital	Establishment	0	Contract
Inspections	Maintenance	Annual	All	Contract
Maintenance	Maintenance	Periodic	All	Contract
CCTV inspection	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	80	Contract

Notes: Condition is the trigger for reconstruction. The condition is based on age, but is only triggered when there is evidence of breaks or leaks in the pipe.

Trunk wastewater sewer pipes (600mm or greater)

Description	Expense type	Sub-type	Age range	Delivery
Construction of sewer	Capital	Establishment	0	Contract
Inspections	Maintenance	Annual	All	Contract
Maintenance	Maintenance	Periodic	All	Contract
CCTV inspection	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	80	Contract

Cast iron distribution mains (100 – 300mm)

Description	Expense type	Sub-type	Age range	Delivery
Installation of main	Capital	Establishment	0	Contract
Inspections	Maintenance	Annual	All	Contract
Flushing	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	40	Contract

PVC and ductile iron distribution mains (100 – 300mm)

Description	Expense type	Sub-type	Age range	Delivery
Installation of main	Capital	Establishment	0	Contract
Inspections	Maintenance	Annual	All	Contract
Flushing	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	80	Contract

Booster station

Description	Expense type	Sub-type	Age range	Delivery
Construction of booster station	Capital	Establishment	0	Contract
Inspections	Maintenance	Annual	All	Contract
Flushing	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	40	Contract

Water meter

Description	Expense type	Sub-type	Age Range	Delivery
Installation of water meter	Capital	Establishment	0	Contract
Maintenance	Maintenance	Annual	All	Contract
Disposal	Capital	Disposal	20	Contract

Notes: Three hundred (300) metres located in all zones. Expected life is twenty (20) years, rate of frequency component (transmitter) life is twenty (20) years.

Water storage reservoir

Description	Expense type	Sub-type	Age range	Delivery
Construction of water reservoir	Capital	Establishment	0	Contract
Drain and inspect reservoir	Maintenance	Periodic	10 to EOL	Contract
Inspection	Maintenance	Annual	All	Contract
Recoating	Maintenance	Periodic		Contract
Removal	Capital	Disposal	40	Contract

Notes: This asset requires cathodic protection and periodic recoating. Reservoirs are drained and inspected every 5 to 10 years.

Water tank

Description	Expense type	Sub-type	Age range	Delivery
Construction of water reservoir	Capital	Establishment	0	Contract
Drain and inspect tank	Maintenance	Periodic	10 to EOL	Contract
Inspection	Maintenance	Annual		Contract
Recoating	Maintenance	Periodic		Contract
Removal	Capital	Disposal	40	Contract

Notes: This asset requires cathodic protection and periodic recoating. Reservoirs are drained and inspected every 5 to 10 years.

Hydrants				
Description	Expense type	Sub-type	Age range	Delivery
Installation of fire hydrants	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Contract
Maintenance	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	40	Contract

Parks and recreation

Lions pool park				
Description	Expense type	Sub-type	Age range	Delivery
Construction of park and related infrastructure	Capital	Establishment	0	Contract
Inspection of park infrastructure for maintenance reasons	Maintenance	Annual	All	Internal
Maintenance to sustain existing level of service	Maintenance	Annual	All	Contract
Construction of park addition	Capital	Periodic	All	Contract
Removal	Capital	Disposal	20	Contract

Trails				
Description	Expense type	Sub-type	Age range	Delivery
Construction of park and related infrastructure	Capital	Establishment	0	Contract
Inspection of Park infrastructure to determine if desired level of service is met	Maintenance	Annual	All	Internal
Spread gravel on trail	Maintenance	Annual		
Cut back vegetation from trail-way	Maintenance	Annual		
Maintenance to sustain existing level of service	Maintenance	Annual	All	Contract
Construction of park addition or upgrade to enhance level of service	Capital	Periodic	All	Contract
Removal	Capital	Disposal	20	Contract

Signage				
Description	Expense type	Sub-type	Age range	Delivery
Construction and installation	Capital	Establishment	0	Contract
Incidental inspections	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	10	Contract
Athletic fields				
Description	Expense type	Sub-type	Age range	Delivery
Construction of athletic site and related Infrastructure	Capital	Establishment	0	Contract
Inspection of athletic site infrastructure to determine if desired level of service is met	Maintenance	Annual	All	Internal
Maintenance to sustain existing level of service	Maintenance	Annual	All	Contract
Construction of site addition or upgrade to enhance level of service	Capital	Periodic	All	Contract
Removal	Capital	Disposal	10 to 25	Contract
Sports courts				
Description	Expense type	Sub-type	Age range	Delivery
Construction of court	Capital	Establishment	0	Contract
Resurface asphalt surfaces	Capital	Periodic		Contract
Supplement clay surfaces	Maintenance	Annual	All	Contract
Removal	Capital	Disposal	10 to 20	Contract
Parking lots				
Description	Expense type	Sub-type	Age range	Delivery
Construction of parking lot	Capital	Establishment	0	Contract
Maintenance	Maintenance	Annual	All	Contract
Surface Treatments	Capital	Periodic		Contract
Removal	Capital	Disposal	EOL	Contract

Play structures

Description	Expense type	Sub-type	Age range	Delivery
Installation of play structure	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	15	Contract

Event facilities

Description	Expense type	Sub-type	Age range	Delivery
Event facilities	Capital	Establishment	0	Contract
Inspections	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	EOL	Contract

Fencing

Description	Expense type	Sub-type	Age range	Delivery
Fencing	Capital	Establishment	0	Contract
Inspections	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Periodic	All	Contract
Removal	Capital	Disposal	EOL	Contract

Vehicle fleet

Transit buses

Description	Expense type	Sub-type	Age range	Delivery
Purchase of vehicle	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Internal
Removal	Capital	Disposal	5	Contract

Fire department				
Description	Expense type	Sub-type	Age range	Delivery
Purchase of vehicle	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Internal
Removal	Capital	Disposal	15	Contract
Parks and recreation trucks and vans				
Description	Expense type	Sub-type	Age range	Delivery
Purchase of vehicle	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Internal
Removal	Capital	Disposal	5	Contract
Public works trucks				
Description	Expense type	Sub-type	Age range	Delivery
Purchase of vehicle	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Internal
Removal	Capital	Disposal	10	Contract
Heavy Equipment / Snow removal and other equipment				
Description	Expense type	Sub-type	Age range	Delivery
Purchase of vehicle	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Internal
Removal	Capital	Disposal	10	Contract

Other				
Description	Expense type	Sub-type	Age range	Delivery
Purchase of vehicle	Capital	Establishment	0	Contract
Inspection	Maintenance	Annual	All	Internal
Maintenance	Maintenance	Annual	All	Internal
Removal	Capital	Disposal	10	Contract

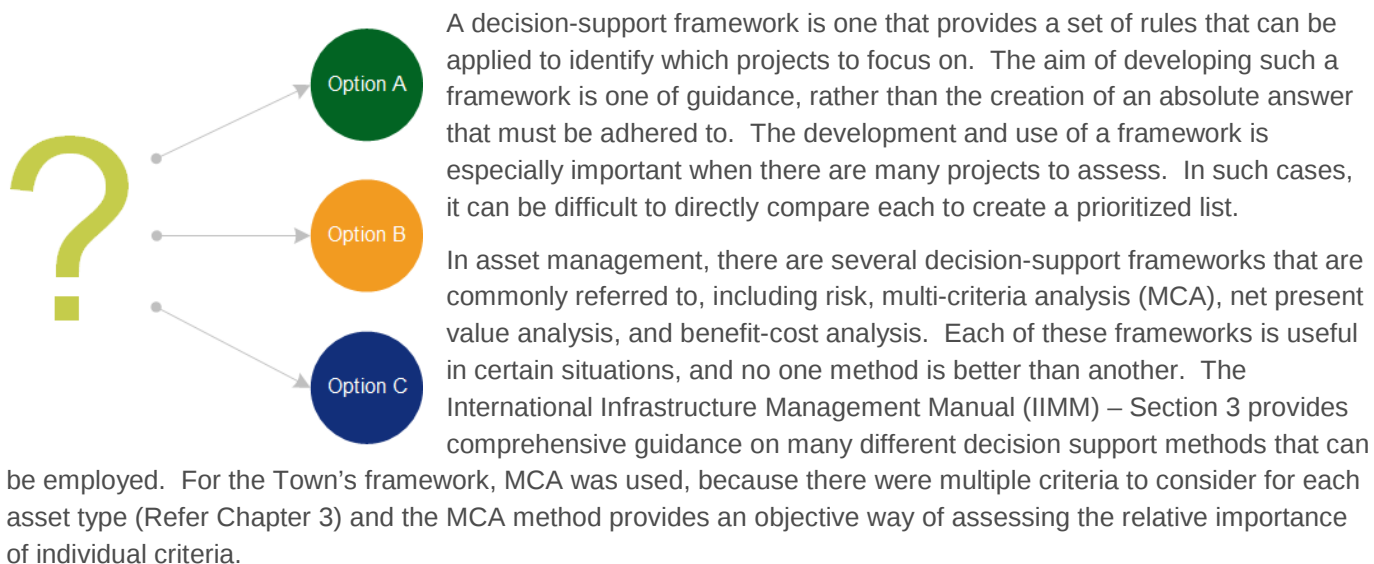
Appendix B – Developing an Asset Decision Support Framework

The following chapter provides details of the decision-support framework that was introduced in the Level of Service chapter (Refer Chapter 3). The decision-support framework comprises a set of weighted criteria that is used by the individual asset managers to prioritize their projects.

This chapter first provides a brief overview of decision-making frameworks and why they are useful. Following the initial introduction, the framework that was developed for the Town is introduced, the intended use of this framework is detailed, and potential improvement actions are identified.

Types of decision-support frameworks

The following section provides a brief overview of why decision-support frameworks are used and the decision support framework selected by the Town.



Developing the multi-criteria analysis framework

The following section describes how the Town's decision-support framework was developed and how the weights applied to each of the criteria were selected.

The IIMM outlines four stages of development when creating an MCA framework including:

- Selecting appropriate criteria,
- Testing the criteria,
- Developing the weighting for each of the criteria,
- Testing weightings, and
- Reporting results.

To develop the service level statements and to ensure they align with the community's expectations, a three-stage process was used. This process consisted of the identification of key stakeholders and the interests of these stakeholders, the development of service level statements to represent these interests, and the development of performance measures to monitor the Town's success in delivering the identified services. The identified performance measures were then reduced by the Town's asset managers to a set of key performance indicators. These key performance indicators were the ones that were initially used as the decision-support criteria (Refer Chapter 3).

To test the suitability of the key performance indicators as decision criteria, the asset managers were asked to consider three test projects of their choosing. The projects were pre-selected based their perceived importance to the community i.e. a highly important, a moderately important, and a lower importance project were scored.

To score each of the identified criteria, a four-point system was used. The scoring system is detailed in Table B1. The following system is used to provide a qualitative assessment of how well a project contributes to the stated criteria.

Table B1: Scoring system used to rate each criterion

Score	Description
3	The project strongly contributes to the achievement of the identified criteria
2	The project moderately contributes to the achievement of the identified criteria
1	The project weakly contributes to the achievement of the identified criteria
0	The project does not contribute to the achievement of the identified criteria

Based on the first round of scoring, several of the asset managers added or removed identified decision-support criteria to more accurately reflect the criteria they used in their decision-making processes. As an example, a collaboration criterion was added to some asset types to reflect the interrelationship that occurs between different asset groups when project planning. Furthermore, another asset manager removed one criteria because, based on discussions during the development process, the criteria was identified as not being used in the decision-making process. Thus, after a few rounds, the original set of criteria were updated.

Not all criteria are of the same importance; therefore, it is desirable to apply weightings to the criteria for decision-support. To develop appropriate weightings for individual criteria, an initial assessment of relative importance was used. Based on this assessment, each of the identified criteria was assigned a percentage score. The three pre-selected projects were then rated and their order noted. If the order was as expected, the weights remained the same. However, many of the project scores were different than what was expected. As an initial check, the criteria that were being used were assessed again. A further check was undertaken to ensure the proposed projects, considering the scores, were still relevant.

Once the criteria and the projects were reviewed, the relative importance of each of the criteria was re-assessed and, if applicable, a new weighting was applied. The cycle of scoring, reviewing, and re-weighting was carried out until the three test projects (being one of high importance, moderate importance and low importance) had distinctly different scores. Ensuring a distinct difference ensures that once the full complement of projects is identified, there will be sufficient variation in the prioritized list. This variation makes the selection process easier.

The organizational objectives

The above-defined process describes how each project is prioritized from an asset management perspective. To ensure alignment with organizational objectives, each project is also rated against the following strategic goals that have been developed for the Town. These include:

- A safe and welcoming community
- Planning for the future
- Smart and sustainable growth
- Fiscal and service responsibility

Each of these criteria is equally weighted to reflect their equal importance. They are added to the other decision-support criteria to complete the priority score calculation for all projects.

Using the framework.

The following section details how the individual stages will be used to integrate the framework into everyday decision making.

- Projects are identified as part of day-to-day activities including inspections, planning processes, and other feasibility studies.
- Once identified, a project is rated using the identified framework and added to the list with the other projects. The list details the scope of work, the project cost, and the rating that was obtained. The rating will likely be carried out by individual asset streams. However, if the project includes multiple asset streams, the project should be scored jointly.
- The identified projects will then be used to develop a program of works for each asset stream. The program can be based on the rating or the project rating divided by the project cost. The latter can be used to ensure moderately high-scoring projects with low cost are addressed.
- At a regular planning meeting (annual or 6-monthly), all asset team leaders will meet to discuss their projects and have their ratings challenged. This will ensure internal organizational consistency across all asset streams is created by applying an alternative perspective to proposed projects.
- Based on the challenge meeting, a combined program of works will be developed and agreed. This program will constitute the five-year program and will provide some insight into mid-term funding requirements.
- Periodically, the projects that are stored in the project list will be reviewed by each asset stream manager to ensure they are still current and, where required, scores adjusted to reflect any changes.

Improvement actions

The following is a list of potential actions that would improve the decision-support process.

Table B2: Decision-Support Improvement Actions

No.	Description
1	Agree to a set of common criteria that can be used by each asset stream. This will allow projects in one stream to be traded-off against projects in another stream.