TOWN OF LINCOLN

LINCOLN PARKS & FACILITIES SERVICES ASSET MANAGEMENT PLAN

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TOWN OF LINCOLN

DATE: MAY 2024

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1 GOVERNANCE AND LEADERSHIP

1.1 OVERVIEW

The Town of Lincoln is located in the heart of the Niagara region, with one of the most diverse economies in Niagara including agriculture, small businesses, advanced manufacturing, and health care. The Town of Lincoln is currently the fourth fastest growing municipality in Niagara. Our towns and villages are filled with over 50 wineries, fresh fruit, vegetables, flowers, heritage, and cultural sites, and natural attractions such as the Niagara Escarpment and Lake Ontario. The Town of Lincoln is part of a two-tier municipality with Niagara Region as the upper tier comprising of 12 municipalities, including Lincoln.

The Parks and Facilities Services Department of the Town of Lincoln manages a diverse range of facilities and assets aimed at providing recreational opportunities, promoting community engagement, and preserving natural spaces.

The Parks & Facilities Services include the following asset categories:

- Buildings

- Parks

- Cemeteries

- Playing fields

- Comfort (i.e., BBQ, Comfort Stations, Picnic Shelters, benches etc.)

- Recreational Parks

- Pools

- Parking (associated with parks and recreation sites)

- Bridges (pedestrian bridges associated with parks)

- Forest

As Lincoln continues to experience growth, it is critical for the Town's parks and facilities infrastructure to be managed in a way that provides an agreed level of service for the lowest life cycle cost. This asset management plan also needs to account for the communities need to adapt and change as the Town continues to grow at a rapid pace, planning for future assets that will meet the needs of the community.

1.2 ROLES AND RESPONSIBILITIES

The **Chief Administrative Officer** (CAO) is responsible for oversight and administration of the Town's services. The CAO Implements the policies and direction approved by Council, and with

support from the senior management team, develops strategic planning initiatives for the organization.

The Town's **Community Services Department** is responsible for the stewardship of all core asset categories outlined in the Parks & Facilities Services Asset Management Plan. The teams and positions supporting this mandate are highlighted below:
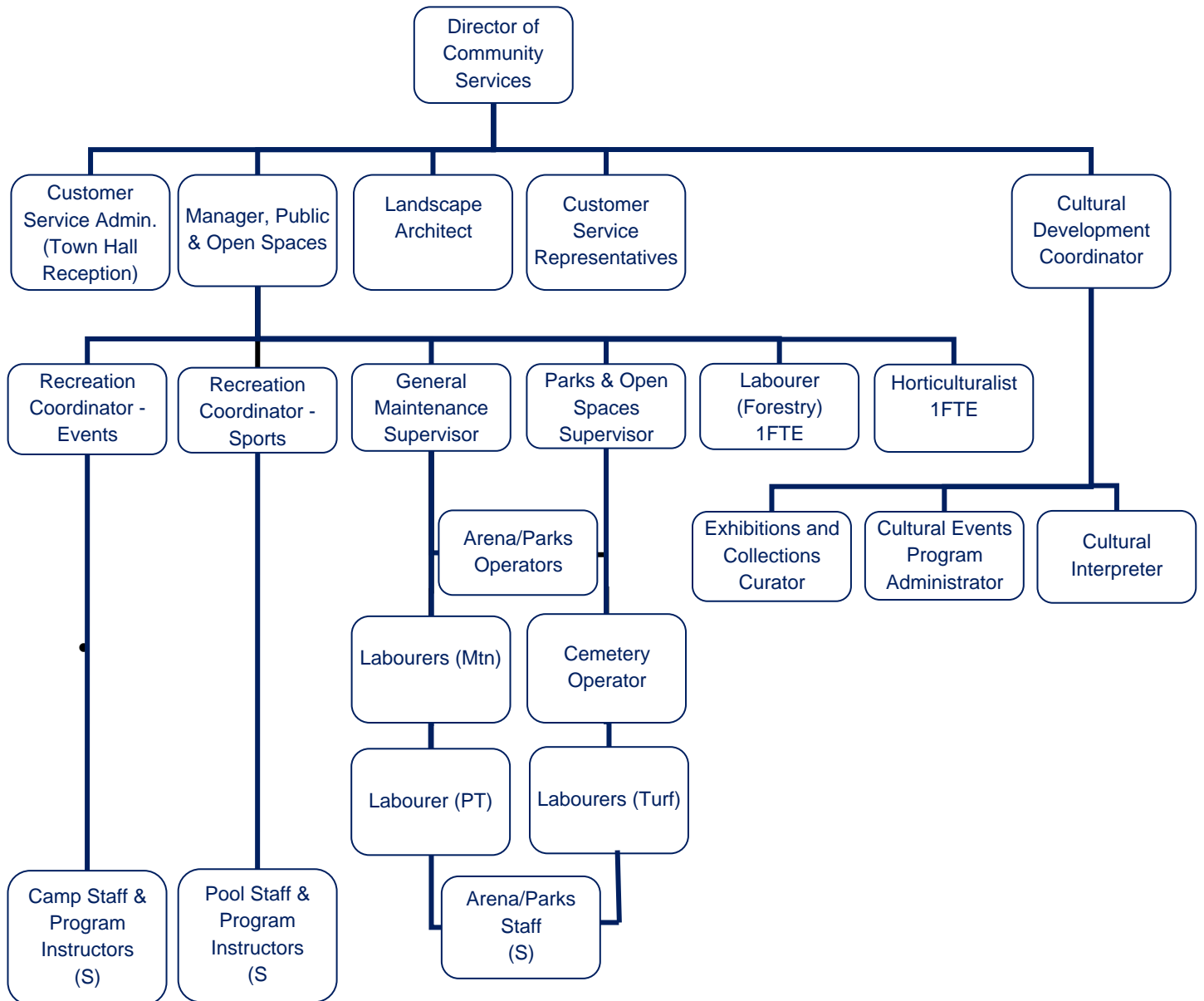
Figure 1: Town of Lincoln Community Services Org Chart

- **Director of Community Services –** Reports to the CAO…

- **Manager, Public and Open Spaces -** Reports to Director of Community Services…

- Customer Service Administration (Town Hall)

- Landscape Architect

- Customer Service Representatives

- Cultural Development Coordinator

- Exhibitions and Collections Curator

- Cultural Events Program Administrator

- Cultural Interpreter

- Recreation Coordinator - Events

- Recreation Coordinator - Sports

- Camp Staff & Program Instructors (S)

- Pool Staff & Program Instructors (S)

- General Maintenance Supervisor

- Parks & Open Spaces Supervisor

- Labourer (Forestry)

- Horticulturalist

- Arena/Parks Operators

- Labourers (Mtn)

- Labourer (PT)

- Labourers (Turf)

- Cemetery Operator

- Arena/Parks Staff (S)

- Skate Patrollers

1.3 GOALS AND OBJECTIVES

The Town of Lincoln's strategic plan "A Future Fit Lincoln" describes its strategic priorities to build a welcoming, connected, vibrant and resilient community. The long-term vision statement for the Town is:
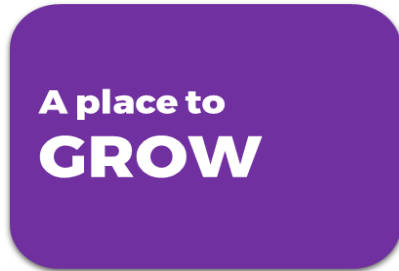
A place to grow:

Youth, aging in place, agriculture – growing crops, farming, greenhouse support, business growth, early childhood development (youth), proper planning and growing smart, growing your family here in Lincoln.

A place to prosper:

A place for small/medium businesses to succeed, opportunities, job creation, tourism, destination, local markets, festivals, beautification, industrial parks, prosperity, community vibrancy, innovation.

A place to belong:

Maintain community feeling, connectedness, more local events, support for families, history and heritage, local markets, local and unique festivals, moving around town, one community.

1.3.1   LINCOLN PARKS & FACILITIES SERVICES MISSION AND GOALS

The Lincoln Parks & Facilities is an essential service that supports achievement of the Town's vision (a place to grow; a place to prosper; and a place to belong).

- Parks & Facilities Service - Clean, safe, secure, and comfortable buildings and spaces, with easy access, suitable for purpose, well maintained, available when needed, and at an affordable cost.

These goals are to provide a reliable, effective, and supportive service in a financially responsible way that is aligned to the community vision.

1.4   CONTEXT FOR ASSET MANAGEMENT PLAN DOCUMENT

1.4.1   RELATIONSHIP WITH OTHER DOCUMENTS

The Town recognizes the importance of proactive and responsible management of the infrastructure that supports the effective and efficient delivery of the Lincoln Parks & Facilities Services. Figure 2 shows the linkage and relationships between asset data and how it informs asset management plans, financial and master planning documents, corporate asset

management plans, and policy statements, which in the Lincoln Facilities & Park Services Asset Management Plan will strive to meet the goals of a **Future-Fit Lincoln**. These goals are to provide a reliable, effective, and supportive service in a financially responsible way that is aligned to the community vision.
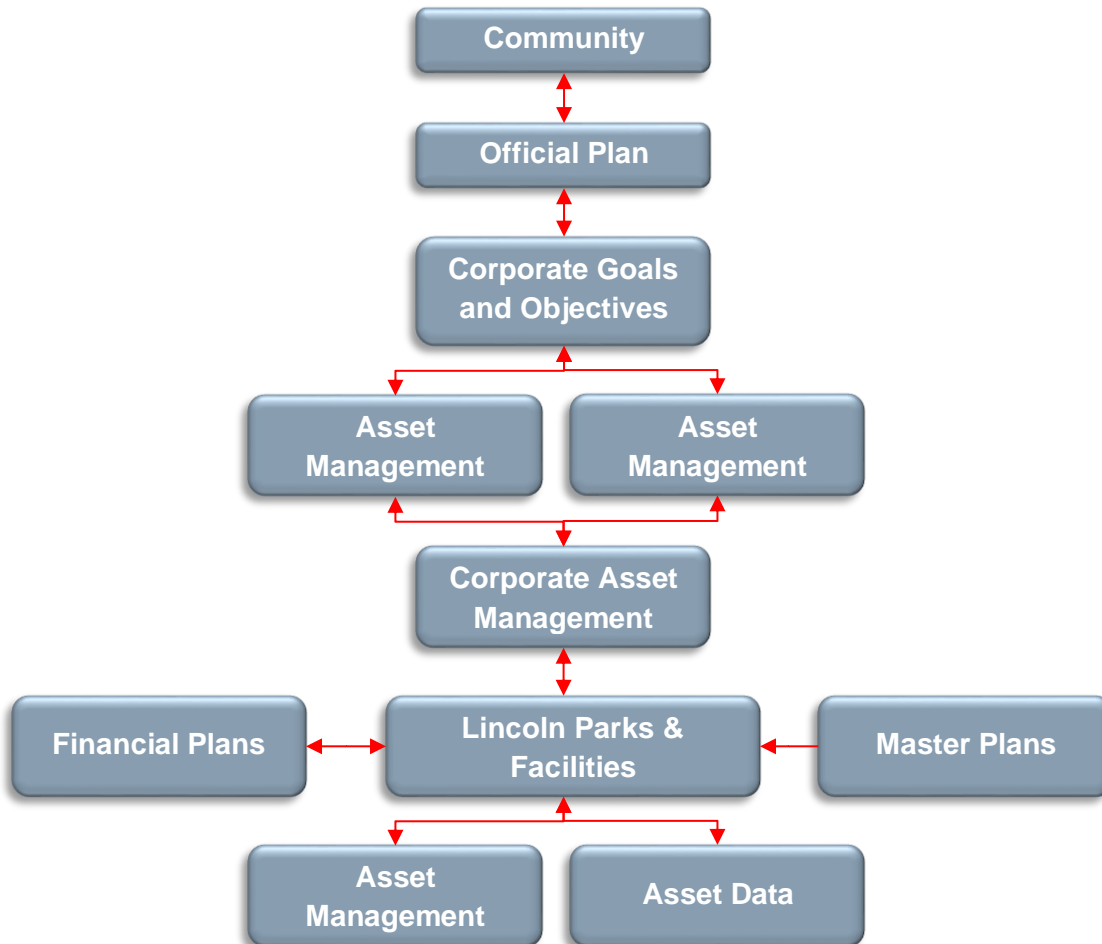
Figure 2: Relationship to corporate documents

1.4.2   REFERENCE DOCUMENTS

The following other plans and strategies were referenced in the preparation of this Asset Management Plan

- Town of Lincoln Official Plan
- Parks, Recreation and Culture Master Plan
- Lincoln Museum and Cultural Centre Strategic Plan
- Building Condition Assessment (BCA's)

1.4.3 LIMITATIONS AND ASSUMPTIONS

This asset management plan has been prepared based on the best information available regarding inventory and costs of providing the service, and an understanding of adequate maintenance and renewal of assets in a "whole of lifecycle" manner. Continuous improvement of Lincoln's asset management practices is essential to continue to collect and enhance accurate asset information that can be used to support ongoing quality planning and sustainable infrastructure management.

The limitations faced while writing this plan are summarized in Table 1Table 1. Recognizing these limitations will help inform the continuous improvement process for future versions of the AMP.

Table 1: Limitations of the asset management plan

Limitation	Impact
Asset Data	The Town's inventory is stored in multiple tables and databases and contains gaps and duplicates. A data management plan was developed in 2021 and recommends a centralized database be adopted for all asset inventory. This is still to be implemented.
State of the infrastructure	The state of the infrastructure is based on currently available inventory data which is sourced from citywide data, building condition assessments and the town's internal inventory data set. Assets are not uniquely identified; therefore, assets have been rolled up, and reported largely on the average condition, age, year installed of each asset group/type. This will allow a baseline SOI, with the aim to improve future versions.

1.4.4 IMPLEMENTATION AND REVIEW

The Lincoln Parks & Facilities Services asset management plan documents current practices and information on:

- The quantity, age, condition and value of the assets
- Current levels of service and performance measures
- Current practices for managing the assets
- Risks to service delivery
- Demand affects on service delivery
- Resource needs required for service delivery
- Resilience and Adaptation

- Sustainability
- Renewal plans and financial strategy

The asset management plan also documents improvement tasks that if addressed will increase the level of understanding of the service provided by Town of Lincoln Parks & Facilities Services. An up-to-date asset management plan will empower decision-makers with accurate and complete information in an easy-to-understand format that will support well-informed, evidence-based decisions to identify the right balance between level of service, risks and available funding, that is in the best interests of the Town. As such, the implementation of this asset management plan must include regular review and update to keep the plan current with the latest information, understanding, and projections.

The asset management plan should be reviewed every five years at a minimum. Consideration must also be given in each asset management plan update to any changes in the Ontario Requirements 588/17: Asset Management Planning for Municipal Infrastructure.

2 KNOW YOUR ASSETS

2.1 OVERVIEW

A state-of-infrastructure analysis provides an objective assessment of the physical and financial status of assets. The following sections describe the current state of infrastructure for the parks & facilities service assets owned and maintained by the Town of Lincoln. The Town's current asset inventory (year end 2023) is assessed through an evaluation framework designed to answer three fundamental asset management questions:

- What assets do we own (asset types and quantity/extent)?
- What are they worth (replacement cost)?
- What is their condition (asset age and condition distribution)?

The results provide an objective assessment of asset types, quantity, age, value, and condition. The analysis also provides a long-term forecast for asset replacements based on current age and condition compared to expected lifespan and the estimated replacement value for each asset. This information provides guidance to the Town of Lincoln for investment and lifecycle management decisions to achieve the required level of service for an optimal lifecycle cost.

State of infrastructure results can also be tracked over time to understand trends such as overall increase or decrease in condition profile or age profile, increasing asset base (quantity), increasing asset replacement values, and other asset metrics.

2.2 OVERVIEW OF ASSETS

This section provides an overview of the park & facilities assets owned and maintained by the Town of Lincoln. The asset inventory is divided into ten (10) categories. These are described in Table 2.

Table 2: Asset Inventory Overview

Asset Category	Asset Type
Buildings	Substructure, Shell, Interiors, Services, Equipment & Furnishings, Special Construction, Building Site Work
Parks	Parks, Pathways, Trails, Off Leash Dog Park, Flower Beds
Cemeteries	Cemeteries
Playing fields	Baseball, Basketball, Soccer, Tennis, Pickleball
Comfort/Picnic	Pavilions/Structures, BBQ, Comfort Stations, Picnic Shelters/Tables, Benches, Signage, Tree Cages, Waste Containers, Bike Racks
Recreational Parks	Outdoor Rinks, Skate Park, Pump Track, Playgrounds
Pools	Swimming Pools, Splash Pads
Parking	Parking Lots, Parking Spaces

Bridges	Pedestrian Bridges
Forest	Mixed, coniferous, deciduous and other forest

A summary of state of infrastructure statistics for each asset group is reported in the next section of this plan. These statistics include the quantity of assets in each group, their average age, the total replacement value, graphs showing the condition profile and age profile of the assets, and a long-term financial forecast for replacing existing assets as they reach the end of their useful life.

2.2.1 INFRASTRUCTURE DATA SOURCE

The inventory data was gathered through the Town's own asset inventory, third party Building Condition Assessment Reports and Citywide data.

2.2.2 MINIMUM DATA REQUIREMENTS

Currency and accuracy of asset data is critical to effective asset management, accurate financial forecasts, and informed decision-making. To produce the state of infrastructure section of the asset management plan, the following attribute data is required:

- Unique asset identifier
- Asset owner
- Asset status (e.g. active, abandoned, not in use)
- Asset group
- Asset type
- Install year
- Estimated useful life (EUL)
- Relevant size attribute:
  - Size 1 (e.g. diameter, width, height, power)
  - Size 2 (e.g. length, width, height, quantity)
- Relevant quantity attribute (e.g. area, quantity, depth)
- Material type
- Replacement cost or unit rate

The Parks & Facilities Services assets don't currently have the minimum attributes required; however, some assumptions have been made where applicable to ensure a baseline state of infrastructure is created. The assumptions made are detailed in 2.2.6 below.

2.2.3 ASSET REPLACEMENT COSTS

The asset replacement costs have been estimated based on unit rates developed from recent purchases and projects where available, and from typical industry standard costing where relevant local rates weren't available.

2.2.4 ASSET LIFESPANS

Most assets used to deliver the Parks & Facilities Services have industry standard estimate useful lives or estimated lives based on Town staff experience.

2.2.5 ASSET CONDITION

The condition of assets is based on condition assessments where recent assessment data was available, or estimated based on the assets age and remaining lifespan following the scale shown in Table 3 where condition assessments were not available.

Table 3: Age-based condition rating

Score	Condition Rating	% of Remaining Useful Life (RUL)	Rating Description
1	**Very Good:** Fit for the future	RUL ≥ 75%	The infrastructure in the system or network has greater than or equal to 75% of its remaining useful life. It is generally in very good condition, typically new or recently rehabilitated.
2	**Good:** Adequate for now	75% > RUL ≥ 35%	The infrastructure in the system or network has less than 75% (and greater than or equal to 35%) of its remaining service life. It is in good condition.
3	**Fair:** Requires attention	35% > RUL ≥ 13%	The infrastructure in the system or network has less than 35% (and greater than or equal to 13%) of its remaining service life. It is in fair condition.
4	**Poor:** At risk	13% > RUL ≥ 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	RUL < 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.

2.2.6 DATA ASSUMPTIONS AND LIMITATIONS

The information for the Parks & Facilities Services assets was not complete; therefore, the following assumptions were made:

- Assets were rolled up into categories for easier analysis at this stage
- Installed dates have been assumed where required to fill data gaps

- Aged-based condition has been used where recent assessment data was not available

- Estimated useful life has been based on industry standards or local staff experience

- Costs have been assumed based on previous projects local staff knowledge, or industry estimates

2.3 STATE OF INFRASTRUCTURE

Table 4 shows a summary of the Parks & Facilities Services assets that are owned by Lincoln and are active and in service.

- The Town of Lincoln's Parks & Facilities Services assets are valued at approximately $131.1 million (in 2024 dollars).

- Most of the assets are in fair or better condition (84.6% by value), with the remaining 15.4% in poor or very poor condition (see Figure 3).

- The overall average condition of the assets (weighted by value) is Fair (2.72) on a scale of 1-5.

- The age of the assets ranges from 0 to 80 years, with an overall average age (weighted by value) of 28 years (See Figure 3).

Table 4: Current state of infrastructure

Category	Quantity	UOM	Current avg asset age (yr.)	Avg expected useful life (yr.)	Average Asset Condition	Current Asset Replacement Cost
Bridges	3	No.	35	30	Poor	$742,000
Buildings*	141	No.	26	38	Good	$86,392,000
Cemeteries	5	No.	51	33	Very Poor	$3,800,000
Comfort	720	No.	16	20	Fair	$4,471,000
Forest	807	No.	75	100	Fair	$4,035,000
Parking	1,761	No.	24	20	Poor	$4,376,000
Parks	130	No.	44	62	Fair	$14,325,000
Playing Fields	102	No.	20	23	Poor	$7,099,000
Pool	5	No.	29	24	Poor	$1,540,000
Recreational Parks	16	No.	19	23	Poor	$4,316,000
Totals	**3,690**		**33**	**28**	**Fair**	**$131,096,000**

Note – Buildings have been counted by asset type, e.g. – Substructure, Shell, Interiors, Services, Equipment & Furnishings, Special Construction, Building Site Work.

It should be noted that inspection condition data was only available for the parks & facilities building assets. Therefore, an age-based-condition assessment was made (refer 2.2.5). It is recommended that the Town completes condition assessments of assets and revise the age-based condition ratings and remaining life in the state of infrastructure tool with data assessed from inspections and report revised values in the next iteration of this asset management plan.

Figure 3 shows the condition and age profile for Parks & Facilities Services assets by replacement cost.
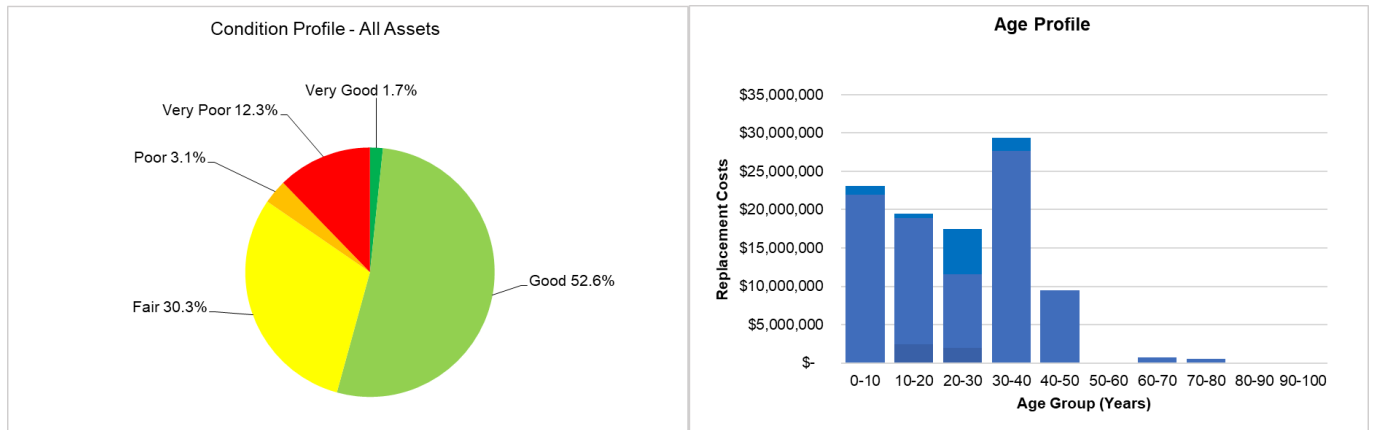
Figure 3: Condition and age profile

Figure 4 shows the 100-year renewal forecast of existing assets based on asset age and estimated replacement cost. Based on the current inventory, the 5, 20, and 100 year average replacement costs are $4.7, $4.5 and $4.0 million per annum respectively.
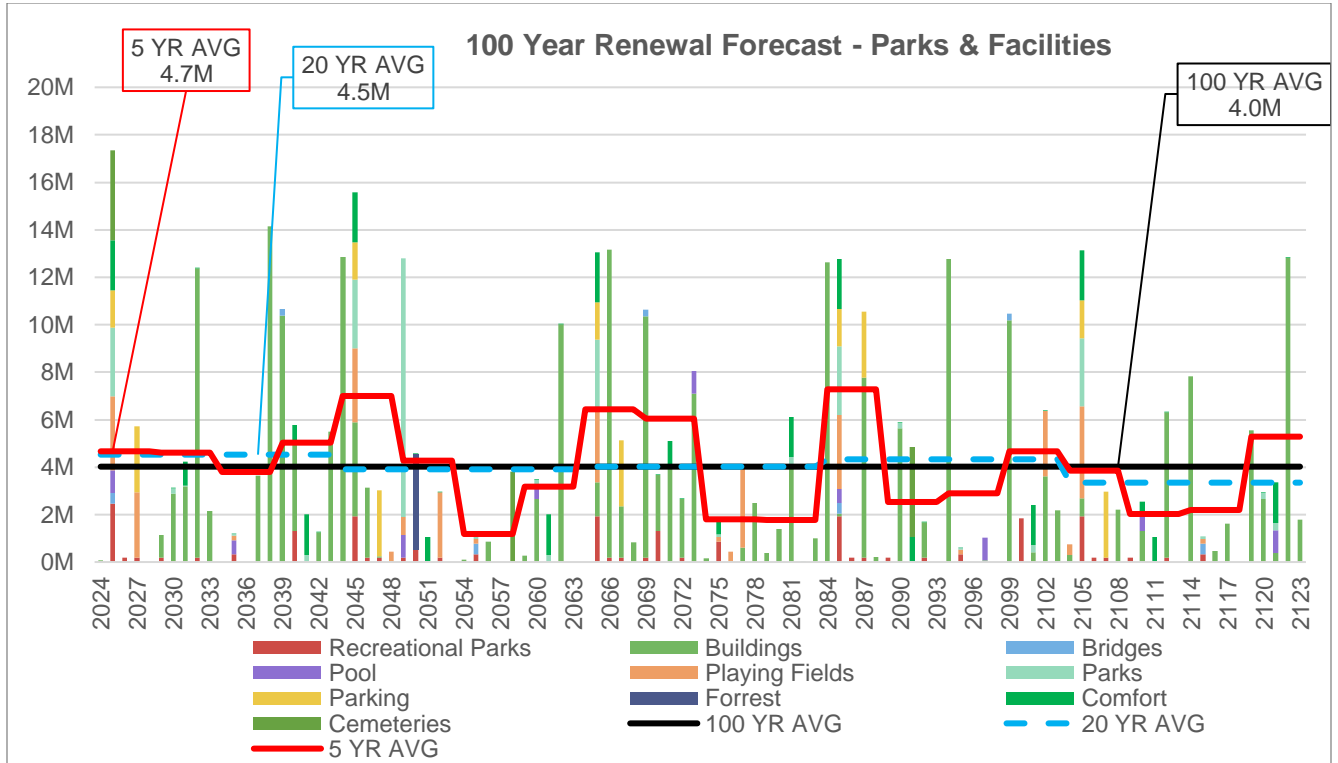
Figure 4: 100-year renewal forecast

The 100-year forecast is provided for context for decision-makers. It allows for at least one replacement of each asset. It is expected that assets indicated to be at or near the end of their useful life (i.e. forecast for replacement in 1-5 years) would be inspected to confirm condition and remaining life and estimate replacement cost for budget purposes that include for site specific situations.

2.3.1 PRIORITIZED IMPROVEMENTS RELATING TO ASSET DATA AND SOI

Table 5 shows the improvement priorities related to asset data and SOI.

Table 5: State of infrastructure improvement tasks

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
1	2	Asset Data	Implement recommendations in the data management plan developed by the Town after completing an assessment of their asset data across all service areas. These recommendations include: • Developing a data standard and data hierarchy to ensure consistency	High

			• Develop a plan to populate missing asset attribute data • Develop roles and assign responsibility of the management of data • Adopt a database software to host data and have a single source of truth	
2	2	Asset Data	Separate grouped assets and assign unique identifiers to all assets to distinguish condition, age, year installed etc.	High
3	2	Asset Data	Complete and document condition inspections on assets and use the results to improve the accuracy of the renewal forecasts.	Medium
4	2	Asset Data	Continue to review and update replacement costs to build confidence in replacement unit rates to use in future state of infrastructure analysis and future replacement forecasts.	High

3 MANAGE SERVICE DELIVERY

3.1 LEVEL OF SERVICE

The purpose of this section is to describe the Levels of Service (LOS) that the Town of Lincoln Parks & Facilities Services aims to provide.

LOS are the outcomes that an organization delivers. They are the key drivers for making decisions on future investment in the service and its infrastructure assets. As such, they need to be clearly articulated in terms that end users and decision makers can understand. Having well defined service levels will allow Lincoln to work with its ratepayers and other stakeholders to find the appropriate balance between affordability and community expectations for service level.

Measured performance indicates what the customers and stakeholders experience from the service that is delivered. Target values are set for performance measures to deliver the intended level of service. Comparison of performance delivered (measured results) to performance intended (target values) assists the Town in both strategic and operational decision making.

Table 6 presents a summary of LOS terms and definitions.

Table 6: Levels of service and performance measure terminology

Concept/Term	Definition	Example
Levels of service (LOS)	A statement of the specific attributes of the service that the Town intends to deliver from the **customer point of view**. LOS statements provide the link between higher level corporate and asset management objectives and more detailed technical and operational objectives. They must all align to give the customer the intended experience of the service.	• Providing useable and clean facilities & parks for the user
Service Criteria	These are the **specific attributes** or key characteristics that each stakeholder group is interested in, regarding the customer's experience of the level of service	• Clean • Safe • Well Maintained • Available • Accessible

Concept/Term	Definition	Example
Performance measures	Criteria that can be measured and provide an indication of how the Town is doing in delivering the intended LOS. This can be defined as: Customer performance measures: Measures that indicate **how the customer is receiving or experiencing the service**. Technical performance measures: Technical criteria that **the Town can monitor to measure the service level being achieved**.	Customer: • Routine cleaning occurs on schedule (Record of cleaning) • Record of validated complaints Technical: • % of facilities cleaned within schedule • # of complaints every quarter (3 months)
Performance targets	The required value (target) for each criterion that is being used as a performance measure. The expectation is that the intended LOS will be achieved if these targets are met.	Customer: • 100% (all sites cleaned according to schedule) • Reviewed ever quarter (3 months) Technical: • 95% (all sites cleaned according to schedule) • 5 (complaints every quarter)

3.1.1 LEVEL OF SERVICE STATEMENTS

Key staff from the Lincoln Parks & Facilities Services team participated in a workshop to determine the following LOS criteria and LOS statements, which are included in Table 7 below.

Table 7: Service criteria and stakeholder key expectations

Service Criteria	LOS Statement
Clean	Providing useable and clean facilities and parks for the user Risk & safety
Safe	Providing safe facilities and parks for the staff and user
Well Maintained	Providing well maintained facilities and parks to always ensure reliability
Accessible	Providing accessible facilities and parks for the user
Available	Providing facilities, parks and programs that meet users needs and availability

3.1.1.1 DETAILED LEVEL OF SERVICE

Table 8 below describes the levels of service the Town of Lincoln aims to deliver and defines the Key Service Attributes, LOS Statements, Customer/Council Focused Measures, Technical Focused Performance Measures and Targets that will be used to monitor, measure, and report achievement.

Table 8: Levels of Service Table

Stakeholder Group	Key Service Attribute	LOS Statement	Customer/Council Focused Performance Measures					Technical Focused Performance Measures		
			Performance Measure	Source	Past Measured Performance	Current Performance	Target	Performance Measure	Current Performance	Target
Parks & Facilities Services	Clean	Providing useable and clean facilities and parks for the user	Routine cleaning occurs on schedule (Record of cleaning)	Contract Invoices (future add verification/audit on compliance)	Inspection records	100%	100% (all sites cleaned according to schedule)	% of facilities cleaned within schedule	TBD	95%
			Record of validated complaints	Future	Recorded Complaints	Reviewed every 6 months	Reviewed ever quarter (3 months)	# of complaints every quarter (3 months)	TBD	5
	Safe	Providing safe facilities and parks for the staff and user	Safety inspections occur on schedule (Record of Inspections)	Work Record System	H&S Insp monthly Staff visual inspection daily and monthly for work inspection	100%	As a minimum 12 inspections occur annually (with a maximum of 6 weeks between inspections)	# of inspections every quarter (3 months)	TBD	3

Stakeholder Group	Key Service Attribute	LOS Statement	Customer/Council Focused Performance Measures					Technical Focused Performance Measures		
			Performance Measure	Source	Past Measured Performance	Current Performance	Target	Performance Measure	Current Performance	Target
			Required certifications, annual permits, and inspections are completed where required (Checklist – Y/N)	Work Record System	Contracted Services Contract invoices verify work has been completed Periodic Compliance Reviews	100%	Supervisor reviews work order system every month to check work is done as scheduled	Monthly work order review completed (Yes/No)	TBD	Yes
			Monthly lighting checks for key system lights and security lights	Work Record System	Staff monthly inspection for work identification, asset/system checks and work programming	100%	Reviewed monthly	Monthly work identification, asset/system checks and work programming review completed (Yes/No)	TBD	Yes
			Spring and Fall lighting checks in parks	Work Record System	Staff audit park lighting twice a year in spring and fall	100%	Reviewed Bi-annually	# of lighting checks annually (12 months)	TBD	2
			Appropriate security and lighting is provided and maintained (Record of valid complaints?)	Future	Recorded Complaints	Reviewed every 6 months	Reviewed ever quarter (3 months)	# of complaints every quarter (3 months)	TBD	10
	Well Maintained	Providing well maintained	Average condition of parks & facility assets (annual State	Future	SOI Analysis	TBD	TBD	?% (by value) in fair or better condition	TBD	75%

Stakeholder Group	Key Service Attribute	LOS Statement	Customer/Council Focused Performance Measures					Technical Focused Performance Measures		
			Performance Measure	Source	Past Measured Performance	Current Performance	Target	Performance Measure	Current Performance	Target
		facilities and parks to always ensure reliability	of Infrastructure tracked)	Building Condition Reports	4-yearly condition inspection and FCI rating	N/A	maintain or improve portfolio condition	% of Facilities Assessed ever 4 years	TBD	=>0%
	Accessible	Providing accessible facilities and parks for the user	Parks & Facility assets comply with accessibility regulations (Y/N)	Annual Inspections (3rd Party)	Inspection records	Priority #1 sites - 90% Priority #2 sites - 80% Priority #3 sites - 50%	80% (sites comply with accessibility standards)	% of Facilities comply with accessibility standards	TBD	80%
	Availability	Providing facilities, parks and programs that meet users needs and availability	Parks & Facilities are open for use at agreed times (hrs available vs agreed). This excludes emergency closures outside of control of Lincoln such as police incident, climate, vandalism.	Notice posted online	Record of Opening Times (filer out notified planned closures for maintenance/renovations)	100%	100% (all sites open according to availability)	# of hours not available during opening times	TBD	0
			Parks, facilities and programs revenue income versus service costs does not change to ensure availability is maintained	Future	TBD	TBD	Reviewed Annually (12 months)	% change in overall revenue vs service costs	TBD	=0-1%

3.1.2   LEVEL OF SERVICE IMPROVEMENT PRIORITIES

Table 9 shows the improvement priorities related to levels of service.

Table 9: Levels of service improvement priority

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
5	3.1	Levels of service	Collect and collate a minimum of one year of data for each performance measure that has been identified in Table 8.	High
6	3.1	Levels of service	Update targets where required after one year.	High
7	3.1	Levels of service	Review levels of service and update as appropriate. Ideally review annually based on measured performance results, but as a minimum review and update when the asset management plan is updated.	Medium

3.2 LIFECYCLE STRATEGIES

3.2.1 OVERVIEW

Assets of different types have different lifecycle lengths, deteriorate at different rates, and require different strategies for optimum performance and cost-efficiency over their life cycle.

A lifecycle strategy sets out the planned actions and intended maintenance management methods for an asset throughout its life. The purpose of lifecycle strategies is to maintain assets in an appropriate way that will deliver the required level of service for the least overall cost, while keeping risk at a level acceptable to the Town.

3.2.2 MANAGEMENT APPROACH

An asset's lifecycle strategy typically includes the work categories shown in Table 10. However, not all assets have the same management approach. Most of the lifecycle strategies for Lincoln Parks & Facilities Services assets (refer to Appendix A) provide for inspection processes to monitor assets throughout their "useful life. Early life intervention treatments are usually only appropriate for a few asset types where reliability is a major factor. Other assets have a "run to fail" approach where relevant maintenance is completed as and when required and the asset is replaced at the end of its life after going through the Town's capital planning process.

3.2.1 LIFECYCLE STRATEGY TERMINOLOGY

The current business practices for lifecycle management have been identified under the following work categories;

- **Operations, Maintenance & Inspections (OMI)**
    - Preventive Maintenance
    - Inspections
    - Operations
    - Reactive Maintenance
- **Renewal and Rehabilitation (R&R)**
    - Early-life Intervention
    - Mid-life Rehabilitation
    - Later-life Rehabilitation
    - End of life

Table 10 shows the definitions of the terminology used for the lifecycle strategy work categories:

Table 10: Lifecycle strategy work categories

Terminology	Definition
Preventative maintenance	These are regularly scheduled activities, completed whilst the asset is still in an "operational" condition. The purpose of preventative maintenance (when they are required), is to ensure the asset achieves its expected life (i.e. does not fail early). Not all assets require or benefit from preventative maintenance activities.
Inspections	There are different types of inspections that can occur throughout the lifecycle of an asset. Some are for checking the asset is operating as planned – these provide early warning for any issues that can then be remedied quickly and less expensively than if the problem remained undetected for some time. Other inspections are for measuring or observing the condition of the assets, or for measuring performance. These provide information for planning renewals and determining if performance targets will be met. Inspections may also be required by legislation, departmental policy, or completed based an industry standard or manufacturers recommendation.
Operations	These are routine activities necessary for the correct operation of the assets. They differ from preventative maintenance activities in that they are operational tasks or activities that must occur, or the asset will cease to function as intended (i.e. cease to operate or operate inadequately), whereas an asset will usually continue to operate even if preventative maintenance tasks are not done, but the overall lifespan of the asset could be reduced, and the asset may fail early.
Reactive maintenance	These activities are physical repairs to an asset that has broken down or is not functioning as required or expected. The repair reinstates the asset to its normal "operating" condition but does not significantly extend the overall life of the asset e.g. it is a repair not a full replacement nor is it an upgrade or major rehabilitation. Maintenance repairs are expected as assets age and are part of the overall lifecycle management to keep the asset operational for as long as physically and economically viable.
Early life interventions	These are treatment options that may be considered when an asset is in the first quarter of its lifespan. Typically, they are rare for most asset types, but some assets do require replacement of component parts at frequent intervals throughout the overall lifespan of the asset.
Mid-life interventions	These are treatment options that may be considered when an asset is in the second or third quarter of its lifespan. Most common forms

Terminology	Definition
	of mid-life rehabilitation are the replacement or refurbishment of component parts that have a shorter lifespan than the overall asset.
Later Life Interventions	These are treatment options considered to be still viable even when an asset is in the fourth quarter of its lifespan. They can include replacement or refurbishment of component parts the same as might be considered for mid-life rehabilitation. However, Later Life Rehabilitation should only be undertaken if it is cost-effective given the potentially short remaining life of the overall asset.
End of life	These are treatment options considered when an asset is approaching or at the end of its lifespan. Typical options include replacement (renewal) of the asset with an equivalent new asset, major rehabilitation that returns the asset to new or near new status, disposal (removal) of the asset without replacement, retirement of the asset (with or without disposal), divestment of the asset (sale or gift to another's ownership), or upgrade (replace with new asset that will provide an increase in level of service e.g. a bigger asset or higher specification).

The lifecycle strategies for the service assets are included in Appendix A.

3.2.2 LIFECYCLE STRATEGY IMPROVEMENT PRIORITIES

Table 11 shows the improvement priority related to lifecycle strategies.

Table 11: Lifecycle strategy improvement tasks

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
8	3.2	Lifecycle strategies	Review and revise lifecycle strategies if maintenance or inspection approaches change (including where new technologies are employed) and include more details and costs and specify decision processes	Medium
9	3.2	Lifecycle Strategy	Develop lifecycle strategies for any new assets that become part of the parks & facilities	Medium
10	3.2	Lifecycle Strategies	Identify and document costing and frequency information for lifecycle strategies to develop a needs-based forecast of operations, maintenance, and inspection activities	Medium

3.3 RISK PROFILE

Risk is evaluated at both the **service level** and the **asset level**. The importance of this is to provide early warning of all potential issues that could adversely affect delivering the level of service. When risks are known and have a rating, staff can prioritize activities to focus on assets with high-risk scores.

3.3.1 SERVICE LEVEL RISK

Service level risks are the risks that affect the delivery of the service to the Town's customers. In this case, the service provision by Lincoln Parks & Facilities is to ensure there is clean, safe, secure, and comfortable buildings, with easy access, suitable for purpose, well maintained, available when needed, and at an affordable cost.

The service level risks are grouped into 5 categories. The categories and examples of the risks in each category are shown in Table 12.

Table 12: Service level risk categories and risk examples

Category	Description of Common Risk Events
Planning	Regulatory changes, Council changing strategic priorities, demand management, etc.
Management	Lack of resources (people) to implement or advance asset management, reputational risk, data security risk, etc.
Service delivery	Outdated or unsupported software or hardware failures, power outages, inadequate stakeholder communication/engagement, etc.
Assets (in general)	Security and safety of physical or information assets from theft/vandalism/cyberattacks, inadequate maintenance and rehabilitation programs to preserve asset value and longevity, etc.
Hazards and environmental	Extreme weather events, climate change, improper storage or usage of hazardous or toxic materials, etc.

Service risks are calculated by multiplying the likelihood of each risk event occurring by the most probable impact to service delivery (i.e., consequence) that would occur if the event happened. The current service risk results are summarized in 3.3.4.

3.3.2 ASSET LEVEL RISK

The results of asset level risk assessments are considered when reviewing lifecycle strategies to determine the most appropriate treatments, preventative maintenance, and inspection frequencies for a particular asset or group of assets. Both asset level risk and service risks are considered in prioritizing capital works projects and other funding decisions.

Asset level risks are calculated by multiplying the consequence of failure for each asset with the likelihood of that asset failing. For an initial assessment, the likelihood and consequence of failure for the assets are a 1-5 rating based on:

- Consequence of failure: the 1-5 criticality rating for each asset (see criticality ratings in section 3.3.8).

- Likelihood of failure: the 1-5 age-based condition rating or 1-5 measured condition state that is based on physical condition assessments (see Table 3).

The current asset risk results are summarized in 3.3.7.

3.3.3 RISK MANAGEMENT

The Town has assessed the service and asset risks relevant to the Parks & Facilities Services and identified an appropriate action for each risk, as shown in Table 13.

Table 13: Risk level and action

Risk level	Recommended action
Very low	**Accept:** These risks can be tolerated. They should be assessed annually to determine whether the level of risk has changed.
Low	**Accept:** These risks can be tolerated. They should be assessed annually to determine whether the level of risk has changed.
Medium	**Monitor:** These risks require a balanced approach to management. They should be included in future risk mitigation plans and assessed at least annually to determine whether levels of risk have changed.
High	**Mitigate:** These risks should be prioritized. Existing mitigation programs and plans should be modified to include these risks, and where new risks are identified, update mitigation programs and plans. An assessment of the effectiveness of the mitigation programs and plans must be conducted annually and updated as appropriate.
Very High	**Take action:** These risks cannot be tolerated as they are critical to service delivery. Immediate corrective actions to mitigate risk should be taken. A risk level monitoring program should be developed to reduce or prevent potential reoccurrence of the risk.

3.3.4 CONNECTION OF SERVICE RISKS TO LEVEL OF SERVICE

The connection between service risks and level of service starts with looking at how the potential service risk events from each of the five categories affect the service commitments made in section 3.1, and defining a risk outcome (i.e. stating how the risk event would affect the service commitment). Figure 5 below shows the connection of risk to levels of service.
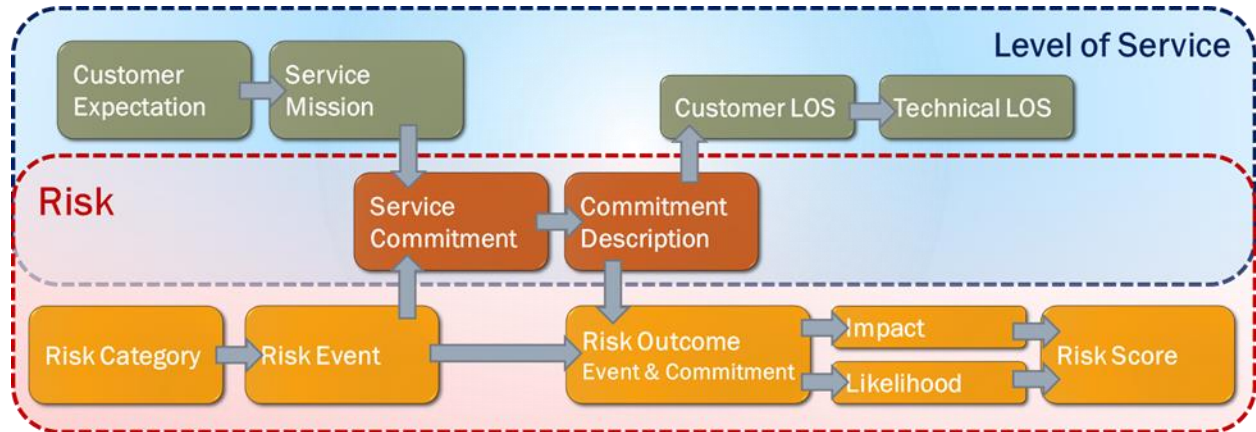
Figure 5: Connection of risk to level of Service

3.3.5 CURRENT SERVICE RISK

Table 14 reports the number of risks rated in each category and their respective risk scores (current). The risk ratings are also shown in a graphical format in Figure 6 below, as well as full detailed risk below split between each category.

Table 14: Service-Level Risk Ratings – Current (Unmitigated)

Risk Category	Risk Rating					Count
	Very Low	*Low*	*Medium*	*High*	*Very High*	
Planning	1	4	3	2	1	**10**
Management	0	0	1	1	1	**3**
Service Delivery	0	0	2	2	0	**4**
Physical Assets	0	0	2	0	0	**2**
Hazard – Environmental	0	0	3	4	0	**7**
Total	1	4	11	5	0	**26**
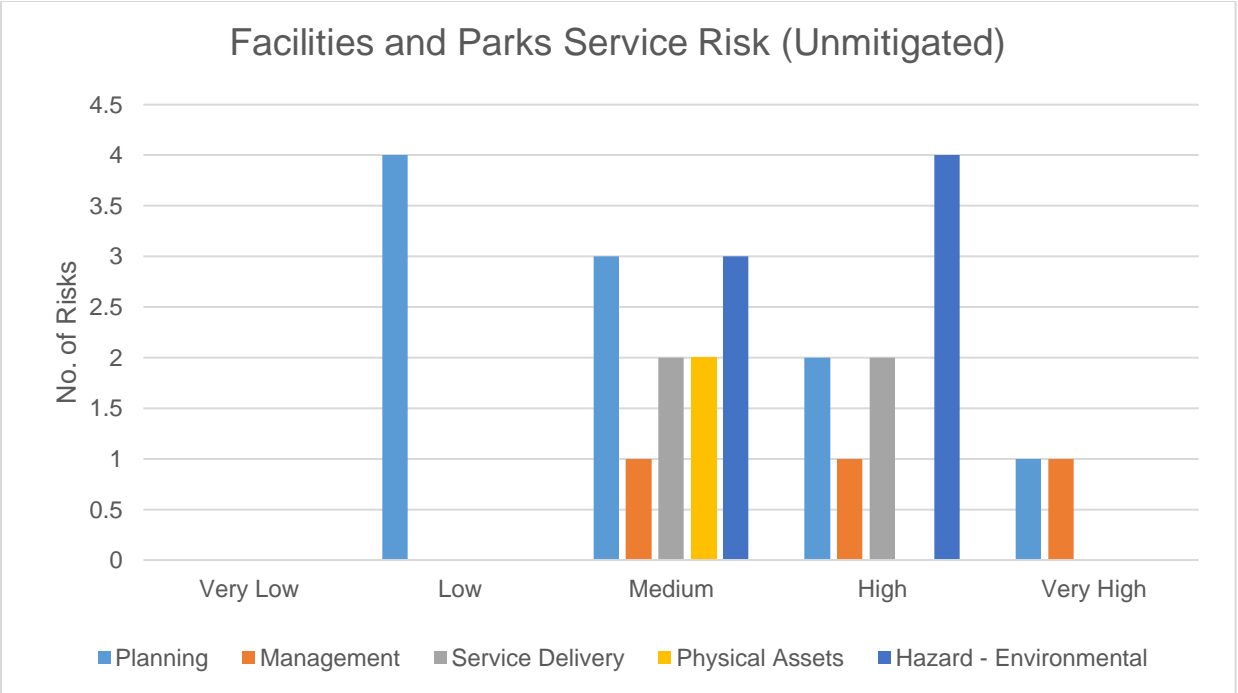
Figure 6: Service-level risk - Lincoln Facilities & Park Services

Planning Risks

The results of the risk ratings showed that ten (10) planning risks were identified and rated by the Town using a risk assessment tool, which can be updated as Lincoln continues to move towards asset management maturity. Of the ten (10) risks, four (4) were rated as low, three (3) were rated as medium, two (2) were rated as high and one (1) was rated as very high. See Table 15 below for full summary of risks and scoring rationale.

Table 15: Planning Risks – All Risks

Event (Planning)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Procurement Strategies	Availability	Providing facilities, parks and programs that meet users	Process performed through bid/tender process. Cost of construction increasing creating possible cost constraints	4 - High	5 - Almost Certain	20	Very High	Take Action	The cost for engineering and construction consultants have increased dramatically making many capital projects more expensive and possibly cost prohibitive.
Change in Legislation	Accessible	Providing accessible facilities for the customer	AODA legislation gets updated regularly. There are lot of older facilities that will need comply. Highest priorities are recognized.	3 - Medium	4 - Likely	12	High	Mitigate	AODA gets regular updates however sometimes not all facilities are affected or assets which lowers impact

Event (Planning)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Whole life Cost of Asset Ownership	Availability	Providing facilities, parks and programs that meet users needs and availability	Availability of facilities to have the all the features that users desire and expect. Example new museum.	3 - Medium	4 - Likely	12	High	Mitigate	With the current population growth trend. New residents are moving from larger population centres. This may result in increased expectations for services and features being provided
Data Integration	Availability	Providing facilities, parks and programs that meet users needs and availability	availability of data to make decisions that are informed and unbiased. Around programing and demands for service.	4 - High	2 - Unlikely	8	Medium	Monitor	Having data integrated is important for program planning and understanding the demand for different services. Current the processes in place are effective
Change in Legislation	Safe	Providing safe facilities for the customer		4 - High	2 - Unlikely	8	Medium	Monitor	With the current population growth trend. New residents are moving from larger population centres. This may result in increased in increased crime.

Event (Planning)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Increasing Costs for Service Delivery	Availability	Providing facilities, parks and programs that meet users needs and availability	Cost will increase but revenue is not inline with the increased cost. Does not have a service commitment but accessible in terms of access	3 - Medium	3 - Possible	9	Medium	Monitor	The cost to provide service has been increasing steadily due to inflation however the revenue from taxes and user fees have not been increasing at the same rate. There is limited appetite for increase fees or taxes to make up the difference
Changing Service Demand - Load	Clean	Providing useable and clean facilities	Increased demand on services as Lincoln is a growing community and often hear desire from users regarding cleanliness.	3 - Medium	2 - Unlikely	6	Low	Accept	population is growing, leading to more people using the facilities and a greater effort to keep clean
Procurement Strategies	Availability	Providing facilities, parks and programs that meet users needs and availability	Process performed through bid/tender process. In the context of maintenance staff, current process works and tenders received are meeting expectations	2 - Low	2 - Unlikely	4	Low	Accept	Currently not seeing an impact from inflation on the quality of the bids or bidders for maintenance contracts

Event (Planning)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Changing Strategies	Availability	Providing facilities, parks and programs that meet users needs and availability	Current Ontario changes for regional government amalgamation	3 - Medium	2 - Unlikely	6	Low	Accept	The current Ontario government has been considering dissolving the 2 tier municipal system which would lead to some of the services and assets provided/owned by the region being distributed to local municipalities. The feasibility studies around this have shown this is very expensive and now seems unlikely to happen
Organizational Staff Turnover	Availability	Providing facilities, parks and programs that meet users needs and availability		1 - Very Low	5 - Almost Certain	5	Low	Accept	There is a lot of turn over however it is mostly in frontline, temp, casual positions which are relatively easy to fill and train

Management Risks

The results of the risk ratings showed that three (3) management risks were identified and rated by the Town. Of the three (3) risks, one (1) was rated as medium, one (1) was rated as high and one (1) was rated as very high. See Table 16 below for full summary of risks and scoring rationale.

Table 16: Management Risks – All Risks

Event (Management)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Inflation	Availability	Providing facilities, parks and programs that meet users needs and availability	Current inflation pressures are impacting the ability to construct new facilities along with providing value for money for users.	4 - High	5 - Almost Certain	20	Very High	Take Action	As noted on the planning Page. Inflation pressures are Impacting the ability To build new facilities and the Cost of services.
Data	Safe	Providing safe facilities for the customer	Cyber security concerns regarding municipal data as more and more municipalities are targeted. Payment of contractors, procurement and ability to book facilities could be impacted	5 - Very High	3 - Possible	15	High	Mitigate	recent incidents of cyber attacks at other municipalities has raised concerns.
Reputation	Safe	Providing safe facilities for the customer	Parks and Facilities are often impacted by public impressions. It only takes a single significant incident	4 - High	2 - Unlikely	8	Medium	Monitor	Services provided by parts and facilities are public facing and incidents are as a result also very public. Safety is very important

			to impact the reputation						

Service Delivery Risks

The results of the risk ratings showed that four (4) service delivery risks were identified and rated by the Town. Of the four (4) risks, two (2) were rated as medium, and two (2) were rated as high. See Table 17 below for full summary of risks and scoring rationale.

Table 17: Service Delivery Risks – All Risks

Event (Delivery)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Stakeholder Consultation	Availability	Providing facilities, parks and programs that meet users needs and availability	Despite efforts to engage community, often less than desired participation achieved	3 - Medium	4 - Likely	12	High	Mitigate	Municipal processes require public consultation however uptake from the public appears limited to a select number of people willing to participate. This means that some possibly important opinions are not being heard
IT Systems	Safe	Providing safe facilities for the customer	IT systems are adequate for cyber security concerns in learning from other incidents.	5 - Very High	3 - Possible	15	High	Mitigate	Similar rational to data management risk
Asset Design	Availability	Providing facilities, parks and programs that meet users needs and availability	Current designs may not meet future needs. Community is growing	4 - High	2 - Unlikely	8	Medium	Monitor	the population of the Town is growing and changing often with people moving from large city centers which have different expectations for service
IT Systems	Availability	Providing facilities, parks and programs that meet users needs and availability	Some software systems such as CMMS is very rudimentary. Leading to basic and difficult to maintain track practices	3 - Medium	3 - Possible	9	Medium	Monitor	data analysis and tracking is difficult and this could lead to concerns around understanding asset replacement and O&M costs

Physical Asset Risks

The results of the risk ratings showed that two (2) physical asset risks were identified and rated by the Town. Both risks were rated as medium. See Table 18 below for full summary of risks and scoring rationale.

Table 18: Physical Asset Risks

Event (Physical)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Asset Failures	Well Maintained	Providing well maintained facilities to always ensure reliability	Processes in place to handle asset failures	4 - High	2 - Unlikely	**8**	Medium	Monitor	Staff are able to address asset failures in a timely manner.
Critical Asset Investment	Safe	Providing safe facilities for the customer	Currently working on capital planning to replace there are some assets that need replaced that are still operating	4 - High	2 - Unlikely	**8**	Medium	Monitor	Currently the capital process allows for capital asset replacement before assets are beyond useful life.

Hazard & Environmental Risks

The results of the risk ratings showed that seven (7) hazard & environmental risks were identified and rated by the Town. Of the seven (7) risks, three (3) were rated as medium and four (4) were rated as high. See Table 19 below for full summary of risks and scoring rationale.

Table 19: Hazard-Environmental Risks – All Risks

Event (Hazard-Environmental)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Extreme weather events - heat wave	Safe	Providing safe facilities for the customer	Some facilities are used as cooling facilities for general public during heat wave	4 - High	2 - Unlikely	8	Medium	Monitor	if facilities were not available people could suffer injuries during heat waves, however this is unlikely since they are equipped and ready for such instances
Extreme weather events - heat wave	Safe	Providing safe facilities for the customer	Staff protection during these events to ensure that staff are not injured	4 - High	2 - Unlikely	8	Medium	Monitor	Staff working in parks or outside during heat waves need protection. Procedures are in place so injury unlikely
Flooding	Safe	Providing safe facilities for the customer	flood damage to faculties	4 - High	2 - Unlikely	8	Medium	Monitor	Currently most over land flooding affects the transportation assets. The facilities are not experiencing floods, they could happen however. Some times the parks assets experience overland flooding which can damage some of the sports fields however these to date have been minimal
Extreme weather events - high winds	Safe	Providing safe facilities for the customer	Could lead to increased service calls to clean up parks and safety risk of falling branches. Also power outages for some facilities without generators.	4 - High	4 - Likely	16	High	Mitigate	Wind storms are concerns for Lincoln and trees in parks can impact park use, they could injure the public and staff. Some facilities could lose power but many facilities have back up generators

Event (Hazard-Environmental)	Service Commitment	Service Commitment Description	Outcome	Impact	Likelihood	Risk Score	Risk Rating	Strategy	Scoring Rationale
Extreme weather events - extreme precipitation events	Safe	Providing safe facilities for the customer	See above. Similar for all weather events	4 - High	4 - Likely	**16**	High	Mitigate	See above. Similar for all weather events.
Extreme weather events - ice storms	Safe	Providing safe facilities for the customer	See above. Similar for all weather events	4 - High	4 - Likely	**16**	High	Mitigate	See above. Similar for all weather events.
Flooding	Safe	Providing safe facilities for the customer	flood damage to lakefront properties.	3 - Medium	4 - Likely	**12**	High	Mitigate	Parks like Charles Daley Park along with general green space along Lake Ontario experience flooding and flood damage

3.3.6 MITIGATED SERVICE RISK

Table 20 shows the number of risks rated in each category and their respective mitigated risk scores. The results of the mitigated risk ratings are also shown in a graphical format in Figure 7.

These mitigated risk scores will be realized when the relevant mitigation measures are funded and implemented. Until then, the current risk rating applies. Details of proposed mitigation measures are given in section 3.3.6.1 (Table 21).

Table 20: Service Level Risks – Future (Mitigated)

| Risk Category | Risk Rating | | | | | Count |
	Very Low	Low	Medium	High	Very High	
Planning	0	4	6	0	0	10
Management	0	0	3	0	0	3
Service Delivery	0	1	3	0	0	4
Physical Assets	0	0	2	0	0	2
Hazard – Environmental	0	0	7	0	0	7
Total	0	5	21	0	0	26
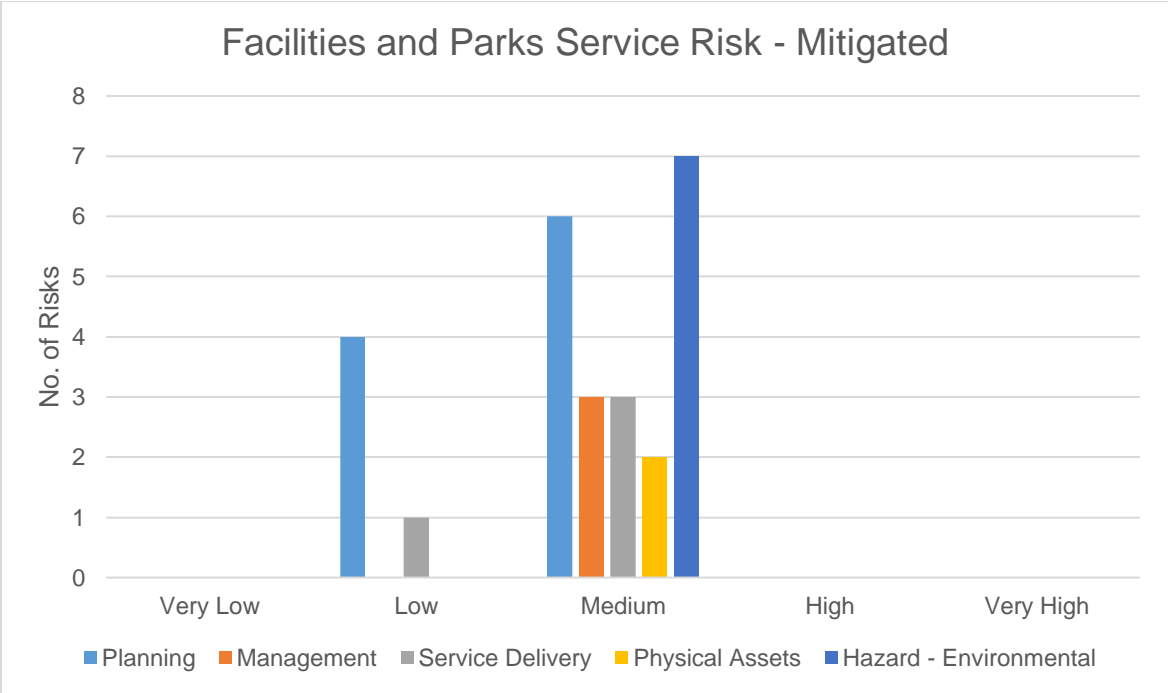
Figure 7: Mitigated service-level risk - Lincoln Facilities & Park Services

3.3.6.1 DETAILED SERVICE RISK RESULTS – MITIGATED

Planning Risks – Mitigated

There are three (3) risks within planning, which were reduced from high and very high to medium. See Table 21 below for full summary of mitigation measures.

Table 21: Planning Risks – Mitigation Measures

Event	Service Commitment	Outcome	Risk Rating	Strategy	Scoring Rationale	Mitigation Measures	Residual Impact	Residual Likelihood	Residual Risk Score	Residual Risk Rating
Procurement Strategies	Availability	Process performed through bid/tender process. Cost of construction increasing creating possible cost constraints	Very High	Take Action	The cost for engineering and construction consultants have increased dramatically making many capital projects more expensive and possibly cost prohibitive.	Improve/expand capital planning process and prioritize/budget appropriately. Including extending the planning horizon. For example, from 2 years to 3 years.	2 - Low	4 - Likely	8	Medium
Change in Legislation	Accessible	AODA legislation gets updated regularly. There are lot of older facilities that will need comply. Highest priorities are recognized.	High	Mitigate	AODA gets regular updates however sometimes not all facilities are affected or assets which lowers impact	Continue to monitor government action with regards to accessibility and primitively create strategies to adapt effected facilities.	2 - Low	4 - Likely	8	Medium
Whole life Cost of Asset Ownership	Availability	Availability of facilities to have the all the features that users desire	High	Mitigate	With the current population growth trend. New residents are moving from larger population centres.	Track facility and program growth to understand which services need to be increased/prioritized.	2 - Low	4 - Likely	8	Medium

Event	Service Commitment	Outcome	Risk Rating	Strategy	Scoring Rationale	Mitigation Measures	Residual Impact	Residual Likelihood	Residual Risk Score	Residual Risk Rating
		and expect. Example new museum.			This may result in increased expectations for services and features being provided	Track customer feedback and analyze to understand largest needs.				

Management Risks – Mitigated

There are two (2) risks within management, which were reduced from high and very high to medium. See Table 22 below for full summary of mitigation measures.

Table 22: Management Risks – Mitigation

Event	Service Commitment	Outcome	Risk Rating	Strategy	Scoring Rationale	Mitigation Measures	Residual Impact	Residual Likelihood	Residual Risk Score	Residual Risk Rating
Inflation	Availability	Current inflation pressures are impacting the ability to construct new facilities along with providing value for money for users.	Very High	Take Action	As noted on the planning page. Inflation pressures are impacting the ability to build new facilities and the cost of services	Improve/expand capital planning process and prioritize/budget appropriately. Including extending the planning horizon. For example, from 2 years to 3 years.	2 - Low	4 - Likely	8	Medium
Data	Safe	Cyber security concerns regarding municipal data as more and more municipalities are targeted. Payment of contractors, procurement and ability to book facilities could be impacted	High	Mitigate	recent incidents of cyber attacks at other municipalities has raised concerns.	More training, additional security measures. For examples Two factor authentication. Also new hires to have the necessary training and licenses, if applicable.	5 - Very High	2 - Unlikely	10	Medium

Delivery Risks – Mitigated

There are only two (2) risks within delivery, which were reduced from high to low and medium. See Table 23 below for full summary of mitigation measures.

Table 23: Delivery Risks – Mitigation

Event	Service Commitment	Outcome	Risk Rating	Strategy	Scoring Rationale	Mitigation Measures	Residual Impact	Residual Likelihood	Residual Risk Score	Residual Risk Rating
Stakeholder Consultation	Availability	Despite efforts to engage community, often less than desired participation achieved	High	Mitigate	Municipal processes require public consultation however uptake from the public appears limited to a select number of people willing to participate. This means that some possibly important opinions are not being heard	Have multiple facet public engagement to engage more user types.	3 - Medium	2 - Unlikely	6	Low
IT Systems	Safe	IT systems are adequate for cyber security concerns in learning from other incidents.	High	Mitigate	Similar rational to data management risk	Similar as data management mitigation measure	5 - Very High	2 - Unlikely	10	Medium

Physical Asset Risks – Mitigated

There are no mitigation risks within physical assets as only medium risks were currently identified.

Hazard-Environmental Risks – Mitigated

There are four (4) risks within hazard-environmental, which were reduced from high to medium. See Table 24 below for full summary of mitigation measures.

Table 24: Hazard-Environmental Risks – Mitigation

Event	Service Commitment	Outcome	Risk Rating	Strategy	Scoring Rationale	Mitigation Measures	Residual Impact	Residual Likelihood	Residual Risk Score	Residual Risk Rating
Extreme weather events - high winds	Safe	Could lead to increased service calls to clean up parks and safety risk of falling branches. Also power outages for some facilities without generators	High	Mitigate	Windstorms are concerns for Lincoln and trees in parks can impact park use, they could injure the public and staff. Some facilities could lose power, but many facilities have back up generators.	Monitor weather forecast and increase staff resources/shifts after severe weather events	2 - Low	4 - Likely	8	Medium
Extreme weather events - extreme precipitation events	Safe	see above	High	Mitigate	similar for all weather events.	Monitor weather forecast and increase staff resources/shifts after severe weather events	2 - Low	4 - Likely	8	Medium
Extreme weather events - ice storms	Safe	see above	High	Mitigate	similar to wind events.	Monitor weather forecast and increase staff resources/shifts after severe weather events	2 - Low	4 - Likely	8	Medium
Flooding	Safe	flood damage to lakefront properties.	High	Mitigate	Parks like Charles Daley Park along with general green space along Lake Ontario experience flooding and flood damage	Monitor weather forecast and increase staff resources/shifts after severe weather events. Invest in Emergency relief fund for future damages.	2 - Low	4 - Likely	8	Medium

3.3.7 CURRENT ASSET RISK

Table 25 summarizes the current risk profile of the Town's Park & Facilities Services assets by replacement value. See section 2.3 for breakdown of type and quantity of assets. Most of the Town's Park & facilities assets (82.3% by value) are rated as medium or lower risk, with the remaining 17.7% rated as high or very high risk. The Town's assets are split fairly evenly between the criticality ratings.

Table 25: Risk Profile, by Replacement Value

Asset Group	Current Replacement Value [$'000][2]				
	Very Low	Low	Medium	High	Very High
Buildings	$14,659	$5,614	$48,748	$17,307	$62
Parks	$307	$12,592	$1,424	0	0
Cemeteries	0	0	$3,800	0	0
Playing fields	$1,200	0	$5,899	0	0
Comfort/Picnic	$2,351	$19	$2,100	0	0
Recreational Parks	0	0	$1,497	$2,818	0
Pools	0	0	$581	$958	0
Parking	0	0	$2,788	$1,588	0
Bridges	0	0	$287	0	$454
Forest	0	$4,035	0	0	0
Total	*$18,518*	*$22,262*	*$67,126*	*$22,672*	*$516*
Percent of Grand Total	*14.1%*	*17.0%*	*51.2%*	*17.3%*	*0.4%*

Figure 8 illisrtrates the asset risk profile graphillcay, which illustrates the park & facilities assets fall under the medium risk rating (by value).
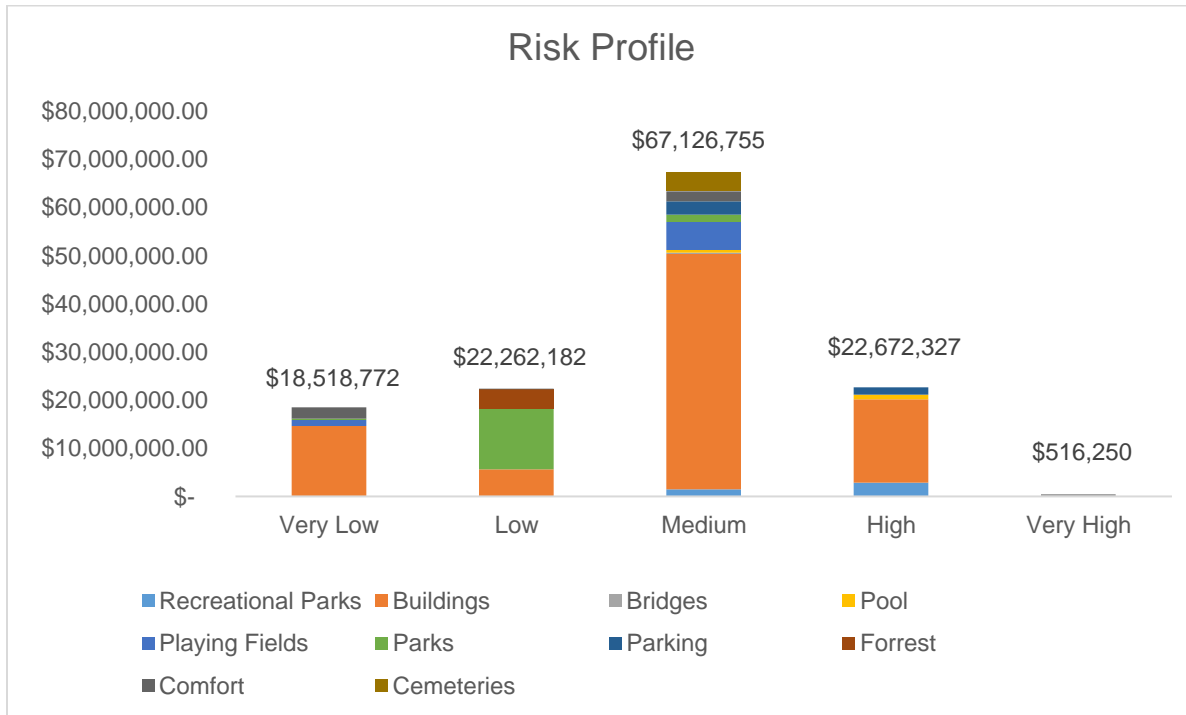
Figure 8: Risk Profile, by Replacement Value

3.3.8 *ASSET CRITICALITY*

The criticality of the asset or component of an asset is defined by its effect on the operation of an asset system if the asset failed. The assets in the scope of this asset management plan have been rated for criticality using the criteria in Table 26.

Table 26: Criticality criteria

Asset Class/Type	Criticality Rating
Bridges - Bridges **Buildings –** Substructure	Leve 5 – Very High
Buildings – Services & Special Construction, **Pool –** Swimming Pool, Splash Pads **Recreational Parks** - Outdoor Rinks, Skate Park, Pump Track, Playgrounds	Level 4 – High
Buildings – Shell	Level 3 – Medium

Asset Class/Type	Criticality Rating
Parking – Parking, Parking Lots **Comfort/Picnic** - Comfort stations	
Buildings - Building Sitework, **Comfort/Picnic –** Pavilions/Shade Structures, **Parks –** Pathways, Street/Square **Recreational Parks –** Baseball, Soccer, Tennis, Basketball **Cemeteries –** Cemetery	Level 2 – Low
Buildings – Interiors, Equipment & Furnishings **Comfort/Picnic –** Picnic Shelters, Tables, BBQ, Benches, Waste Containers, Signage, Bike Racks, Tree Cage, **Parks –** Parks, Bike Tracks, Trails, Off Leash Dog Park, Flower Beds	Level 1 – Very Low

3.3.9 RISK IMPROVEMENT PRIORITIES

Table 27 shows the improvements priority related to risk.

Table 27: Risk improvement tasks

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
11	3.3	Risk	Consider an advanced risk framework that builds on the basic risk rating to consider other aspects of consequence in addition to service delivery and analyses failure likelihood in more detail including failure on functionality, performance, and capacity as well as physical failure, to derive a more detailed risk analysis	Low
12	3.3	Risk	Regularly update and revise service level risk register, as risk levels may change over time and new risk may be identified.	Medium

3.4 RESOURCE NEEDS

This section compares available resource demand versus capacity and identifies whether there is enough capacity for the existing staff to take on new tasks or if additional resources are required.

3.4.1 EXISTING CAPACITY AND NEEDS

The first step in identifying resource needs is to understand the current available hours for all staff and volunteers and what activities/resource types are currently undertaken as part of the Lincoln Parks & Facilities Services. For reporting purposes, the activities/resource types are grouped into the following categories:

- Senior Leadership
- Manager
- Supervisor
- Administration
- Operations
- Coordinator

Table 28 below shows the number of available hours and demand hours for full-time employees and volunteer staff. These numbers were derived during a workshop with the Town of Lincoln staff and an evaluation of required activities to deliver current levels of service by each group were identified.

Table 28: Resources for Parks & Facilities

Resource Name	Resource Type	Number of Positions	Months Per Year	Total Annual Available Hrs	Total Annual Demand Hrs
Director of Community Services	Senior Leadership	1	12	1,645	2,139
Manager, Public and Open Spaces	Manager	1	12	1,645	2,139
Customer Service Administration (Town Hall)	Administration	1	12	1,645	3290
Landscape Architect	Operations	1	12	1,645	1645
Customer Service Representatives	Coordinator	12	12	13,536	13,536
Cultural Development Coordinator	Coordinator	1	12	1,645	1,645
Exhibitions and Collections Curator	Coordinator	1	12	1,645	1,645
Cultural Events Program Administrator	Administration	1	12	1,645	1,645
Cultural Interpreter	Operations	1	12	1,645	1,645
Recreation Coordinator - Sports	Coordinator	1	12	1,645	1,645
Recreation Coordinator - Sports	Coordinator	1	12	1,645	1,645
Camp Staff & Program Instructors (S)	Coordinator	29	2	32,712	32,712
Pool Staff & Program Instructors (S)	Coordinator	26	3	29,328	29,328
General Maintenance Supervisor	Supervisor	1	12	1,880	2,820
Parks & Open Spaces Supervisor	Supervisor	1	12	1,880	2,820
Labourer (Forestry)	Operations	1	12	1,880	1,880
Horticulturalist	Operations	1	12	1,880	1,880
Arena/Parks Operators	Operations	6	12	11,280	11,280
Labourers (Mtn)	Operations	2	12	3,760	3,760
Labourer (PT)	Operations	20	4	2,200	2,200

Resource Name	Resource Type	Number of Positions	Months Per Year	Total Annual Available Hrs	Total Annual Demand Hrs
Labourers (Turf)	Operations	3	12	5,640	5,640
Cemetery Operator	Operations	1	12	1,880	1,880
Arena/Parks Staff (S)	Coordinator	9	6	4,860	4,860
Skate Patrollers	Coordinator	6	7	4,464	4,464
Total		**128**		**133,630**	**138,142**

An overall variance of 4,512 hours per year were identified, which are required to meet the current levels of service.

3.4.2 COMPARING RESOURCE NEEDS AND CAPACITY

A comparison was made between required resources to deliver the level of service and current resource availability.

The resource demand shown in Figure 9 indicates that resources for Parks & Facilities are largely met, with the major resources such as operations and coordination staff are met to ensure the front line current levels of services are maintained. However, the other activities required to deliver service levels that are assigned to the Senior Leadership, Manager and Supervisors cannot be completed with the standard available working hours.
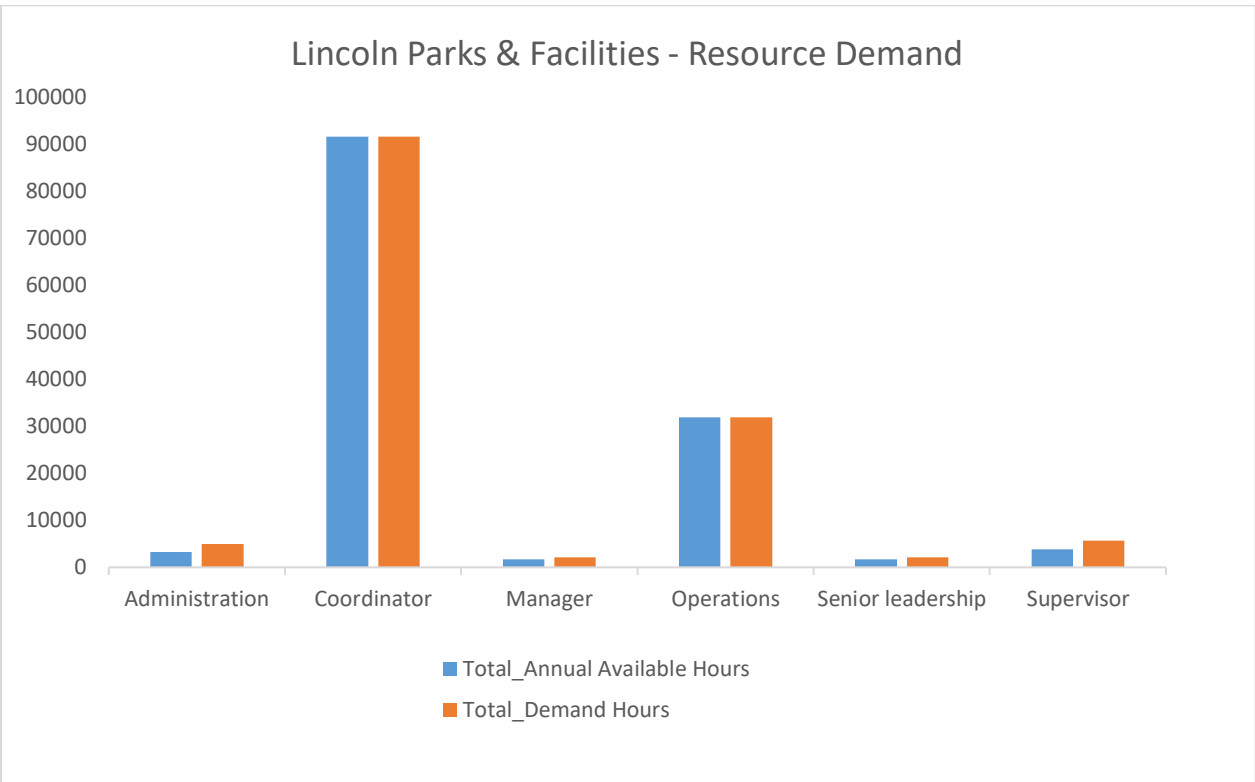
Figure 9: Lincoln Parks & Facilities Services – Resource Demand by Resource Category

Figure 10 below shows a more detailed breakdown of the roles which are requiring additional resources. The Director of Community Services and Manager, Public and Open Spaces have approximately 30% increase for demand hours. The demand hours for the Customer Service Administration role are estimated at 100%, as well as a 50% increase in demand hours for both Supervisor roles. This indicates that the levels of service are at risk of not being met, which can also be impacted by staff absences due to vacation, sickness, training, or loss of staff due to change of employment.
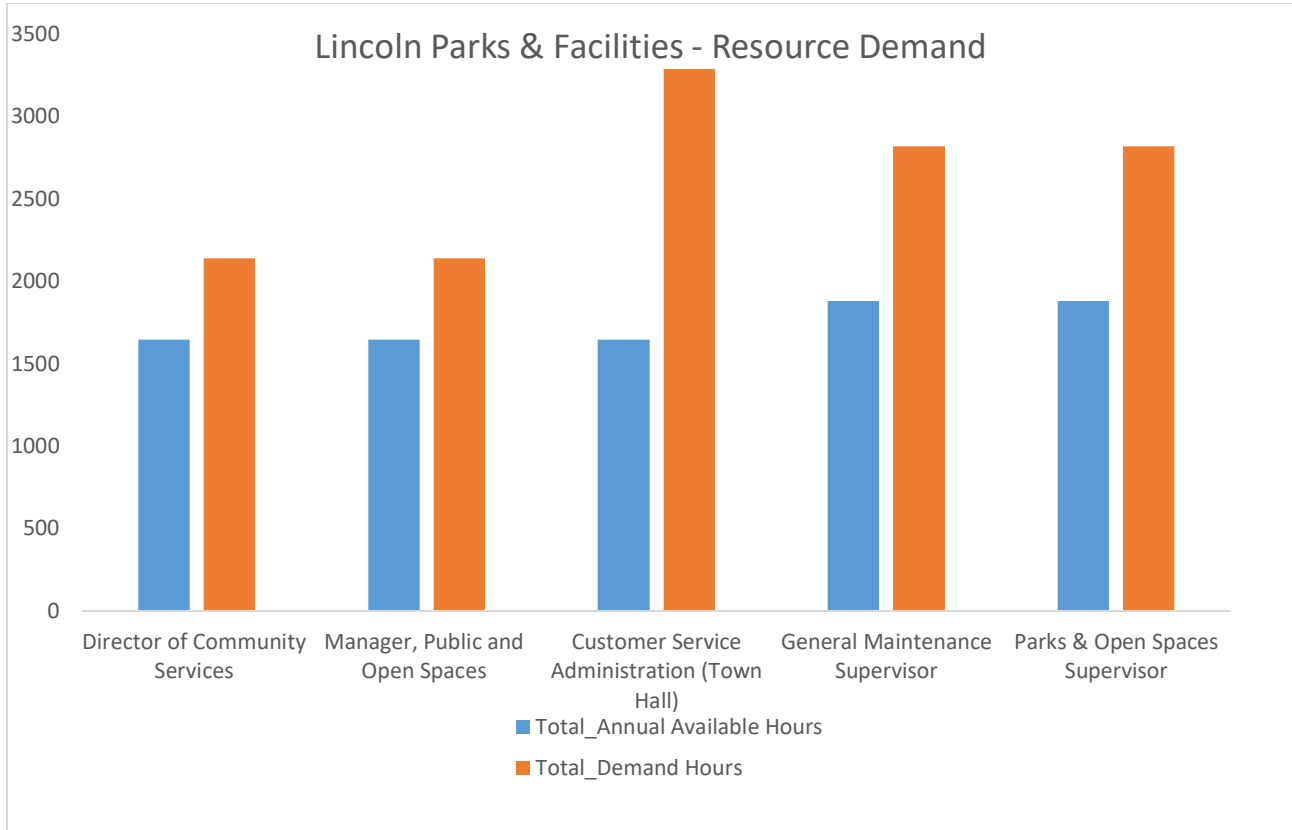
Figure 10: Lincoln Parks & Facilities Services – Resource Demand by Resource Name

There are several options that could be investigated to resolve this gap including;

- Obtain additional (Supervisor & Administration roles) resources and reassign activities

- Outsource some activities under contract

- Share activities with neighbouring authorities or agencies

- Reassess activities and reduce resource demand if possible without increasing risk of not meeting required level of service

- Reduce service level (usually this is not desired, and reduction is limited under legislation)

Figure 11 below shows the demand detail for each activity type. The majority of the resourcing needs is for coordinators (68%) and operations staff (24%).
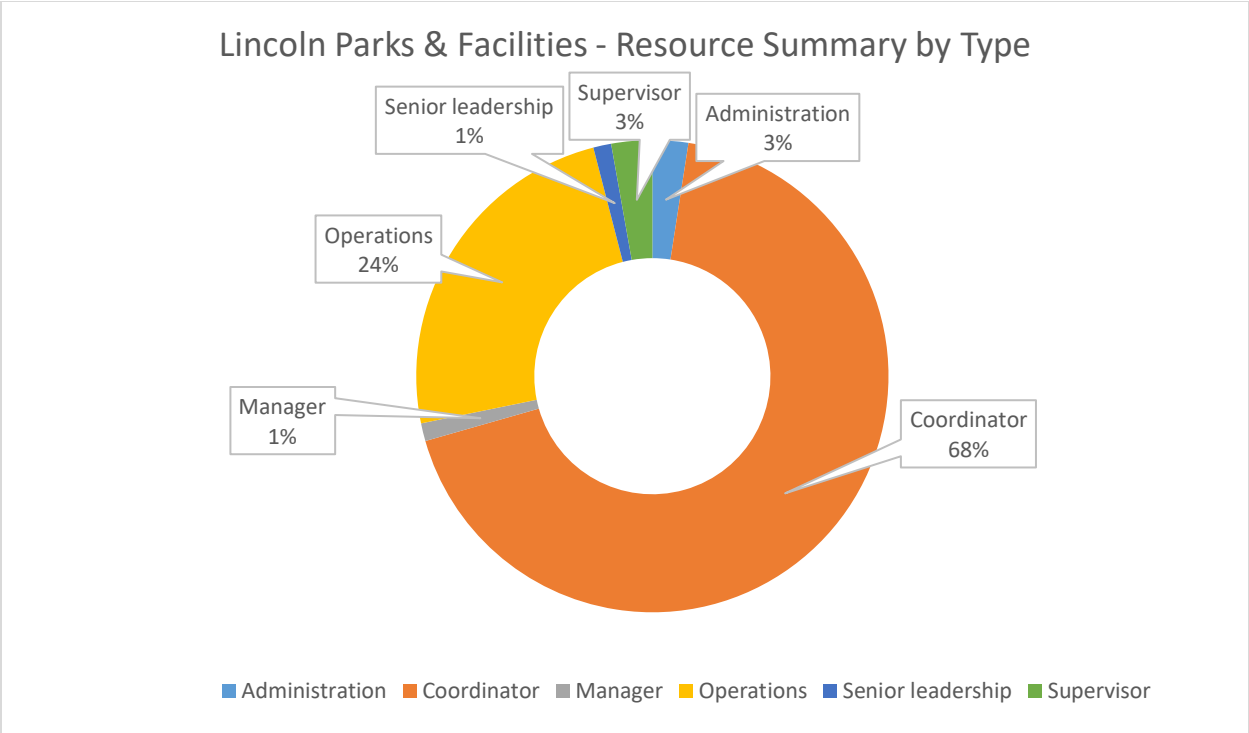
Figure 11: Summary of Resource Summary by Type

3.4.3 RESOURCE IMPROVEMENT PRIORITIES

Table 29 shows the improvement priorities related to resources.

Table 29: Resource improvement priorities

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
13	3.4	Resources	Review the hours spent for each of the major activities and separate out hours to detail resources required at task level to support the current levels of service in each category over a year.	Medium
14	3.4	Resources	Resolve gaps in resource requirements to ensure levels of service can be consistently met.	High

4 FUTURE READY

4.1 DEMAND MANAGEMENT

Demand management refers to the process of forecasting and managing the demand for assets and resources. Drivers typically affecting demand include items such as population change, regulations, changes in demographics, climate change, and increase in commercial or industrial developments.

The Town has assessed the following drivers for the parks & facilities services:

- Legislative change
- Population growth
- Aging or disabled population growth
- Increase in commercial/industrial development
- Cultural/society change (e.g., changing demographics)

The drivers are assessed for impacts on the assets that provide the parks & facilities services and the ability of the Town to continue to provide the required level of service.

Lincoln is one of the fastest growing municipalities in Niagara. During the 25 years between 1986 and 2011 the population of the Town increased by about 8,100 people or at an annual rate of 1.4%. Currently, the Town of Lincoln has a population of ~25,000 and is expected to grow by 50% by 2031. Therefore, the impact of population increase on service demand will continue to require monitoring for the foreseeable future.

4.1.1 CURRENT DEMAND RISK (UNMITIGATED)

Table 30 reports the number of risks rated in each demand category and their respective risk scores (current). The risk ratings are also shown in a graphical format in Figure 12.

Table 30: Initial Demand Assessment Results (Unmitigated)

Demand Driver	Very Low	Low	Medium	High	Very High	Count
Increase in Population	-	-	2	1	-	**3**
Social/Cultural Change	-	-	1	1	-	**2**
Aging Population	-	-	1	-	-	**1**
New Technology	-	-	2	-	-	**2**
Climate Change Impact	-	-	-	1	-	**1**
Change in user fees/taxation	-	-	-	3	-	**3**

Demand Driver	Very Low	Low	Medium	High	Very High	Count
Total	0	0	6	6	0	12
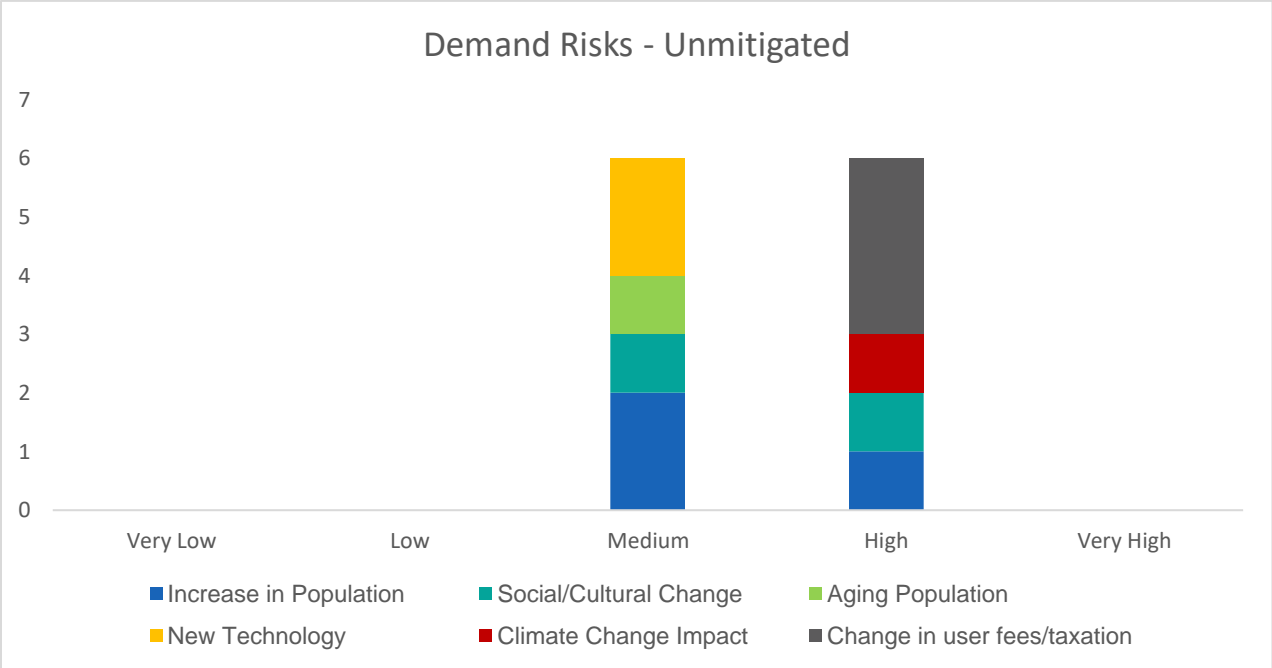
Figure 12: Unmitigated Demand Risks

The six (6) high demand risks are associated with increase in population, social/cultural change, climate change impact and change in user fees/taxation that will lead to increase in demand for service. This growth will likely require improved recreation facilities, additional staff/training, increase in user fees, and increase in security, cleaning, maintenance in order to maintain the current levels of service. See Table 31 for full summary of unmitigated demand risks., which were identified by the town using the demand management resource tool. The tool can be used to update the risks for future iterations of the asset management plan.

Table 31: Demand Risks - Unmitigated

Demand / Growth Driver	Demand / Growth Event	Description / Comment	HSE Impact	Asset Impact	Likelihood	Demand Impact	Demand Score	Demand Rating	Demand Strategy
Increase in Population	Improved Recreation Facilities	Increase in population drives the need for improved recreation facilities. Higher expectations from new residents/visitors. For example - indoor swimming pool.	2 - Low	5 - Very High	3 - Possible	**5 - Very High**	**15**	High	Mitigate
Climate Change Impact	Increased extreme weather events	Increase in high winds, flooding, heat waves. This could require additional assets, training, and resources to maintain current level of service	4 - High	3 - Medium	4 - Likely	**4 - High**	**16**	High	Mitigate
Change in user fees/taxation	Improved Recreation Facilities	Change in user fees/taxation, will create user demand for improved facilities. Expectation of more higher quality facilities.	2 - Low	3 - Medium	5 - Almost Certain	**3 - Medium**	**15**	High	Mitigate
Change in user fees/taxation	Increase in demand for programming	Change in user fees/taxation, will create user demand for more programming. For example, courses/classes/workshops etc.	2 - Low	3 - Medium	5 - Almost Certain	**3 - Medium**	**15**	High	Mitigate
Change in user fees/taxation	Increase in Demand for Service	Change in user fees/taxation, will create user demand for improved facilities. Expectation of higher levels of service. Cleaning, maintenance, operations etc.	2 - Low	3 - Medium	5 - Almost Certain	**3 - Medium**	**15**	High	Mitigate
Social/Cultural Change	Increase in damage/vandalism	Change in park, facilities users may increase damage/vandalism. Need for additional security, cleaning, maintenance etc.	3 - Medium	3 - Medium	4 - Likely	**3 - Medium**	**12**	High	Mitigate

Demand / Growth Driver	Demand / Growth Event	Description / Comment	HSE Impact	Asset Impact	Likelihood	Demand Impact	Demand Score	Demand Rating	Demand Strategy
Increase in Population	Increase in Demand for Service	Increase in population drives demand for service increasing the amount of parks services and programs used/required. This could increase the need for cleaning, maintenance etc.	3 - Medium	3 - Medium	3 - Possible	**3 - Medium**	9	Medium	Monitor
Increase in Population	Increased Facility Capacity	Increase in population requires more municipal hires leading to increase in space requirements for employees.	3 - Medium	2 - Low	3 - Possible	**3 - Medium**	9	Medium	Monitor
Social/Cultural Change	Changes to Towns Demographic	Increase of younger people and families in area requiring access to facilities and recreation parks. This could require additional facilities, recreational parks and resources to maintain current levels of service.	1 - Very Low	3 - Medium	3 - Possible	**3 - Medium**	9	Medium	Monitor
Aging Population	Increase in aged or disabled users	Mobility issues for aged or disabled users increases need for accessible facilities, parking spaces etc.	3 - Medium	3 - Medium	3 - Possible	**3 - Medium**	9	Medium	Monitor
New Technology	Demand to increase technology	More programs may require more online/booking capacity. This could require additional software, cyber security, training of town staff etc.	2 - Low	3 - Medium	3 - Possible	**3 - Medium**	9	Medium	Monitor
New Technology	Demand to increase technology	Increase in the need for EV chargers. More operations, inspections needed.	1 - Very Low	2 - Low	5 - Almost Certain	**2 - Low**	10	Medium	Monitor

4.1.2 MITIGATED DEMAND RISK

Table 32 shows the number of demand drivers in each category and their respective mitigated risk ratings. The results of the mitigated demand risk ratings are also shown in a graphical format in Figure 13.

Table 32: Demand Assessment Results (Mitigated)

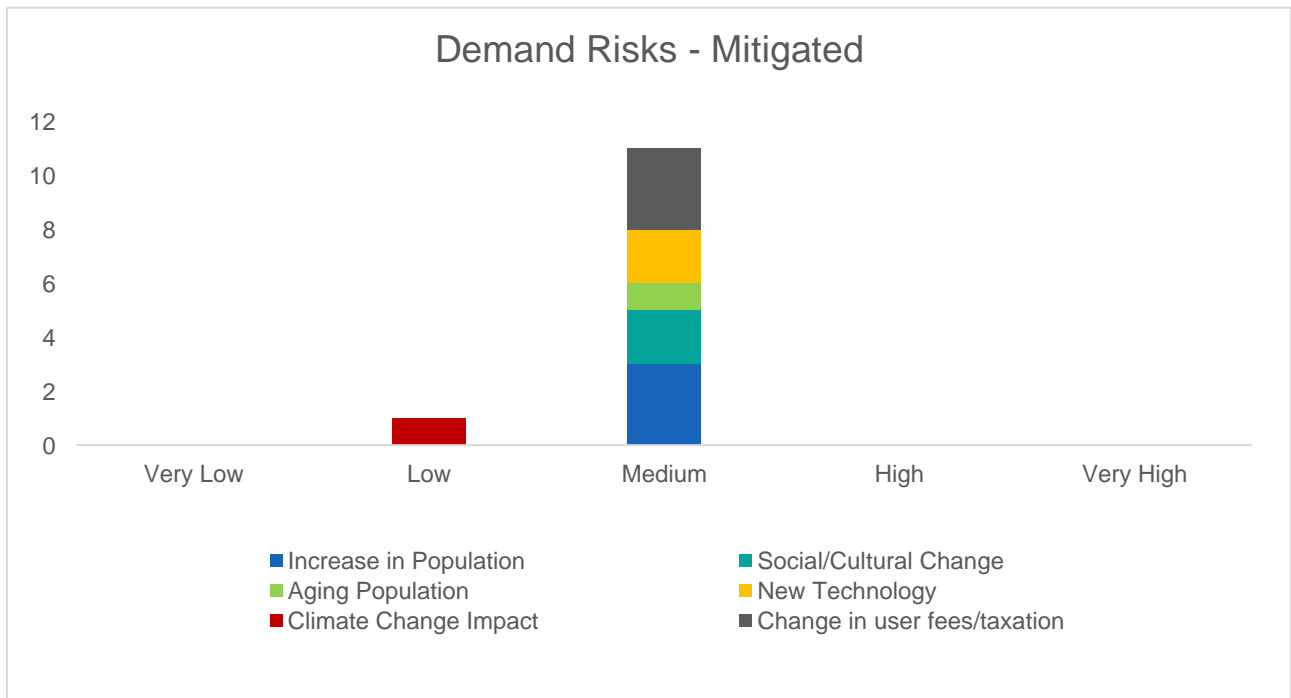| Demand Driver	Very Low	Low	Medium	High	Very High	Count
Increase in Population	-	-	3	-	-	**3**
Social/Cultural Change	-	-	2	-	-	**2**
Aging Population	-	-	1	-		**1**
New Technology	-	-	2	-	-	**2**
Climate Change Impact	-	1	-	-	-	**1**
Change in user fees/taxation	-	-	3	-	-	**3**
Total	**0**	**1**	**11**	**0**	**0**	**12**

Figure 13: Demand Risks – Mitigated

The mitigation measures for the six (6) high risks are summarized in Table 33 below.

Table 33: Demand Risks – Mitigated

Demand / Growth Driver	Demand / Growth Event	Description / Comment	Demand Rating	Demand Strategy	Demand Mitigation Measures	Residual Impact	Residual Likelihood	Residual Demand Score	Residual Demand Rating	Residual Demand Strategy
Increase in Population	Improved Recreation Facilities	Increase in population drives the need for improved recreation facilities. Higher expectations from new residents/visitors. For example - indoor swimming pool.	High	Mitigate	Planning/anticipation, following trends. Evidenced based decision making. Training and courses.	3 - Medium	3 - Possible	9	Medium	Monitor
Climate Change Impact	Increased extreme weather events	Increase in high winds, flooding, heat waves. This could require additional assets, training, and resources to maintain current level of service	High	Mitigate	Planning (& preparedness) ahead of time. For example eclipse, providing glasses. Town has EOC (Emergency Operations Centre) in the event of extreme evens.	3 - Medium	2 - Unlikely	6	Low	Accept
Change in user fees/taxation	Improved Recreation Facilities	Change in user fees/taxation, will create user demand for improved facilities. Expectation of more higher quality facilities.	High	Mitigate	Planning, communication, reviewing levels of services. Promote current services. Parks and Rec master plan which records short falls. Process on identifying demand. Staff recommends, council ultimately approves.	3 - Medium	3 - Possible	9	Medium	Monitor
Change in user fees/taxation	Increase in demand for programming	Change in user fees/taxation, will create user demand for more programming. For example, courses/classes/workshops etc.	High	Mitigate	Planning, communication, reviewing levels of services. Promote current services. Parks and Rec master plan which records short falls. Process on identifying	3 - Medium	3 - Possible	9	Medium	Monitor

Demand / Growth Driver	Demand / Growth Event	Description / Comment	Demand Rating	Demand Strategy	Demand Mitigation Measures	Residual Impact	Residual Likelihood	Residual Demand Score	Residual Demand Rating	Residual Demand Strategy
			High		demand. Staff recommends, council ultimately approves.				Medium	
Change in user fees/taxation	Increase in Demand for Service	Change in user fees/taxation, will create user demand for improved facilities. Expectation of higher levels of service. Cleaning, maintenance, operations etc.	High	Mitigate	Planning, communication, reviewing levels of services. Promote current services. Parks and Rec master plan which records short falls. Process on identifying demand. Staff recommends, council ultimately approves.	3 - Medium	3 - Possible	9	Medium	Monitor
Social/Cultural Change	Increase in damage/vandalism	Change in park, facilities users may increase damage/vandalism. Need for additional security, cleaning, maintenance etc.	High	Mitigate	Improved programming for certain ages. Planning for anti-vandal equipment/materials. Scheduled inspection/maintenance.	3 - Medium	3 - Possible	9	Medium	Monitor

4.1.3 DEMAND MANAGEMENT IMPROVEMENT PRIORITIES

Table 34 shows the improvement priority related to resources.

Table 34: Demand improvement priorities

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
15	4.1	Demand management	Annually review and revise demand risk to reflect when mitigation measures have been implemented and if additional demand drivers are identified.	Low

4.2 RESILIENCY AND ADAPTATION

The resilience of our critical infrastructure is vital to our customers and the services we provide. To adapt to changing conditions and grow over time we need to understand our capacity to respond to possible disruptions and be positioned to absorb disturbance and act effectively in a crisis to ensure continuity of service. Resilience is built on aspects such as response and recovery planning, financial capacity and crisis leadership.

4.2.1 GROWTH / DEMAND MANAGEMENT

Asset management planning must consider potential future impacts on the services being delivered. Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets, providing new assets to meet demand, and demand management. Demand management practices can include non-asset solutions (i.e. education and policy changes), insuring against risks, and managing failures.

In order to manage growth, the Town can investment more into service areas and/or reduce the need for investment by considering the following strategies:

- **Extending service lives of assets through better maintenance** – Targeted preventative maintenance, and operational practices that preserve the asset can extend an assets lifespan and reduce long term costs.
- **Earlier interventions with lower lifecycles costs** – Early, low-cost interventions in an asset lifecycle may lengthen service lives. Failing to do early interventions (where they are appropriate, practical, and cost effective), and replacing assets only when they fail is generally more expensive.
- **Accept reduced service levels** – Lower levels of quality, availability, consistency, and/or reliability of service or less consistency of service may be acceptable to lower operational and capital costs.
- **Fewer services** – Eliminating non-essential services saves on operating and capital costs.
- **Alternative revenues** – Alternatives to tax increases may include development cost charges or user fees as examples.

4.2.2 CLIMATE CHANGE MANAGEMENT / PREPAREDNESS

The Town has completed a Corporate Climate Adaptation Plan (CCAP) as a guideline to support and inform climate adaptation at the Corporate municipal level. It outlines how the municipality will adapt its assets, operations, and services to the current and future impacts of climate change.

The development of a CCAP for the Town of Lincoln is supported by the 2016 Asset Management Plan which states, *"infrastructure is inextricably linked to the economic, social and environmental advancement of a community"* and that *"broader environmental and weather patterns have a direct impact on the reliability of critical infrastructure services"*.

The Town's 2014 Official Plan also affirms, *"reviewing opportunities for reducing the impact of climate change, meeting the challenges of climate change and other environmental issues through integrated solutions, and incorporating low impact design and other site design strategies to mitigate environmental impacts".*

The development of a CCAP is also driven and supported by the 2017 Growth Plan for the Greater Golden Horseshoe, of which a guiding principle is to *"integrate climate change considerations into planning and managing growth such as planning for more resilient communities and infrastructure – that are adaptive to the impacts of a changing climate".*

Climate projections in the CCAP for the Town of Lincoln are based on RCP 8.5 climate models from www.climatedata.ca which is a collaboration between:

- Environment and Climate Change Canada
- Computer Research Institute of Montréal
- Ouranos
- Pacific Climate Impacts Consortium
- Prairie Climate Centre, and
- Habitat Seven.

Table 35 sets out the historical average and the 2050 and 2100 projections for temperatures and precipitation.

Table 35: Historical weather averages and projections

Variable	Sub-Variable	Average (1976-2005)	2050 Projection	2100 Projection	Trend
Temperature	Hottest day °C	33	37	40	↑
	Mean Temp °C	9	12	15	↑
	Min. Temp °C	4	7	11	↑
	Max. Temp °C	13	16	19	↑
	Days Over 30 °C	11	47	91	↑
	Coldest Day °C	-20	-13	-8	↑
	Days Below -15°C	8	0	0	↓
	Days Below -25°C	0	0	0	↓
	Frost Days	124	85	46	↓
	Cooling Degree Days	328	670	1200	↑
	Growing Degree Days 10°C	1390	1996	2725	↑
	Growing Degree Days 5°C	2390	3096	3977	↑
	Cumulative Degree Days >0 °C	3657	4440	5526	↑
	Heating Degree Days	3402	2669	2011	↓
	Ice Days (below 0°C)	48	24	6	↓
	Tropical Nights >18°C	26	61	106	↑
	Tropical Nights >20°C	10	39	84	↑
	Tropical Nights >22°C	2	18	60	↑
Precipitation	Total Precipitation	864	1016	955	↑
	Max 1 Day Total mm	39	39	38	↓
	Wet Days >10mm	26	33	32	↑
	Wet Days >20mm	6	9	9	↑

The overall risk and vulnerability of the Town to 15 projected impacts (see Figure 14) were assessed to determine the priority of each and if action to address an impact should be taken. As a result, the following climatic threats were identified as top priority for the Town of Lincoln:

- Increased variability in temperature and precipitation
- More frequent and/or severe freezing rain events
- More frequent and/or severe extreme weather events
- More heavy rainfalls
- More frequent and/or severe drought events
- More days above 30C
- Increased annual temperatures
- More growing degree days
- More cooling degree days
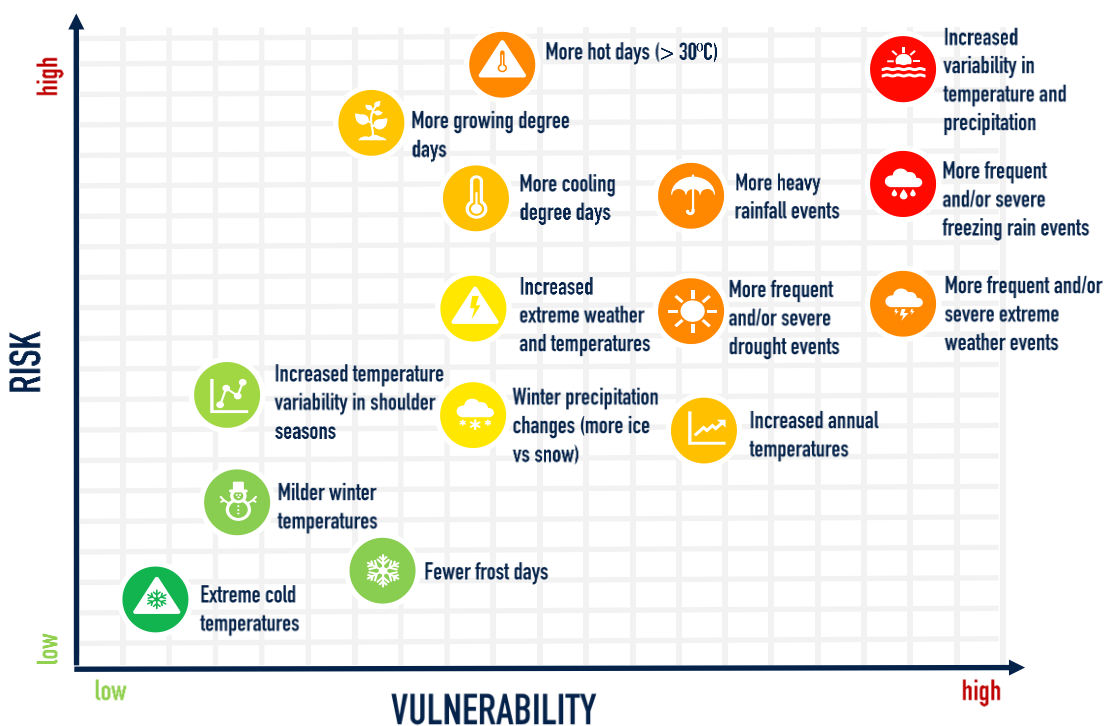
Figure 14: Risk and vulnerability

CLIMATE ACTION GOALS:

The Town of Lincoln is committed to providing its community with an equitable, sustainable, and prosperous quality of life. In order to adapt, manage, and reduce the impacts of climate change, the Town has committed to 47 actions that the municipality will undertake to adapt to climate change. Adapting assets and the asset management process to anticipated climate change are included in the following goals:

Goal 1: Integrate climate change considerations into Town strategies, plans, policies, procedures, operations, & services

Goal 2: Increase resiliency & adaptive capacity within economic development, community services, parks, & recreation

Goal 3: Protect natural resources, promote ecosystem services, & minimize environmental degradation

Goal 4: Mitigate harmful consequences of extreme weather & emergency events

Goal 7: Consider climate change impacts in built infrastructure & asset management

Goal 8: Increase climate change literacy among staff & public

The trends from climate change that have been identified by Lincoln include rising lake levels and more frequent and prolonged high intensity storms. The main issue resulting from these trends will be potential road closure caused by flooding and increased erosion that could cause a delay in emergency response.

4.2.3 RESILIENCY AND ADAPTATION IMPROVEMENT PRIORITIES

Table 36:shows the improvement priority related to resiliency and adaptation.

Table 36: Resiliency and adaptation improvement priorities

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
16	4.2	Resiliency and adaptation	Review climate change forecasts regularly and modify adaptation actions if appropriate	Low

4.3 SUSTAINABILITY

For this inaugural asset management plan, The Town of Lincoln Parks & Facilities Services is using the Service Sustainability Assessment Tool (SSAT) which was prepared by Asset Management BC (AMBC). This tool highlights where the service sustainability may be threatened and provides feedback on performance of business practices that contribute to service sustainability.

Service sustainability requires balancing service delivery with good governance and strong finances. Many communities have a strong understanding of service delivery itself, that is, how services are delivered, in what quantity, to whom, and where. In fact, much of the work of local government is in the delivery of services. Good governance provides consistent and transparent decision-making that takes a long-term view. Strong finances are key to being able to deliver a service affordably over time.

By assessing the three components of sustainable service delivery together (i.e., service delivery, governance, and finances), the SSAT provides clear feedback on strengths and gaps in each component.

4.3.1 ASSESSMENT AND CURRENT PERFORMANCE

The Town of Lincoln Parks & Facilities completed the SSAT by rating statements that correspond to the current situation of the facilities and services and to their level of future preparedness.

4.3.2 CURRENT PERFORMANCE

The results of the SSAT assessment show that the current level of sustainability of Town of Lincoln Parks & Facilities Services is 54% and that it's preparedness for the future is 55% respectively.

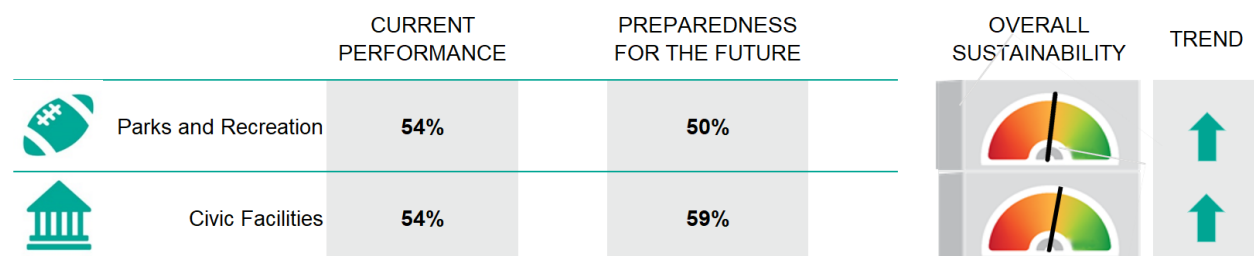|		CURRENT PERFORMANCE	PREPAREDNESS FOR THE FUTURE		OVERALL SUSTAINABILITY	TREND
	Parks and Recreation	54%	50%			↑
	Civic Facilities	54%	59%			↑

Figure 15: Sustainability Results – Parks & Facilities

The current performance is based on the following key themes for Parks & Recreation and Civic Facilities:

- Quantity/type of sports fields/play areas/skate parks, trails & pathways and natural parks as well as Civic facilities (libraries/town hall etc.) that are sufficient to the user groups and needs.

- Condition of assets in fair or better condition (%)

- Green House Gas (GHG) emissions (generated by providing the service)

- There is sufficient revenue and reserves to fund capital projects.

- There is citizen engagement for major infrastructure projects with very few complaints.

The preparedness for the future is based on the following key themes:

- There is up-to-date master plans or suitable plan/policy document in place.

- A formal preventative maintenance program exists and takes climate change into consideration.

- An asset management plan/program is in place.

- A formal succession and training plan is in place.

- A formal GHG reduction plan is in place.

- A comprehensive long-term financial plan based on up-to-date information.

- Policies are in place to guide decision making.

- Policies are in place to improve public communication and engagement.

4.3.3 SUSTAINABILITY IMPROVEMENT PRIORITIES

Table 37 shows the improvement priority related to resiliency and adaptation.

Table 37: Sustainability improvement priorities

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
17	4.3	Sustainability	Parks & Facilities Services staff to annually re-assess service against AMBC Sustainable Service Assessment Tool (SSAT)	Medium

5 FINANCIAL SUMMARY

5.1 CONTEXT FOR INFORMATION IN THIS SECTION

This section provides an overview of the costs to provide the Town of Lincoln Parks & Facilities Services including the operations and maintenance forecasts, and the capital renewal and new asset forecasts. The information is based on the 2024-2033 Capital budget and the 2024 Operations Budget and includes current assets and future expansion assets.

5.2 FINANCIAL FORECASTS

5.2.1 FINANCIAL FORECAST – NEEDS-BASED BUDGET (CAPITAL PLAN)

Figure 16 shows the current (2024) and planned capital budget from 2025 to 2033. The total capital budget for the period from 2024 to 2033 is $62.1 million. The capital plan includes replacement of existing parks and facilities.
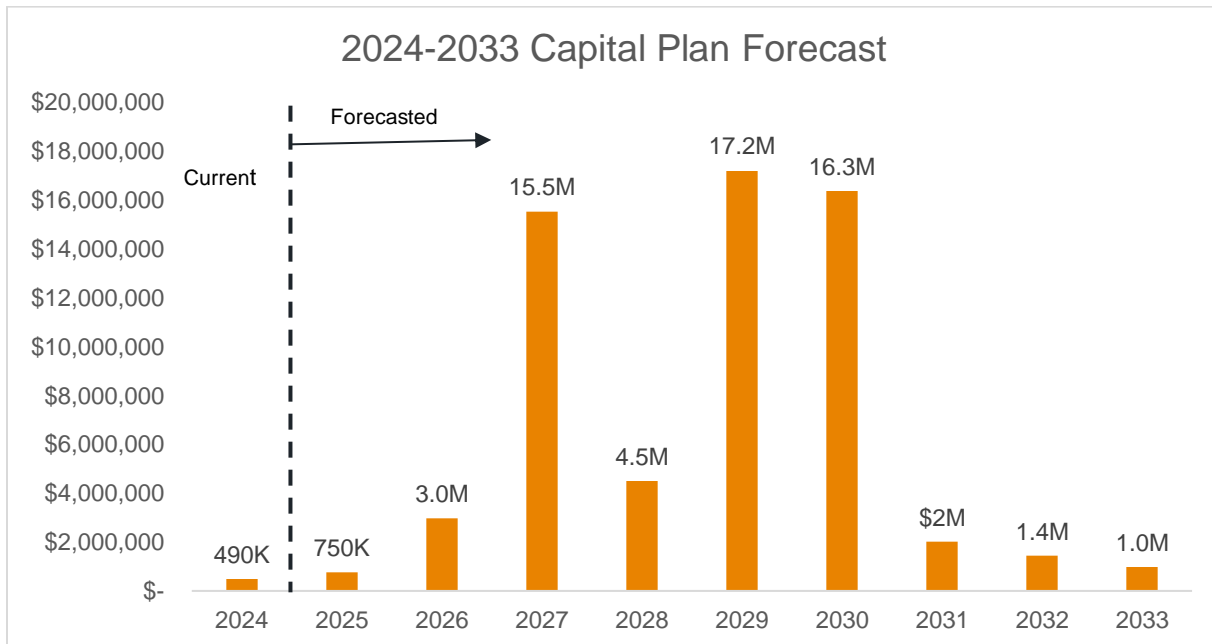

Figure 16: Lincoln Parks & Facilities 10-year capital Budget Forecast

Figure 17 show the percentage of the budget allocated by category. Most forecast capital projects are for the replacement of buildings (83%, $51.3 million), followed by parks (13%, $8.3 million). The remaining 4% ($2.5 million) is allocated towards recreational parks, bridges, parking, cemeteries, playing fields and forestry.
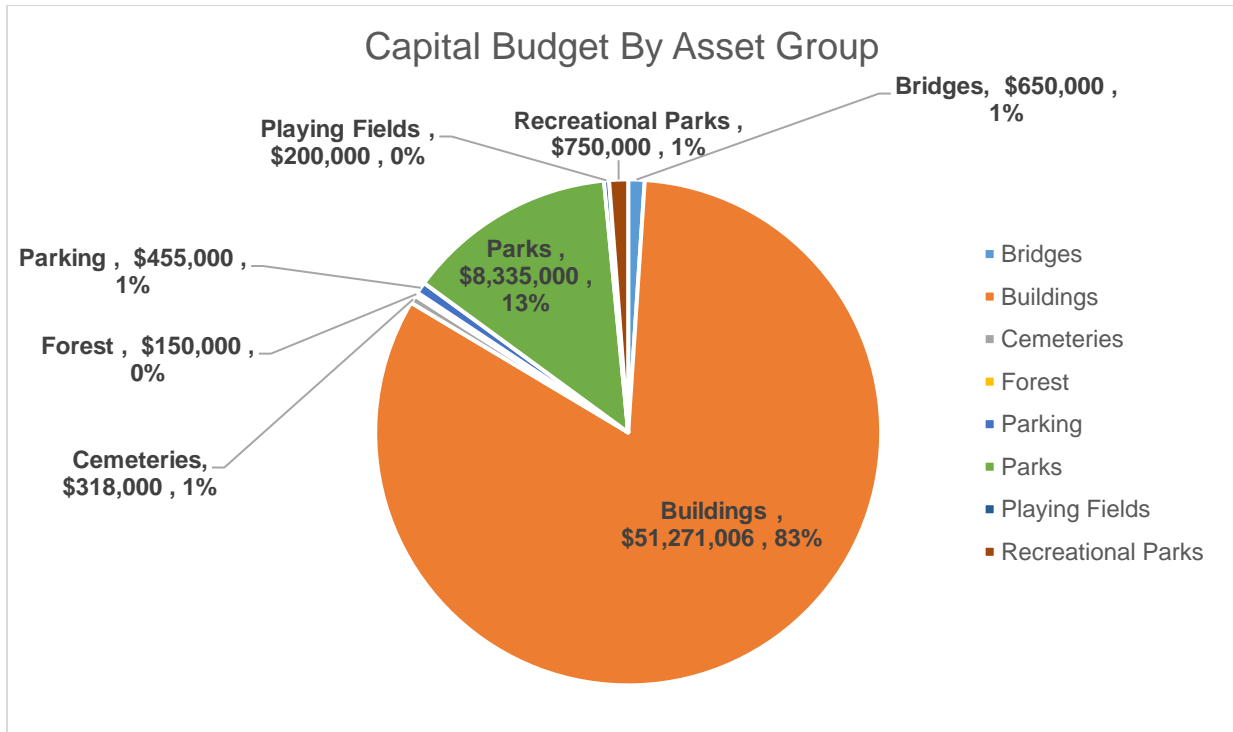

Figure 17: Distribution of capital projects for the 2024-2033 period

5.2.2 OPERATIONS AND MAINTENANCE BUDGET

The operations forecast in Figure 18 shows the proposed funding allocated for operations and maintenance activities to be completed on the Town of Lincoln Parks & Facilities Services assets over the next 10 years. The current annual operating budget of $4.9 million was provided by the town for 2024 and the remaining years have been estimated using an escalation factor of 3% per annum to account for growth as there was insufficient recorded information to develop a detailed needs-based budget for the current level of service. Therefore, future O&M costs have been based on current budgets for an initial forecast.
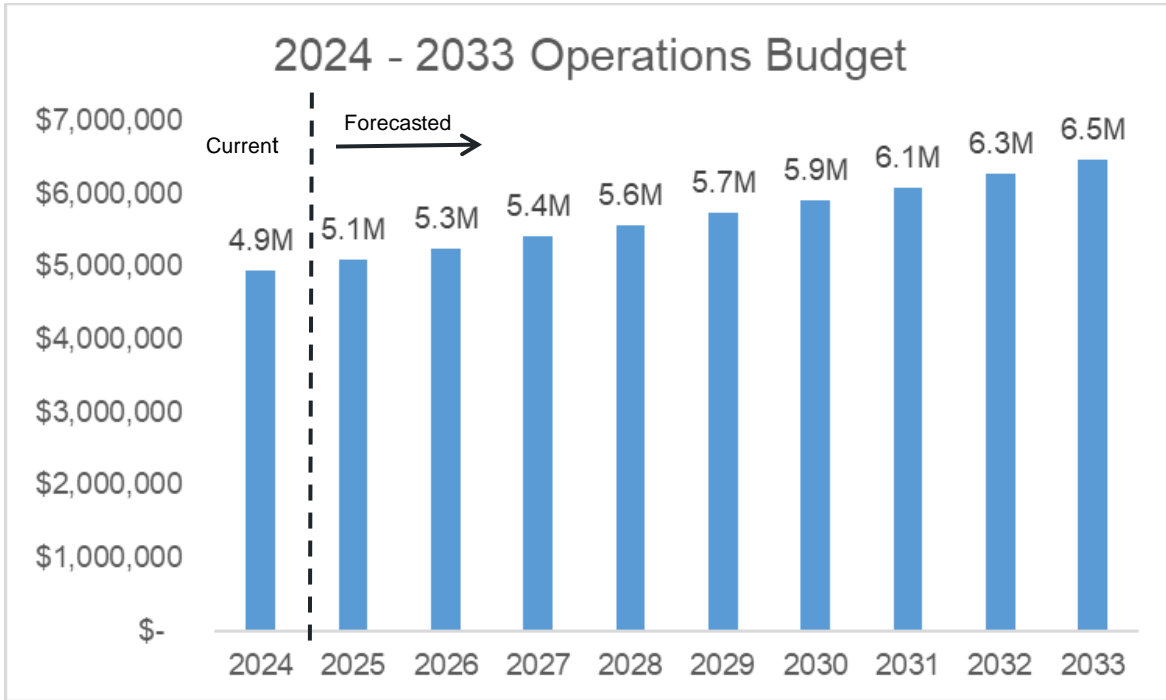
Figure 18: 10-year operations and maintenance budget – Parks & Facilities Services

5.2.3 REVENUES SOURCES

Capital works, operations and maintenance of the parks & facilities services are currently funded by the following sources of revenues:

- CIL RF
- Fire DC
- Fire DC Debt
- Levy Debt
- Library DC Debt
- Other Grants
- Parks & Rec DC
- Tax Levy

Figure 19 below shows the anticipated funding sources for the capital expenditures (asset renewals and new asset purchases) for parks and facilities assets between 2024 and 2033.

Figure 19: Lincoln Parks & Facilities – 10-year capital budget funding sources by Year

The overall total amount of funding and sources for capital projects between 2024-2033 are shown in Figure 20 It is anticipated that the majority of capital projects will be funded through the tax levy ($23.16 million).
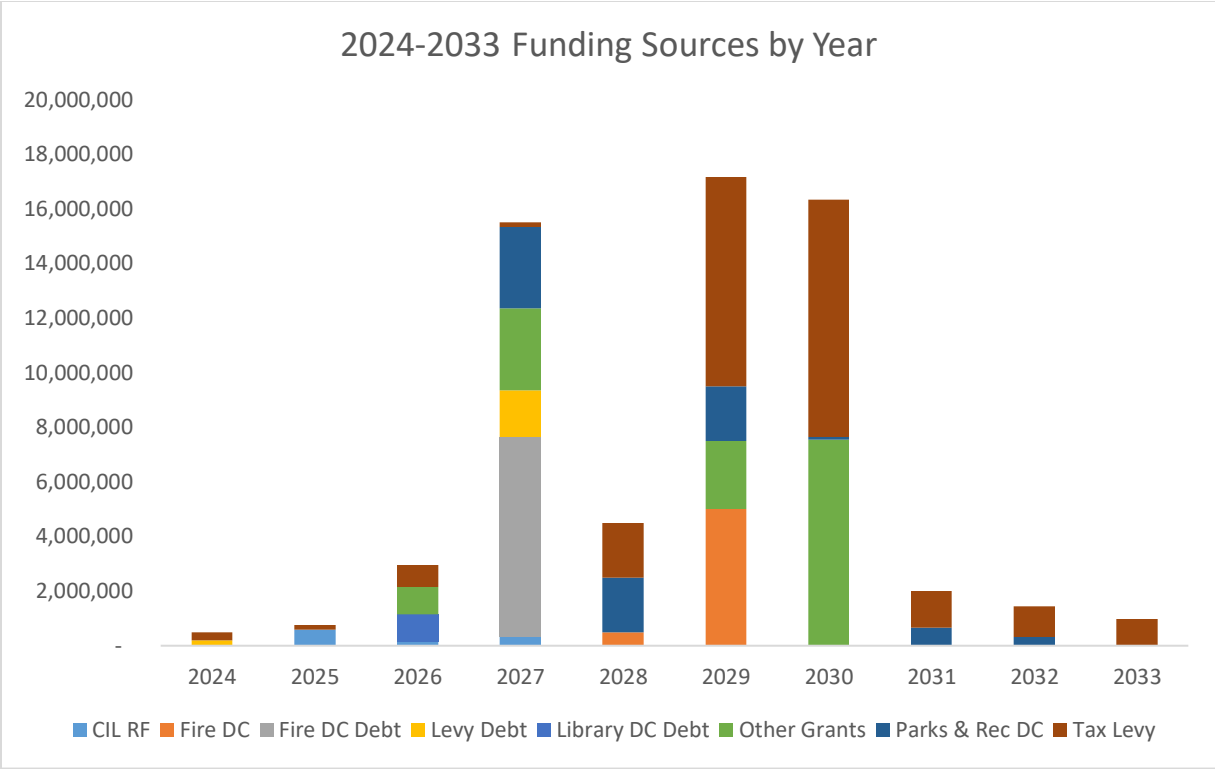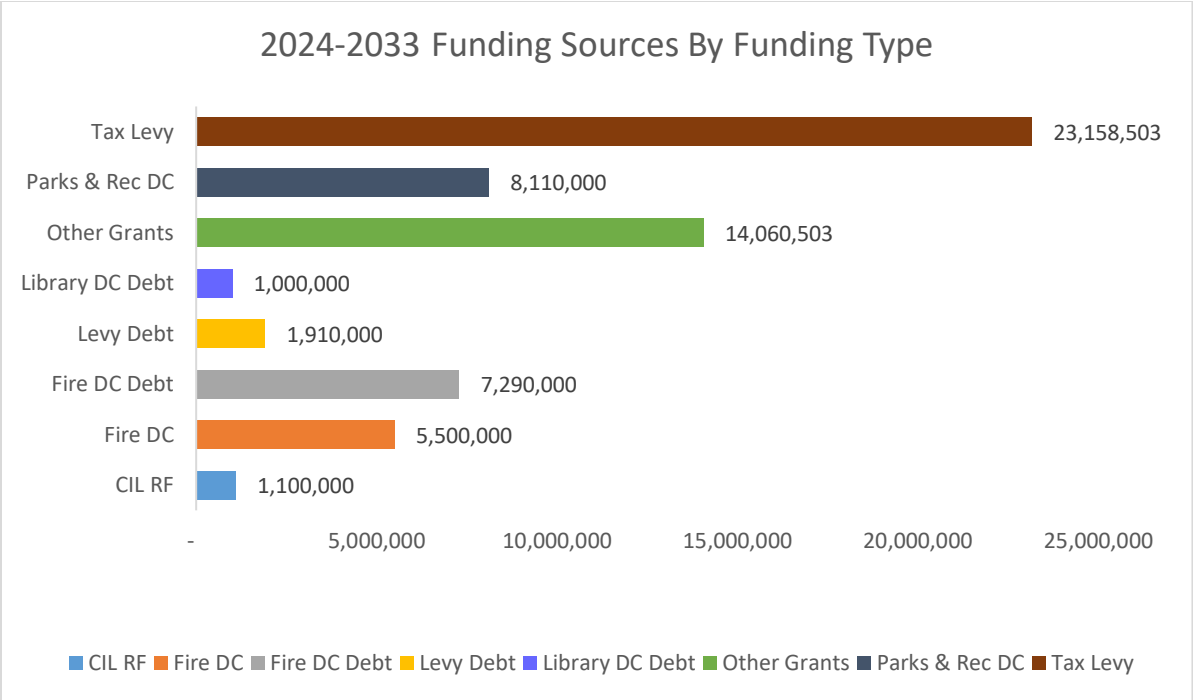
Figure 20: 10-year capital budget funding sources by type

5.3 FINANCIAL FORECASTS

5.3.1 *CAPITAL RENEWAL FORECAST (STATE OF INFRASTRUCTURE)*

The State of Infrastructure capital renewal forecast presented in this section is limited to replacement with like-for-like of existing assets only and does not include any expenditures on new asset acquisitions/purchases or asset upgrades. It is also important to note that this renewal forecast (i.e., forecast replacement year is based on current age and estimated lifespan of each asset) is based on lifecycle.

Figure 21 shows the State of the Infrastructure renewal forecast over the next 10 years (2024 – 2033) by asset group. Points to note are:

- The 10-year total forecasted capital renewal cost for parks & facilities assets is approximately $46.4 million. This corresponds to an annual average capital cost of $4.6 million a year.

- 46.2% of the costs are for replacing the parks & facilities building assets.

- Playing field asset replacement represents 12.7% of the forecasted capital costs.

- Cemeteries represent 8.2% and recreational parks, parks, and comfort all represent approximately 7% each of the replacement costs.

- Parking represents 9.4% of the forecasted capital costs. Pools and Bridge assets represent 2.1% and 1%, respectively.

- Forest (green assets) assets do not include any replacement costs in the next 10 years.
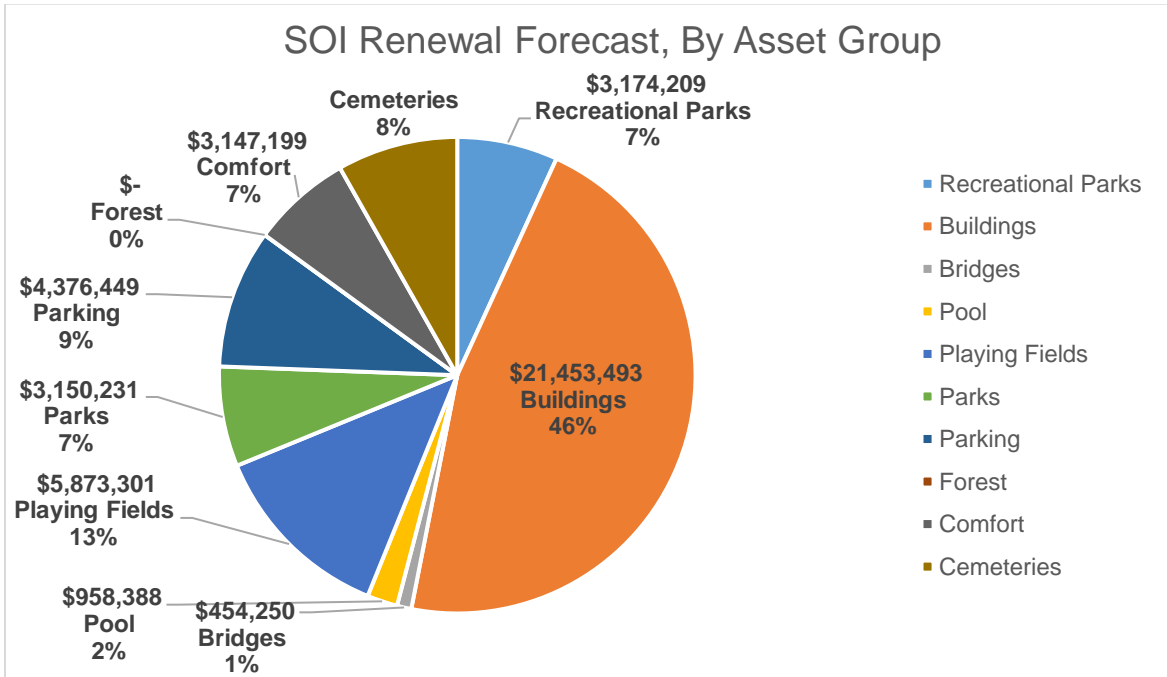
Figure 21: Total forecast Capital Renewal Cost, By Asset Group 2024-2033

Figure 22 shows the capital renewal forecast between 2024 and 2033. It is important to note that this forecast is for replacement like-for-like of existing assets only and does not include any new assets or asset upgrades and their renewal that may occur in the future. This forecast is based on lifecycle timing of current assets only. The costs of the capital renewals over the next 10-year period equate to $46.4 million. Most of the renewals being forecast to occur in 2025 and 2032. 2025 reflects recreation parks, playing fields, parks, comfort, parking, pools and bridges that are at the end of their useful life. 2032 reflects mainly building assets which are also at the end of their useful life.
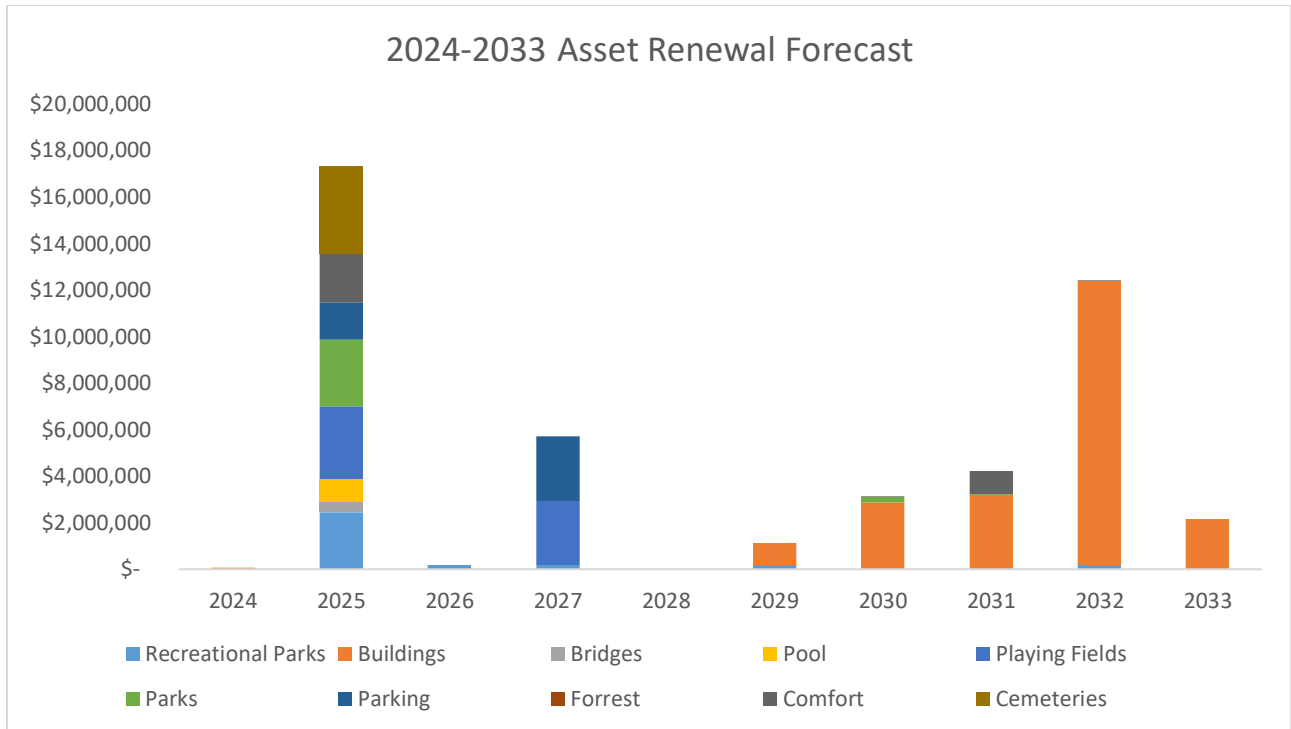
Figure 22: Park & Facilities 10-year condition/age based renewal forecast

5.4 COMPARISON OF BUDGET FORECAST

5.4.1 CAPITAL RENEWALS BUDGET VS RENEWALS FORECAST (STATE OF THE INFRASTRUCTURE)

Figure 23 shows a comparison between the renewals and rehabilitation projects in the 2024-2033 Capital budget and the State of Infrastructure renewal forecast.
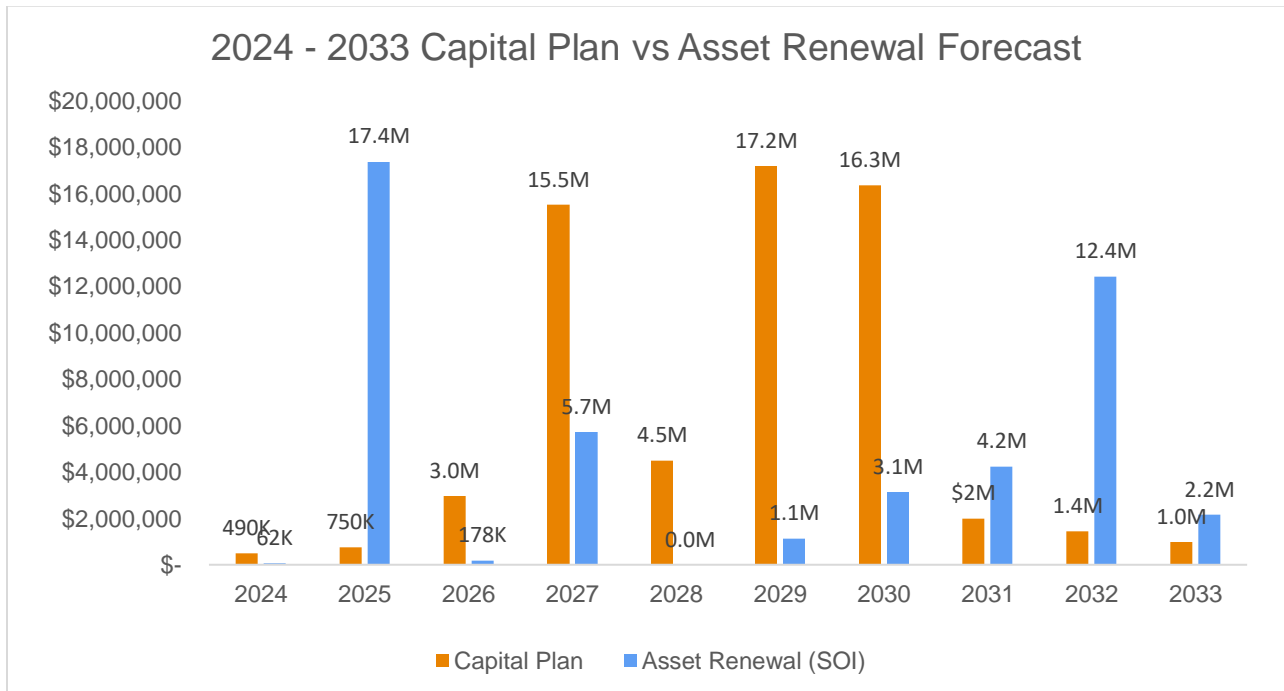
Figure 23: 10-year capital budget and condition/age-based renewal forecast comparison

The Town of Lincoln's parks & facilities average annual budget for capital renewals and replacements between 2023 and 2033 is $6.21 million. This is $1.57 million higher than the forecasted average annual renewal costs of $4.64 million (that is based on state of infrastructure and asset lifecycle forecasts). Table 38 below indicates that, on average, planned budget is sufficient to meet the estimated capital renewal and replacement needs currently forecast for the period from 2024 and 2033.

Table 38: Annual Funding Comparison

10-year Average Annual Capital Replacements (Planned Budget)	**$6.21 million**
Forecasted 10-year Average Annual Capital Replacements (Needs-Based on State of Infrastructure analysis)	**$4.64 million**
Annual Funding Gap*	**+$1.57 million**

*Note: Positive value means current forecasted capital replacement needs do not exceed the planned budget (i.e., no current funding gap).

5.4.2 OPERATIONS BUDGET VS NEEDS-BASED FORECAST

A needs-based forecast of operational forecast (operation, maintenance, and inspections) has not been undertaken but is identified as a recommended improvement task for future updates of this Asset Management Plan.

5.5 FINANCIAL IMPROVEMENT PRIORITIES

Table 39 shows the improvement priority related to financial strategy.

Table 39: Financial improvement tasks

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
18	5	Finance	Develop a structured process for long-term budgeting decisions to be made considering costs of service delivery and meeting levels of service.	High
19	5	Finance	Develop a process to track and separate operations, preventative and reactive maintenance, and inspections costs.	Medium
20	5	Finance	Develop a process to track and separate capital renewals and rehabilitation costs from capital upgrades, improvements, and new assets.	Medium
21	5	Finance	Review unit rates at a minimum for each new iteration of the asset management plan and update replacement costs as appropriate	High

6 CONTINUOUS IMPROVEMENT

6.1 IMPROVEMENT ACTIONS

Table 40 lists all improvement tasks collated from each section of the asset management plan. The Lincoln Parks & Facilities Services team will continue to review and update this improvement plan as tasks are completed or as priorities change over time or as additional needs arise.

Table 40: Asset management plan improvement tasks

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
1	2	Asset Data	Implement recommendations in the data management plan developed by the Town after completing an assessment of their asset data across all service areas. These recommendations include: • Developing a data standard and data hierarchy to ensure consistency • Develop a plan to populate missing asset attribute data • Develop roles and assign responsibility of the management of data Adopt a database software to host data and have a single source of truth	High
2	2	Asset Data	Separate grouped assets and assign unique identifiers to all assets to distinguish condition, age, year installed etc.	High
3	2	Asset Data	Complete and document condition inspections on assets and use the results to improve the accuracy of the renewal forecasts.	Medium
4	2	Asset Data	Continue to review and update replacement costs to build confidence in replacement unit rates to use in future state of infrastructure analysis and future replacement forecasts.	High
5	3.1	Levels of service	Collect and collate a minimum of one year of data for each performance measure that has been identified in Table 8.	High
6	3.1	Levels of service	Update targets where required after one year.	High

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
7	3.1	Levels of service	Review levels of service and update as appropriate. Ideally review annually based on measured performance results, but as a minimum review and update when the asset management plan is updated.	Medium
8	3.2	Lifecycle strategies	Review and revise lifecycle strategies if maintenance approaches change (including where new technologies are employed) and include more details and costs and specify decision processes.	Medium
9	3.2	Lifecycle Strategy	Develop lifecycle strategies for any new assets that become part of the parks & facilities.	Medium
10	3.2	Lifecycle Strategies	Identify and document costing and frequency information for lifecycle strategies to develop a needs-based forecast of operations, maintenance, and inspection activities.	Medium
11	3.3	Risk	Consider an advanced risk framework that builds on the basic risk rating to consider other aspects of consequence in addition to service delivery and analyses failure likelihood in more detail including failure on functionality and capacity as well as physical failure, to derive a more detailed risk analysis	Low
12	3.3	Risk	Regularly update and revise service level risk register, as risk levels may change over time and new risk may be identified.	Medium
13	3.4	Resources	Review the hours spent for each of the major activities and separate out hours to detail resources required at task level to support the current levels of service in each category over a year.	Medium
14	3.4	Resources	Resolve gaps in resource requirements to ensure levels of service can be consistently met.	High
15	4.1	Demand management	Annually review and revise demand risk to reflect when mitigation measures have been implemented and if additional demand drivers are identified.	Low

Task Ref	AMP Section	AM Practice Area	Task Description	Task Priority
16	4.2	Resiliency and adaptation	Review climate change forecasts regularly and modify adaptation plan if appropriate.	Low
17	4.3	Sustainability	Parks & Facilities Services staff to annually re-assess service against AMBC Sustainable Service Assessment Tool (SSAT).	Medium
18	5	Finance	Develop a structured process for long-term budgeting decisions to be made considering costs of service delivery and meeting levels of service.	High
19	5	Finance	Develop a process to track and separate operations, preventative and reactive maintenance, and inspections costs.	Medium
20	5	Finance	Develop a process to track and separate capital renewals and rehabilitation costs from capital upgrades, improvements, and new assets.	Medium
21	5	Finance	Review unit rates at a minimum for each new iteration of the asset management plan and update replacement costs as appropriate.	High

6.2 IMPLEMENTATION PLAN

In addition to documenting current state and business practices for the management of The Town of Lincoln Parks & Facilities Services, the asset management plan provides recommended improvement tasks as described in section 6.1. These improvement tasks will:

- increase the level of understanding of the assets and services provided;
- improve the accuracy of financial forecasts and risk assessments; and
- provide decision-makers with accurate and complete information in an easy-to-understand format to assist them with making evidence-based decisions for the best use of available funding and the best interests of the region and its communities.

6.2.1 CONTINUOUS IMPROVEMENT PROCEDURES

The Town will adopt a continuous improvement approach as shown in Figure 24 below. A continuous improvement approach includes a regular review and adjustment process to keep the asset management plan up to date with the latest information, understanding, and forecasts.

This can also be described as a 'Plan, Do, Check, Adjust,' process (based on the Deming Cycle).
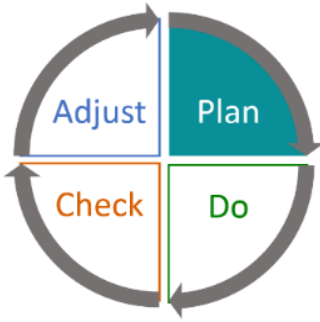
PLAN

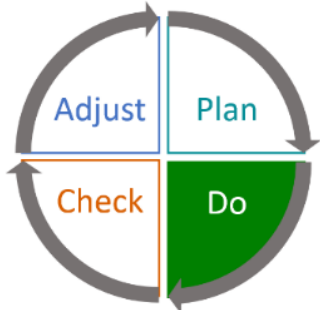- Collate available data and analysis results
- Consider data and analysis results in relation to objectives
- Document outcomes and recommendations
- Update assessment of limitations and assumptions
- Update asset management plan, consult and confirm for implementation

DO

- Schedule, fund, and complete improvement tasks
- Improve asset and cost data
- Monitor, manage, and mitigate risk
- Manage assets and deliver required service
- Measure and record performance
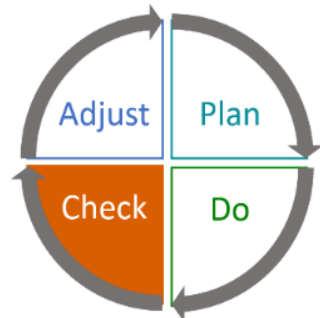
CHECK

- Review performance results
- Analyze asset and cost data
- Re-assess state of infrastructure and risk ratings
- Re-assess state of asset management practice
- Report achievements
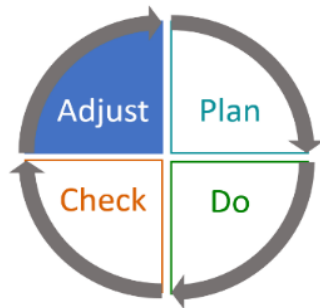
ADJUST

- Update improvement tasks and plan
- Adjust lifecycle strategies
- Adjust priorities and targets
- Update forecasts

Figure 24: Continuous Improvement Cycle

This four-step process can be used to generate on-going iterative improvements to the asset management plan and all business processes for the management of the assets and the delivery of the service, and to facilitate responsible adaptation to change. Each phase of the four-step process is described in Figure 24, starting with the implementation or 'Do' phase for this asset management plan as the development of this asset management plan was the first iteration of the 'Plan' phase.

The review cycle for implementing and updating the asset management plan should be done annually. However, it may be done every two years where little change has occurred. The timing for the asset management plan update is preferably prior to the annual budget process. This will facilitate consideration of outcomes and inclusion of updated forecasts into the financial planning process.

6.2.2 CHANGE MANAGEMENT STRATEGY AND ACTION PLAN

The Town currently doesn't have a change management strategy and action plan. Several improvements have been identified in the asset management plan, in addition to the data management plan and overall asset management process currently being considered. It is recommended that a formal change management strategy is developed to provide a clear path.

6.2.2.1 GENERAL CHANGE MANAGEMENT STRATEGY

Relationships

Managing relationships within the Town is crucial for the successful implementation of asset management practices. Helping staff see the path, providing them with the resources they need to succeed, and clear communication will support the Town on its path to creating a cultural shift and ingraining asset management practices into all levels of the organization.

There are several strategies the Town can implement to increase the likelihood of effecting a change successfully. These strategies include:

Establishing a Clear Vision

Developing a clear and concise vision statement for how asset management will impact the organization is the first step toward general agreement on what the organization wants to achieve with the change. The vision will also support communicating the change to staff. Any communication should ultimately align with vision and will help staff to envision how their tasks align and support the organizational goal.

Mapping the Journey

One of the main reasons why implementing a change can fail is because an organization tried to implement too many change initiatives too quickly, and without prioritization. Being over ambitious can harm the process as people may need time to adjust to the change. Providing too many tasks without alignment to an objective can also confuse staff. Identifying areas of focus and mapping out the journey can help the team understand the steps needed to reach the end goal. Reviewing the implementation can provide a sense of how ambitious the Town intends to be in implement changes, what the changes are, which areas of the organization will be affected, and when. A strategy can then be prepared prior to rolling out the change to minimize staff resistance or hesitation due to confused focus.

Prioritize People and Leverage the Champions

Change is not possible without its people and changing an organization's culture takes time. People have different tolerances for embracing change, therefore identifying champions for change and empowering them to deliver results can be an effective strategy for change. The

Town can identify a sponsor and create an asset management working group which can be open to anyone who is interested in leading the change. Facilitating weekly, two-weekly, or monthly meetings to provide updates on quick wins, and schedules can keep momentum. By creating this collective group of passionate people who have bought into the change (i.e., believe in the benefits of the change) can increase the Town's likelihood of success.

Anticipate and Manage Resistance to Change

Any change can be disruptive to a person's role, and a person may resist a change for various reasons. Being aware of the reasons why people may resist a change and having a set of prepared response strategies can help to communicate a change in a positive way. For example, some individuals may think that Asset Management practices create unnecessary work that provides little value. A strategy to counteract this claim is to help the individual treat it as a new challenge to be solved and to uncover the connection between their work and the change benefits. One could also reiterate how the practices will provide indirect benefits to their work by supporting better decision making. Table 41 includes some sample reasons why people resist change, sample scenarios, as well as strategies to minimize staff resistance.

Table 41: Reasons why people resist change, and strategies to minimize resistance

Reasons People Resist the Change	Anticipated Scenario	Strategy to Minimize the Resistance
Parochial self interest – Individuals are concerned with the implications for themselves	Some individuals may become frustrated because they feel as though the new tasks will create unnecessary work.	It's a new challenge to be solved! Find connections to benefits for their work. Reiterate how the practices will support better decisions.
Misunderstanding due to miscommunication or inadequate information	Asset management can sound like a large undertaking, and some may not understand it.	When communicating, keep it simple. Leverage subject matter experts
Low tolerance for change due to a sense of insecurity or lack of patience	People may fear that their jobs are being replaced by technology.	Highlight that it is an opportunity for development and that analysis and technology are tools to support decision-makers (not replace them).
Different assessment of the situation – disagree over the need for change or the advantages.	May have a different understanding for the level of effort vs the benefit. If they don't understand the benefit, the level of effort may not seem worth the time.	Opportunity to participate and shape the outcome.
Individual challenges with implementing the change	Some field staff do not enjoy working with computers daily and may resist the requirement to input data into a computer or system.	Pairing up a senior person with a data manager will support succession planning while reducing the need for a person being forced to learn new systems.

Reasons People Resist the Change	Anticipated Scenario	Strategy to Minimize the Resistance
Loss in momentum	A member may have been on-board, but over time change was not seen and interest and momentum are lost.	Submit an internal anonymous survey that asks question to gauge the level of engagement.

Assess the Town's Change Readiness

A change readiness assessment can be completed to understand how prepared an organization is to undertake a major change. The assessment can consider how an organization manages its assets, and how it adapts to change. An Asset Management change readiness assessment can evaluate the organization's context for change based on the components in Table 42.

Table 42: Sample change readiness assessment categories and components

Category	Component
Employee readiness	• Awareness and perception of change • Support for and commitment to change • Understanding the ability to implement the required skills and behaviours
Organizational context	• Goals and alignment • Leadership Support • Organizational structure and culture • Authority and initiative for decision-making • Communication and engagement • Residual of previous change efforts • Resources available for the change

The feedback from this assessment can then inform a change management strategy that can accompany an asset management implementation plan.

Communicate the Change

Before communicating a task to staff members, it is important to be clear on what you need them to do and how they'll succeed. Below are some considerations to help prepare and plan for discussions when implementing a change.

- **Consider who is involved** and why they may resist the change. Communicate what the AM benefits will be.
- **Align the task with the vision** to provide purpose to the change.

- **Does the team have what they need to be successful?** Do they need training, additional resources, or new software and tools?
- **Will their role change?** What do you think some of their fears will be? How can you support them through the change?
- **Be clear about the task** and communicate what is involved, what the proposed change is, why the change is needed, what the major effects will be, and how the process will be managed.

Develop a Change Management Team

Developing and implementing a change management team can support business process improvement initiatives and can help drive cultural transformation, focusing on building agility, accountability, and employee empowerment.

Provide Training to Support Staff

Implementing asset management can feel like a large undertaking to many. Providing training to introduce asset management concepts will allow staff to "speak the same language". Training staff on what AM can do for them creates a personal connection as they now understand how AM will make their role more effective.

Monitoring

The Town should schedule a recurring monitoring schedule to review progress. It should include metrics on how the organization plans to measure success and review whether the organization is achieving its objectives. A process for receiving staff feedback should be established to determine focus areas for adjustment. Lastly, upon reflecting on the progress to date, the Town should review whether additional support is needed.

6.2.3 *PERFORMANCE MEASUREMENT & EVALUATION*

6.2.3.1 *AM PERFORMANCE MONITORING*

To inform and support improvement, it is necessary to monitor current performance, and to review performance outcomes compared to the intended outcomes. Performance Monitoring & Evaluation (PME) is therefore an integral part of implementing robust Asset Management.

Monitoring and evaluating the performance of the assets and services will help to improve the reliability and consistency of service delivery.

The primary objective for performance measurement is not reporting performance; it is managing performance to achieve a specific target.

This section describes the three key performance measurement processes for asset management that will evaluate whether the Parks & Facilities Services management team are:

- Completing the asset management improvement tasks;
- Achieving asset management and the maturity targets, and;
- Improving asset data that will support evidence-based decisions.

6.2.3.2 *REPORTING PROGRESS ON AM IMPROVEMENT TASKS*

Review, report and revise improvement program

At least annually review and report the percent complete for each improvement task. Compare results to the schedule of work planned for completion in that year. It would also be useful to compare the hours spent on each task and the total expenses for the year compared to budget hours and expenses. This will inform whether each task is on track for completion on time and to budget and identify areas of concern for any tasks that are not on track. However, the ability to do this detailed reporting will depend on whether records are kept of staff time and expenses for work done on each task throughout the year. The minimum requirement is to report annually on the overall percent complete for scheduled improvement tasks.

At least annually the schedule for asset management improvement tasks must be reviewed and revised. Completed tasks should be removed, and new tasks added where necessary. New completion dates should be agreed for tasks that are partially complete. All other tasks in the asset management improvement plan, including tasks that were scheduled for completion during the year but have not been started, should be reassessed for priority and where appropriate assigned new start and completion dates. Any tasks that are no longer required should be removed from the plan.

This annual review and updating of the improvement program should also consider the outcomes of re-assessment of asset management maturity and re-assessment of Asset Data quality.

Reporting progress on asset management maturity

To measure improvements of asset management maturity, staff should complete a re-assessment (at least annually) and compare the result from each year to the previous year. Where appropriate add a comparison to the first year of the program.

An initial AM Maturity Assessment for facilities and parks was completed in January 2020 as part of an organization-wide assessment.

The step-by-step instruction for completing a re-assessment of asset management maturity using the assessment tool provided to the Parks & Facilities Services team, is included in the "Notes" tab of that assessment tool. Each year a new copy of the analysis spreadsheet can be made so changes are easily tracked over time.

The AM Maturity assessment tool provides several automated infographics and tables for reporting current results and comparing results to previous results and to any future targets if these have been set. See Figure 25 below for example of the typical diagram used.
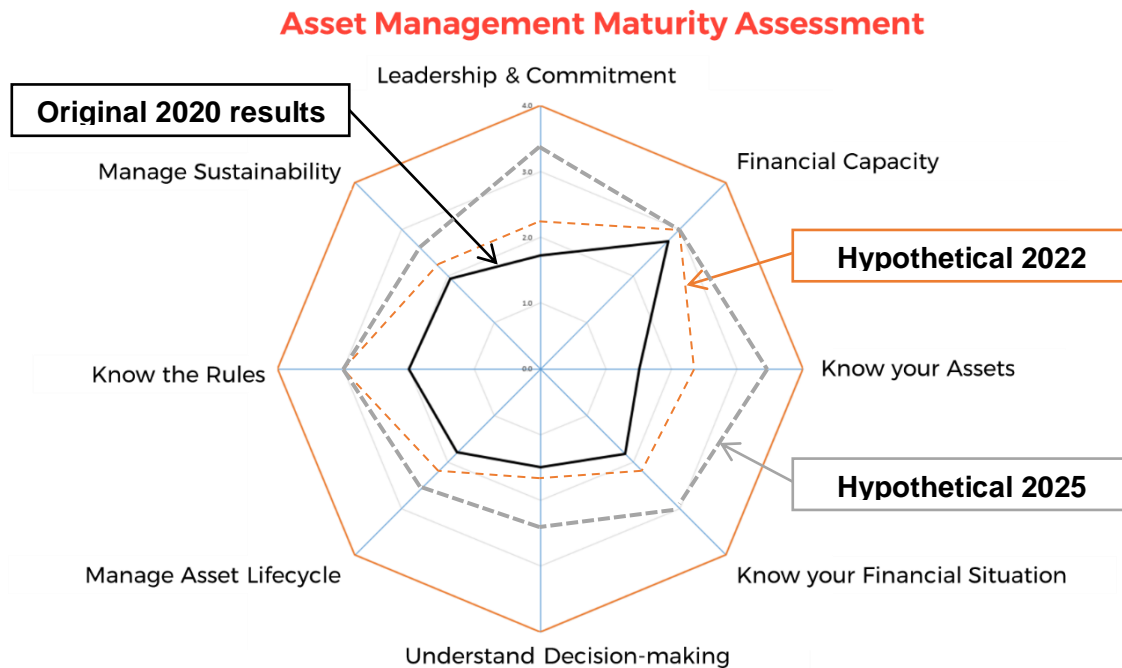
Figure 25: Reporting Progress on AM Maturity - Example

The assessment tool provides further detail if required, for the results within each of the categories summarized in the graph above.

The results of the annual asset management maturity re-assessment provide important input to decisions on the continued relevance and the appropriate priority for asset management improvement tasks. Asset management maturity results should therefore be considered in the annual review and revision of the asset management improvement plan.

Reporting on the quality of asset data

The currency and accuracy of asset data is critical to effective asset management, accurate financial forecasts, and informed decision-making. However, even more important than this is knowing what the reliability of the information is. Even data that is not highly accurate can be of benefit to decision-makers provided the accuracy is declared.

The Town has yet to develop a consistent data structure for recording asset information. A data management plan has been developed to support staff in understanding the attributes required to develop asset registers for all asset groups and locations and understand the significant impact

on the accuracy of assessments for when each asset may need replacing and how much it will cost to replace.

As staff build their asset register and collate available asset information, the accuracy of these key attributes can be recorded in the relevant columns for confidence rating. This will facilitate measurement of the asset data quality and reporting on improvements in data quality.

The confidence ratings for asset data are a numerical value between 1 and 5, as appropriate to each asset record and each key attribute. A score of 1 indicates high confidence and 5 indicates low confidence. An example of how this is used would be, if the size of an asset (such as a hose) is known but its material type is not known, and its install date is not certain but has been reasonably assumed from the age of other assets in the station, then its confidence ratings would be 1 for the size attribute, 4 or 5 for material type and a 2 or 3 for install date depending on how compelling the supporting data is.

The general description for each confidence level is;

1. Data is verified as factual (accurate)
2. Data is known with a high level of certainty, but it may not be verified as factual (there is a small possibility of error)
3. Data has been reasonably assumed or determined from other known facts. There is a moderate level of certainty and a moderate possibility for error.
4. Data has been assumed or determined from some indicator, but the opportunity for error (at an asset level) is high.
5. Data is a default value assigned as a temporary measure until better information is available, because at this time, the correct data is not known, nor can it be reasonably assumed from known facts or some indicator.

Annually, an assessment should be made to determine the quantity (and completeness) of recorded asset data and the confidence profile for the recorded information.

The process will include to;

- Report the number of recorded assets
- Calculate the percent (by value) of asset records that have confidence ratings 1 to 5
- Graph results with comparison to the previous year's result

The change in the number of assets recorded in the asset register will advise decision-makers of how complete the asset data is and any analysis results that are based on current asset data.

The change in the confidence ratings for key attributes will advise decision-makers of how accurate the asset data is and therefore, how confident they can be in any analysis results that are based on that asset data. Figure 26 below shows examples of data quality graphs.

Both examples quantify the change (improvement) in data confidence from one year to the next. The graphs show a reduction in very low confidence records (rating of 5) and an increase in moderate and good confidence records (ratings of 3 and 2).
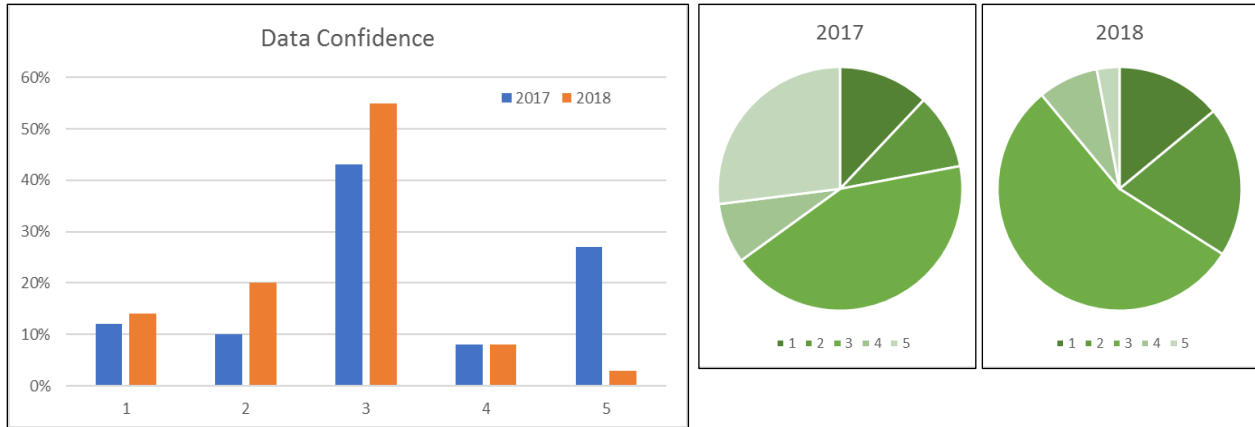
Figure 26: Data Quality Graphs examples

While staff are building their asset register, and until confidence ratings for key attributes have been recorded in the data register, it is recommended that a high-level data quality assessment is done. Table 43 below is an example of a data confidence ratings table.

Table 43: Data Confidence Ratings example

Asset Group	Asset Type	Install Date	Relevant Size	Material	EUL	EUC
Buildings	1	1	3	1	2	1
Parks	1	1	3	3	4	4
Bridges	1	1	2	2	2	1

The results for one year can be compared to previous year(s) and the change in data quality can be shown graphically (in the same way as reporting for asset-level data quality).

APPENDIX

A   LIFECYCLE STRATEGIES

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Table 44: Building/Facilities lifecycle strategies

	Preventative maintenance	Inspections	Operations	Reactive maintenance	
OMI	Scheduled as required	-Walk through daily inspections/checks Fire alarm monthly inspection generator monthly inspections	-Janitorial - Cleaning Services -Garbage removal -Snow removal -HVAC checks - filter changes/refrigerant/cleaning/ lubrication etc. -Energy Management - BAS Systems	-Repairs as required	**OMI**
NEW					**REPLACE**
R & R		Reinforcement - Structural insulation upgrades weatherproofing - seals etc. Weatherstripping replace door hardware	-Modernization (Elevators) -Brick replacement/re-pointing -Chiller re-build -Hot water tank - inner liner replacement	-Replace at end of life -Re-assess condition, extend life if able	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

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Table 45: Parks lifecycle strategies

	Preventative maintenance	Inspections	Operations	Reactive maintenance	
OMI	Dog park - seed spring and fall Pruning boundary map - trees	- Daily inspections one forester staff - tree assessment - Dog park - daily inspections for gates etc.	Garbage pickup/ disposal Manual Litter Pickup Debris Blowing	-Repairs as required - Trees - complaint driven (pruning, cutting etc.)	**OMI**
NEW					**REPLACE**
R & R			Run through 10 year capital plan, wait for approval	-Replace at end of life - Wate containers - replaced end of life Tress - only remove if health concern or dying	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

Table 46: Cemeteries lifecycle strategies

	Preventative maintenance	Inspections	Operations	Reactive maintenance	
OMI		- Daily inspections	- Garbage pickup/ disposal Manual Litter Pickup Debris Blowing	- Repairs as required - Wooden bench - repaint as needed	**OMI**
NEW					**REPLACE**
R & R			- Roadways - added to 10 year plan, repaved as needed.	-Replace at end of life	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

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Table 47: Playing Fields lifecycle strategies

	Preventative maintenance	Inspections	Operations	Reactive maintenance	
OMI	- Landscaping services - Lubrication - Gravel/ball mix - yearly topped up, top dressed and overseed spring and fall (baseball/soccer)	- Walk through daily inspections/ checks	- Grass cutting/Turf - Sports field standard - school - once a week, primary - twice a week	- Repair backstops as needed - Paint as needed - Bleachers - repaired as needed	**OMI**
NEW					**REPLACE**
R & R			- Grass/turf replacement - Basketball re-paved as needed - Every 4 years - re-crown diamonds and build up the mounds	-Replace at end of life	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

Table 48: Comfort - Lifecycle strategies

	Preventative maintenance	Inspections	Operations	Reactive maintenance	
OMI		-Walk through daily inspections/ checks	-Cleaning	'Repaint as required - benches/tables -Painting interior of comfort stations Repair toilets	**OMI**
NEW					**REPLACE**
R & R			-Picnic Tables to be repainted, rebuilt, inventory levels maintained- lifecycle	-Sign inventory/ replacement maintained- lifecycle- Once every three years -Dispose of vandalized tables -Replace at end of life	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

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Table 49: Recreational Parks Strategies

	Preventative maintenance	Inspections	Operations	Reactive maintenance	
OMI	- Lubrication	- Walk through daily inspections/ checks Outdoor Rink - Ice to be inspected daily as follows: Ice Maintenance Routine Every flood Ice measurements are done a minimum once weekly	-Outdoor Rink - Readings every 2 hours -Shaving of ice is done weekly or as required -Snow removal occurs at 2-inch accumulation	- Vandalism -Check cracks for skateparks -Add seed/grass to edges of bike track	**OMI**
NEW					**REPLACE**
R & R		Re-paint every 10-15 years Pump track - Asphalt repair Skae park - concrete repair Splash pad - repaint		-Replace at end of life	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

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Table 50: Pools –lifecycle strategies

	Preventative maintenance	Inspections	Operations	Reactive maintenance	
OMI	-Painting pool every year	- Splash pads/pools checked and inspected many times daily. Inspections and readings to be documented - Splash pad - Preseason inspection	- Ensure is operating properly, serviced according to standards and guidelines. All lifecycle maintenance is kept up to date and on schedule to ensure operation. -Water readings every two hours on recirculated systems	-Replacing pumps /HVAC equipment -Splash pad equipment going down - buttons/ nozzles etc. -Ladder replacements	**OMI**
NEW					**REPLACE**
R & R				-Replace pumps/ sand traps -Studies - look at different options, cost-benefit etc.	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

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Table 51: Parking - Lifecycle strategies

OMI	Preventative maintenance	Inspections	Operations	Reactive maintenance	OMI
		- Inspections - monthly	-Leaf program - every Spring & Fall (swept in spring) -Gravel parking lot - graded 3 times per year.	- Patching areas where applicable	
NEW					**REPLACE**
R & R				-Replace as needed - Pave the gravel roads	**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	

Table 52: Forest –lifecycle strategies

OMI	Preventative maintenance	Inspections	Operations	Reactive maintenance	OMI
		- Cyclical inspection program	- Pruning/cutting		
NEW					**REPLACE**
R & R					**R & R**
	Early life intervention	**Mid-life rehab**	**Later life rehab**	**End of life**	