City of Kingston

2024 Asset Management Plan

Executive Summary and Introduction	Volume 1 Infrastructure, Transportation, Transit, & Emergency Services	Volume 2 Corporate Services & Parking Operations	Volume 3 Community Services	**Volume 4 Parks, Parkland, & Trails**	Volume 5 Police, Libraries, City Real Estate & Environment

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Appendices (Provided in a Separate Document)

Acronyms

Acronym	Definition
AODA	*Accessibility for Ontarians with Disabilities Act*
AMP	Asset Management Plan
BAO	Bereavement Association of Ontario
BCA	Building Condition Assessment
CPI	Consumer Price Index
EUL	Expected Useful Life
GHG	Greenhouse Gas
IS&T	Information Systems & Technology
IT	Information Technology
KM	Kilometre
LOS	Levels of Service
O&M	Operations and Maintenance
PDU	Power Distribution Unit
RUL	Remaining Useful Life
SOLI	State of the Local Infrastructure
UPS	Uninterruptible Power Supply

1.0 Overview

The asset management project includes 21 service areas, covering all assets owned by the City of Kingston (City) that are not already included in other Asset Management Plans (AMP). This is the first iteration of an AMP for these service areas. Given the extensive range of assets included in the project, the plan is presented in the following six documents:

- Executive Summary and Introduction
- Volume 1: Infrastructure, Transportation, Transit, & Emergency Services
- Volume 2: Corporate Services & Parking Operations
- Volume 3: Community Services
- Volume 4: Parks, Parkland, & Trails
- Volume 5: Police, Libraries, City Real Estate & Environment

Overview

The Introduction document presents key asset management principles and an overview of how each service area will be presented in its own chapter with the following sections: State of the Local Infrastructure (SOLI); Levels of Service (LOS); Risk Assessment; and Asset Management Strategy. The Introduction also includes a section on Growth and a Roadmap with Next Steps. The following sections are included in the Introduction document:

- Section 1.1 Asset Management
- Section 1.2 Scope of Assets
- Section 1.3 Alignment with Strategic Plan, Policy and Regulation
- Section 1.4 Governance and Relationship to Other Planning Documents
- Section 1.5 Growth
- Section 1.6 Overview of the AMP
  - State of the Local Infrastructure
  - Levels of Service
  - Risk Assessment
  - Asset Management Strategy
- Section 1.7 Roadmap with Next Steps

1.1 Scope of Assets in Volume 4

The service areas included in **Volume 4: Parks, Parkland and Trails** are: Parks Linear; Park Amenities; Park Facilities; and Cemeteries. See **Table 1-1** for the respective asset classes for each service area and the relevant chapter.

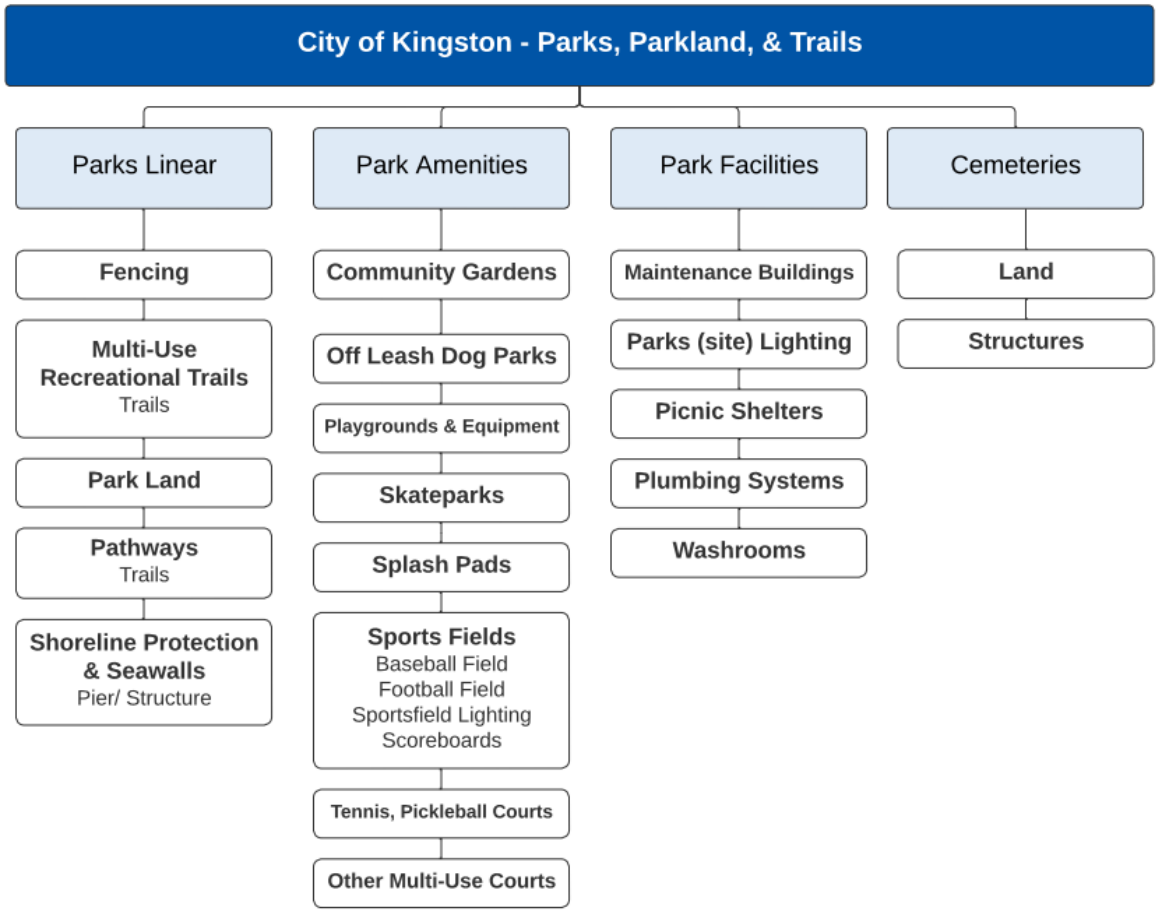
Table 1-1: Service Areas included in Parks, Parkland, & Trails

Service Area	Asset Classes	Report Chapter
Parks Linear	• Fencing • Multi-Use Recreational Trails • Park Land • Pathways • Shoreline Protection & Seawalls	Chapter 2.0
Park Amenities	• Community Gardens • Off-Leash Dog Parks • Playgrounds & Equipment • Skateparks • Splash Pads • Sports Fields • Tennis, Pickleball Courts • Other Multi-Use Courts	Chapter 3.0
Park Facilities	• Maintenance Buildings • Parks (site) Lighting • Picnic Shelters • Plumbing Systems • Washrooms	Chapter 4.0
Cemeteries	• Land • Structures	Chapter 5.0

1.2 Asset Hierarchy

The asset hierarchy that was generated and used for the City's assets is shown in **Figure 1-1**. The asset group (level 1) is shown in the blue box, the four service areas (level 2) are shown in the light blue boxes, the asset classes are shown in bold (level 3), and where applicable, the asset sub-classes are shown in regular text (level 4).

Figure 1-1: Asset Hierarchy for Parks, Parkland, & Trails



1.3 Asset Inventory and Replacement Costs

An asset inventory was generated for all assets included in this AMP using Microsoft Excel. The inventory organizes assets using the various levels of the asset hierarchy and acts as a central repository for the asset data that can be used to inform asset management planning. It is recommended that the City continually updates the asset information stored within the asset inventory to facilitate asset management planning based on reliable data.

Where replacement costs were provided, the values were inflated based on the Bank of Canada Consumer Price Index (CPI) to estimate the replacement cost in 2023 dollars. If replacement costs were not provided, Dillon leveraged a unit cost model to assign replacement costs based on unit cost estimated for 2023. It is recommended that unit prices should be reviewed annually by the City based on costs observed from local contractors.

1.4 Establishing Levels of Service

There were four LOS workshops that were held with staff. The service areas in this volume were covered in Workshop 4.

- Workshop 4 was held on November 27, 2023, and included the stakeholders for Outdoor Recreation & Parks and Shoreline.

There were City staff from each service area that attended the workshop. The list of attendees is summarized in **Table 1-2**.

Table 1-2: Workshop Attendees – Community Services

Service	Name	Role
Parks Linear	Luke Follwell	Director of Engineering
Parks Linear	Neal Unsworth	Manger Parks & Shoreline
Parks Linear	John Piraino	Asset Management Coordinator
Park Amenities	Amy Elgersma	Director of Recreation & Leisure Services
Park Amenities	Troy Stubinski	Operations Manager Public Works
Park Facilities	Amy Elgersma	Director of Recreation & Leisure Services
Park Facilities	Dan Korneluk	Manager of Energy and Asset Management
Cemeteries	Karen Santucci	Director of Public Works & Solid Waste

1.5 Growth Related Impacts on Lifecycle of Assets

As the City continues to expand, there are impacts to existing service levels and assets based on these future needs. The growth-related assumptions and potential impact on the lifecycle of the assets is shown in **Table 1-3**.

Table 1-3: Growth Related Impacts on Lifecycle of Assets

Service Category	Growth Impact Assumptions	How Assumptions Relate to Lifecycle of Assets
Parks Linear	• Increase in service demands in operations and maintenance due to increased number of assets	• Potential increase in capital expenditures for the purchase of additional assets to meet service needs
Park Amenities	• Increase needs for service based on demands • Increases to internal capacity (staffing) required to maintain amenities	• Potential increase in capital expenditures for the purchase of additional assets to meet service needs • Potential increased operational costs due to increasing the number of assets
Park Facilities	• Increase in service demands due to increased operating hours, or capacity to meet service needs • Increases to internal capacity (staffing) required to maintain facilities	• Potential increase in capital and maintenance costs for facility services • Potential increase in operational costs to maintain fleet assets
Cemeteries	• Changing service demands based on population growth and demographic	• Potential increase in capital expenditures to acquire new assets or maintain existing cemeteries

2.0 Parks Linear

The City of Kingston's parks infrastructure covers over 606 hectares and plays a critical role in contributing to several key objectives in the City's 2023-2026 Strategic Plan. The Parks Linear assets provide services to all community members and visitors to allow for an enjoyable experience exploring the City of Kingston. The City manages the maintenance and operation of a network of Fencing, Multi-Use Recreational Trials, Park Land, Pathways, and Shoreline Protection & Seawalls.

The City's investment in operating and maintaining these assets helps to support families and improve community health and physical activity levels while enhancing the overall quality of life of Kingston's residents and visitors.

The following section of the AMP includes assets that are under the Parks Linear service.

Note on Scope: At the time of this AMP no data was available for the Fencing asset class, and as a result, the asset class is not included in this AMP. It is recommended that the City further develops an inventory of these asset classes to be considered in subsequent iterations of this AMP.

2.1 State of the Local Infrastructure

2.1.1 Asset Inventory and Valuation

For inventory purposes, the Parks Linear asset classes have been further divided into applicable asset types. It should be noted that a distinction has been made between Multi-Use Recreation Trails and Pathways. Multi-Use Recreational Trails are designed to accommodate a variety of activities such as walking, running, and cycling. Pathways are generally designed for pedestrian use, including walking and jogging. **Table 2-1** summarizes the asset inventory for Parks Linear by asset class, asset type, asset count, and total replacement cost (in 2023 dollars). The total replacement cost (2023 dollars) is estimated at **$232.4 million** for the **623 assets** included in the inventory.

Table 2-1: Inventory Summary by Asset Type – Parks Linear

Asset Class	Asset Type	Asset Count	Quantity	Total Replacement Cost (2023)
Multi-Use Recreational Trails	Trail – Asphalt	3	6.23 km	$4,736,000
Multi-Use Recreational Trails	Trail – Concrete	2	0.82 km	$621,700
Multi-Use Recreational Trails	Trail – General	3	0.80 km	$456,200
Multi-Use Recreational Trails	Trail – Granular	11	31.76 km	$12,069,100
Park Land	Parkland & Open Space	214	521.22 ha	$187,546,600
Pathways	Trail – Asphalt	206	24.70 km	$18,773,200
Pathways	Trail – Brick	3	0.36 km	$71,400
Pathways	Trail – Concrete	34	1.73 km	$1,317,500

Parks Linear

Asset Class	Asset Type	Asset Count	Quantity	Total Replacement Cost (2023)
Pathways	Trail – General	67	7.59 km	$4,325,600
Pathways	Trail – Granular	38	6.58 km	$2,498,500
Shoreline Protection & Seawalls	Pier/ Structure	42	N/A	Unknown
Overall	**Not Applicable (N/A)**	**623**	**N/A**	**$232,415,800**

2.1.2 Asset Age Summary

Table 2-2 summarizes the average age, the average condition, the expected useful life, and the average remaining useful life of assets pertaining to the Parks Linear service category. The overall average age of Parks Linear assets is 34 years, and the average remaining useful life is five years.

Table 2-2: Average Age, Average Condition, Expected Useful Life, and Average Remaining Useful Life – Parks Linear

Asset Class	Asset Type	Average Age (Years)	Average Condition Grade	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Multi-Use Recreational Trails	Trail – Asphalt	15	Poor	25	10
Multi-Use Recreational Trails	Trail – Concrete	8	Very Good	50	42

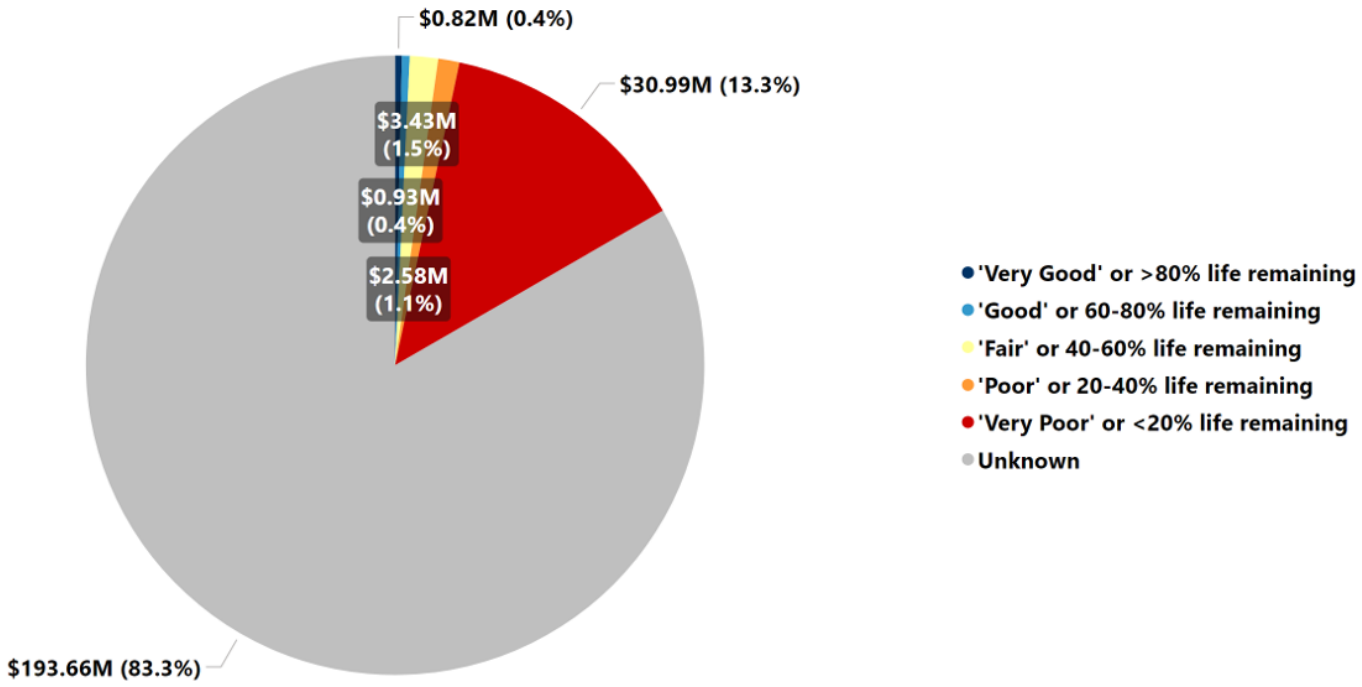
Parks Linear

Asset Class	Asset Type	Average Age (Years)	Average Condition Grade	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Multi-Use Recreational Trails	Trail – General	35	Poor	20	4
Multi-Use Recreational Trails	Trail – Granular	26	Very Poor	20	0
Park Land	Parkland & Open Space	Unknown	Unknown	200	Unknown
Pathways	Trail – Asphalt	36	Poor	25	5
Pathways	Trail – Brick	36	Very Poor	30	0
Pathways	Trail – Concrete	45	Fair	50	17
Pathways	Trail – General	29	Very Poor	20	1
Pathways	Trail – Granular	25	Very Poor	20	2
Shoreline Protection & Seawalls	Pier/ Structure	Unknown	Unknown	20	Unknown
Overall	**N/A**	**34**	**Poor**	**20 to 200**	**5**

2.1.3 Asset Condition

The overall condition summary for Parks Linear assets by replacement cost (in 2023 dollars) is shown in **Figure 2-1**. Due to existing data gaps at the time of preparing the AMP, the condition of Park Land and Shoreline Protection & Seawalls is currently unknown. It is recommended that a condition assessment is completed for Park Land and Shoreline Protection & Seawalls assets.

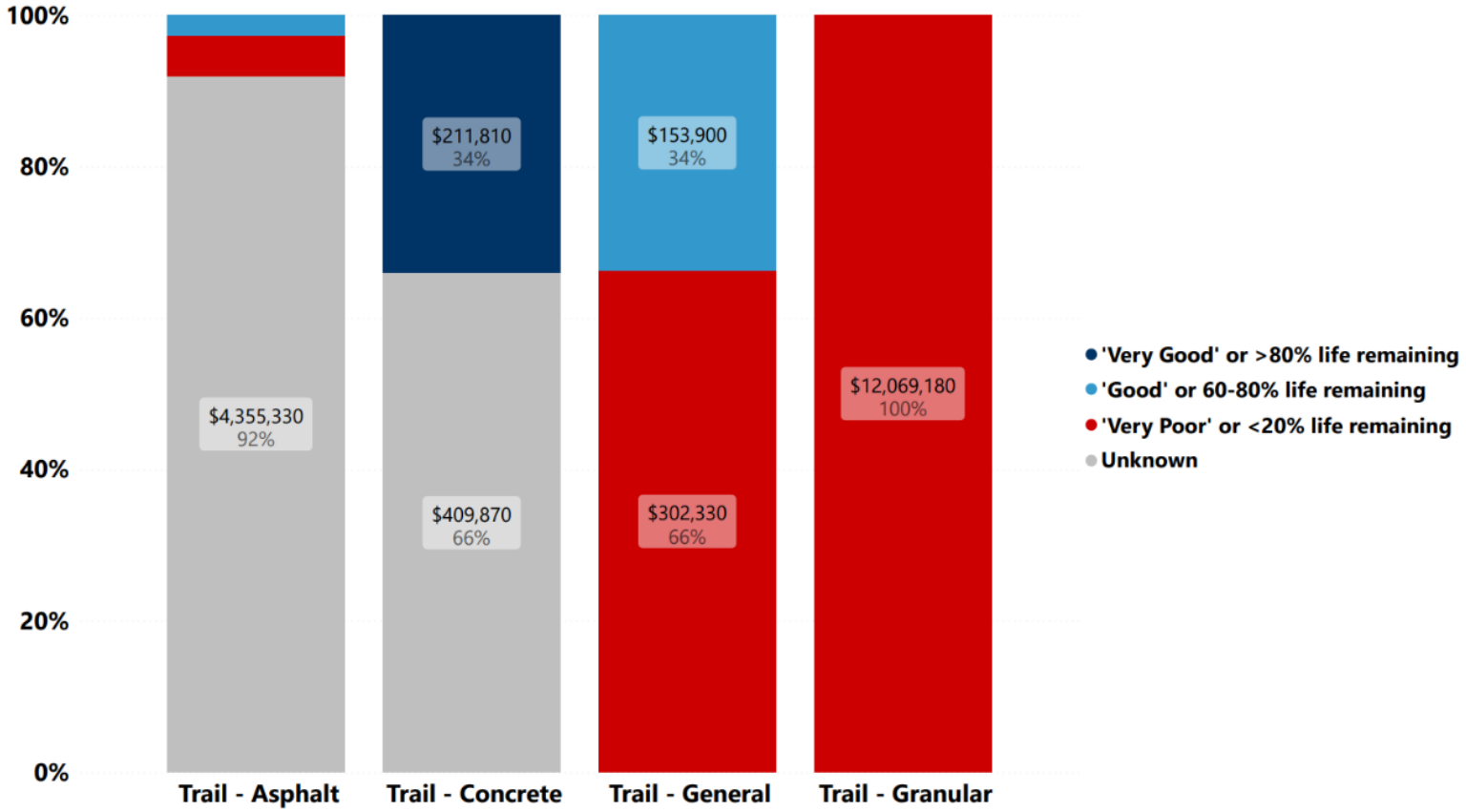
Figure 2-1: Condition Summary by 2023 Replacement Cost – Parks Linear



Parks Linear

A condition summary for the Multi-Use Recreational Trails assets is provided in **Figure 2-2** by asset type and replacement cost (in 2023 dollars). In the absence of condition assessment data, the condition of the Multi-Use Recreational Trails assets has been determined based on age and expected useful life.

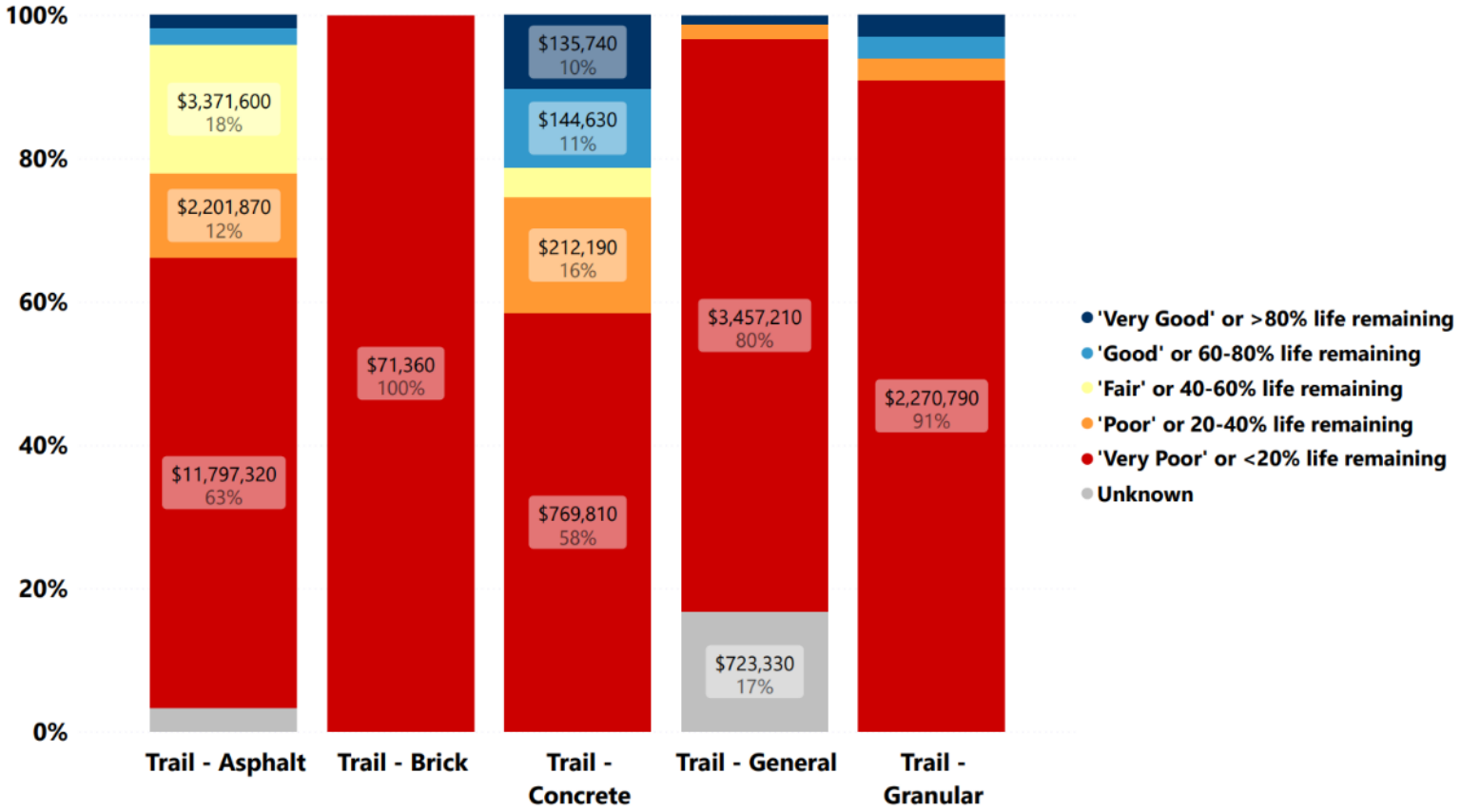
Figure 2-2: Condition Summary by Asset Type and 2023 Replacement Cost – Parks Linear (Multi-Use Recreational Trails)



Parks Linear

A condition summary for the Pathways assets is provided in **Figure 2-3** by asset type and replacement cost (in 2023 dollars). In the absence of condition assessment data, the condition of the Pathways assets has been determined based on age and expected useful life.

Figure 2-3: Condition Summary by Asset Type and 2023 Replacement Cost – Parks Linear (Pathways)



2.1.4 Data Sources and Confidence

Asset data for Parks Linear assets is maintained by the City within ArcGIS, a web-based geographical mapping solution, and the Cartegraph asset management software which served as the data source for this AMP.

Data confidence can be estimated based on the confidence level of various qualifiers and can be presented on a scale from 0% (low) to 100% (high), as shown in **Table 2-3**. The qualifiers chosen for evaluation are specifically targeted for estimating overall confidence of condition reporting within the SOLI.

Table 2-3: Data Confidence Scale

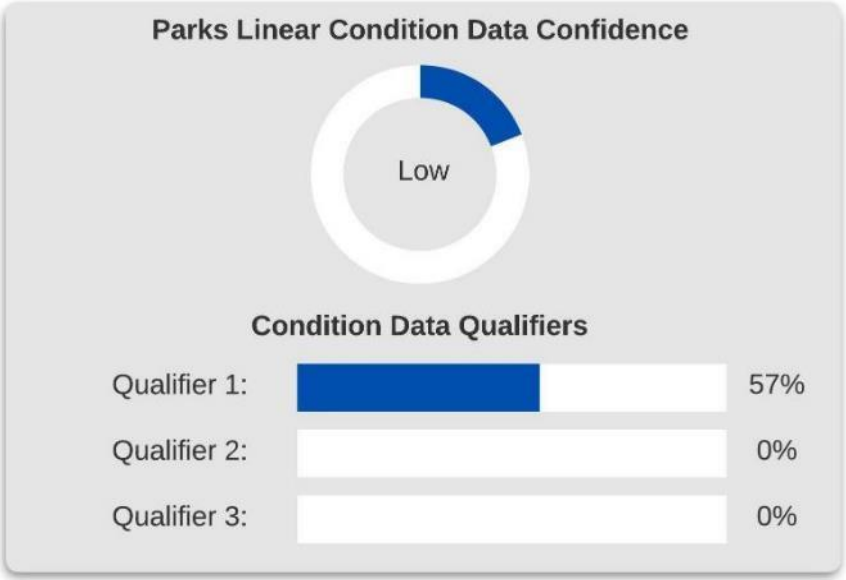
Confidence Level	Low	Low/ Moderate	Moderate	Moderate/ High	High
Average of Qualifiers	0% to 19%	20% to 39%	40% to 59%	60% to 79%	80% to 100%

Assuming the data source is reliable, the following qualifiers were considered to estimate data confidence regarding the data utilized in the creation of this SOLI report:

- **Qualifier 1**: The percentage of assets in the asset inventory where construction, installation, or acquisition years are documented (57%);
- **Qualifier 2**: The percentage of assets in the asset inventory that have condition assessment data documented (0%); and,
- **Qualifier 3**: The percentage of the estimated overall replacement value, in 2023 dollars, attributed to assets in the asset inventory with documented condition assessment data (i.e., condition is not solely age-based) (0%).

Parks Linear

Figure 2-4: SOLI Report Data Confidence – Parks Linear



As summarized in **Figure 2-4**, the overall asset condition data confidence for Parks Linear assets is estimated as Low. Presently, all asset conditions for Parks Linear assets are age-based and there are many assets where age is currently unknown. Data confidence can be increased by improving the documentation of the asset data (i.e., addressing data gaps such as missing installation years and replacement costing) and/or by formalizing a condition assessment program to assess the current conditions of this infrastructure.

2.2 Levels of Service

In 2021, the City approved it's Parks and Recreation Master Plan. This plan outlines a long-term vision and a strategic implementation approach guided by the City's values, priorities, and needs for enhancing parks and recreation services. Over the next 15 years, the master plan will help manage the development of parks and open spaces, as well as the provision of recreation and leisure services, programs, events, facilities, marinas, and other recreational amenities.

Parks Linear

The plan was updated in January 2023 to include an implementation strategy. The plan outlines 13 service areas for parks within the City boundaries. A summary of the key items that will influence the current LOS are outlined below.

- Current Planning: Parkland is planned on 13 park service areas. The areas are used to help prioritize parkland service distribution across the City.
- Prioritization: Service areas with lower parkland service levels should be prioritized for new parkland to ensure equitable distribution.
- Urban Accessibility: In urban areas, parkland should be within an 800-meter (10-minute walk) distance from residential areas to maximize accessibility.
- Service Standards: The current service standard for active parkland is 3.5 hectares of usable parkland per 1,000 residents, with an overall parkland service level of 5.1 hectares per 1,000 residents, including natural lands.

Table 2-4 and **Table 2-5** outline the City's current community and technical levels of service for Parks Linear assets.

Table 2-4: Community LOS – Parks Linear

LOS Parameter	LOS Statement	Performance Measure	Current LOS (2023)
Quality	Trails, parkland, and structures assets are kept in a good state of repair.	Percentage of assets that are meeting condition performance objectives.	34%

Parks Linear

Table 2-5: Technical LOS - Parks Linear

LOS Parameter	LOS Statement	Performance Measure	Current LOS (2023)
Capacity	Adequate and sufficient parkland is provided for end-users.	Total hectares of useable parkland per 1,000 residents	3.5

2.3 Risk Assessment

The risk ratings for Parks Linear assets included Multi-Use Recreational Trails, Park Land, Pathway, and Shoreline Protection & Seawalls. The risk scores were calculated using the risk methodology and approach outlined in the Introduction materials which were provided under a separate document. **Table 2-6** summarizes the risk factors for the Parks Linear assets.

Table 2-6: Risk Factors – Parks Linear

Factors	Risk Ratings
A - Condition	The condition of the assets was determined either by visual or age-based and can be found in the SOLI section of the AMP.
B - Performance	The performance of Multi-Use Recreational Trails, Park Land, and Pathway assets was identified as being “always reliable” and assigned a rating of 1 for calculating risk score. Shoreline Protection & Seawall assets was identified as being “usually reliable” and assigned a rating of 3 for calculating risk score.

Parks Linear

Factors	Risk Ratings
C - Climate Change	The climate change ratings were determined at the asset class level by identifying climate change hazard interactions. The Multi-Use Recreational Trails and Pathways assets were identified as a “low” risk and assigned a rating of 1 for calculating the risk score. The Park Land and Shoreline Protection & Seawall assets were identified as a “high” risk and assigned a rating of 5 for calculating the risk score.
D - Impact	The impact of the Shoreline Protection & Seawall assets was identified as "moderate" impact and assigned a rating of 1 for calculating risk score. The Multi-Use Recreational Trails, Park Land, and Pathway assets was identified as having “low” impact and assigned a rating of 0 for calculating risk score.
E - Importance	The Shoreline Protection & Seawall asset class was identified as “moderate” importance and assigned a rating of 2 when calculating risk. A “high” importance rating was applied to the Multi-Use Recreational Trails, Park Land, and Pathway assets and a rating of 3 was assigned for calculating risk score.

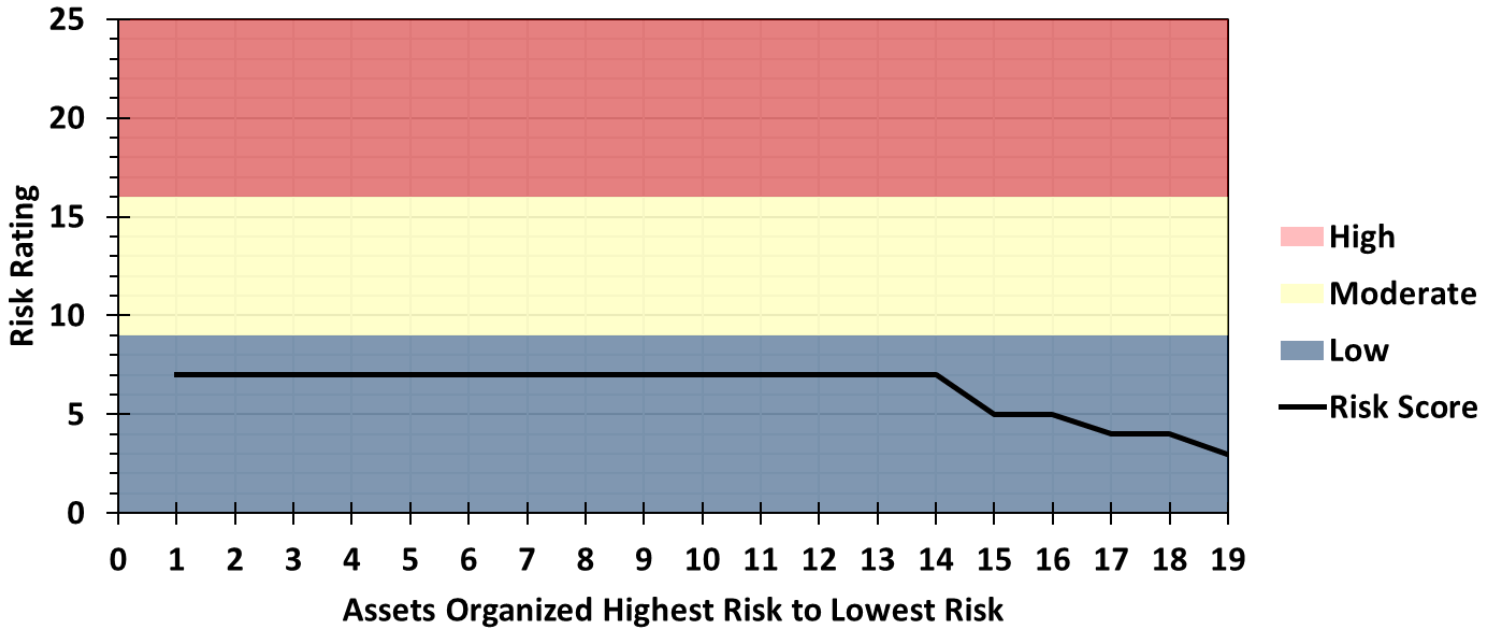
The individual risk ratings were used in calculating the risk score for each of the assets.

2.3.1 Risk Profile

The Risk profile of the Multi-Use Recreational Trails assets is displayed in **Figure 2-5**. All 19 assets tracked in the asset inventory are considered as Low risk.

Parks Linear

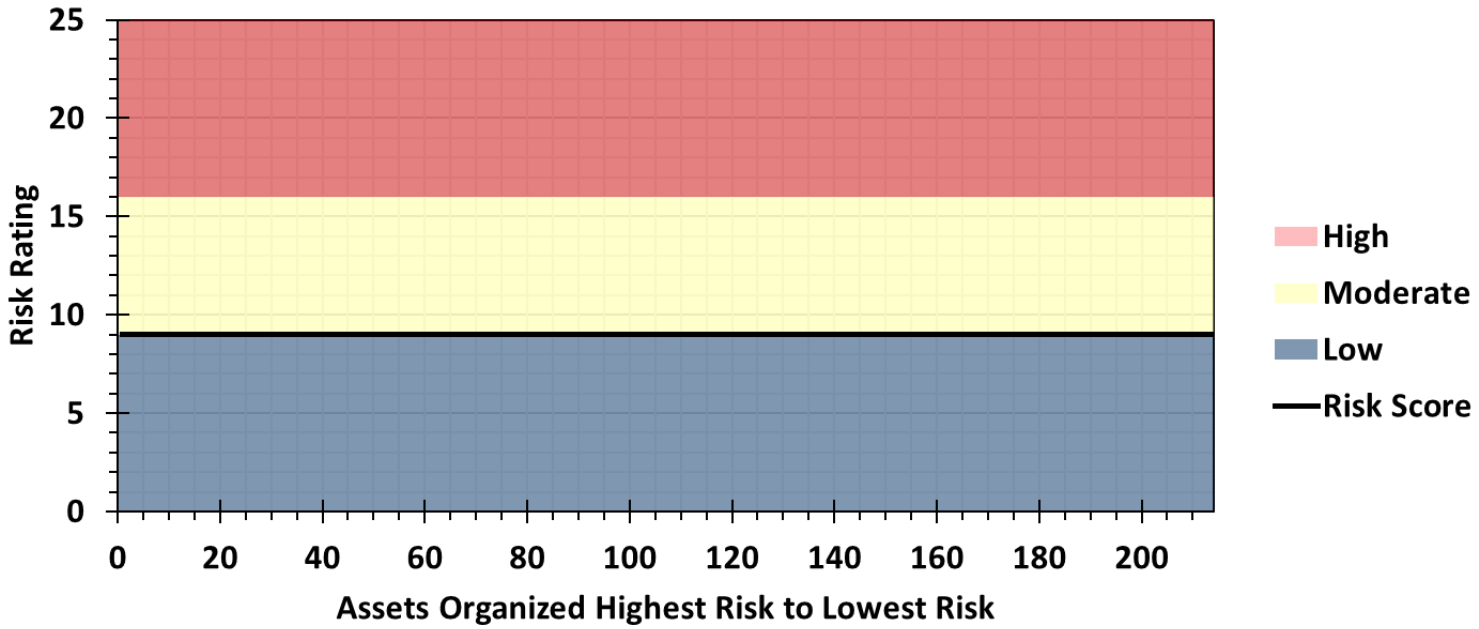
Figure 2-5: Risk Profile – Parks Linear (Multi-Use Recreational Trails)



The Risk profile of the Park Land assets is displayed in **Figure 2-6**. All 214 assets tracked in the asset inventory are considered as Low risk.

Parks Linear

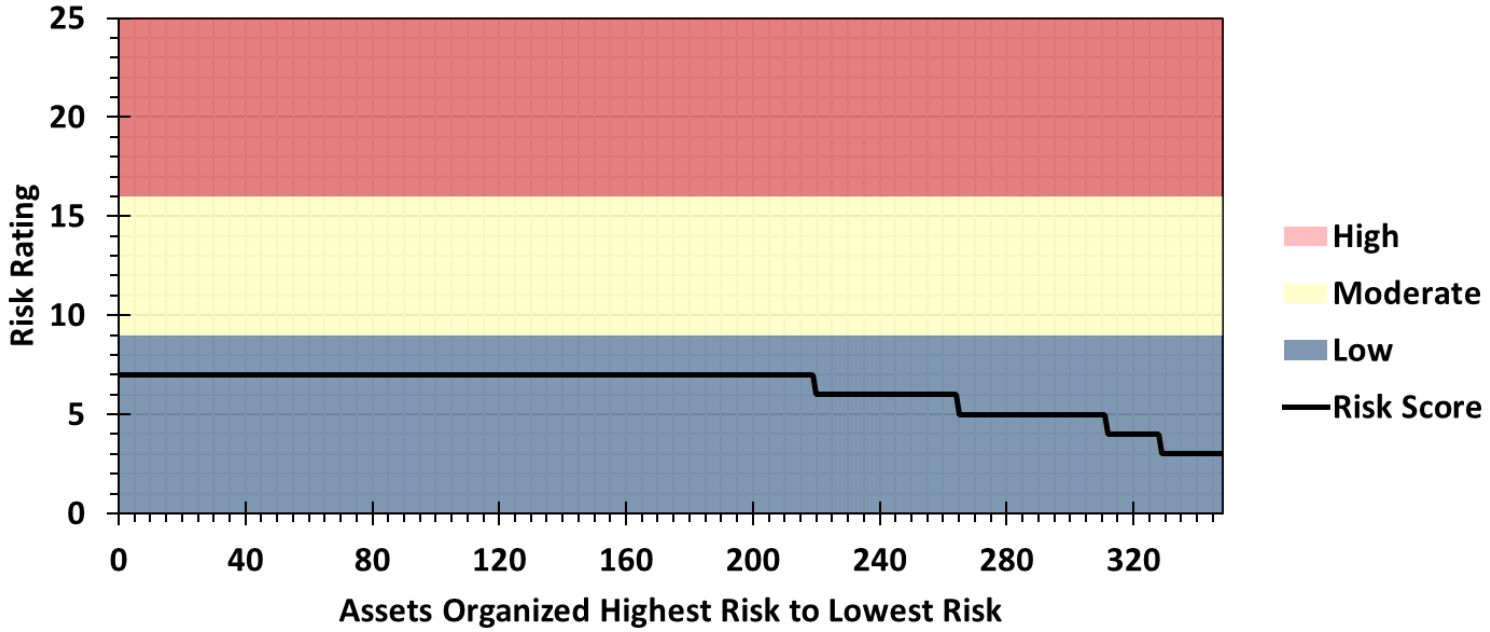
Figure 2-6: Risk Profile - Parks Linear (Park Land)



The Risk profile of the Pathways assets is displayed in **Figure 2-7**. All 348 assets tracked in the asset inventory are considered as Low risk.

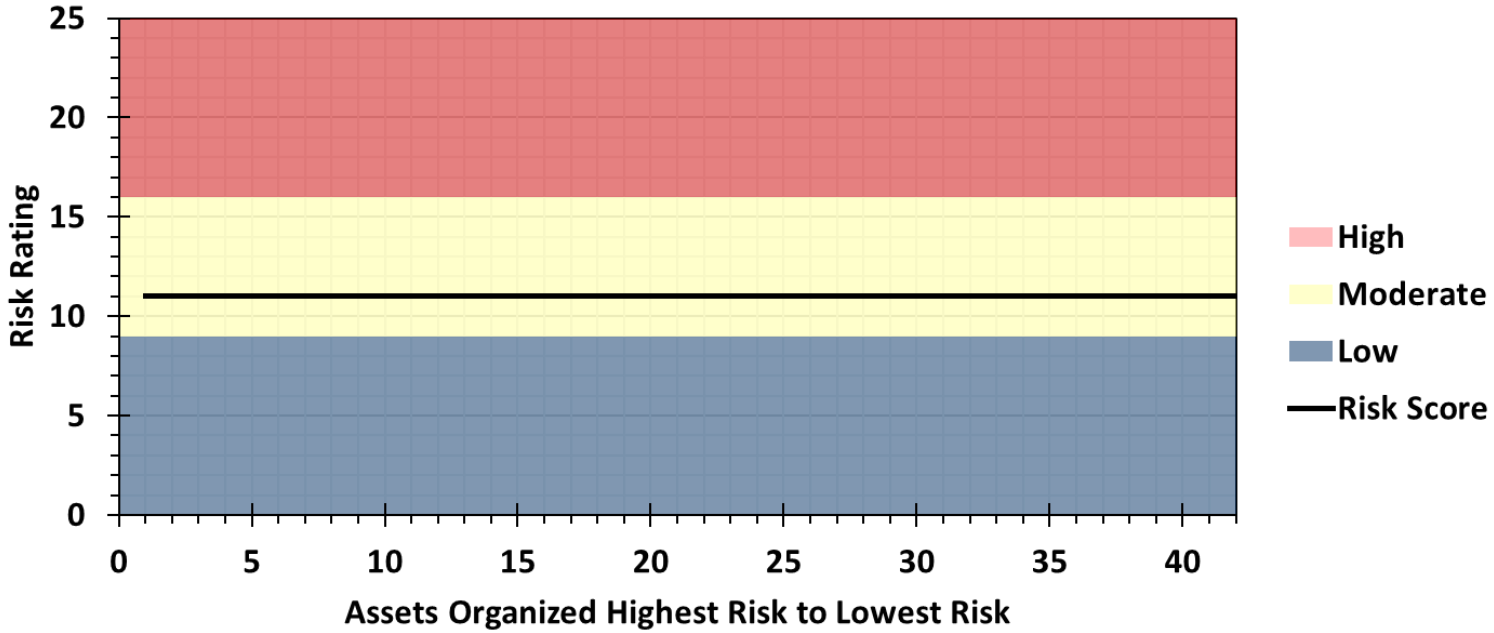
Parks Linear

Figure 2-7: Risk Profile - Parks Linear (Pathways)



The Risk profile of the Shoreline Protection & Seawall assets is displayed in **Figure 2-8**. All 42 assets tracked in the asset inventory are considered as Moderate risk.

Figure 2-8: Risk Profile - Parks Linear (Shoreline Protection & Seawalls)



2.4 Asset Management Strategy

2.4.1 Lifecycle Activities – Parks Linear

The lifecycle activities considered include:

- **Non-Infrastructure Solutions**: Actions or policies that can lower costs and extend useful lives.
- **Maintenance Activities**: Regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.
- **Renewal / Rehabilitation Activities**: Significant repairs designed to extend the life of the asset.

- **Replacement / Construction Activities**: Activities that are expected to occur once an asset has reached the end of its useful life and renewal/rehabilitation is no longer an option.
- **Disposal Activities**: Activities associated with disposing of an asset once it has reached the end of its useful life or is otherwise no longer needed.
- **Expansion / Growth / Service Improvement Activities**: Planned activities required to extend services to previously unserved areas or expand services to meet growth demands.

Table 2-7 describes the lifecycle activities that can be implemented within the asset management strategy for Parks Linear assets. The lifecycle activities presented below are existing activities performed by the City, identified during a workshop with City staff in February 2024.

Table 2-7: Lifecycle Activities – Parks Linear

Lifecycle Activity Type	Description of Activity	Frequency / Timing
Non-Infrastructure Solutions	Community Outreach/Public Engagement	Annually
Non-Infrastructure Solutions	Playground Inspections	Annually
Non-Infrastructure Solutions	Pedestrian Bridge Inspections	Every 2 years
Non-Infrastructure Solutions	Shoreline Inspections	Every 3 years
Maintenance Activities	Erosion Control	Annually
Maintenance Activities	Specific maintenance as documented in the public works park maintenance plan	Ongoing
Renewal / Rehabilitation Activities	15-Year Capital Plan	Annually

Parks Linear

Lifecycle Activity Type	Description of Activity	Frequency / Timing
Replacement / Construction Activities	15-Year Capital Plan	Annually
Disposal Activities	At time of asset renewal, but never land	Annually
Expansion / Growth / Service Improvement Activities	Development Charges Study	Every 5 to 10 years
Expansion / Growth / Service Improvement Activities	Parks and Recreation Master Plan	Every 15 years
Expansion / Growth / Service Improvement Activities	Waterfront Master Plan	Every 30 years
Expansion / Growth / Service Improvement Activities	Review of Council Approved Population Growth Projections	As needed

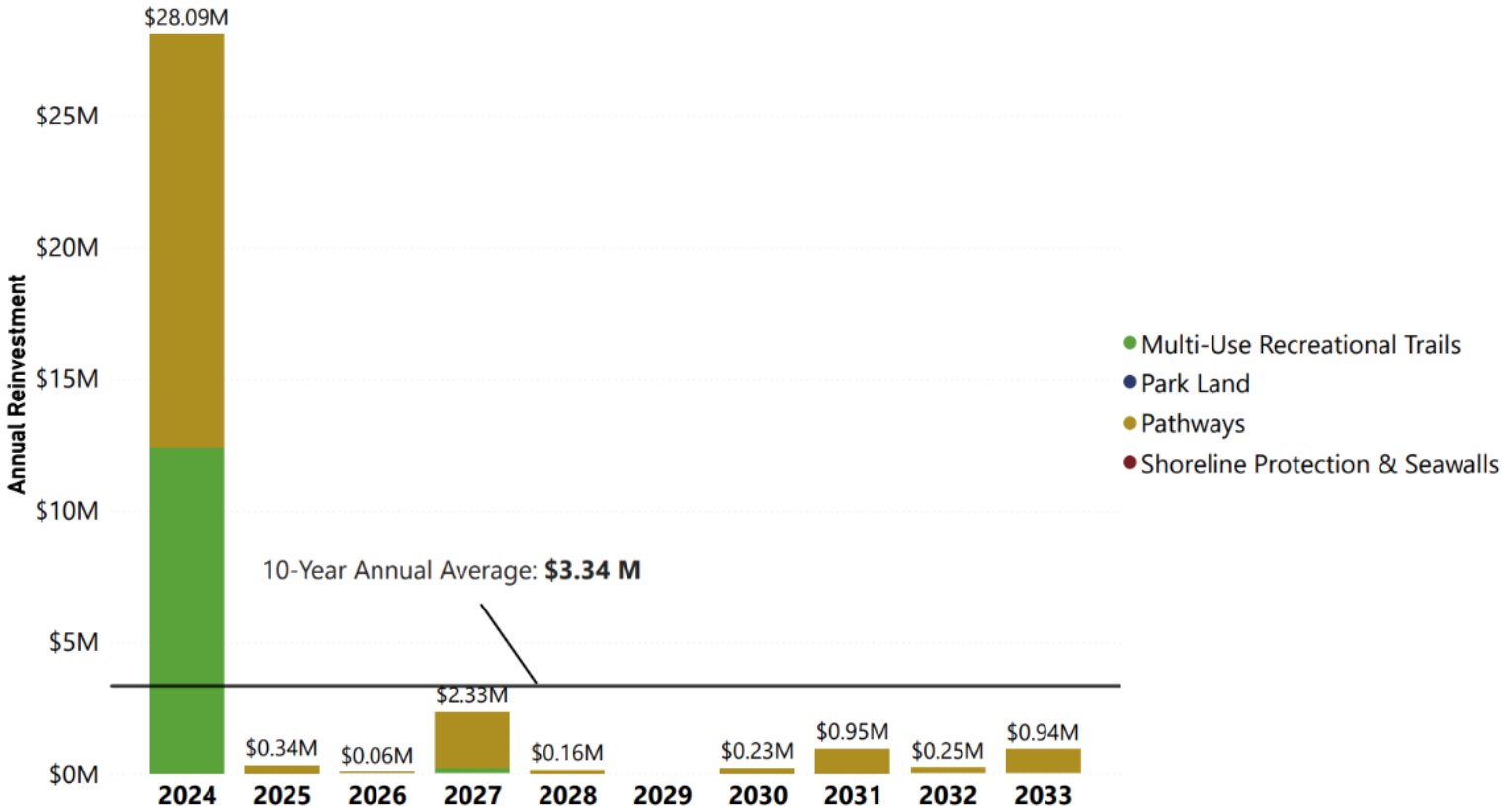
2.4.2 Funding the Lifecycle Activities – Parks Linear

Lifecycle modeling allows for the City to understand the future reinvestment needs of their existing assets by generating a theoretical asset replacement forecast that considers available asset inventory data. The age, EUL, replacement cost, condition, and risk score of each asset can be leveraged within the lifecycle model to proactively plan for reinvestment over a period of time. Asset replacement forecasts within this subsection estimate the required reinvestment for Parks Linear assets over the next 10 years based on available asset inventory data.

Parks Linear

There is a total of approximately **$33.36 million** to be reinvested into the Parks Linear assets owned by the City in the next 10 years. This translates to a 10-year annual average of approximately **$3.34 million**, as presented in **Figure 2-9.** Due to the age of the trail assets under Multi-Use Recreational Trails and Pathway asset classes, there are over 200 assets in very poor condition requiring a large reinvestment need in 2024.

Figure 2-9: 10-Year Capital Reinvestment Needs – Parks Linear



It is important to note that forecasting in this lifecycle model relies heavily on age and EUL to determine renewal or replacement needs.

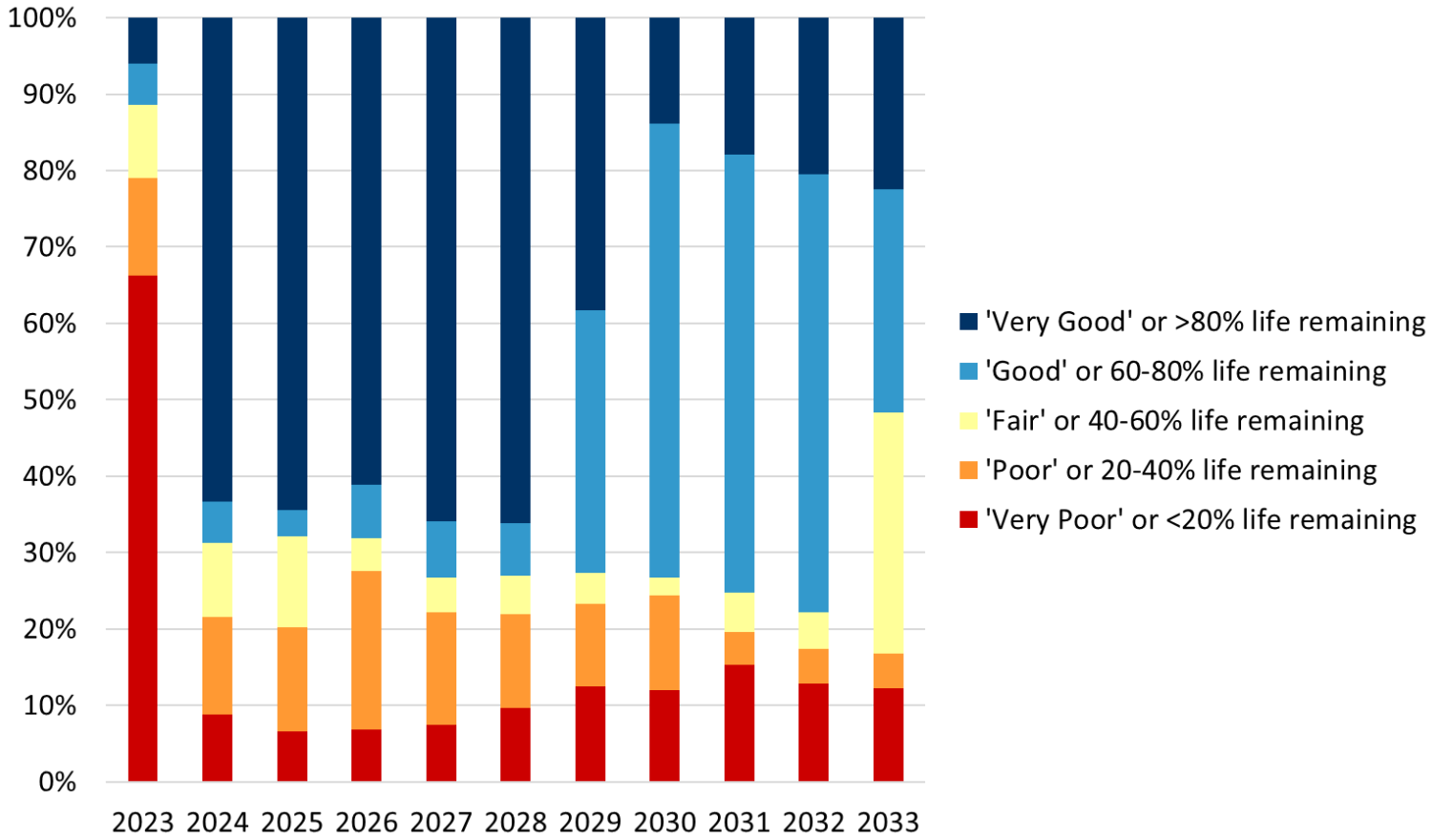
Parks Linear

The LOS includes maintaining the current assets in poor or better condition (34%). From the lifecycle model, the percentage of Parks Linear assets in poor or better condition fluctuates throughout the next 10-years due to the EUL of the assets. Based on the EUL (20, 25, 30, 50, and 200 years) and age of the assets, the forecasted condition of the Parks Linear assets reaches a high of 93% in 2025 to 2027 and eventually finishing at 88% in 2033.

Figure 2-10 shows an overview of the condition of Parks Linear over the next 10 years based on the lifecycle model.

Parks Linear

Figure 2-10: Condition Overview by Year Based on Lifecycle Model – Parks Linear



3.0 Park Amenities

The City's Park Amenities service manages and oversees Community Gardens, Off Leash Dog Parks, Playground & Equipment, Skateparks, Splash Pads, Sports Fields, Tennis, Pickleball Courts, and Other Multi-Use Courts. The following section of the AMP includes assets that are under the Park Amenities service. The Park and Recreation Master Plan outlines the service level standards for Park Amenities growth needed for the City over 15 years. Although there are needs for additional Park Amenities, renewal to optimize capacity of existing amenities prior to building new is a key direction. Clustering like amenities and repurposing and optimizing existing amenities will help with future maintenance and management of the amenities.

Note on Scope: At the time of preparing this AMP no data was available for an asset class (i.e., Community Gardens) and as a result, this asset class has been excluded. It is recommended that the City further develops an inventory of this asset class to be considered in subsequent iterations of the AMP.

3.1 State of the Local Infrastructure

3.1.1 Asset Inventory and Valuation

For inventory purposes, Park Amenities assets have been summarized into asset classes and further divided into applicable asset types. **Table 3-1** summaries the asset inventory for Park Amenities by asset class, asset type, asset count, and total replacement cost (in 2023 dollars). The total replacement cost (2023 dollars) is estimated at **$97.7 million** for the **304 assets** included in the inventory.

Table 3-1: Inventory Summary by Asset Type – Park Amenities

Asset Class	Asset Type	Count	Total Replacement Cost (2023)
Off Leash Dog Park	Off Leash Dog Park	5	$1,750,000
Playgrounds & Equipment	Playground Large	11	$5,339,000
Playgrounds & Equipment	Playground Small	102	$33,454,100
Skateparks	Skate Park Large	1	$1,020,600
Skateparks	Skate Park Small	3	$870,900
Splash Pads	Splash Pad/ Wading Pool Small	9	$2,196,900
Splash Pads	Splash Pad Larger	3	$1,762,500
Sports Fields	Artificial Turf Field (lit)	2	$4,818,600
Sports Fields	Ball Diamonds (lit)	14	$13,209,000
Sports Fields	Ball Diamonds (unlit, including informal)	25	$8,507,500
Sports Fields	Running Track (rubber)	1	$1,900,000
Sports Fields	Soccer Field (unlit, natural, full size)	29	$10,753,200
Sports Fields	Soccer Field (unlit, natural, minor)	25	$4,045,000
Sports Fields	Throwing/ Jumping Field	1	$50,000
Tennis, Pickleball Courts	Pickleball Court (dedicated, unlit)	8	$496,000

Park Amenities

Asset Class	Asset Type	Count	Total Replacement Cost (2023)
Tennis, Pickleball Courts	Tennis Court (unlit)	26	$5,080,400
Other Multi-Use Courts	Basketball (hoop only)	2	$10,000
Other Multi-Use Courts	Basketball (separate court only)	30	$2,280,000
Other Multi-Use Courts	Beach Volleyball Court (unlit)	6	$150,000
Other Multi-Use Courts	Shuffleboard Court	1	$50,000
Overall	**N/A**	**304**	**$97,743,700**

3.1.2 Asset Age Summary

Table 3-2 summarizes the average age, the average condition, the expected useful life, and the average remaining useful life of assets pertaining to the Park Amenities.

Table 3-2: Average Age, Average Condition, Expected Useful Life, and Average Remaining Useful Life – Park Amenities

Asset Class	Asset Type	Average Age (Years)	Average Condition Grade	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Off Leash Dog Park	Off Leash Dog Park	15	Fair	30	14
Playgrounds & Equipment	Playground Large	14	Good	25	17
Playgrounds & Equipment	Playground Small	17	Good	25	15
Skateparks	Skate Park Large	Unknown	Good	15	10
Skateparks	Skate Park Small	Unknown	Good	15	10

Park Amenities

Asset Class	Asset Type	Average Age (Years)	Average Condition Grade	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Splash Pads	Splash Pad/ Wading Pool Small	Unknown	Good	20	12
Splash Pads	Splash Pad Larger	Unknown	Good	20	13
Sports Fields	Artificial Turf Field (lit)	Unknown	Good	20	13
Sports Fields	Ball Diamonds (lit)	Unknown	Good	30	20
Sports Fields	Ball Diamonds (unlit, including informal)	Unknown	Good	30	19
Sports Fields	Running Track (rubber)	Unknown	Good	20	13
Sports Fields	Soccer Field (unlit, natural, full size)	Unknown	Good	30	19
Sports Fields	Soccer Field (unlit, natural, minor)	Unknown	Good	30	18
Sports Fields	Throwing/ Jumping Field	Unknown	Good	20	13
Tennis, Pickleball Courts	Pickleball Court (dedicated, unlit)	Unknown	Good	20	13
Tennis, Pickleball Courts	Tennis Court (unlit)	Unknown	Good	20	11
Other Multi-Use Courts	Basketball (hoop only)	Unknown	Good	25	17
Other Multi-Use Courts	Basketball (separate court only)	Unknown	Good	25	15
Other Multi-Use Courts	Beach Volleyball Court (unlit)	Unknown	Fair	10	6

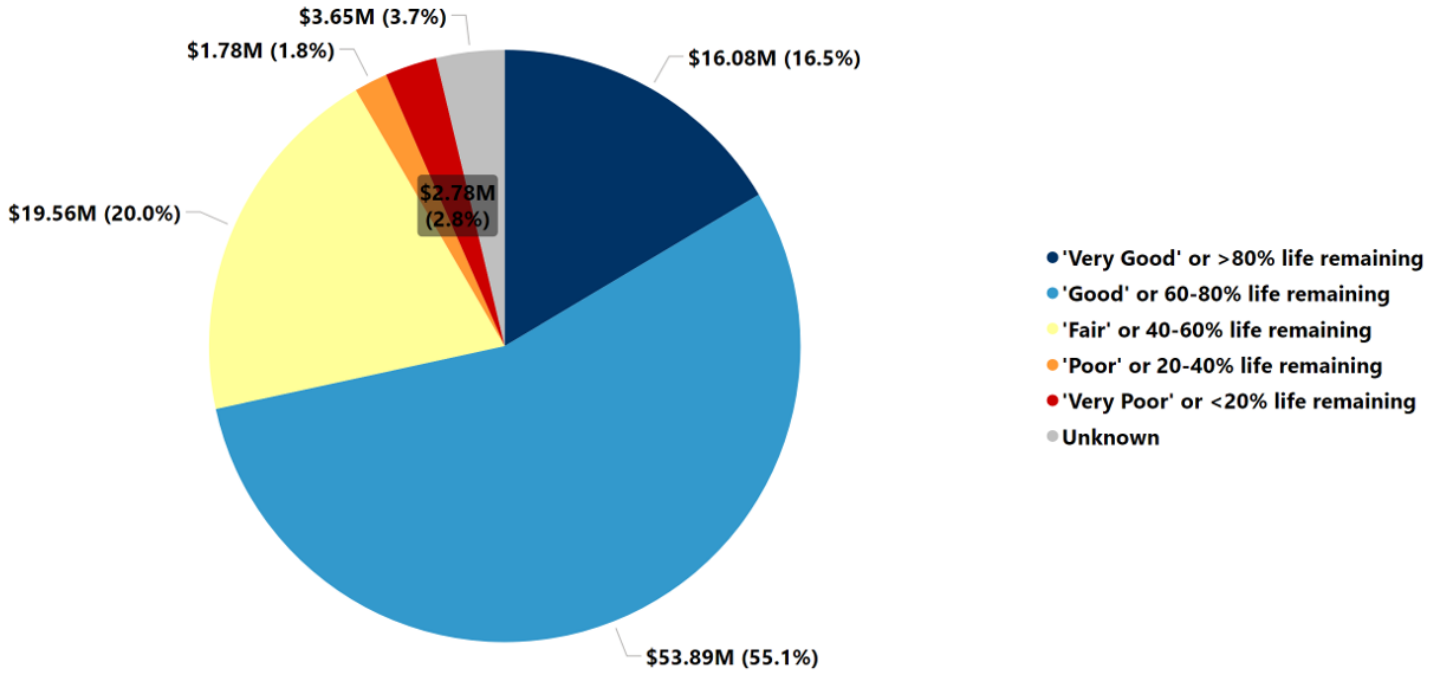
Park Amenities

Asset Class	Asset Type	Average Age (Years)	Average Condition Grade	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Other Multi-Use Courts	Shuffleboard Court	Unknown	Good	20	13
Overall	**N/A**	**15**	**Good**	**10 to 30**	**14**

3.1.3 Asset Condition

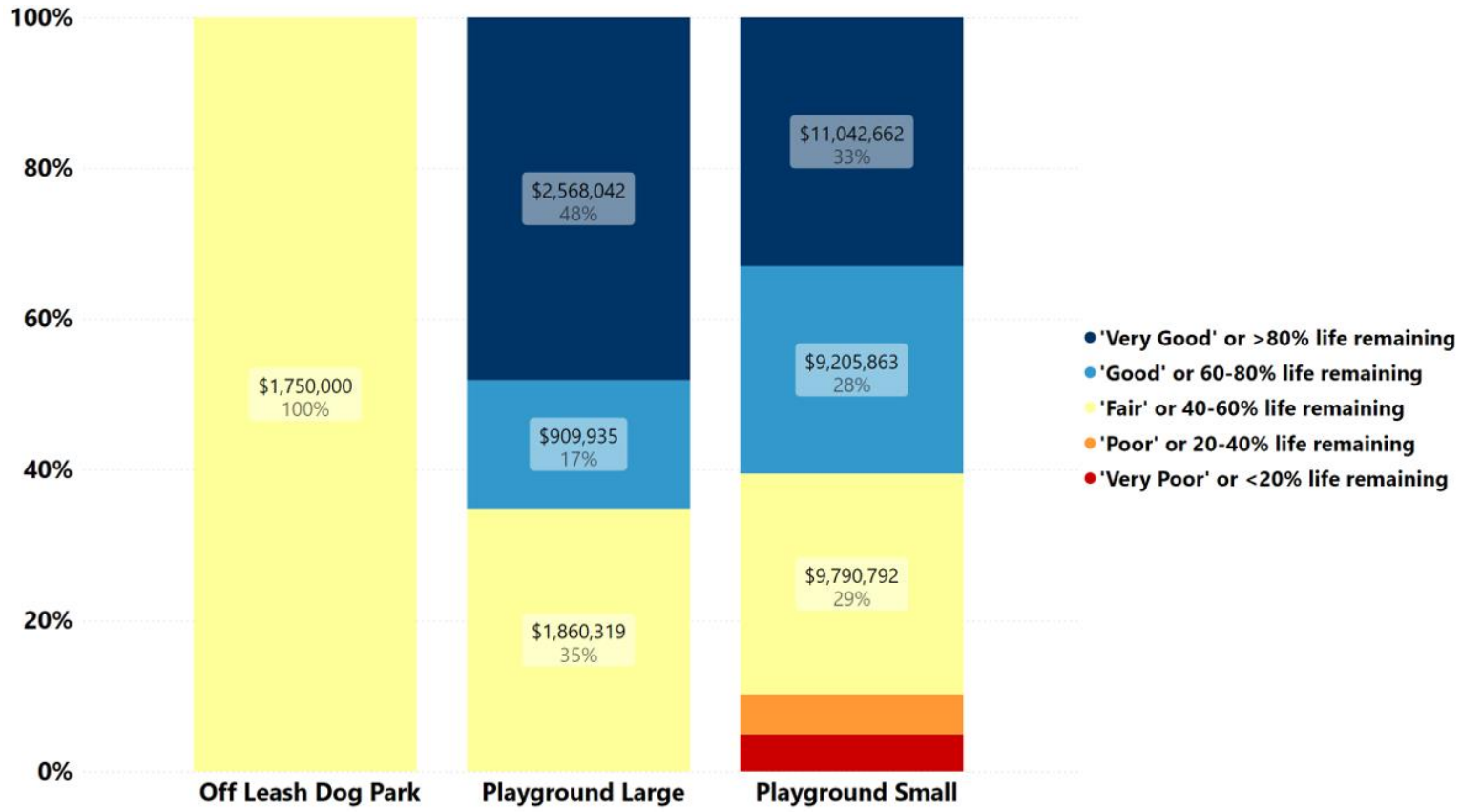
The overall condition summary for Park Amenities assets by replacement cost (in 2023 dollars) is shown in **Figure 3-1**. There is approximately 92.5% of the assets that are in very good to fair condition.

Figure 3-1: Condition Summary by 2023 Replacement Cost – Park Amenities



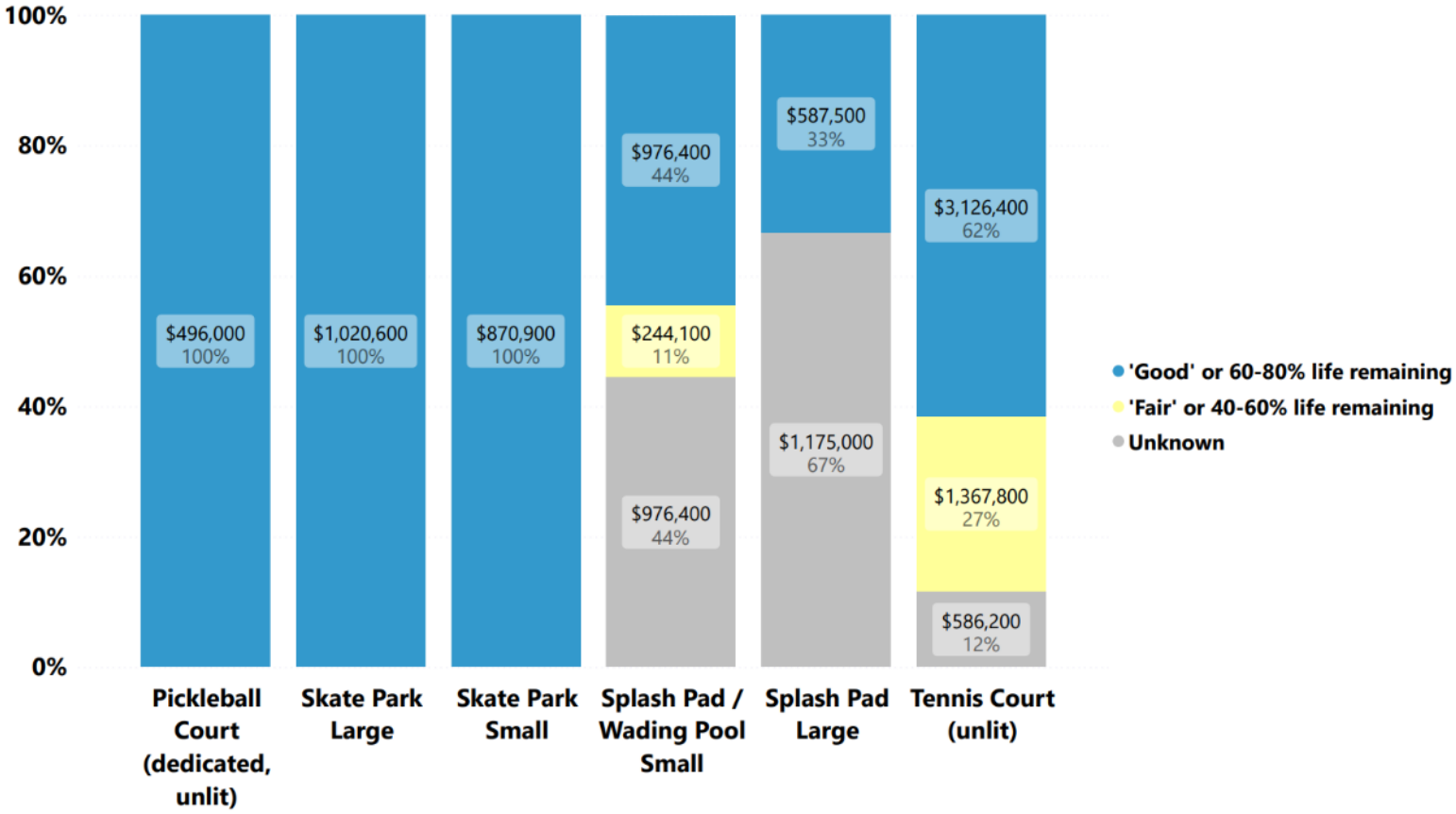
A condition summary for Off Leash Dog Park and Playgrounds & Equipment is provided in **Figure 3-2** by asset type and replacement cost (in 2023 dollars).

Figure 3-2:Condition Summary by Asset Type and Replacement Cost – Park Amenities (Off Leash Dog Park and Playgrounds & Equipment)



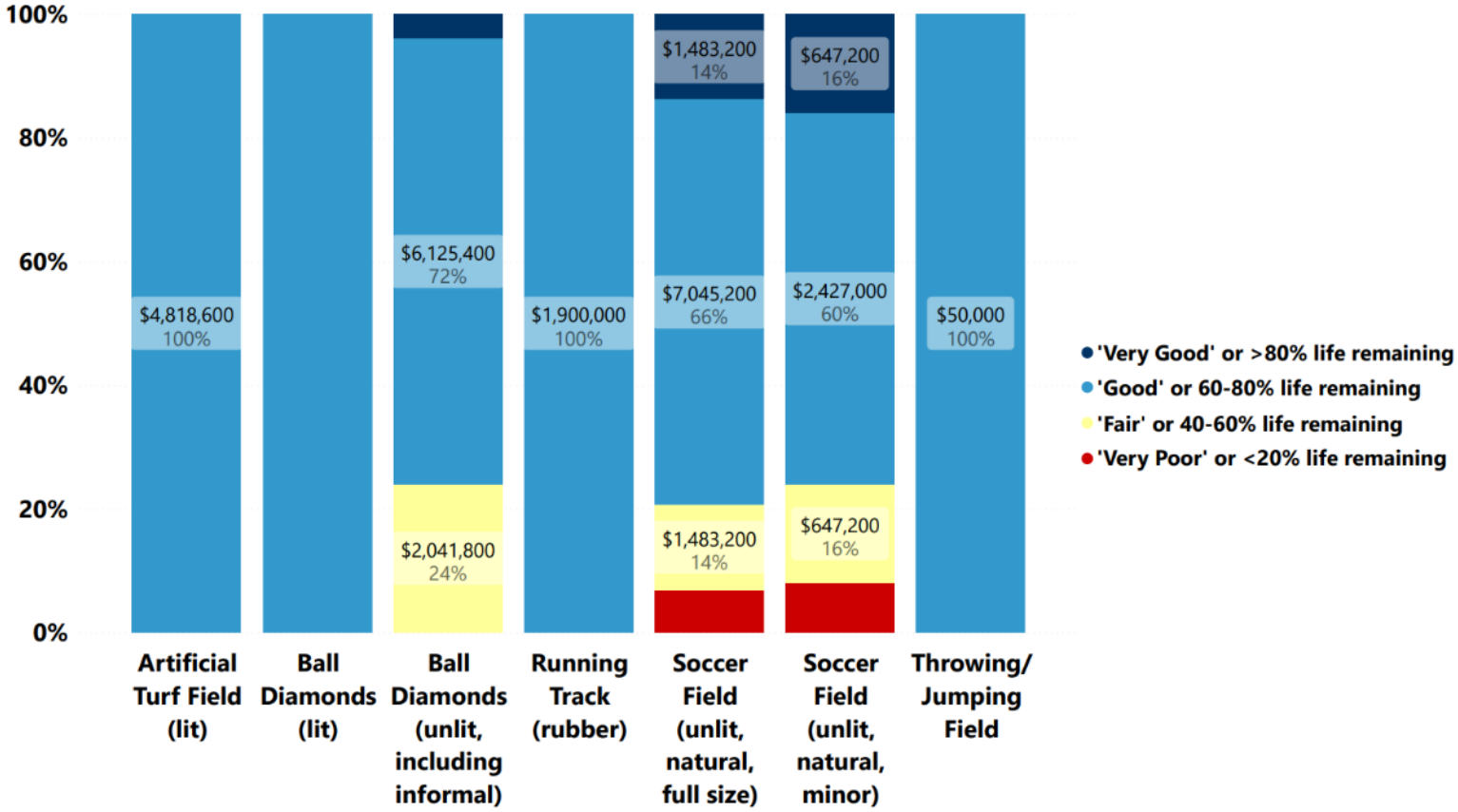
A condition summary for Skateparks, Splash Pads, and Tennis, Pickleball Courts is provided in **Figure 3-3** by asset type and replacement cost (in 2023 dollars).

Figure 3-3: Condition Summary by Asset Type and Replacement Cost – Park Amenities (Skateparks, Splash Pads, and Tennis, Pickleball Courts)



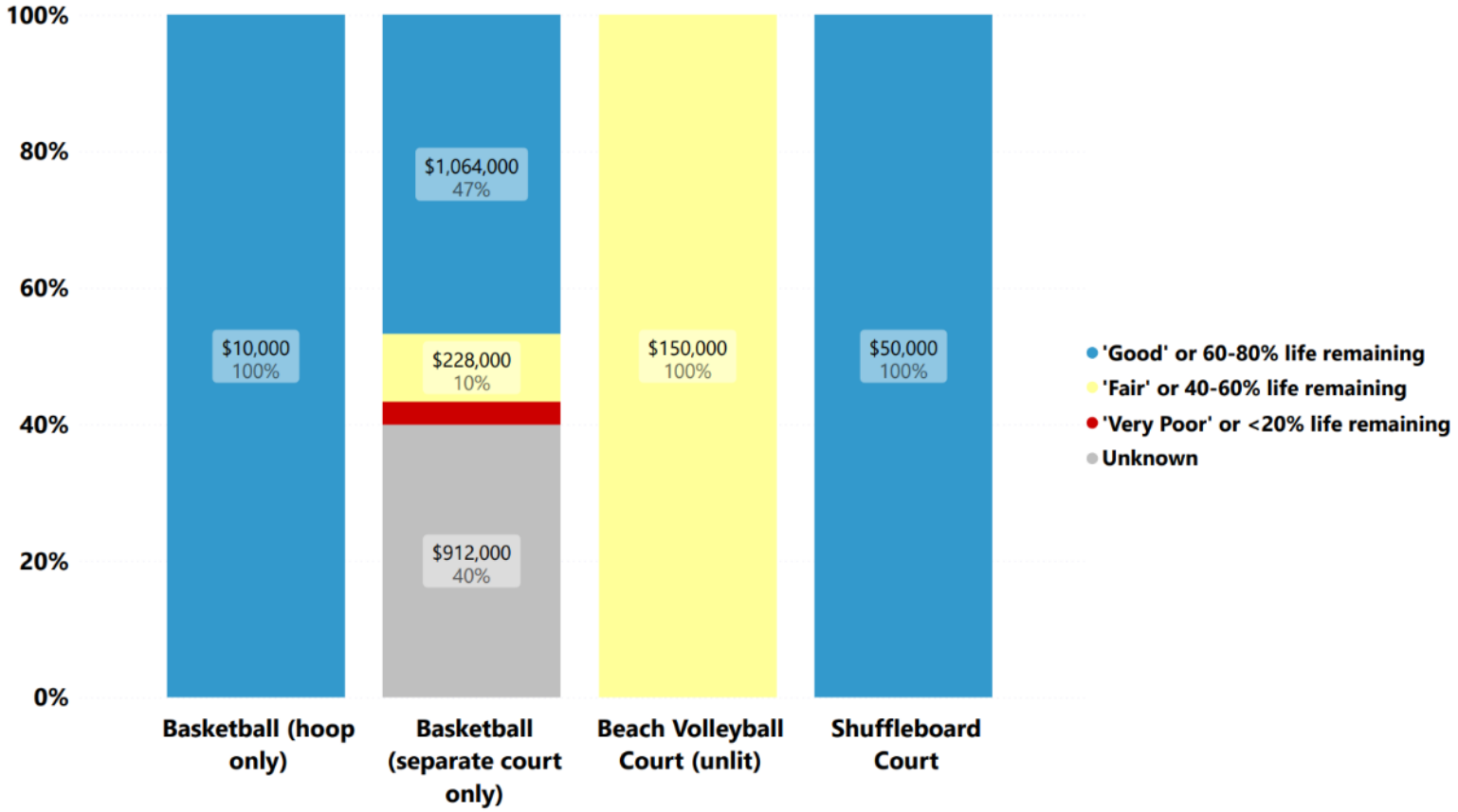
A condition summary for Sports Fields is provided in **Figure 3-4** by asset type and replacement cost (in 2023 dollars).

Figure 3-4: Condition Summary by Asset Type and Replacement Cost - Park Amenities (Sports Fields)



A condition summary for Other Multi-Use Courts is provided in **Figure 3-5** by asset type and replacement cost (in 2023 dollars).

Figure 3-5: Condition Summary by Asset Type and Replacement Cost - Park Amenities (Other Multi-Use Courts)



3.1.4 Data Sources and Confidence

Asset data for Park Amenities is maintained by City staff. Currently, there is no centralized repository for Park Amenities asset information. The City has some asset data within ArcGIS, a web-based geographical mapping solution, and additional asset data within various Excel spreadsheets including a 2022 Playground Replacement Assessment Summary.

Data confidence can be estimated based on the confidence level of various qualifiers and can be presented on a scale from 0% (low) to 100% (high), as shown in **Table 3-3**. The qualifiers chosen for evaluation are specifically targeted for estimating overall confidence of condition reporting within the SOLI.

Table 3-3: Data Confidence Scale

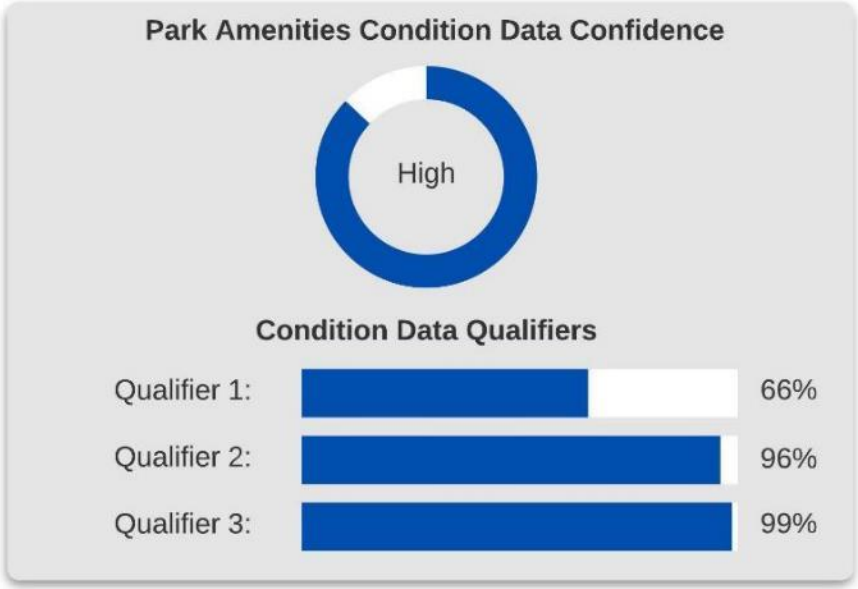
Confidence Level	Low	Low/ Moderate	Moderate	Moderate/ High	High
Average of Qualifiers	0% to 19%	20% to 39%	40% to 59%	60% to 79%	80% to 100%

Assuming the data sources are reliable, the following qualifiers were considered to estimate data confidence regarding the data utilized in the creation of this SOLI report:

- **Qualifier 1**: The percentage of assets in the asset inventory where construction, installation, or acquisition years are documented (66%);
- **Qualifier 2**: The percentage of assets in the asset inventory that have condition assessment data documented (96%); and,
- **Qualifier 3**: The percentage of the estimated overall replacement value, in 2023 dollars, attributed to assets in the asset inventory with documented condition assessment data (i.e., condition is not solely age-based) (99%).

Park Amenities

Figure 3-6: SOLI Report Data Confidence – Park Amenities



As summarized in **Figure 3-6**, the overall asset condition data confidence for Park Amenities assets is estimated as High. Presently, most asset conditions for Park Amenities assets are based on condition ratings assigned in 2023 by City staff, as documented within ArcGIS. Data confidence can be increased by improving the quality of the data and/or filling data gaps, such as documentation of the construction years for assets where construction years are currently unknown.

3.2 Levels of Service

As mentioned in the **Section 2.2**, the City generated and approved the Parks and Recreation Master Plan in 2021. **Table 3-4** outlines the overall current parkland service level for Park Amenities. Park levels of service is influenced by growth and demand of amenities. Numerous legislative and regulatory requirements such as the Ontario Building Code, the Accessibility for Ontarians Disabilities Act (AODA) standards for customer service, and playground safety requirements apply to Park Amenities. Additionally, community expectations may impact the scale and complexity of renewal of existing amenities.

Table 3-4: Community LOS – Park Amenities

LOS Parameter	LOS Statement	Performance Measure	Current LOS (2023)
Quality	Park Amenities assets are kept in a good state of repair.	Percentage of assets that are meeting condition performance objectives.	92.5%

In the Master Plan, it summarizes the current supply of outdoor recreation amenities and specifies the additional number of each type needed by the end of the planning period (2036) to achieve the service level. The proposed performance measures for the facilities are outlined in **Table 3-5**. The classification of the facilities sightly differs from the AMP.

Park Amenities

Table 3-5: Community LOS – Facility Service Level

Facility	Service Level	Current LOS (2023)
Rectangular Fields	1: 120-130 registered participants	1:126
Ball Diamonds	1: 90-100 registered participants	1:92
Tennis Court (includes multi-use)	1: 4,000 residents	1:6249
Pickleball Court (includes multi-use)	1: 4,000 residents	1:6818
Basketball Court (full, half courts and multi-use)	1 basketball court per 600-700 youth (ages 10-19)	1:7142
Playgrounds	1 playground within 800m of major residential areas	1:1250
Skate Parks	1 skate park per 5,000 youth (ages 10-19)	1:4597
Splash Pads	1 splash pad per 1,500 children (ages 0-9)	1:1010

Park Amenities

Table 3-6 outline the technical levels of service for Park Amenities.

Table 3-6: Technical LOS – Park Amenities

LOS Parameter	LOS Statement	Performance Measure	Current LOS (2023)
Safety	Playgrounds are safe and meet regulatory requirements.	Percentage of playgrounds that meet the Canadian Standards Association (CSA).	100%

3.3 Risk Assessment

The risk ratings for physical Park Amenities assets included Off Leash Dog Park, Playgrounds & Equipment, Skateparks, Splash Pads, Sports Fields, Tennis, Pickleball Courts, and Other Multi-Use Courts. The risk scores were calculated using the risk methodology and approach outlined in Section 1.4 of the Introduction. **Table 3-7** summarizes the risk factors for the Park Amenities assets.

Table 3-7: Risk Factors – Park Amenities

Factors	Risk Ratings
A - Condition	The condition of the assets was determined either by visual or age-based and can be found in the SOLI section of the AMP.
B - Performance	The performance of all the asset classes, except Playgrounds & Equipment assets was identified as "always reliable" and assigned a rating of 1 for calculating risk score. Playgrounds & Equipment assets was assigned a rating of 3 for being “Usually reliable”.

Factors	Risk Ratings
C - Climate Change	The climate change ratings were determined at the asset class level by identifying climate change hazard interactions. The Off Leash Dog Park and Sports Fields assets were identified as a “high” risk and assigned a rating of 5 for calculating the risk score. The Playgrounds & Equipment, Skatepark, Splash Pad, Tennis, Pickleball Court, and Other Multi-Use Courts assets were identified as a “low” risk and assigned a rating of 1 for calculating the risk score.
D - Impact	The impact of the Playgrounds & Equipment assets was identified as "moderate" impact and assigned a rating of 1 for calculating risk score. The impact of the Off Leash Dog Park, Skatepark, Splash Pad, Sports Field, Tennis, Pickleball Court, and Other Multi-Use Courts assets was identified as "low" impact and assigned a rating of 0 for calculating risk score.
E - Importance	The Off Leash Dog Park, Skatepark, Splash Pad, Sports Field, Tennis, Pickleball Court Other, and Other Multi-Use Courts asset classes was identified as “moderate” importance and assigned a rating of 2 when calculating risk. A “high” importance rating was applied to the Playgrounds & Equipment assets and a rating of 3 was assigned for calculating risk score.

The individual risk ratings were used in calculating the risk score for each of the assets.

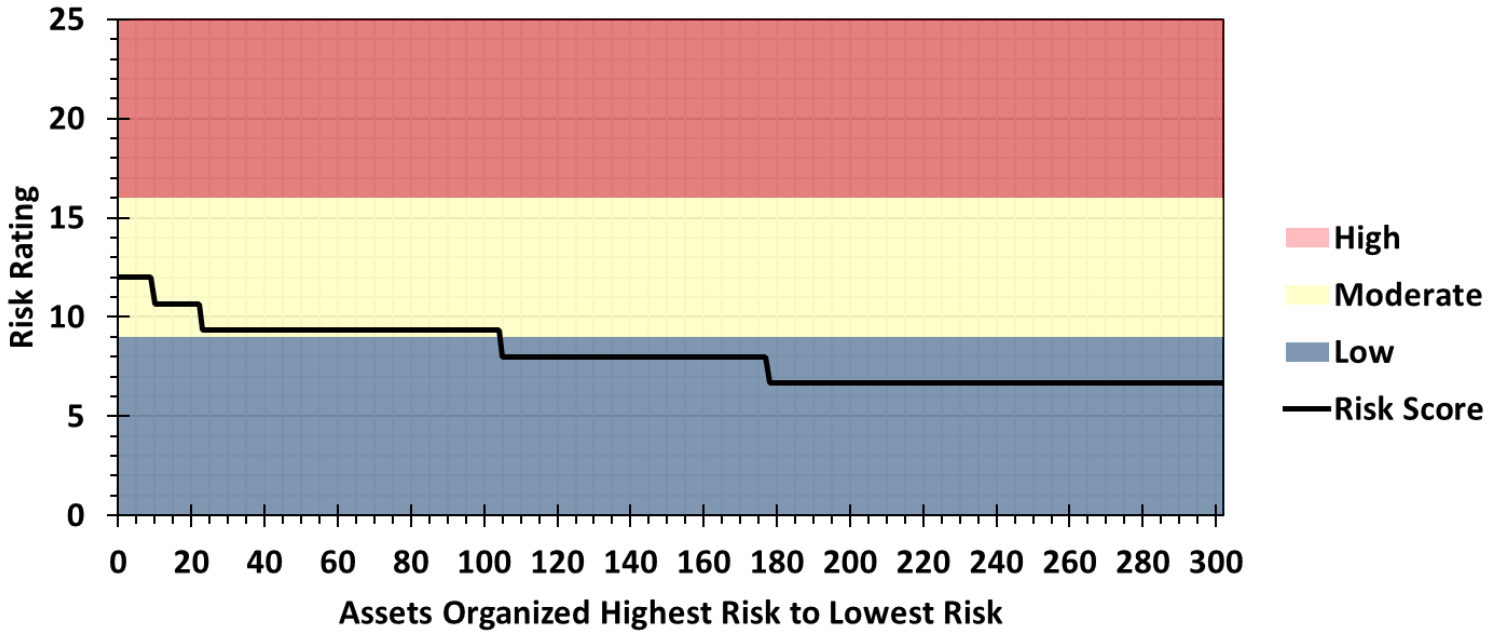
3.3.1 Risk Profile

The Risk profile for the five Off Leash Dog Park, four Skateparks, 12 Splash Pads, and 14 Tennis, Pickleball Courts assets tracked within the asset inventory are all classified as Low risk.

The Risk profile of the Playground & Equipment assets is displayed in **Figure 3-7**. There are 34% (104) of the 302 assets tracked in the asset inventory that are considered as Moderate risk, the remaining 66% (198) asset are considered in Low risk.

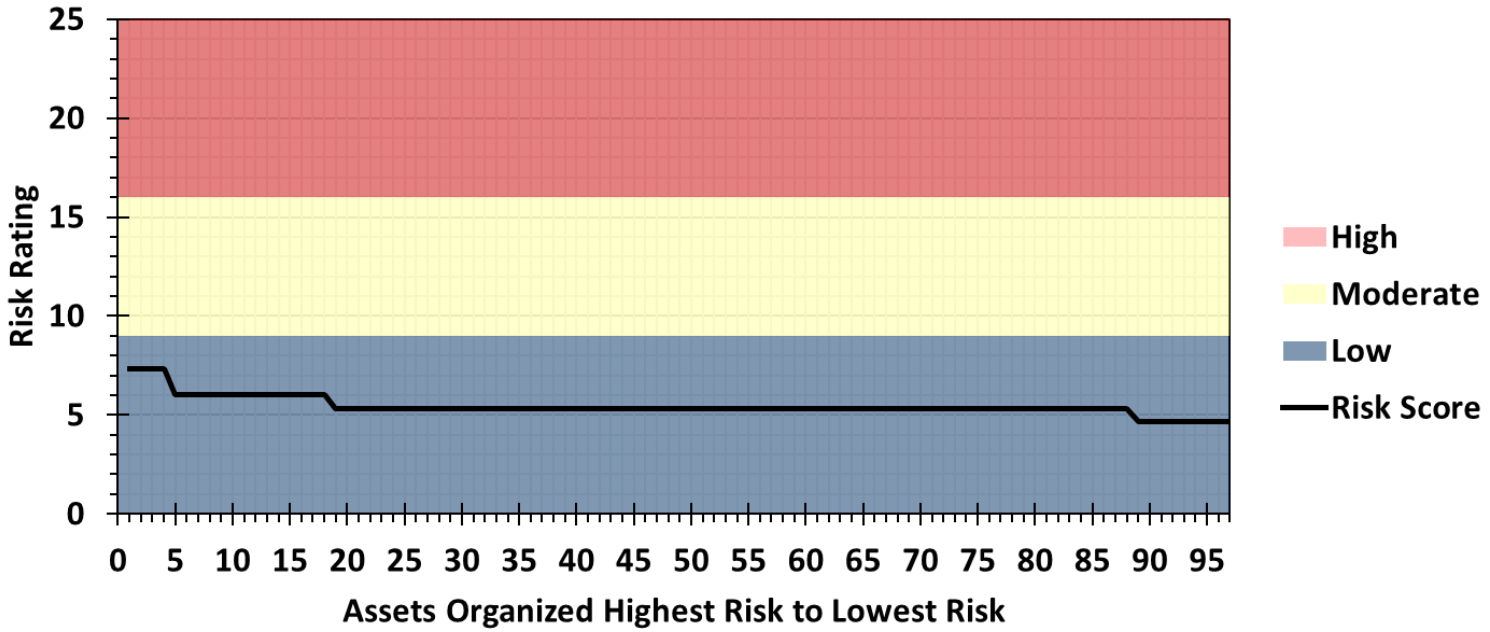
Park Amenities

Figure 3-7: Risk Profile - Park Amenities (Playground & Equipment)



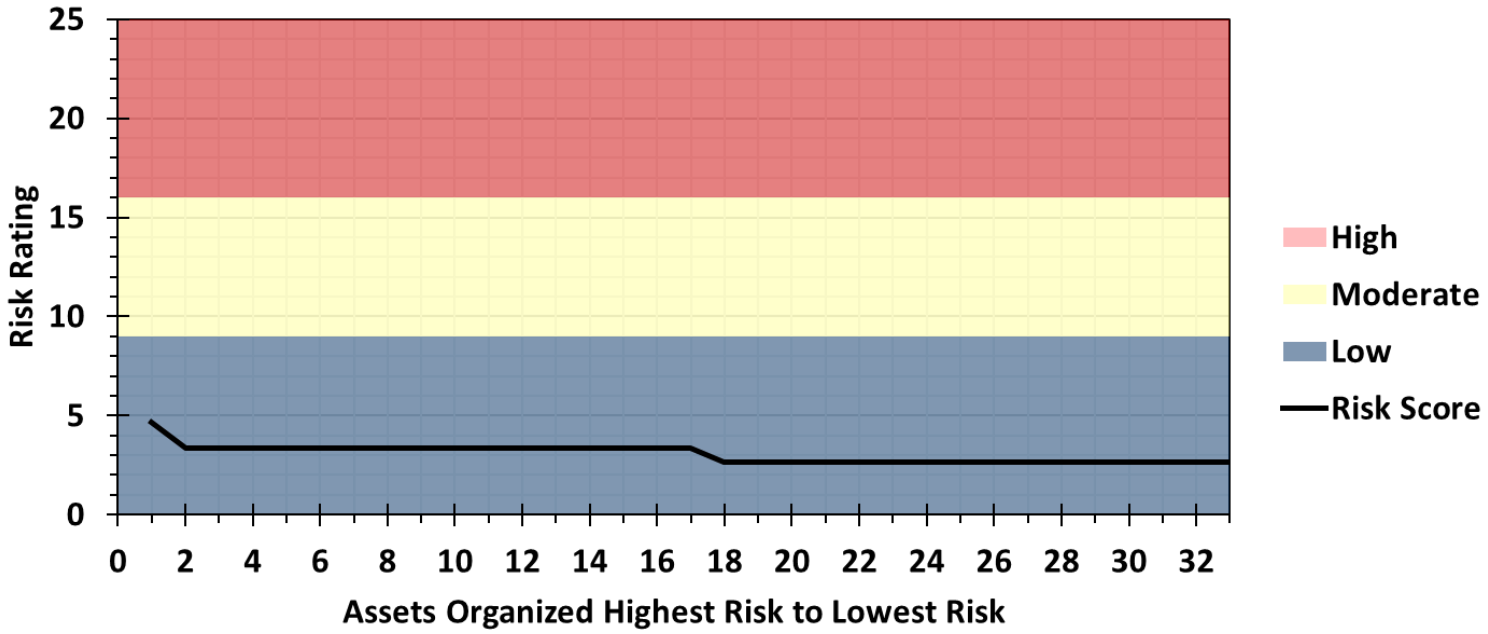
The Risk profile of the Sports Fields assets is displayed in **Figure 3-8**. All 97 assets tracked in the asset inventory are considered as Low risk.

Figure 3-8: Risk Profile - Park Amenities (Sports Fields)



The Risk profile of the Other Multi-Use Courts assets is displayed in **Figure 3-9**. All 33 assets tracked in the asset inventory are considered as Low risk.

Figure 3-9: Risk Profile – Park Amenities (Other Multi-Use Courts)



3.4 Asset Management Strategy

3.4.1 Lifecycle Activities – Park Amenities

The lifecycle activities considered include:

- **Non-Infrastructure Solutions**: Actions or policies that can lower costs and extend useful lives.
- **Maintenance Activities**: Regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.
- **Renewal / Rehabilitation Activities**: Significant repairs designed to extend the life of the asset.
- **Replacement / Construction Activities**: Activities that are expected to occur once an asset has reached the end of its useful life and renewal or rehabilitation is no longer an option.

- **Disposal Activities**: Activities associated with disposing of an asset once it has reached the end of its useful life or is otherwise no longer needed.
- **Expansion / Growth / Service Improvement Activities**: Planned activities required to extend services to previously unserved areas or expand services to meet growth demands.

Table 3-8 describes the lifecycle activities that can be implemented within the asset management strategy for Park Amenities assets. The lifecycle activities presented below are existing activities performed by the City, identified during a workshop with City staff in February 2024.

Table 3-8: Lifecycle Activities – Park Amenities

Lifecycle Activity Type	Description of Activity	Frequency / Timing
Maintenance Activities	Turf Care Management Plan	Annually
Maintenance Activities	Turf Maintenance	Daily (during summer season)
Maintenance Activities	Park Amenities assets monitored and repaired based on reporting of deficiencies, supplemented by field inspections completed by Public Works Staff for playgrounds and Splash Pads	Ongoing
Renewal / Rehabilitation Activities	Renewal of assets based on needs identified by City staff in 15-Year Capital Plan	Ongoing
Renewal / Rehabilitation Activities	Court Resurfacing	Approximately every 5 years

Park Amenities

Lifecycle Activity Type	Description of Activity	Frequency / Timing
Replacement / Construction Activities	Replacement at Expected Useful Life (EUL)	End of EUL
Replacement / Construction Activities	Utilize approach where possible to bundle assets required for replacement into one construction contract to minimize service disruption and increase cost effectiveness	End of EUL
Expansion / Growth / Service Improvement Activities	Parks and Recreation Master Plan	Every 15 years
Expansion / Growth / Service Improvement Activities	Council Strategic Plan (2023-2026)	Every 4 years
Expansion / Growth / Service Improvement Activities	Development Charges Study or Public Outreach	Every 5 to 10 years

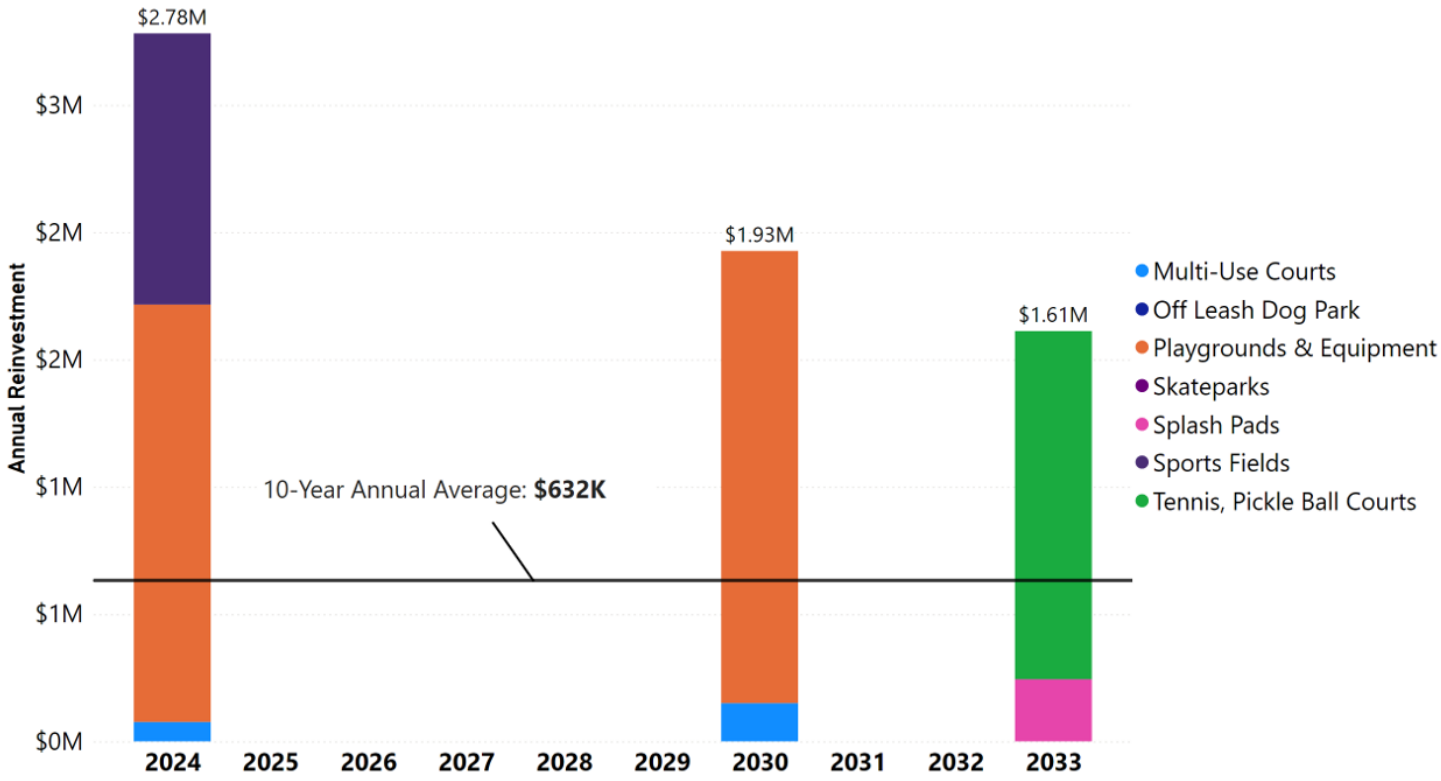
3.4.2 Funding the Lifecycle Activities – Parks Amenities

Lifecycle modeling allows for the City to understand the future reinvestment needs of their existing assets by generating a theoretical asset replacement forecast that considers available asset inventory data. The age, EUL, replacement cost, condition, and risk score of each asset can be leveraged within the lifecycle model to proactively plan for reinvestment over a period of interest. Asset replacement forecasts within this subsection estimate the required reinvestment for Park Amenities over the next 10 years based on available asset inventory data.

Park Amenities

There is a total of approximately **$6.32 million** to be reinvested into the Park Amenities assets owned by the City in the next 10 years, excluding reinvestment associated with facilities. This translates to a 10-year annual average of approximately **$632 thousand**, as presented in **Figure 3-10**.

Figure 3-10: 10-Year Capital Reinvestment Needs – Park Amenities



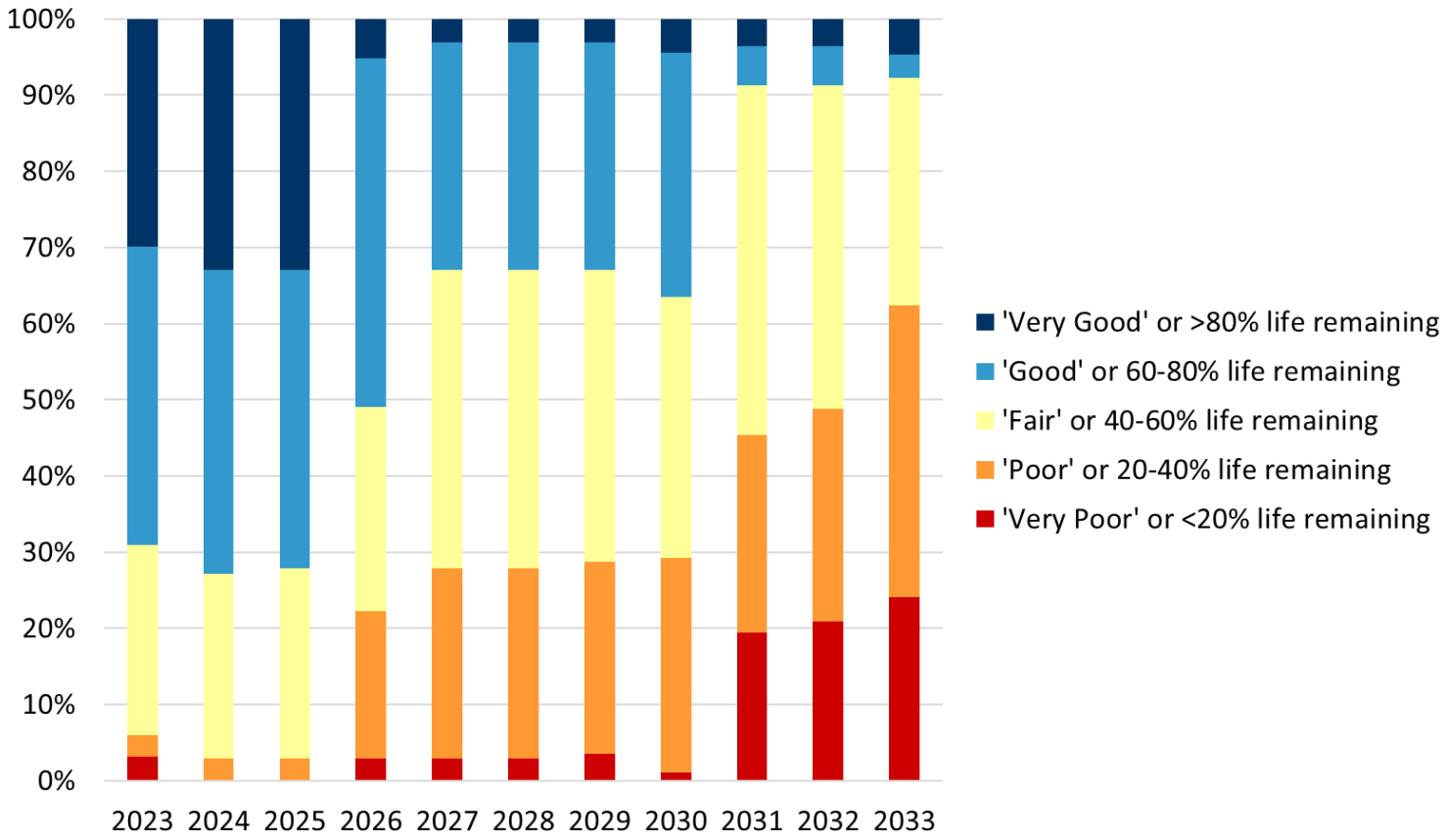
It is important to note that forecasting in this lifecycle model relies heavily on age and EUL to determine renewal or replacement needs.

Park Amenities

The LOS includes maintaining the current assets in poor or better condition (97%). From the lifecycle model, the percentage of Park Amenities assets in poor or better condition is fluctuates throughout the next 10-years due to the EUL of the assets. With an EUL of 10, 15, 20, 25, and 30 years the assets reach a high of 100% in 2024 to 2025 and finish at 76% in 2033.

Figure 3-11 shows an overview of the condition of Park Amenities over the next 10 years based on the lifecycle model.

Figure 3-11: Condition Overview by Year Based on Lifecycle Model – Park Amenities



4.0 Park Facilities

The City's Park Facilities consists of Maintenance Buildings, Parks (site) Lighting, Picnic Shelters located within parks, start up and winterize Plumbing Systems in park such as splash pads or irrigation lines, and Washrooms. It is important to note that assets within this service category are not included in this volume as they have been previously featured in the City's Facilities AMP (2023) that was developed by GM BluePlan in collaboration with the City's Facilities Management & Construction Services (FMCS) department.

The City's FMCS department is comprised of three divisions: Facilities Management, Energy & Asset Management, and Facilities Construction. FMCS maintains the City's diverse portfolio of municipal buildings, thereby supporting departments such as Parks in providing extensive front-line services to the community. This centralized, shared services collaborative approach has allowed the integration of energy management and sustainability considerations along with other aspects of facilities maintenance, asset management, space planning, design, construction, and demolition across all areas of the City.

5.0 Cemeteries

The City's Cemeteries asset portfolio includes six sites with only the Pine Grove Cemetery remaining in active operation where burials are still able to take place. The remainder are historic sites. The service is responsible for the maintenance and administration of several historic and contemporary Cemeteries throughout the City, providing respectful and dignified final resting places for its residents while meeting all legislative requirements including those found under the Funeral, Burial and Cremations Services Act (2002). All sites are well-maintained, with meticulous landscaping and continuous upkeep of monuments and paths, preserving their serene and respectful atmosphere. The service is dedicated to compassionate customer service, helping bereaved families navigate end-of-life arrangements with care and sensitivity. The following section of the AMP includes assets that are under the Cemeteries service.

Note on Scope: At the time of preparing this AMP no data was available for Structures located at Cemeteries and as a result this asset class has been excluded. It is also important to note that asset data for Cemeteries was limited to basic inventory information for this AMP. It is recommended that the City further develops an inventory of these assets to be considered in subsequent iterations of the AMP.

5.1 State of the Local Infrastructure

5.1.1 Asset Inventory and Valuation

Table 5-1 summarizes the asset inventory for Cemeteries by asset class, asset type, asset count, and total replacement cost (in 2023 dollars). The total replacement cost (2023 dollars) is estimated at **$111,900** for the **6 assets** included in the inventory.

Table 5-1 Notes

[1] Only one cemetery remains in active operation (Pine Grove Cemetery), the remaining five are inactive.

[2] Inflated from the City of Kingston Parks Asset Management Plan (GHD, 2009)

Table 5-1: Inventory Summary by Asset Type - Cemeteries

Asset Class	Asset Type	Count	Total Replacement Cost (2023)
Land	Cemetery	6[1]	$111,900[2]

5.1.2 Asset Age Summary

Table 5-2 summarizes the average age, the average condition, the expected useful life, and the average remaining useful life of assets pertaining to Cemeteries. The overall average age of Cemeteries assets is 356 years and the average remaining useful life is 665 years.

Table 5-2 Notes

[1] As Provided in the City of Kingston Parks Asset Management Plan (GHD, 2009)

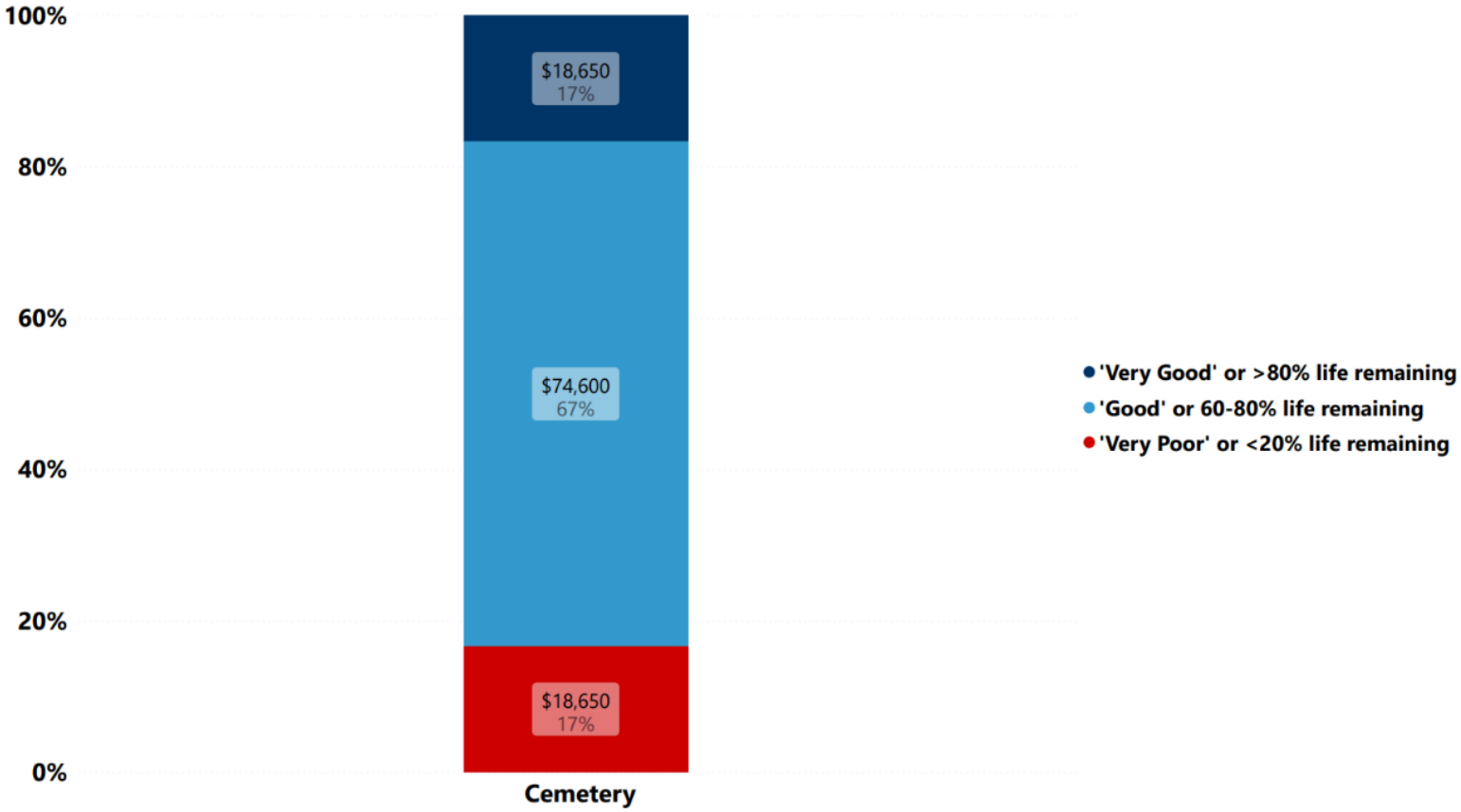
Table 5-2: Average Age, Average Condition, Expected Useful Life, and Remaining Useful Life - Cemeteries

Asset Class	Asset Type	Average Age (Years)	Average Condition Rating	Expected Useful Life (Years)	Average Remaining Useful Life (Years)
Land	Cemetery	356	Good	1000[1]	665

5.1.3 Asset Condition

A condition summary for Land assets is provided in **Figure 5-1** by asset class and replacement cost (in 2023 dollars). There is approximately 84% of the assets that are in very good to fair condition.

Figure 5-1: Condition Summary by Asset Class and 2023 Replacement Cost - Cemeteries (Land)



5.1.4 Data Sources and Confidence

Asset data for Cemeteries was provided by City staff in the format of a list. Currently, there is no central repository for asset data related to Cemeteries.

Cemeteries

Data confidence can be estimated based on the confidence level of various qualifiers and can be presented on a scale from 0% (low) to 100% (high), as shown in **Table 5-3**. The qualifiers chosen for evaluation are specifically targeted for estimating overall confidence of condition reporting within the SOLI.

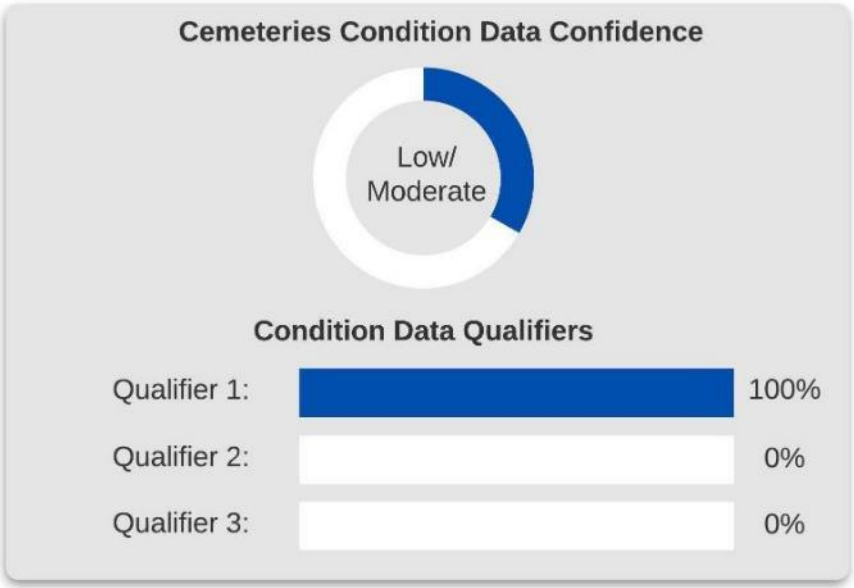
Table 5-3: Data Confidence Scale

Confidence Level	Low	Low/ Moderate	Moderate	Moderate/ High	High
Average of Qualifiers	0% to 19%	20% to 39%	40% to 59%	60% to 79%	80% to 100%

Assuming the data source is reliable, the following qualifiers were considered to estimate data confidence regarding the data utilized in the creation of this SOLI report:

- **Qualifier 1**: The percentage of assets in the asset inventory where construction, installation, or acquisition years are documented (100%);
- **Qualifier 2**: The percentage of assets in the asset inventory that have condition assessment data documented (0%); and,
- **Qualifier 3**: The percentage of the estimated overall replacement value, in 2023 dollars, attributed to assets in the asset inventory with documented condition assessment data (i.e., condition is not solely age-based) (0%).

Figure 5-2: SOLI Report Data Confidence – Cemeteries



As summarized in **Figure 5-2**, the overall asset condition data confidence for Cemeteries assets is estimated to be Low and Moderate. Data confidence can be increased by improving the quality of the data and/ or filling in data gaps, such as completing condition assessments.

5.2 Levels of Service

The City has developed the community and technical Levels of Service (LOS), based on input from municipal staff. Of note, only one cemetery is in active use – that being Pinegrove. It was decided that Quantity and Quality were key attributes in gauging the performance of the assets. **Table 5-4** and **Table 5-5** outline the City's current community and technical levels of service for Cemeteries.

Cemeteries

Table 5-4: Community LOS – Cemeteries

LOS Parameter	LOS Statement	Performance Measure	Current LOS (2023)
Availability	Cemetery assets should not endanger people, property, or the integrity of remains.	Active cemeteries are fully compliant with Bereavement Authority of Ontario (BAO) regulations.	70% in compliance with BAO regulations
Quality	Cemetery assets should deliver their intended services at a certain quality. Requests for repair or access to cemetery assets should be completed as quickly as safely practical.	Number of work orders and timeliness of response.	Currently unknown

Table 5-5: Technical LOS – Cemeteries

LOS Parameter	LOS Statement	Performance Measure	Current LOS (2023)
Availability	Assets comply with regulations, perform their intended function and are safe, secure, and sustainable.	Percentage of active cemeteries that are AODA compliant.	100% AODA compliant

Cemeteries

LOS Parameter	LOS Statement	Performance Measure	Current LOS (2023)
Quality	Assets are in adequate condition, are maintained as required and respond to customer needs.	Number of work orders and timeliness of response.	Currently Unknown

5.3 Risk Assessment

The risk ratings for Cemeteries assets included Land assets. The risk scores were calculated using the risk methodology and approach outlined in Section 1.4 of the Introduction. **Table 5-6** summarizes the risk factors for the Cemeteries assets.

Table 5-6: Risk Factors - Cemeteries

Factors	Risk Ratings
A - Condition	The condition of the assets was determined either by visual or age-based and can be found in the SOLI section of the AMP.
B - Performance	The performance of the asset class was identified as "always reliable" and assigned a rating of 1 for calculating risk score.
C - Climate Change	The climate change ratings were determined at the asset class level by identifying climate change hazard interactions. The Land assets were identified as a “low” risk and assigned a rating of 1 for calculating the risk score.

Cemeteries

Factors	Risk Ratings
D - Impact	The Land assets was recognized as "low" impact and assigned a rating of 0 for calculating risk score.
E - Importance	The Land asset class was identified as “low” importance and assigned a rating of 1 when calculating risk.

The individual risk ratings were used in calculating the risk score for each of the assets.

5.3.1 Risk Profile

All six Land assets tracked in the asset inventory are considered as Low risk.

5.4 Asset Management Strategy

5.4.1 Lifecycle Activities - Cemeteries

The lifecycle activities considered include:

- **Non-Infrastructure Solutions**: Actions or policies that can lower costs and extend useful lives.
- **Maintenance Activities**: Regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.
- **Renewal / Rehabilitation Activities**: Significant repairs designed to extend the life of the asset.
- **Replacement / Construction Activities**: Activities that are expected to occur once an asset has reached the end of its useful life and renewal or rehabilitation is no longer an option.
- **Disposal Activities**: Activities associated with disposing of an asset once it has reached the end of its useful life or is otherwise no longer needed.
- **Expansion / Growth / Service Improvement Activities**: Planned activities required to extend services to previously unserved areas or expand services to meet growth demands.

Cemeteries

Table 5-7 describes the lifecycle activities that can be implemented within the asset management strategy for Cemeteries. The lifecycle activities presented below are existing activities performed by the City, identified during a workshop with City staff in February 2024.

Table 5-7: Lifecycle Activities - Cemeteries

Lifecycle Type	Description of Activity	Frequency / Timing
Maintenance Activities	Grass Maintenance	Ongoing
Maintenance Activities	Tree Trimming	Ongoing
Expansion / Growth / Service Improvement Activities	Evaluate option to have a Third-Party Cemetery management company operate administration and ongoing maintenance needs of operating Cemeteries	Ongoing
Expansion / Growth / Service Improvement Activities	Review of plans to expand the City's cemetery assets.	Annually

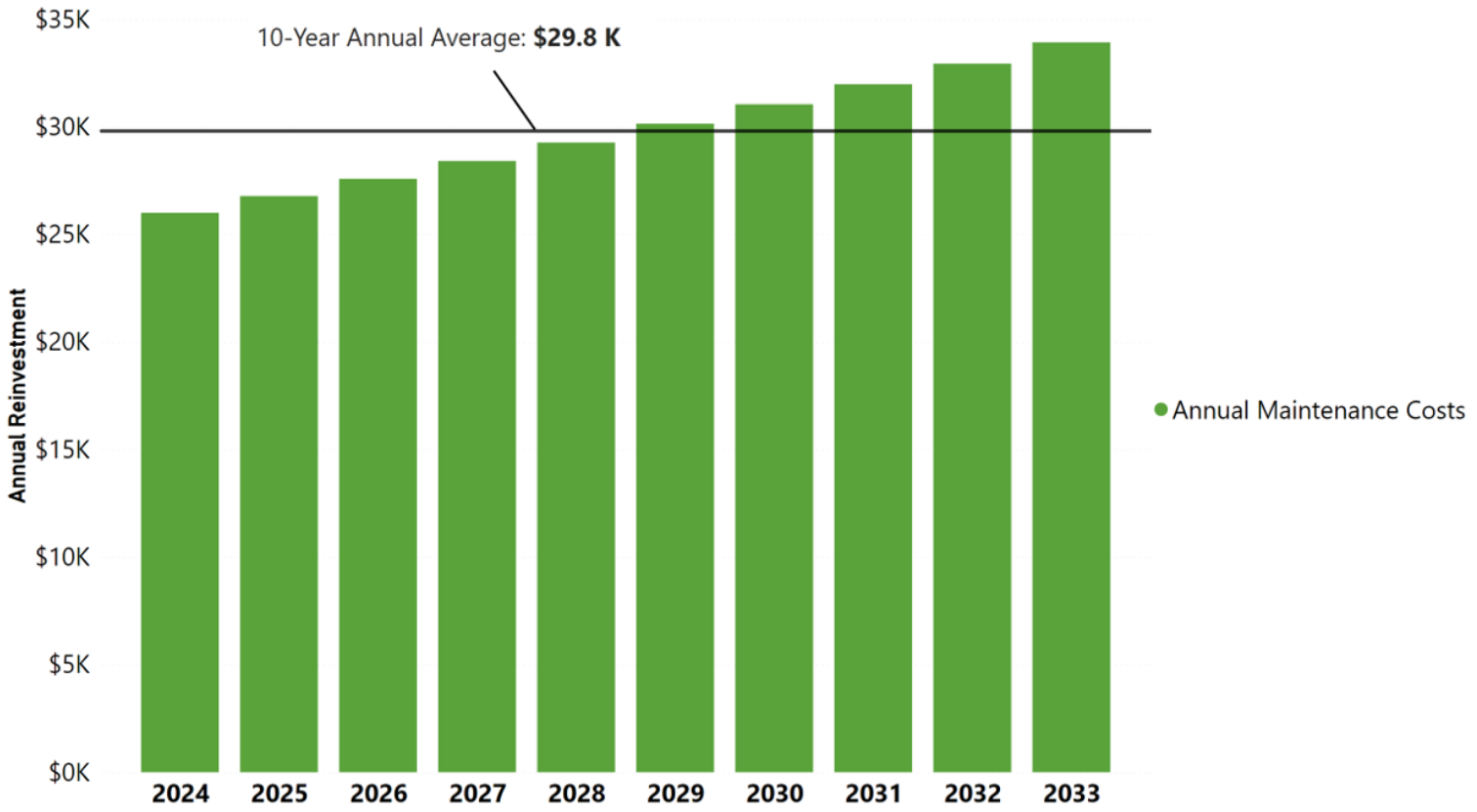
5.4.2 Funding the Lifecycle Activities - Cemeteries

Lifecycle modeling allows for the City to understand the future reinvestment needs of their existing assets. For Cemeteries, lifecycle costs are predominantly associated with operations and maintenance (O&M). Asset O&M costs forecasted within this subsection estimate the required reinvestment for Cemeteries assets over the next 10 years based on 2023 maintenance costs.

There is a total of approximately **$947.9 thousand** to be reinvested into Cemeteries operations and maintenance (O&M) in the next 10 years, excluding reinvestment associated with facilities. This translates to a 10-year annual average of approximately **$29.8 thousand**, as presented in **Figure 5-3**.

Cemeteries

Figure 5-3: 10-Year O&M Reinvestment Needs - Cemeteries



O&M costs for 2023 were identified and have been inflated with an assumed average annual inflation rate of 3%.

The technical LOS includes maintaining the current assets in poor or better condition (83%). From the lifecycle model, the percentage of Cemeteries assets in poor or better condition is consistently 100% throughout the next 10-years due to the EUL of the assets.

Cemeteries

Figure 5-4 shows an overview of the condition of Cemeteries over the next 10 years based on the lifecycle model.

Figure 5-4: Condition Overview by Year Based on Lifecycle Model – Cemeteries