Attachment 1

Building Better Parks:
An Asset Management Plan for Parks

City of Saskatoon

JULY 2016

Parks

INTRODUCTION

The City of Saskatoon's (City) parks inventory is composed of a variety of asset sub-classes that include but are not limited to: pathways, irrigation systems, play structures, trees, shrubs, trash cans, benches, fencing, sports fields, tennis courts, lighting, signage, picnic sites, skateboard parks, gazebos, foot bridges, shade structures, paddling pools and spray parks. This report will focus on asphalt and crusher dust pathways, irrigation systems and play structures. The potential funding plan in this report is for these asset sub-classes only. The remaining assets and their funding gaps will be added to the Asset Management Plan as it is updated annually.

CURRENT INVENTORY

The current replacement cost of the asphalt and crusher dust pathways, irrigation systems, and play structures is $85.8 million, as detailed in Table 1.

***Table 1:** What do we own, what is it worth?*

Asset	Inventory	Replacement Cost (2016)
Asphalt Pathways (not including Meewasin)	201,000 m^2	$18,100,000
Meewasin Trail Riverbank Park Asphalt Pathway	35,000 m^2	$3,200,000
Crusher Dust Pathways	75,000 m^2	$4,500,000
Irrigation System	575 ha	$34,500,000
Play Structures	166	$21,580,000
Wooden Play Structures	20	$2,600,000
Destination Accessible Playgrounds	3	$1,350,000

Pathways

Asphalt and crusher dust pathways located in park areas are included in this report. Parks Division does not manage asphalt pathways located on other types of non-park open space such as road right of way, buffers etc. and, as such, those pathways are not considered as part of this report. Concrete pathways represent a much smaller portion of park pathway inventory and will be considered in future asset management plans.

The Meewasin Valley Authority (Meewasin) and the City share the responsibility to rehabilitate the Meewasin Valley Trail. Meewasin is currently completing a master plan and trail strategy for the Meewasin Valley Trail network which will include costs to replace and upgrade the trail system. The upgrades include improved accessibility and widening of the trail.

The information in this report includes the Meewasin Trail Riverbank Park pathways and the replacement cost to replace the pathway to its existing width without upgrades. The City's responsibility for the costs will depend on the level of rehabilitation or replacement required; however, the funding plan in this report reflects the full cost of replacement to the existing standards as well as a funding contribution of $250,000 to Meewasin for the pathways.

Irrigation System
Irrigation assets include sprinklers, pipe, wiring, electronic field controllers, weather stations, central control computers and valves. This report includes irrigation in parks and open space landscape but not irrigation in non-park open space or the Woodlawn Cemetery.

Play Structures
Metal, wooden, and the destination accessible play structures are included in this report. Replacement cost of all the play structures includes the removal of the old structure, landscaping, and replacement of all components including the playground surface material under the play structures.

EXPENDITURE LEVELS

Administration evaluates the condition of the City's assets in order to develop annual programs to maintain the assets at a minimum cost. Condition assessments or evaluations are conducted and used to establish condition levels as well as develop annual capital improvement plans.

The level of service for each type of asset is defined differently; however, as the level of service increases for the asset, so does the cost of maintaining the asset. In order to be able to compare the level of investment for all assets corporate-wide, five levels of expenditures are identified below. It should be noted that expenditure levels are not condition assessments but lead to a change in the asset condition over time; 'A' represents the highest level of expenditure and 'F' represents no expenditure.

Table 2

Expenditure Level	Asset Condition	Description
A	Getting Better Quickly	Sufficient expenditures to keep asset in the condition specified by City Council and to increase asset condition/value quickly over time.
B	Getting Better	Sufficient expenditures to keep asset in the condition specified by City Council and to increase asset condition/value slowly over time.
C	Maintain Assets in Current Condition	Sufficient expenditures to keep asset in constant condition over time.
D	Getting Worse	Insufficient expenditures to maintain asset condition. Over time asset condition will deteriorate.
F	Getting Worse Quickly	No expenditures. Asset condition/value decreased rapidly.

Parks

To date, there has not been a report presented to City Council where an Expenditure Level has been identified for these assets. If the following desired expenditure levels were selected, Table 3 details the funding gaps that would be present:

Table 3 (in millions of dollars)

Asset	Physical Condition Actual - Average Age[1]	Physical Condition Desired - Average Age[1]	Desired Expenditure Level	Required Annual Funding *(to meet Expenditure Level)*	2016 Dedicated Funding[2]	Annual Funding Gap *(to meet Expenditure Level)*
Asphalt Pathways	Poor	Fair	Level B	$1.50	$0.64	$0.86
Crusher Dust Pathways	Fair	Fair	Level C	$0.02	$0.02	$0.00
Irrigation	Poor	Fair	Level B	$3.20	$1.56	$1.64
Play Structures	Poor	Good	Level A	$1.04	$0.57	$0.47

[1] *See Table 4*

[2] *The Required Annual Funding and the 2016 Dedicated Funding does not include one-time funding but does include current operating funding. This is subject to further refinement once complete operational and maintenance regimes have been established.*

In order to determine a representative condition assessment of the City's park assets as a whole, fixed asset useful life has been determined as an applicable benchmark. Useful life is the time the asset is expected to be usable for the purpose it was intended. Based on Administration's knowledge of the park system assets and using industry best practices, the useful life of the assets included in this report have been determined as follows: 20 years for asphalt pathways, 20 years for the irrigation system, and 15 years for the play structures. The following fixed asset useful life chart has been developed to illustrate the corresponding condition rating:

Table 4

Physical Condition	Pathways (Avg Age = 18 years)	Irrigation (Avg Age = 18 years)	Play Structures (Avg Age = 14 years)
Very Good	1–5 years	1–5 years	1–4 years
Good	6–10 years	6–10 years	5–8 years
Fair	11–15 years	11–15 years	9–12 years
Poor	16–20 years	16–20 years	13–15 years
Very Poor	21+ years	21+ years	16+ years

As shown in the following charts, 57% of the asphalt pathways, 57% of the irrigations systems and 44% of the play structures are in poor or very poor condition.

Chart 1 – Asphalt Pathways

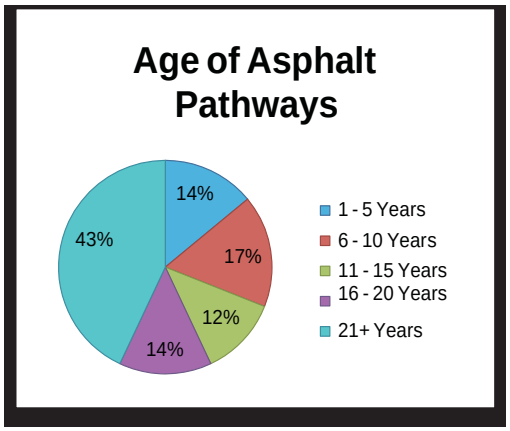


Chart 2 – Irrigation Systems

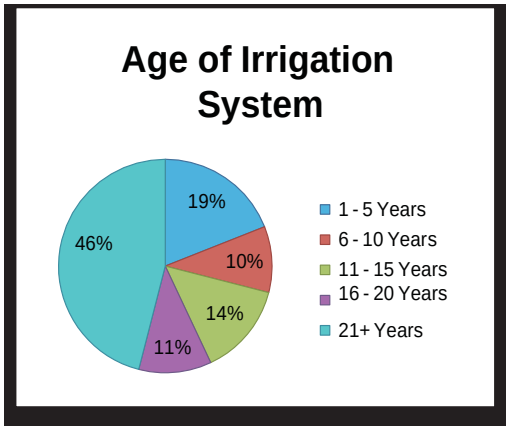
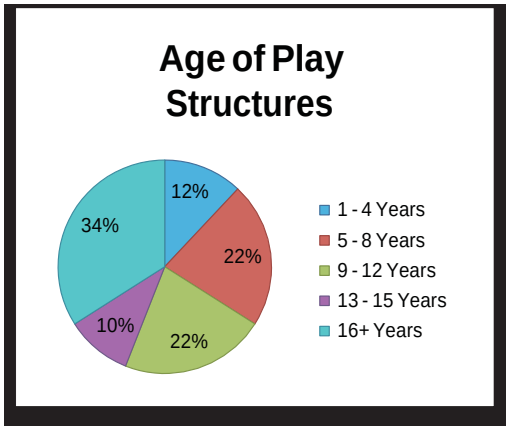


Chart 3 – Play Structures



To provide some context as to how the condition and useful life correlate, the following photographic images show a pathway of 23 and 3 years of age respectively. The extensive deterioration, cracking, and sloping can be seen in the older pathway:

PRESERVATION PROGRAMS

Pathways

The useful life of asphalt pathways is directly related to the preventative maintenance procedures that are applied. With the current level of funding of $169,200 for operating/ maintenance on the entire network of pathways, the City is only able to address the poorest condition assets that may represent safety concerns. To date, funding levels have not supported a consistent preventative maintenance program for park pathways. By implementing a preventative maintenance program, the useful life of asphalt pathways could potentially increase to 25–30 years; however, without a preventative maintenance program, the expected useful life is 16-–20 years depending on the specific site conditions. A preventative maintenance program on asphalt pathways could include:

- crack sealing being performed about 7 times throughout a 30 year useful life ($7/m² per application);
- slurry sealing being performed about 2 times during a 30 year useful life ($5/m² per application); or
- an overlay being performed at approximately year 20 of a 30 year useful life ($50/m² per application).

Preventative maintenance for crusher dust pathways includes weed control, crusher dust top-up, erosion repair, and smoothing. If preventative maintenance is applied, the crusher dust pathways can last indefinitely. Currently, the City spends approximately $23,000 annually to maintain these pathways, which is sufficient to keep these pathways in good condition. Full replacement would not be required unless there is damage by construction equipment or underground utility repair. Replacement cost would be approximately $60/m^2.

Irrigation Systems

The preventative maintenance performed for irrigation systems includes the annual blow out of the system prior to the winter season and charging the system with water in the spring in combination with operational system checks that are performed to ensure each system is applying water as efficiently as possible. Deficiencies including broken heads, valves, wiring, and pipe are repaired as identified and allow continued distribution of irrigation water throughout the growing season. These maintenance costs are paid for through the irrigation operating budget.

Play Structures

For play structures, preventative maintenance is included in the Parks and Facilities operating budgets and is approximately $285,000 per year. This includes playground equipment certifications, labour for inspections of the structures, replacement materials for the components that are worn out or unsafe, cleaning of broken glass, pumping water after spring melts or rain events, sharps checks, sand / woodchip replenishment, sweeping, raking, and rototilling of sand.

POTENTIAL PLAN TO ADDRESS FUNDING GAP

Pathways

Currently, there is insufficient operational funding to establish a preventative maintenance program for the pathways. The average age of the asphalt pathways is 18 years and most of these pathways have not had a preventative maintenance program applied over the lifetime of the asset, therefore, approximately 57% of pathways are in poor to very poor condition.

The current estimated cost to replace the asphalt pathways that are over 30 years old is $3.2 million; the estimated cost to replace the pathways over 25 years old is $7.9 million, and the estimated cost to replace the pathways over 20 years old is $9.4 million.

Irrigation System

It is difficult to determine the actual condition of the irrigation system as the majority of the asset is below ground, but the average life of an irrigation system is 18 years. The estimated average useful life of the various components within the system is 20 years. There are many irrigation systems that are still functioning beyond the expected useful life; however, there are two parks that have deteriorated systems that no longer operate (Rochdale Park and St. Andrews Park). As irrigation systems continues to age, more of the systems will become unrepairable and require replacement if irrigated service levels are to be maintained.

The current estimated cost to replace the irrigation systems that are over 20 years old is $16.1 million. In 2016 there is an approved project in the amount of $575,000, funded with one-time funding from the Dedicated Lands Reserve, to replace 2 older irrigation systems in Cumberland Park and Nutana Kiwanis Park.

Play Structures

There are 166 metal play structures, 20 wooden play structures, and 3 destination accessible play structures in use. The wooden play structures are all in need of replacement as they do not meet CSA safety standards. There are also metal play structures as well as combination metal and wooden playgrounds that do not meet CSA safety standards.

The current estimated cost to replace all the wooden play structures is $2.6 million. The estimated cost to replace the metal play structures that are over 15 years old is $6.4 million. The oldest destination accessible play structure is 10 years old and is still within the useful expected life. The replacement cost of all play structures includes replacement of the ground surfacing material under the play structure, if required. The City received approval in 2015 for funding up to $500,000 from the Canada 150 Community Infrastructure Program to replace up to 8 structures that are most in need of repair. This funding is being matched by the City. The replacement of these 8 structures will take place throughout 2016 and 2017. In 2016 the City applied for additional Canada 150 Community Infrastructure funding for replacement of 8 more structures. Although approval has not been received, this report assumes that funding will be approved. If this funding is not approved, an adjustment will be made when the Asset Management Plan is updated.

Potential Plan

There is a Parks Infrastructure Reserve that provides funding to park assets and receives funding from the operating budget on an annual basis in accordance with the Capital Reserve Bylaw 6774. This reserve has been in an authorized deficit due to upgrades made at Dundonald Neighbourhood Park but in 2017, the reserve will return to a surplus position and have funding available for use on the backlog of park rehabilitation. The Dedicated Funding in Table 3 and the potential funding plan in Table 5 assume that the existing reserve funding will be used on the 3 asset sub-classes detailed in this report.

In order to begin to address the funding backlog, additional funding directed towards these asset sub-classes will be required. The potential funding plan described below and also shown in Table 5 is an example of a plan that could be adopted by City Council if additional phased-in funding were to be allocated towards rehabilitation of the Park assets.

An option would be to add additional funding to the Parks Infrastructure Reserve through a potential phased-in property tax increase. An annual increase of approximately $600,000 for 4 years and 300,000 for an additional 2 years would:

- bring asphalt pathways back to fair condition at the end of 8 years;
- provide irrigation systems with appropriate funding to return to a fair condition at the end of 10 years; and
- allow play structures to return to good condition after 4 years.

In the first year there would be sufficient existing funds within the Parks Infrastructure Reserve and therefore a property tax increase would not be necessary in 2017, under this scenario. After the 10 year plan, there will be sustainable funding in the reserve that can be used to replace and rehabilitate the parks assets on a systematic basis while also addressing the need for comprehensive preventative maintenance programs.

Table 5: Potential Phased-in Property Tax Increase (in Millions of Dollars)

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Asphalt Pathways	Funding	$0.55	$0.91	$1.02	$1.29	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50
	Average Age (years)	18	19	18	18	18	17	17	15	15	15
Irrigation System	Funding	$1.30	$1.70	$1.90	$2.22	$2.60	$2.90	$3.20	$3.20	$3.20	$3.20
	Average Age (years)	18	18	17	18	18	17	16	16	16	15
Play Structures	Funding	0.46	$0.75	$1.04	$1.04	$1.04	$1.04	$1.04	$1.04	$1.04	$1.04
	Average Age (years)	12	11	9	8	7	7	6	5	4	4
TOTAL FUNDING REQUIRED		$2.31	$3.36	$3.96	$4.55	$5.14	$5.44	$5.74	$5.74	$5.74	$5.74
Existing Funding Available*		$2.31	$2.77	$3.36	$3.96	$4.55	$5.14	$5.44	$5.74	$5.74	$5.74
Additional Funding Required		$0.00	$0.59	$0.60	$0.60	$0.59	$0.30	$0.30	$0.00	$0.00	$0.00
Property Tax Increase (%)		0.00%	0.29%	0.29%	0.29%	0.29%	0.15%	0.15%	0.00%	0.00%	0.00%
Canada 150 Community Infrastructure Funding and Matching City Funding**		$2.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

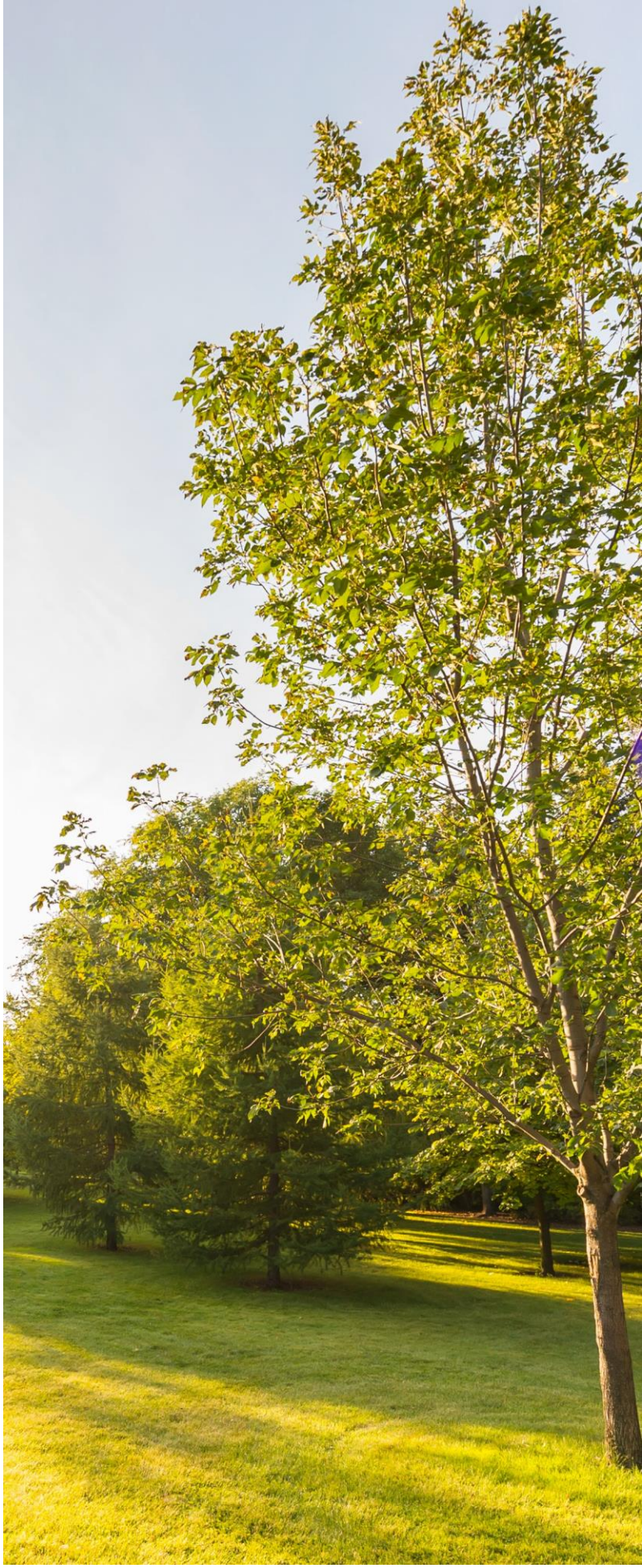
**Existing funding includes $250,000 funding contribution to Meewasin for upgrade and replacement of pathways as well as Parks Infrastructure Reserve funding, all in 2016 dollars.*
***In 2015 the City received approval for up to $500,000 in funding from the Canada 150 Community Infrastructure Program for replacement of up to 8 Play Structures and in 2016 the City has applied for an additional $500,000. The $2.0M funding shown in Table 5 assumes the second round of funding will be approved and the City will provide matching funding.*

The Federal Government has announced additional funding for infrastructure and specifically for repair and replacement of assets. Specific details of the funding and timing are expected in the near future. Some of the replacement of the parks assets may be eligible for this senior government funding. This could assist in the catch-up of the repair and replacement of these assets; however, constant and predictable funding would still be necessary to sustain a preservation program and asset replacement.

CLIMATE ADAPTATION STRATEGY

To prepare for periods of extreme weather, the Parks Division has already implemented or is currently developing the following systems and plans related to the asset sub-classes in this report:

- irrigation systems are installed for times of prolonged drought;
- updating landscape design and construction specifications (eg. slope, surface drainage) to mitigate the park impacts associated with prolonged wet weather conditions;
- durable pathway surfaces are being installed in areas with high risk of erosion as a result of storm water movement;
- ensuring safe work practices for workers during extreme hot or cold; and
- design and construction specifications are being developed to ensure new park development considers all risk events.



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