

2023

CORPORATE ASSET MANAGEMENT PLAN UPDATE

Saskatoon Sidewalks

*We invest in what matters...financial
and physical resources under our
care are used to address the needs
of citizens today – and tomorrow.*

INTRODUCTION

This report outlines the state of City of Saskatoon’s (City) sidewalk network, including information on inventory, valuation, condition, growth and inflation funding requirements, asset preservation, operations, and maintenance.

The City’s sidewalk networks consist of a combination of curb and sidewalk, separate sidewalks, walkways and pathways in the right-of-way.

The City’s sidewalk network is managed through four programs, each filling an important role in maintaining the City’s sidewalk infrastructure.

The primary network consists of curb and sidewalks alongside roads classified as collector, arterial, and expressway roads.

CURRENT INVENTORY

The sidewalk network inventory consists of two networks: a neighbourhood network and a primary network. This neighbourhood network is comprised of curb and sidewalks alongside local roads that, for the most part, serve residents, or businesses within residential, commercial, and industrial neighbourhoods. The primary network consists of curb and sidewalks alongside roads classified as collector, arterial, and expressway roads. These roadways serve a broader range of users.

A summary of the two networks’ current inventory and valuation can be seen in the following table. The source of information for this inventory is the City’s Geographic Information Systems (GIS), asset management database.

Table 1: Sidewalk and Curb Inventory & Replacement Value

Asset	Inventory	Replacement Value
Sidewalks	1,683.0 km	\$473M
Curbs	2,374.0 km	\$585M
P3 Curbs	39.7 km	\$11M
Total	4,096.7 km	\$1,069 M

The method used to value assets is to calculate the replacement value. This is an estimated cost of replacing an asset by physical excavation and replacing with new, approved materials.

PERFORMANCE OF ASSET

The Sidewalk Condition Index (SCI) Rating Scale is a numerical rating from 0 being the worst possible condition to 100 being the best possible condition. The table below shows that, overall, the average sidewalk condition index for the entire City sidewalk network is 85 out of 100, which is classed as a “Satisfactory” condition state.



111th Street West: before



111th Street West: after

Table 2: Sidewalk Condition Index (SCI)

Network	2020 Average SCI	Current Performance	Desired Performance
Neighbourhood	84.8	Satisfactory	Good
Primary	85.5	Satisfactory	Good
Total	*85.0	Satisfactory	Good

**Weighted average based on network percentage.*

***Areas of very poor to severely poor sidewalk condition are being targeted annually, and the overall backlog is forecasted to be less than 1% of the network by 2030.*

LIFE-CYCLE PROGRAMS

The City’s sidewalk network is managed through four programs. Coordinated together, these programs manage safety, preservation, maintenance, repair, replacement, and installation of new sidewalks for the City’s entire sidewalk network. The goals of these programs are to focus on restoring and maintaining sidewalks to a safe and functional condition for users, as well as add sidewalks at the highest pedestrian potential locations. These programs are as follows:

The Sidewalk Maintenance and Safety Program is managed by the Roadways, Fleet and Support Department and is funded through annual operational budgets. The program performs sidewalk maintenance activities that remove safety hazards for pedestrians.

The Sidewalk Preservation Program is managed by the Technical Services Department and is funded through the Paved Roadways Infrastructure Reserve. The program focuses on repairing or replacing sidewalks adjacent to roadways when they receive a preservation treatment. The annually programmed work areas for the Sidewalk Preservation Program are aligned to the Roadway Preservation Program.

The Pedestrian Accessible Curb Ramp Program is managed by the Transportation Department and is an element of the Active Transportation Plan. This program prioritizes installation of accessibility curb ramps at specific locations based on pedestrian potential, transit routes, and requests from people with accessibility needs.

The Sidewalk Infill Program is managed by the Transportation Department. This program focuses on installing new sidewalks where they do not exist. The Sidewalk Infill Program is an element of the Active Transportation Plan and locations are prioritized according to scoring based on pedestrian potential and risk reduction potential.

SERVICE EXPENDITURE LEVELS

The Administration evaluates the condition (physical, functional, capacity) of the City’s assets in order to develop annual programs to maintain the assets at a minimum life-cycle cost. Condition assessments or evaluations are conducted and used to establish performance levels, as well as to develop annual capital improvement plans.

The level of service for each type of asset is defined; 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 in the following table.

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 3: Expenditure Levels

Expenditure Level	Asset Performance	Description
A	Getting Better Quickly	Sufficient expenditures to keep asset in top condition and to increase asset condition/value quickly over time.
B	Getting Better	Sufficient expenditures to keep asset in top condition 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. Asset condition will deteriorate over time.
F	Getting Worse Quickly	No expenditures. Asset condition/value decreased rapidly.

Using the above criteria and the physical condition desired, the Administration has identified the following desired expenditure levels for the Sidewalk Preservation Program and the Sidewalk Maintenance and Safety Program.



Girgulis Crescent: before



Girgulis Crescent: after

Table 4: Sidewalk Performance & Expenditure Levels

Asset Program	Current Performance	Desired Performance	Desired Expenditure Level	Required Annual Funding to meet Expenditure Level	2023 Budget	Difference
Sidewalk Preservation	Satisfactory	Good	Level B	\$8.2M	\$6.3M	\$1.9M
Sidewalk Maintenance and Safety	Good	Good	Level C	\$1.17M*	\$1.17M	\$0
Pedestrian Accessible Curb Ramp [†]	N/A	N/A	N/A	N/A	\$1.1M [†]	\$0
Sidewalk Infill	Unknown ^{**}	Unknown ^{**}	Unknown ^{**}	Unknown ^{**}	\$0.15M ^{**}	\$0

*Growth and inflation are not included in \$ amount.

[†]Supported through the Roadways Preservation Program.

^{**}Feasibility assessments are required.

FUNDING SUMMARY

The sidewalk program has received significant service level enhancements, improving the overall condition of the assets and reducing the repair and rehabilitation cycle to under 20 years. However, tender rates have increased an average of more than 30% compared to 2021 construction costs. Based on this trend a shortfall has been identified and service levels will be reduced, if inflationary cost increases adjustments are not realized in the 2024-2025 multi-year budget process.

The Sidewalk Preservation Program is funded through the Paved Roadways Infrastructure Reserve. The overall level of service is to provide full corridor revitalization when doing major capital construction which includes roadway, sidewalk, water and sewer infrastructure. Roadway and sidewalk treatments are planned along side the Water and Sewer program, and the majority of the locations selected for the Water and Sewer (W&S) Program have roadway and sidewalks that require rehabilitation or reconstruction treatments.

Coordinating the Roadway and Sidewalk Preservation Programs with the W&S Program has forced a major shift in sidewalk preservation since 2017 that has and will continue to move the City sidewalks ahead in overall condition and the preservation cycle. However, in order to maintain the level of service and achieve full corridor revitalization, funding from the Roadways Preservation Program is needed to assist the adjacent sidewalk rehabilitation work required. Allocating funding from roadways preservation to sidewalk preservation to achieve this level of service is expected to continue until 2026.

Additionally, the Sidewalk Preservation Program has been impacted by two other level of service adjustments; pedestrian accessible curb ramp and

sidewalk asphalt overlay. The Pedestrian Accessible Curb Ramp Program has added pressure to the program, as upgrading or installing accessibility ramps at every street corner is required for full corridor revitalization. The Sidewalk Asphalt Overlay Program requires all sidewalks covered in asphalt overlays be removed and replaced, which has also added to the Sidewalk Preservation Program.

Recent base funding allocations in 2020 and 2021 by City Council, and additional one-time funding to support the costs associated with these level of service improvements was to allow the program to sustain a 1-in-20-year return cycle to 2026, assuming no changes to the program and overall level of service.

However, based on revised construction costs, the Roadways and Sidewalk Preservation Programs are not sufficiently funded to maintain the level of services improvements and alignment with the W&S Program.

The Sidewalk Maintenance and Safety Program is funded through the Transportation & Construction – Road and Maintenance Operating Budget. The 2023 budget of \$1.17 million is sufficient to continue the planned maintenance program. Winter maintenance is funded under the Snow and Ice Service Level.

The Pedestrian Accessible Curb Ramp Program is funded through the Transportation Infrastructure Expansion Reserve (TIER). Currently this program receives on average \$100,000 annually and since 2019 has been supported through the Sidewalk Preservation Program with on average an additional \$1,000,000 being allocated from this program annually. With this support the time frame to complete the backlog of pedestrian accessible curb ramps has been reduced from 47 years to 15 years.

The Sidewalk Infill Program is funded through the Transportation Infrastructure Expansion Reserve (TIER). Feasibility assessments are required to determine the desired expenditure level and to establish annual base funding for this program. Currently the program receives \$150,000 annually.

FUTURE DEMAND

Saskatoon’s Growth Plan to Half a Million predicts that the population will double in size in the next 30 to 40 years. This growth will involve both new greenfield neighbourhoods and revitalization of older neighbourhoods with higher densities, particularly along corridors. The demand for better and efficient transportation systems will increase with population growth, which will affect the funding priority and focus given to the asset management of the sidewalk network. Citizen expectations for accessible and safe active transportation systems, legislation and policy measures promoting sustainable active transportation, and climate change will also affect preservation and maintenance programs, requiring them to incorporate sustainable practices such as using recycled materials and reducing carbon emissions to comply with regulations.

Sidewalk preservation and maintenance programs play a crucial role in meeting the demands of population growth, citizen expectations, climate change, legislation and policy, technology evolution, operational efficiencies, and the economy. These programs can help in maintaining and upgrading the existing infrastructure to cater to the growing population’s active transportation needs. They can also address citizens’ expectations by ensuring that sidewalks and pathways are maintained and upgraded



Wollaston Crescent: before



Wollaston Crescent: after



Taylor Street East: before



Taylor Street East: after

to meet desired standards. Moreover, they can help mitigate the impact of climate change by promoting sustainable practices, complying with regulations by incorporating sustainable practices into their operations, adopting technology to improve efficiency, safety, and sustainability, and improving operational efficiency by adopting best practices such as predictive maintenance, data analytics, and performance monitoring. Finally, a well-maintained transportation system contributes to economic growth by improving connectivity, reducing transportation costs, and attracting businesses.

INFRASTRUCTURE RESILIENCE AND CLIMATE CHANGE ADAPTATION STRATEGY

Due to the nature of the construction materials used for our sidewalk assets (i.e. concrete and asphalt), they are resistant to many of the effects of climate change. In new construction, edge drains adjacent to the sidewalk within the road structure have been included that will assist in reducing damage due to high water tables caused by climate changes.

The standards for sidewalk design have undergone recent updates, making it mandatory for granular base material to be incorporated into the overall structure. This new requirement aims to enhance the sidewalk's stability and resilience during severe weather events, freeze-thaw cycles, and high water tables resulting from adverse weather conditions. Additionally, maintenance practices such as crack-filling and sidewalk sealing have been included to prevent water infiltration into the underlying soils, which minimizes damage caused by freeze-thaw cycles and increased precipitation due to climate change.

THE WAY FORWARD

- Continue to adopt Enterprise Asset Management (EAM) into the Sidewalk Program and continue integration with SAP.
- Continue the shift from reactive to preventative maintenance when planning programs.
- Continue initiatives and continuous improvements related to data analysis and data collection methods.
- Build deterioration curves for sidewalk network analysis and understanding cause of deterioration.
- Review and improve preservation and maintenance treatment strategies, specifications and standards.
- Coordinate and plan with other divisions and departments to increase efficiencies across the corporation.
- Complete feasibility assessment for the Sidewalk Infill Program.
- Identify median and boulevards as a separate asset from the Roadways and Sidewalk Preservation Programs and develop an asset management strategy for this asset.

Asset Management is committed to maintaining and carefully investing in our sidewalks. We will use the financial resources and physical resources under our care to address the needs and expectations of Saskatoon citizens today and for the future.

*We strive to maintain and fund
our key infrastructure assets to
minimize total life-cycle costs.*



City of
Saskatoon