

State of  
**ROADS AND LANES  
INFRASTRUCTURE**

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*The State of Report is a standardized Corporate Asset Management tool designed to give City Council and Executive Leadership a strategic overview of each infrastructure portfolio. It outlines the current condition, performance, risk levels, service level achievement and asset management capacity, promoting transparent, evidence-based decision-making across the organization. A Corporate Asset Management Consolidated Report consolidates findings from all asset portfolio State of Reports into one overall executive summary report.*

## INTRODUCTION

This report examines the current state of the City of Saskatoon’s (City) Road and Lane Network comprised of roadways, paved lanes, and gravel lanes assets, including inventory, condition ratings, and data reliability to provide a clear understanding of the network’s health and performance. It evaluates service performance metrics to determine whether the Road and Lane Network’s services meet established service levels.

Additionally, the report outlines investment needs and funding gaps, covering operational, maintenance, and capital cost projections necessary for sustaining and improving the Road and Lane Network. It also assesses risk profiles and mitigation strategies, addressing potential vulnerabilities such as climate adaptation and emergency response planning.

Furthermore, the report identifies data gaps and proposes action plans to improve asset management and decision-making. By highlighting challenges and opportunities with the Road and Lane Network, this report equips City Council and leadership with the insights needed to prioritize investments, enhance service delivery, and ensure the long-term sustainability of Saskatoon’s Road and Lane infrastructure.

*The Road and Lane Network infrastructure service program works towards the goal of enabling a coordinated, cost-effective, and organizationally sustainable management to ensure asset condition slowly improves over time and continues to provide a safe and reliable foundation to move people along the transportation network.*

### Infrastructure Service Statement

The Road and Lane Network infrastructure service program works towards the goal of enabling a coordinated, cost-effective, and organizationally sustainable management to ensure asset condition slowly improves over time and continues to provide a safe and reliable foundation to move people along the transportation network.

## STEWARDS

The Roadway and Lane Network is an asset class providing fundamental public core services essential to the City. By extension, design, construction, maintenance, and rehabilitation of these assets relies on a several City departments, and many City departments depend on these assets to deliver municipal services.

### Asset Custodians

Responsibility	Description	Responsible Party
<b>Overall Accountability</b>	Implement and continuously improve the processes governing road and lane asset management planning, design, construction, maintenance, and rehabilitation.	General Manager, Transportation and Construction
<b>Resource and Budget Allocation</b>	Coordinates preparation of the proposed budget, allocate resources and make strategic decisions related to the Road and	Director of Transportation Director of Construction and Design Director of Roadways, Fleet and Support

Responsibility	Description	Responsible Party
	Lane Network planning, design, construction, maintenance, and preservation.	Director of Technical Services
<b>Risk Management</b>	Identify, assess, and prioritize risks related to the assets and their operations.	Engineering Manager, Transportation Engineering Manager, Construction and Design Roadways Manager, Roadway, Fleet and Support Engineering Manager, Municipal Engineering Services Engineering Manager Technical Services
<b>Regulatory Compliance</b>	Ensure Road and Lane Network infrastructure service delivery and programs are managed and constructed to applicable local, provincial, and federal regulations, including safety, environmental, operational, and construction standards.	Engineering Manager, Transportation Senior Project Management Engineer, Construction and Design Roadways Manager, Roadways, Fleet and Support Senior Operations Engineer, Municipal Engineering Services Asset Preservation Manager, Technical Services
<b>Asset Inspection and Condition Monitoring</b>	Assess the condition of the Road and Lane Network infrastructure assets and reports on performance.	Roadways Manager, Roadways, Fleet, and Support Engineering Manager, Municipal Engineering Services Asset Preservation Manager, Technical Services
<b>Data Management</b>	Collect and validate data on asset inventory, condition, and performance.	Senior Project Management Engineer, Construction and Design Asset Preservation Manager, Technical Services Information Management Coordinator, Information Technology Planning and Scheduling Manager, Roadways, Fleet and Support
<b>Asset Design and Construction</b>	Implement and continuously improve standards and specifications governing the design and construction of both new road and lane assets, as well as preservation and rehabilitation treatments in accordance with current industry best management practices.	Senior Project Management Engineer, Construction and Design Asset Preservation Manager, Technical Services
<b>Routine Maintenance</b>	Implement maintenance activities, including preventative and corrective maintenance.	Roadways Manager, Roadways, Fleet and Support Engineering Manager, Municipal Engineering Services

Responsibility	Description	Responsible Party
		Planning and Scheduling Manager, Roadways, Fleet and Support

## CURRENT INVENTORY AND VALUE

The City's roadway inventory is composed of paved surfaces (includes asphalt, concrete, and paving stone) and gravel surfaces.

### Roadway Network

- **Local Roads** – Provide land access and do not carry high volumes of traffic.
- **Collector Roads** – Provide traffic movement and land access and serve as connectors between local roads and arterial roads.
- **Arterial Road** – Are considered **Minor** or **Major**, but both provide the same services, which is to provide high volume traffic movement between major traffic generators such as residential, commercial, and industrial neighbourhoods.
- **Expressways** – Accommodate high traffic volumes at high speeds and a means to move traffic from one area of the city to the next. Interchange locations are part of the expressways as they consist of ramps and loops as well as any highways that are maintained by the City.

### Boundary Network

- **Boundary Roads** refer to rural grid roadways that lie between the built-out areas of a city and its municipal boundary. These roads can be gravel or paved and are likely to undergo upgrades, realignment, or removal as the City expands beyond the current developed areas.

### P3 Roads (Paved)

- **P3 Roads** are roadways constructed and maintained under a public, private, partnership agreement.

Table 1 – Roadway Network Size and Year of Construction

Road Class	Total Lane km	Percent Network	Pre-1969	1970-1999	2000-2015	2016-Present
<b>Local</b>	2,320	52%	19%	19%	10%	3%
<b>Collector</b>	730	16%	5%	6%	4%	1%
<b>Arterial</b>	830	19%	7%	6%	4%	2%
<b>Expressway</b>	460	10%	8%	3%	3%	0%
<b>Boundary</b>	120	3%	4%	0%	0%	2%
<b>Total</b>	4,460	100%	36%	35%	21%	9%

### Roadway Network Replacement Value

Estimated replacement value is the approximate cost at present time required to replace a road asset, including removal and disposal of existing material. An assumed road structure consisting

of an 85 mm asphalt layer and 300 mm base material was used for the purpose of calculating replacement value of the network.

The roadway network has an approximate replacement value of \$4.9 billion.

**Table 2 – Road Network Replacement Value**

Roadway Network	Lane Km	Replacement Value (1,000s)
<b>Local</b>	2,320	\$2,607,000
<b>Collector</b>	730	\$818,000
<b>Arterial</b>	830	\$879,000
<b>Expressway</b>	460	\$523,000
<b>Boundary</b>	120	\$70,000
<b>Total</b>	<b>4,460</b>	<b>\$4,897,000</b>

#### Lane Network

- **Gravel Lanes** – Comprised of gravel surface and provide secondary land access from the rear or flankage of a lot and do not carry high volumes of traffic.
- **Paved Lanes** – Asphalt surface constructed to a local road standard and provide secondary land access from the rear or flankage of a lot and do not carry high volumes of traffic.

**Table 3 – Lane Network Size and Year of Construction**

Lane Class	Total Lane km	Percent Network	Pre-1969	1970-1999	2000-2015	2016-Present
Paved	128	18%	8%	1%	5%	3%
Gravel	598	82%	60%	19%	0%	3%
<b>Total</b>	<b>727</b>	<b>100%</b>	<b>69%</b>	<b>20%</b>	<b>5%</b>	<b>6%</b>

### Lane Network Replacement Value

Paved lanes are constructed to a local road standard of an 85 mm asphalt layer and 300 mm base aggregate layer. Gravel lanes were assumed to include removal and replacement of 300 mm base aggregate material.

The lane network has an approximate replacement value of \$480 million.

**Table 4 – Lane Network Replacement Value**

Lane Network	Lane km	Replacement Value (1,000s)
Paved	128	\$143,000
Gravel	598	\$337,000
<b>Total</b>	<b>727</b>	<b>\$480,000</b>

## ASSET PERFORMANCE AND DATA CONFIDENCE

The Administration reports on all road and lane assets using a mix of high and lower quality data supplemented by subject matter expertise to plan, quantify, and administer maintenance, rehabilitation and construction activities.

All data is interpreted with oversight from technical experts, and both preservation and safety inspections are benchmarked against objective standards. These practices ensure that the data used to inform the condition, rehabilitation strategies, and maintenance decisions is both reliable and representative.

To support more transparent reporting and insights, the framework reports two metrics alongside the data: Data Confidence and Reporting Levels.

**Table 5: Data Confidence: Perceived Accuracy of the Information**

Rating	Description	Detailed Description
5	Highly Reliable	High quality data sources (trusted, timely, complete, consistent, accurate, and relevant)
4	Reliable	A mix of high quality and some lower quality data sources requiring Subject Matter Experts (SME) assumptions
3	Uncertain	High-level assumptions by SMEs inferred from suspect quality data sources
2	Very Uncertain	Primarily based on high-level SME assumptions
1	Unknown	Data source is unknown

**Figure 1: Reporting Levels: Availability of Data in Mandatory Fields for Each Asset**



The table below represents the data confidence and reporting levels for the Road and Lane assets.

**Table 6: Data Confidence**

Asset Inventory	Asset Category	Data Confidence	Reporting Level
Roads and Lanes	Roadways	4	100%
	Paved Lanes	4	100%
	Gravel Lanes	4	100%

Current Condition of Infrastructure and Service Life

Condition assessments for the complete paved roadway network is performed on a three-year cycle with the most recent condition assessment performed in 2024. This assessment, based on industry standard methodologies, was used to report on existing condition and aid in setting future roadway preservation programs.

Condition assessment of the paved roadway network includes assessment and evaluation of a dozen surface distress types, ride quality/roughness, and structural adequacy.

Surface distresses are evaluated to form a Pavement Condition Index (PCI) that is used as the primary indicator of the overall road condition as it offers the most consistent, repeatable form of data collection between assessments. PCI is specific to distress in the asphalt layer and does not account for ride quality or adequacy of the underlying aggregate road structure. The current service target of the road network is an average PCI ranging from 70 to 85, which will indicate the City’s roads to be in a “Satisfactory” condition.

Table 7 displays the international standard ASTM scale for representing pavement condition on a 100-point scale.

**Table 7 – PCI Rating Category**

Condition Description	Color Code	PCI Pavement Index Range
Good/Satisfactory		70 < PCI ≤ 100
Fair/Poor		40 < PCI ≤ 70
Very Poor/Serious		0 < PCI ≤ 40

Road surfaces are somewhat unique in that road assets deemed ‘Very Poor’ to ‘Serious’ still provide a useful service life; however, the ride quality is less optimal.

Comparing PCI assessments in 2017, 2021, and 2024 condition assessments, Local and Collector roads have held relatively consistent while Arterial and Expressways have shown a slight deterioration. Of note, Local and Collector roads account for approximately 70% of the roadway network.

**Table 8 – Paved Roadway Network Condition PCI 2017-2024**

Roadway Network	Average PCI			Current Condition	Desired Condition
	2017	2021	2024		
Local	76	70	70	Fair	Good/Satisfactory
Collector	69	72	72	Good/Satisfactory	Good/Satisfactory
Arterial	69	75	71	Good/Satisfactory	Good/Satisfactory
Expressway	71	72	68	Fair	Good/Satisfactory
Lanes	-	76	77	Good/Satisfactory	Good/Satisfactory

### Condition Assessment Methodology and Programs

#### Paved Roadway and Lane Network

Services of an external consultant are procured every three years to undertake condition assessment of the City's roadway network in accordance with ASTM standards and methodologies. Secondary to the formal assessments, the Administration performs inspection of road surfaces in response to unexpected increases in maintenance requirements. Both the primary and secondary assessments shape the three-year roadway preservation and rehabilitation program.

Condition assessment of surface distress to determine road segment PCI can be established using two industry accepted methods. In 2017, pavement distresses were identified and evaluated using a Laser Crack Measurement System (LCMS) that performs a three-dimensional scan of the road surface. In 2021 and 2024, window-based assessments were performed whereby a qualified technician visually identifies and records distresses.

Both assessment methods comply with ASTM standards for surface distress identification and analysis; however, each has limitations. For instance, LCMS is limited to a 4-metre pass and may not account for distresses outside the driving lane (i.e., in the parking lane). Conversely, window-based assessments cover the entire road surface but may contain a limited degree of subjectivity between moderate and severe distresses.

Data quality controls and assurances are performed during evaluations and data reliability for PCI was calculated at 85% confidence level and is generally considered reliable with a mix of high quality and lower quality data requiring interpretation by SMEs. Examples of conditions that impede assessment include parked vehicles, temperature, recent moisture, and poor pavement visibility (e.g., shadows and surface debris).

To compare roadway network conditions between assessment cycles, PCI is used as the most reliable indicator, given network coverage of 95%, 99%, and 98% in 2017, 2021, and 2024, respectively.

Figure 2 displays the PCI trend in the overall roadway network between 2017, 2021, and 2024 condition assessment periods. Between 2017 and 2024, roads considered 'Satisfactory-Good' improved slightly from 60% to 63%. Similarly, the volume of roads considered 'Very Poor to Serious' increased from 8% to 15% during this same period. The volume of roadways in the mid-range 'fair/poor' has gradually decreased and is considered a positive observation.

Figure 2 – Paved Road Network PCI Trend 2017-2024

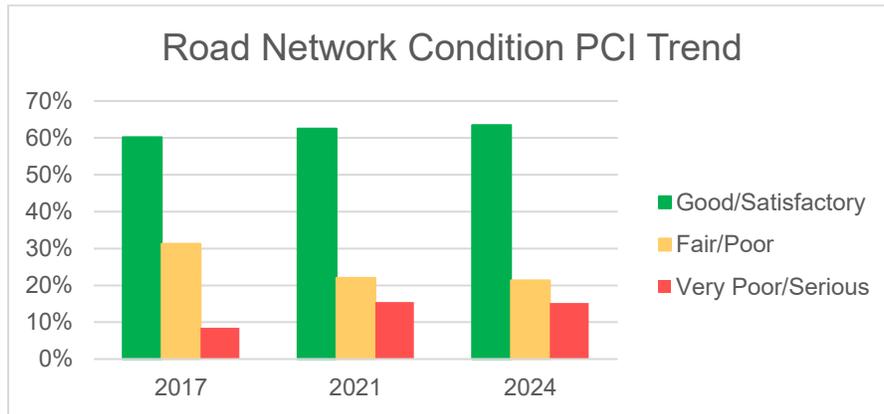
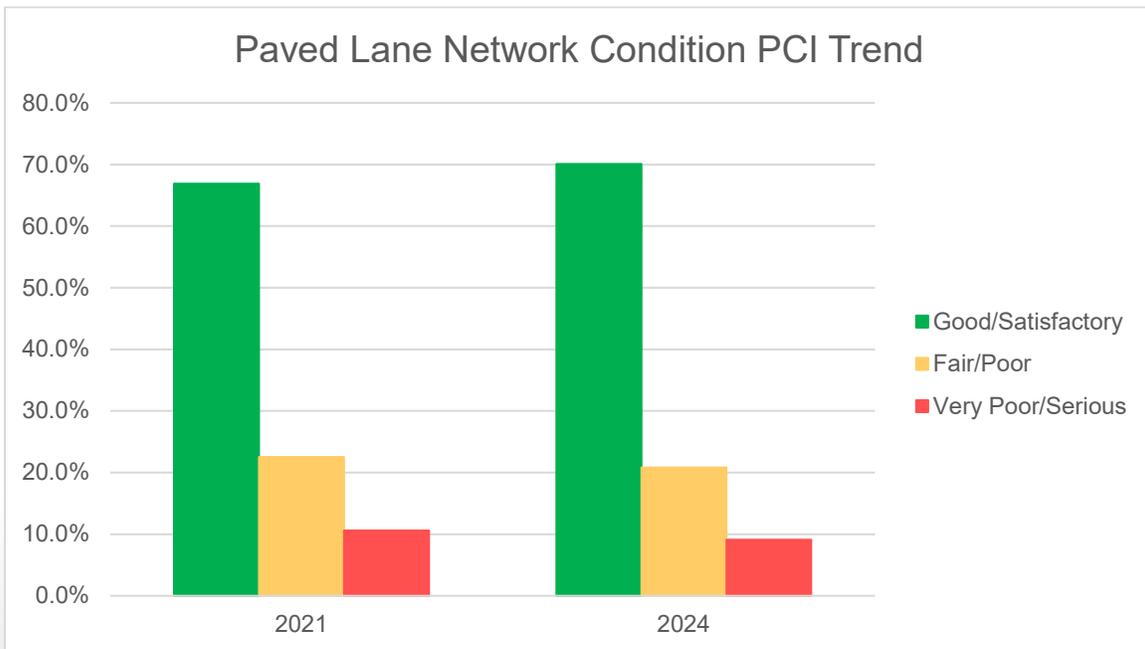


Figure 3 displays the PCI trend in the paved lane network between 2021 and 2024 condition assessments. Condition data on paved lanes was not collected in the 2017 assessment year. The paved lane network has improved slightly between 2021 and 2024 assessment years with approximately 70% of the network considered ‘Satisfactory-Good’.

Figure 3 – Paved Lane Network PCI Trend 2021-2024



Gravel Street and Lane Network

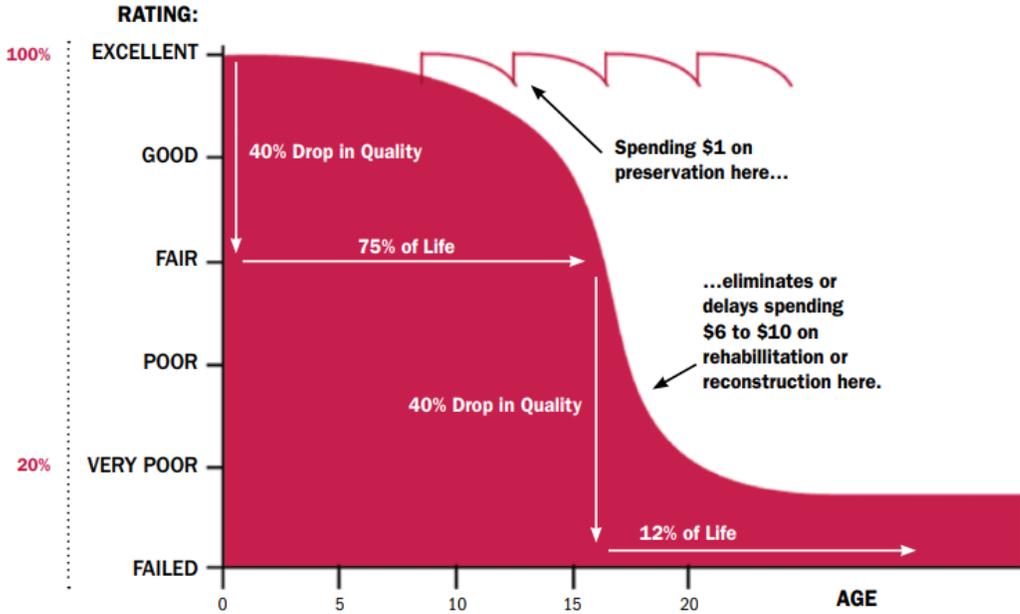
Gravel streets and gravel lanes receive annual blade grading and are assessed every spring. Year-to-year condition data is not available for presentation as the condition of gravel surfaces is subject to change rapidly following spring melt and sustained rainfall events. The gravel surface network is considered to be in a ‘good’ overall condition.

Asphalt Service Life

The service life of paved roadway and lane assets is a function of governing regulations at the time of construction, traffic volumes, and maintenance practices. Asphalt surfaces begin to display signs of deterioration within 10 to 15 years after construction and good maintenance practices and superficial preservation treatments can extend the service life to 20-plus years before the asset requires rehabilitation (i.e., resurfacing and/or reconstruction). Roads with high traffic volumes of heavy vehicles, such as arterials and expressways, often require intervention before reaching the 20-year design life due to their critical role in the network and higher operating speeds. In contrast, local roadways may experience extended service life due to lower traffic volumes, reduced structural demands, and less criticality within the transportation system.

Figure 4 demonstrates that when roads are allowed to deteriorate below a “Fair” condition rating, the rate of both deterioration and reinvestment costs significantly increase. Investing in preventative maintenance and light preservation will prolong the asset service life, avoiding premature and costly rehabilitation.

Figure 4 – Roadway Deterioration Curve (Canadian Infrastructure Report Card 2019)



Construction practices and governing standards and specifications regulating pavement design and road construction have evolved over time, and the era under which a road was constructed is correlated to its longevity.

Service Levels

The levels of service for road maintenance are defined within the Transportation business line of the 2024–2025 Approved Detailed Operating and Capital Budget, as well as in the 2017 Road Maintenance Service Level document found on the City’s website. To develop the roadway program and associated service levels, the Administration evaluates the condition of the City’s

roadway assets - including physical condition, functionality, and capacity - to maintain the network at the most cost-effective level. While the level of service for roadway assets is clearly defined, it is important to note that higher service levels result in increased maintenance costs.

The importance of roadway maintenance is also reflected in public feedback. Findings from the 2024 Citizen Satisfaction and Performance Survey indicated that 66% of respondents would like the City to provide more service for road maintenance.

This report falls under the 'Roadways and Corridor Infrastructure State of Reports' category, with a specific focus on roadway and lane assets. The following table provides a more detailed breakdown of the program's service levels, aligned with the defined service objectives.

**Table 9 – Program Service Levels**

Service	Sub-Service	Service Levels
<b>Road Surface Maintenance</b>	Emergency Pothole	Potholes with the potential for causing damage are considered an emergency and will be repaired as quickly as possible.
	Routine Pothole	Routine potholes are responded to and repaired on a complaint basis from May to November. Until the full spring and summer pothole blitzes are underway, only potholes that cause concern in driving lanes of priority one and two streets will be repaired with a temporary fill.
	Paving	Paving activities are completed between May and October.
	Paved Back Lanes	Maintenance will be performed as crews are made available depending upon the priority of those lanes requiring maintenance.
<b>Drainage and Flooding</b>	Emergency	Inspect on the same business day (within 24 hours).
	Non-Emergency	Inspect as soon as time permits. Typically, within two to five days.
<b>Earth Streets</b>	Condition Assessment	Inspect and evaluate the gravel lane network annually.
	Gravel Lane, Street, and Rural Road Maintenance	All back lanes receive at least one maintenance treatment annually (i.e., grading).
	Gravel Lane Reconstruction	Reconstruct and rehabilitate gravel lanes where current condition exceeds that which can be rectified through maintenance.  Tree trimming of gravel lane reconstruction locations.
<b>Paved Roadway and Lane Development,</b>	Development Services	Land development design review of new neighbourhood and subdivision pavement structures for compliance with design and development standards.

<b>Preservation, and Rehabilitation</b>	<b>Asset Management</b>	Asset management of paved asphalt network, including inventory, condition, and preservation planning.  Administer condition assessment of all asphalt surfaces on a three-year cycle.
	<b>Asphalt Preservation and Rehabilitation</b>	Maintain and slowly improve roadway network condition over time through annual preservation and rehabilitation of 5% of the roadway network annually (approximately a 1-in-20-year return cycle).  Maintain condition of the paved lane network through annual preservation and rehabilitation treatments.

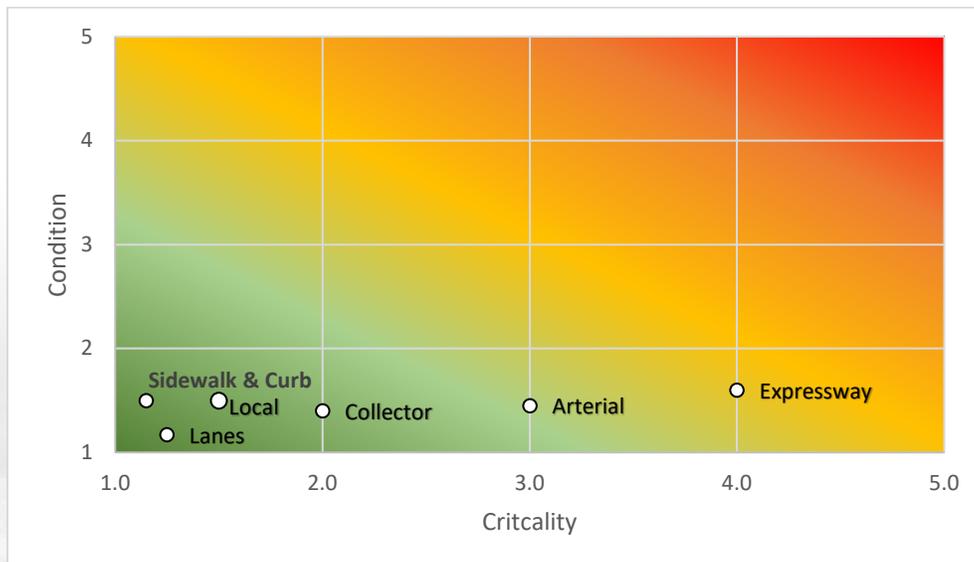
**Asset Criticality and Risk**

The paved roadway network provides an essential service to the residents and business community of Saskatoon and is the foundation of the transportation network to move goods and people. Expressways and arterial roadways are designed and constructed to accommodate high traffic volumes and commercial vehicles and, therefore, are more critical to the daily function and operation of the road network. Comparatively, disruptions to lanes, local, and collector roads serve smaller segments of the population.

Figure 5 provides a visual summary of condition of the paved roadway network assets and relative to the critical function each serves within the broader context of asset management. For reference, all roadway, lane, and sidewalk/curb assets are shown.

A summary of risks to asset condition is provided to highlight impact, consequences, likelihood, and mitigation strategies implemented and pursued by the Administration.

**Figure 5 – Roadway Asset Condition and Criticality**



***Risk 1 – Required preservation funding not secured to return to the annual preservation and rehabilitation of 5% of the roadway network (20 year return cycle)***

**Impact and Consequences** – Current funding levels for P.10056 Paved Road and Sidewalk Preservation target an average preservation treatment of 4% of the roadway network each year (i.e., approximate 25-year return cycle).

Reduced funding levels would see lower network preservation and rehabilitation coverage and overall quality of the roadway asset class deteriorate over time and maintenance costs would see a proportional increase in service requests. Funding allocation would increasingly favour high traffic volume roadways while lower traffic roads would see less investment.

**Likelihood** – Moderate. Roadways provide an essential service to citizens and the business community and remains a priority initiative in citizen satisfaction surveys. However, changing economic landscapes are placing increasing burdens on municipal budgets.

**Mitigation Strategies** – The Administration uses a mix of preservation methods to keep ‘good roads in good condition’ while slowly lifting the condition of those in need of more costly rehabilitation. This strategy allows public funding to cover a larger network area with priority to high traffic volume expressways and arterials.

***Risk 2 – Actual inflationary increases in maintenance and rehabilitation costs above typical budgeted inflation***

**Impact and Consequences** – Actual inflationary increases to program delivery above budgeted inflation increases would result in a reduction in annual network preservation coverage. Scope of maintenance services may be reduced to focus on priority areas and treatments. In both instances, condition quality of roadway assets would be reduced in the short term and would require funding increases in the long term to restore asset conditions.

**Likelihood** – Low to moderate. Unit rate analysis for road preservation is performed on an annual basis to reflect current market conditions, however recent economic and geopolitical uncertainty (i.e. tariffs and supply chain impacts) can drive unanticipated increases to input costs impacting service delivery targets.

**Mitigation Strategies** – Program input costs are monitored and evaluated annually to reflect current market conditions and mitigate short-term cost increases. Improved investment and focus to mitigate and control risk in design phase through investigation of sub-surface conditions and timeliness of detailed design relative to procurement.

***Risk 3 – Underestimated rates of asset deterioration***

**Impact and Consequences** – Roadway asset deterioration curves reflect traffic volumes, subgrade geotechnical conditions, constructed road structure, and maintenance investment. Increased traffic volumes experienced through increasing neighbourhood density or changing traffic patterns may advance degradation.

**Likelihood** – Low to moderate. Population growth and neighbourhood densification has a proportional increase on traffic volumes and may advance degradation of road assets, particularly in areas constructed during periods where design standards were not as robust as today.

**Mitigation Strategies** – Proactive roadway maintenance activities and superficial treatments have a significant impact on prolonging asset life cycle. The Administration has invested in predictive software tools to improve deterioration models to prioritize rehabilitation on road structures that may degrade sooner than those in comparable condition. Furthermore, design standards and construction specifications are continually evaluated to ensure road assets are constructed to industry best practices.

#### ***Risk 4 – Program alignment with utility preservation and infill development***

**Impact and Consequences** – Paved surfaces subject to excavations for utility (e.g., water, sewer, gas, power, telecoms) preservation and maintenance activities advance degradation and deterioration of the road asset. Alignment is pursued whenever possible to direct roadway preservation funding to water distribution and sewer collection infrastructure projects to restore the non-trench area and provide a curb-to-curb restoration of the road surface.

**Likelihood** – Moderate. Aging infrastructure and neighbourhood densification drives improvements in network capacity for water distribution and sanitary collection networks. In addition, technological growth is driving expansion of power and telecommunication networks to accommodate, for example, increasing electric vehicle use. As these initiatives grow, a greater potential exists for utility cuts in paved surfaces.

**Mitigation Strategies** – The public-facing Construction Map on the City’s website displays roadway, water, and sewer preservation programs on a three-year forward looking time horizon allowing for improved communication with external utilities to align respective preservation programs. Coordination of road preservation with internal and external utilities reduces potential for overlap construction limits and limits potential utility programs will disturb recently paved surfaces.

#### ***Risk 5 – Climate related risk***

**Impact and Consequences** – Environmental conditions may also advance degradation of roadway assets. For example, late season snow fall storage on the road surface may prolong freeze/thaw cycles and create ideal conditions for pothole formation. Prolonged wet cycles may increase groundwater levels compromising structural adequacy of subgrade beneath the road surface. Graveled surfaces are particularly susceptible to excessive rainfall.

**Likelihood** – Moderate. Sudden or gradual shifts in snow and rainfall patterns pose near- and short-term risks to maintenance preservation costs required to maintain roadway network condition. Sustained rainfall events are expected each year and pose a moderate risk to graveled surfaces.

**Mitigation Strategies** – Roadway preservation and rehabilitation treatments aim to improve the drainage pathway to the storm sewer system and reduce opportunity for subgrade saturation and pothole formation.

## INVESTMENT STRATEGIES AND NEEDS

### Life-Cycle Programs – Preservation and Rehabilitation

#### Paved Roadway Network

The most effective way to achieve an improved roadway network condition is to use a mix of preservation and rehabilitation treatments in addition to proactive maintenance strategies. The service target for the City's roadway asset preservation strategy is to increase the overall condition slowly over time while maintaining a preservation target of 5% of the network per year (i.e., approximately 1-in-20-year return cycle). Current funding levels support network coverage of approximately 4% per year (i.e., approximately a 1-in-25-year return cycle).

Moving forward, the annual network service target will be measured on a five-year average to reflect the balance between cost and treatment selection. For instance, full-depth road reconstruction replacing base aggregate and asphalt is a high-cost treatment per road segment and greatly reduces network coverages. In contrast, micro-surfacing is a low-cost surface treatment used to re-seal the existing asphalt surface that could be utilized to cover more area each year.

Preservation treatments are less expensive than restoration or rehabilitation treatments. Utilizing preservation treatments is important to help maintain the City's 'fair to good' roads so they do not drop into a lower condition category.

The City develops a three-year roadway preservation plan in coordination with the Water and Sewer Preservation programs that cover full roadway treatments within the preservation, restoration, and rehabilitation strategies. Specific details and distribution of these treatments vary year-to-year, depending on requirements or possible cost-saving innovations. The three-year preservation program is updated annually and is publicly available on the City's webpage.

#### Paved Lane Network

Paved lanes provide secondary access to property through the rear and/or flankage of the parcel. Similar to roadways, a mix of preservation and rehabilitation treatments is utilized to match the surface condition. At current funding levels, approximately 2% of the paved network receives preservation treatments each year.

#### Graveled Lane Network

Like paved lanes, the graveled lane network provides secondary property access. The condition of graveled surfaces can vary based on environmental conditions (i.e., rainfall and drainage). Each year, the graveled lane network is graded to promote drainage and reduce ponding through operation and maintenance funded programs.

Approximately 12 kilometres of the graveled lane network receives rehabilitation treatment whereby existing material is removed and replaced with new aggregate through Capital Project P.00837 – Lane Rehab and Drainage Improvements.

Life-Cycle Programs – Operation and Maintenance

## Roadway and Lane Network

The Roadway Operations and Maintenance Program focuses on maintaining the useable life and integrity of paved surfaces to serve the public's safety and mobility needs.

Activities undertaken in the Operations and Maintenance plans include:

- Crack sealing;
- Pothole repairs;
- Utility cut maintenance and restoration (funded by Utilities or external parties);
- Grading back lanes and gravel roads;
- Gravel lane reconstruction;
- Removal of debris from streets;
- Street cleaning and sweeping;
- Application of dust suppressants on gravel streets; and
- Snow and ice management.

Service levels for the Road Maintenance, Street Cleaning and Sweeping, and Snow and Ice Management programs were approved in 2017. These service levels detail the services currently provided and are available on the City's website.

Funding Requirements and Investment Strategies

## Service Expenditure Levels

The Administration evaluates the condition (physical, function, and capacity) of the City's assets to maintain a desired condition level at the minimum cost. Network condition assessments are conducted every three years to establish condition levels as well as develop annual capital improvement plans.

The level of service is defined; however, as a level of service increases for the asset, so does the cost of maintaining the asset. To compare the level of investment for all assets corporate-wide, five levels of expenditures are identified in Table 10.

It should be noted that expenditure levels are not condition assessments but lead to a change in the condition over time.

**Table 10 – Expenditure Levels**

Expenditure Level	Asset Condition	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 Asset 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.

Table 11 presents the expenditure level and alignment with current and desired asset performance. The desired expenditure level for roadway preservation aims to slowly improve the overall network condition over time through a service target of preserving and rehabilitating 5% of the network annually (approximately a 1-in-20-year return cycle).

Current funding levels for the paved roadway network support an annual base coverage of approximately 4% of the network (i.e. a 1-in-25 year return cycle).

**Table 11 – Asset Performance and Expenditure**

Asset Program	Funding Source	Current Performance	Desired Performance	Desired Expenditure Level	2025 Target Funding to meet service level	2025 Budget	2025 Funding Gap
Roadway Preservation	Capital P.10056	Good / Satisfactory	Good / Satisfactory	Level B	\$38.8M*	\$35.80M	\$3M†
Lane Preservation	Capital P.00837	Good / Satisfactory	Good / Satisfactory	Level C	\$1.79M	\$1.79M	\$0
Boundary Roads	Capital P.00959	Good / Satisfactory	Good / Satisfactory	Level C	\$0.40M	\$0.40M	\$0
Road Maintenance	Road Maintenance Operating Budgets	Good / Satisfactory	Good / Satisfactory	Level C	\$7.93M	\$7.53M	\$0.40M
Snow and Ice Management	Snow and Ice Operating Budgets	Good / Satisfactory	Good / Satisfactory	Level C	\$19.1M	\$18.10M	\$1.0M
Street Cleaning and Sweeping	Street Cleaning and Sweeping Operating Budgets	Good / Satisfactory	Good / Satisfactory	Level C	\$5.07M	\$5.07M	\$0

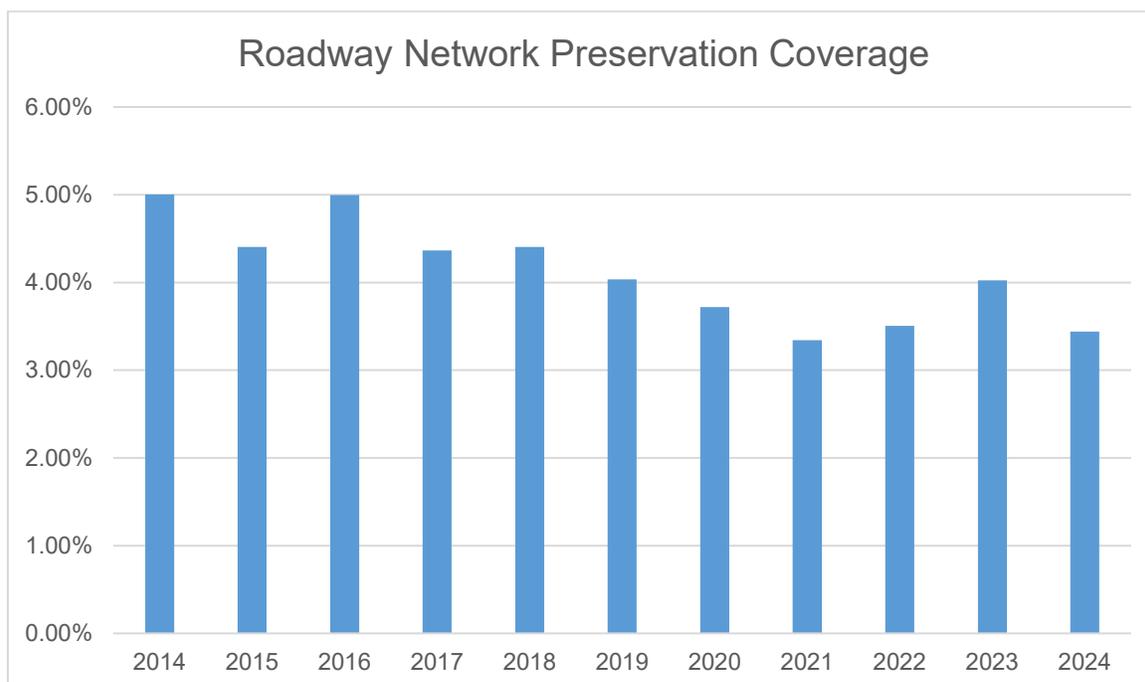
#### Roadway Preservation – Funding Summary

The Building Better Roads program was launched in 2014 with a phased mill rate increase fully realized in 2017 (Capital Project P.10056 Paved Roads and Sidewalk Rehabilitation). Between 2017 and 2024, approximately 43.5% of the road network has received preservation and rehabilitation treatment.

Since 2017, condition of the overall road network has remained stable. Positive growth has been realized in the ‘good/satisfactory’ condition range, although the number of road segments in the very poor/serious condition range has also increased during this period. However, the volume of roads in the ‘fair/poor’ range has shown a steady decrease (refer to Figure 1 – Paved Road Network PCI Trend 2017-2024).

In the past five years, between 2020 and 2024, an annual average of 3.61% of the roadway network received preservation and rehabilitation treatments (Figure 6).

Figure 6 – Road Preservation Coverage 2014-2024



Year-to-year coverage has displayed a general downtrend since 2018, as shown in Figure 6, driven by a combination of factors, including post-Covid inflation, expansion of the water main replacement programs, and full corridor revitalization initiatives (i.e., water, road, and sidewalk preservation on same road segment in the same year). A positive trend was experienced in 2022-23 following an injection of grant funding which supplemented sidewalk preservation and allowed for greater investment in roadways.

Inflationary pressures strained the roadway preservation program with unit costs increasing above 30% between 2021 and 2023. A funding gap of \$8.3M was reported in the 2023 Roadway Asset Management Update. The 2024/25 Multi-Year budget approved a base funding adjustment to support a service target of 4% annual road surface preservation.

The Administration implemented program adjustments in 2024, including a focus on high volume traffic expressways and arterial roads as well as pursuing full corridor revitalization only where sidewalk preservation occurs alongside roadway rehabilitation, when alignment exists with available funding, pedestrian potential, and defect density. Full corridor revitalization is not pursued on road segments receiving micro-surfacing treatments. In previous years, full corridor revitalization required roadway funding occasionally be allocated to sidewalk and curb.

In light of these changes, the funding gap has been reduced to approximately \$6M and remains below the target of 5% network coverage. However, it should be noted that the funding gap is specific to roadways and was determined under the assumption no roadway funding will be allocated in pursuit of reverting to full corridor revitalization (i.e., sidewalk and curb preservation is recoupled to roadway preservation).

### Lane Preservation – Funding Summary

Preservation and rehabilitation of the paved and gravel lane network has a funding expenditure intended to maintain the network condition. The paved portion of the lane network has remained constant between the 2021 and 2024 condition assessments (Figure 3 – Paved Lane PCI Trend 2021-2024). Current funding for the paved lane network supports preservation and rehabilitation of approximately 2% of the network each year.

Condition of the gravel lanes network remains constant and can vary according to sustained rainfall events. Each year, every gravel lane receives grading to maintain drainage and improve surface condition through operations and maintenance funding. Gravel lanes that require rehabilitation (i.e., removal and replacement of aggregate material) are funded through the preservation program. Approximately 12 km of gravel lanes are rehabilitated each year.

### Boundary Roads – Funding Summary

The Boundary Roads capital program includes annual operation and maintenance of ditches and both paved and gravel surfaces. In addition, the program is structured to accumulate funding for large scale preservation activities of paved surfaces.

### Operations and Maintenance – Funding Summary

The Operations and Maintenance programs have been adequately funded to meet the approved service levels, except in years with significant increases in the number of potholes and asphalt failures. Typically, these types of failures are driven by late-season freeze/thaw cycles and increases in moisture.

In years that asphalt failures are more common, there is a gap in available funding for treatments that are larger in scale than typical road maintenance repairs but are focused in one small portion of a road segment compared to preservation treatments which typically address an entire segment. This funding gap has been addressed in 2026-27 by a transfer of dedicated funding for road betterment from the Paved Roadway Reserve.

Snow and Ice Management is also not adequately funded during seasons of significant snowfall and inclement weather. While base funding levels are typically sufficient in an average year, severe winter storms and above-average snowfalls often require the City to access reserve funding for emergency response activities. The Snow and Ice Emergency Response and Removal Plan has been created to address these emergency responses.

### List of Recommendations and Action Plans

Saskatoon's population grew 4.1% between 2023 and 2024 and remains one of the fastest growing cities in Canada. Forecasted growth may see Saskatoon's population exceed half a million within the next 15 to 20 years. This growth will involve expansion of new neighbourhoods with higher densities and infill development along corridors, bringing with it increased daily traffic volumes. The demand for better and efficient transportation systems will increase with population and affect the funding priority and focus on the condition and management of the roadway network.

To support the future growth and expansion of the road and lane networks, the Administration will:

- Implement Pavement Management Software to improve analysis of condition data and improve selection and timely application of preservation and rehabilitation treatments to match stage of asset life cycle;
- Continue the shift from reactive to preventative maintenance when planning and administering programs;
- Review and improve preservation, rehabilitation, and maintenance treatments strategies utilized to optimize funding allocation and asset life cycle extension;
- Improve collection and analysis of condition data collected for gravel surfaces;
- Coordinate preservation and maintenance activities with various departments and divisions within the organization to minimize construction disruptions;
- Continue to investigate and review best management practices in other jurisdictions and adopt improvements to development standards and construction specifications; and
- Improve municipal oversight of utility cuts and implement new systems where appropriate.

## FORECASTED STATE OF ROADWAYS

A well managed transportation system contributes to economic growth by improving connectivity, reducing transportation costs, and attracting new business. Roadway preservation and maintenance programs are foundational to meeting the demands of population growth and citizen expectations.

While the overall condition of both the roadway and lane networks has remained relatively stable in recent years, precipitation, variability, population growth, and increasing vehicle weights related to the adoption of electric vehicles pose risks to these assets.

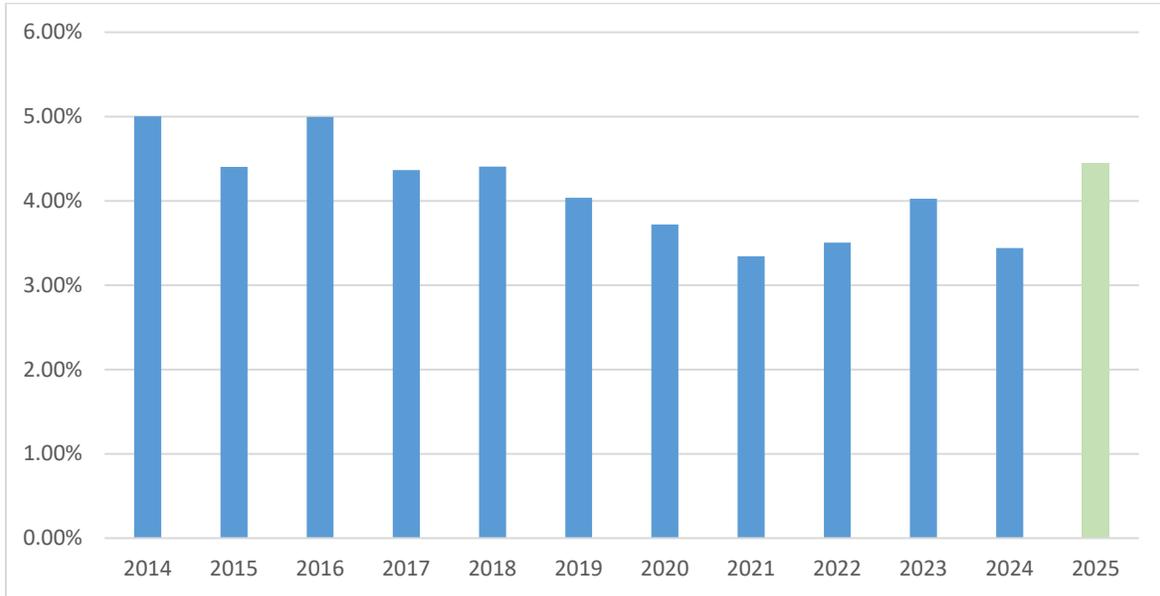
Expansion of water distribution projects are expected to place additional pressure on the roadway program in the coming years. As the lead water service connection program moves to achieve the goal of removing all lead lines by the end of 2028, road surfaces will experience an increase in utility cuts as remaining lead locations may not be aligned with a need to replace the water main. Additionally, capacity improvements to water main infrastructure to accommodate both the housing accelerator program and the new water treatment plant may require open trench excavations on otherwise good road surfaces.

Sidewalk preservation alongside road treatments will only be pursued when alignment exists with available funding, pedestrian potential, and defect density. Decoupling of sidewalk preservation from that of the roadway allows sidewalk funding to be directed to locations of greater need, which may have not been prioritized should the asphalt be in good condition. Shifting away from full corridor revitalization allows for greater funding allocation to roadways in pursuit of the 5% annual network preservation service level.

Further, the Administration will continue to prioritize investment into expressway, arterial, and collector roads that accommodate high daily traffic volumes. Local roads may degrade below their service life and will receive rehabilitation treatments in alignment with condition priority and available funding.

The 2024 and 2025 construction seasons have implemented the above noted program adjustments and, in combination with City Council-approved funding increases in the respective budget cycle, reduced the funding gap from \$8.3M in 2023 to \$2.2M in 2026 (should growth, inflation, and phase-in amounts be realized). These adjustments result in an improved network coverage expected in the 2025 and 2026 preservation forecast as presented in Figure 7. At current projections, the average network coverage over the five-year period between 2021 to 2025 will increase the five-year average to 3.75% from the 3.61% average between 2020 and 2024.

**Figure 7 – Road Preservation Coverage 2014-2026**



The Administration continues to explore and implement operational and program efficiencies alongside growth and understanding in both academic research and industry best practices. Such pursuits are made in collaboration with industry consultants, contractors, public engagement, and partnerships with institutions to ensure Saskatoon builds, maintains, and preserves these important assets.