APPENDIX 1

2025

State of

BRIDGES AND STRUCTURES INFRASTRUCTURE

City of Saskatoon

CONTENTS

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) Bridges and Structures inventory comprised of bridges, overpasses, pedestrian crossings, sound attenuation walls, retaining walls, and chain-link fencing, including inventory, condition ratings, and data reliability to provide a clear understanding of the inventory's health and performance. It evaluates service performance metrics to determine whether the structures meet established service levels.

The bridges and structures 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, reliable, and effective crossings and structures for the public.

Additionally, the report outlines investment needs and funding gaps, covering operational, maintenance, and capital cost projections necessary for sustaining and improving the structures. 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 structure inventory, 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 bridges and structures.

STEWARDS

The design, construction, maintenance, and rehabilitation of the City's bridges and structures assets rely on several City departments, and many City departments depend on these assets to deliver municipal services.

Asset Custodians

Responsibility	Description	Responsible Party
Overall Accountability	Implement and continuously improve the processes governing bridges and structures management planning, design, construction, maintenance and rehabilitation.	General Manager, Transportation and Construction
Resource and Budget Allocation	Coordinates preparation of the proposed budget, allocate resources, and make strategic decisions related to the bridges and structures maintenance and preservation.	Director of Technical Services
Risk Management	Identify, assess, and prioritize risks related to the assets and their operations.	Engineering Manager, Technical Services Asset Preservation Manager, Technical Services

Regulatory Compliance	Ensure the structures and bridges inventory service delivery and programs are managed and constructed to applicable local, provincial, and federal regulations, including safety, environmental, operational, and construction standards.	Engineering Manager, Technical Services Engineering Manager, Transportation Asset Preservation Manager, Technical Services
Asset Inspection and Condition Monitoring	Assess the condition of the bridges and structures inventory assets and reports on performance.	Asset Preservation Manager, Technical Services
Data Management	Collect and validate data on Asset Area, condition, and performance.	Asset Preservation Manager, Technical Services Information Management Coordinator, Information Technology
Asset Design and Construction	Implement and continuously improve standards and specifications governing the preservation and rehabilitation treatments in accordance with current industry best management practices.	Engineering Manager, Technical Services Engineering Manager, Transportation Asset Preservation Manager, Technical Services
Routine Maintenance	Implement maintenance activities, including preventative and corrective maintenance.	Asset Preservation Manager, Technical Services Roadway Manager, Roadway, Fleet, and Support

CURRENT INVENTORY AND VALUE

Bridges and Structures Inventory

The City's bridges and structures inventory are separated into the following categories:

- **Bridges –** A bridge is typically defined as a structure built to span a valley, road, railway, body of water, or any other physical obstacle. For the purposes of this report, the term bridge is used to describe traffic crossing structures over a body of water (i.e., the City's river crossings). A portion of bridges are not maintained or operated by the City and are referred to as "Externally Maintained Bridges" (i.e., P3 partnership – Traffic Bridge and Chief Mistawasis Bridge)

- **Overpasses (also known as grade separations, flyovers, or interchanges) –** An overpass is a separation of surface grades in which traffic in two different vectors is diverted over/under each other in order to remove the need for an intersection in one or more directions of travel. For the purposes of this report, the term overpass is used to describe traffic crossing structures over or under roadways and railways (i.e., the overpass of Circle Drive North over Idylwyld Drive).

- **Pedestrian Crossings –** A pedestrian crossing is a structure that allows pedestrians, cyclists, and other walkway or trail users to cross over or under a major roadway, railway, body of water, or other obstacle (i.e., the pedestrian overpass crossing of College Drive at Central Avenue). Pedestrian walkways, which are integral to a bridge or overpass (i.e., the sidewalks on the University Bridge), are not considered separately from the larger structure.

- **Sound Attenuation Walls –** A sound attenuation wall is a barrier built alongside a railway, freeway, or other high-capacity roadway to reduce the impact of noise pollution to neighbouring properties.

- **Retaining Walls –** A retaining wall is a structural wall designed to stabilize an earthen slope which would otherwise slide downwards, allowing creation of useable areas at various elevations. City-owned retaining walls along road right-of-ways are most commonly located at or near bridge and overpass structures and, for the purposes of this report, are considered separately from the overall structure. Retaining walls in parks and other areas outside of road right-of-ways are not considered in this report.

- **Chain-Link Fencing –** Chain-link fencing is installed along expressways and major arterial road right-of- ways to prevent pedestrians from crossing onto the roadway. Chain-link fencing in parks and other local areas is not considered in this report.

The City's bridges and structures inventory locations are provided in Figures 1 to 4 below:

Figure 1 – Bridge, Overpass, Pedestrian Crossing Locations

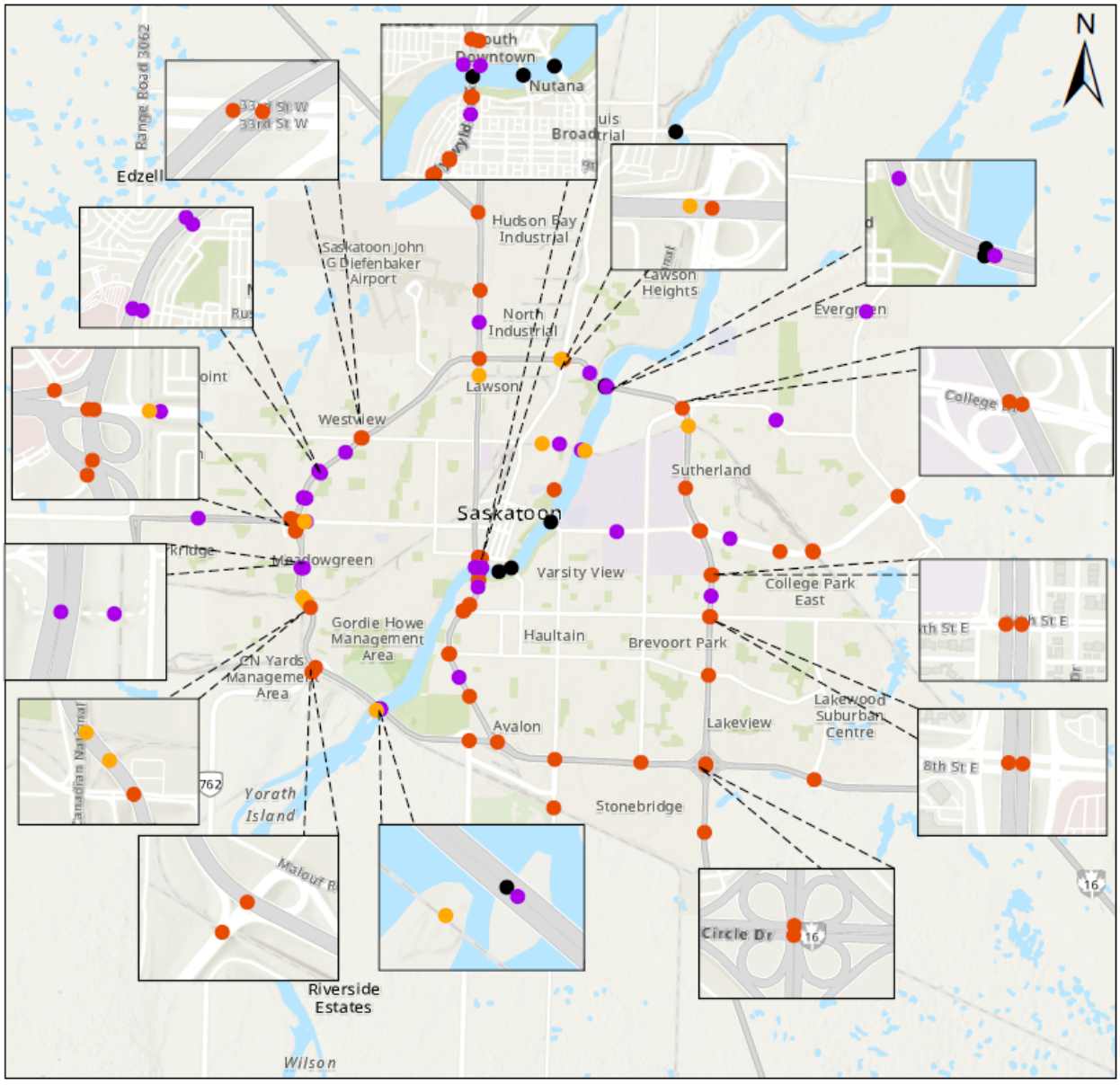
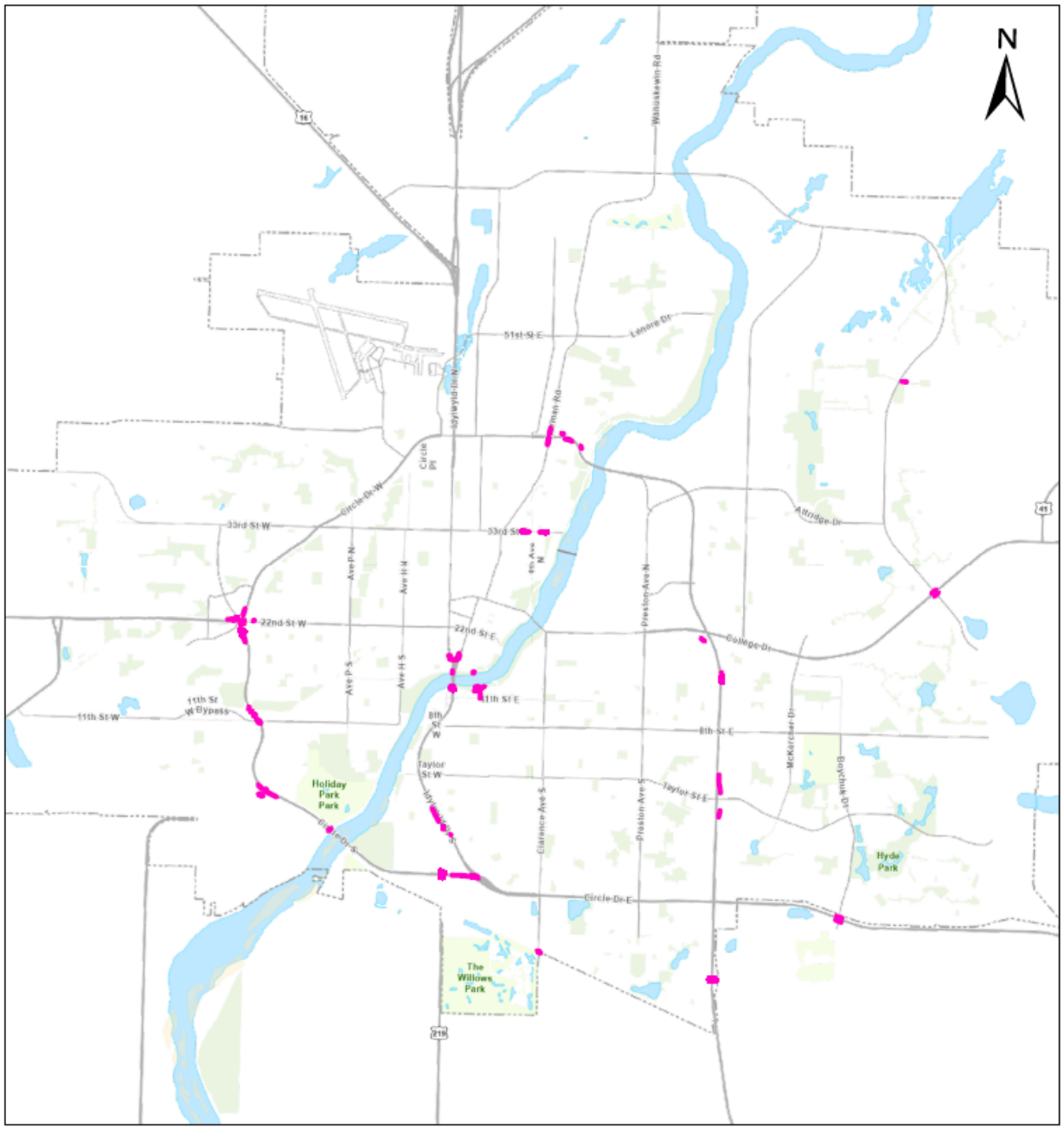


Figure 2 – Sound Attenuation Walls

Figure 3 – Chain-Link Fences

Figure 4 – Retaining Walls



Bridges and Structures Replacement Value

The method used to evaluate the structures inventory is to calculate the replacement value.

Replacement value is the estimated cost of:

- Replacing structural components of assets;
- Replacing the structure to current Canadian Highway Bridge Design Code; and
- Restoring the structure to the existing alignment and using existing roadways, ramps and embankments.

Past replacement contracts and new development contracts were analyzed to determine an average estimated cost of replacement in 2025 dollars.

The following table summarizes the estimated replacement value for the bridges and structures inventory:

Table 1 – Bridges and Structures Replacement Costs

Asset	Inventory	Replacement Value
River Bridges	6 ea.	$ 465,000,000
Overpasses	51 ea.	422,000,000
Pedestrian Crossings	24 ea.	$50,000,000
Sound Walls	31 km	$45,000,000
Chain-Link Fence	53 km	$4,000,000
Retaining Walls	6 km	$31,200,000
Subtotal		**$1,017,200,000**
P3 Bridges	2 ea.	$135,000,000
Total		**$1,152,200,000**

ASSET PERFORMANCE AND DATA CONFIDENCE

Current Condition of Infrastructure and Service Life

The condition of bridges, overpasses, and pedestrian crossings is assessed based on safety inspections, detailed industry standard inspections, and deck testing data in accordance with Alberta Transportation's BIM Level 2 Inspection Manual.

Condition ratings for structures are on a five-point scale from "A" to "F", with a rating of "F" indicating a failed condition or severe deterioration and a rating of "A" signifying the structure is in Very Good condition or in a like-new state. The following table outlines the structural condition rating, which provides a general guide to the type of activities suggested by each rating. This rating system has been internally developed by the City.

Table 2 – Structural Condition Rating

Rating	Physical Condition	Action
A	Very Good	No structural problems evident. Only monitoring and maintenance required.
B	Good	Minor deficiencies noted. Monitoring and maintenance required.
C	Fair	Structures showing signs of deterioration. Corrosion is actively occurring in components of the structure.
D	Poor	Structure showing advanced deterioration.
F	Failed	Structure no longer capable of safely supporting design loading

The rating of a structure is determined in combination with reviewing all of the relevant inspection results, testing data, rehabilitation recommendations, and technical expertise.

All structures in the City's inventory are safe for public use based on the physical condition ratings. The City works diligently to ensure all structures remain serviceable with the preservation program. Each structure in the City's inventory is inspected annually by civic staff to identify any critical defects that may require investigation and to determine if there are any immediate or long-term safety concerns.

The Preservation Program rates the condition of each structure; however, it is difficult to illustrate the differences between "Very Good", "Good", and "Fair" since not all structural defects are visible, as the overall condition rating is based on the deck testing reports as well as the following testing: copper sulfate electrode (CSE) equipotential survey, delamination survey, chloride testing, steel reinforcement bar cover/depth testing, and visual inspections in accordance with the Ontario Structures Inspection Manual (OSIM).

In general, a "Poor" condition rating still has the structure rated as safe for use; however, it describes a structure where all inspection, testing, and maintenance activities indicate the

presence of advanced deterioration, and a major rehabilitation is required, typically in two to five years.

- Note that allowing a structure to reach a “Poor” condition is not ideal as it can lead to costly rehabilitations and lengthy construction duration. Extending the service life of the structure and minimizing total life-cycle costs involves proactive rehabilitation to mitigate against structures falling into a “Poor” rating.

An example of a “Failed” condition structure was the original Traffic Bridge, which was closed to traffic in August 2010 after critical defects/deterioration were discovered through a detailed inspection. Due to concerns with the structural integrity of the bridge, it was deemed unsafe to remain open.

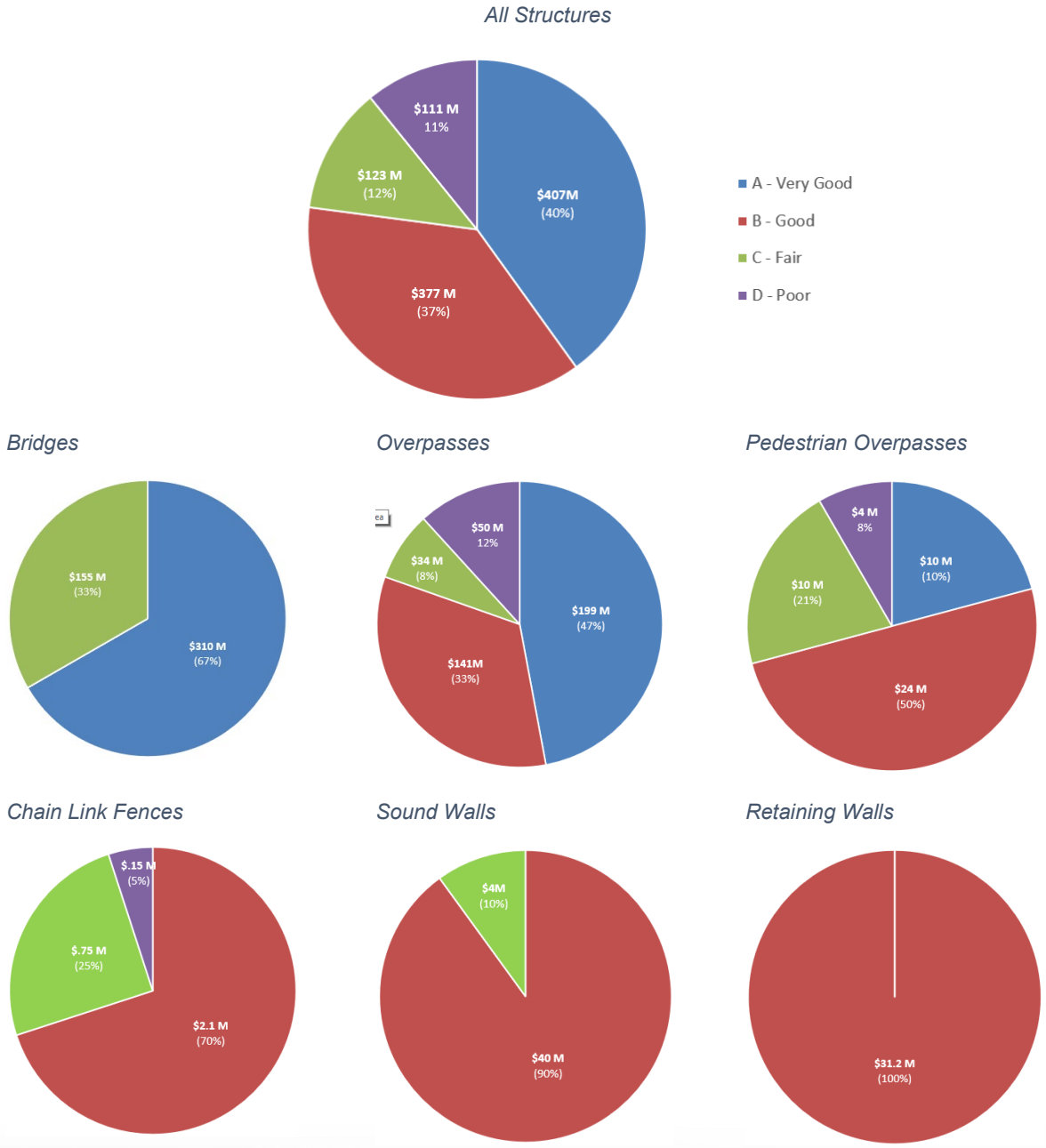
The following table breaks down the condition for each type of structure in the bridges and structures inventory:

Table 3 – Structural Condition Breakdown

Physical Condition	Grade	Bridges	Overpasses	Pedestrian Structures	Chain Link Fencing	Sound Attenuation Wall	Retaining Walls
Very Good	A - Very Good	67%	47%	21%	0%	0%	0%
Good	B - Good	0%	33%	50%	70%	90%	100%
Fair	C - Fair	33%	8%	21%	25%	10%	0%
Poor	D - Poor	0%	12%	8%	5%	0%	0%

The following Figure 5 summarizes the current condition for each type of asset:

Figure 5 – Condition of Bridges and Structures by Replacement Value



Condition Assessment Methodology and Programs

The City works to ensure all bridges and structures remain safe and structurally sound. The condition assessment methodologies and programs used to collect this data are as follows.

Bridge Inspection and Testing Program

The bridge inspection and deck testing program consists of completing industry standard inspections every three years and deck testing on a six-year cycle for all bridges and

overpasses that are over ten years old in the City inventory. Note that structures are not tested within ten years after a major rehabilitation. The deck testing covers the deck, barrier and curb components (if applicable), piers and abutments (if applicable), and expansion joints (if applicable) for each structure.

The following tests, if applicable, are performed on these elements:

- Copper Sulfate Electrode (CSE) Equipotential Survey – This test is used to determine the potential corrosion activity in the outermost layer of reinforcement as an indication of the potential for damage occurring in the future.
- Chloride Concentration – A rapid chloride test method is used to assess the free chloride content available to accelerate corrosion of the reinforcement.
- Rebar Depth Testing – A magnetic rebar depth finder is used to determine the rebar cover depth at all chloride test locations. For asphalt covered decks, depths are measured at the chloride testing holes. This information is used to determine actual concrete cover.
- Delamination Testing – The surfaces subjected to the CSE and Chloride testing are sounded with a chain or hammer to identify areas of delaminated concrete and/or de-bonded asphalt.
- Expansion Joints – Expansion joints are flooded and monitored from below the bridge deck to determine performance. Inspectors also carefully clean and probe the joint to determine if the rubber has become brittle. This inspection allows the City to schedule seal replacements if leakage is detected.

The program methodology begins by gathering the detailed testing information to determine the approximate point at which each element is within its service life and produce corresponding remaining service life estimates. Once the remaining service life has been identified, rehabilitation strategies are developed and compared to help determine the optimal timing for rehabilitation.

For each structure, the City generally creates rehabilitation strategies, costs, and timings following the industry standard categories typically developed for bridges, including the do-nothing, reactive, proactive, and like-new strategies. The like-new and proactive strategies may not be applicable to bridges with protection systems that are beyond their service life.

Safety Inspections

Each bridge, overpass, and pedestrian crossing in the City's inventory is visually safety inspected annually by civic staff. Sound walls, retaining walls, and chain-link fencing are inspected on a three-year cycle by utilizing seasonal infrastructure raters. The key goals of the inspections are to determine if there are any safety concerns with each structure, develop the minor maintenance program scope of work, and identify critical defects that may require additional investigation.

Data Confidence and Reporting Level

The Administration reports on all bridges and structures in the inventory and maintains a high level of confidence in the data collected through its bridge inspection and testing programs.

Quality controls and assurances are embedded throughout the evaluation process, with data collection and testing conducted using standardized, industry-accepted methodologies.

Testing protocols are applied consistently across the inventory, with adjustments made only to reflect the structural characteristics and age of each asset. This ensures that the data remains relevant and technically appropriate. A comprehensive suite of tests, such as chloride concentration, CSE testing, and delamination assessments provides a robust understanding of structural condition.

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 4: 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 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	The data source is not known

Figure 6: Reporting Levels - Availability of Data in Mandatory Fields for Each Asset

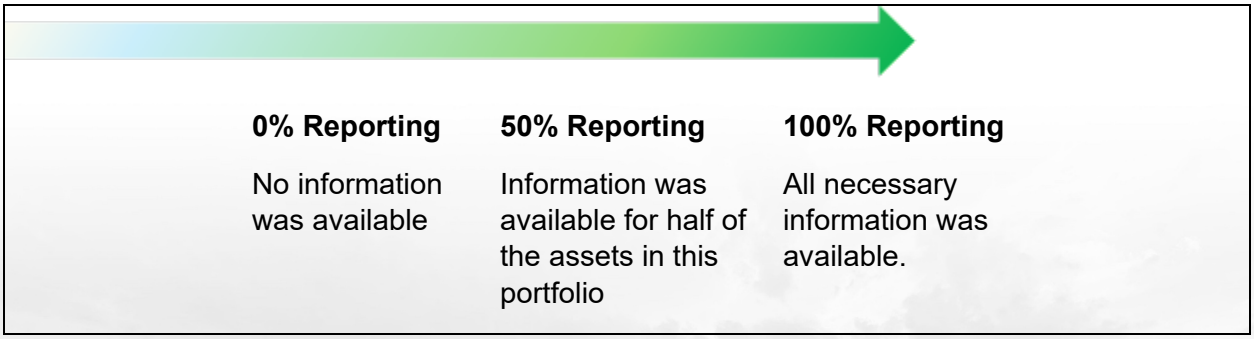


Table 5 table represents the data confidence and reporting levels for the bridge assets.

Table 5: Data Confidence

Asset Area	Asset Class	Data Confidence	Reporting Level
Bridges and Structures	Bridges	5	100%
	Overpasses	5	100%
	Pedestrian Structures	5	100%
	Chain Link Fencing	4	100%
	Sound Attenuation Walls	4	100%
	Retaining Walls	4	100%

The Service Levels

The levels of service for bridges and structures preservation and maintenance are defined within the Transportation business line of the 2024-2025 Approved Detailed Operating and Capital Budget.

The following table provides a more detailed breakdown of the program's service levels, aligned with the defined service objectives. The programs are described further in the "Life-Cycle Program" Section as well.

Table 6 – Service Levels

Service	Sub-Service	Service Level
Asset Management	Washing	Structures are cleaned annually.
Asset Management Inspections	Sealing	A penetrating sealer is added on a five-year cycle.
	Minor Maintenance	Completed on an annual basis, dealing with repairs and maintenance on structures as determined by internal and external inspections.
	Major Rehabilitations	The City uses inspection and deck testing data, recommendations and scenarios to select the rehabilitations and timing. The City developed the program to improve conditions slowly over time by targeting the most cost-effective future treatment, performing major bridge and overpass rehabilitations approximately once every 25 years. With the current inventory an average of two rehabilitations are targeted to be completed each year.
	Safety Inspections	Each structure is inspected annually for safety concerns, required maintenance, and to identify defects for additional investigation.
Inspections	Bridge Inspection and Deck Testing	Consultant inspections done every three years and deck testing on a six-year cycle for bridges and overpasses that are over ten years old.

Asset Criticality and Risk

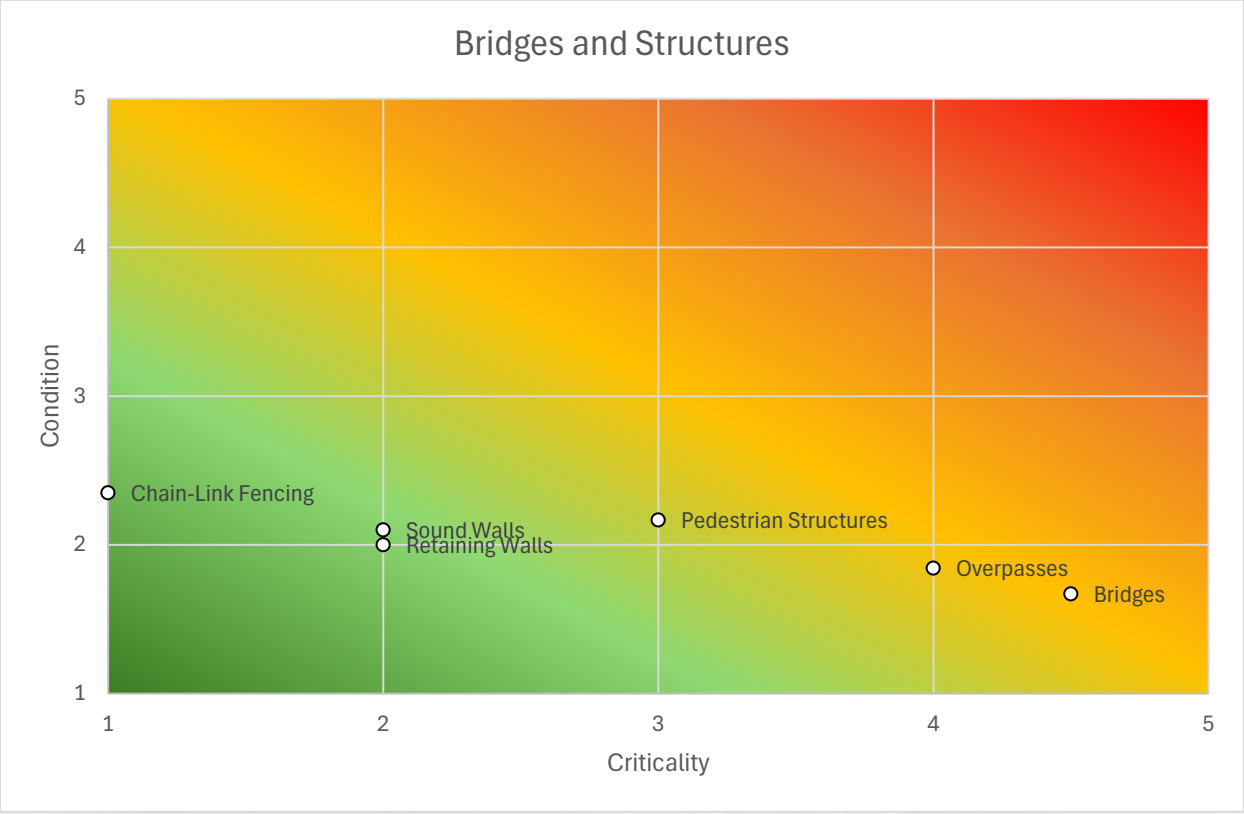
The bridges, overpasses, and pedestrian crossings provide an essential service to the residents and business community of Saskatoon and are vital structures to ensure consistent traffic movement throughout the city. These structures are designed and constructed to accommodate significant traffic volumes, commercial vehicles, and over-dimensional vehicles and, therefore, are critical to the daily function and operation of the transportation network. Comparatively, retaining walls, sound walls, or chain-link fencing serve smaller or more localized segments of the population and, as such, while still a key component of the inventory, are less critical to the majority of the city.

Figure 7 below provides a visual summary of the condition of the structural inventory relative to the critical function each serves within the broader context of asset management.

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

Due to the criticality of these structures, the City monitors condition ratings closely to ensure that no structure reaches a failed state. Inspections are conducted to identify any critical defects for both immediate and long-term safety concerns.

Figure 7 – Bridge and Structure Asset Criticality



Risk 1 – Shortfall of preservation funding to maintain service levels

Impact and Consequences – Currently there is a shortfall of funding in Bridge Major Repair Reserve (BMRR) to fully support proactive preservation of bridge infrastructure. A reduction in annual funding would impair the City's ability to maintain bridges in a cost-effective and safe manner. Proactive maintenance would be delayed, leading to accelerated structural deterioration and increased long-term rehabilitation costs. The program would shift toward reactive repairs, which are typically more expensive and disruptive.

The larger the funding shortfall the higher the likelihood of a growing backlog of costly repairs and the higher the future likelihood of emergency interventions which may impact traffic flows (e.g. temporary lane closures). The current program is experiencing an annual funding gap.

Likelihood – Low to moderate. While current funding shortfalls has placed pressure on the bridge preservation program, the City has made significant progress in closing the funding gap since 2012. The investment has improved the City's ability to manage the aging infrastructure. However, funding shortfalls remain a concern, particularly under changing economic conditions and increasing infrastructure demands, which may still impact the program’s ability to maintain service levels over the long term.

Mitigation Strategies – The Administration prioritizes structures based on risk of failure and public safety. High-risk structures are monitored with increased frequency, and minor maintenance is implemented to delay major failures. Asset management tools are used to optimize investment timing and extend service life. Coordination with other infrastructure programs is pursued to align work and reduce costs.

Risk 2 – Substantial increase in maintenance and rehabilitation costs

Impact and Consequences – Unexpected increases in material, labour, or contractor costs can significantly reduce the scope of annual bridge preservation and rehabilitation work. As a result, fewer structures receive timely interventions, leading to more assets falling below acceptable condition thresholds. Deferred work can become more complex and expensive to address, escalating long-term costs. The program may become increasingly reactive, with emergency repairs consuming a larger share of the budget. This would reduce the ability to deliver planned capital programs and increase the risk of service disruptions.

Likelihood – Low to moderate. While cost forecasting is part of annual planning, macroeconomic factors such as inflation, supply chain disruptions, and labour shortages can drive sudden increases in input costs, impeding service delivery targets.

Mitigation Strategies – Program input costs are reviewed annually to reflect current market conditions. Early design and procurement are used to lock in pricing and reduce exposure to inflation. High-risk structures are prioritized to ensure limited funds are used effectively. Alternative delivery models and project bundling are explored to achieve cost efficiencies.

Risk 3 – Increased asset deterioration or emergency events (e.g., bridge and sound wall impacts/fires)

Impact and Consequences – Unexpected events such as vehicle impacts, fires, or accelerated deterioration due to hidden defects can compromise structural integrity and require immediate response. These events can result in sudden loss of service, including emergency closures or load restrictions. Public safety may be at risk if structural damage is not detected or addressed promptly. Emergency repairs are typically high cost and can disrupt planned capital programs. The City may also face reputational risks if critical infrastructure is perceived as unsafe or poorly maintained.

Likelihood – Moderate. While emergency events are relatively rare, they are difficult to predict. Increasing traffic volumes, aging infrastructure, and environmental exposure raise the probability of such incidents occurring.

Mitigation Strategies – Regular inspections and condition monitoring are conducted to detect early signs of deterioration. Emergency response protocols and operational funding is in place to address urgent repairs.

Risk 4 – Climate-related risk

Impact and Consequences – Environmental conditions may accelerate deterioration of bridge and overpass structures. Changing weather patterns, particularly increased freeze/thaw cycles, can lead to spalling of concrete, pothole formation, and damage to expansion joints. Prolonged wet conditions may also increase water infiltration, compromising substructure elements and increasing maintenance needs. These climate-related impacts can shorten the service life of structures and increase life-cycle costs due to more frequent interventions.

Likelihood – Low. While climate-related impacts are expected to increase over time, the current risk level is moderate and manageable with proactive maintenance and design strategies.

Mitigation Strategies – Structures preservation and rehabilitation treatments are designed to target known climate vulnerabilities before they become critical. Design standards are continually evaluated to account for changing climate conditions. Environmental trends are monitored to inform long-term planning, and climate resilience is integrated into asset management strategies.

INVESTMENT STRATEGIES AND NEEDS

Life-Cycle Programs

Washing and Sealing Program

During the winter, bridges and overpasses are exposed to gravel, sand, and anti-icing chemicals that are spread on icy roads. The debris can cause wear on the surface of the bridge and salt can initiate chloride induced corrosion of the reinforcing steel in the bridge. The longer the debris and salt are on the road, the more time the salt has to corrode the components on and in the bridge.

Each year, every structure is swept and washed to remove salts and debris to mitigate the amount of time the salts have to enter the concrete and deteriorate the bridges. The sealing program involves sealing about 20% of the City's structures each year, with the objective of sealing every bridge and overpass on a five-year cycle. Silane sealers reduce the corrosion in the structure by forming a water repelling (hydrophobic) layer on and in the surface of concrete. They also create a breathable condition that allows the internal concrete to dry by the process of out-gassing, while preventing future build-up of moisture from the environment.

Minor Maintenance

The minor maintenance program is completed on an annual basis under the Bridges Operating and Capital Budget. The program deals with repairs and maintenance for each asset in the bridges and structures program as determined by the inspections.

Minor repairs include items such as paving, route and crack sealing, concrete patching and repairs, repairing settling issues, erosion control, drainage improvements, impact damage repairs, sound wall repairs, hand railing maintenance, and minor joint repairs.

Major Rehabilitations

The City uses deck testing data to development rehabilitation strategies for each structure.

The rehabilitation strategies for each structure have a critical period of time for each strategy, based on the level of chlorides (salts) to induce corrosion in each structure. Once the critical period is missed, the repair strategy changes and the rehabilitation costs increase.

Projects are typically selected for rehabilitation at the optimum date and confirmed through testing prior to rehabilitation. There is variability in the critical timeframe for rehabilitation, as it is unknown exactly when corrosion will be induced in the structure. However, typically, once the protective membranes have failed and corrosion is occurring the deterioration rate substantially increases. Proactive rehabilitation strategies are intended to complete rehabilitation before corrosion of the reinforcing steel within the deck is induced. Reactive rehabilitation strategies are employed when corrosion has already been induced, and require varying degrees of removal and replacement of portions of the concrete deck, including the impacted steel reinforcing.

Load Rating Program

The City develops and maintains load rating analyses for several bridge/overpass structures located throughout Saskatoon. The City, with the assistance from external specialized structural consulting engineers, has created load capacity charts to confirm bridge capacity for truck traffic. The information is used within the City to develop the long-haul vehicle routes, pick-up and delivery maps, and assists with the permitting process to ensure vehicle loads are within safe loading parameters for the bridges and structures.

Emergency Response Program

This program is required on an as-needed basis when unexpected emergencies occur to assets within the inventory. A dedicated structural on-call program has been established to ensure inspections are completed in a timely manner. Emergency responses can include:

- Overhead impacts to overpasses;

- Vehicle collisions with sound walls/retaining walls; and
- Vandalism.

Emergency inspections occur for each event where the structural integrity of the structure is ascertained, all applicable information is gathered, and the repairs are either added to the minor maintenance program or tendered as a separate project if the damage is significant. Depending on the damage, lane restrictions or other measures may be enacted until more detailed inspections and/or emergency repairs can be carried out.

Funding Requirements and Investment Strategies

Service Expenditure Levels

The Administration evaluates the condition of the City's assets in order to develop annual programs to maintain the assets at the defined service level 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; however, as the level of service increases for the asset, so does the cost of maintenance. 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.

Table 7 – 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 8 below presents the expenditure level and alignment with current and desired asset performance. The desired expenditure level for bridges and structures preservation aims to gradually improve structural condition through a service target that emphasizes proactive maintenance and rehabilitation.

Table 8 – Expenditure Levels

Asset Program	Current Performance	Desired Performance	Desired Expenditure Level	2025 Target Funding to Meet Service Level	2025 Budget	2025 Funding Gap
Operating Programs[1]	Good	Good	Level C	$1.31M	$1.31M	$0.00M
Major Rehabilitations and Capital Minor Maintenance	Satisfactory	Good	Level B	$5.80M	$4.32M[2]	$1.48M

1 Operating Programs include Washing and Sealing, Minor Maintenance and Repairs, Safety Inspections, Bridge Inspections and Deck Testing, Load Rating Program.

2 Reduced to account for the Operations budget funding a portion of the Capital Minor Maintenance program.

Bridge and Structures Preservation Funding Summary

Bridges

As identified in the 2023 Asset Management Report, the BMRR has been underfunded. In 2025, the capital contribution is $4.32 million. The target contribution is $5.80 million annually, with no requirement for one-time contributions.

Sufficient funding is not in place for the current ten-year rehabilitation plan. One-time funding will be required for future components of the University Bridge Arch Rehabilitation. The 2026 scope has currently been reduced to complete critical repairs only. The ten-year plan will be reviewed to determine whether any planned work can be delayed without significantly increasing life-cycle costs to other structures.

If target funding and one-time contributions are achieved, the revised ten-year plan can be implemented at the lowest life-cycle cost. This would ensure timely rehabilitation of structures, mitigating further damage and cost escalation.

Sound Attenuation Walls

Most sound attenuation walls were constructed after 2003. With a design life of 50 years, no major rehabilitation is expected within the next 20 years. Funding is available for minor maintenance as needed.

Retaining Walls

Retaining walls are designed for long service life and are regularly inspected (those adjacent to bridges are inspected every three years). No major rehabilitation is anticipated in the next ten years. Funding is allocated for ongoing minor maintenance.

Chain-Link Fencing

Chain-link fencing has undergone extensive condition assessment and asset mapping in

ArcGIS. Funding is allocated for immediate maintenance needs. Overall, the fencing is in good condition and will continue to be inspected on a three-year cycle.

List of Recommendations and Action Plans

The bridges and structures network is a critical component of the City's transportation system, supporting the safe and efficient movement of people, goods, and services. As the city continues to grow, the demand on these structures will increase, requiring proactive and sustainable asset management strategies.

To support the future performance and sustainability of the bridge network, the Administration will:

- **Provide bi-annual State of Reports** to inform Council of the current condition and funding state of bridges and structures infrastructure;
- **Continue with inspection process improvements** to enhance data quality and improve prioritization of maintenance and rehabilitation activities;
- **Focus on alternative repair and maintenance technologies** to extend asset life and reduce life-cycle costs;
- **Continue the shift from reactive to preventative maintenance** through the Minor Bridge Maintenance Program, including treatments such as asphalt resurfacing and joint sealing;
- **Develop additional modeling of corrosion and life-cycle costs** to better forecast deterioration and optimize intervention timing;
- **Target proactive rehabilitations** to address emerging issues before they escalate into major repairs;
- **Optimize project timelines** to reduce traffic disruption and improve coordination with other infrastructure programs;
- **Continue to target minor rehabilitations with project management by City staff** to reduce reliance on external consultants and lower project costs; and
- **Develop strategic tendering practices** that consider local market conditions, seasonal constraints, and material availability.

FORECASTED STATE OF INFRASTRUCTURE

A well-managed bridges and structures network contributes to economic growth by improving connectivity, reducing transportation delays, and supporting public safety. Preservation and maintenance programs are foundational to meeting the demands of population growth and citizen expectations.

While the overall condition of the City's bridges and structures has remained relatively stable, several emerging pressures are expected to impact the network, as follows:

- **Aging Infrastructure**: Many structures are approaching the end of their design life and will require significant investment to maintain safety and functionality.
- **Funding Shortfall**: Although the BMRR has grown from $720,000 in 2012 to $4.32 million in 2025, it remains below the target of **$5.8 million**. Major upcoming rehabilitations, such as the University Bridge Arch repairs, will require one-time funding contributions or will need to be delayed, increasing the overall cost of the work.
- **Inflation and Material Costs**: Rising construction costs are placing additional pressure on capital budgets and may impact the timing and scope of future projects.

Bridges and structures are vital to movement around Saskatoon. To address the challenges of aging infrastructure, climate variability, and increasing demand, the Administration will continue to prioritize investment into high-traffic structures and critical connections. Preventative maintenance will be emphasized to delay costly replacements, and data-driven decision-making will guide the timing and scope of interventions.

The Administration continues to explore and implement operational and program efficiencies alongside growth in academic research, technology developments and industry best practices. These efforts are made in collaboration with industry consultants, contractors, public engagement, and partnerships with institutions to ensure Saskatoon builds, maintains, and preserves a resilient and sustainable bridges and structures network.