Asset Management Plan

the Counties
SDG
STORMONT · DUNDAS · GLENGARRY

2022

This Asset Management Program was prepared by:

psdcitywide

Empowering your organization through advanced asset management, budgeting & GIS solutions

Key Statistics

Replacement cost of core asset portfolio
$952.5 million

Replacement cost of core infrastructure per household
$18,749

Percentage of core assets in fair or better condition
66%

Percentage of core assets with assessed condition
82%

Annual capital core infrastructure requirements
$26.1 million

Target reinvestment rate
2.74%

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Executive Summary

The United Counties of Stormont, Dundas and Glengarry (SDG Counties) infrastructure provides the foundation for the economic, social, and environmental health and growth of SDG Counties through the delivery of critical services. The goal of asset management is to deliver an adequate level of service in the most cost-effective manner. This involves the development and implementation of asset management strategies and long-term financial planning.

All municipalities in Ontario are required to complete an asset management plan (AMP) in accordance with Ontario Regulation 588/17 (O. Reg. 588/17). This AMP outlines the current state of asset management planning for core infrastructure at SDG. It identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, SDG Counties can ensure that public infrastructure is managed to support the sustainable delivery of infrastructure services.

This AMP includes the following asset categories:

Asset Category

- Road Network
- Bridges & Culverts
- Stormwater Infrastructure

The overall replacement cost of the asset categories included in this AMP totals $952.5 million. 66% of all assets analysed in this AMP are in fair or better condition and assessed condition data was available for 82% of assets. For the remaining assets, assessed condition data was unavailable, and asset age was used to approximate condition. This is a data gap that persists in most municipalities.

Generally, age misstates the true condition of assets, making assessments essential to accurate asset management planning, and a recurring recommendation in this AMP.

The development of a long-term, sustainable financial plan requires an analysis of whole lifecycle costs. This AMP uses a combination of proactive lifecycle strategies (Roads and Bridges & Culverts) and replacement only strategies (Stormwater) to determine the lowest cost option to maintain the current level of service.

To meet capital replacement and rehabilitation needs for existing core infrastructure, prevent infrastructure backlogs, and achieve long-term sustainability, SDG Counties' average annual capital requirement totals $26.0 million.

It is important to note that this AMP represents a snapshot in time and is based on the best available processes, data, and information at SDG Counties. Strategic asset management planning is an ongoing and dynamic process that requires continuous improvement and dedicated resources.

This AMP identifies the current practices and strategies that are in place to manage public infrastructure and makes recommendations where they can be further refined. Through the implementation of sound asset management strategies, SDG Counties can ensure that public infrastructure is managed to support the sustainable delivery of municipal services.

> With the development of this AMP SDG has achieved compliance with O. Reg. 588/17 to the extent of the requirements that must be completed by July 1, 2022. There are additional requirements concerning proposed levels of service and growth that must be met by July 1, 2024 and 2025.

Core Infrastructure Deficit Per Household

$12

Recommendations to guide continuous refinement of SDG Counties' asset management program include:

- Review data to update and maintain a complete and accurate dataset
- Develop a condition assessment strategy with a regular schedule
- Review and update lifecycle management strategies
- Develop and regularly review short- and long-term plans to meet capital requirements
- Measure current levels of service and identify sustainable proposed levels of service

1 Introduction & Context

Key Insights

- The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, and manage the associated risks, while maximizing the value rate payers receive from the asset portfolio

- SDG Counties' asset management policy provides clear direction to staff on their roles and responsibilities regarding asset management

- An asset management plan is a living document that should be updated regularly to inform long-term planning

- Ontario Regulation 588/17 outlines several key milestones and requirements for asset management plans in Ontario between July 1, 2022 and 2025

1.1   Asset Management Overview

Municipalities are responsible for managing and maintaining a broad portfolio of infrastructure assets to deliver services to the community. The goal of asset management is to minimize the lifecycle costs of delivering infrastructure services, and manage the associated risks, while maximizing the value ratepayers receive from the asset portfolio.

The acquisition of capital assets accounts for only 10-20% of their total cost of ownership. The remaining 80-90% derives from operations and maintenance. This AMP focuses its analysis on the capital costs to maintain, rehabilitate and replace existing municipal infrastructure assets.

Total Cost of Ownership

| Build 20% | Operate, Maintain, and Dispose 80% |
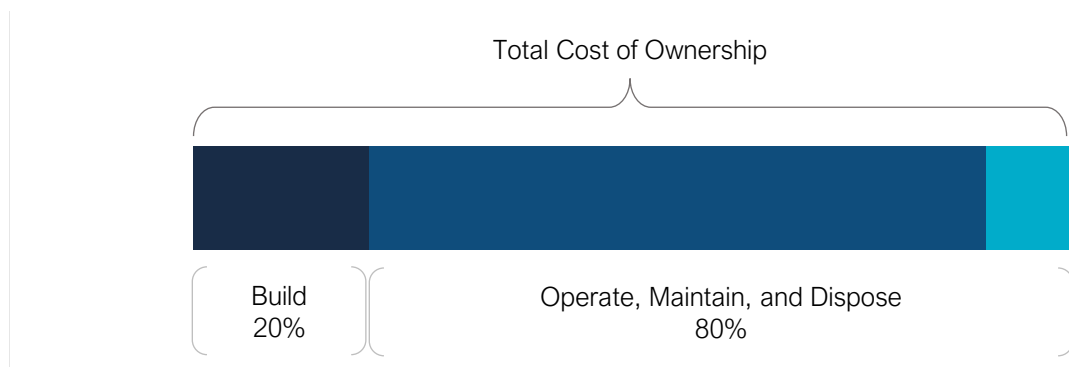
These costs can span decades, requiring planning and foresight to ensure financial responsibility is spread equitably across generations. An asset management plan is critical to this planning, and an essential element of a broader asset management program. The industry-standard approach and sequence to developing a practical asset management program begins with a Strategic Plan, followed by an Asset Management Policy and an Asset Management Strategy, concluding with an Asset Management Plan.

This industry standard, defined by the Institute of Asset Management (IAM), emphasizes the alignment between the corporate strategic plan and various asset management documents. The strategic plan has a direct, and cascading impact on asset management planning and reporting.

1.1.1   Asset Management Policy

An asset management policy represents a statement of the principles guiding SDG Counties' approach to asset management activities. It aligns with the organizational strategic plan and provides clear direction to United Counties staff on their roles and responsibilities as part of the asset management program.

SDG Counties adopted the "Strategic Asset Management Policy" effective April 15th, 2019 in accordance with Ontario Regulation 588/17.

The objectives of the policy include:
- To promote development where it can be adequately serviced with existing capacity or planned expansion of public service facilities and infrastructure to ensure development is financially viable
- To maintain the well-being of downtowns and main streets by encouraging development of County-centered, pedestrian, and transit-oriented communities that promote well-designed built form that conserves and protects cultural heritage resources
- To conserve and protect natural heritage features and areas and biodiversity and consider the impacts of a changing climate in the design, development and maintenance of land uses and activities
- To develop public services and infrastructure that are accessible, available, costeffective, and efficient at meeting the needs of existing and new development and considers the effects of climate change
- To provide a level and quality of public service facilities and infrastructure commensurate with planned growth and development of settlement areas and the rural area of the County
- To improve and enhance the quality of existing public service facilities and infrastructure

1.1.2   Asset Management Strategy

An asset management strategy outlines the translation of organizational objectives into asset management objectives and provides a strategic overview of the activities required to meet these objectives. It provides greater detail than the policy on how SDG Counties plans to achieve asset management objectives through planned activities and decision-making criteria.

SDG Counties' Asset Management Policy contains many of the key components of an asset management strategy and may be expanded on in future revisions or as part of a separate strategic document.

1.1.3 Asset Management Plan

The asset management plan (AMP) presents the outcomes of SDG Counties' asset management program and identifies the resource requirements needed to achieve a defined level of service. The AMP typically includes the following content:

- State of Infrastructure
- Asset Management Strategies
- Levels of Service
- Financial Strategies

The AMP is a living document that should be updated regularly as additional asset and financial data becomes available. This will allow SDG Counties to re-evaluate the state of infrastructure and identify how the organization's asset management and financial strategies are progressing.

1.2 Key Concepts in Asset Management

Effective asset management integrates several key components, including lifecycle management, risk management, and levels of service. These concepts are applied throughout this asset management plan and are described below in greater detail.

1.2.1 Lifecycle Management Strategies

The condition or performance of most assets will deteriorate over time. This process is affected by a range of factors including an asset's characteristics, location, utilization, maintenance history and environment. Asset deterioration has a negative effect on the ability of an asset to fulfill its intended function, and may be characterized by increased cost, risk and even service disruption.

To ensure that assets are performing as expected and meeting the needs of customers, it is important to establish a lifecycle management strategy to proactively manage asset deterioration.

There are several field intervention activities that are available to extend the life of an asset. These activities can be generally placed into one of three categories: maintenance, rehabilitation or replacement. The following table provides a description of each type of activity and the general difference in cost.

Lifecycle Activity	Description	Example (Roads)	Cost
Preventative Maintenance	Activities that prevent defects or deteriorations from occurring	Crack Seal	$
General Maintenance	Activities that focus on current defects or inhibit deterioration	Pothole Repairs	$
Rehabilitation/ Renewal	Activities that rectify defects or deficiencies that are already present and may be affecting asset performance	Mill & Re-surface	$$
Replacement/ Reconstruction	Asset end-of-life activities that often involve the complete replacement of assets	Full Reconstruction	$$$
Replacement Upgrade	Asset end-of-life activities that involve the replacement of an asset to an 'upgraded' asset	Gravel Road to a Surface Treated Road	$$$$

Depending on initial lifecycle management strategies, asset performance can be sustained through a combination of maintenance and rehabilitation, but at some point, replacement is required. Understanding what effect these activities will have on the lifecycle of an asset, and their cost, will enable staff to make better recommendations.

SDG Counties' approach to lifecycle management is described within each asset category outlined in this AMP. Developing and implementing a proactive lifecycle strategy will help staff to determine which activities to perform on an asset and when they should be performed to maximize useful life at the lowest total cost of ownership.

1.2.2 Risk Management Strategies

Municipalities generally take a 'worst-first' approach to infrastructure spending. Rather than prioritizing assets based on their importance to service delivery, assets in the worst condition are fixed first, regardless of their criticality. However, not all assets are created equal. Some are more important than others, and their failure or disrepair poses more risk to the community than that of others. For example, a road with a high volume of traffic that provides access to critical services poses a higher risk than a low volume rural road. These high-value assets should receive funding before others.

By identifying the various impacts of asset failure and the likelihood that it will fail, risk management strategies can identify critical assets, and determine where maintenance efforts, and spending, should be focused.

This AMP includes a high-level evaluation of asset risk and criticality. Each asset has been assigned a probability of failure score and consequence of failure score based on available asset data. These risk scores can be used to prioritize maintenance, rehabilitation and replacement strategies for critical assets.

1.2.3 Levels of Service

A level of service (LOS) is a measure of what SDG Counties is providing to the community and the nature and quality of that service. Within each asset category in this AMP, technical metrics and qualitative descriptions that measure both technical and community levels of service have been established and measured as data is available.

These measures include a combination of those that have been outlined in O. Reg. 588/17 in addition to performance measures identified by SDG Counties as worth measuring and evaluating. SDG Counties measures the level of service provided at two levels: Community Levels of Service, and Technical Levels of Service.

Community Levels of Service

Community levels of service are a simple, plain language description or measure of the service that the community receives. For core asset categories (Roads, Bridges & Culverts, Stormwater) the Province, through O. Reg. 588/17, has provided qualitative descriptions that are required to be included in this AMP. For non-core asset categories, SDG Counties has determined the qualitative descriptions that will be used to determine the community level of service provided. These descriptions can be found in the Levels of Service subsection within each asset category.

Technical Levels of Service

Technical levels of service are a measure of key technical attributes of the service being provided to the community. These include mostly quantitative measures and tend to reflect the impact of SDG Counties' asset management strategies on the physical condition of assets or the quality/capacity of the services they provide.

For core asset categories (Roads, Bridges & Culverts, and Stormwater) the Province, through O. Reg. 588/17, has provided technical metrics that are required to be included in this AMP.

Current and Proposed Levels of Service

This AMP focuses on measuring the current level of service provided to the community. Once current levels of service have been measured, SDG Counties plans to establish proposed levels of service over a 10-year period, in accordance with O. Reg. 588/17.

Proposed levels of service should be realistic and achievable within the timeframe outlined by SDG Counties. They should also be determined with consideration of a variety of community expectations, fiscal capacity, regulatory requirements, corporate goals and long-term sustainability. Once proposed levels of service have been established, and prior to July 2025, SDG Counties must identify a lifecycle management and financial strategy which allows these targets to be achieved.

1.3 Ontario Regulation 588/17

As part of the *Infrastructure for Jobs and Prosperity Act, 2015*, the Ontario government introduced Regulation 588/17 - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17). Along with creating better performing organizations, more liveable and sustainable communities, the regulation is a key, mandated driver of asset management planning and reporting. It places substantial emphasis on current and proposed levels of service and the lifecycle costs incurred in delivering them.

The diagram below outlines key reporting requirements under O. Reg 588/17 and the associated timelines.

2019

Strategic Asset Management Policy

2024

Asset Management Plan for Core and Non-Core Assets

2022

Asset Management Plan for Core Assets with the following components:
1. Current levels of service
2. Inventory analysis
3. Lifecycle activities to sustain LOS
4. Cost of lifecycle activities
5. Population and employment forecasts
6. Discussion of growth impacts

2025

Asset Management Policy Update and anAsset Management Plan for All Assets with the following additional components:
1. Proposed levels of service for next 10 years
2. Updated inventory analysis
3. Lifecycle management strategy
4. Financial strategy and addressing shortfalls
5. Discussion of how growth assumptions impact lifecycle and financial

1.3.1   O. Reg. 588/17 Compliance Review

The following table identifies the requirements outlined in Ontario Regulation 588/17 for municipalities to meet by July 1, 2022. Next to each requirement a page or section reference is included in addition to any necessary commentary. For this AMP SDG Counties has met all requirements for July 1, 2022 for core assets and has also partially met requirements for July 1, 2024 for non-core assets.

Requirement	O. Reg. Section	AMP Section Reference	Status
Summary of assets in each category	S.5(2), 3(i)	3.1 - 3.5	Complete for Core Assets
Replacement cost of assets in each category	S.5(2), 3(ii)	4.1.1 – 4.3.1	Complete for Core Assets
Average age of assets in each category	S.5(2), 3(iii)	4.1.2 - 4.3.2	Complete for Core Assets
Condition of core assets in each category	S.5(2), 3(iv)	4.1.2 – 4.3.2	Complete for Core Assets
Description of United Counties' approach to assessing the condition of assets in each category	S.5(2), 3(v)	4.1.2 – 4.3.2	Complete for Core Assets
Current levels of service in each category	S.5(2), 1(i-ii)	4.1.6 – 4.3.6	Complete for Core Assets
Current performance measures in each category	S.5(2), 2	4.1.6 – 4.3.6	Complete for Core Assets
Lifecycle activities needed to maintain current levels of service for 10 years	S.5(2), 4	4.1.3 – 4.3.3	Complete for Core Assets
Costs of providing lifecycle activities for 10 years	S.5(2), 4	Appendix A	Complete for Core Assets
Growth assumptions	S.5(2), 5(i-ii) S.5(2), 6(i-vi)	6.1-6.2	Complete

2 Scope and Methodology

Key Insights

- This asset management plan includes 3 tax funded asset categories

- The source and recency of replacement costs impacts the accuracy and reliability of asset portfolio valuation

- Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life

2.1   Asset categories included in this AMP

This asset management plan for SDG Counties of Stormont, Dundas, and Glengarry (SDG) is produced in compliance with Ontario Regulation 588/17. The July 2022 deadline under the regulation—the first of three AMPs—requires analysis of only core assets (roads, bridges & culverts, and stormwater infrastructure).

The AMP summarizes the state of the infrastructure for SDG Counties' asset portfolio, establishes current levels of service and the associated technical and customer oriented key performance indicators (KPIs), outlines lifecycle strategies for optimal asset management and performance, and provides financial strategies to reach sustainability for the asset categories listed below.

Asset Category	Source of Funding
Bridges & Culverts	Tax Levy &
Road Network	Sustainable Funding Sources
Stormwater Infrastructure	From Other Levels of Government

2.2   Deriving Replacement Costs

There are a range of methods to determine the replacement cost of an asset, and some are more accurate and reliable than others.   This AMP relies on two methodologies:

- **User-Defined Cost and Cost/Unit**: Based on costs provided by United Counties staff which could include average costs from recent contracts; data from engineering reports and assessments; and staff estimates based on knowledge and experience
- **Cost Inflation/CPI Tables**: Historical cost of the asset is inflated based on Consumer Price Index or Non-Residential Building Construction Price Index

User-defined costs based on reliable sources are a reasonably accurate and reliable way to determine asset replacement costs. Cost inflation is typically used in the absence of reliable replacement cost data. It is a reliable method for recently purchased and/or constructed assets where the total cost is reflective of the actual costs that SDG Counties incurred. As assets age, and new products and technologies become available, cost inflation becomes a less reliable method.

2.3   Estimated Useful Life

The estimated useful life (EUL) of an asset is the period over which SDG Counties expects the asset to be available for use and remain in service before requiring replacement or disposal. The EUL for each asset in this AMP was assigned according to the knowledge and expertise of United Counties staff and supplemented by existing industry standards when necessary.

2.4   Reinvestment Rate

As assets age and deteriorate they require additional investment to maintain a state of good repair. The reinvestment of capital funds, through asset renewal or replacement, is necessary to sustain an adequate level of service. The reinvestment rate is a measurement of available or required funding relative to the total replacement cost.

By comparing the actual vs. target reinvestment rate SDG Counties can determine the extent of any existing funding gap. The reinvestment rate is calculated as follows:

$$Target\ Reinvestment\ Rate = \frac{Annual\ Capital\ Requirement}{Total\ Replacement\ Cost}$$

$$Actual\ Reinvestment\ Rate = \frac{Annual\ Capital\ Funding}{Total\ Replacement\ Cost}$$

2.5   Deriving Asset Condition

An incomplete or limited understanding of asset condition can mislead long-term planning and decision-making. Accurate and reliable condition data helps to prevent premature and costly rehabilitation or replacement and ensures that lifecycle activities occur at the right time to maximize asset value and useful life.

A condition assessment rating system provides a standardized descriptive framework that allows comparative benchmarking across SDG Counties' asset portfolio. The table below illustrates a typical condition rating system applied to determine asset condition. This rating system is aligned with the Canadian Core Public Infrastructure Survey which is used to develop the Canadian Infrastructure Report Card. When assessed condition data is not available, service life remaining is used to approximate asset condition.

Condition	Description	Criteria	Service Life Remaining (%)
Very Good	Fit for the future	Well maintained, good condition, new or recently rehabilitated	80-100
Good	Adequate for now	Acceptable, generally approaching mid-stage of expected service life	60-80
Fair	Requires attention	Signs of deterioration, some elements exhibit significant deficiencies	40-60
Poor	Increasing potential of affecting service	Approaching end of service life, condition below standard, large portion of system exhibits significant deterioration	20-40
Very Poor	Unfit for sustained service	Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable	0-20

The analysis in this AMP is based on assessed condition data only as available. In the absence of assessed condition data, asset age is used as a proxy to determine asset condition. Appendix B includes additional information on the role of asset condition data and provides basic guidelines for the development of a condition assessment program.

3   Portfolio Overview

Key Insights

- The total replacement cost of SDG Counties' asset portfolio is $952.5 million
- SDG Counties' current re-investment rate is 2.67% in comparison to the target re-investment rate of 2.74% for core infrastructure
- 66% of all assets are in fair or better condition
- Average annual capital requirements total $26.1 million per year across all core infrastructure assets

3.1 State of the Infrastructure Summary

Asset Category	Replacement Cost	Average Condition	Financial Capacity		
Road Network	$701M	Fair	Annual Requirement:		$21,345,736
			Funding Available:		$21,610,000
			Annual Deficit:		**$(264,264)**
Bridges & Culverts	$243M	Good	Annual Requirement:		$4,510,699
			Funding Available:		$3,827,000
			Annual Deficit:		**$683,699**
Stormwater Infrastructure	$9M	Poor	Annual Requirement:		$169,813
			Funding Available:		$0
			Annual Deficit:		**$169,813**
Overall	$952M	**Fair**	Annual Requirement:		$26,062,248
			Funding Available:		$25,437,000
			Annual Deficit:		**$589,248**

3.2 Total Replacement Cost of Asset Portfolio

The asset categories analyzed in this AMP have a total replacement cost of $952.5 million based on inventory data from 2021. This total was determined based on a combination of user-defined costs and historical cost inflation. This estimate reflects replacement of historical assets with similar, not necessarily identical, assets available for procurement today.

Average Annual Capital Requirements
$26,026,248
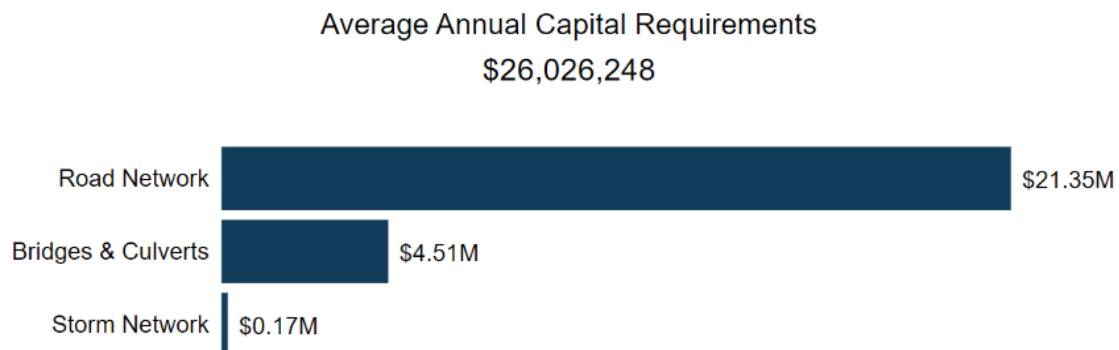
3.3 Target vs. Actual Reinvestment Rate

The graph below depicts funding gaps or surpluses by comparing target vs actual reinvestment rate. To meet the long-term core infrastructure replacement needs, SDG Counties should be allocating approximately $26.1 million annually, for a target reinvestment rate of 2.74%. Actual annual spending on infrastructure totals approximately $25.4 million, for an actual reinvestment rate of 2.67%.
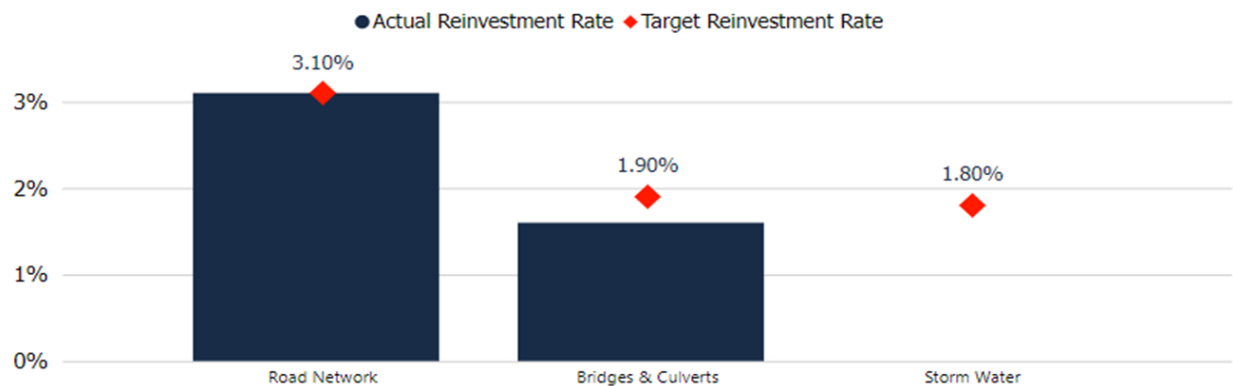
3.4 Condition of Asset Portfolio

The current condition of the assets is central to all asset management planning. Collectively, 66% of assets in SDG are in fair or better condition. This estimate relies on both age-based and field condition data.
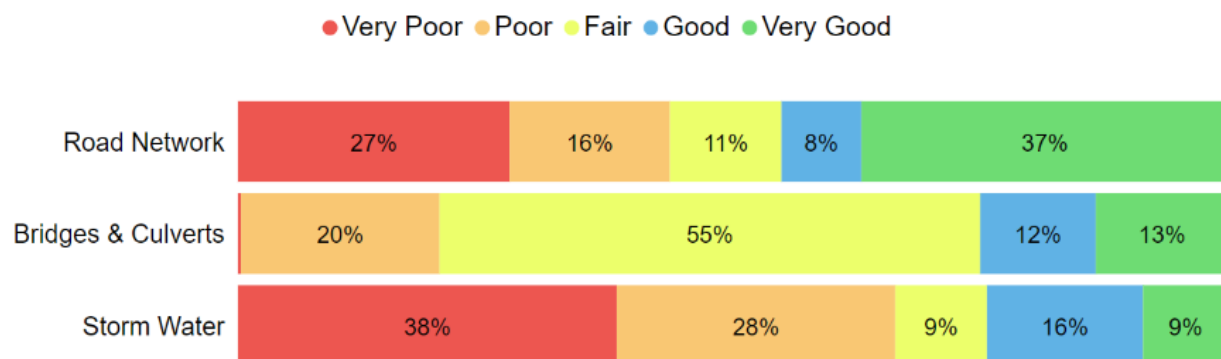
This AMP relies on assessed condition data for 82% of assets; for the remaining portfolio, age is used as an approximation of condition. Assessed condition data is invaluable in asset management planning as it reflects the true condition of the asset and its ability to perform its functions. The table below identifies the source of condition data used throughout this AMP.

Asset Category	Asset Segment	% of Assets with Assessed Condition	Source of Condition Data
Bridges & Culverts	All	98%	2021 Bridge Inspections
Road Network	All	78%	2018 Road Assessment
Stormwater Infastructure	All	0%	Age-based
		82%	

3.5   Forecasted Capital Requirements

The development of a long-term capital forecast should include both asset rehabilitation and replacement requirements. With the development of asset-specific lifecycle strategies that include the timing and cost of future capital events, SDG Counties can produce an accurate long-term capital forecast.

The annual capital requirement represents the average amount per year that SDG Counties should allocate towards funding rehabilitation and replacement needs to meet future capital needs. The following graph identifies capital requirements over the next 85 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year bins.

Average Annual Capital Requirements
$26,026,248
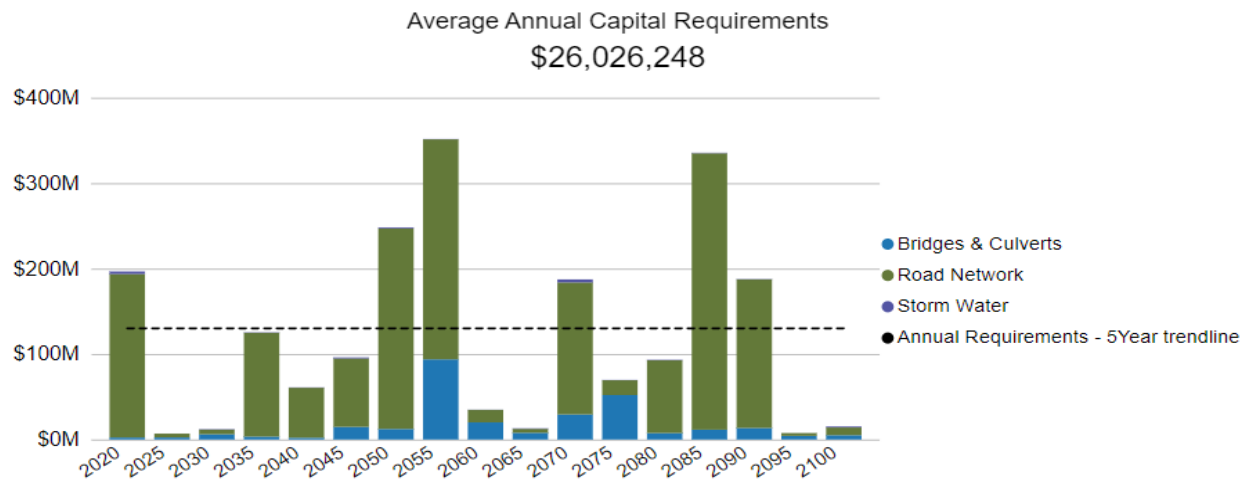
4 State of Local Infrastructure Core Assets

Standard Tables and Graphs Defined

- The **Average Condition** (%) is a weighted value based on replacement cost. The Estimated Useful Life has been assigned according to a combination of established industry standards and staff knowledge. The Average Age of each asset is based on the number of years each asset has been in-service.

- The **annual capital requirement** represents the average amount per year that SDG Counties should allocate towards funding rehabilitation and replacement needs to meet future capital needs.

- **Risk matrices** provide a visual representation of the relationship between the probability of failure and the consequence of failure for the assets within each asset category based on 2020 inventory data.

4.1 Road Network

The Road Network is a critical component of the provision of safe and efficient transportation services and represents the highest value asset category in SDG Counties' asset portfolio. It includes all United Counties owned and maintained roadways in addition to supporting roadside infrastructure including traffic signals and other safety structures.

4.1.1 Asset Inventory & Replacement Cost

Table 1 below includes the quantity, replacement cost method and total replacement cost of each asset segment in SDG Counties' Road Network inventory.

Table 1: Road Network Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Guiderails	24 kms	Cost/Unit	$8,246,000
Road Surface	940 kms	User-Defined	$690,248,000
Safety Structures	163	Cost/Unit	$2,055,000
			$700,549,000

Total Replacement Cost
$700.5M

Road Surface	$690.2M
Guiderails	$8.2M
Safety Structures	$2.1M
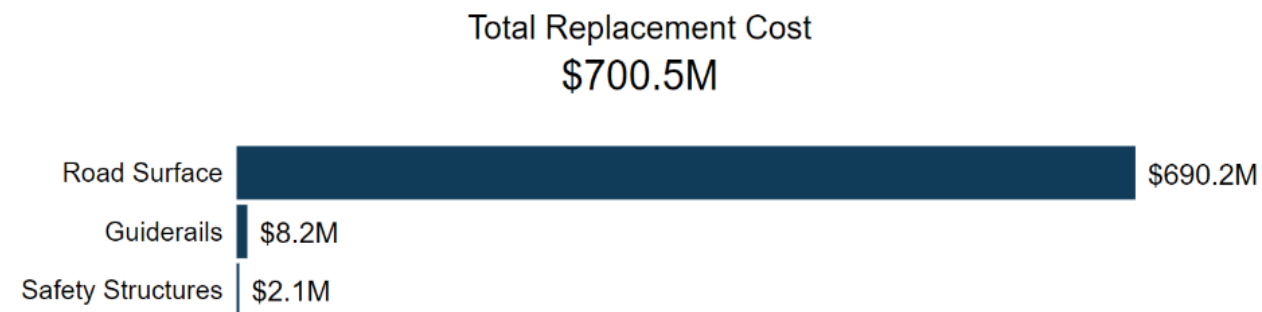
4.1.2   Asset Condition, Age & Useful Life

Table 2 below identifies the current average condition, average age, and estimated useful life for each asset segment.

Table 2: Road Network Asset Condition Summary

Asset Segment	Average Condition (%)	Estimated Useful Life (Years)	Average Age (Years)
Guiderails	65% (Good)	0-25	21.6
Road Surface	51% (Fair)	3-40	17.0
Safety Structures	61% (Good)	30	24.6
	51% (Fair)		**19.5**
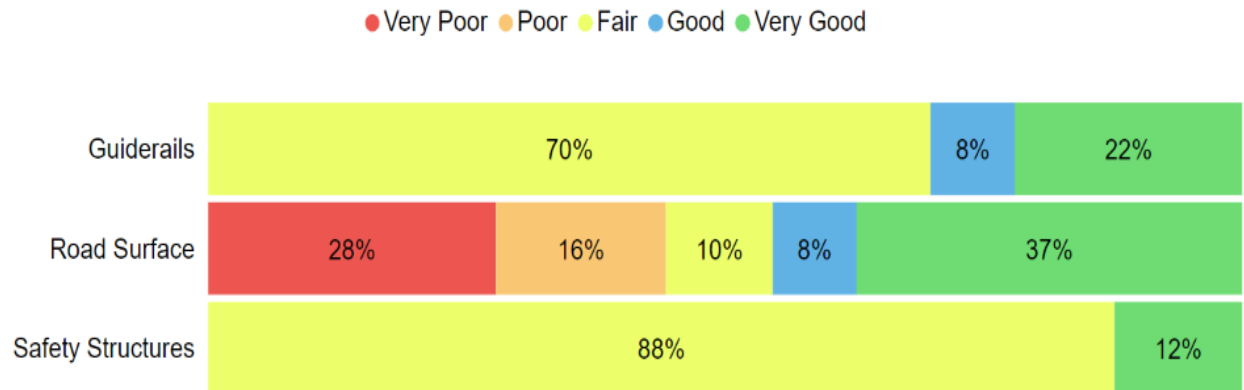
Current Approach to Condition Assessment

The following describes SDG Counties' current approach:
- All road surfaces are inspected by external contractors every four years and minor culverts are inspected by internal staff prior to being paved over.
- A Road Assessment was completed in 2018 by 4 Roads Management Services Inc. that included a detailed assessment of the condition of each road surface segment. This assessment did not include the road base.

In this AMP, the following rating criteria in Table 3 is used to determine the current condition of all road assets, and forecast future capital requirements:

Table 3: Road Asset Condition Assessment Criteria

Condition	Rating
Very Good	80 – 100
Good	60 – 80
Fair	40 – 60
Poor	20 – 40
Very Poor	0 – 20

4.1.3   Lifecycle Management Strategy

The following lifecycle strategy in Table 4 has been documented to illustrate the maintenance and rehabilitation required to keep paved roads in a good state of repair.

Table 4: Road Network Lifecycle Strategy

Paved Roads		
Event Name	**Event Class**	**Event Trigger**
Cold in Place & Resurface	Rehabilitation	PCI 60%
Crack Sealing	Preventative Maintenance	PCI 75%
Microsurfacing	Preventative Maintenance	PCI 75%
Pulverising	Rehabilitation	PCI 40%
Resurfacing Lift	Rehabilitation	PCI 40%
Full Reconstruction	Replacement	PCI 10% - 30%
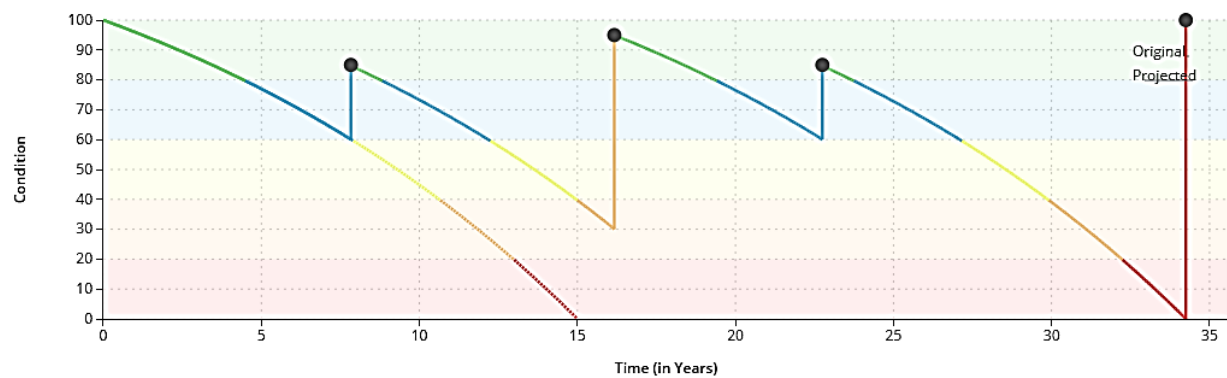
4.1.4 Forecasted Capital Requirements

Based on the lifecycle strategies identified previously for SDG Counties' road network **Figure 1** illustrates capital requirements over the next 40 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year increments and the trend line represents the average 5-year capital requirements.

Figure 1: Road Network Average Annual Capital Requirements
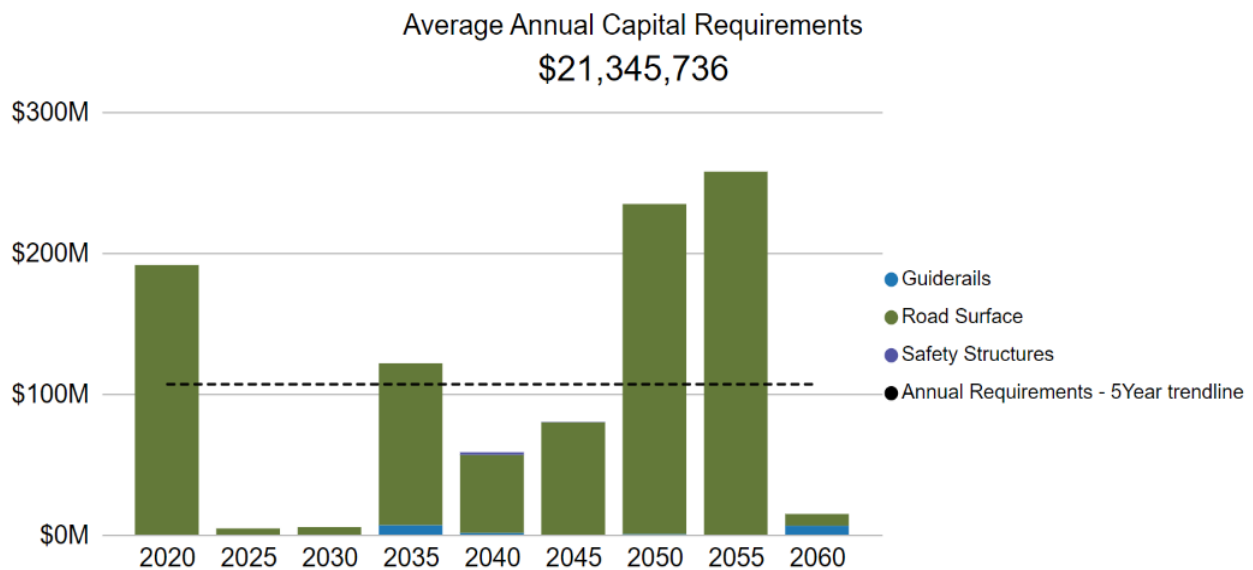
The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.1.5   Risk Analysis

Risk Matrix

The following risk matrix provides a visual representation of the criteria used in **Table 5** to determine the risk rating of each road segment and **Table 6** to determine the risk rating of all road network components
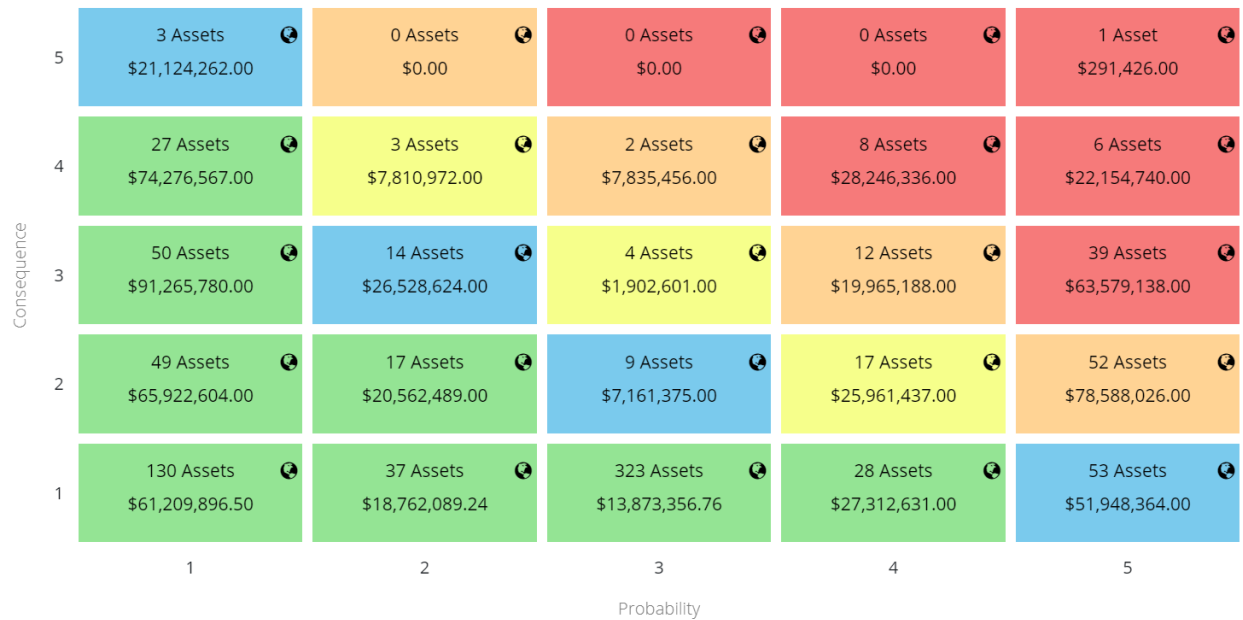
Consequence					
5	3 Assets $21,124,262.00	0 Assets $0.00	0 Assets $0.00	0 Assets $0.00	1 Asset $291,426.00
4	27 Assets $74,276,567.00	3 Assets $7,810,972.00	2 Assets $7,835,456.00	8 Assets $28,246,336.00	6 Assets $22,154,740.00
3	50 Assets $91,265,780.00	14 Assets $26,528,624.00	4 Assets $1,902,601.00	12 Assets $19,965,188.00	39 Assets $63,579,138.00
2	49 Assets $65,922,604.00	17 Assets $20,562,489.00	9 Assets $7,161,375.00	17 Assets $25,961,437.00	52 Assets $78,588,026.00
1	130 Assets $61,209,896.50	37 Assets $18,762,089.24	323 Assets $13,873,356.76	28 Assets $27,312,631.00	53 Assets $51,948,364.00
	1	2	3	4	5

Probability

Table 5: Road Network Quantitative Risk Rating Criteria

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Historical Cost (Economic)
	AADT (Economic)

Table 6: Road Network Appurtenances Quantitative Risk Rating Criteria

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Historical Cost (Economic)

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that SDG Counties is currently facing:

Infrastructure Design

Intersection upgrades will be required to accommodate larger traffic volumes in the future, though few upgrades are anticipated as most intersections currently operate well below capacity.

Staff Capacity

O'Reg 588/17 has placed a strain on the available resources and capacity of County staff. A small but consistent amount of staff turnover has at present provided a constant level of understaffing. Faced with already limited resources, the addition of the regulation requirements on top of providing some of the public facing services has been challenging for County staff.

Additionally, supply chain challenges and the workload of contractors in general have caused schedule overrun on several projects, which impacts the schedule the County has set to follow.

4.1.6   Levels of Service

The following tables and maps identify SDG Counties' current level of service for the Road Network. These metrics include the community and technical level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that SDG Counties has selected for this AMP.

Community Levels of Service

Table 7 outlines the qualitative descriptions that determine the community levels of service provided by the Road Network.

Table 7: Road Network Qualitative Levels of Service

| Service Attribute	Qualitative Description	Current LOS (2021)
Availability	Description, which may include maps, of the road network in SDG Counties and its level of connectivity	SDG Counties' road network is critical infrastructure that supports multi-model transporation including commercial and personal transportation, emergency vehicles, agricultural machinery, and cyclists. See **Figure 2**
Performance	Description, images, or map that illustrate the different levels of road class pavement condition	A Road Assessment was completed in 2018 and provided surface condition data for the SDG road network.

Technical Levels of Service

Table 8 outlines the quantitative metrics that determine the technical level of service provided by the Road Network.

Table 8: Road Network Quantitative Levels of Service

Service Attribute	Technical Metric	Current LOS (2021)
Availability	Lane-km of MMS classes 1 and 2 per land area (km/km^2)	55 / 3,236
	Lane-km of MMS classes 3 and 4 per land area (km/km^2)	1,773 / 3,236
Reliability	Average pavement condition index for paved roads in SDG Counties	Fair
	Average surface condition for unpaved roads in SDG Counties (e.g. excellent, good, fair, poor)	N/A
Sustainability	Current reinvestment rate	3.1%
	Target reinvestment rate	3.1%

Figure 2: Road Network Connectivity
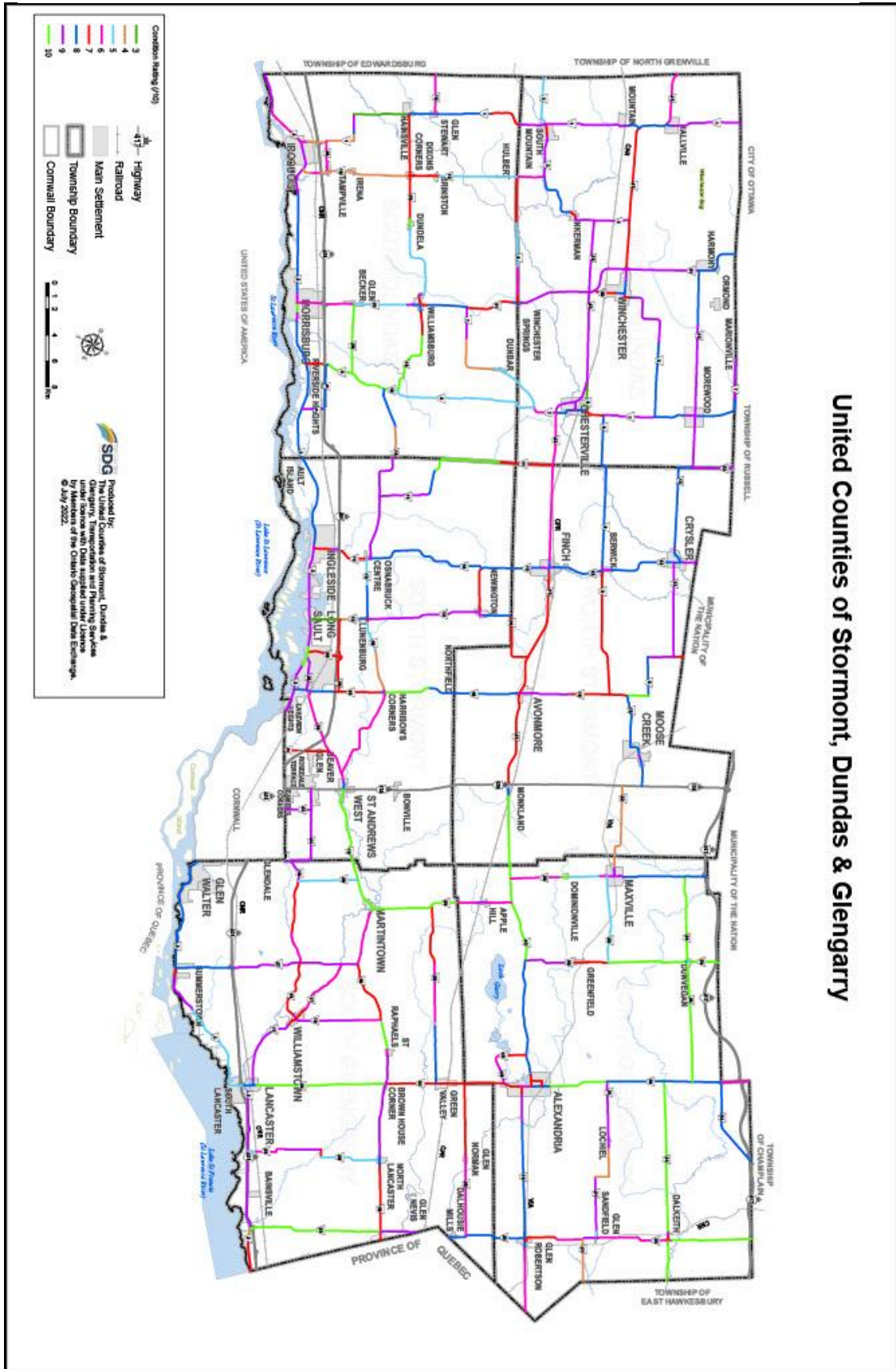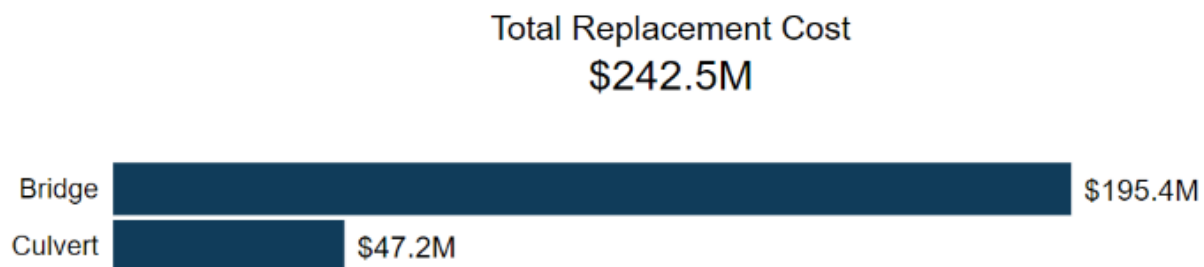
4.2 Bridges & Culverts

Bridges & Culverts (over 3m) represent a critical portion of the transportation services provided to the community. The Department of Transportation is responsible for the maintenance of all bridges and culverts located across County roads with the goal of keeping structures in an adequate state of repair and minimizing service disruptions.

4.2.1   Asset Inventory & Replacement Cost

Table 9 below includes the quantity, replacement cost method and total replacement cost of each asset segment in SDG Counties' Bridges & Culverts inventory.

Table 9: Bridges & Culverts Replacement Cost Summary

Asset Segment	Quantity	Total Replacement Cost
Bridges	91	$195,356,000
Culverts	101	$47,161,000
		$242,517,000

Total Replacement Cost
$242.5M

|	
Bridge	$195.4M
Culvert	$47.2M

4.2.2   Asset Condition, Age & Useful Life

Table 10 below identifies the current average condition, average age, and estimated useful life for each asset segment.

Table 10: Bridges & Culverts Asset Condition Summary

Asset Segment	Average Condition (%)	Estimated Useful Life (Years)	Average Age (Years)
Bridges	71% (Fair)	15-75	42.4
Culverts	68% (Fair)	18-75	44.1
	71% (Fair)		**43.3**
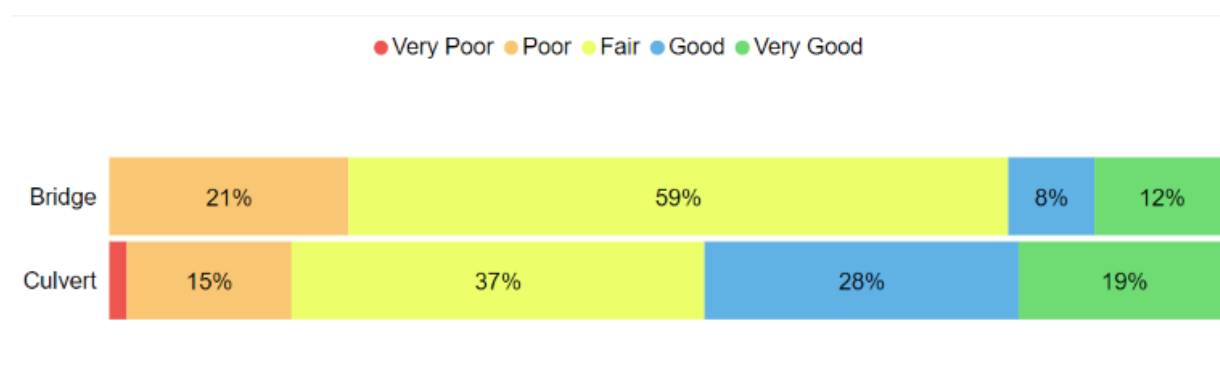
Current Approach to Condition Assessment

The following describes SDG Counties' current approach:

- Condition assessments of all bridges and culverts with a span greater than or equal to 3 meters are completed every 2 years in accordance with the Ontario Structure Inspection Manual (OSIM)

In this AMP, the following rating criteria in **Table 11** and **Table 12** is used to determine the current condition of bridges & culverts respectively, and forecast future capital requirements:

Table 11: Bridges Condition Assessment Criteria

Condition	Rating
Very Good	90 − 100
Good	80 − 90
Fair	65 − 80
Poor	40 − 65
Very Poor	0 − 40

Table 12: Culverts Condition Assessment Criteria

Condition	Rating
Very Good	90 – 100
Good	85 – 90
Fair	60 – 85
Poor	40 – 60
Very Poor	0 – 40

4.2.3 Lifecycle Management Strategy

Table 13 outlines SDG Counties' current lifecycle management strategy for bridges and culverts.

Table 13: Bridges & Culverts Lifecycle Strategy

Activity Type	Description of Current Strategy
Maintenance, Rehabilitation and Replacement	All lifecycle activities are driven by the results of mandated structural inspections competed according to the Ontario Structure Inspection Manual (OSIM)
Inspection	The most recent inspection report was completed in 2021 by Keystone Bridge Management Corp.

4.2.4 Forecasted Capital Requirements

Figure 3 illustrates capital requirements over the next 90 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year increments and the trend line represents the average 5-year capital requirements.

Figure 3: Bridges & Culverts Average Annual Capital Requirements
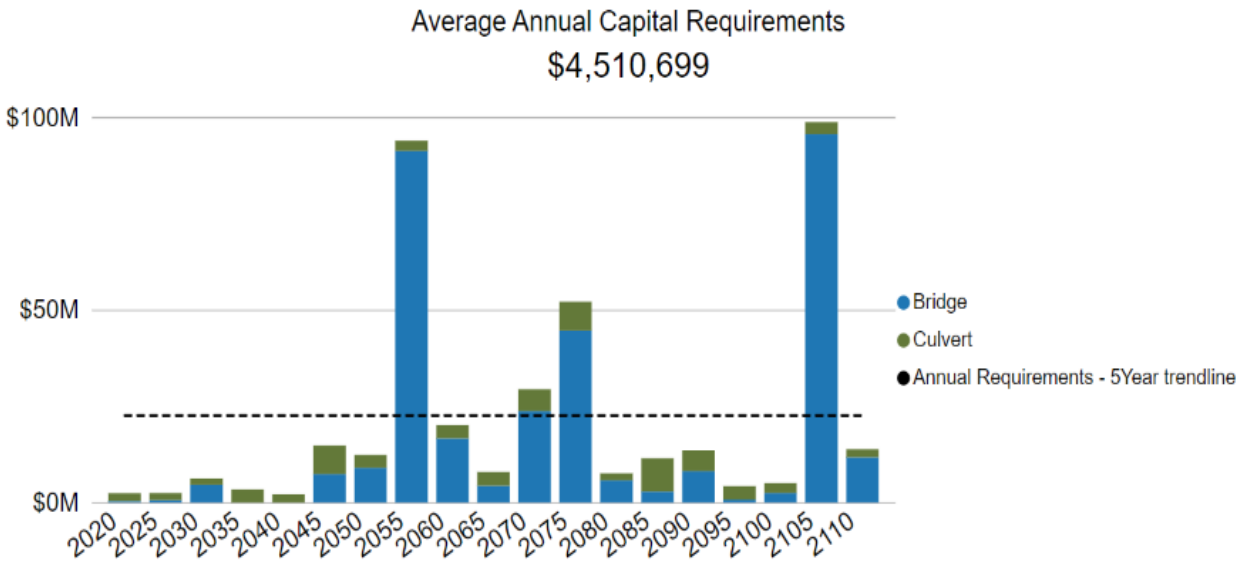
The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.2.5   Risk Analysis

Risk Matrix

The following risk matrix provides a visual representation of the criteria used in **Table 14** to determine the risk rating of each Bridge & Culvert.

Table 14: Bridges & Culverts Risk Rating Criteria

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Historical Cost (Economic)

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that SDG Counties is currently facing:

Climate Change and Infrastructure Design

Climate change has caused an increase in weather extremes which may have an impact on future infrastructure capacity. Culvert sizing and installation is based on conventional watershed analysis. Factors for climate change will be handled on a case-by-case basis. SDG plans to install oversize culverts for future trenchless rehabilitation opportunities, which will result in conveyance benefits.

Staff Capacity

O'Reg 588/17 has placed a strain on the available resources and capacity of County staff. A small but consistent amount of staff turnover has at present provided a constant level of understaffing. This includes maternity leaves, short term disability, internal lateral moves and conventional turnover. Faced with already limited resources, the addition of the regulation requirements on top of providing some of the public facing services has been challenging for County staff.

4.2.6   Levels of Service

The following tables and figures identify SDG Counties' current level of service for Bridges & Culverts. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that SDG Counties has selected for this AMP.

Community Levels of Service

Table 15 outlines the qualitative descriptions that determine the community levels of service provided by Bridges & Culverts.

Table 15: Bridges & Culverts Qualitative Levels of Service

Service Attribute	Qualitative Description	Current LOS (2021)
Availability	Description of the traffic that is supported by United Counties bridges (e.g. heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, cyclists)	Bridges and structural culverts are a key component of SDG Counties' transportation network. None of SDG Counties' structures have loading or dimensional restrictions.
Performance	Description or images of the condition of bridges & culverts and how this would affect use of the bridges & culverts	The bridges and culverts are in fair condition with minimal unplanned service interruptions and closures.

Technical Levels of Service

Table 16 outlines the quantitative metrics that determine the technical level of service provided by Bridges & Culverts.

Table 16: Bridges & Culverts Quantitative Levels of Service

Service Attribute	Technical Metric	Current LOS (2021)
Availability	% of bridges in SDG Counties with loading or dimensional restrictions	0%
Reliability	Average bridge condition index value for bridges in SDG Counties	71
	Average bridge condition index value for structural culverts in SDG Counties	68
Sustainability	Current reinvestment rate	1.6%
	Target reinvestment rate	1.9%

Figure 4: Bridges & Culverts Connectivity
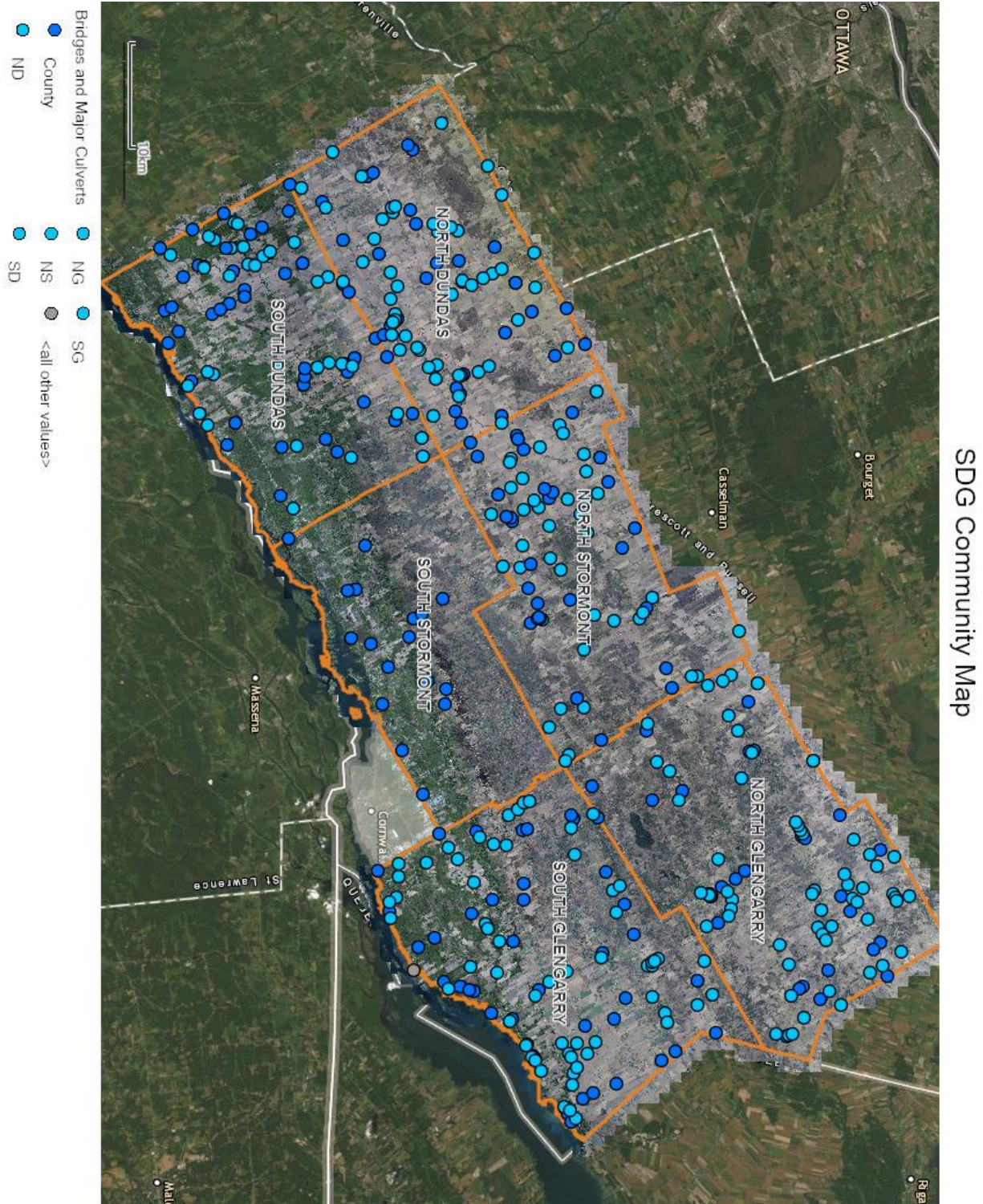
4.3 Stormwater Infrastructure

SDG Counties is responsible for owning and maintaining a stormwater network of 22 kms of storm mains, catch basins, storm structures, and manholes.

4.3.1 Asset Inventory & Replacement Cost

Table 17 includes the quantity, replacement cost method and total replacement cost of each asset segment in SDG Counties' Stormwater Infrastructure inventory.

Table 17: Stormwater Infrastructure Replacement Cost Summary

Asset Segment	Quantity	Replacement Cost Method	Total Replacement Cost
Catch Basins	619	Cost/Unit	$1,699,000
Mains	22 kms	Cost/Unit	$6,624,000
Manholes	238	Cost/Unit	$1,117,000
Storm Structures	2	Cost/Unit	$14,000
			$9,424,000

Total Replacement Cost
$9.4M

Main	$6.62M
Catch Basin	$1.67M
Manhole	$1.12M
Storm Structure	$0.01M
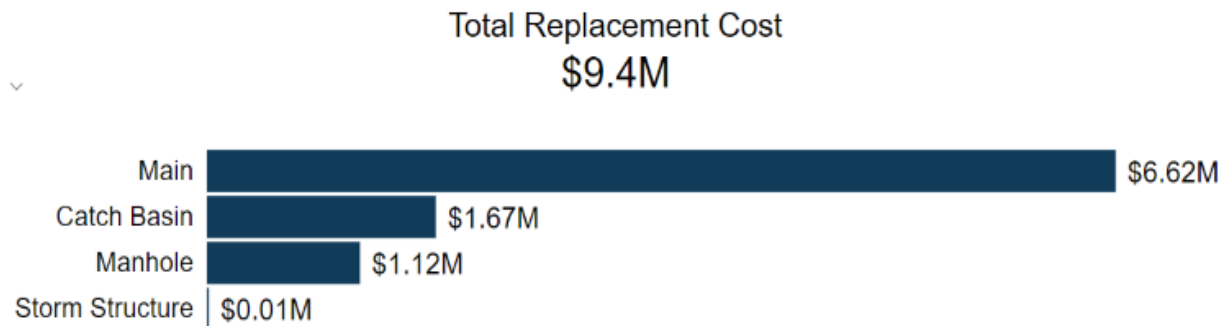
4.3.2   Asset Condition, Age & Useful Life

Table 18 identifies the current average condition, average age, and estimated useful life for each asset segment.
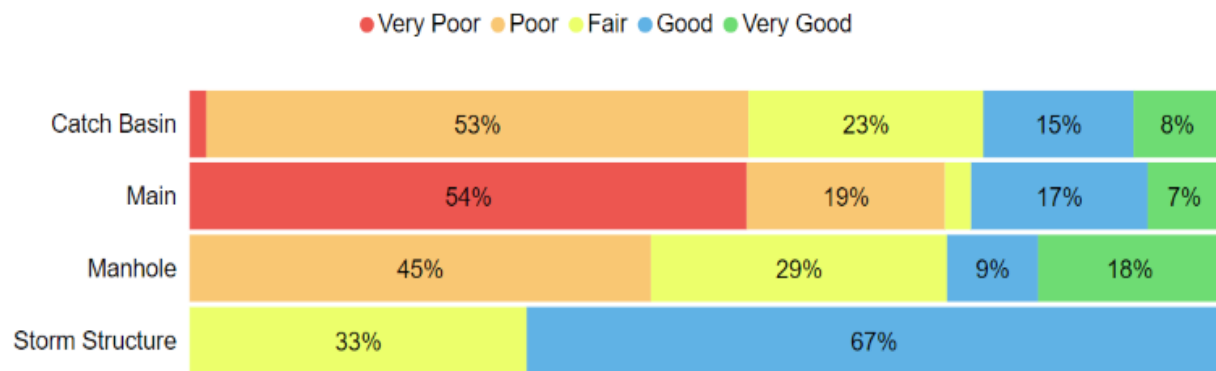
Table 18: Stormwater Infrastructure Asset Condition Summary

Asset Segment	Average Condition (%)	Estimated Useful Life (Years)	Average Age (Years)
Catch Basins	48% (Fair)	75	39.2
Mains	26% (Poor)	50	38.0
Manholes	53% (Fair)	75	35.1
Storm Structures	66% (Good)	75	29.1
	33% (Poor)		**38.0**

Current Approach to Condition Assessment

The following describes SDG Counties' current approach:
- Assessments are completed by external contractors
- Starting in 2021, SDG initiated a CCTV program of storm sewer assets. The preliminary program consisted of approximately half of all SDG storm sewers. In 2022, an additional 1/6 of storm sewers are included in the CCTV program. This will be increased to 1/3 if additional funding can be secured. Moving forward, SDG intends to CCTV 1/6 of storm sewer assets on an annual, rotating basis, resulting in the entire system being evaluated every six years.

In this AMP, the following rating criteria illustrated in **Table 19** is used to determine the current condition of stormwater infrastructure and forecast future capital requirements:

Table 19: Stormwater Infrastructure Condition Rating Criteria

Condition	Rating
Very Good	80 − 100
Good	60 − 80
Fair	40 − 60
Poor	20 − 40
Very Poor	0 − 20

4.3.3   Lifecycle Management Strategy

Table 20 outlines SDG Counties' current lifecycle management strategy.

Table 20: Stormwater Infrastructure Lifecycle Strategy

Activity Type	Description of Current Strategy
Maintenance	Maintenance activities are informal and more reactive compared to other infrastructure and assets
	Primary activities include annual catch basin cleaning and storm main flushing when required

4.3.4   Forecasted Capital Requirements

Figure 5 illustrates capital requirements over the next 80 years. This projection is used as it ensures that every asset has gone through one full iteration of replacement. The forecasted requirements are aggregated into 5-year increments and the trend line represents the average 5-year capital requirements.

Figure 5: Stormwater Infrastructure Average Annual Capital Requirements
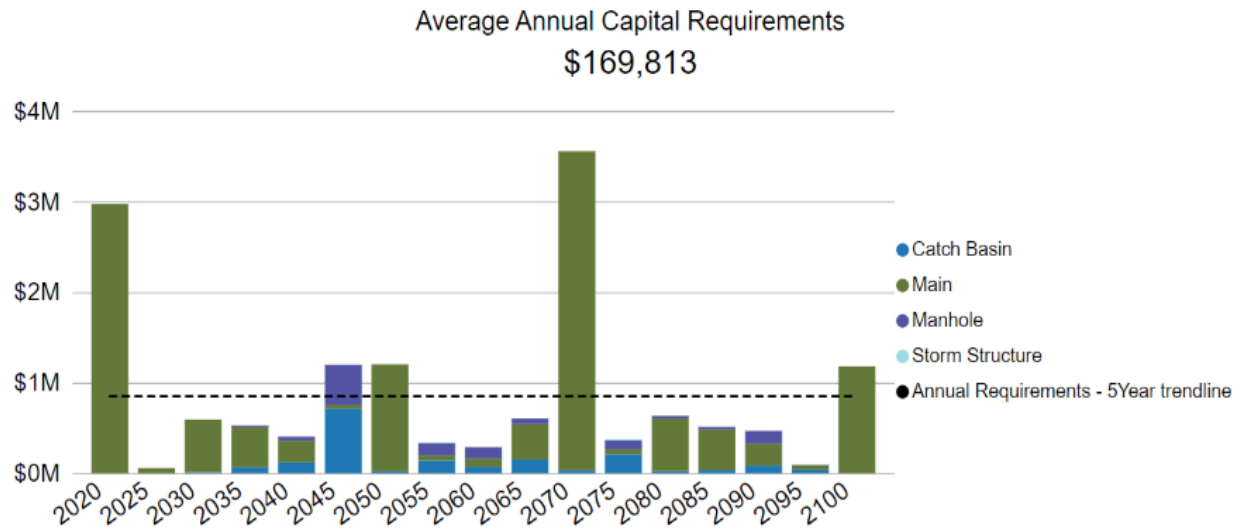
The projected cost of lifecycle activities that will need to be undertaken over the next 10 years to maintain the current level of service can be found in Appendix A.

4.3.5   Risk Analysis

Risk Matrix

The following risk matrix provides a visual representation of the criteria used in **Table 21** to determine the risk rating of the stormwater infrastructure.

Table 21: Stormwater Infrastructure Risk Rating Criteria

Probability of Failure (POF)	Consequence of Failure (COF)
Condition	Historical Cost (Economic)

Risks to Current Asset Management Strategies

The following section summarizes key trends, challenges, and risks to service delivery that SDG Counties is currently facing:

Aging Infrastructure

The County has traditionally used CSP for a significant number of storm sewers. The material is not maintaining a service life beyond 50 years and many of the storm sewers are approaching or exceeding this age threshold. Other material sewers are performing to a higher standard. The CSP sewers are generally in extremely poor condition and will be replaced with a more effective material hereafter.

Staff Capacity

O'Reg 588/17 has placed a strain on the available resources and capacity of County staff. A small but consistent amount of staff turnover has at present provided a constant level of understaffing. Faced with already limited resources, the addition of the regulation requirements on top of providing some of the public facing services has been challenging for County staff.

4.3.6   Levels of Service

The following tables identify SDG Counties' current level of service for Stormwater Infrastructure. These metrics include the technical and community level of service metrics that are required as part of O. Reg. 588/17 as well as any additional performance measures that SDG Counties has selected for this AMP.

Community Levels of Service

Table 22 outlines the qualitative descriptions that determine the community levels of service provided by Stormwater Infrastructure.

Table 22: Stormwater Infrastructure Qualitative Levels of Service

Service Attribute	Qualitative Description	Current LOS (2020)
Availability	Description, which may include map, of the user groups or areas of SDG Counties that are protected from flooding, including the extent of protection provided by SDG Counties stormwater infrastructure.	SDG Counties' stormwater collection network control minor or nuisance storms in urban areas. Their biggest benefit is protection of the road from minor flooding and prolongs the life of the road asset. See **Figure 6.**
Performance	Description or images of the condition of stormwater infrastructure and how this would affect the level of protection provided by the network.	SDG Counties' transportation connectivity is highly dependant on critical water crossings. Without the proper maintenance and repair of SDG Counties' bridge and culvert structures the levels of service provided by the transportation network would be severely affected.

Technical Levels of Service

Table 23 outlines the quantitative metrics that determine the technical level of service provided by the Stormwater Infrastructure.

Table 23: Stormwater Infrastructure Quantitative Levels of Service

Service Attribute	Technical Metric	Current LOS (2020)
Reliability	% of properties in United Counties resilient to a 100-year storm	0%[1]
	% of SDG Counties' stormwater management system resilient to a 5-year storm	0%[1]
Sustainability	Current reinvestment rate	0%
	Target reinvestment rate	1.8%

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[1] The County does not currently have data available to determine this technical metric. The rate of properties that are not expected to be resilient to a 100-year storm is expected to be very low.

Figure 6: United Counties Stormwater Structures
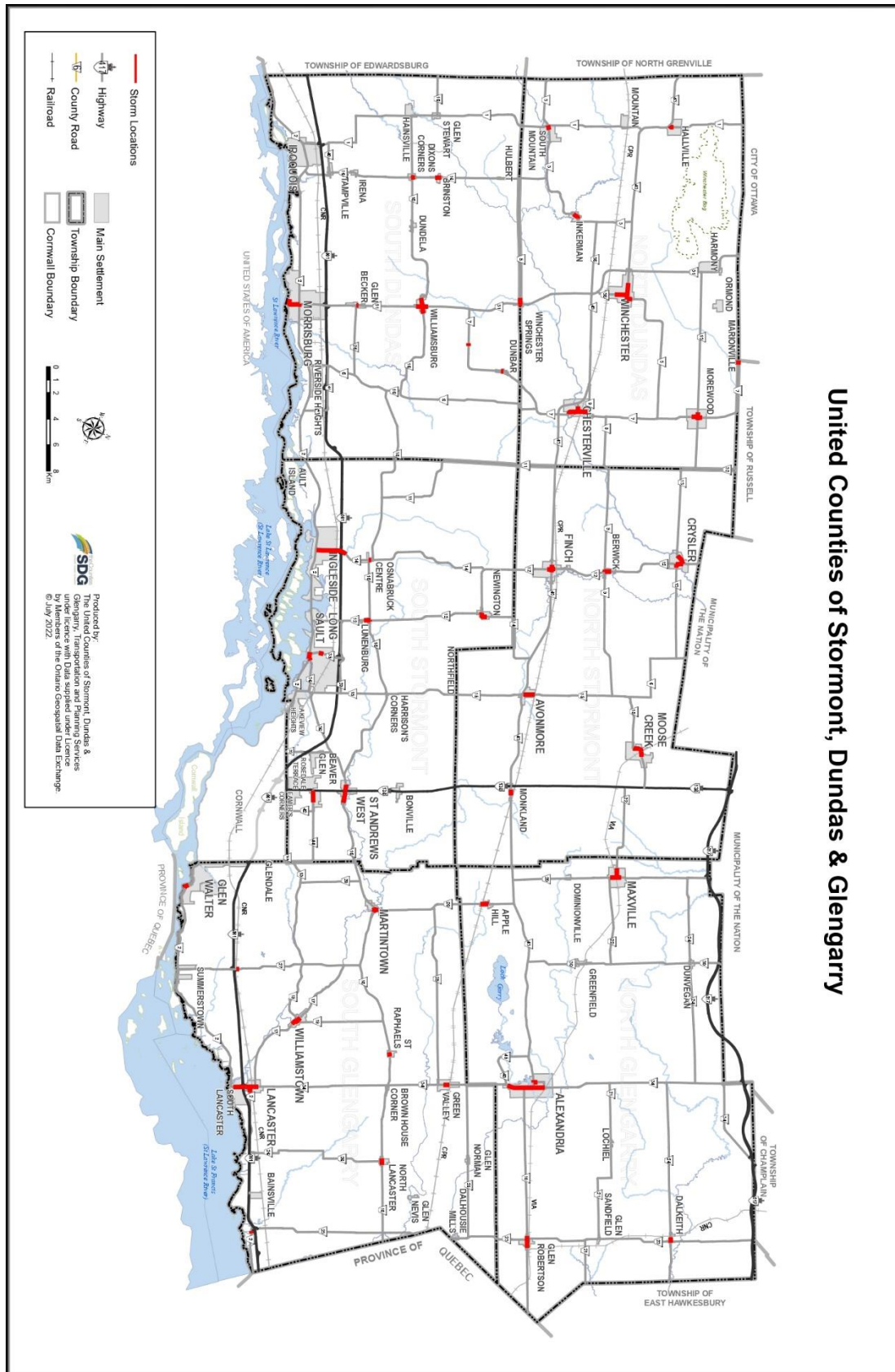
4.4   Core Assets Recommendations

O.Reg 588/17 Proposed Levels of Service

- By July 1, 2025, SDG's asset management plan must include levels of service that SDG Counties' proposes to provide for each of the 10 years following the year in which all information is required.
- An explanation of why SDG's proposed levels of service are appropriate for SDG Counties.
- The proposed performance of each asset category for each year of the 10-year period, determined in accordance with the performance measures established by SDG Counties.
- A lifecycle management and financial strategy with respect to the assets in each asset category for the 10-year period

Data Review/Validation

Road Network
- Continue to review and refine the road network's asset inventory to ensure new assets and betterments are reflected and attributes are detailed.

Stormwater Infrastructure
- SDG Counties' stormwater infrastructure inventory is a newly developed inventory relying on a combination of historical construction drawings, lower-tier municipality data, internal professional knowledge, and field data capture. It is highly recommended staff continue to review and validate stormwater infrastructure inventory data.

Bridges & Culverts
- Continue to review and validate assessed condition data and replacement costs for all bridges and structural culverts upon the completion of OSIM inspections every 2 years.

Condition Assessment Strategies

Road Network
- The last comprehensive assessment of the road network was completed in 2018. Consider completing an updated assessment of all roads within the next 1-3 years.
- Develop and conduct condition assessment programs for all other road network assets such traffic signals, signs, and non-structural culverts.

Stormwater Infrastructure
- The confirmation of a comprehensive asset inventory should be followed by a system-wide assessment of the condition of all stormwater infrastructure assets through CCTV or zoom camera inspections.

Lifecycle Management Strategies

<u>Road Network</u>
- Develop cursory life cycle management strategies for all other road network assets.

<u>Bridges and Culverts</u>
- This AMP only includes capital costs associated with the reconstruction of bridges and culverts. SDG Counties should work towards identifying projected capital rehabilitation and renewal costs for bridges and culverts and integrating these costs into long-term planning.

<u>All Core Assets</u>
- Document and review lifecycle management strategies for core infrastructure assets on a regular basis to achieve the lowest total cost of ownership while maintaining adequate service levels.

Risk Management Strategies

<u>All Core Assets</u>
- Implement risk-based decision-making as part of asset management planning and budgeting processes. This should include the regular review of high-risk assets to determine appropriate risk mitigation strategies.

Levels of Service

<u>All Core Assets</u>
- Continue to measure current levels of service in accordance with the metrics that SDG Counties has established in this AMP. Additional metrics can be established as they are determined to provide meaningful and reliable inputs into asset management planning.

5   Impacts of Growth

Key Insights

- Understanding the key drivers of growth and demand will allow SDG Counties to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure

- Moderate population and employment growth is expected

- The costs of growth should be considered in long-term funding strategies that are designed to maintain the current level of service

5.1 Description of Growth Assumptions

The demand for infrastructure and services will change over time based on a combination of internal and external factors. Understanding the key drivers of growth and demand will allow SDG Counties to more effectively plan for new infrastructure, and the upgrade or disposal of existing infrastructure. Increases or decreases in demand can affect what assets are needed and what level of service meets the needs of the community.

5.1.1 United Counties of Stormont, Dundas, and Glengarry Official Plan

SDG Counties adopted an Official Plan to guide development within SDG Counties between the years of 2017 and 2037. The policies included in the Official Plan are consistent with the Provincial Policy Statement and do not conflict with Provincial Plans. Such policies are intended to encourage new development that does not add additional financial burden on SDG Counties and will balance the costs of providing necessary additional municipal services, facilities, and infrastructure.

The Official Plan was adopted on July 17th, 2017 and approved on February 4th, 2018.

SDG is located in the southeast corner of Ontario, bounded on the east by the Province of Quebec, on the west by SDG Counties of Leeds and Grenville, to the North by United Counties of Prescott and Russell, and to the south by the United States of America. The Official Plan establishes a policy-driven framework for land use planning for the County and its six municipalities while considering the social, economic, and natural environment. A moderate population growth is expected in SDG Counties due to their strategic location and competitive industrial development market.

Much of the growth and development will be directed to settlement areas while supporting the viability of the rural area. Within rural lands, uses will be primarily resource or resource based. Emphasis will be placed on intensification and redevelopment in settlement areas before considering settlement area expansion. The policies in the Official Plan also consider the need to balance population growth with employment opportunities by ensuring County Council encourages economic development and promotes the County as a desirable location for new business development.

A growth management study prepared by Watson & Associates indicates that SDG Counties accounted for 54% of the total population growth in the regional area

between 2001 and 2021. This study also outlines the forecast permanent population scenario from 2021 to 2051, with a low scenario of 0.45% and a high scenario of 0.9% annual growth rates.

Table 24 outlines the population and employment forecasts allocated to SDG Counties from Census data.

Table 24: Population & Employment Forecasts

	2011	**2016**	**2021**
Historical & Forecasted Population	111,164	113,429	114,637
Historical & Forecasted Employment	N/A	61,220	91,320

5.2 Impact of Growth on Lifecycle Activities

By July 1, 2025, SDG's asset management plan must include levels of service that SDG Counties proposes to provide for each of the 10 years following the year in which all information required.

Planning for forecasted population growth may require the expansion of existing infrastructure and services. As growth-related assets are constructed or acquired, they should be integrated into the County's AMP. While the addition of residential units will add to the existing assessment base and offset some of the costs associated with growth, the County will need to review the lifecycle costs of growth-related infrastructure. These costs should be considered in long-term funding strategies that are designed to, at a minimum, maintain the current level of service.

6 Appendices

Key Insights

- Appendix A identifies projected 10-year capital requirements for each asset category

- Appendix B provides additional guidance on the development of a condition assessment program

Appendix A: 10-Year Capital Requirements

The following tables identify the capital cost requirements for each of the next 10 years in order to meet projected capital requirements and maintain the current level of service.

Road Network

Asset Segment	Backlog	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Road Surface	$60,644,501	$64,836,219	$66,603,369	$24,477,605	$51,769,614	$4,456,048	$0	$0	$0	$2,831,308	$0
Total	$60,644,501	$64,836,219	$66,603,369	$24,477,605	$51,769,614	$4,456,048	$0	$0	$0	$2,831,308	$0

Bridges & Culverts

Asset Segment	Backlog	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Bridges	$0	$0	$0	$0	$354,000	$0	$0	$583,000	$0	$0	$0
Culverts	$0	$0	$1,161,000	$495,000	$0	$543,000	$435,000	$578,000	$0	$306,000	$352,000
Total	$0	$0	$1,161,000	$495,000	$354,000	$543,000	$435,000	$1,161,000	$0	$306,000	$352,000

Stormwater Infastructure

Asset Segment	Backlog	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Catch Basins	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,800
Main	$1,881,999	$200,135	$564,677	$875,297	$0	$0	$0	$0	$0	$55,793	$0
Total	$1,881,999	$200,135	$564,677	$875,297	$0	$0	$0	$0	$0	$55,793	$10,800

Appendix B: Condition Assessment Guidelines

The foundation of good asset management practice is accurate and reliable data on the current condition of infrastructure. Assessing the condition of an asset at a single point in time allows staff to have a better understanding of the probability of asset failure due to deteriorating condition.

Condition data is vital to the development of data-driven asset management strategies. Without accurate and reliable asset data, there may be little confidence in asset management decision-making which can lead to premature asset failure, service disruption and suboptimal investment strategies. To prevent these outcomes, the County's condition assessment strategy should outline several key considerations, including:

- The role of asset condition data in decision-making
- Guidelines for the collection of asset condition data
- A schedule for how regularly asset condition data should be collected

Role of Asset Condition Data

The goal of collecting asset condition data is to ensure that data is available to inform maintenance and renewal programs required to meet the desired level of service. Accurate and reliable condition data allows County staff to determine the remaining service life of assets, and identify the most cost-effective approach to deterioration, whether it involves extending the life of the asset through remedial efforts or determining that replacement is required to avoid asset failure.

In addition to the optimization of lifecycle management strategies, asset condition data also impacts the County's risk management and financial strategies. Assessed condition is a key variable in the determination of an asset's probability of failure. With a strong understanding of the probability of failure across the entire asset portfolio, the County can develop strategies to mitigate both the probability and consequences of asset failure and service disruption. Furthermore, with condition-based determinations of future capital expenditures, the County can develop long-term financial strategies with higher accuracy and reliability.

Guidelines for Condition Assessment

Whether completed by external consultants or internal staff, condition assessments should be completed in a structured and repeatable fashion, according to consistent and objective assessment criteria. Without proper guidelines for the completion of

condition assessments there can be little confidence in the validity of condition data and asset management strategies based on this data.

Condition assessments must include a quantitative or qualitative assessment of the current condition of the asset, collected according to specified condition rating criteria, in a format that can be used for asset management decision-making. As a result, it is important that staff adequately define the condition rating criteria that should be used and the assets that require a discrete condition rating. When engaging with external consultants to complete condition assessments, it is critical that these details are communicated as part of the contractual terms of the project.

There are many options available to the County to complete condition assessments. In some cases, external consultants may need to be engaged to complete detailed technical assessments of infrastructure. In other cases, internal staff may have sufficient expertise or training to complete condition assessments.

Developing a Condition Assessment Schedule

Condition assessments and general data collection can be both time-consuming and resource-intensive. It is not necessarily an effective strategy to collect assessed condition data across the entire asset inventory. Instead, the County should prioritize the collection of assessed condition data based on the anticipated value of this data in decision-making. The International Infrastructure Management Manual (IIMM) identifies four key criteria to consider when making this determination:
1. **Relevance**: every data item must have a direct influence on the output that is required
2. **Appropriateness**: the volume of data and the frequency of updating should align with the stage in the assets life and the service being provided
3. **Reliability**: the data should be sufficiently accurate, have sufficient spatial coverage and be appropriately complete and current
4. **Affordability**: the data should be affordable to collect and maintain