



Town of Newmarket  
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## Corporate Infrastructure Report Information Report

Report Number: INFO-2023-29

Department(s): Financial Services

Author(s): Lisa Ellis, Manager Corporate Asset Management

Date: November 17, 2023

In accordance with the Procedure By-law, any member of Council may make a request to the Town Clerk that this Report be placed on an upcoming Committee of the Whole agenda for discussion.

### Purpose

This report aims to inform decision-makers, stakeholders, and the public about the current state of infrastructure that supplies essential services and systems that enable our community to function, connect, and thrive. In recognition of the critical role that infrastructure plays in our lives, this report provides an objective comprehensive assessment of the state of Town's core infrastructure namely, bridges, water, wastewater, and stormwater. The report card provides a snapshot of the condition of infrastructure, highlighting **areas of strength** and provides a comparison against the last report card to show **areas in need of attention** and investment.

### Background

The Infrastructure Report Card provides an assessment of the state of the town's infrastructure as of year-end 2022 and to help guide investment decisions and planning efforts.

The latest report includes a number of data improvements notably in the stormwater area. With each report card, values are normalized on an annual basis for Non-Residential Construction Price Index. The 2022 report card reflects recent inflation in construction cost of 30%.

Bringing together the analysis of each of the core service areas, the results of the infrastructure report cards answer three pivotal questions:

**1. What do we own?  
(Figure 1)**



Roads



Bridges



Water



Wastewater



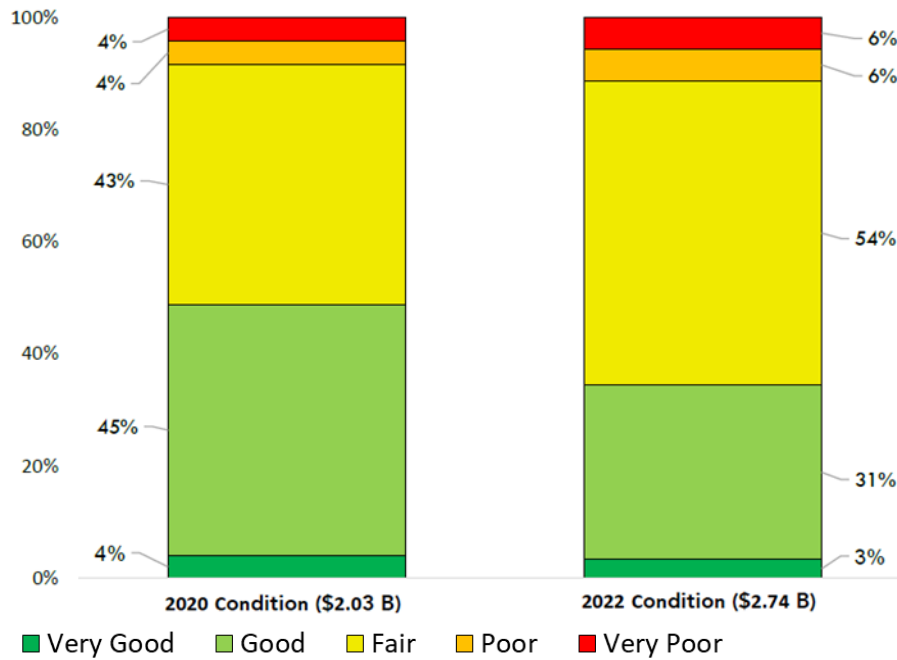
Stormwater

**2. What is it worth?  
(Figure 2)**

Summary of Replacement Cost	
2020 Valuation	\$2,016,657,798
Inflation Adjustment	\$660,655,633
Growth	\$58,878,629
<b>2022 Valuation</b>	<b>\$2,736,192,061</b>

**3. What condition is it in?  
(Figure 3)**

Comparing Conditions of Core Assets from 2020 to 2022



## Discussion

### Sustainable Service Delivery

The town has undertaken several infrastructure renewal projects in recent years, including the rehabilitation of roads and bridges and the replacement of aging water and wastewater infrastructure. These projects are informed by the Asset Management Plan (AMP) and are designed to ensure that the town's assets are maintained in a state of good repair.

The Town's asset management planning is guided by industry standard measures of financial sustainability usually expressed as a percentage of total replacement value.

An industry standard metric usually compares the amount spent annually to the total replacement asset value of the assets to determine the reinvestment rate. A 1% reinvestment rate for \$1 Billion would be \$10 Million annually.

- In simple terms, using Town's current replacement value of \$2.7 Billion, the Town's average life expectancy; 62 years, results in an annual capital spend of \$44 Million.

(Figure 4)

	Asset Valuation	Life Expectancy	Annual Capital Spend	% Reinvestment Rate
<b>Industry Standard</b>	<b>\$ 1,000,000,000</b>	<b>100</b>	<b>\$ 10,000,000</b>	<b>1.0%</b>
AM Plans	\$ 2,736,192,061	62	\$ 44,132,130	1.6%
Current Delivery	\$ 2,736,192,061	62	\$ 7,500,000	0.3%

Capital delivery rates have improved from 2021 to 2022 while contributions to the asset replacement fund have declined as illustrated below:

(Figure 5)

#### ASSET REPLACEMENT FUND (ARF) CONTRIBUTIONS AND CAPITAL DELIVERY SPENDING FOR 2022

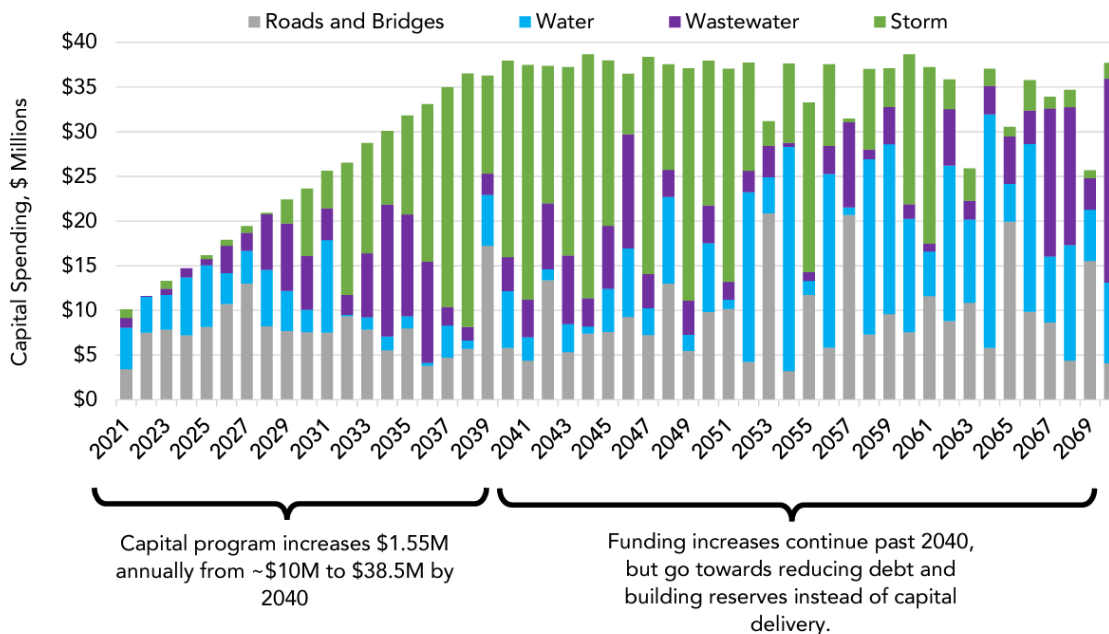


As endorsed by Council in the 2021 AM Plans and identified under next step at the October 2<sup>nd</sup>, 2023, Council workshop staff will work towards the following objectives to improve the town’s ability to either reduce or mitigate the risk of asset failure in coming years:

- Develop a **strategy to increase capital delivery capacity** to deliver on AM Plans.
- Develop **risk management plans** for the upcoming periods where renewal needs will exceed capital reinvestment capacity.

**Council endorsed service levels identified in the 2021 Asset Management Plan call for an annual increase in capital reinvestment of \$1.5 Million annually.**

**(Figure 6)**



## Service Level Type

State of good repair is typically defined as the level of condition and functionality that ensures the safe, reliable, and efficient operation of infrastructure over its expected service life. This is typically achieved through a combination of preventative maintenance, routine repairs, and occasional major rehabilitation and/or replacement. The Town has established specific criteria or benchmarks for assessing infrastructure conditions and determining whether they meet the state of good repair standard. These criteria consider factors such as age, usage, and wear and tear, and vary depending on the specific type of infrastructure being assessed. For further information on the Town’s approach to these activities please refer to the [Asset Management Plans](#).

## Risks for consideration

Asset management best practice takes into account certain risks when reviewing any infrastructure report card.

- Incomplete or inaccurate data: At the time of compiling this report card, there may have been data which was not available or complete.
- Objective assessment: The assessment is conducted on the basis of objective, factual information to the extent that such information is available.
- Changing conditions: Changing conditions, such as climate change or technological advancements could impact the long-term viability of the infrastructure.
- Limited scope: The assessment only considers a limited range of infrastructure assets. As more information and data is collected, additional infrastructure needs will be included.
- Funding: Funding for infrastructure projects is determined through the approved annual Capital and Operating Budgets.
- Public perception: The report card may impact how the public perceives the municipality's management and investment in infrastructure.

As a best practice, Council should consider these risks when reviewing the infrastructure report card and to seek additional information and input as needed to make informed decisions about infrastructure investments.

To assist Council in better understanding the confidence staff has in the data that the attached report cards are based on staff have developed the following confidence rating:

- Verified Condition and Analytical Techniques
- Observed Condition
- Age Only
- Historical knowledge
- Assumptions

Roads and bridges information is based on observed condition while water, wastewater and storm assets condition are based on age.

## Conclusion

Overall, Council defines desired outcomes for infrastructure by taking a comprehensive, strategic approach that considers the needs of the community, the condition of existing assets, and the resources available to support infrastructure investments.

This report is intended to help Council evaluate the current state of infrastructure assets and provide direction to staff in terms of the required investment to achieve the desired outcomes for the coming year.

Condition levels which serve as a proxy for service levels have declined slightly as shown in Figure 3 above. This decline was identified on page 32 of the Town's 2021 Asset Management Plans for Core Assets:

- *“Current service levels enjoyed by the Town will require additional levels of investment in order to be sustainable.*
- *Maintaining Asset condition requires consistent contributions in infrastructure investment and reserves.*
- *Planned contributions to the Town's capital funding and the capacity to conduct infrastructure work are needed to achieve desired service outcomes.*

## **Business Plan and Strategic Plan Linkages**

Newmarket's Council Priorities function as the roadmap for continued community success through the current term of Council (2022-2026) and beyond, helping to guide Newmarket towards and even brighter future. All municipal infrastructure supports Council's vision of:

- **Customer-first way of life (enhanced by technology)** – Ensuring the community has timely access to services that enhance their quality of life.
- **Extraordinary places and spaces** – Creating exceptional experiences for the community in shared and accessible public spaces.
- **Environmental sustainability** – Preserving our environmental assets and addressing climate change for future generations.

## **Consultation**

The information contained in the report is based on available information from Development Infrastructure Services departments.

## **Human Resource Considerations**

No human resource considerations required with this report.

## **Budget Impact**

No budget impact associated with this report.

## **Attachments**

Corporate State of the Infrastructure Report Card

## **Approval**

Mike Mayes, Director Financial Services

Esther Armchuk, Commissioner Corporate Services

## **Contact**

Please contact Lisa Ellis, Manager Corporate Asset Management Ext 2511 or [lellis@newmarket.ca](mailto:lellis@newmarket.ca) for any questions.

# CORPORATE STATE OF INFRASTRUCTURE REPORT

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INFRASTRUCTURE  
REPORT CARD





# Executive Summary

## General Purpose of Infrastructure Report Cards:

The municipal Infrastructure Report Card is a tool for assessment, transparency, and planning, but it has limitations and should be used in conjunction with the Asset Management Plans and other planning documents, data, and expertise to assist with comprehensive decision-making.

The Infrastructure Report Card is a key reporting document that is typically produced annually and highlights the condition of Town-owned assets and **serves the following purposes:**

- **Assessment:** It assesses the condition and performance of a municipality's infrastructure, including roads, bridges, water systems, and more. It helps identify areas in need of maintenance or improvement.
- **Transparency:** It provides transparency to the public and policymakers regarding the state of municipal infrastructure. This information can inform decision-making and budget allocation.
- **Accountability:** It holds local governments accountable for the maintenance and development of infrastructure by highlighting successes and areas needing attention.
- **Planning:** It aids in long-term planning by identifying trends and predicting future infrastructure needs.

The Infrastructure Report Card **is not:**

- **Detailed Engineering Analysis:** It's not a detailed engineering assessment of every piece of infrastructure. Instead, it provides an overview and grades based on selected criteria.
- **Financial Audit:** It does not delve deeply into financial aspects or funding sources for infrastructure projects.
- **Real-time Monitoring:** It's not a real-time monitoring system. It typically provides a snapshot at a specific point in time.



## Town's Purpose for issuing Infrastructure Report Cards:

The Town of Newmarket is continually focused on the cost and quality of the services the Town's infrastructure provides. The sustainability of Town infrastructure depends on effective management, maintaining a state of good repair, and ensuring the optimal use of limited funds.

Locally and nationally, there is growing concern about the sustainability of municipal infrastructure. The fundamental purpose of infrastructure is to facilitate the provision of essential services to our residents. The objective of this report is to establish a comprehensive understanding of the current condition of the Town's core infrastructure valued at \$2.7 billion and to highlight the challenges the organization encounters in ensuring service delivery that balances increasing demand for public services within the confines of tight budgets and rising costs, all amidst economic uncertainties.

This report provides a foundational review of the Town of Newmarket's assets to empower our decision-makers to prioritize future investments, ultimately enhancing our capacity to efficiently manage the Town's assets and deliver essential services to the public.



Roads



Bridges



Water



Wastewater



Stormwater



## Rehabilitation and Replacement Projects in 2022:

Each year, the Town undergoes a number of state of good repair projects to maintain and improve infrastructure. The Infrastructure Report Cards should be considered in context of the steps the Town is continually taking to maintain service levels by improving infrastructure. Projects specific to the core assets in the report card substantially completed in 2022 include:

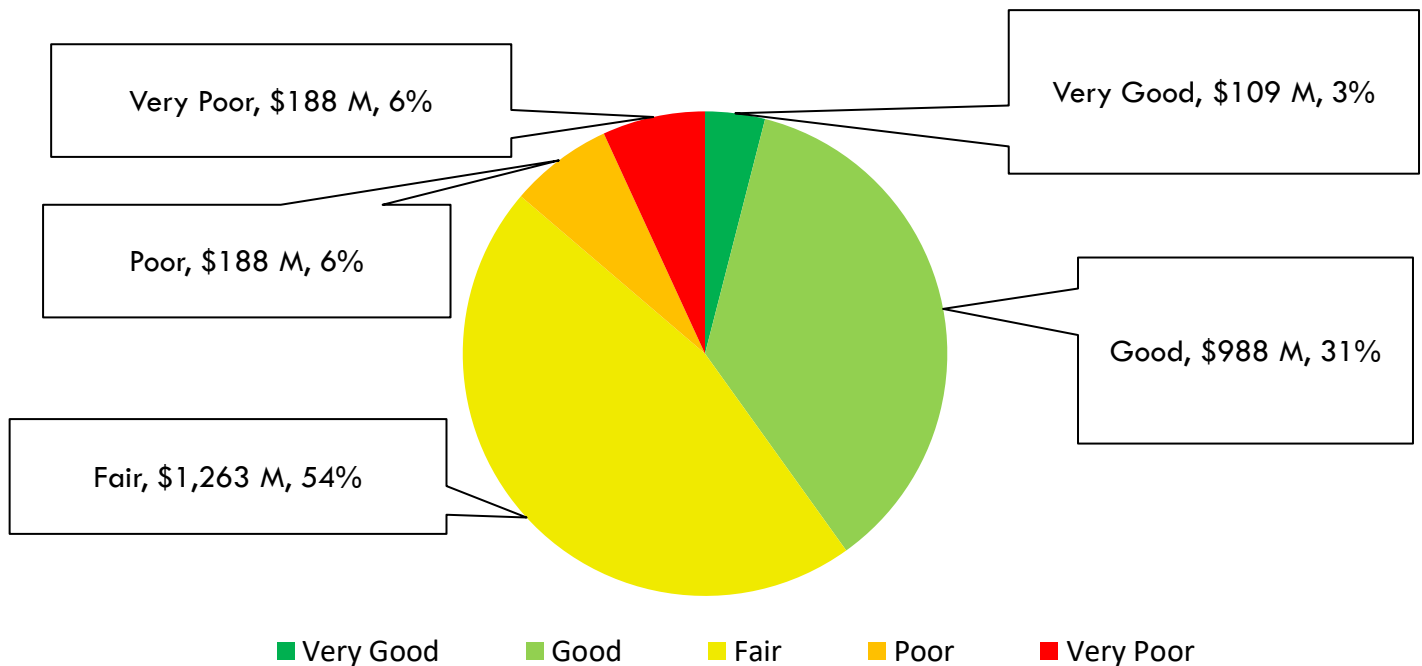
2022 Capital Projects for Core Assets	Assets				
	Roads	Bridges	Water	Wastewater	Stormwater
Lorne Avenue Reconstruction	✓		✓	✓	✓
Reconstruction of McAffrey Road, resurfacing of Eagle Street West, resurfacing of neighbouring courts and crescents	✓				
31 km of roads crack sealed	✓				
Enabling works to prepare for Queen Street Bridge rehabilitation		✓			
Cathodic protection of watermains in London Road area			✓		
Capacity upgrades on Penn Avenue and Charles Street				✓	

## What Would Our Asset Cost to Replace?

Summary of Replacement Cost	
2020 Valuation	\$2,016,658,000
Inflationary Adjustment	\$660,656,000
Growth	\$58,879,000
<b>2022 Valuation</b>	<b>\$2,736,192,000</b>

## What Conditions Are Our Assets In?

### Executive Summary of Conditions for Core Assets



# What Has Changed Since I Last Saw This Information?

Infrastructure Changes Since 2020

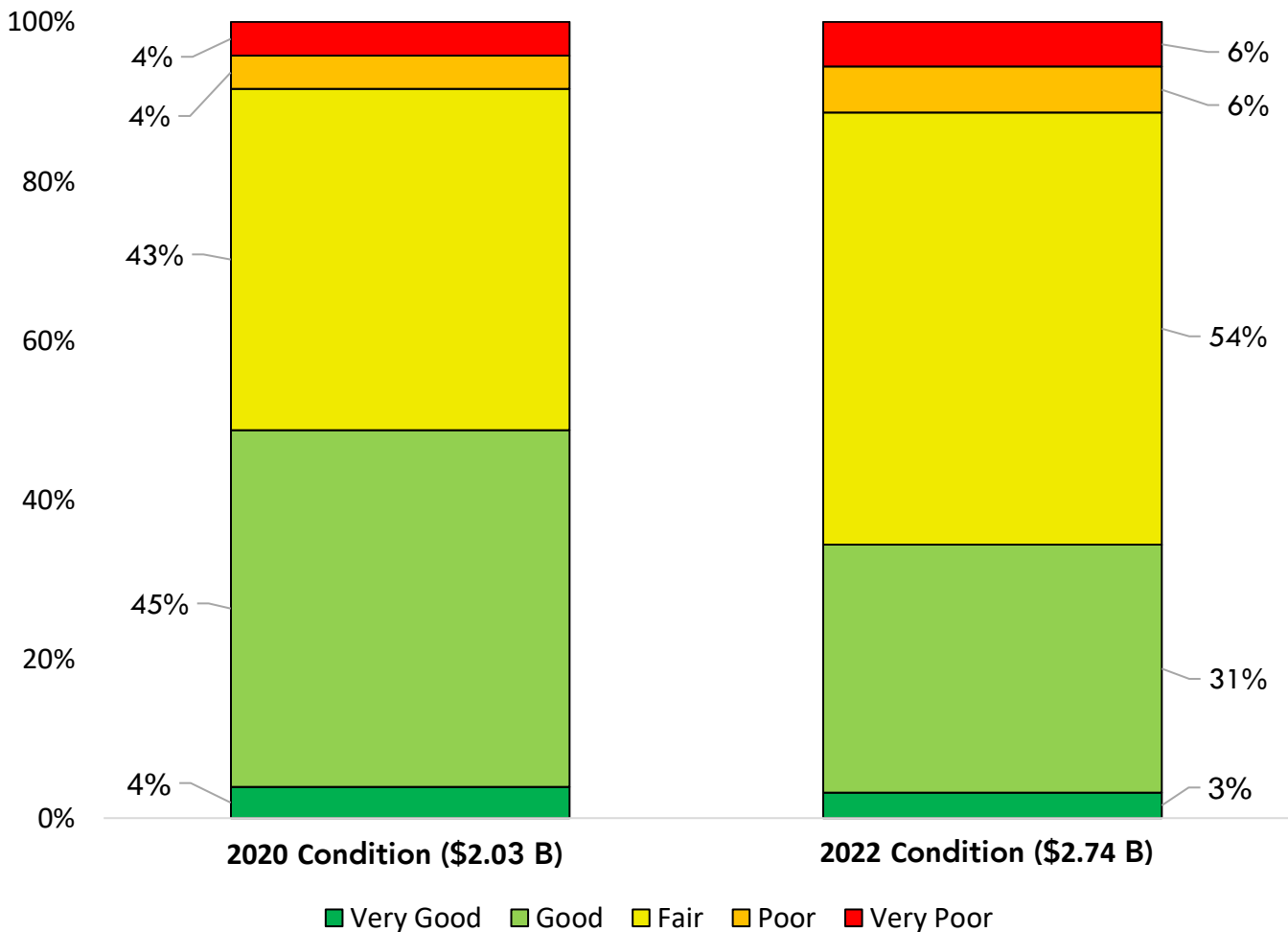


Very Good / Good /  
Fair



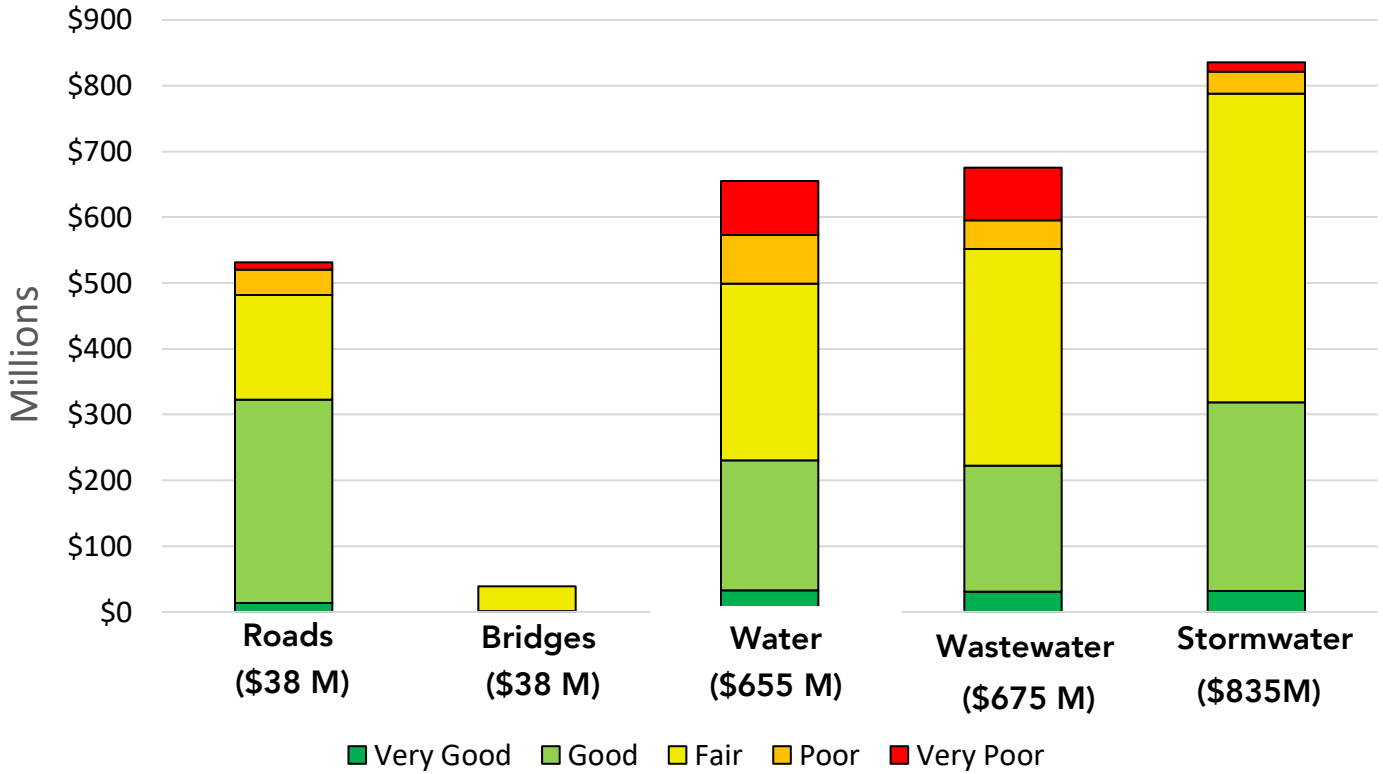
Poor / Very  
Poor

Comparing Conditions of Core Assets from 2020 to 2022

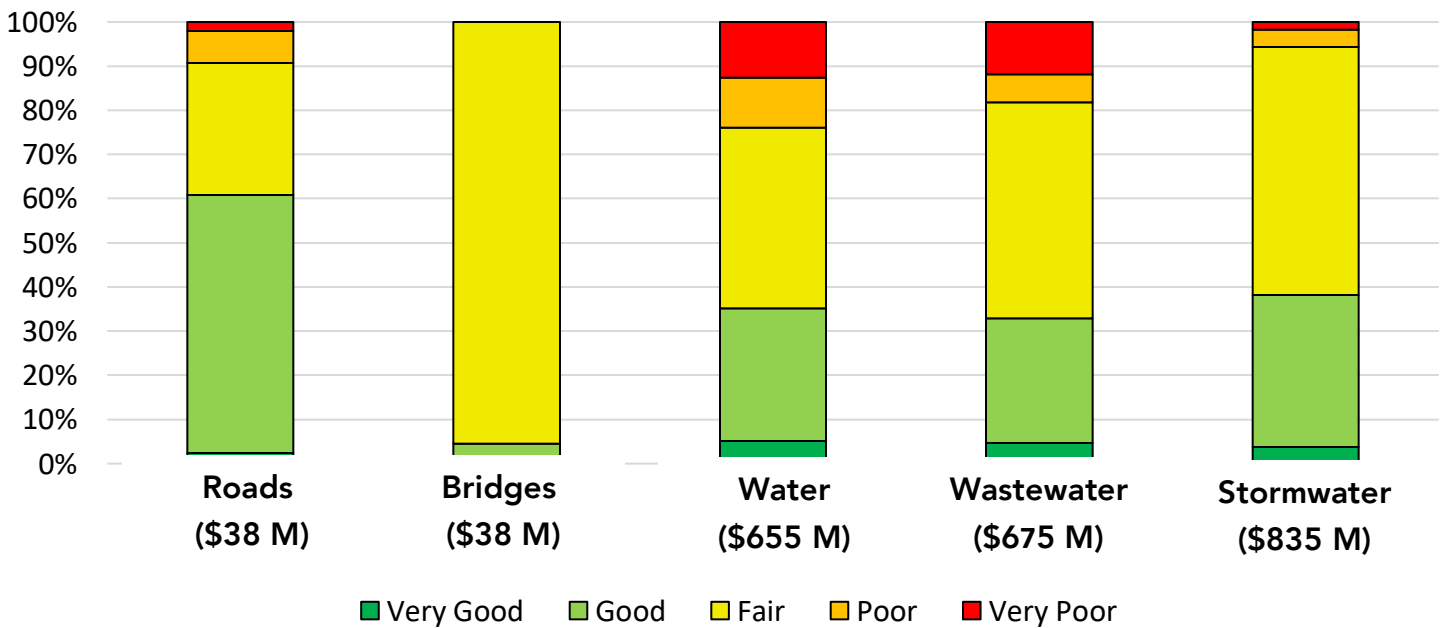


# How Do Service Areas Compare?

Service Area Comparison (\$) of Core Asset



Service Area Comparison (%) of Core Asset Conditions



# 2022 Savings and Spending on Core Assets

## Asset Replacement Fund (ARF) Contributions and Capital Delivery Spending for 2022



*Compared with Asset Management Plan Targets*





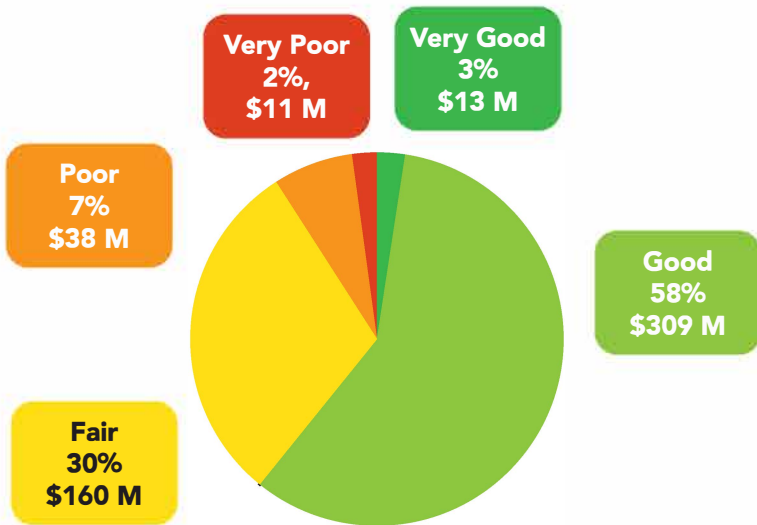
# Roads Network Infrastructure Report Card

## WHAT CONDITION ARE OUR ASSETS IN?



**AVERAGE NETWORK CONDITION:**

**GOOD**



## INFRASTRUCTURE CONDITION CHANGES SINCE 2020



Very Good/Good/Fair  
From 94% to 91%

Poor/Very Poor  
From 6% to 9%



## WHAT WOULD OUR ASSETS COST TO REPLACE?

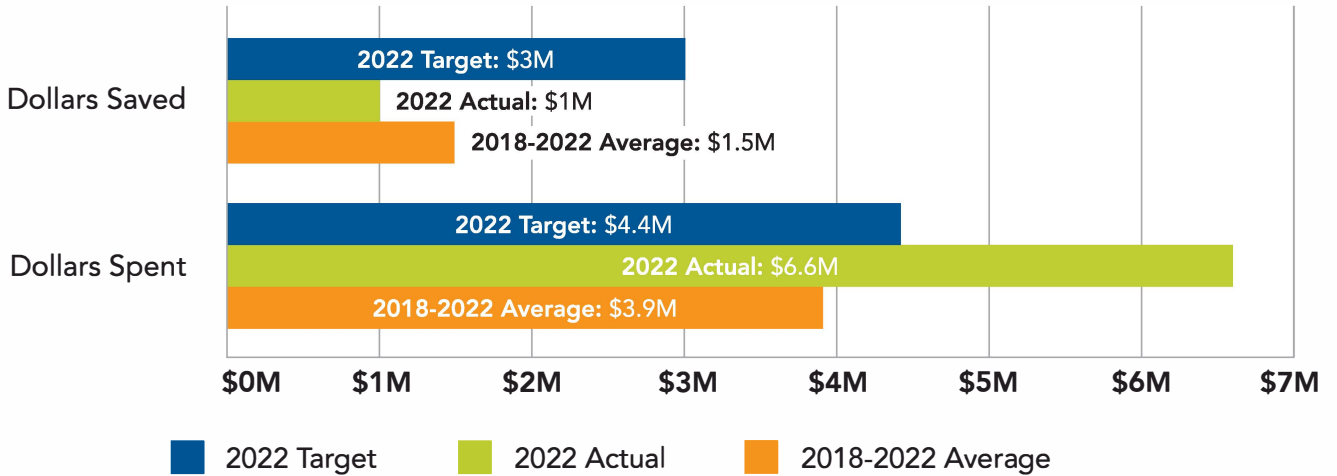


**REPLACEMENT COST:**  
\$531 Million

Replacement Cost Summary	
2020 Replacement Cost	\$396 M
Inflationary Adjustment	\$123 M
Growth	\$12 M
<b>Updated 2022 Replacement Cost</b>	<b>\$531 M</b>



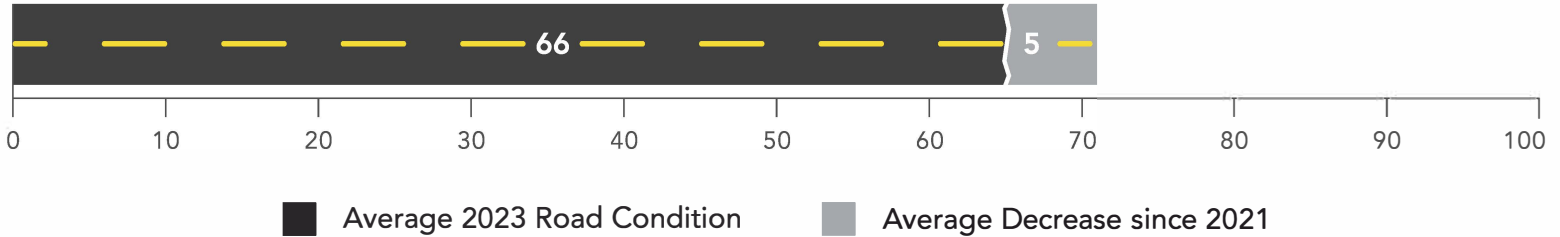
# ASSET REPLACEMENT FUND (ARF) CONTRIBUTIONS AND CAPITAL DELIVERY SPENDING FOR 2022



Compared with Asset Management Plan Targets

## AGE & USEFUL LIFE EXPECTANCY OF ASSETS

### Average Road Network Condition



### MAJOR 2022 PROJECTS

#### 2022 Projects

Reconstruction of Lorne Avenue

Reconstruction of McAffrey Road, resurfacing of Eagle Street West, resurfacing of neighbouring courts and crescents

31km of roads crack sealed

### FUTURE OUTLOOK

The Town's reserve contributions are **below** the levels needed to maintain service levels. In the next 10 years, capital delivery requirements are expected to **steadily increase** due to aging roads. Over the next 50 years, the 2021 Asset Management Plans showed an annual required reinvestment of **2.08%** to maintain existing service levels – significantly **higher** than the current average of **0.87%**.



# Bridge Infrastructure Report Card

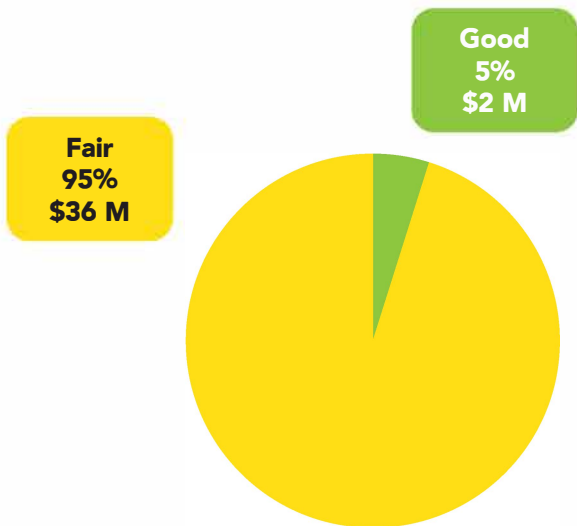
## WHAT CONDITION ARE OUR ASSETS IN?



**AVERAGE NETWORK\*  
CONDITION:**

**FAIR**

\*Bridge network no longer reports pedestrian bridges, reporting transferred to Parks.



## INFRASTRUCTURE CONDITION CHANGES SINCE 2020



**Very Good/Good/Fair**  
From 100% to 100%\*

**Poor/Very Poor**  
From 0% to 0%\*



\*On average, no change in condition category.

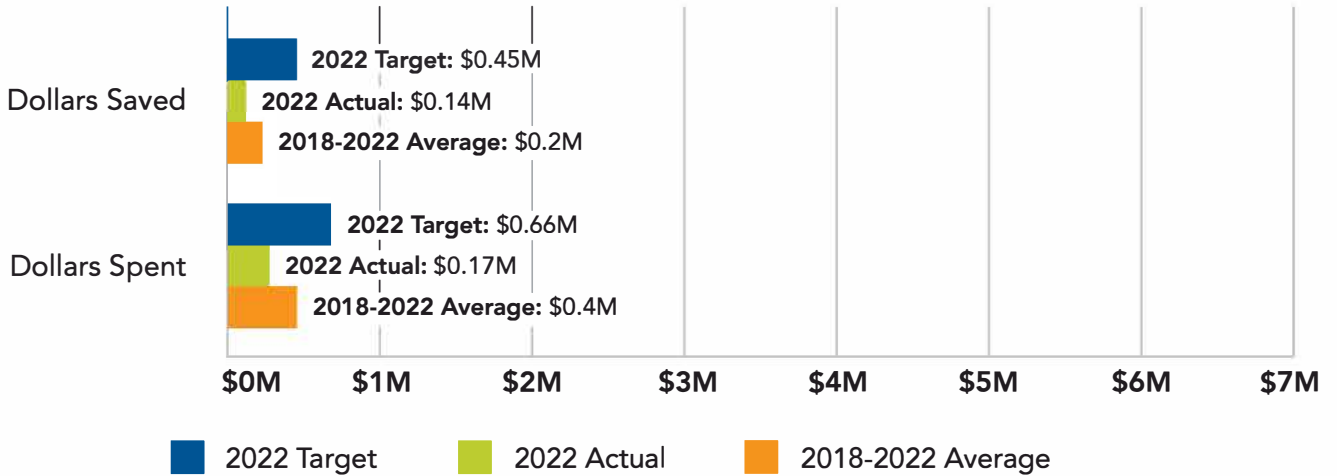
## WHAT WOULD OUR ASSETS COST TO REPLACE?



**REPLACEMENT  
COST:**  
\$39 Million

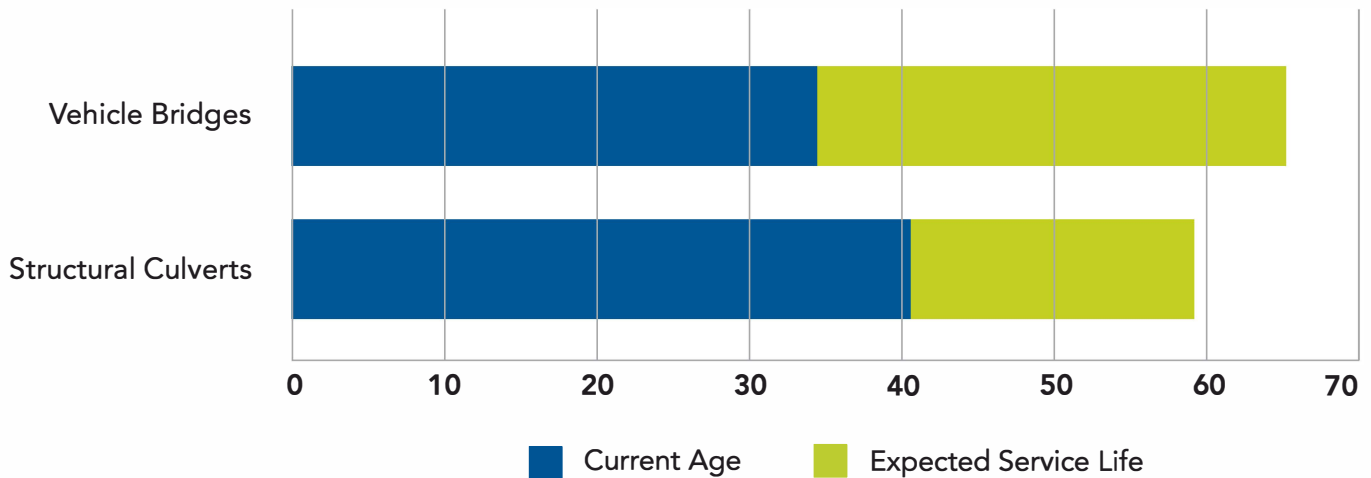
Replacement Cost Summary	
2020 Replacement Cost	\$30 M
Inflationary Adjustment	\$9 M
Growth	\$0 M
<b>Updated 2022 Replacement Cost</b>	<b>\$39 M</b>

# ASSET REPLACEMENT FUND (ARF) CONTRIBUTIONS AND CAPITAL DELIVERY SPENDING FOR 2022



Compared with Asset Management Plan Targets

## AGE & USEFUL LIFE EXPECTANCY OF ASSETS



### MAJOR 2022 PROJECTS

#### 2022 Projects

Enabling works to prepare for Queen Street Bridge rehabilitation

### FUTURE OUTLOOK

The Town's reserve contributions are **below** the levels needed to maintain service levels. In the next 10 years, capital delivery requirements are expected to **steadily increase** due to aging assets. Over the next 50 years, the 2021 Asset Management Plans showed an annual required reinvestment of **2.69%** to maintain existing service levels – significantly higher than the current average of **0.88%**.



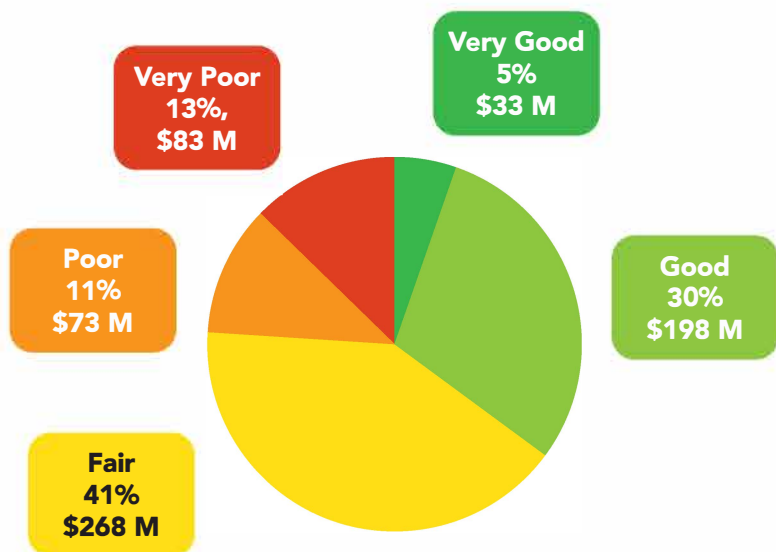
# Water Distribution Infrastructure Report Card

## WHAT CONDITION ARE OUR ASSETS IN?



**AVERAGE NETWORK CONDITION:**

**FAIR**



### INFRASTRUCTURE CONDITION CHANGES SINCE 2020



Very Good/Good/Fair  
From 81% to 76%

Poor/Very Poor  
From 19% to 24%



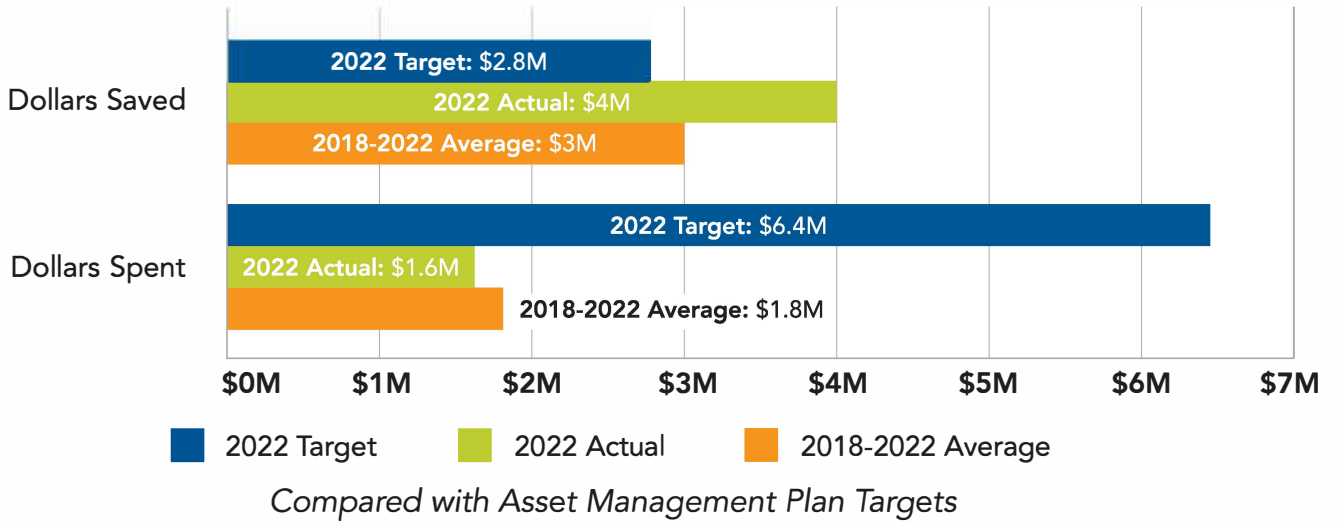
## WHAT WOULD OUR ASSETS COST TO REPLACE?



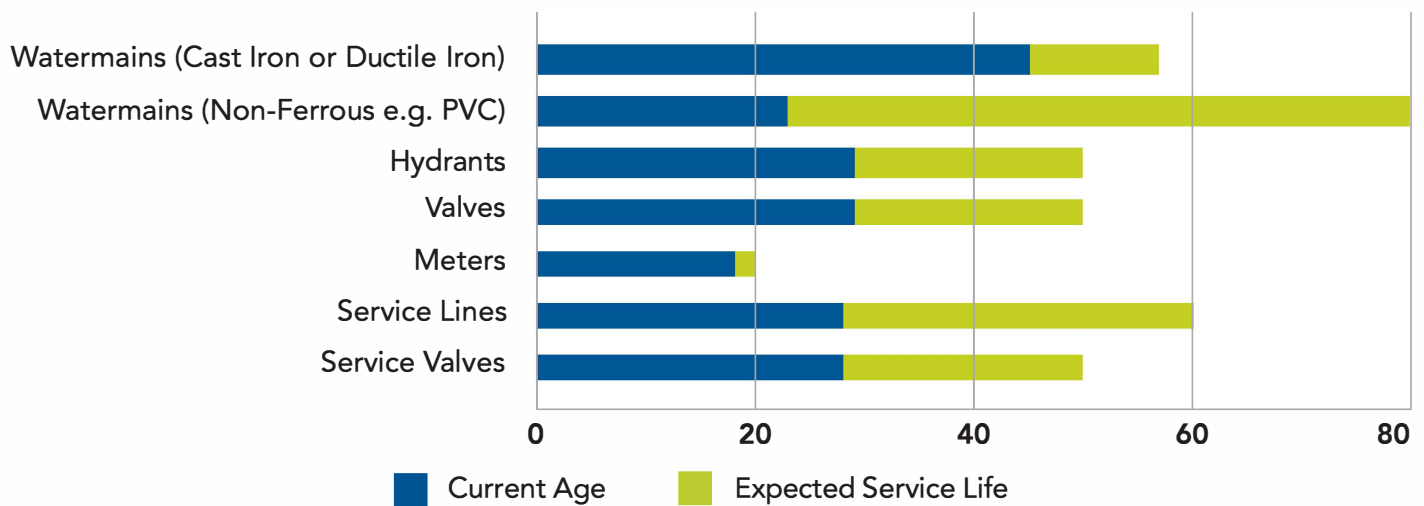
**REPLACEMENT COST:**  
\$655 Million

Replacement Cost Summary	
2020 Replacement Cost	\$487 M
Inflationary Adjustment	\$149 M
Growth	\$19 M
<b>Updated 2022 Replacement Cost</b>	<b>\$655 M</b>

# ASSET REPLACEMENT FUND (ARF) CONTRIBUTIONS AND CAPITAL DELIVERY SPENDING FOR 2022



## AGE & USEFUL LIFE EXPECTANCY OF ASSETS



### MAJOR 2022 PROJECTS

#### 2022 Projects

- Reconstruction of Lorne Avenue
- Cathodic protection of watermains in London Road area

### FUTURE OUTLOOK

The Town's reserve contributions are **below** the levels needed to maintain service levels. In the next 10 years, capital delivery requirements are expected to **significantly increase** due to aging cast iron watermains. Over the next 50 years, the 2021 Asset Management Plans showed an annual required reinvestment of **1.58%** to maintain existing service levels – significantly **higher** than the current average of **0.36%**.



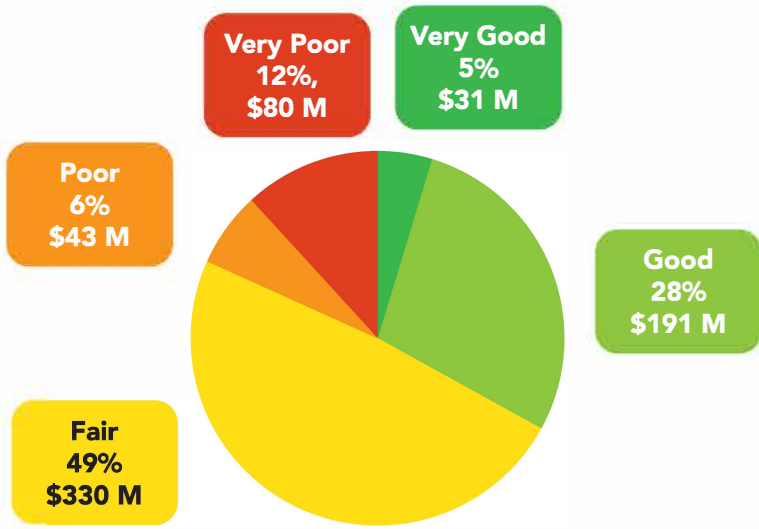
# Wastewater Collection Infrastructure Report Card

## WHAT CONDITION ARE OUR ASSETS IN?



**AVERAGE NETWORK CONDITION:**

**FAIR**



### INFRASTRUCTURE CONDITION CHANGES SINCE 2020



Very Good/Good/Fair  
From 82% to 82%



Poor/Very Poor  
From 18% to 18%

\*On average, no change in condition category.

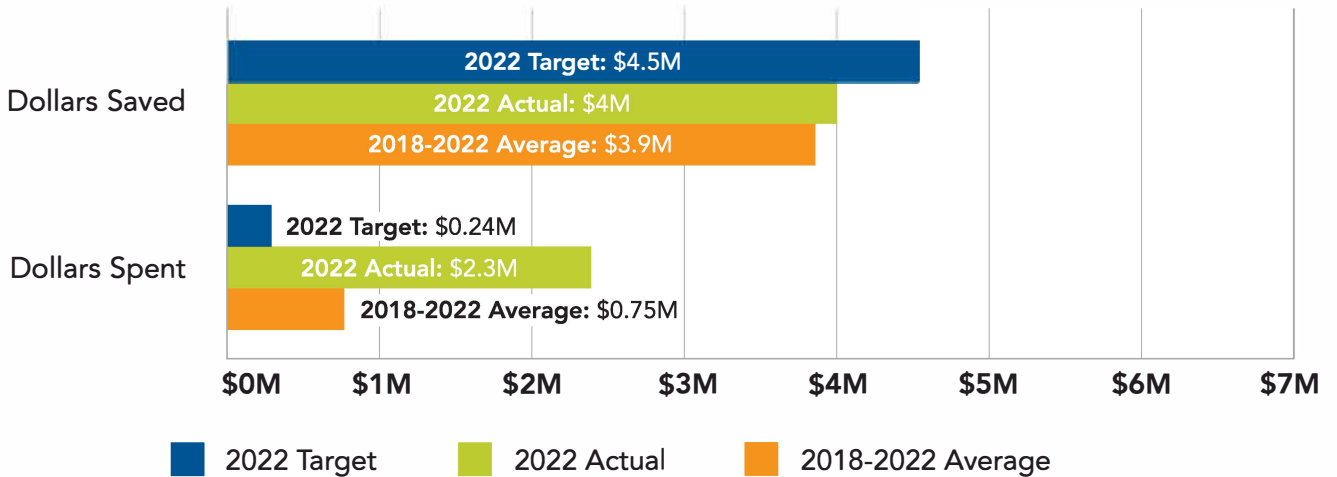
## WHAT WOULD OUR ASSETS COST TO REPLACE?



**REPLACEMENT COST:**  
\$675 Million

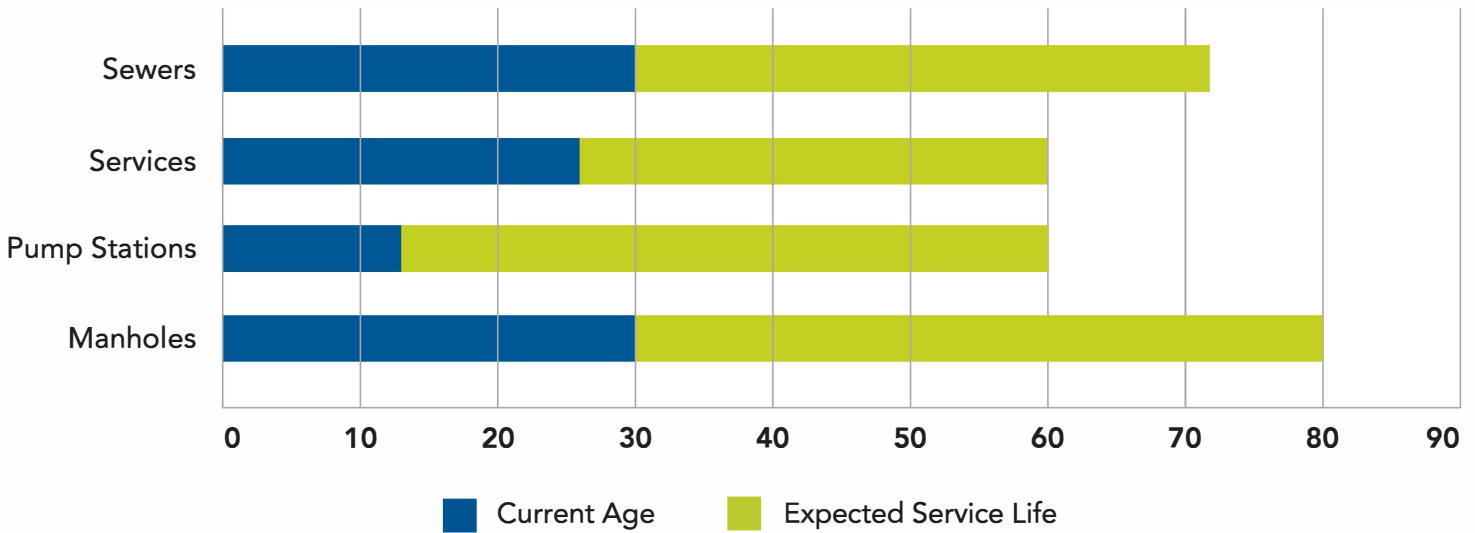
Replacement Cost Summary	
2020 Replacement Cost	\$475 M
Inflationary Adjustment	\$187 M
Growth	\$14 M
<b>Updated 2022 Replacement Cost</b>	<b>\$675 M</b>

# ASSET REPLACEMENT FUND (ARF) CONTRIBUTIONS AND CAPITAL DELIVERY SPENDING FOR 2022



Compared with Asset Management Plan Targets

## AGE & USEFUL LIFE EXPECTANCY OF ASSETS



### MAJOR 2022 PROJECTS

#### 2022 Projects

- Reconstruction of Lorne Avenue
- Capacity upgrades on Penn Avenue and Charles Street

### FUTURE OUTLOOK

The Town's reserve contributions are **below** the levels needed to maintain service levels. In the next 10 years, capital delivery requirements are expected to **steadily increase** due to aging assets. Over the next 50 years, the 2021 Asset Management Plans showed an annual required reinvestment of **1.13%** to maintain existing service levels – significantly higher than the current average of **0.13%**.



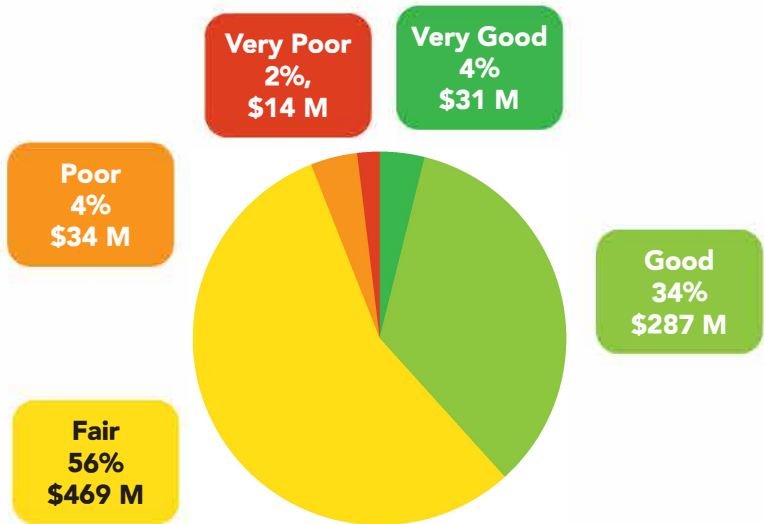
# Stormwater System Infrastructure Report Card

## WHAT CONDITION ARE OUR ASSETS IN?



**AVERAGE NETWORK CONDITION:**

**FAIR**



### INFRASTRUCTURE CONDITION CHANGES SINCE 2020



Very Good/Good/Fair  
From 97% to 94%

Poor/Very Poor  
From 3% to 6%



## WHAT WOULD OUR ASSETS COST TO REPLACE?

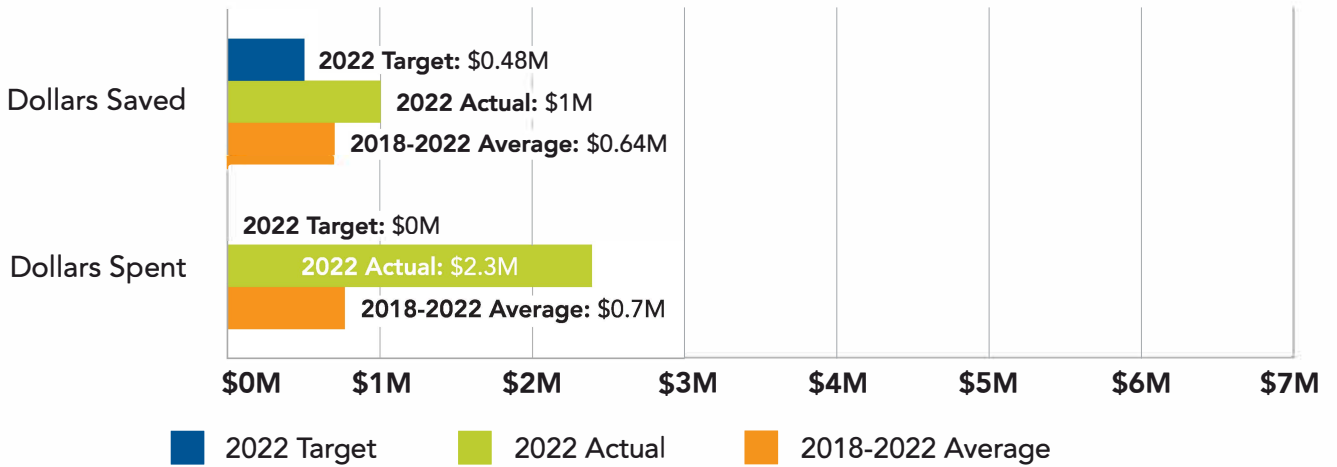


**REPLACEMENT COST:**  
\$835 Million

Replacement Cost Summary	
2020 Replacement Cost	\$629 M
Inflationary Adjustment	\$193 M
Growth	\$14 M
<b>Updated 2022 Replacement Cost</b>	<b>\$835 M</b>

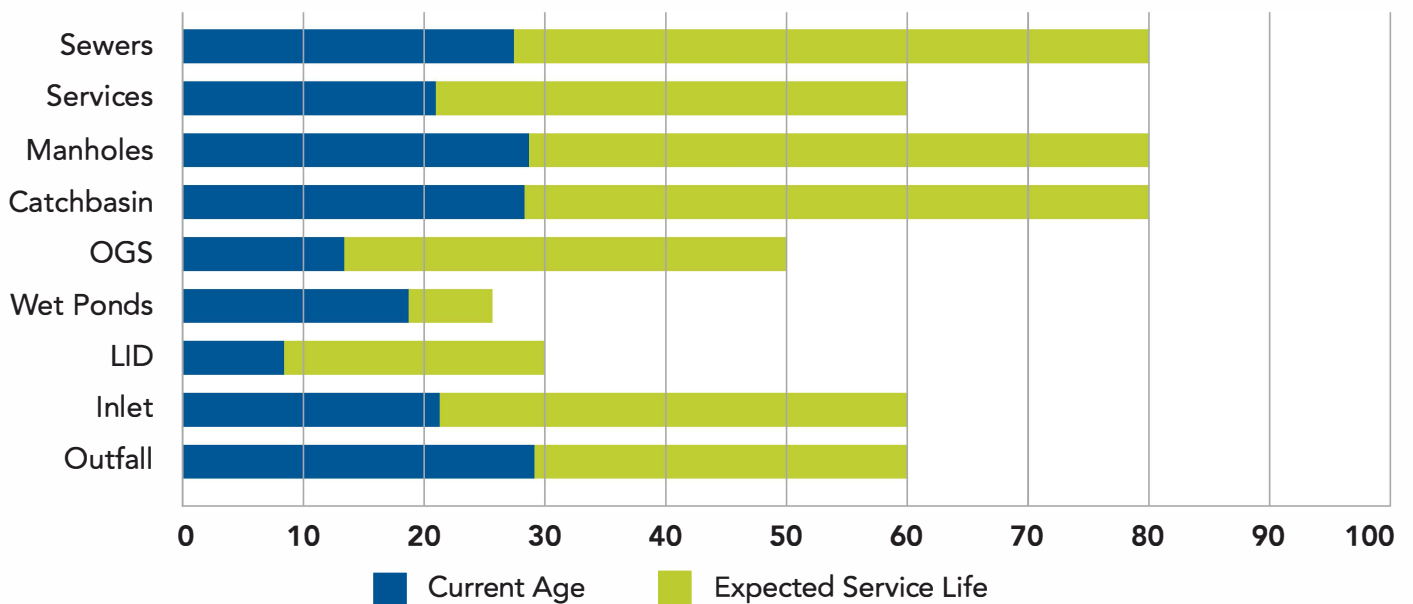


# ASSET REPLACEMENT FUND (ARF) CONTRIBUTIONS AND CAPITAL DELIVERY SPENDING FOR 2022



Compared with Asset Management Plan Targets

## AGE & USEFUL LIFE EXPECTANCY OF ASSETS



### MAJOR 2022 PROJECTS

#### 2022 Projects

Reconstruction of Lorne Avenue

### FUTURE OUTLOOK

The Town's reserve contributions are **below** the levels needed to maintain service levels. In the next 10 years, capital delivery requirements are expected to **steadily increase** due to aging assets. Over the next 50 years, the 2021 Asset Management Plans showed an annual required reinvestment of **1.69%** to maintain existing service levels – significantly higher than the current average of **0.09%**.