



2022 Asset Management Plan

Town of Essex



Presenter

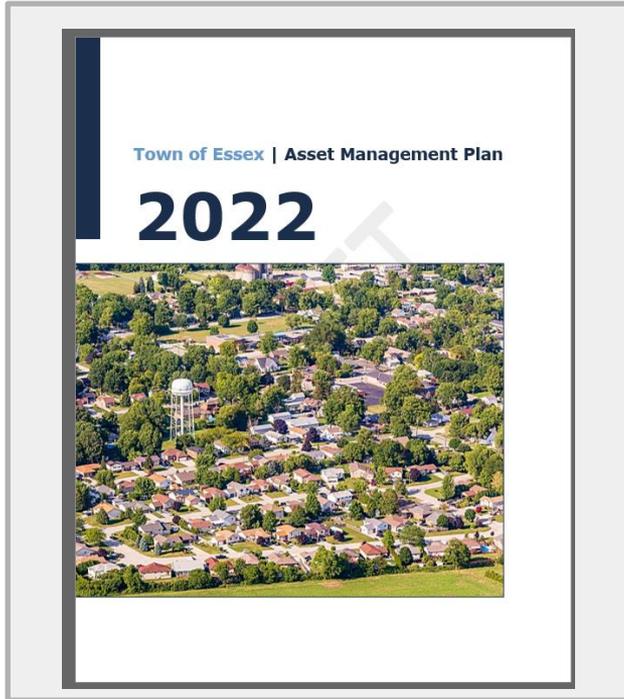


Elio Ibrahim

Senior Asset Management Advisor



Project Background



Primary Deliverable

AMP (2022 O. Reg. 588/177 Compliant)

Infrastructure Asset Data Refinement and Consolidation

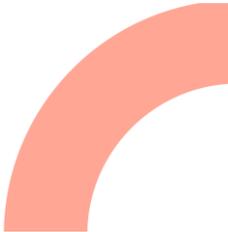
Supporting Workshops

- ✓ Risk & Criticality Analysis
- ✓ Lifecycle Strategies
- ✓ Levels of Service

Infrastructure assets are vital for communities

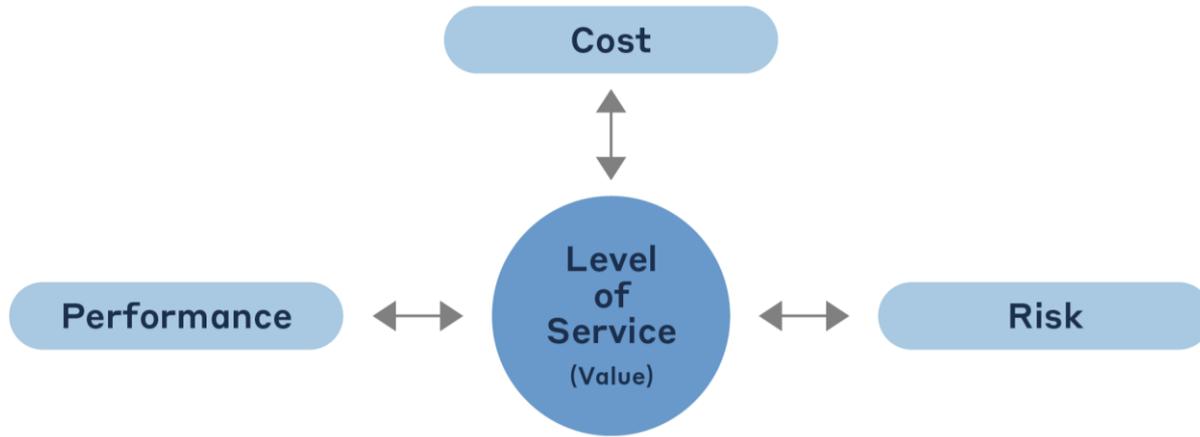


- We need a meaningful way to organize what we own
- We need a way to understand what services we provide
- We need a way to ensure accountability to our residents and stakeholders for the services they use

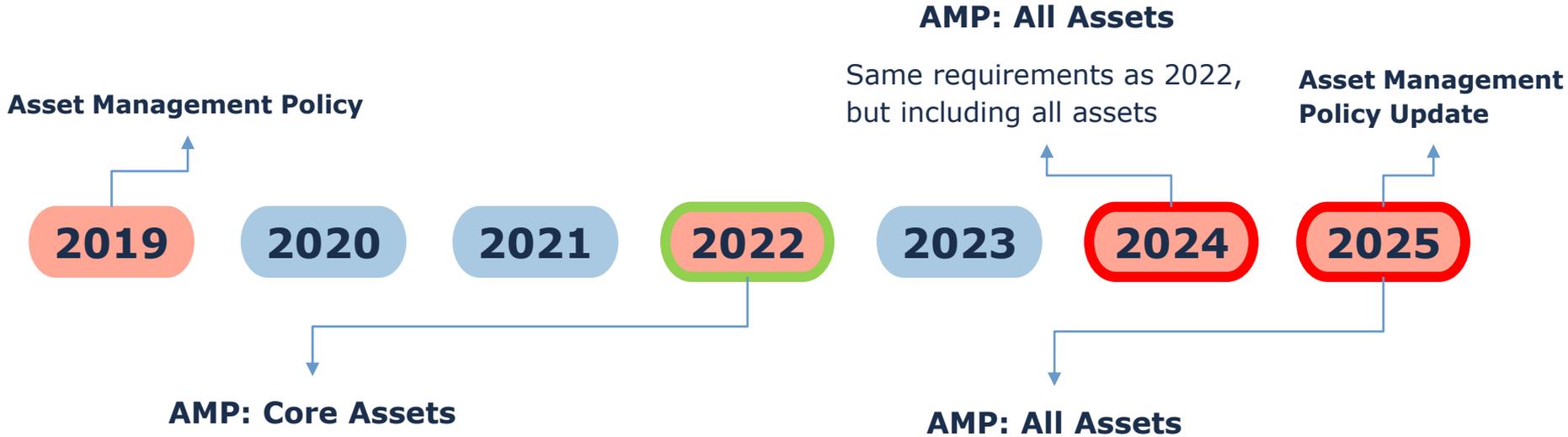


What does Asset Management involve?

ISO 55000: “Coordinated activity of an organization to realize value from assets”



Ontario Regulation 588/17



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

1. Proposed levels of service for the next 10 years
2. Updated inventory analysis
3. Lifecycle management strategy
4. Financial strategy and addressing shortfalls
5. Discussion of how growth assumptions impacted lifecycle and financial strategy

AMPs - Updating, Reviewing & Public Posting

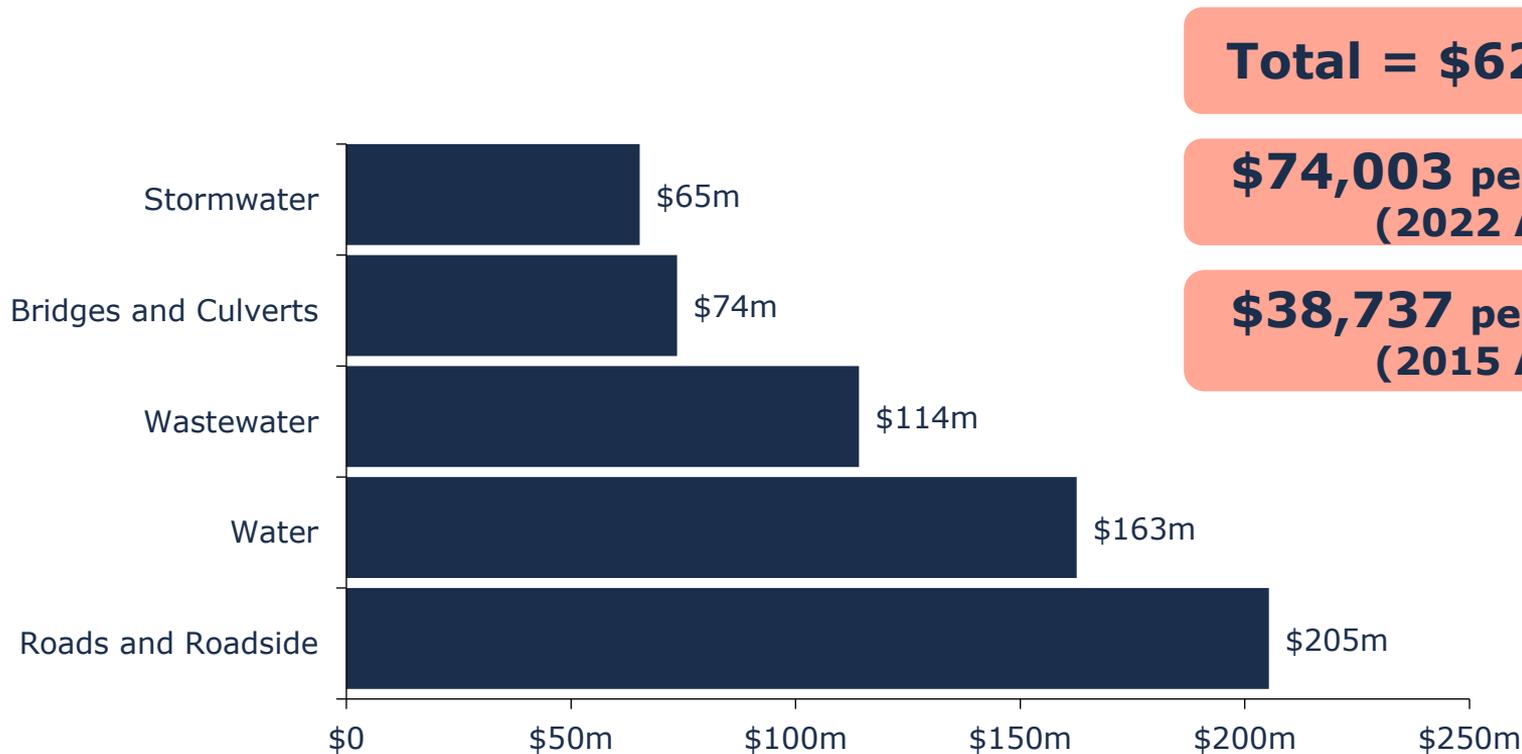


- After 2025, asset management plans must be updated at least once every 5 years
- After 2025, every municipal council shall conduct an annual review of its asset management progress on or before July 1st
- The asset management policy and plans should be posted to the municipal website

Asset Management Plan (2021 year-end)

- 1 What is the current state of municipal infrastructure?
- 2 What process improvements can increase confidence in analysis and decision-making?
- 3 What is the Town's financial capacity to meet long-term capital requirements?

Replacement Cost of Core Asset Portfolio



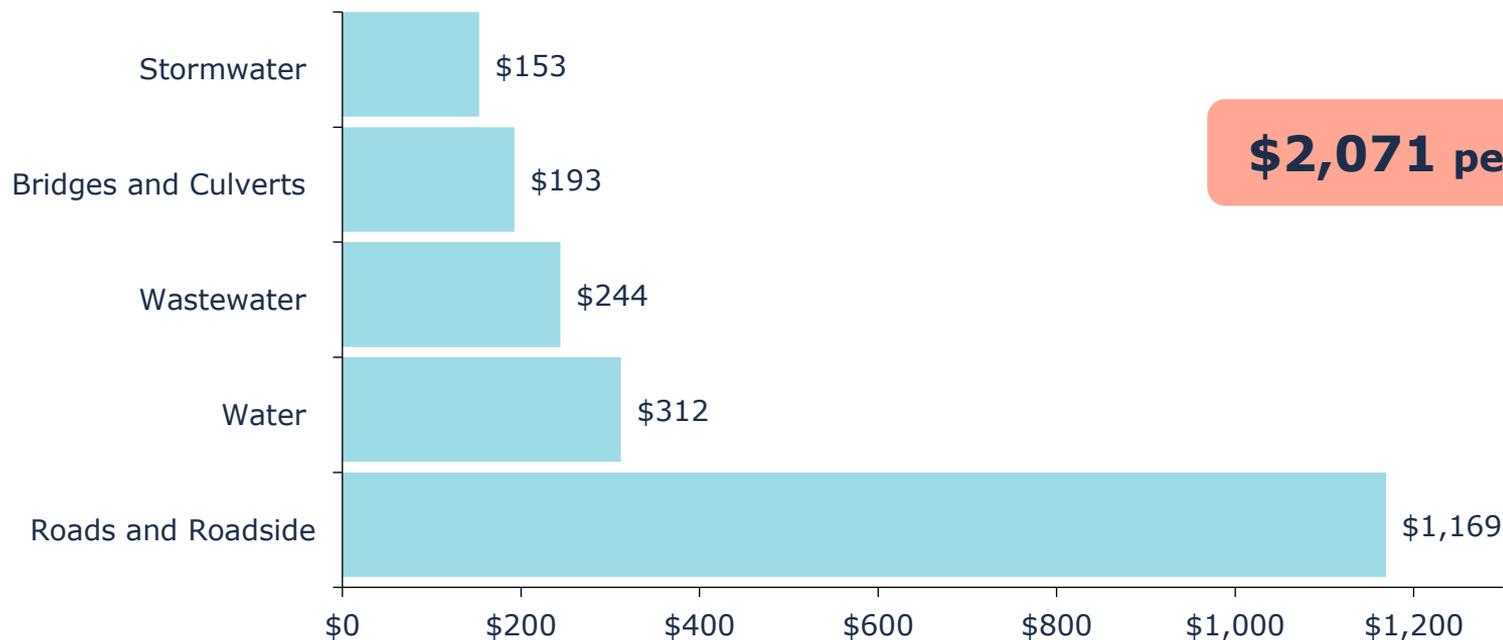
Total = \$621 million

**\$74,003 per household
(2022 AMP)**

**\$38,737 per household
(2015 AMP)**



Annual Capital Requirements per Household



Annual Capital Requirements Per Household



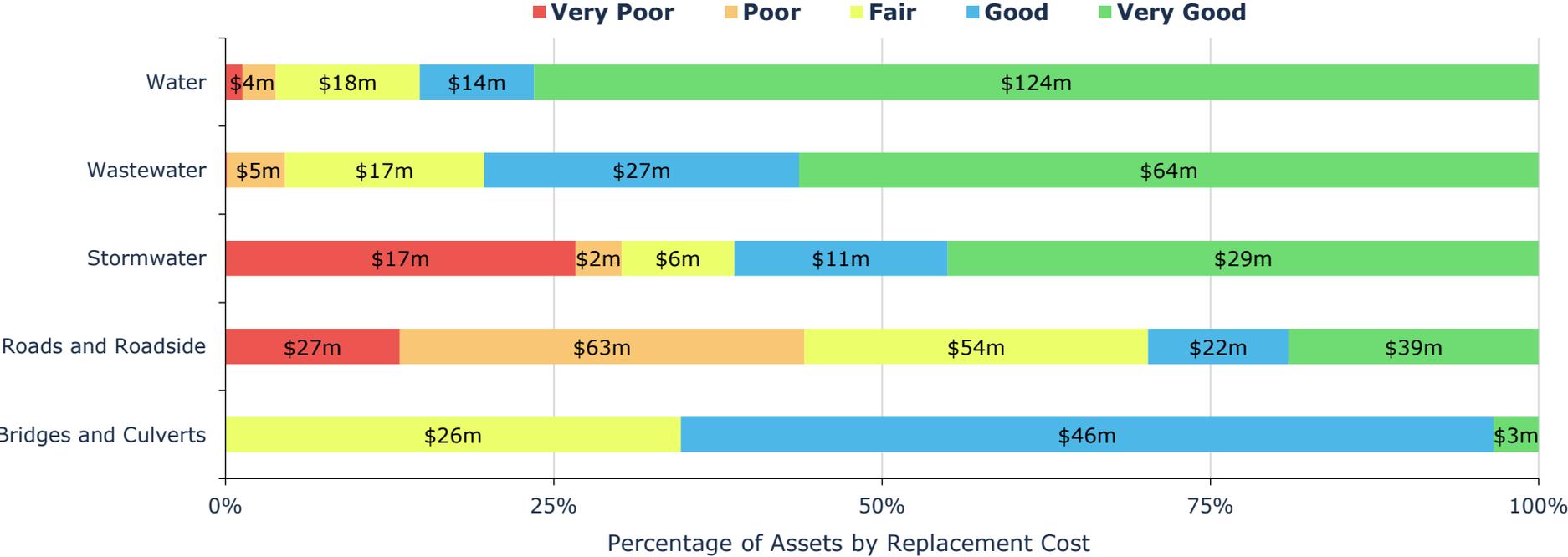
Replacement Cost Method of Asset Portfolio

Category	Replacement Cost Method	
	Defined Replacement Cost	Historical Cost Indexing
Roads and Roadside	93%	7%
Bridges and Culverts	100%	0%
Stormwater	99%	1%
Water	90%	10%
Wastewater	68%	32%
Overall	89%	11%

The accuracy and reliability of lifecycle costs is critical for asset management.



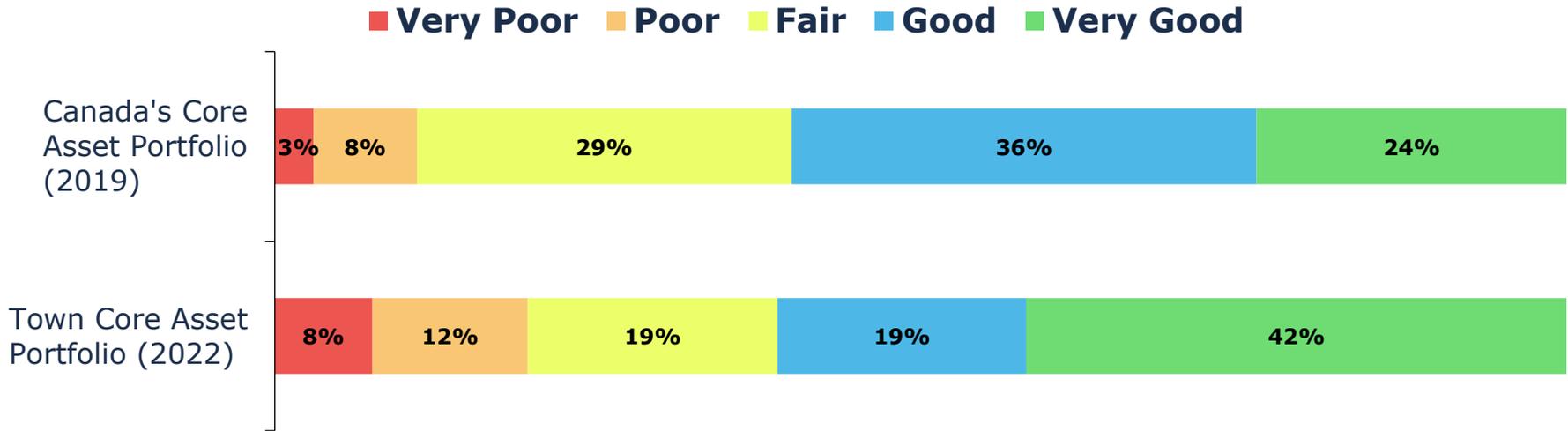
Overall Condition of the Asset Portfolio



80% assets are in fair or better condition



Overall Condition – Benchmark



Condition Assessments in the Asset Portfolio

Asset Category	Asset Condition Breakdown		
	% of Assets with Age-based Condition	% of Assets with Assessed Condition	Source of Condition Data
Roads and Roadside	30%	70%	2020/2021 Road Assessments
Bridges and Culverts	0%	100%	2022 OSIM Reports
Stormwater	100%	0%	Age-based
Wastewater	100%	0%	
Water	100%	0%	
Overall	65%	35%	

Age-based condition data typically overstates needs and overall deficit.
 Assessed condition data builds confidence in decision making.



Assessed Condition Data in AM Decision Making



Mitigation of risks associated with asset failure



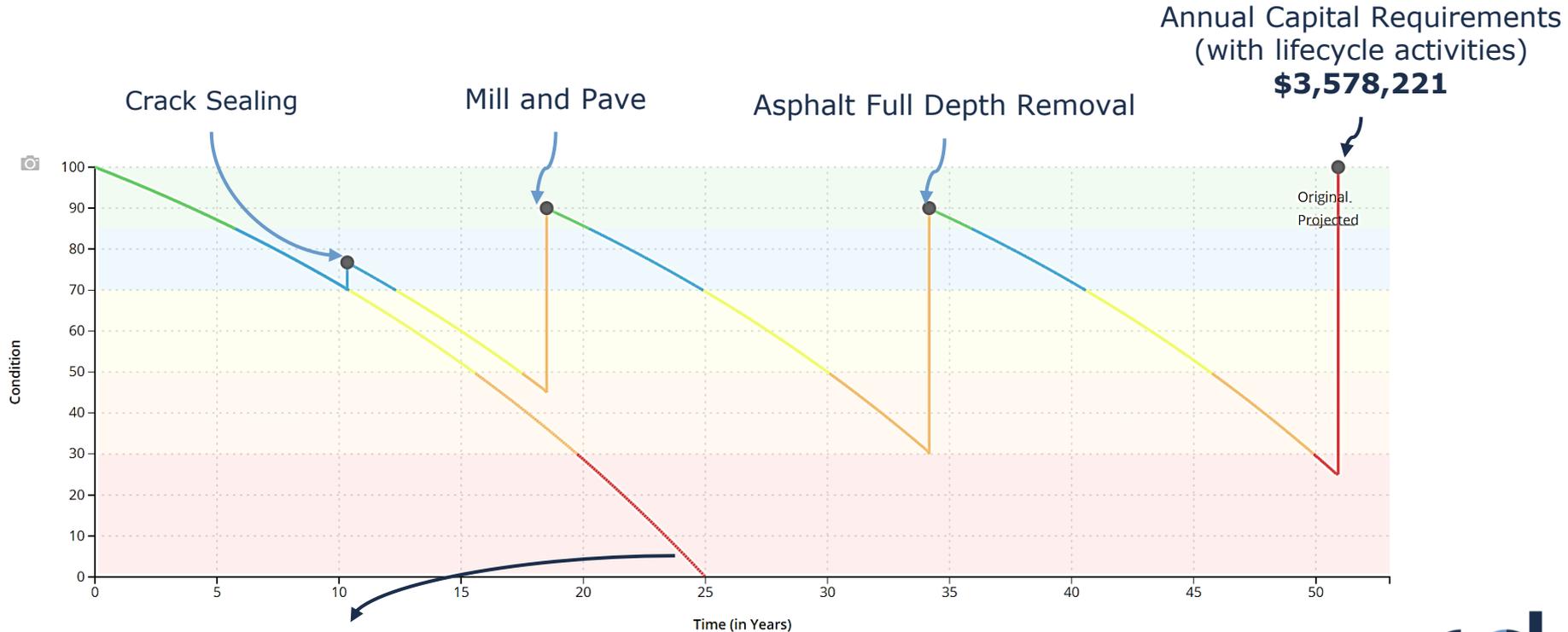
Identifying the most economic intervention



Accurate predication of future expenditure requirements



Lifecycle Strategies (HCB Roads)

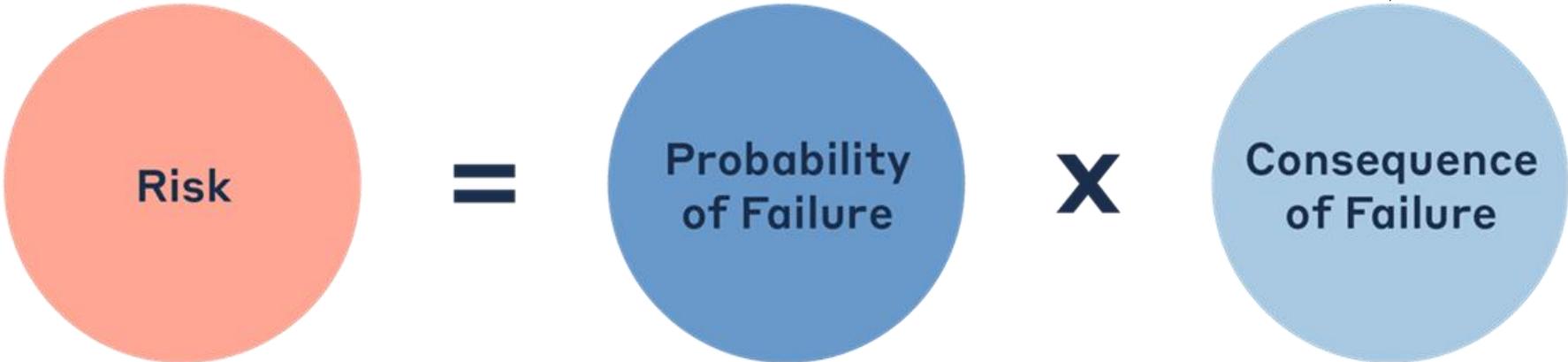


Annual Capital Requirements
(end of life replacement only)
\$4,382,778

Cost Benefit = \$804,557



Risk Framework



- Asset Condition
- Service Life Remaining
- Pipe Material

- Replacement Cost
- AADT
- Road Design Class
- Pipe Diameter
- Asset Function



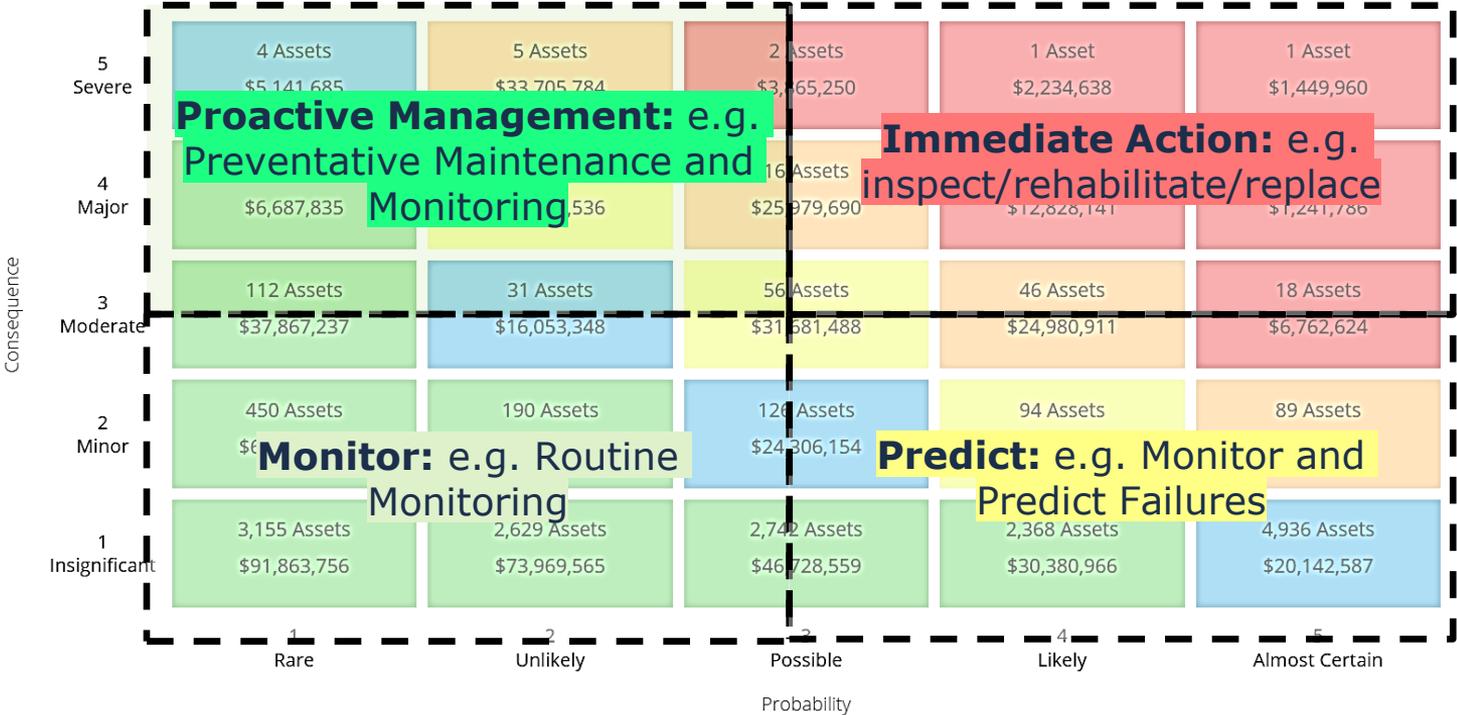
Risk & Criticality

		Probability				
		1 Rare	2 Unlikely	3 Possible	4 Likely	5 Almost Certain
Consequence	5 Severe	4 Assets \$5,141,685	5 Assets \$33,705,784	2 Assets \$3,865,250	1 Asset \$2,234,638	1 Asset \$1,449,960
	4 Major	11 Assets \$6,687,835	8 Assets \$13,363,536	16 Assets \$25,979,690	9 Assets \$12,828,141	3 Assets \$1,241,786
	3 Moderate	112 Assets \$37,867,237	31 Assets \$16,053,348	56 Assets \$31,681,488	46 Assets \$24,980,911	18 Assets \$6,762,624
	2 Minor	450 Assets \$61,036,607	190 Assets \$31,596,050	126 Assets \$24,306,154	94 Assets \$10,075,353	89 Assets \$6,940,696
	1 Insignificant	3,155 Assets \$91,863,756	2,629 Assets \$73,969,565	2,742 Assets \$46,728,559	2,368 Assets \$30,380,966	4,936 Assets \$20,142,587

A good risk model will assist in prioritizing resources and applying them to the right asset at the right time



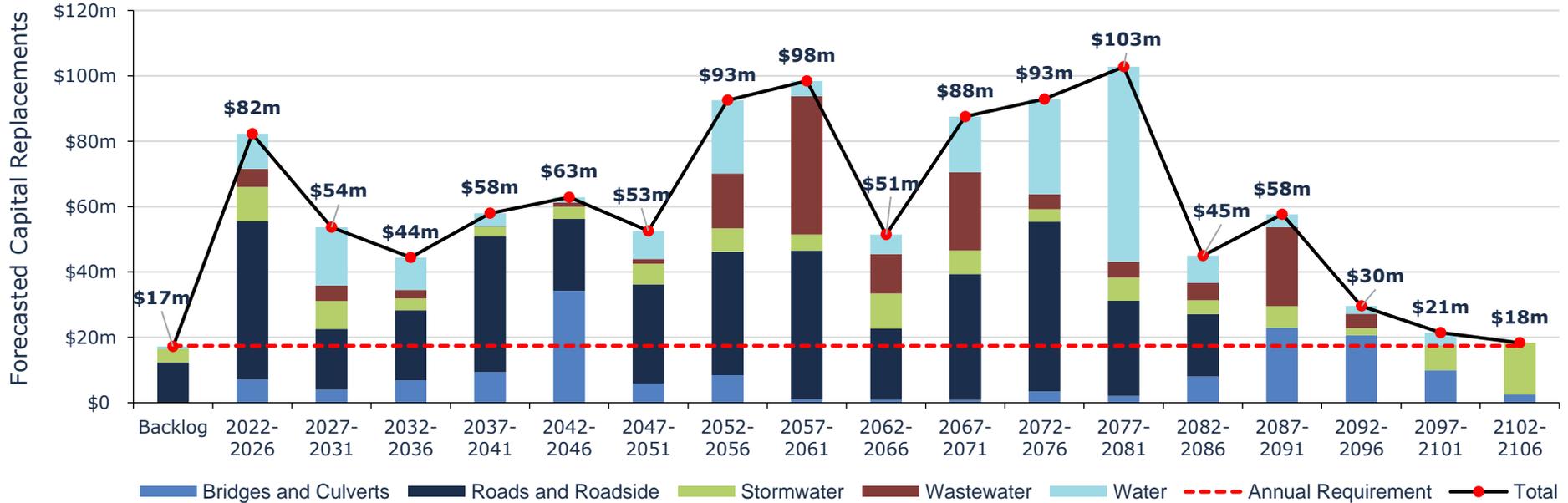
Operationalizing Risk



Identify which assets pose the highest risk to delivering your objectives and use this data to drive the capital planning process



Forecasted Capital Requirements – 84 Years



Annual Capital Requirement & Infrastructure Deficit

	Annual Capital Requirement	Funding Available	Annual Capital Deficit
Tax-Funded Assets	\$12,707,809	\$4,540,000	\$8,167,809
Rate-Funded Assets	\$4,668,080	\$2,623,000	\$2,045,080
Total	\$17,375,889	\$7,163,000	\$10,212,889

Tax Funded Assets are currently funded at 36% of their long-term capital requirements

Rate Funded Assets are currently funded at 56% of their long-term capital requirements



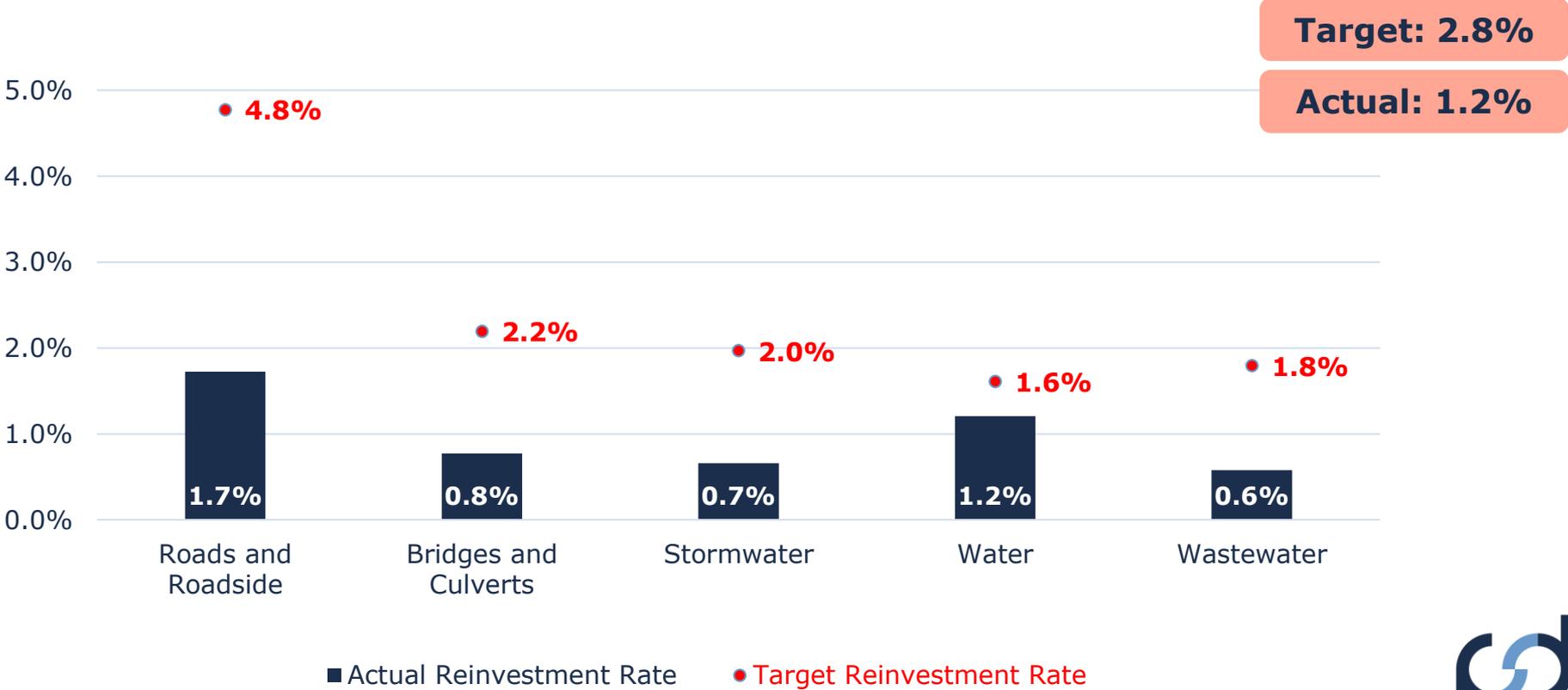
Reinvestment Rates

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

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



Average Annual Reinvestment Rates



Financial Strategy

Funding Source	Years until Full Funding	Total Tax Increase	Average Annual Tax Increase
Tax-Funded	15	47%	2.6%
Water Rate-Funded		22%	1.4%
Wastewater Rate-Funded		62%	1.8%

- Both sustainable and one-time grants/transfers will continue to be an essential source of revenue for investment in capital infrastructure
- Adjustments to taxes should be supplemented with project prioritization and evaluation of the desired levels of service



Recommendations & Next Steps

1

Continue to review and refine asset inventory in consultation with internal departments/stakeholders

- Implement a portfolio-wide **data governance strategy** to increase accuracy/confidence in data
- Conduct **asset management-needs assessment** to identify resources and investment required
- Hiring an **asset management coordinator** dedicated to championing asset management within the Town

2

Prepare for O.Reg. 588/17 2024 and 2025 Requirements

- Develop LOS statements and identify LOS metrics **for Non-Core Assets** for the 2024 requirement
- Identify **Proposed levels of service** for the 2025 requirement
- Develop a medium to long-term external communication strategy to **engage the public** on asset management and obtain feedback to inform development of proposed levels of service

3

Continuous improvement and regular review

- An asset management plan is a **living document** that should be updated regularly to inform long-term planning
- Continue to **operationalize** the asset management database through its functionality





Questions?