



# Asset Management Plans Council Workshop

**Council Workshop**

**Corporate Asset Management Office**

**Date: September 27, 2021**

# Team Work Completed To Date



# Council Touch Points

✓ May 17<sup>th</sup> – Council Workshop on LOS

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**LOS –Key Performance Indicators (KPIs)**

Service	Service Outcome Statement	Customer KPIs	Technical KPIs
Water	Provide accessible, safe, reliable drinking water and a reasonable price	<ul style="list-style-type: none"> <li># breaks per year</li> <li>% assets in X condition or better</li> <li>% water tests not meeting regulations per year</li> </ul>	<ul style="list-style-type: none"> <li># unplanned interruptions per 100km pipe per year</li> <li>Capital Renewal ratio</li> <li># water quality complaints per 1000 households per year</li> </ul>

Service Criteria

1. Reliability
2. Availability
3. Compliance
4. Risk/Safety
5. Value for Money

1. Desired Service Criteria not currently or proposed to be measured

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**LOS –Key Performance Indicators (KPIs)**

Service	Service Outcome Statement	Customer KPIs	Technical KPIs
Wastewater	Provide accessible, available and reliable wastewater collection services that meet regulations at a reasonable cost	<ul style="list-style-type: none"> <li>% assets in X condition or better</li> <li># complaints by type per year</li> <li>% properties connected to wastewater system</li> </ul>	<ul style="list-style-type: none"> <li>% of pipe system CCTV and flushed per year</li> <li>Capital Renewal ratio</li> <li># non-compliance events in system per year (i.e. sewer overflows)</li> </ul>

Service Criteria

1. Reliability
2. Compliance
3. Risk/Safety
4. Availability

2. Proposed Compliance Service Criteria

31

**LOS –Key Performance Indicators (KPIs)**

Service	Service Outcome Statement	Customer KPIs	Technical KPIs
Storm	Protection of property from flooding at an appropriate cost	<ul style="list-style-type: none"> <li>% Area (ha) with stormwater control</li> <li>Urban Area</li> <li>Rural Area</li> <li>% assets in X condition or better</li> <li># flooding events per stormwater zone per year</li> </ul>	<ul style="list-style-type: none"> <li># storm pipes CCTV per year</li> <li>Frequency of catch basin clearing per season</li> <li>Quantity ditch and watercourse inspected per month</li> <li>Time spent thawing catch basins per year</li> </ul>

Service Criteria

1. Availability
2. Reliability
3. Risk/Safety
4. Compliance
5. Affordability
6. Environmental Stewardship

3. Desired Service Criteria not currently proposed to be measured



# Key Deadlines

Description	Date	Update
Asset Management Phase 1 Workshop	May 17, 2021	Complete
Asset Management Phase 2 Workshop	Sep 27, 2021	Today
AM Plans - core assets	Oct 4, 2021	Nov 2021
AM Plans - non-core assets	2024	2024
Services Level targets and Funding Strategy	2025	2025

# Introductions



**Town of Newmarket**

**Council - Financial Strategy Briefing**

*Martin Gordon, Danah Ashcroft*





**Town of Newmarket**  
**Council – Financial Strategy Briefing**

*Martin Gordon, Danah Ashcroft*



# Agenda

1. Safety Moment
2. Overview of where we are in the project
3. Brief Review of AM Concepts and Past Work
4. Modelling Scenarios Overview
5. Change Management Discussion and Next Steps



# Where are we in the AMP process?

	December	January	February	March	April	May	June	July	August	September	October
Inventory Management	1	2	3	4	5						
Risk Management		1	2	3	4						
Lifecycle Management		1	2	3	4	5			6	7	8
Operations and Maintenance				1	2	3	4	5	6	7	8
Capital Planning				1	2	3	4	5	6	7	8
Levels of Service		1	2	3	4						
Growth Planning		1	2	3	4		5	6	7	8	9
Financial Strategy						1	2	3	4	5	6
Asset Management Plans						1	2	3	4	5	6
Change Management		1	2	3	4	5	6	7	8	9	10



## Goals for Today

What we want to deliver

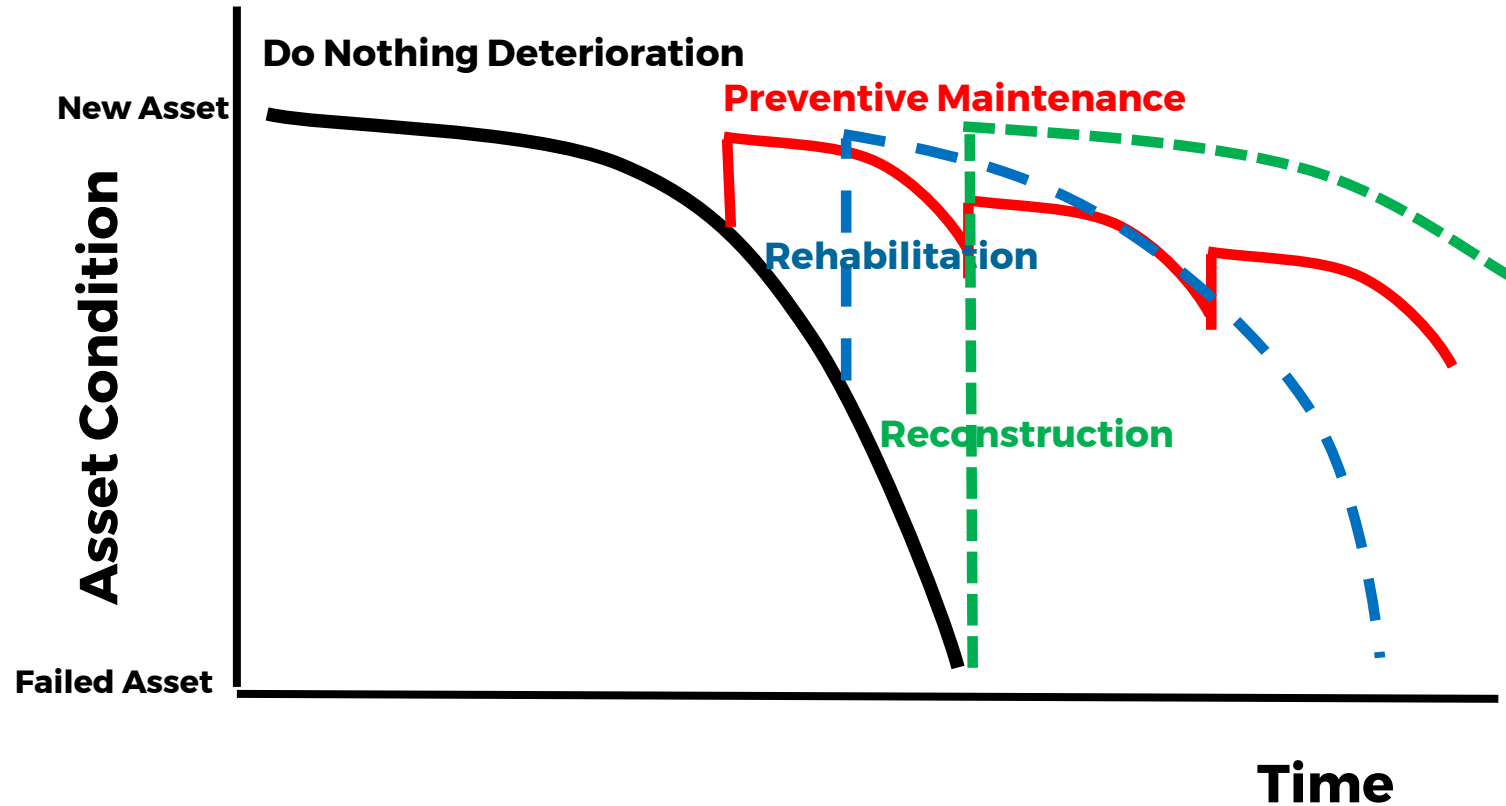
- Review of scenarios
- Discuss potential recommendations for investment
- Illustrate Link between Service targets, cost and risk
- Answer and questions about the financial strategy



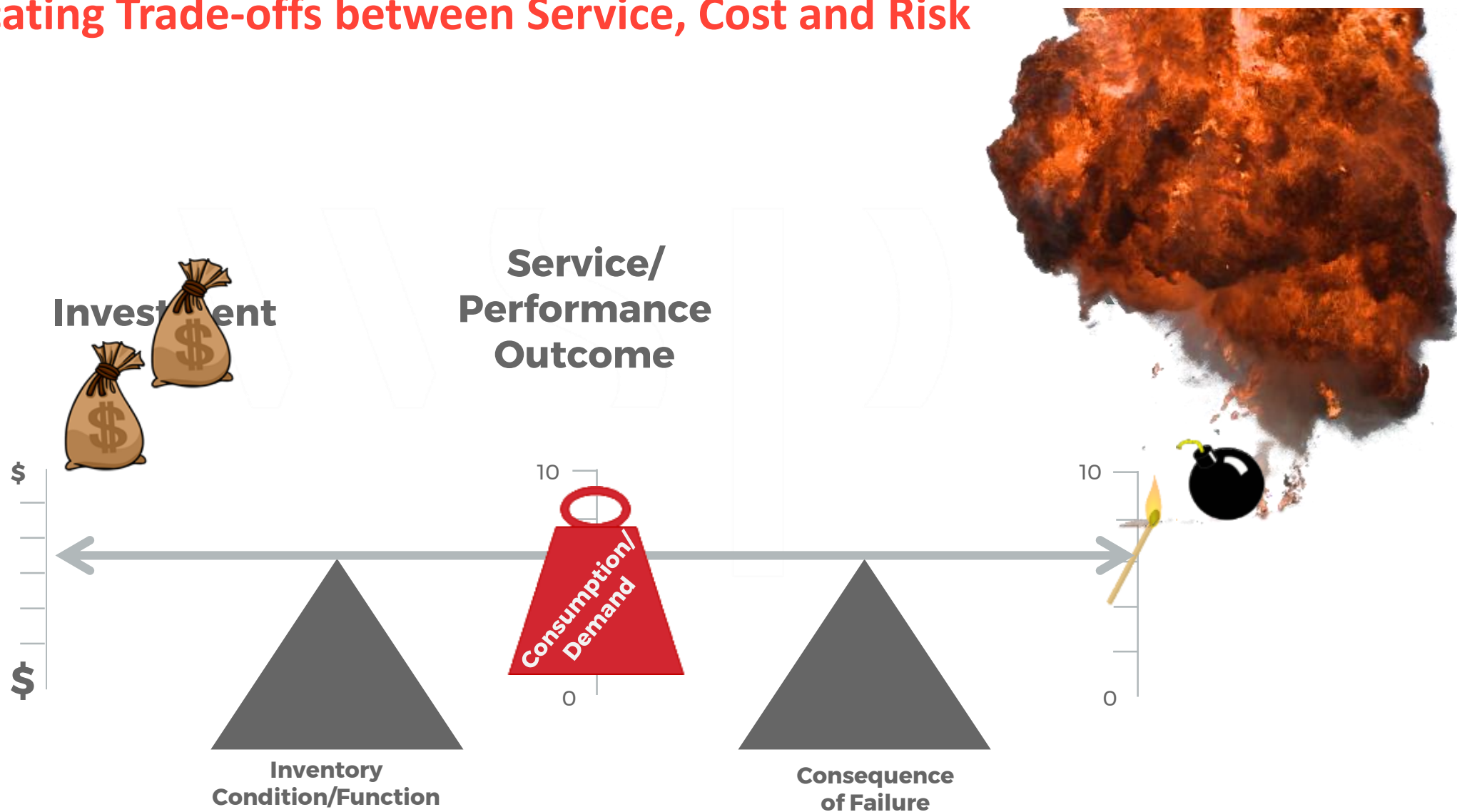


## Review of Key Concepts

# Alternative Interventions Save Money and Improve Forecasting



# Communicating Trade-offs between Service, Cost and Risk





## LOS –Key Performance Indicators (KPI's) - Roads

Service	Service Outcome Statement	
<b>Roads</b>	Safe, well maintained and managed transportation network for vehicles, cycling, and pedestrians.	
Service Criteria	Customer KPI's	Technical KPI's
1. Risk/Safety 2. Reliability 3. Availability 4. Quality / Condition	<ul style="list-style-type: none"> <li>• Average PCI of Local roads</li> <li>• Average PCI of Collector roads</li> <li>• Km road patrols per year</li> <li>• Km roads plowed within x hrs of y cm snowfall</li> </ul>	<ul style="list-style-type: none"> <li>• Km crack sealing per year</li> <li>• Capital Renewal ratio</li> <li>• # plow runs per winter</li> <li>• # salt runs per winter</li> <li>• Single lift resurfacing \$x per year</li> <li>• % achievement of regulatory requirements</li> <li>• Capital renewal ratio</li> </ul>

## LOS –Key Performance Indicators (KPI's) - Structures

Service	Service Outcome Statement
<b>Bridges &amp; Culverts</b>	Safe, reliable crossings with access for all mobilities.

Service Criteria	Customer KPI's	Technical KPI's
1. Risk/Safety 2. Availability / Reliability 3. Quality / Condition	<ul style="list-style-type: none"> <li>• Average deck ride condition<sup>4</sup></li> <li>• % assets in X condition or better</li> <li>• # bridges with cycle lane or sidewalk</li> <li>• Ratio sidewalk/bridge widths</li> </ul>	<ul style="list-style-type: none"> <li>• % assets inspected in 2 yrs.</li> <li>• Average condition of bridge or culvert components by class of component</li> <li>• Traffic counts / utilization of bridges</li> <li>• Capital renewal ratio</li> </ul>

## LOS –Key Performance Indicators (KPI's) - Water

Service	Service Outcome Statement	
<b>Water</b>	Provide accessible, safe, reliable drinking water and a reasonable price.	
Service Criteria	Customer KPI's	Technical KPI's
1. Reliability 2. Availability 3. Compliance 4. Risk/Safety 5. Value for Money <sup>1</sup>	<ul style="list-style-type: none"> <li>• # breaks per year</li> <li>• % assets in X condition or better</li> <li>• % water tests not meeting regulations per year</li> </ul>	<ul style="list-style-type: none"> <li>• # unplanned interruptions per 100km pipe per year</li> <li>• Capital Renewal ratio</li> <li>• # water quality complaints per 1000 households per year</li> </ul>

## LOS –Key Performance Indicators (KPI's) - WW

Service	Service Outcome Statement	
<b>Wastewater</b>	Provide accessible, available and reliable wastewater collection services that meet regulations at a reasonable cost.	
Service Criteria	Customer KPI's	Technical KPI's
1. Reliability 2. Compliance 3. Risk/Safety 4. Availability	<ul style="list-style-type: none"> <li>• % assets in X condition or better</li> <li>• # complaints by type per year</li> <li>• % properties connected to wastewater system</li> </ul>	<ul style="list-style-type: none"> <li>• % of pipe system CCTV and flushed per year</li> <li>• Capital Renewal ratio</li> <li>• # non-compliance events in system per year (i.e. sewer overflows)<sup>2</sup></li> </ul>



## LOS –Key Performance Indicators (KPI's) - Storm

Service	Service Outcome Statement	
<b>Storm</b>	Protection of property from flooding at an appropriate cost.	
Service Criteria	Customer KPI's	Technical KPI's
1. Availability 2. Reliability 3. Risk/Safety 4. Compliance 5. Affordability <sup>3</sup> 6. Environmental Stewardship <sup>3</sup>	<ul style="list-style-type: none"> <li>• % Area (ha) with stormwater control               <ul style="list-style-type: none"> <li>• Urban Area</li> <li>• Total Area</li> </ul> </li> <li>• % assets in X condition or better</li> <li>• # flooding events per stormwater zone per year</li> </ul>	<ul style="list-style-type: none"> <li>• % storm pipes CCTV per year</li> <li>• Frequency of catch basin clearing per season</li> <li>• Quantity ditch and watercourse inspected per month</li> <li>• Time spent thawing catch basins per year</li> </ul>

## Key Take-Aways

The Town has established service levels, performance metrics and will set targets in the coming year

Changes in budget, affect either service outcomes or risk, or both. This relationship is important to understand.

The financial strategy seeks to give the Town's Leadership visibility on the relationship and differences in outcome that are associated with alternative investment choices.

Council and Town leaders are tasked to decide their risk tolerance and service level requirements that they are willing to fund with taxes and rate revenues.

The intent of the regulation governing asset management planning is to have communities go through this process.

This focusses on core assets only. Non-Core assets will be the focus of the next 12 months to develop similar recommendations



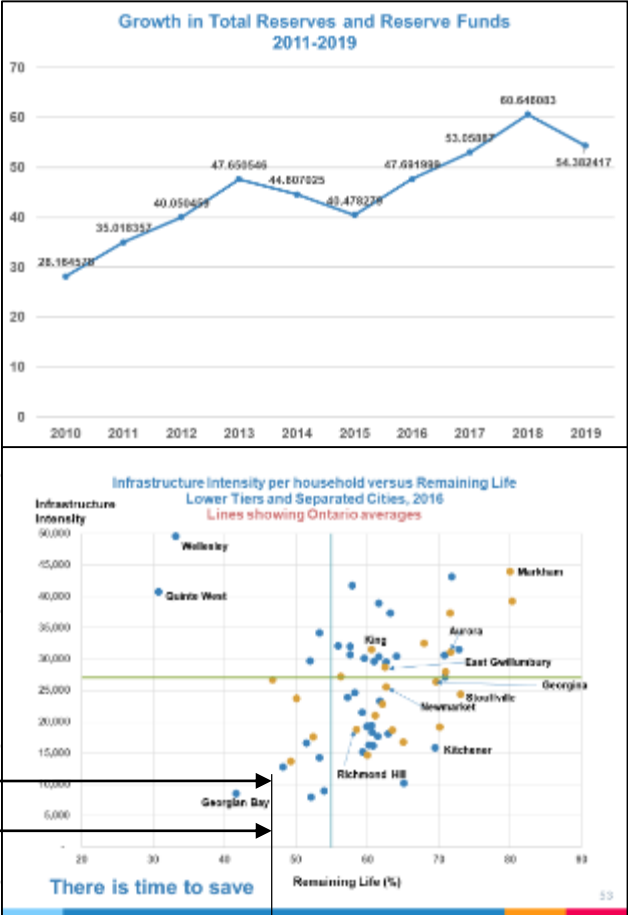
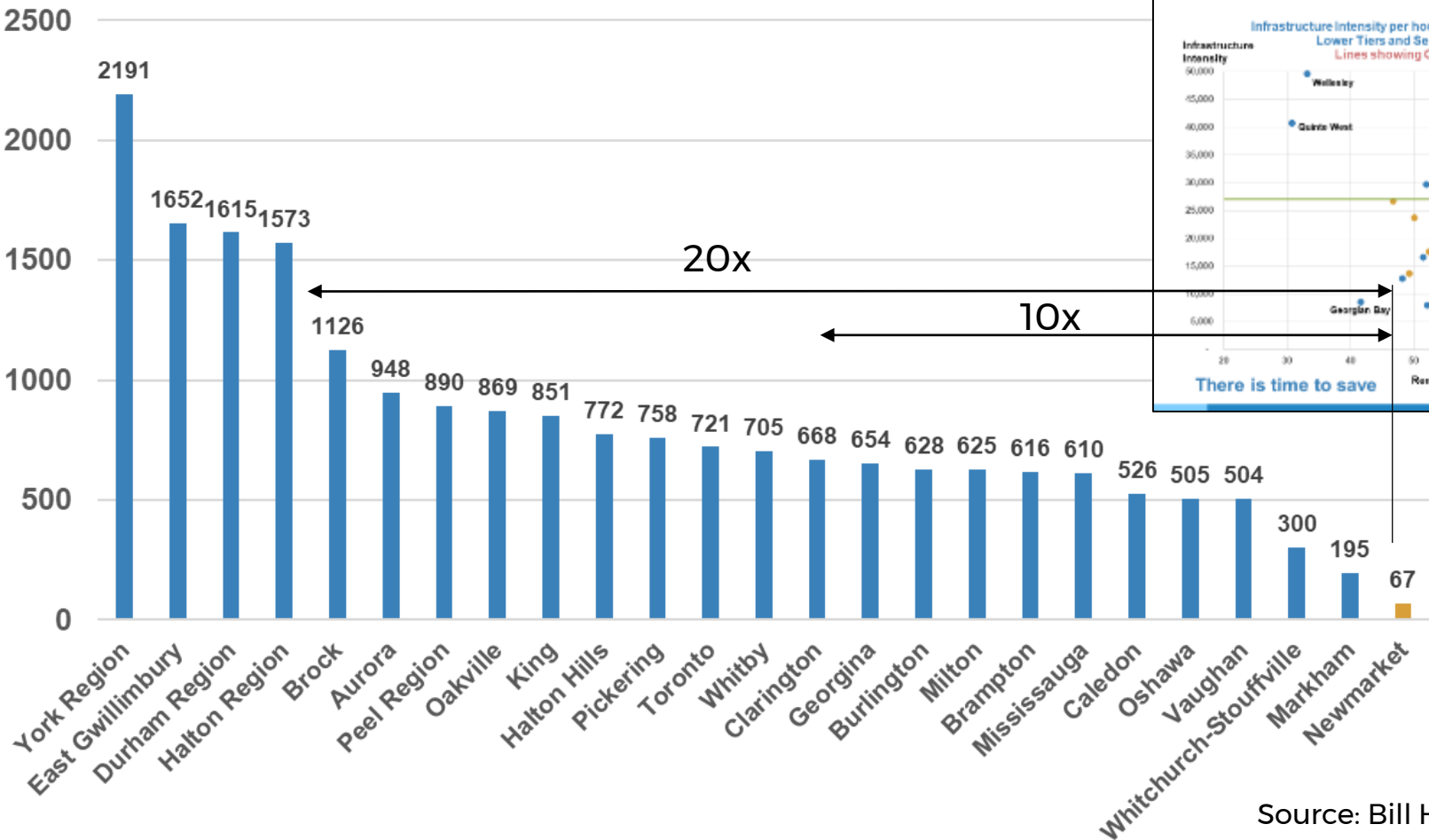
# Review of Past Work

*Fiscal Strategy – Bill Hughes, September 28, 2020*



# Newmarket's tax-supported reserves per capita are the lowest in the GTA

Tax-Supported Reserves per capita, GTA municipalities, 2019





## Concluding Comments

- Newmarket is well managed financially and well positioned to adopt and implement a long-term fiscal strategy
- The Town needs to aggressively build reserves for the foreseeable future
- A significant restructuring of the Town's reserve funds is needed
- The Town should keep a watchful eye on debt
- The Town would benefit from a careful examination of options to increase revenue
- Generally the Town would benefit from extending the time frame for its financial planning

Source: Bill Hughes, 2020



# Review of Scenario Results

*Scenario 1*

# Modelling Results – Review of Analysis to Date

## **Iteration 1: Modeling current and Service Driven (Needs Based) 10 Year Forecast**

### **Iteration 2: Current Budget (50 Years)**

- Maximize Performance, i.e. improve condition weighted by criticality
- Constraint: Existing Budget

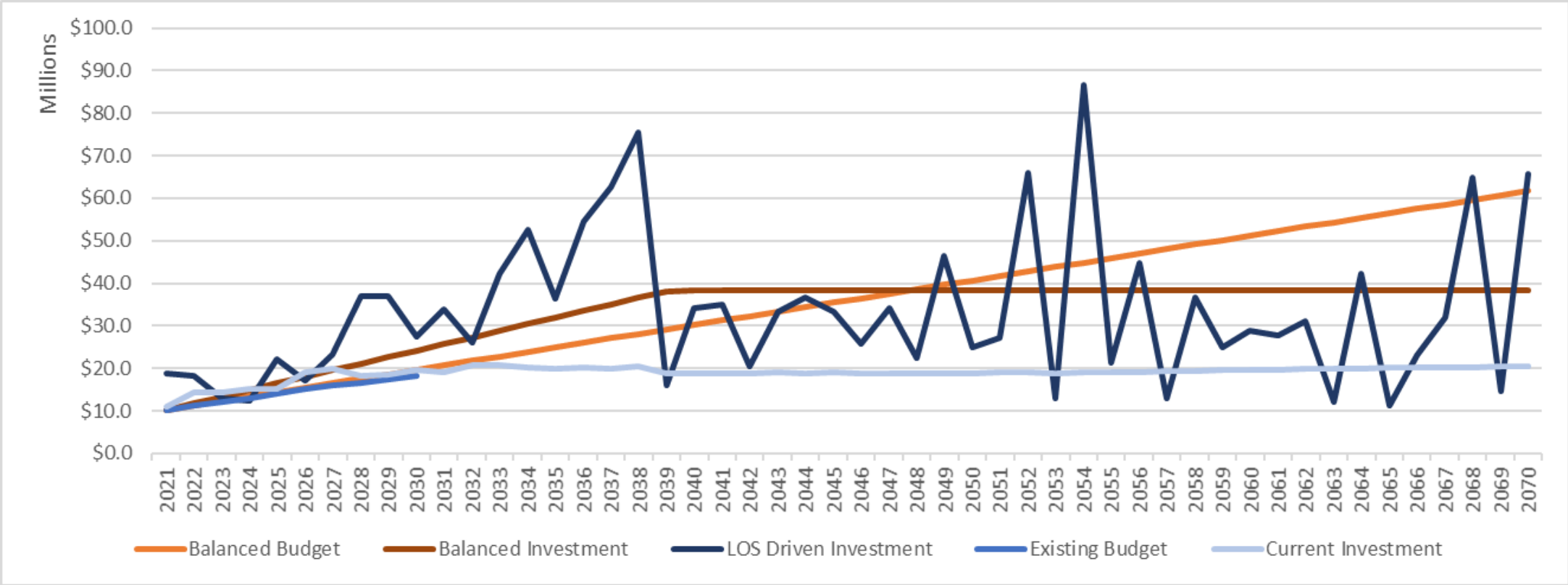
### **Iteration 2: Service Level Driven Investment (50 Years)**

- Optimization – Minimize Cost
- E.g. Less than 5% of Collectors in Poor and none in Very Poor
- E.g. Less than 10% of network in Poor, and less than 5% in Very Poor

### **Iteration 3: Balanced Investment**

- Target Service levels
- Defined budget increases (Overall, \$1.05M increase annually spread across all asset classes by need)

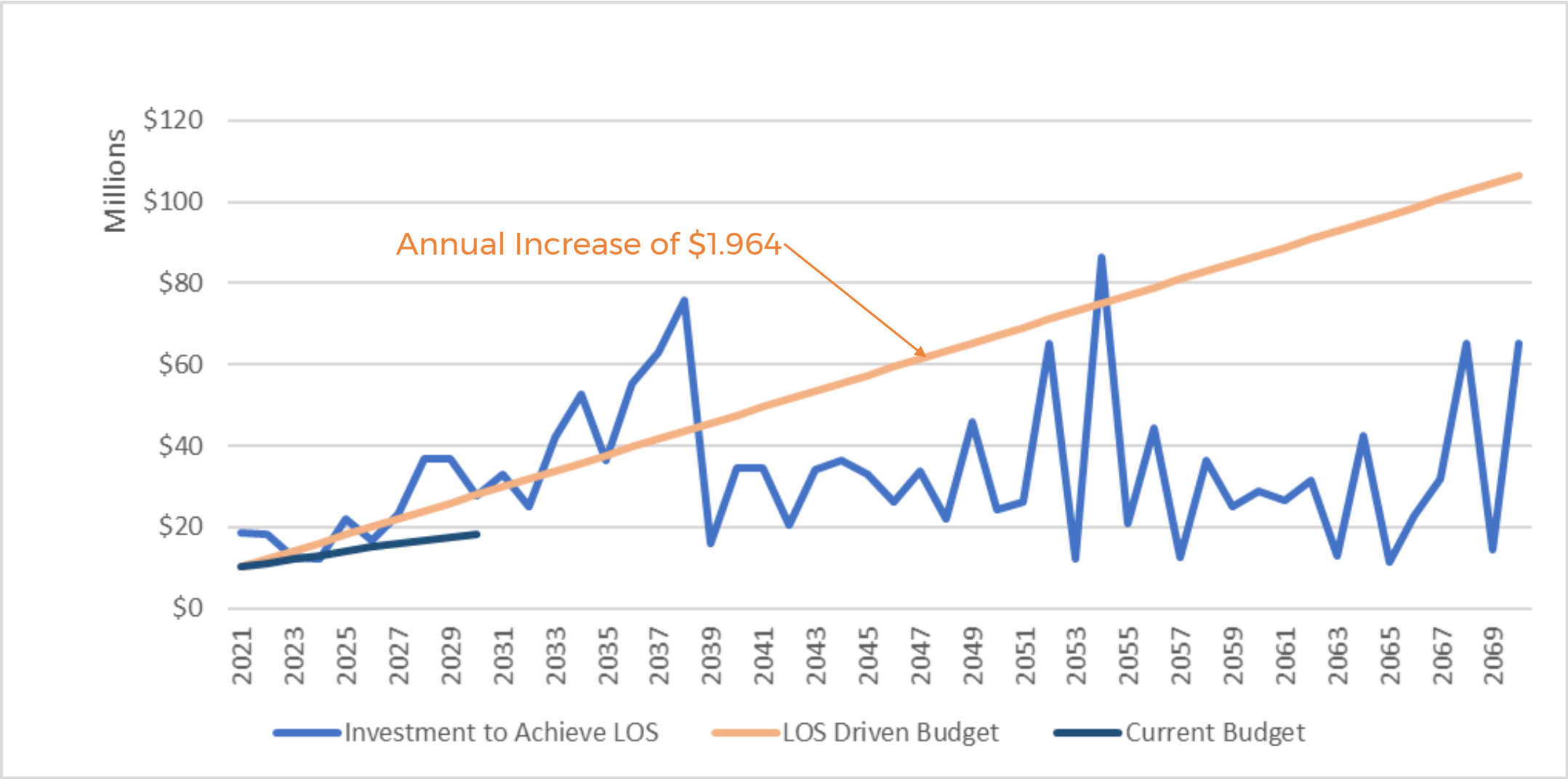
# Modelling Results – Forecasts for Three Scenarios





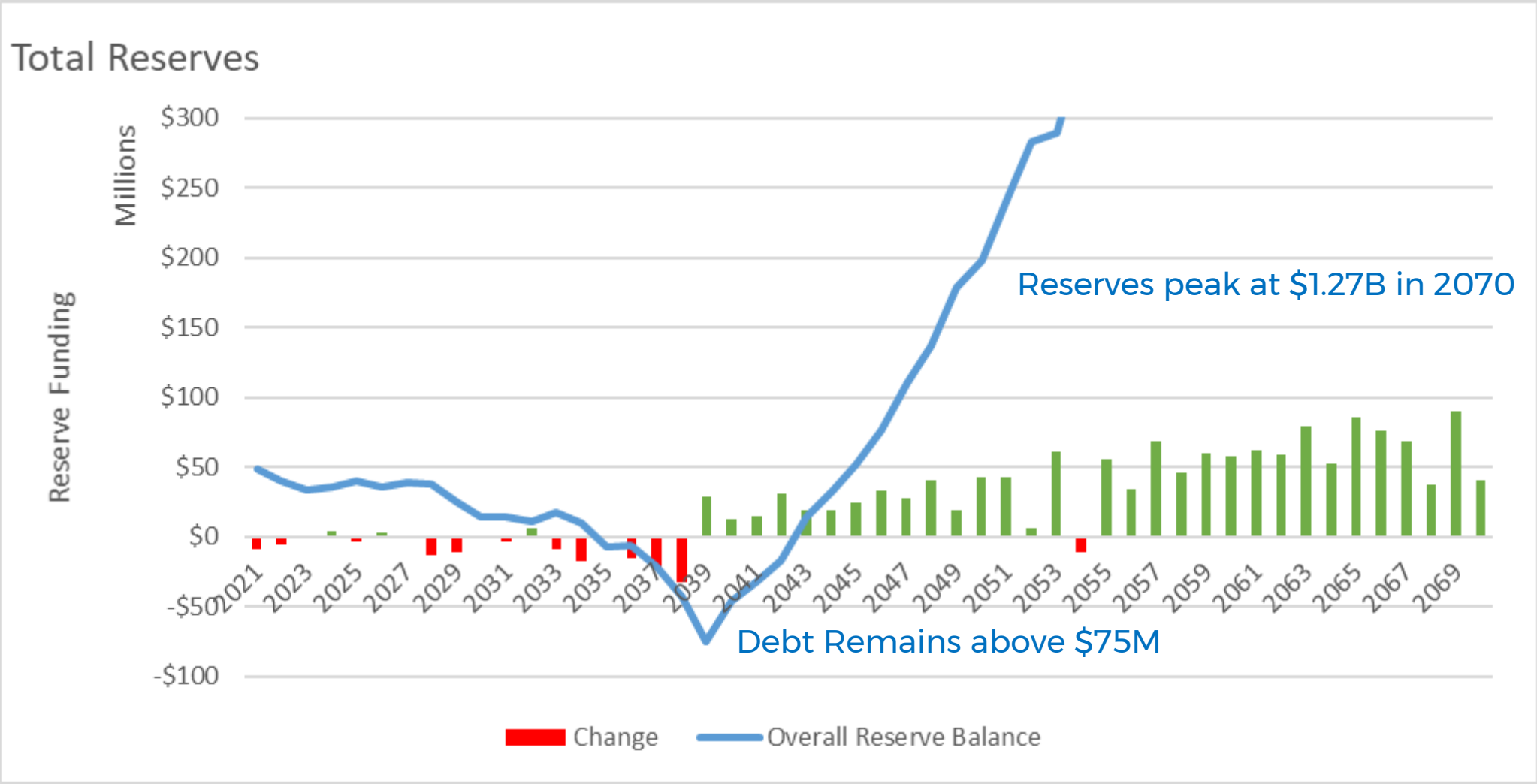


# Funding LOS Driven Investment and Debt <\$75M



# Funding LOS Driven Investment and Debt <\$75M

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# Reviewing Modelling Results – Road Pavements

## Three Outputs to Consider (all 50 year models)

### Current Budget

- Improve condition weighted by criticality with existing budget

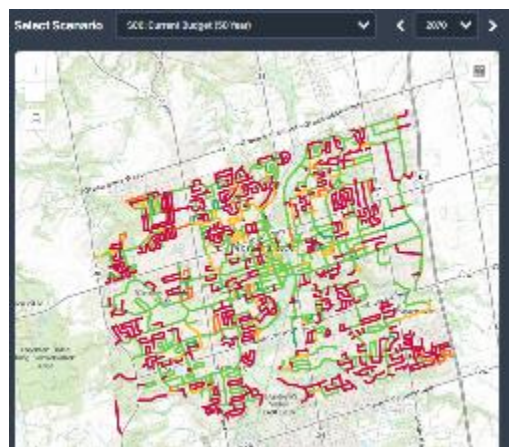
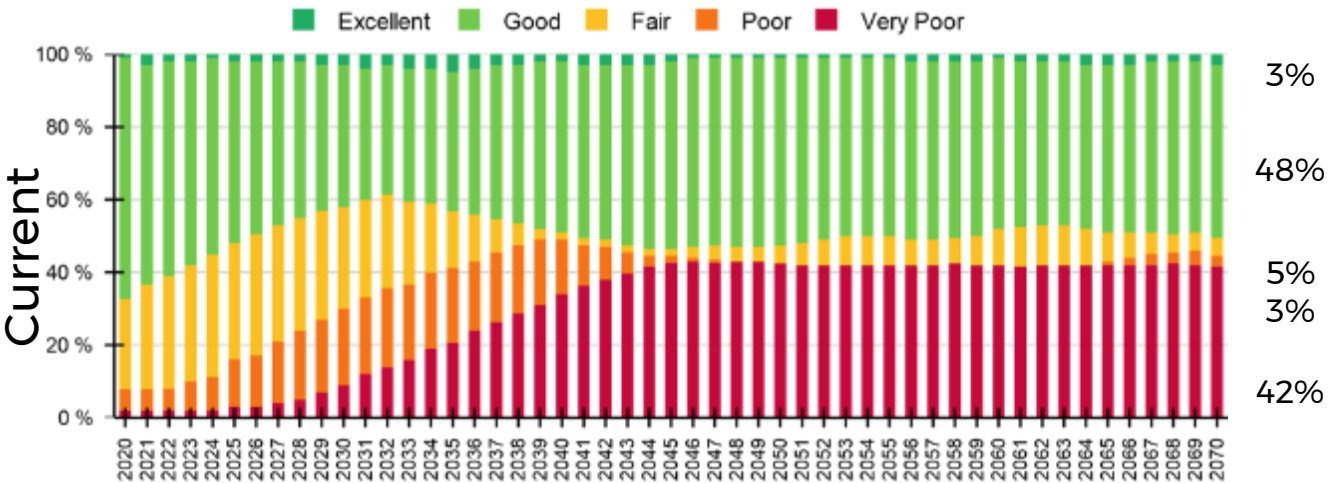
### Service Level Driven Investment

- Optimization – Minimize Cost
- Less than 5% of Collectors in Poor and none in Very Poor
- Less than 10% of network in Poor, and less than 5% in Very Poor

### Balanced Investment

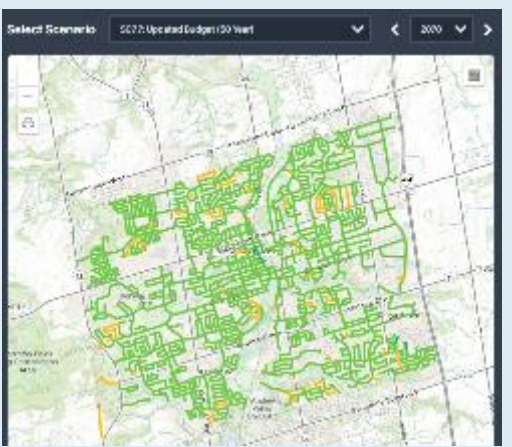
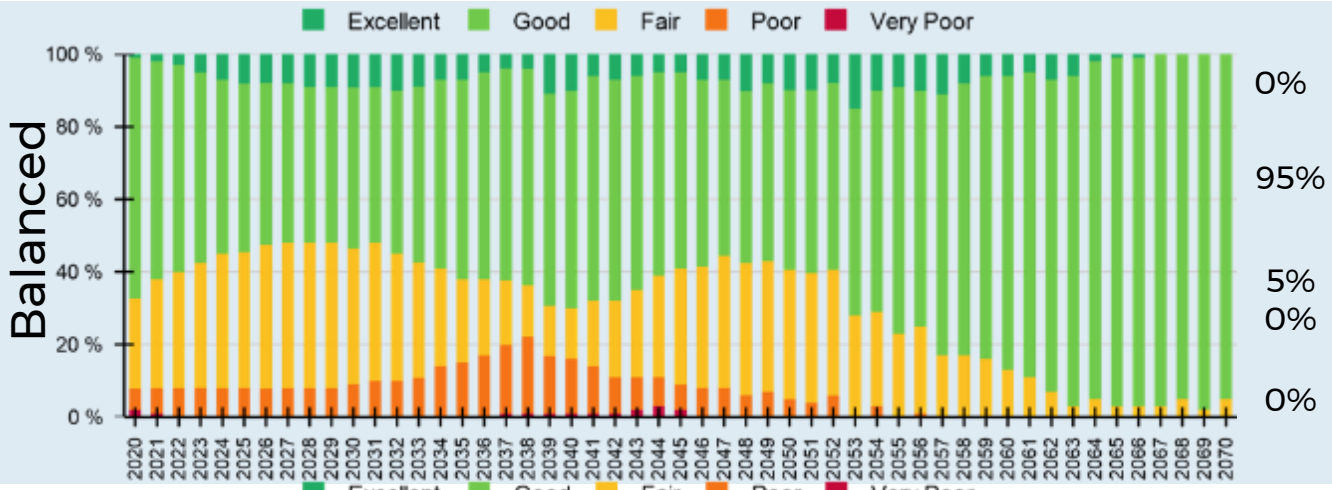
- Target Service Levels with investment
- Constant budget increase (\$1.05M) annually, distributed across all asset types based on need

Balanced Scenario-  
Road Pavements

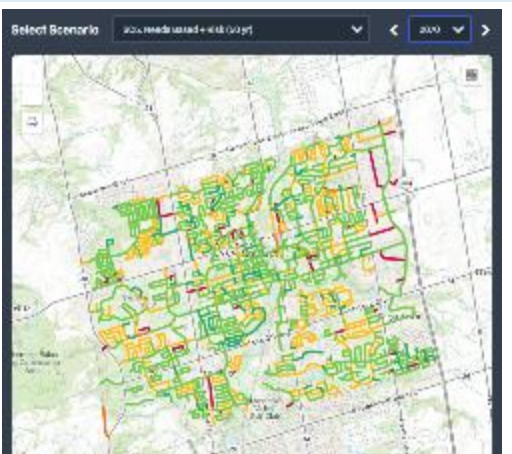
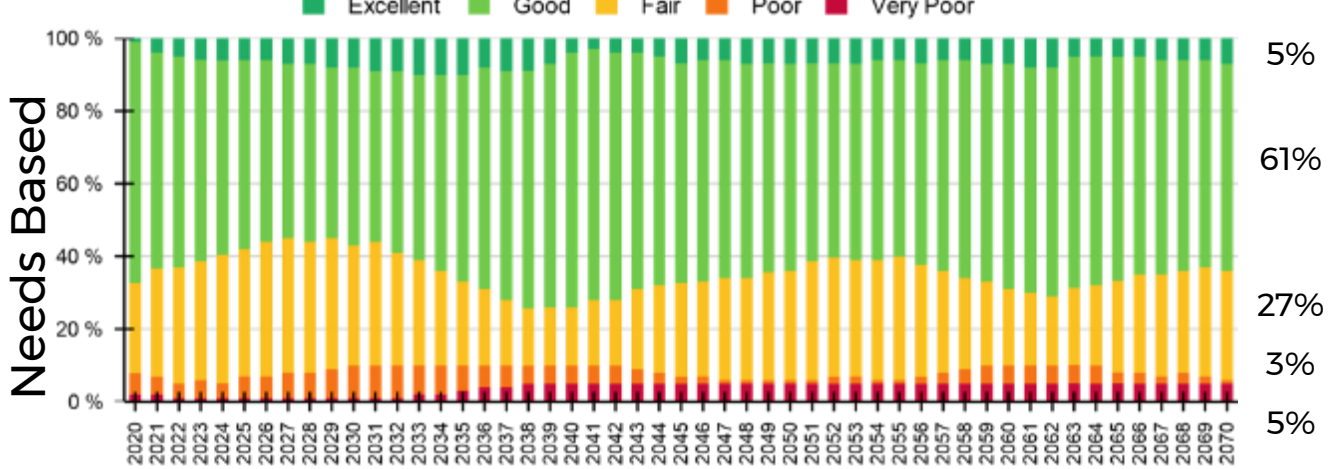


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Less than 5% of  
Collectors in Poor  
and none in Very  
Poor



Less than 10% of  
network in Poor,  
and less than 5%  
in Very Poor





## Modelling Outputs – Road Pavements

- If funding is maintained at current levels, roads LOS will decline:
  - e.g. 42% of roads will be in very poor condition



Bridges

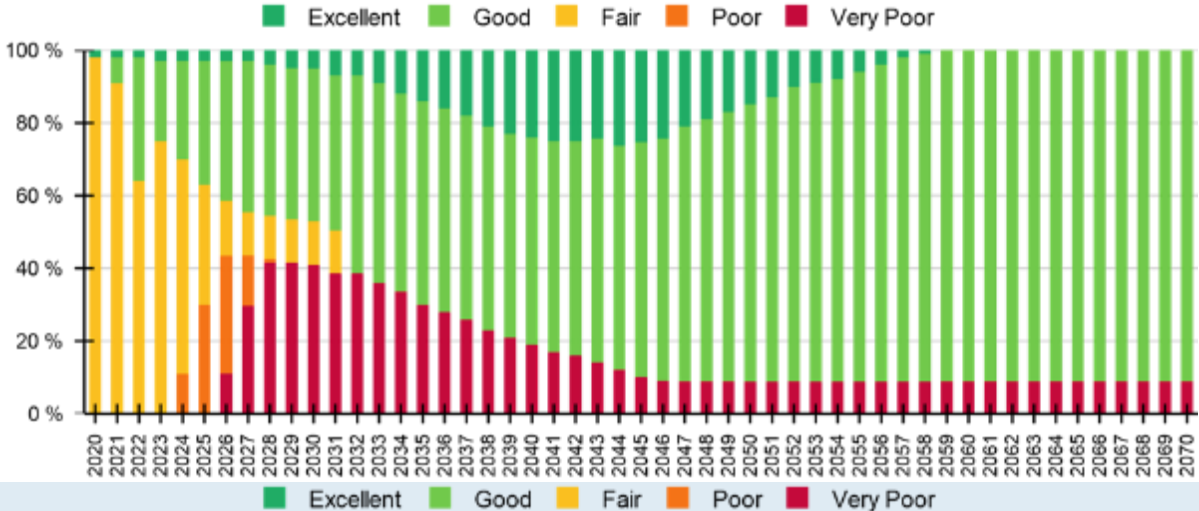
<25% assets in fair condition or worse

No assets in Very Poor condition

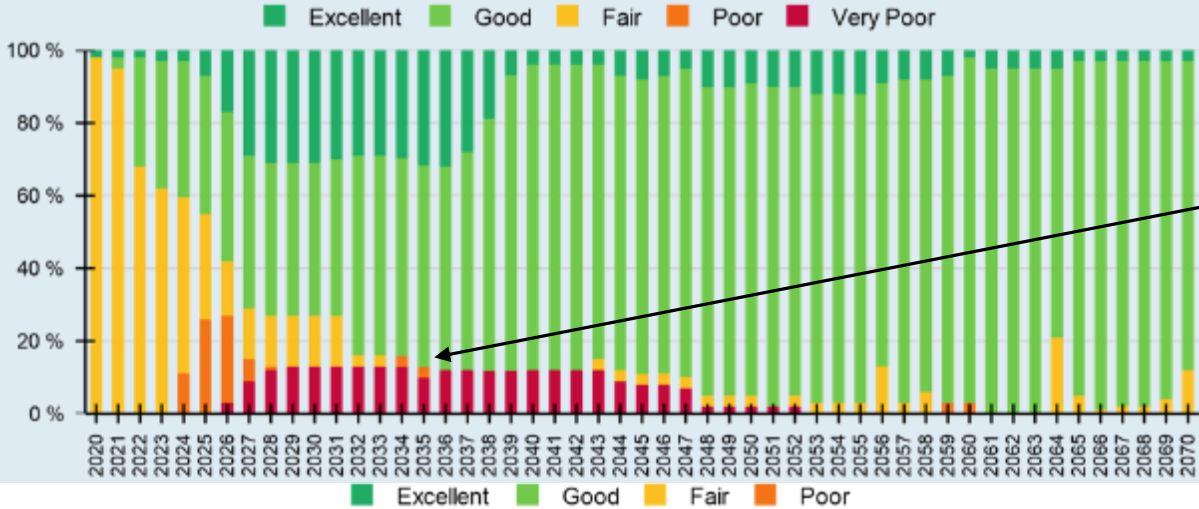
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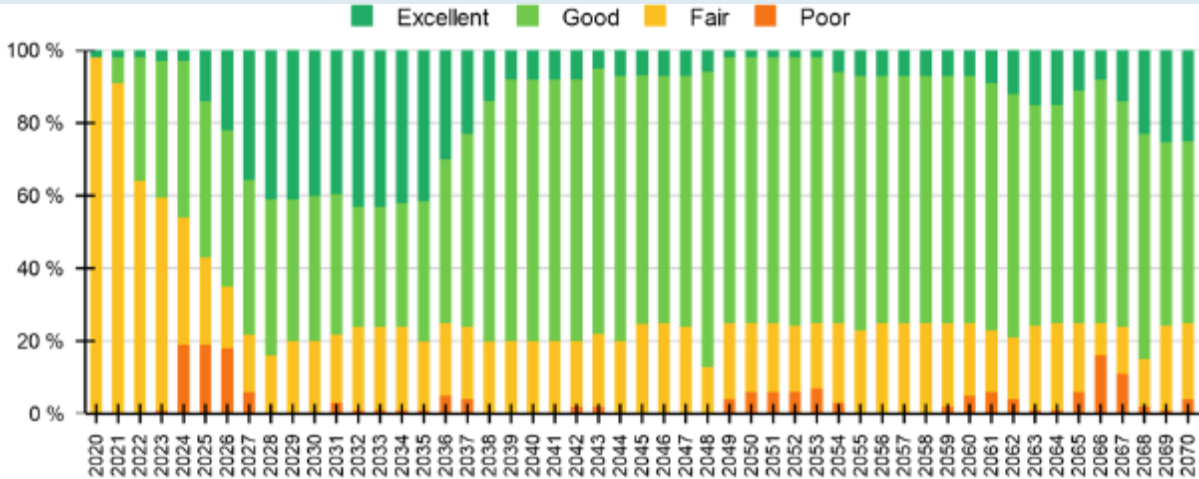
Current



Balanced



Needs Based





## Modelling Outputs – Bridge Structures

- If funding is maintained at current levels, bridges LOS will fall substantially:
  - *E.g. 10-40% of bridges will be in very poor condition over the next 25 years*



Very Good

Good

Fair

Poor

Very Poor



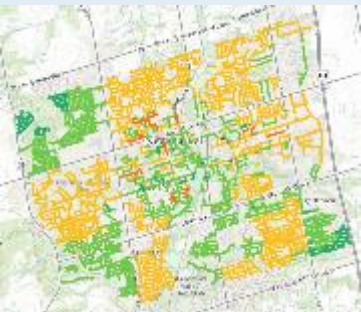
Stormlines

No Ponds in Very Poor

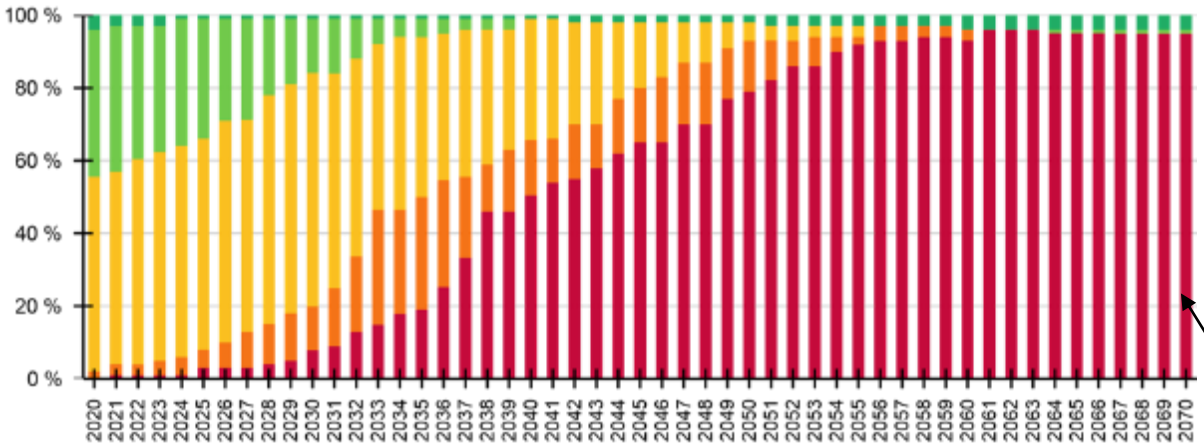
5% in of the network Very Poor and

0% of Large Pipes in Very Poor

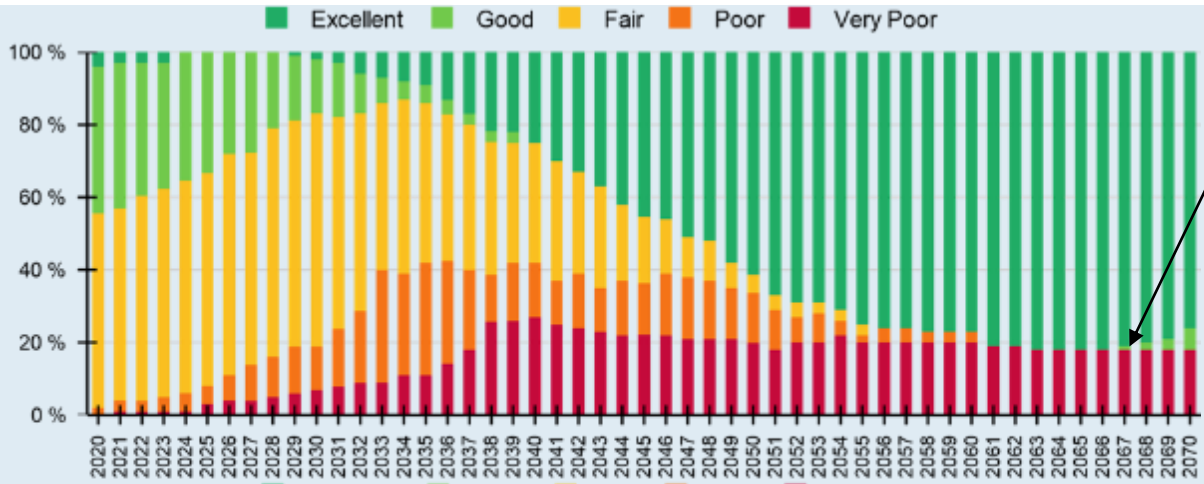
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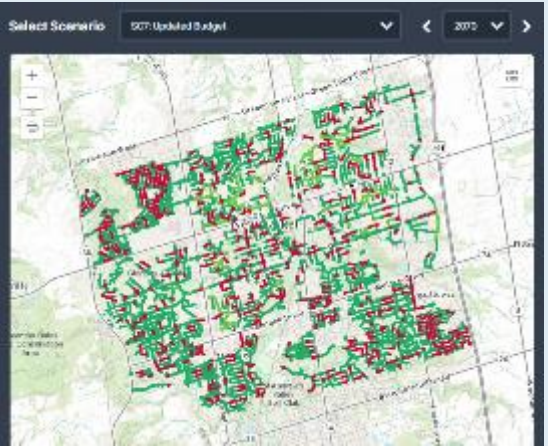
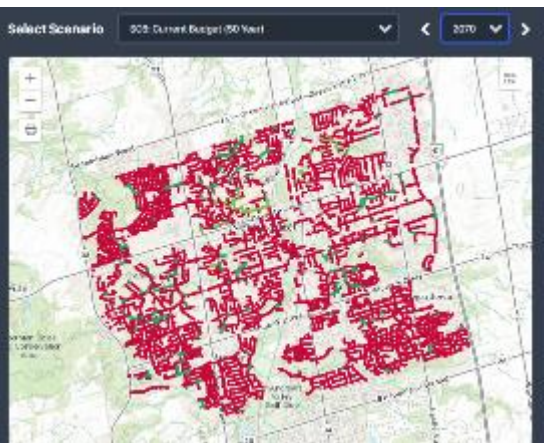
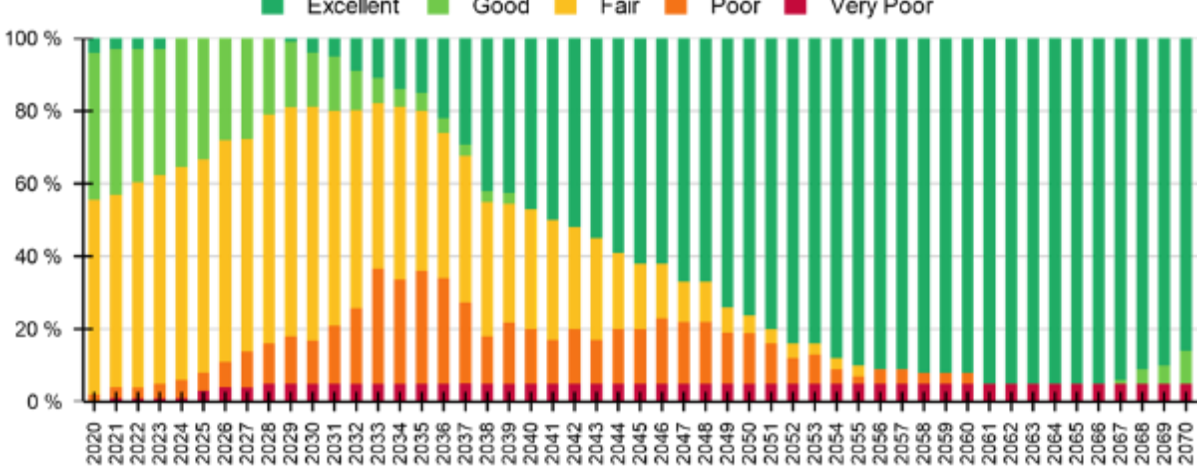
Current



Balanced



Needs Based

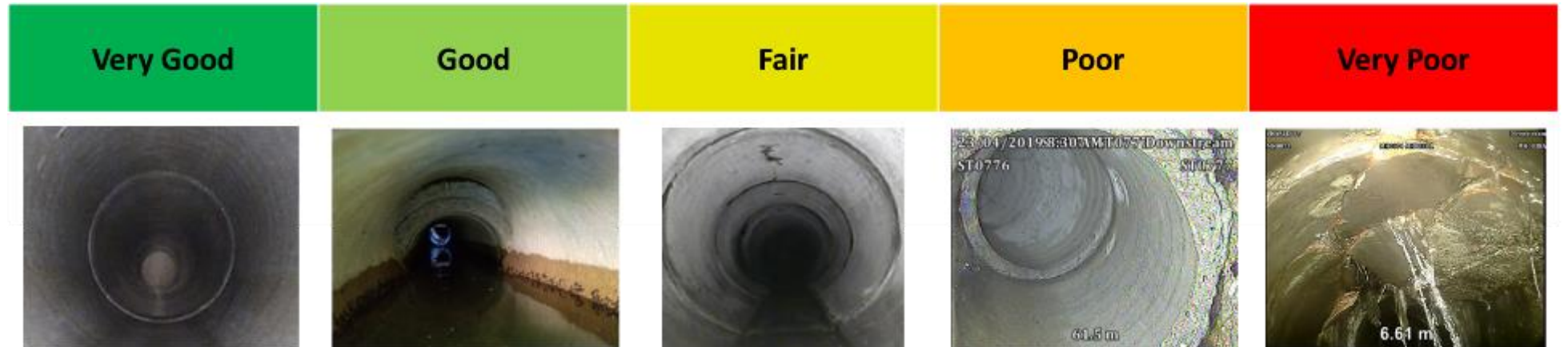
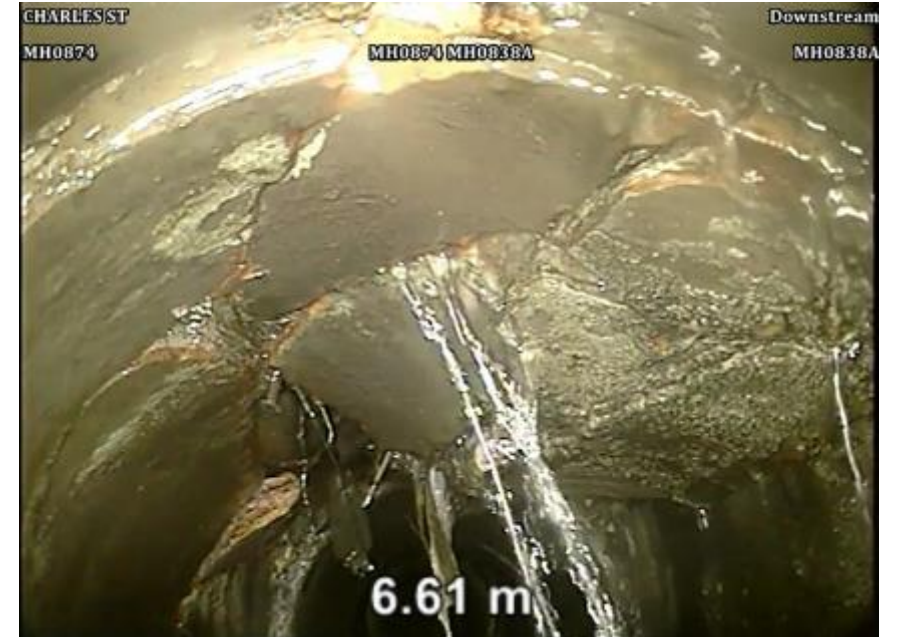


Higher risk of failure / flooding?



## Modelling Outputs – Stormwater Investment

- If funding is maintained at current levels, stormwater LOS will fall drastically:
  - *E.g. over 90% of stormwater pipes will be in very poor condition within the next 35 years*



# Sewerlines

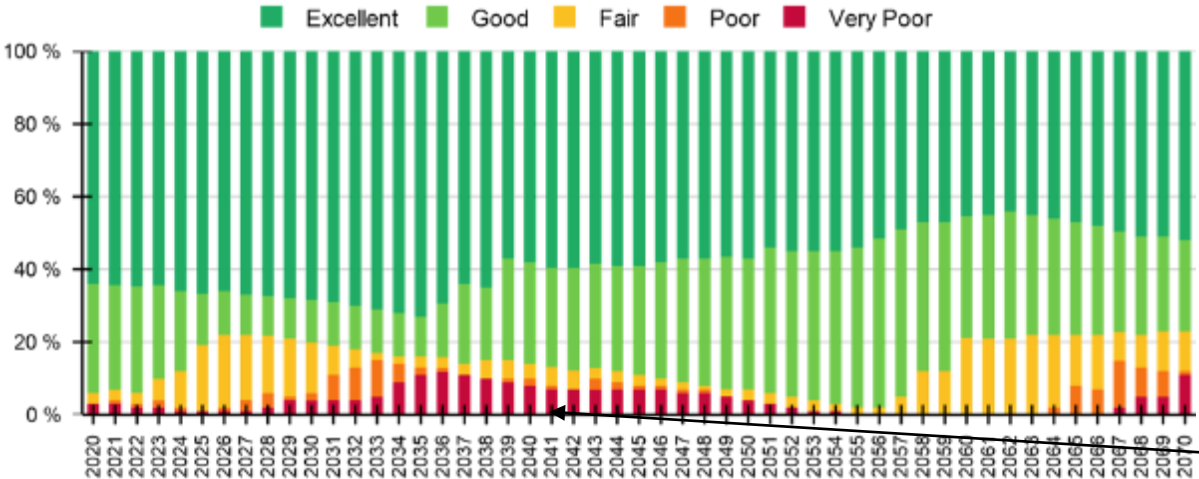
Less than 5% of Sewer Line Network Very Poor and no large pipes in Very Poor

Less than 5% of Sewer Services Very Poor Condition

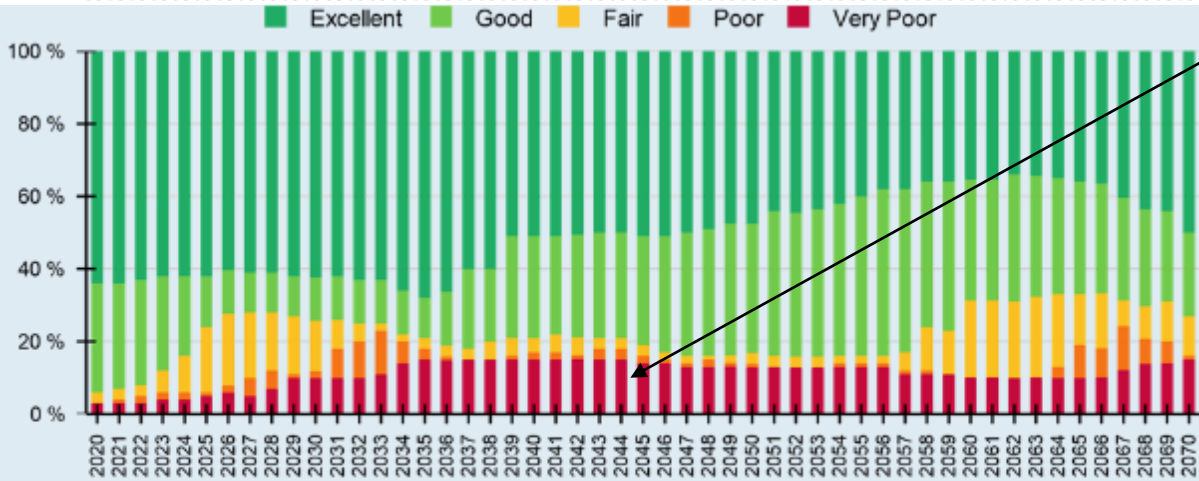
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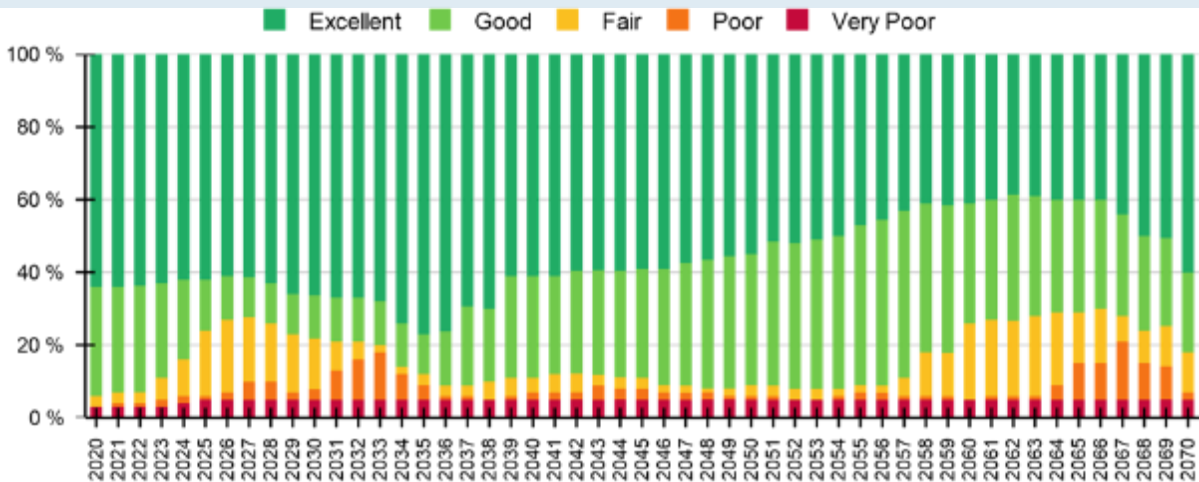
Current



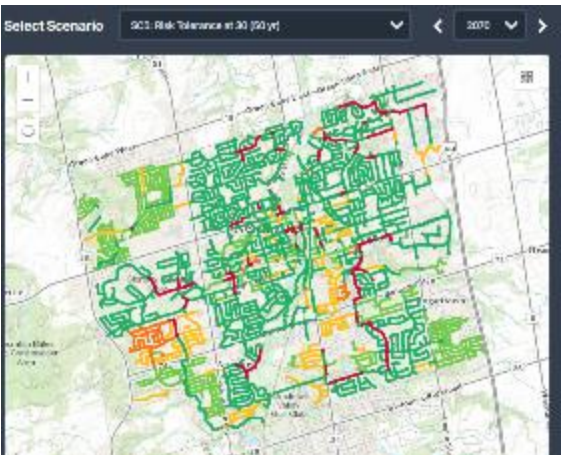
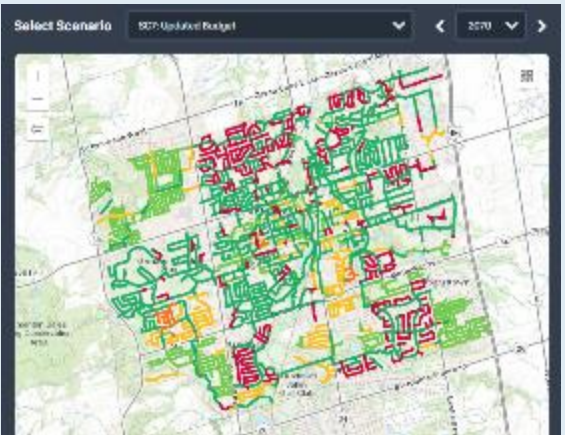
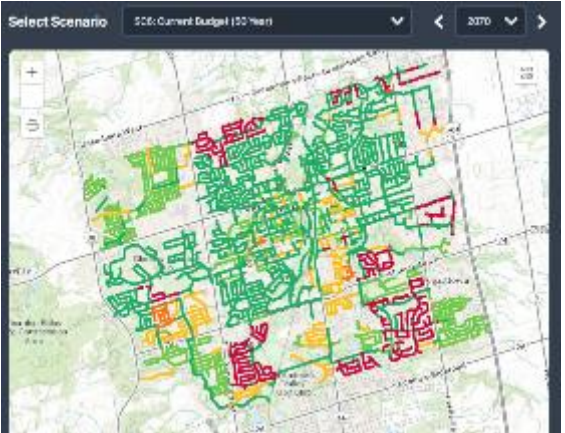
Balanced



Needs Based

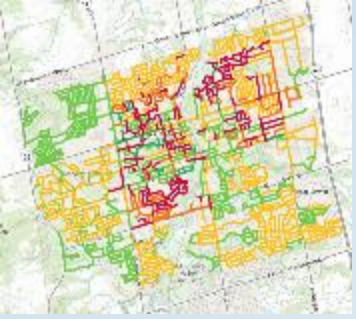


Higher risk of failure

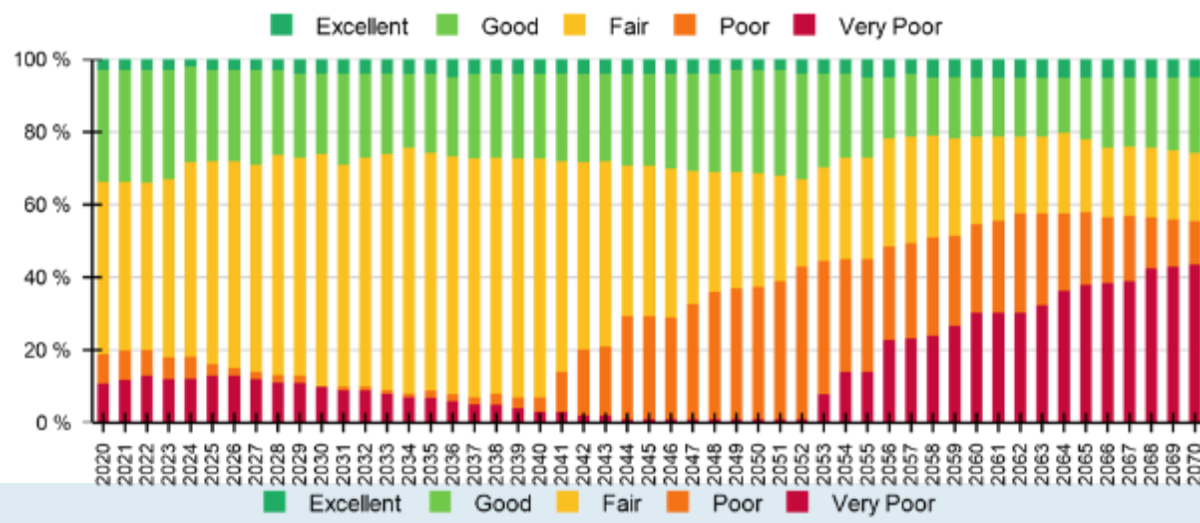




# Waterlines



Current



5%  
21%  
19%  
12%  
44%

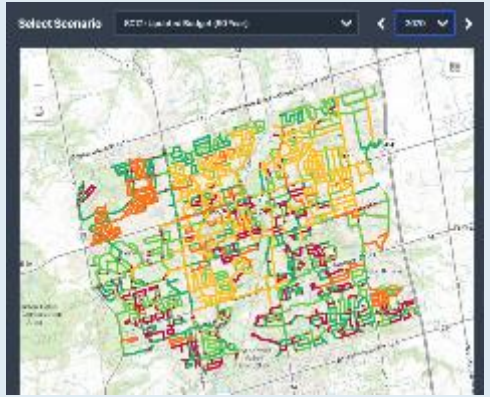


Higher risk of breaks?

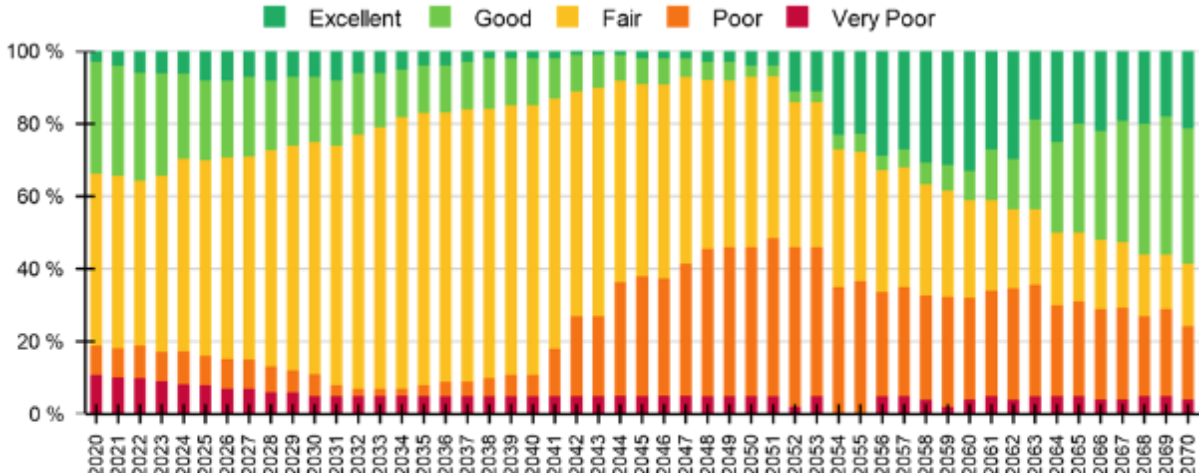
Balanced



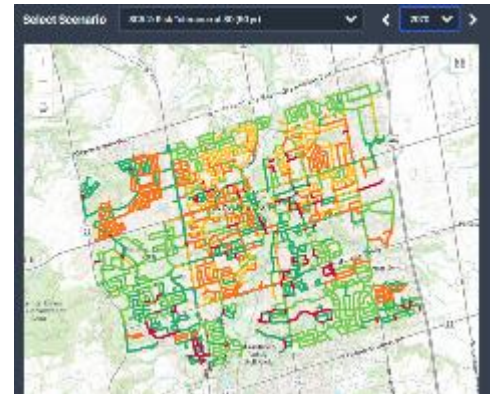
22%  
34%  
23%  
12%  
10%



Needs Based



21%  
37%  
17%  
20%  
4%



30

Less than 5% of Water Network Very Poor and

No Very Large and large pipes in Very Poor



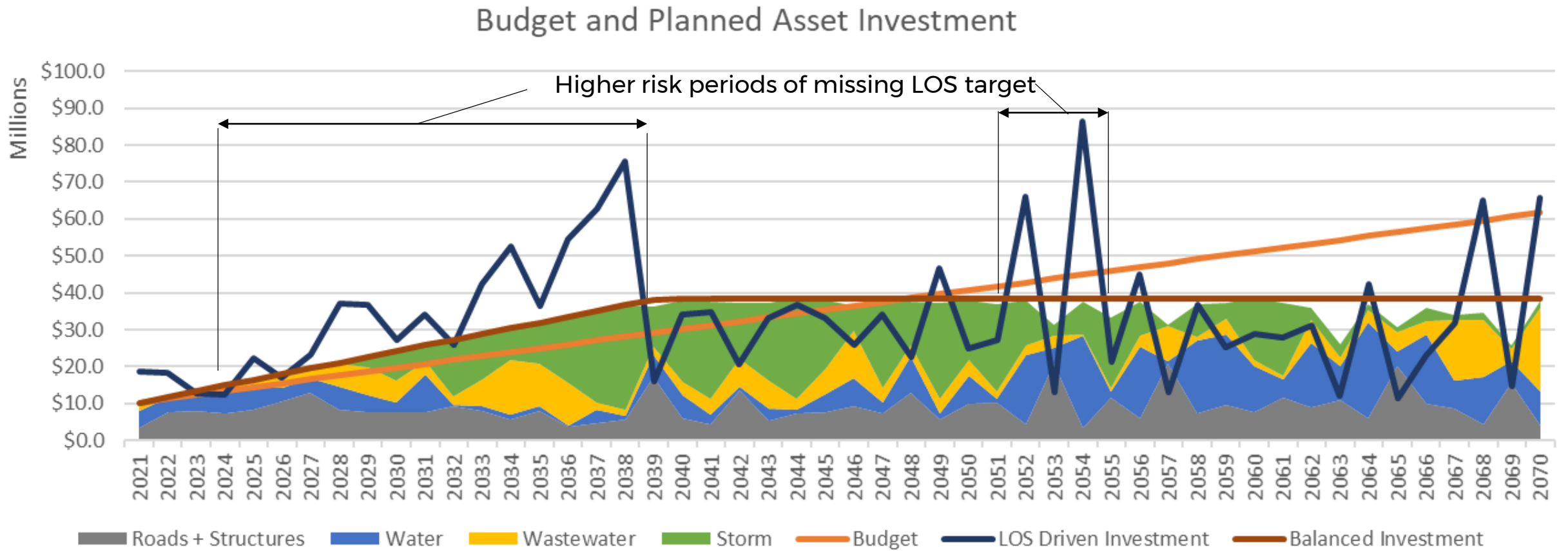
## Modelling Outputs – Investment in Water System

- If funding is maintained at current levels, risk of service failures rises:
  - *E.g. over 40% of water pipes will be in very poor condition within the next 50 years*
  - *The Town will have to accept a higher risk of water breaks beginning around 2053 and beyond*





# Long Term Comparison of Investment Alternatives



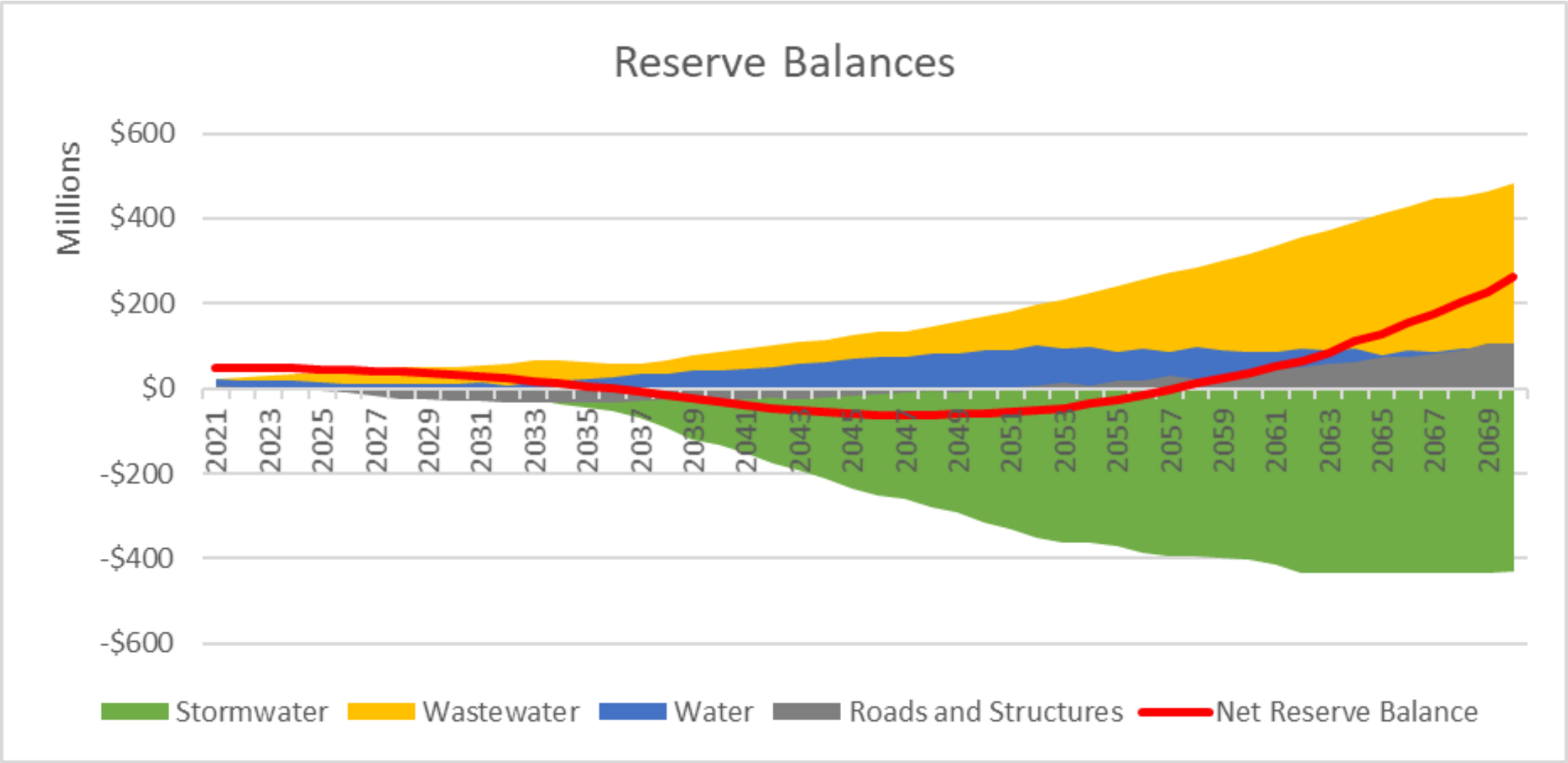


# Review of Shortfalls

*Scenario 2*

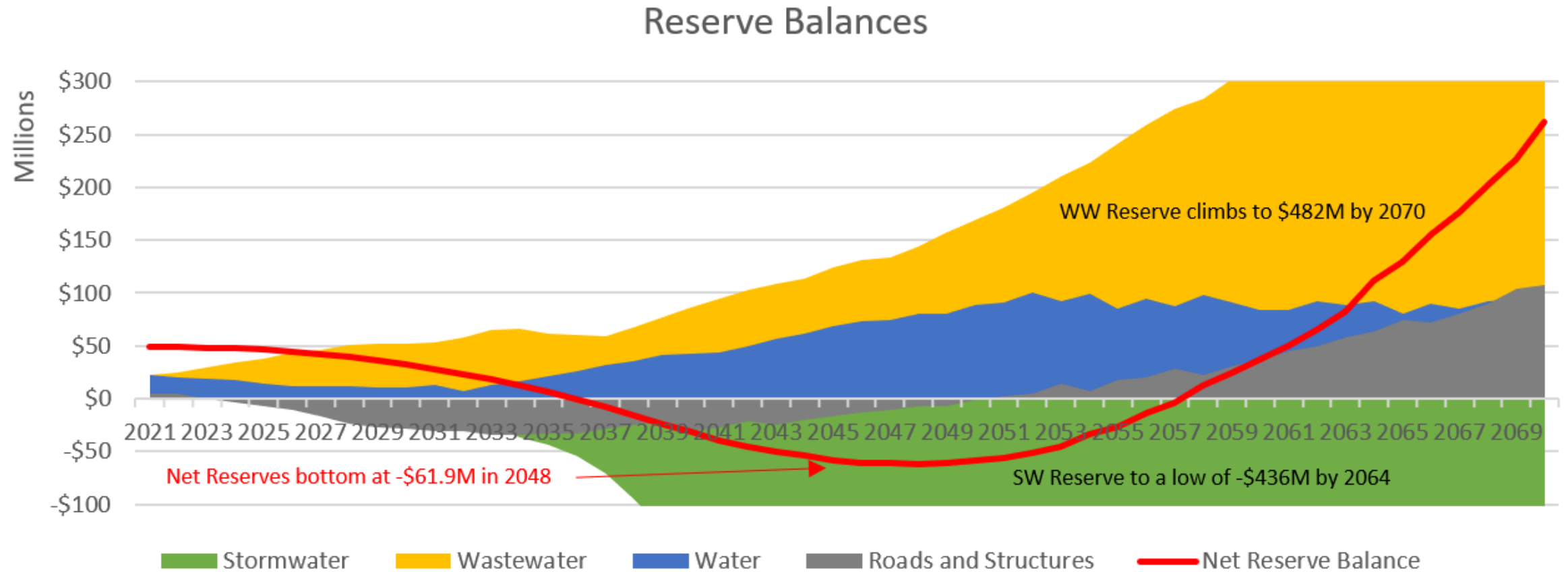


# Reserves- Balanced Investment / Budget



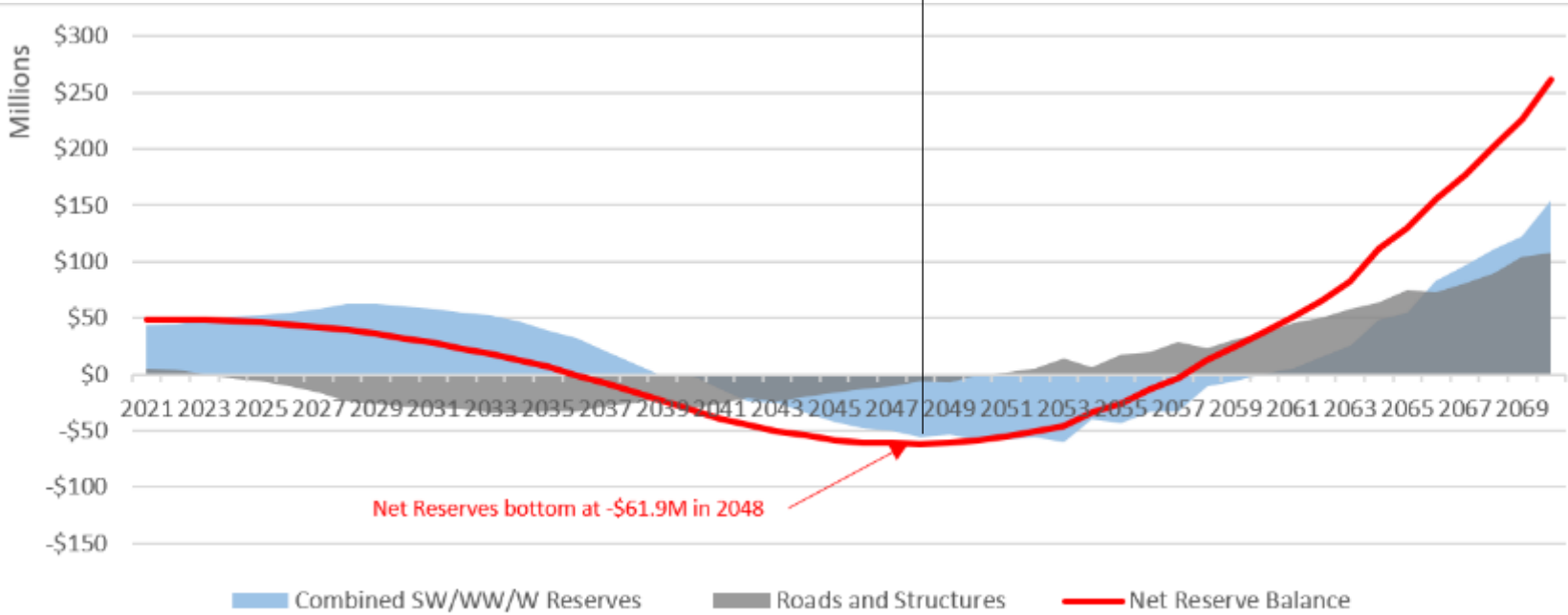
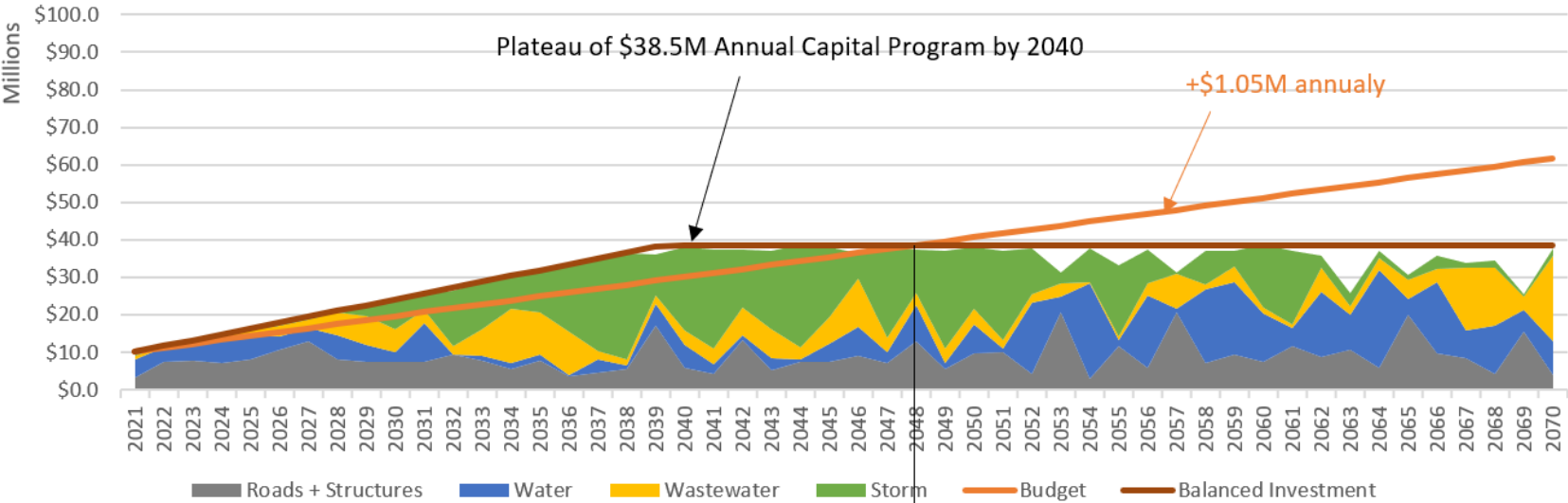
# Reserves- Balanced Investment / Budget

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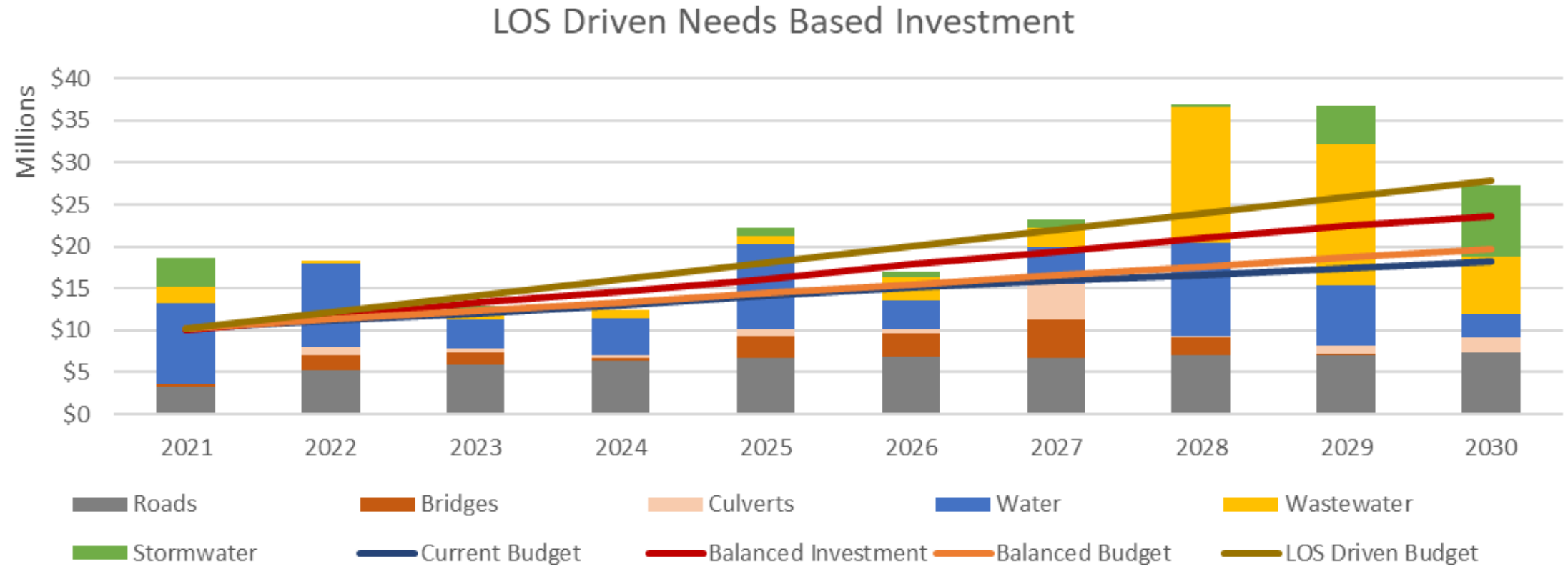




Budget and Planned Asset Investment

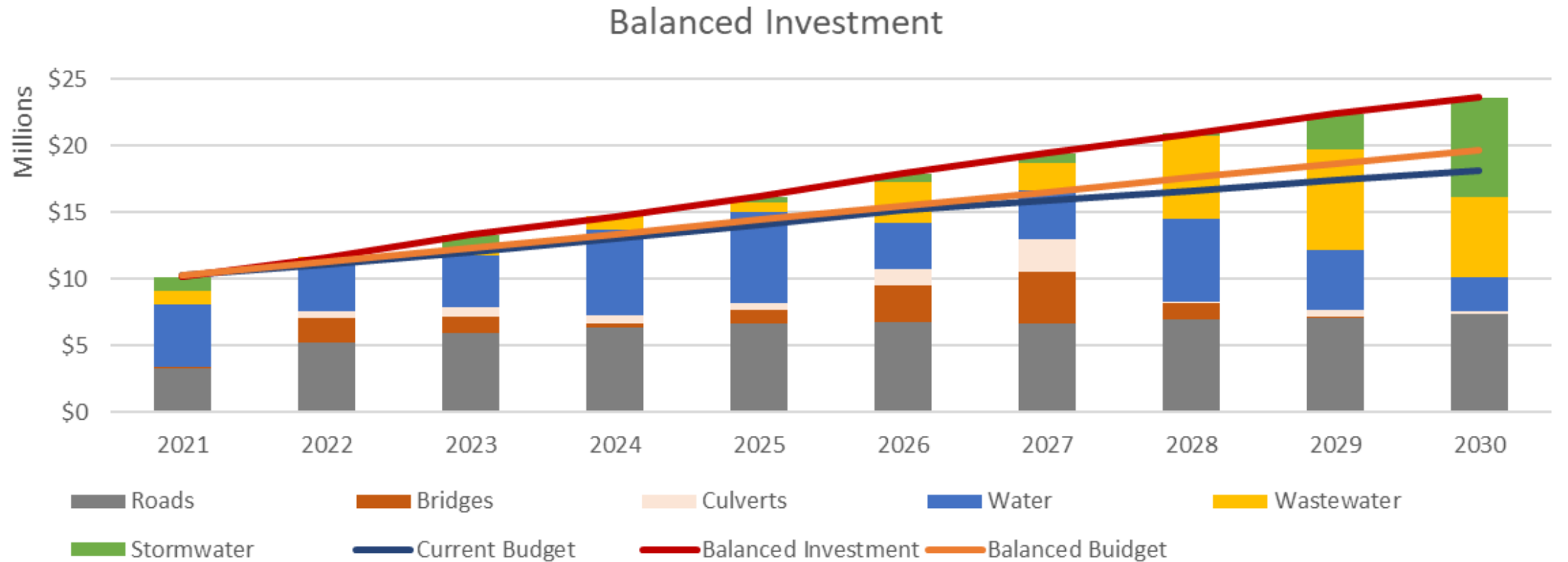


# Near Term Comparison of Current Vs Needs





## Near Term Comparison of Current Vs Balanced

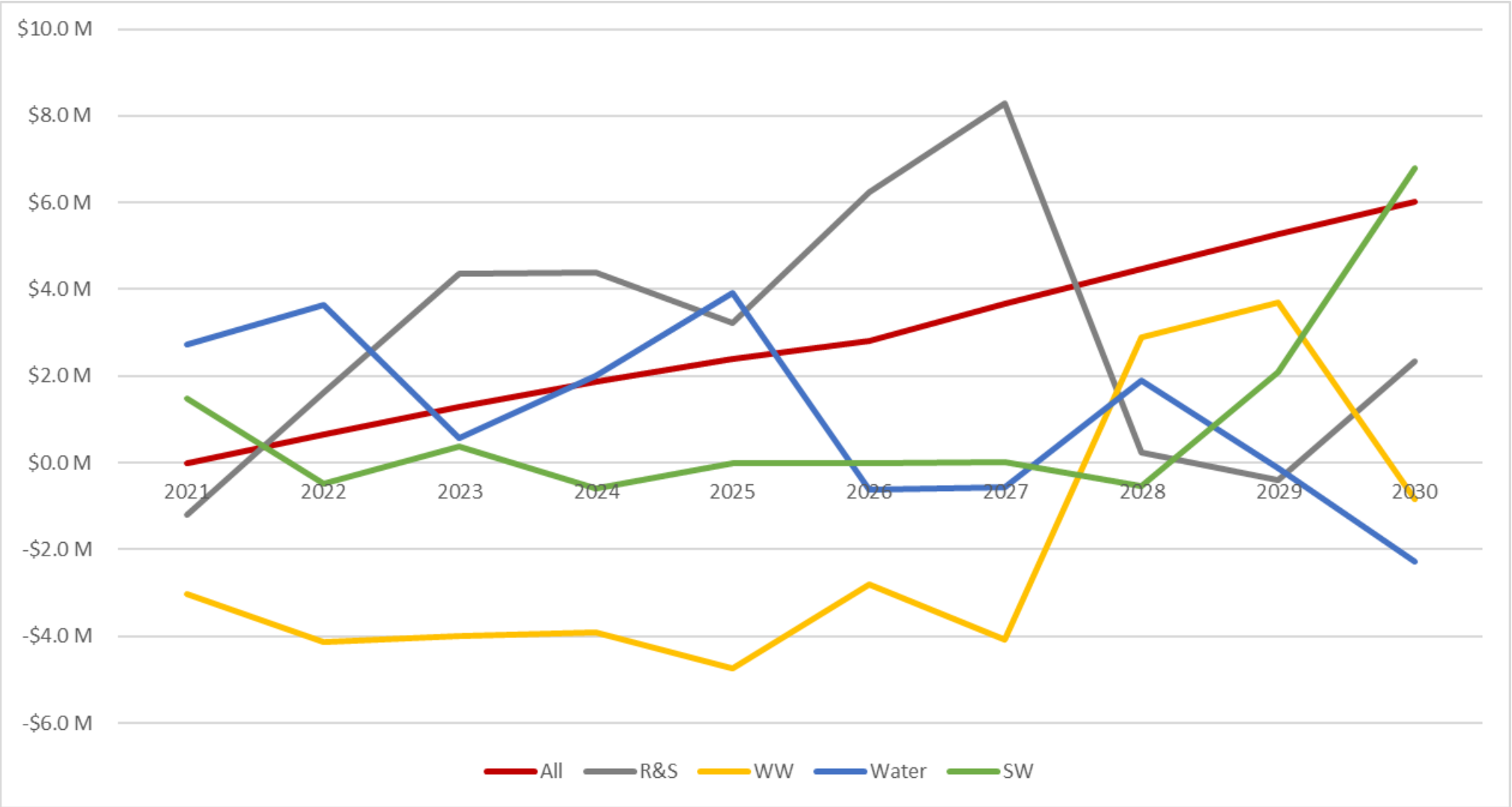


## Balanced Budget Relative to Current Budget

Core Assets	Roads and Structures	Wastewater	Water	Storm	Overall*
2021	\$3.18M (-)	\$4.1M (-)	\$2.5M (-)	\$0.4M (-)	\$10.2M (-)
2022	\$3.5M (+0.04)	\$4.5M (+0.11)	\$2.8M (+0.01)	\$0.5M (-)	\$11.3M (+0.16)
2023	\$3.8M (+0.11)	\$4.9M (+0.20)	\$3.1M (-0.01)	\$0.5M (-)	\$12.3M (+0.30)
2024	\$4.2M (+0.18)	\$5.3M (+0.27)	\$3.3M (-0.06)	\$0.6M (-0.01)	\$13.4M (+0.38)
2025	\$4.5M (+0.24)	\$5.7M (+0.31)	\$3.6M (-0.14)	\$0.6M (-0.02)	\$14.4M (+0.38)
2026	\$4.8M (+0.29)	\$6.2M (+0.32)	\$3.8M (-0.25)	\$0.7M (-0.04)	\$15.5M (+0.31)
2027	\$5.1M (+0.33)	\$6.6M (+0.50)	\$4.1M (-0.15)	\$0.7M (-0.03)	\$16.5M(+0.65)
2028	\$5.5M (+0.37)	\$7.0M (+0.67)	\$4.4M (-0.06)	\$0.8M (-0.01)	\$17.6M (+0.97)
2029	\$5.8M (+0.39)	\$7.4M (+0.84)	\$4.6M (+0.02)	\$0.8M (-)	\$18.6M (+1.26)
2030	\$6.1M (+0.41)	\$7.8M (+0.99)	\$4.9M (+0.10)	\$0.8M (+0.02)	\$19.7M (+1.52)

\* \$1.05M proportionally distributed to existing budgets

# Balanced Investment Relative to Current Budget



## Comparison of Investment Alternatives – Core Assets

Alternative	Current Budget	Balanced Investment	Funding Initial LOS Targets
Service Outcomes	<ul style="list-style-type: none"> <li>- LOS not achieved</li> <li>- High risk of service failure</li> </ul>	<ul style="list-style-type: none"> <li>- LOS partially achieved</li> <li>- Periods of service failure risk</li> </ul>	<ul style="list-style-type: none"> <li>- LOS achieved</li> </ul>
Budget Increases	Keep pace with inflation only	+\$1.05M annually every year before inflation	+\$1.964 annually every year before inflation
Debt Impacts	Minimal	No greater than \$75M	No greater than \$75M
Reserves	Static, currently at ~\$49M	Debt supported for 20 years, \$261m by 2070	Debt supported for 8 years, \$1.27B by 2070
Reserves Vs Peers	Last	Below median, likely lowest quartile (~5X)	Top Quartile (~26x)
Capacity Requirements	No change	Capital program slowly rises from ~\$10M to \$38.5M by 2040	Variable, Avg: \$33.2M Low: \$11.4M High: 86.6M
Increase per Household	Keep pace with Inflation	\$32.40 per household per year before inflation	\$60.54 per household per year before inflation



# Recommendations and Next Steps

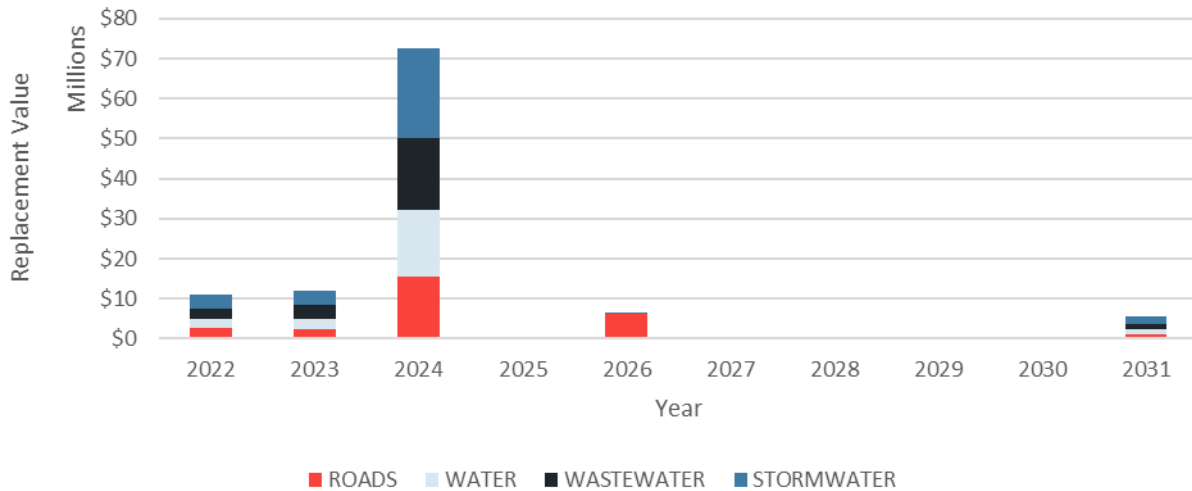
*Financial Strategy*

## Recommendations

- Newmarket is well positioned to invest in a long-term fiscal strategy
- The Town needs to build reserves for the foreseeable future
- The Town is currently under-funding their infrastructure portfolio or must accept lower service levels or higher risk
- The Town likely has capacity to increase revenues and remain competitive among its peers
- The Town may wish to evaluate investment requirements over a longer time frame and incorporate other objectives including criticality and service risk.

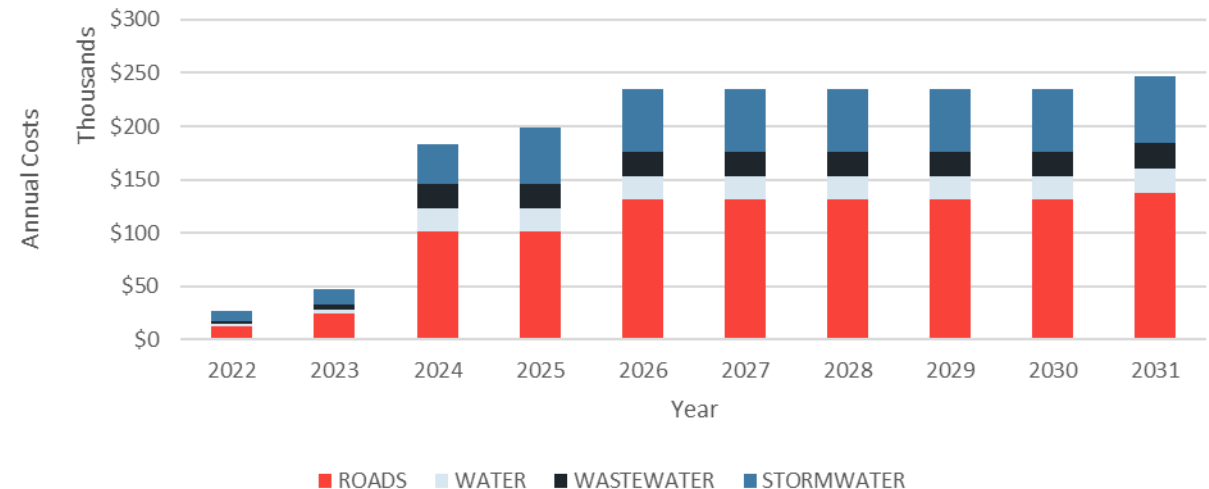


## The Extra Costs of Known Growth



- Known capital projects for Urban Expansion / Intensification
- Known-unknown limitations (UE only 3-4 years, UI not continuous)
- No forecast for regulatory or climate impacts
- Development Charge

- For the known capital projects
- Increases in O&M costs forecasted
- Likely under-forecasting budget requirements



# Thank you!

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