



Municipality of Mississippi Mills

SPECIAL COUNCIL AGENDA

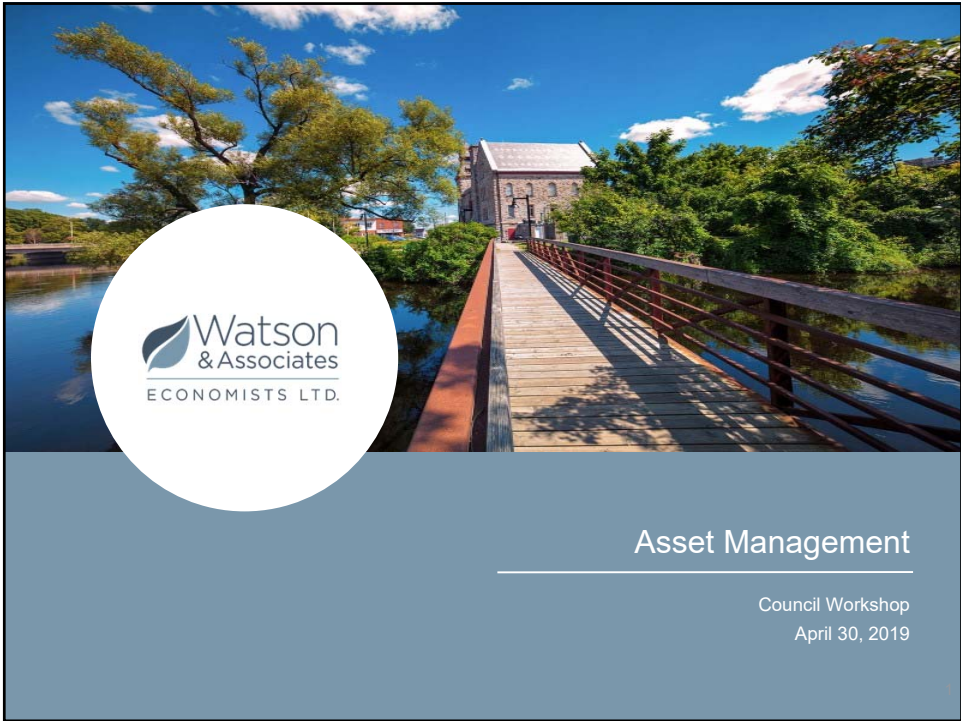
Tuesday, April 30, 2019

3:00 p.m.

Council Chambers, Municipal Office

PLEASE REMEMBER TO SET YOUR CELL PHONE TO SILENT AND THAT NO RECORDING DEVICES ARE PERMITTED.

- A. CALL TO ORDER (3:00 p.m.)
- B. ATTENDANCE
- C. APPROVAL OF AGENDA
- D. DISCLOSURE OF PECUNIARY INTEREST OR GENERAL NATURE THEREOF
- E. DELEGATION, DEPUTATIONS, AND PRESENTATIONS
 - 1. Presentation by Peter Simcisko, Watson & Associates Pages 2-24
Re: Asset Management
- F. CONFIRMATORY BY-LAW – 19-43
- G. ADJOURNMENT



Asset Management

Council Workshop
April 30, 2019

Introduction

Asset Management – Basic Questions

- Do you know what sewer, water, road and facility assets you own?
- Do you know the condition and service capacity of your assets?
- Do you know which assets are most critical?
- Do you know the service levels stakeholders expect and at what cost?
- Do you know what your assets are worth and how much it would cost to replace them?



Introduction

How about these questions?

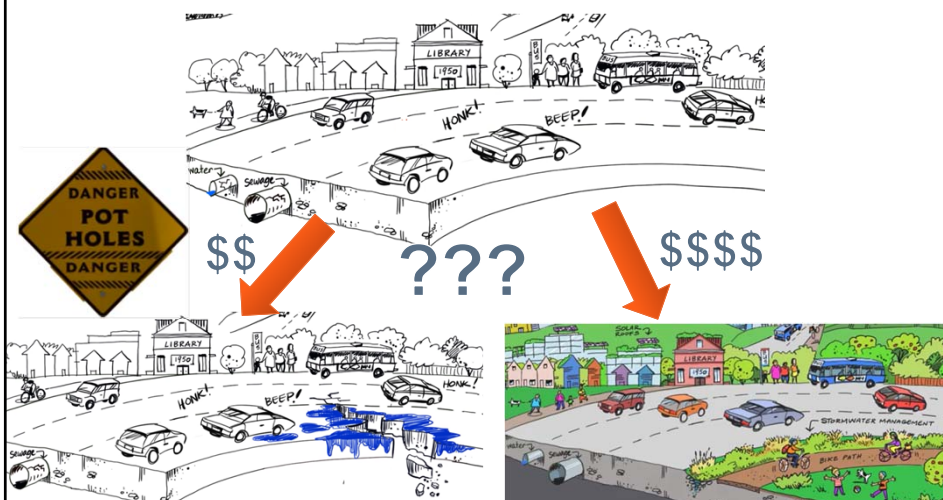
- What's the best **service** level for a given amount of funding?
- What will be the future **asset performance** if we change the current level of **funding**?
- How much **funding** is required to bring assets up to the target **performance** level?



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Introduction

Do you know what outcomes will result from your decisions?



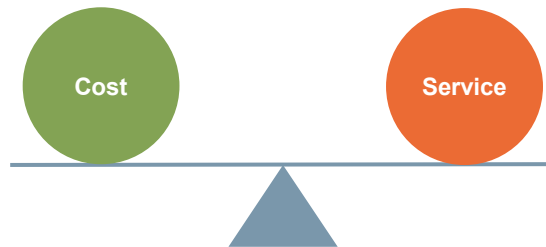
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Introduction

Asset Management – what is it?



- **Assets** – things that provide value to the municipality and its stakeholders
- **Asset Management** – “the set of planned actions that will enable the assets to provide the desired level of service in a sustainable way, while managing risk, at the lowest lifecycle cost”
- Balancing **lifecycle costs** and **levels of service**



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Introduction

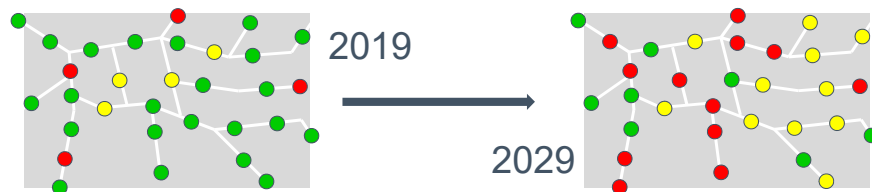
Asset Management – Levels of Service



● Acceptable



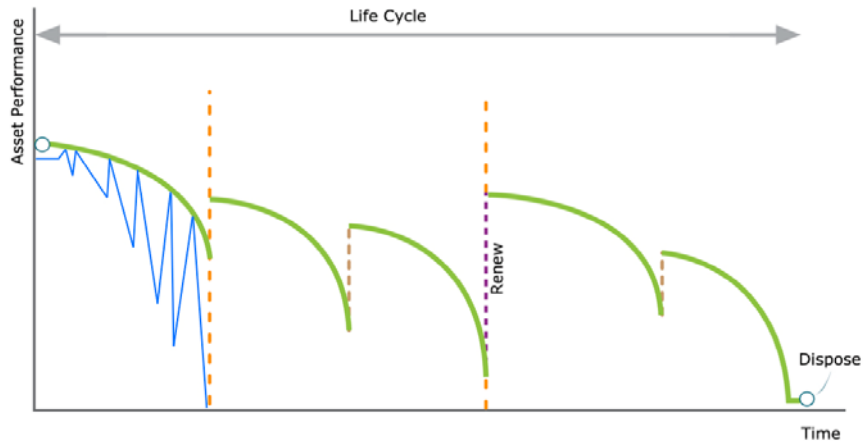
● Unacceptable



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Introduction

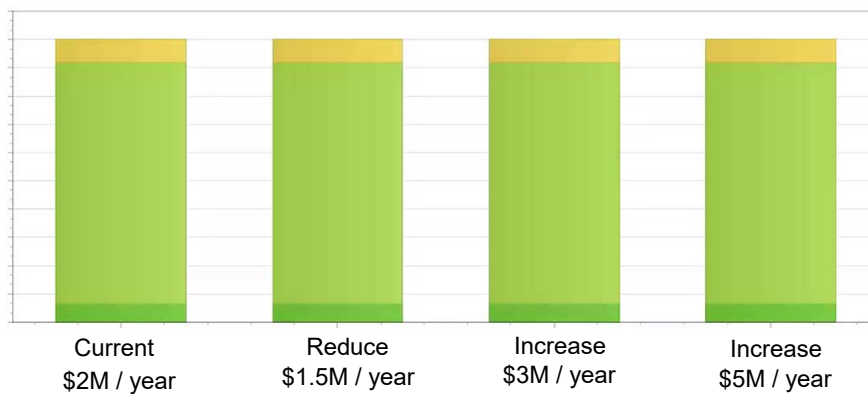
Asset Management – lifecycle approach



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Introduction

Asset Management – Choices – What is the target level of service? How much will it cost?



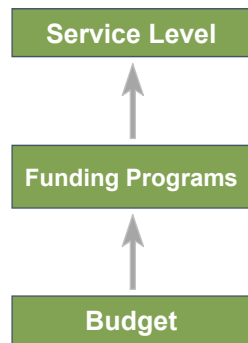
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Introduction

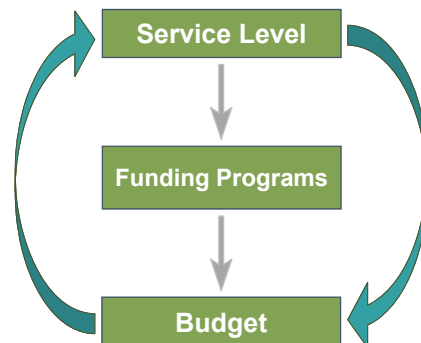
Asset Management – Budget vs. Service Driven



Budget Driven Framework



Service Driven Framework



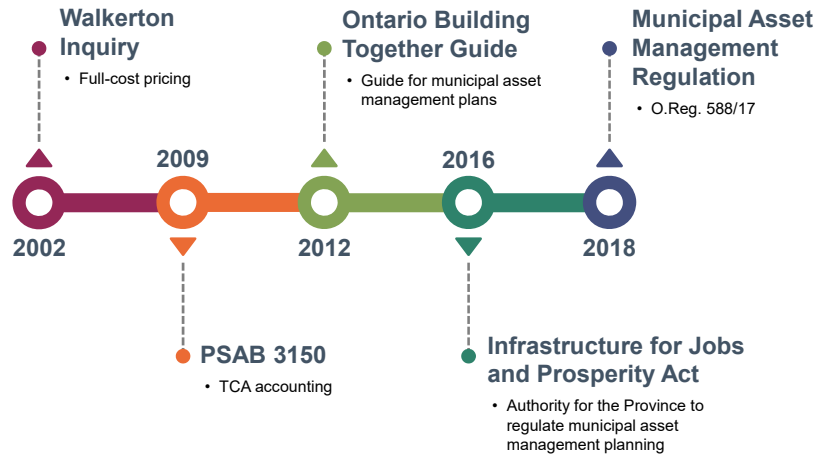
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Background & Context

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Background & Context

Evolution of Asset Management in Ontario



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Background & Context

Ontario Regulation 588/17



	1-Jan-18	1-Jul-19	1-Jul-20	1-Jul-21	1-Jul-22	1-Jul-23	1-Jul-24
Strategic Asset Management Policy	[Timeline bar with diamond at 1-Jul-19]						[Update diamond]
Asset Management Plans - Current Levels of Service - Current levels of service - Asset (inventory) analysis - Current performance of assets - Lifecycle activities and costs to maintain current levels of service - Impacts of growth on current levels of service	[Timeline bar with diamonds at 1-Jul-21 and 1-Jul-23]						
			[Core municipal infrastructure assets]		[All municipal infrastructure assets]		
Asset Management Plans - Proposed Levels of Service - Proposed levels of service - Proposed performance of assets - Lifecycle activities and costs to achieve proposed levels of service - Financial strategy - Impacts of growth on proposed levels of service	[Timeline bar with diamond at 1-Jul-24]						

◆ Deadline for completion
◇ Update

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Background & Context

Line of Sight

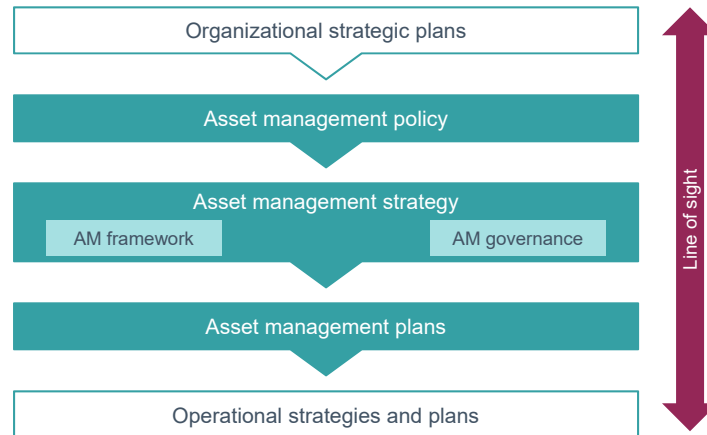


Figure adapted from Federation of Canadian Municipalities: How to develop an asset management policy, strategy and governance framework

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Ontario Regulation 588/17

Strategic Asset Management Policy

- Identification of municipal goals/plans/policies the asset management plan (AMP) would support
- How the AMP would inform the development of the budget and any long-term financial plans
- Approach to continuous improvement and adoption of appropriate asset management practices
- Principles that would guide asset management planning, including principles from section 3 of *Infrastructure for Jobs and Prosperity Act, 2015*

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Ontario Regulation 588/17
Strategic Asset Management Policy



- A commitment to consider:
 - Actions, adaptation opportunities, mitigation measures to address vulnerabilities caused by climate change
 - Disaster planning (with any required contingency funding)
- A process to ensure that AMP aligns with Ontario's land-use planning framework
- Capitalization thresholds for AMP, and how this compares to the municipality's tangible capital asset policy

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Ontario Regulation 588/17
Strategic Asset Management Policy



- A commitment to coordinate planning between interrelated assets with separate ownership structures
- Identification of individuals responsible for asset management planning in the municipality, including an "executive lead" and how Council will be involved
- A commitment to provide opportunities for stakeholder input

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Ontario Regulation 588/17
Asset Management Plans (Current Levels of Service)



- AMP must include:
 - Asset (Inventory) Analysis
 - Current Levels of Service
 - Current Performance of Each Asset Category
 - Lifecycle Activities and Associated Costs
 - Growth Considerations

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Ontario Regulation 588/17
Asset Management Plans (Current Levels of Service)



- Asset (Inventory) Analysis
 - Summary of the assets
 - Replacement cost of the assets
 - Average age of the assets (it is noted that the Regulation specifically requires average age to be determined by assessing the age of asset components)
 - Information available on condition of assets
 - Approach to condition assessments (based on recognized and generally accepted good engineering practices where appropriate)
 - Identification of how background information will be made available to the public

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Ontario Regulation 588/17
 Asset Management Plans (Current Levels of Service)



- Current Levels of Service:
 - Core assets include, prescribed qualitative community levels of service, and metrics for technical levels of service
 - Non-Core assets, each municipality will establish its own measures for levels of service

Service Attribute	Community LoS (Qualitative Descriptions)	Technical LoS (Technical Metrics)
Scope	Description, which may include maps, of the road network in the municipality and its level of connectivity.	Number of lane-kilometres of each of arterial roads, collector roads and local roads as a proportion of square kilometres of land area of the municipality.
Quality	Description or images that illustrate the different levels of road class pavement condition.	Paved roads - average pavement condition index value. Unpaved roads - average surface condition (e.g. excellent, good, fair or poor).

Ontario Regulation 588/17
 Asset Management Plans (Current Levels of Service)



- Current Performance of Each Asset Category:
 - Establish performance measures for each asset category
 - Tied to technical level of service performance or other key performance indicators
 - Data used to define “current” performance must be at most two years old (e.g. 2019 data for core 2021)

Ontario Regulation 588/17

Asset Management Plans (Current Levels of Service)



- Lifecycle Activities and Associated Costs
 - 10-year forecast of lifecycle activities required to maintain current levels of service
 - Identification of costs associated with those activities
 - Requires an assessment of the full lifecycle of assets (i.e. activities beyond straight replacement of assets)
 - Options for lifecycle activities that could potentially be undertaken, and risks associated with each of these options
 - 10-year forecast should be premised on lifecycle activity options that can sustain the current level of service at the lowest cost

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Ontario Regulation 588/17

Asset Management Plans (Current Levels of Service)



- Growth Considerations
 - Need to consider impacts of growth on the lifecycle activities required to maintain current levels of service
 - Different levels of analysis based on the population size of the municipality

Population	AMP Requirements
< 25,000	<ul style="list-style-type: none">• High-level analysis of the impact of growth
≥ 25,000	<ul style="list-style-type: none">• Specific population and employment forecasts• Forecast of lifecycle costs required to maintain current levels of service in light of growth

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Ontario Regulation 588/17

Asset Management Plans (Proposed Levels of Service)



- Building on the current levels of service and asset performance analysis described in the preceding slides, Phase 3 requirements include the following:
 - 10-year forecast identifying the **proposed** levels of service for each asset category
 - Options for proposed levels of service and the risks associated with each to the long-term sustainability
 - AMP must identify how these differ from current levels of service, and whether they are achievable and affordable
 - Forecast of the proposed performance of each asset category for each year of the 10-year forecast period

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Asset Management Plans (Proposed Levels of Service)



- Lifecycle Management and Financial Strategy
 - Forecast of lifecycle activities required to achieve proposed levels of service and the associated costs
 - Options for lifecycle activities that could potentially be undertaken, and risks associated with each of these
 - Forecast should be premised on lifecycle activity options that can achieve and sustain the proposed level of service at the lowest cost

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Asset Management Plans (Proposed Levels of Service)



- Lifecycle Management and Financial Strategy (continued)
 - Estimated annual costs of undertaking the lifecycle activities
 - Funding that is expected to be available and an examination of options to maximize available funding
 - If a funding shortfall is identified (relative to the projected costs of lifecycle activities), then the AMP will need to identify which lifecycle activities will actually be undertaken during the forecast period
 - Explanation of how the municipality will manage risks associated with not undertaking any of these activities

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Ontario Regulation 588/17

Asset Management Plans (Proposed Levels of Service)



- Growth Considerations
 - Different levels of analysis based on the population size of the municipality

Population	AMP Requirements
< 25,000	<ul style="list-style-type: none">• Discussion of how growth assumptions were used to inform the lifecycle management and financial strategy
≥ 25,000	<ul style="list-style-type: none">• Forecast of estimated expenditures associated with achieving the proposed levels of service in light of anticipated population and employment growth• Incremental funding expected to become available as a result of population and employment growth, broken down by source• Overview of risks associated with implementing the AMP and actions proposed in response to those risks

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Levels of Service

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Levels of Service

Types of Service Level



There are two broad types of Service Level:

- **Community:** the performance standard/objectives for the long-term management of the assets

Example: Each building will be available to its users during its normal operating hours of the service it supports

- **Technical:** the performance standard for the day-to-day management of the assets

Example: Average Pavement Condition Index of 75 for arterial roads, with no more than 10% of the arterial road network falling below a PCI of 50.

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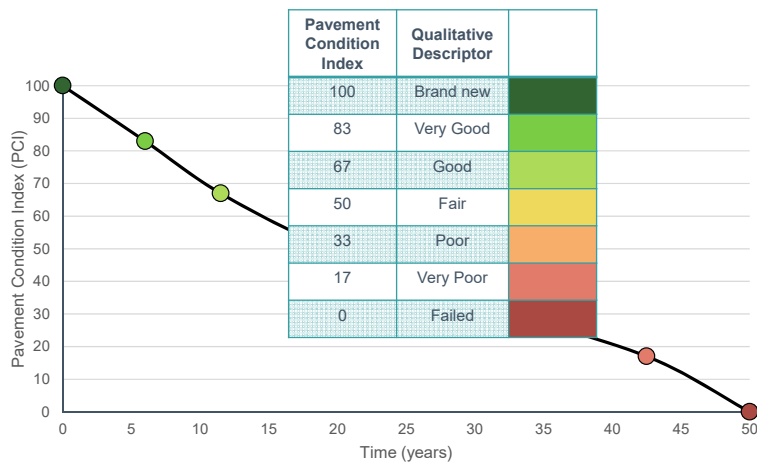
Levels of Service

Technical LOS – Customer Experience (roads)



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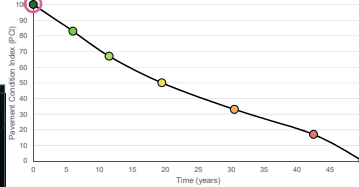
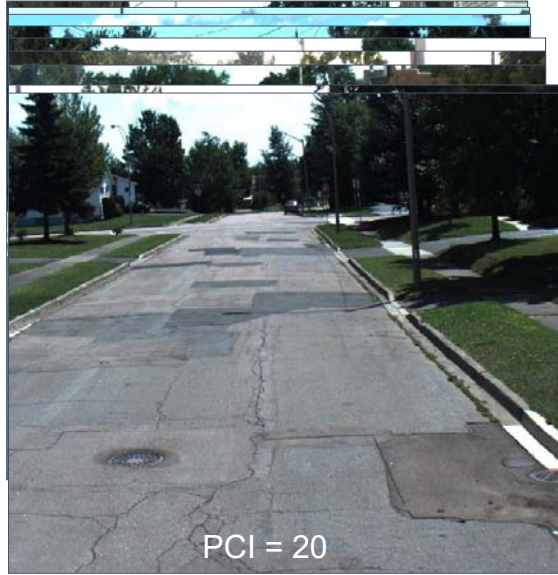
Technical Levels of Service Example – Roads



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Technical Levels of Service

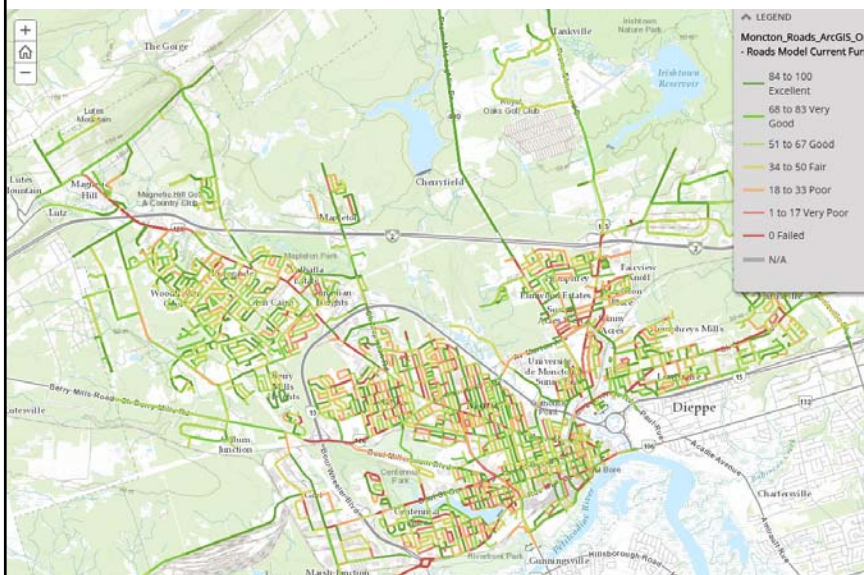
Understanding how the Technical LoS Changes over time



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Technical Levels of Service

Visualizing the current service state



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Expected Levels of Service



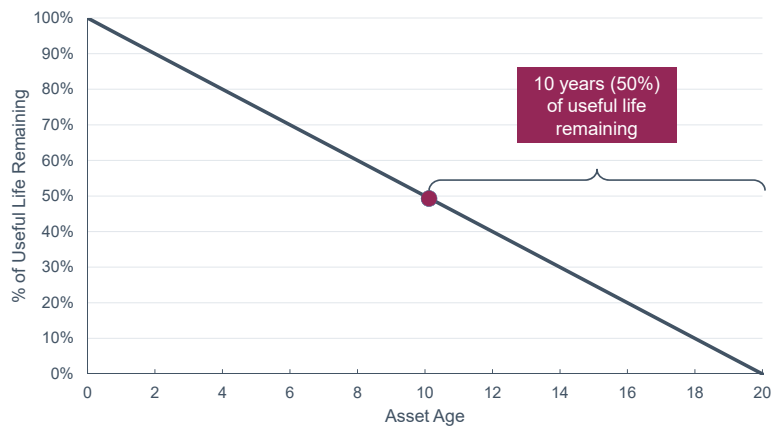
Road Class	Expected LOS	Example Photo
Arterial	Maintain roads at a PCI \geq 50	
Collector	Maintain roads at a PCI \geq 40	
Local	Maintain roads at a PCI \geq 30	

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Lifecycle Management Strategy

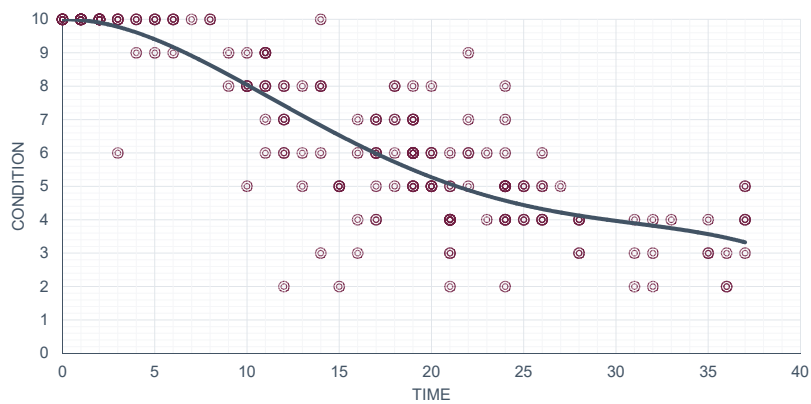
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Lifecycle Management Strategy Age-based Replacement Forecast



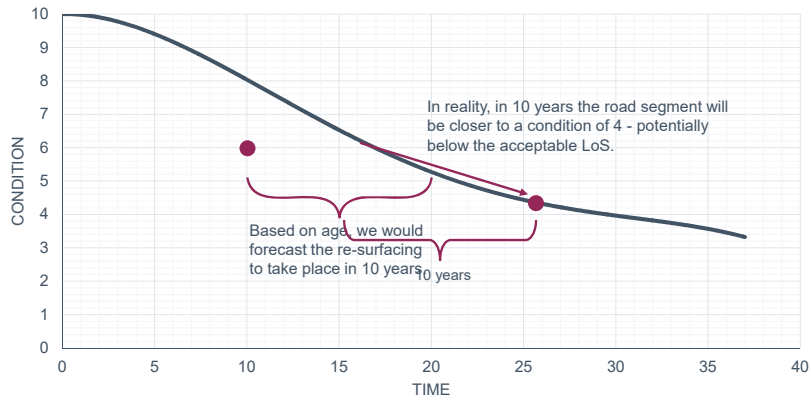
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Lifecycle Management Strategy Deriving a Degradation Curve



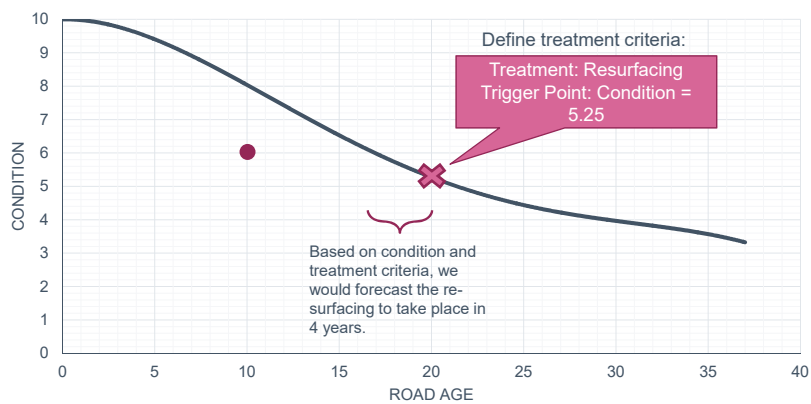
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Lifecycle Management Strategy Age-based Forecasting – LoS Implications



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Lifecycle Management Strategy LoS (Condition-based) Forecasting



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Lifecycle Management Strategy Components

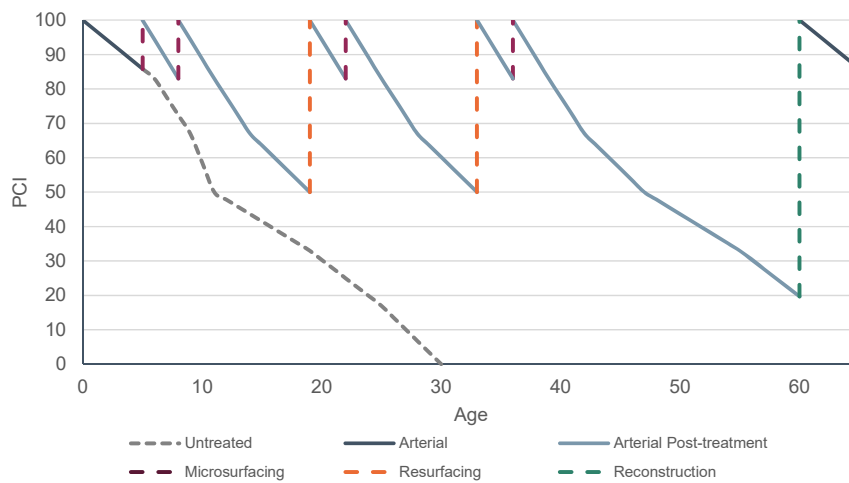


- Treatments – what do we do to our assets?
- Decision Logic – when do we do it and why?
- Criticality – do we treat all assets of the same type equally, or are some more important than others?
- Costs – how much does it cost?

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Lifecycle Management Strategy

Arterial Roads



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Lifecycle Management Strategy

Arterial Roads



- Asset Outcomes

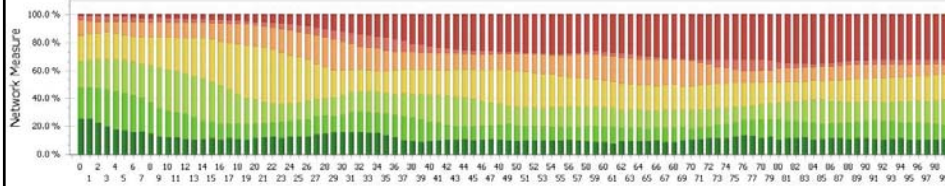
Road Class	Description	Reconstr. Only	AM Strategy	% Change
Urban	Years of Service Life	24	60	150%
	Total Capital Cost (per m ²)	\$ 130.00	\$ 254.00	95%
	Total Maintenance Cost (per m ²)	\$ 13.85	\$ 18.24	32%
	Total Cost (per m ²)	\$ 143.85	\$ 272.24	89%
	Cost per year (per m²)	\$ 5.99	\$ 4.54	-24%
Rural	Years of Service Life	\$ 24.00	\$ 60.00	150%
	Total Capital Cost (per m ²)	\$ 90.00	\$ 184.00	104%
	Total Maintenance Cost (per m ²)	\$ 13.85	\$ 18.24	32%
	Total Cost (per m ²)	\$ 103.85	\$ 202.24	95%
	Cost per year (per m²)	\$ 4.33	\$ 3.37	-22%
Average Condition (PCI)		\$ 58.12	\$ 70.84	22%

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Network-level Outcomes



Projected level of service at current funding level

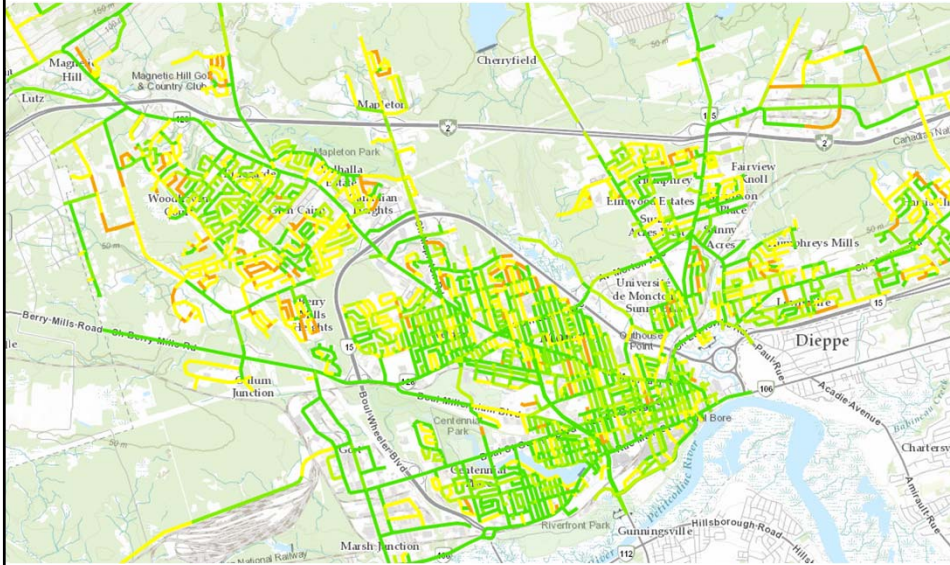


Projected level of service based on Lifecycle Management Strategy



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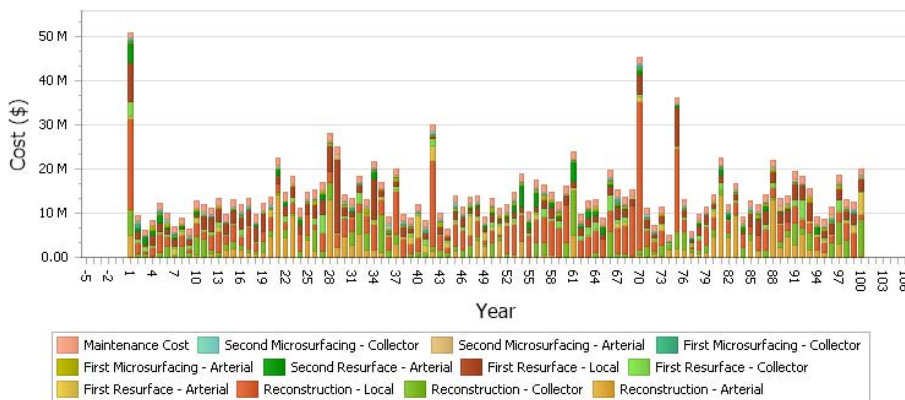
Network-level Outcomes



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Expenditure Forecast

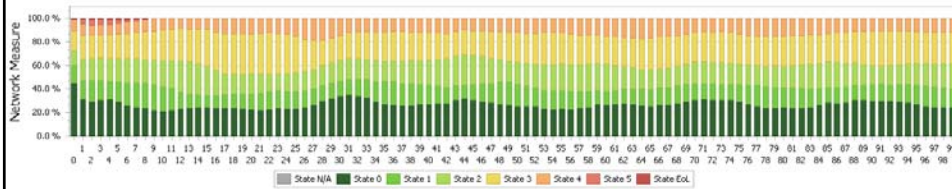
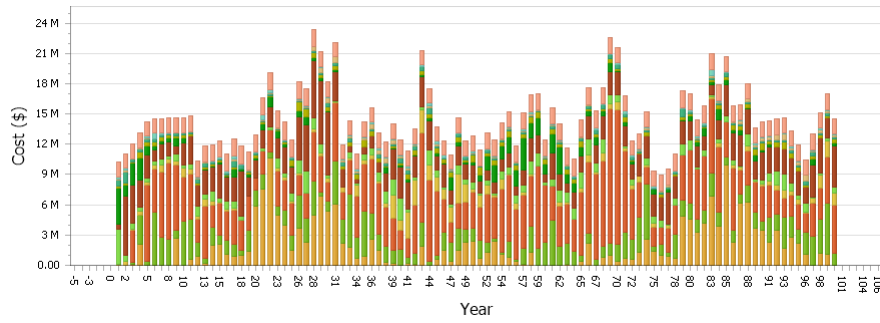
Ideal world...



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Expenditure Forecast & LoS Outcomes

Optimized Strategy



Thank you!

