

**Public Works Committee
January 16, 2017
Item 7.1**



Hamilton
Public Works

**Public Works Department
Engineering Services Division
Asset Management Section**

Roads Asset Management Plan Update

Providing services that bring our City to life !

Purpose

- Community
- People
- Processes
- Finance



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1. Pending Provincial Regulations
2. Asset Management Plan update
3. Road Network Life Cycle Management Assessment
4. Next Steps

Provincial Asset Management Legislation

1. In 2015 Bill 6, Infrastructure for Jobs and Prosperity Act, was enacted by the Provincial government
2. Act provides the Province with the authority to regulate asset management for identified public bodies
3. Provincial Regulations anticipated by mid 2017 that include;
 - a. Infrastructure asset inventory (SOTI)
 - b. Life Cycle Management Assessment
 - c. Levels of service analysis
 - d. Financial strategy

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Asset Management Program

1. Asset inventory (SOTI) was updated in 2016
2. The City is currently updating the Asset Management Plan
3. Road Network Life Cycle Management Assessment Completed
4. Life cycle assessment and level of service review for other assets is currently underway

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Asset Inventory Summary

- Community
- People
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Asset Value

- Community
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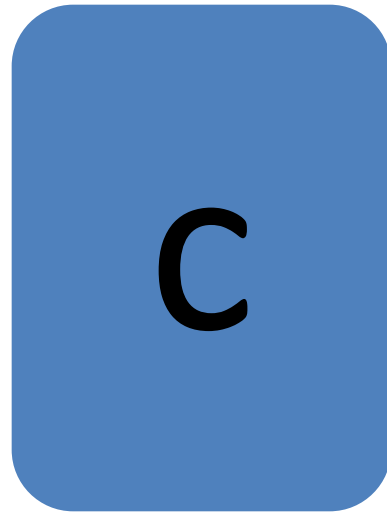


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ASSET GROUP	Replacement Value (\$ million)
Potable Water	\$3,222
Wastewater	\$5,393
Stormwater	\$1,458
Road Network	\$5,026
Bridges & Structures	\$1,176
Alleyways	\$128
Traffic	\$183
Central Fleet	\$109
Facilities Management	\$1,443
Parks & Open Spaces	\$314
Public Transit	\$204
Waste Management	\$354
Forestry	\$379
Cemeteries	\$99
Public Works Assets	\$19,488

Overall Rating & Program Challenges

- Community
- People
- Processes
- Finance



- Service Level Demands
- Aging Infrastructure
- Capital & Operating Funding
- Growth & Intensification
- Global Warming
- Regulatory Requirements
- Funding Shortfalls
- Staffing

Rating of C - Fair with some deterioration or defects evident. Function is generally not significantly affected.



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Lifecycle Management

- Community
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Lifecycle Management

Objective of Lifecycle management is to;

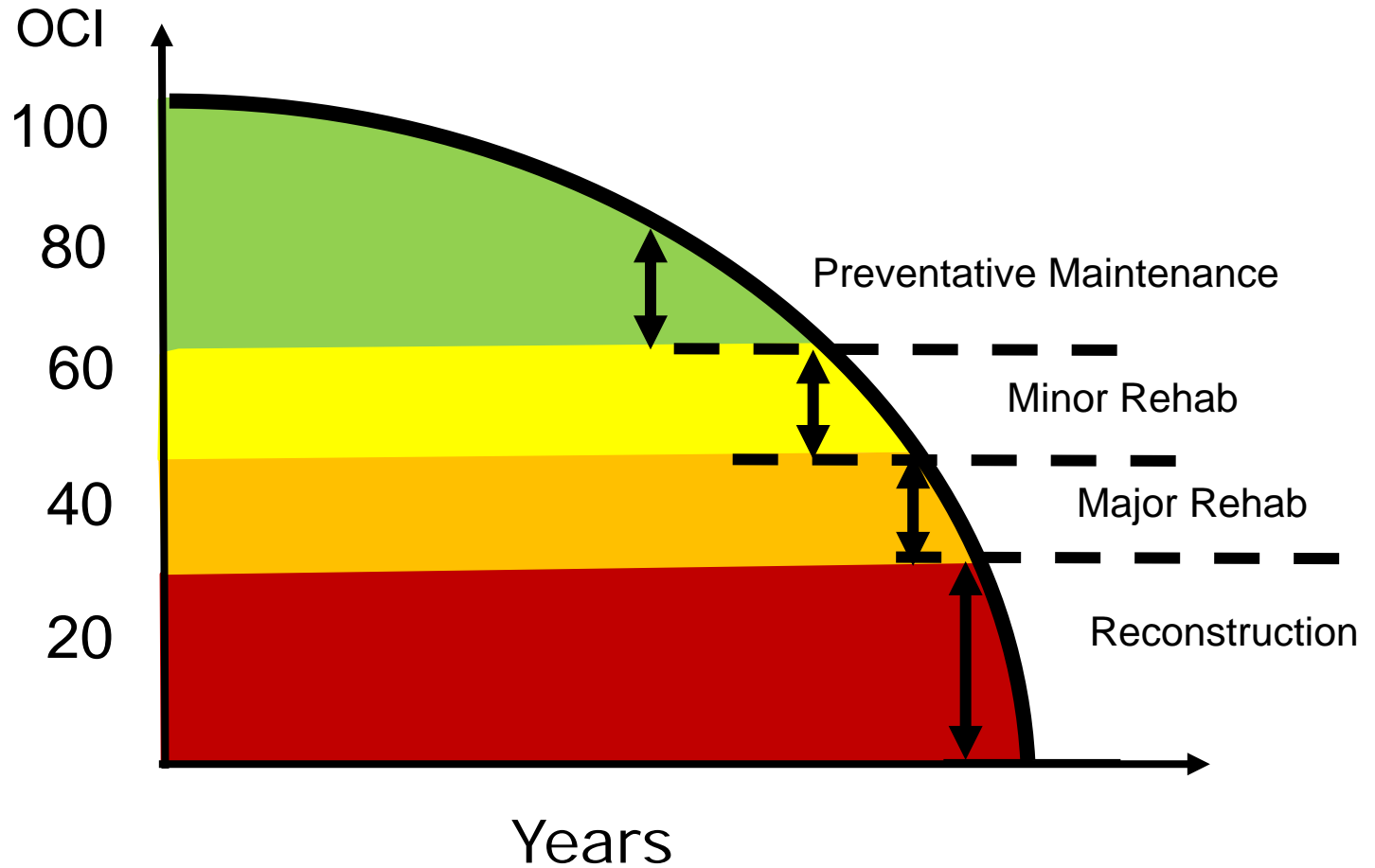
1. Do the right strategy at the right time in order to get the full service life of an asset
2. Maintain the required level of service
3. Maximize the return-on-investment (ROI)

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Lifecycle Needs of Roads



- Community
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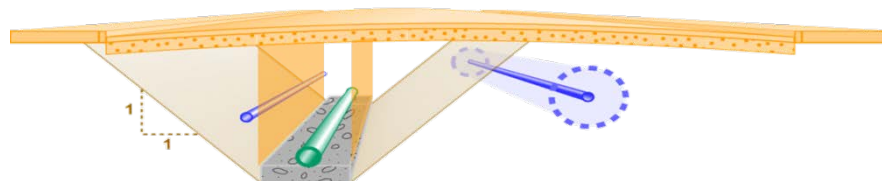
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Road Rehabilitation Strategies

- Community
- People
- Processes
- Finance

1. Greater than 60 - preventative maintenance such as crack sealing
2. Between 45 and 60 - minor rehabilitation such as shave and pave
3. Between 30 and 45 - major rehabilitation such as full surface removal and replacement
4. Below 30, in need of full reconstruction

Road rehabilitation is also coordinate with utility needs to ensure an optimized ROW investment strategy



New Road with OCI of 100



Road with OCI of 89



Road with OCI of 57



Road with OCI of 38



Road with OCI of 17

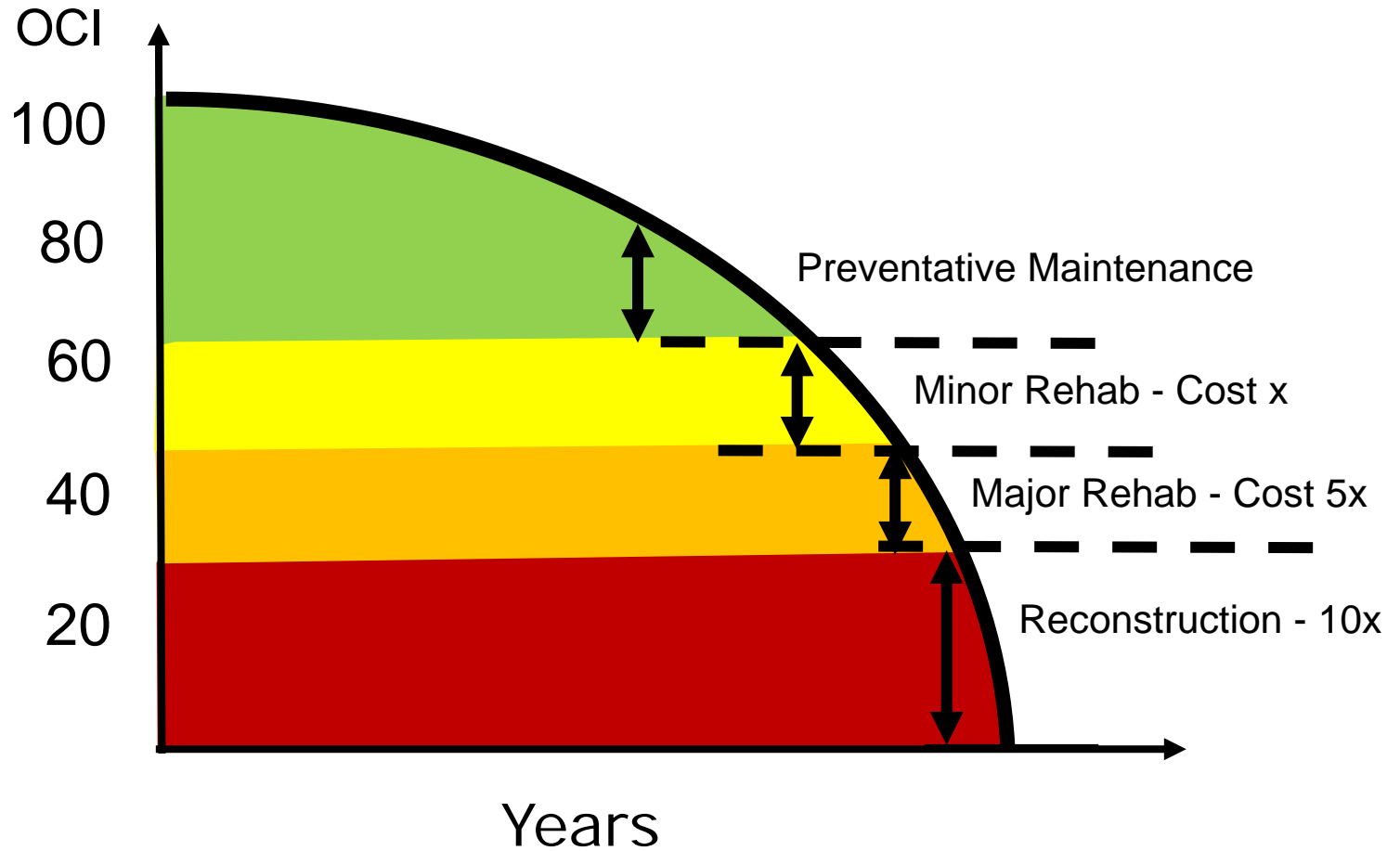
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Road Rehabilitation Costs



- Community
- People
- Processes
- Finance



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Road Rehabilitation Objective

To maintain level of service and optimize ROI

1. Address minor rehabilitation first and then major rehabilitation and construction
2. Address projects that are imminent to transition from one rehabilitation category to another

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Road Lifecycle Analysis Results

- Community
- People
- Processes
- Finance



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<i>Road Classification</i>	<i>Network %</i>	<i>Condition Index (OCI)</i>
RHVP / LINC	2.1	77
Urban Arterial Major	14.9	63
Urban Arterial Minor	6.1	61
Urban Collector	12.7	58
Urban Local	30.4	59
Rural Arterial	2.8	66
Rural Collector	18.6	67
Rural Local	12.3	67
Average Network Condition		62

<i>Road Classification</i>	<i>Resurfacing %</i>	<i>Construction %</i>
Arterials	32.1	11.9
Collector	37.4	16.5
Local	38.3	18.4

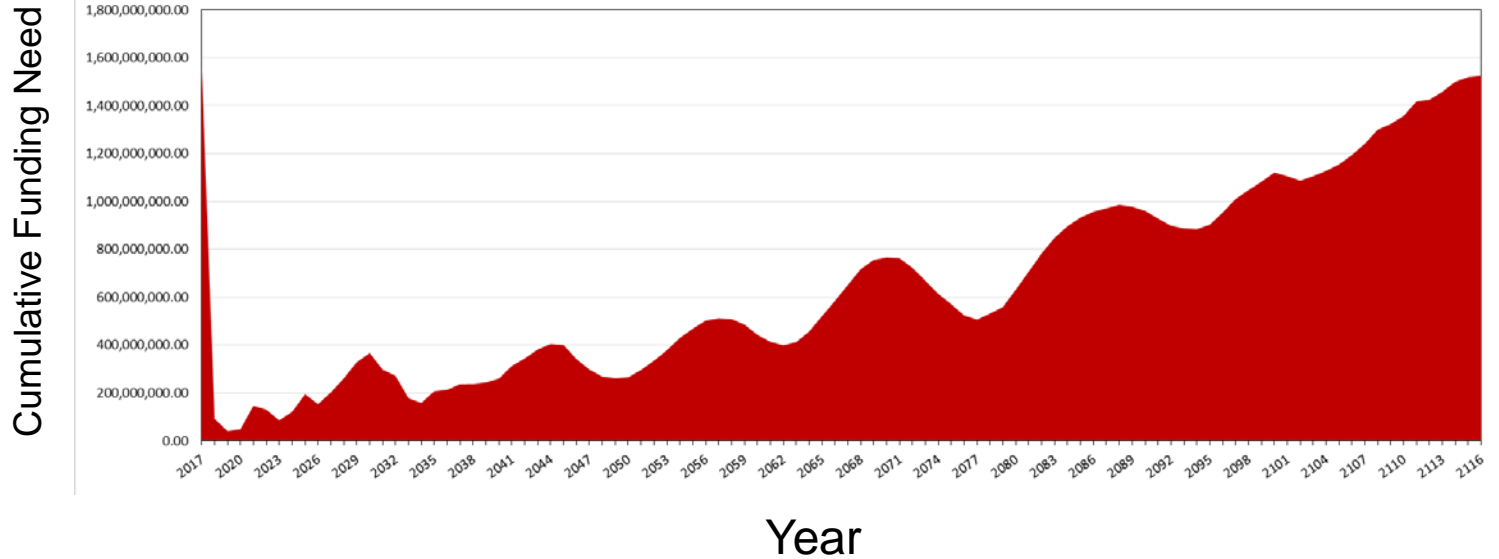
An OCI target of 81 represents the optimum state

Road Lifecycle Analysis Results

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1. Road Needs backlog of approximately \$1.5 billion.
2. Annual average expenditure needs to 2026 of \$110 million
3. Approved 2017 road rehabilitation allocation is \$25.5 million

Scenario Analysis Results

Given the funding challenges, the following 5 scenarios were analyzed

<i>2017 – 2026 Road Program Allocation</i>	<i>Funding Requirements (\$M)</i>	<i>OCI 2026</i>	<i>Service Loss</i>
\$25.5M / year	\$255	54	-8
\$25.5 + \$3.25M / year	\$401	59	-3
Maintain OCI of 60	\$463	60	-2
Maintain OCI of 65	\$617	65	3
Need-Driven	\$1,357	81	19
Maintain Current OCI - 62	\$521	62.0	0

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Next Steps

- Complete lifecycle analysis for other Public Works Assets
- Prepare Asset Management Plan
- Provide updates to Council Prior to Summer of 2017

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Questions ?
