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A gravel road stretches into the distance, flanked by green fields and trees under a cloudy sky. The road is the central focus, leading the eye towards the horizon. On the left, there's a grassy area with some bushes and a building with a water tower in the background. On the right, there's a large green field, possibly corn. The sky is overcast with grey clouds.

**2019 Road Needs Study Update
Township of Zorra**

Agenda

- Overview of Road Needs Study (RNS) Methodology and Activities
- Summary of Township's Road Infrastructure
- Summary of Findings / Budget Considerations
- Road Work Prioritization Considerations

RNS Methodology

- MTO Inventory Manual for Municipal Roads (1991), Pavement Condition Index (MTO SP-021 & SP-024)
- Visual inspection of entire 474 km road network, Summer of 2019
- Holistic approach vs. just surface condition
 - Road base*
 - Surface condition
 - Surface widths*
 - Surface type*
 - Drainage
 - Alignment
 - Maintenance demand
- ***Critical Deficiencies identified**
 - (Now, 1-5, 6-10 years)
- Overall Condition Rating assigned for each road segment based on above criteria.



35th Line



Perth Oxford Road

RNS Methodology Cont'd

- Roads classified by:
 - Roadside Environment:
 - Rural,
 - Semi-Urban,
 - Urban
 - Class
 - Local
 - Collector
 - Arterial
- Roads prioritized based on Condition Rating and Volume.
- Traffic Volumes based on counts provided by the Municipality.



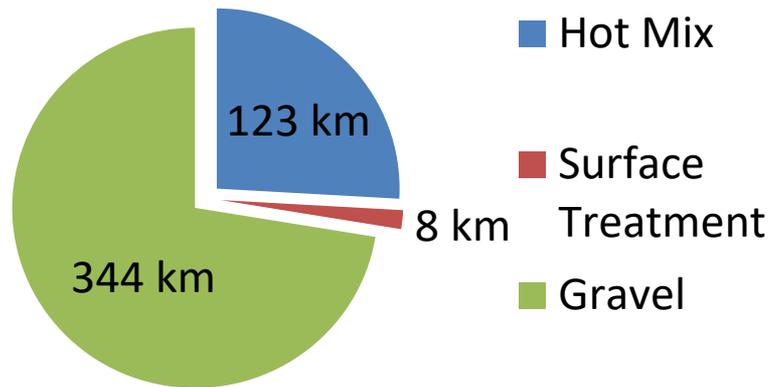
Cornelia Street



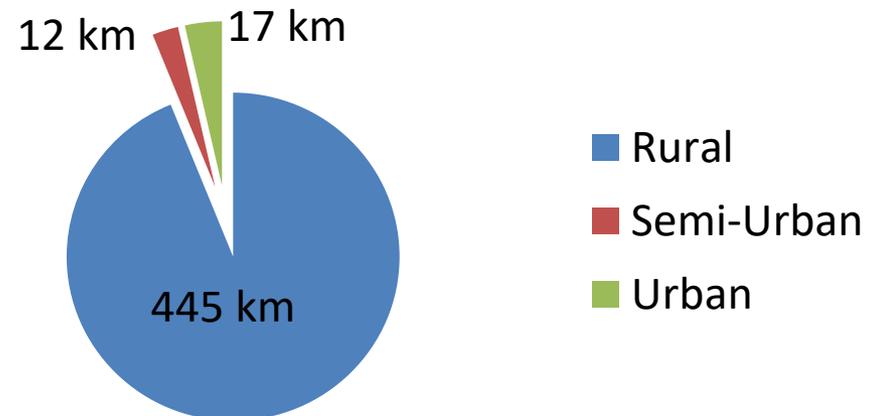
Road 64

Summary of Road Network

Road Surface Type



Road Side Environment



Summary of Findings

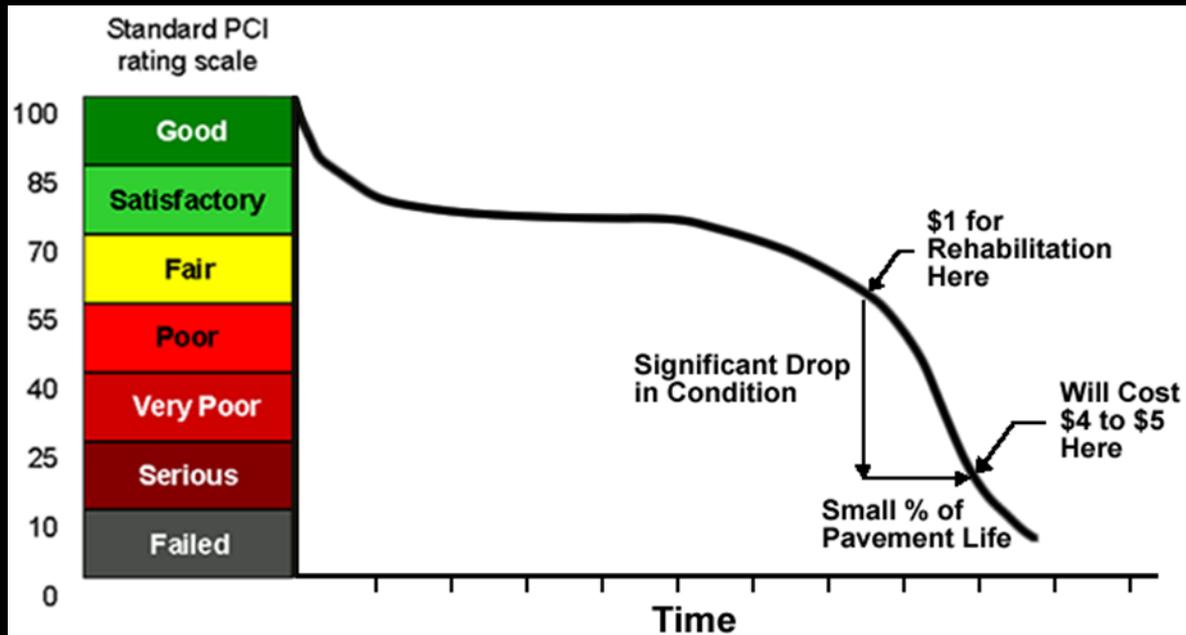
- **Average Structural Adequacy is 14.8/20**
- **PCI of Hard Top Roads is 81.1**

Capital Improvement (Now, 1-5 yr., Needs)

- 37.9 km with Needs (structural) over the next 5 years
(Estimated Cost of \$11.6 M)

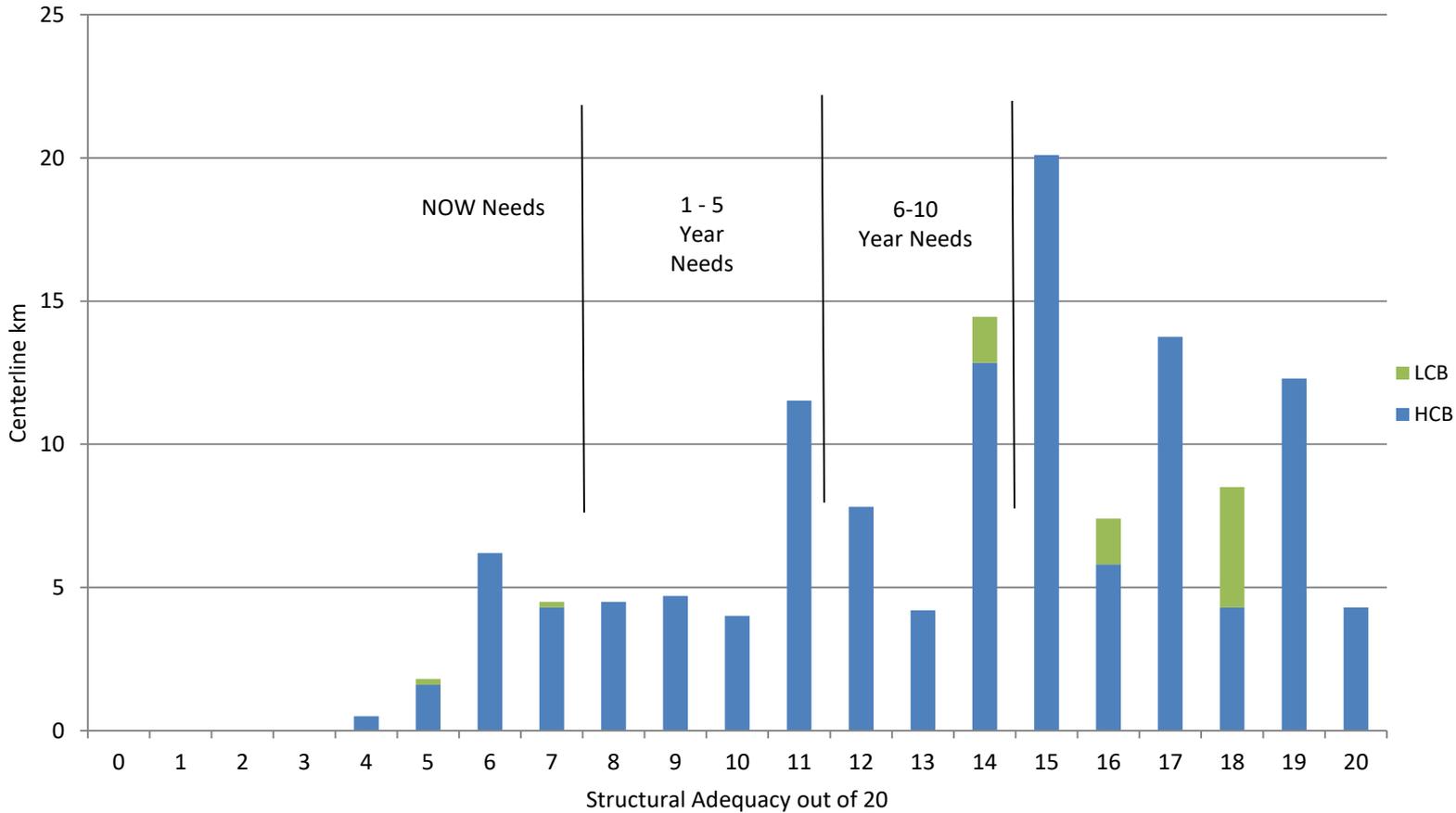
Preservation Management

Preservation Management (Resurfacing)



“Keep the Good Roads Good”

Structural Adequacy Distribution



Structural Adequacy < 7 – Reconstruction
 Structural Adequacy >12 - Resurfacing

Preservation Management

- Dedicated Road Resurfacing Program:
 - Hot Mix (20 year cycle)
 - Surface Treatment (7 year cycle)
 - Re-Gravelling (3 year cycle)
- Annual Roads Resurfacing Budget - \$ 3.1 M
 - Extend useful service life of road
 - “Keep the good roads good”
- Dedicated Road Maintenance Program :
 - Brushing
 - Ditch Cleanout

Prioritization of Road Works

- MTO Inventory Method uses Traffic Volume and Road Condition Rating to Prioritize Improvements:

$$\text{Priority Rating} = 0.2 \times (100 - \text{CR}) \times (\text{AADT} + 40)^{0.25}$$

- Tool to assist is deciding what roads to address first.
- Note, its not always the worst condition road!
- The “worst first” approach can lead to an overall decline in System Adequacy, based on limited budgets (a true reality).

Summary

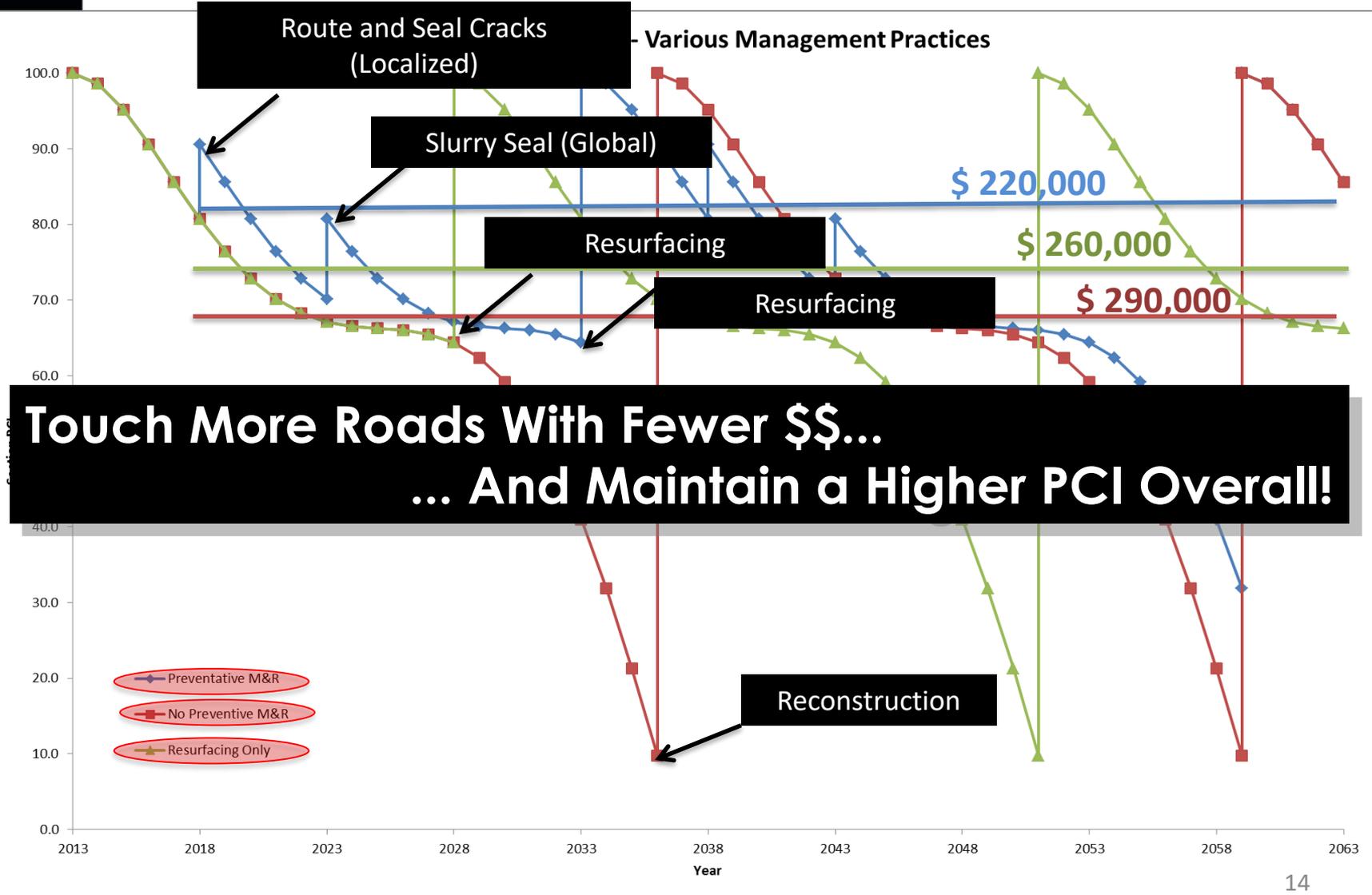
- RNS based on MTO Inventory Manual Method
- Holistic Approach
- Annual Roads “Resurfacing” Budget Target - \$ 3.1 M (preservation management)
- 37.9 km with Structural Needs over the next 10 years (Estimated Cost of \$11.6 M)
- Dedicated Road Maintenance Program to Extend Service Life:
 - Sealing, Brushing, Ditch Cleanout etc.



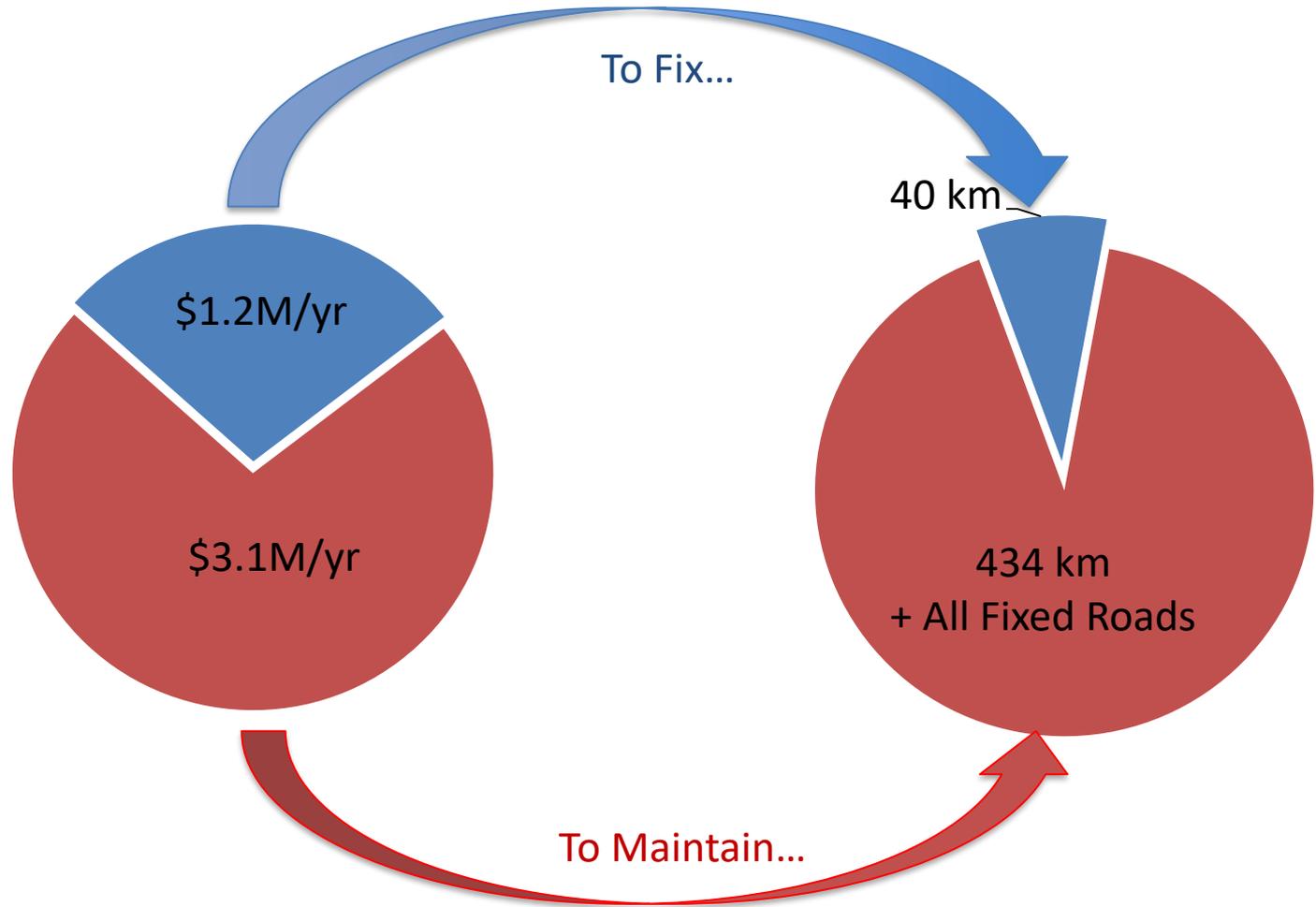
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PRESERVATION MANAGEMENT APPROACH



Fully Funded 10 Year Budget



■ Capital Improvements

■ Resurfacing & Preservation