

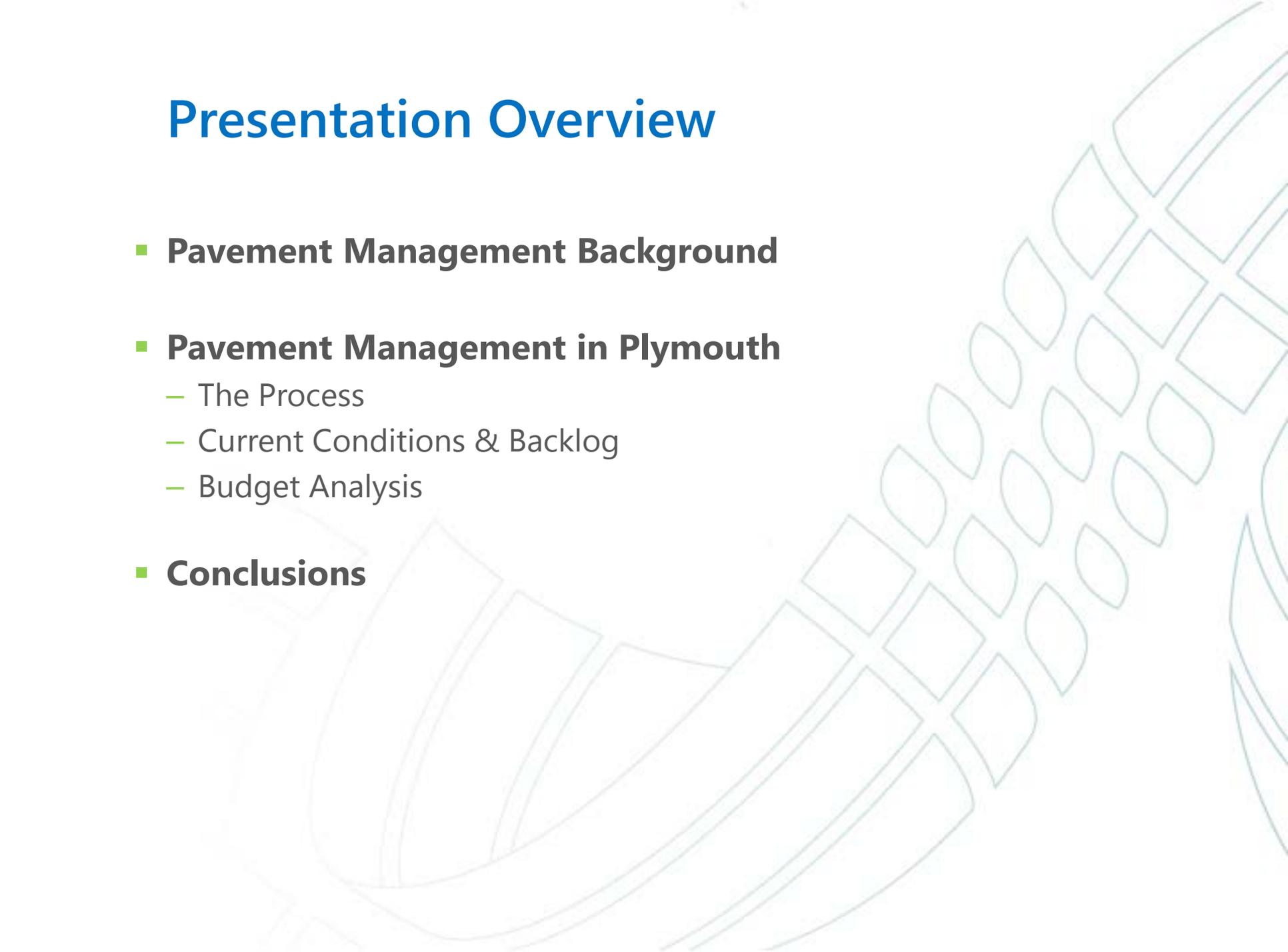
March 12, 2018 | **Town of Plymouth**



Municipal Pavement Management System



Presentation Overview

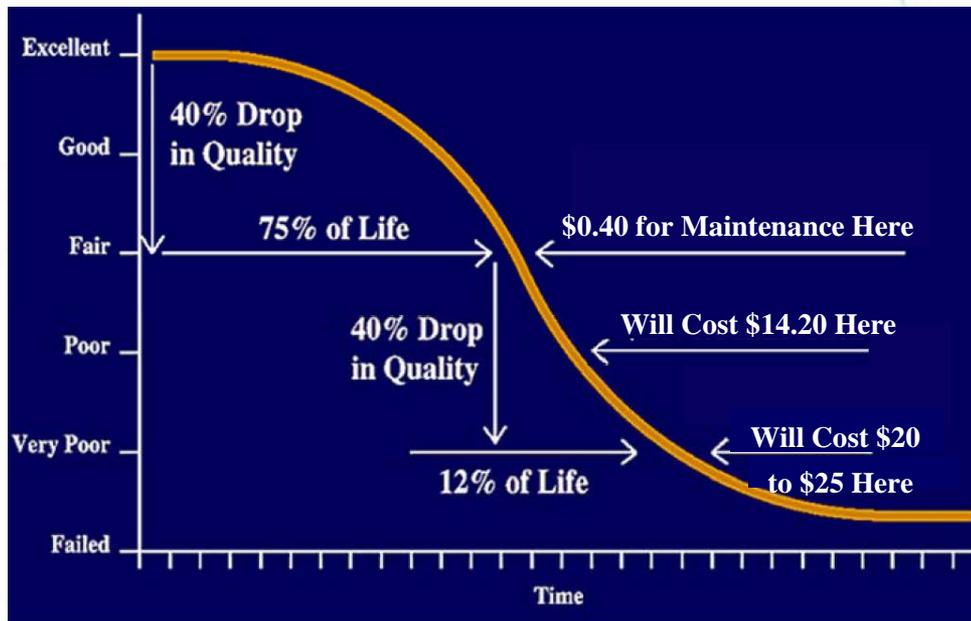
- **Pavement Management Background**
 - **Pavement Management in Plymouth**
 - The Process
 - Current Conditions & Backlog
 - Budget Analysis
 - **Conclusions**
- 

What is Pavement Management?

The practice of planning for pavement maintenance and rehabilitation with the goal of maximizing the value and life of a pavement network.

Otherwise known as:

“Getting the Biggest Bang for Your Buck”



The Process

- Pavement Section Inventory
- Automated Pavement Condition Assessment
- Estimated Pavement Condition Index (PCI) on a 0 - 100 scale
- Define Repair Strategies and Costs
- Test various Budget Scenarios
- Develop list of candidate projects based on "Benefit Value"
- Apply engineering and local judgment to refine annual road program

Pavement Treatment Bands

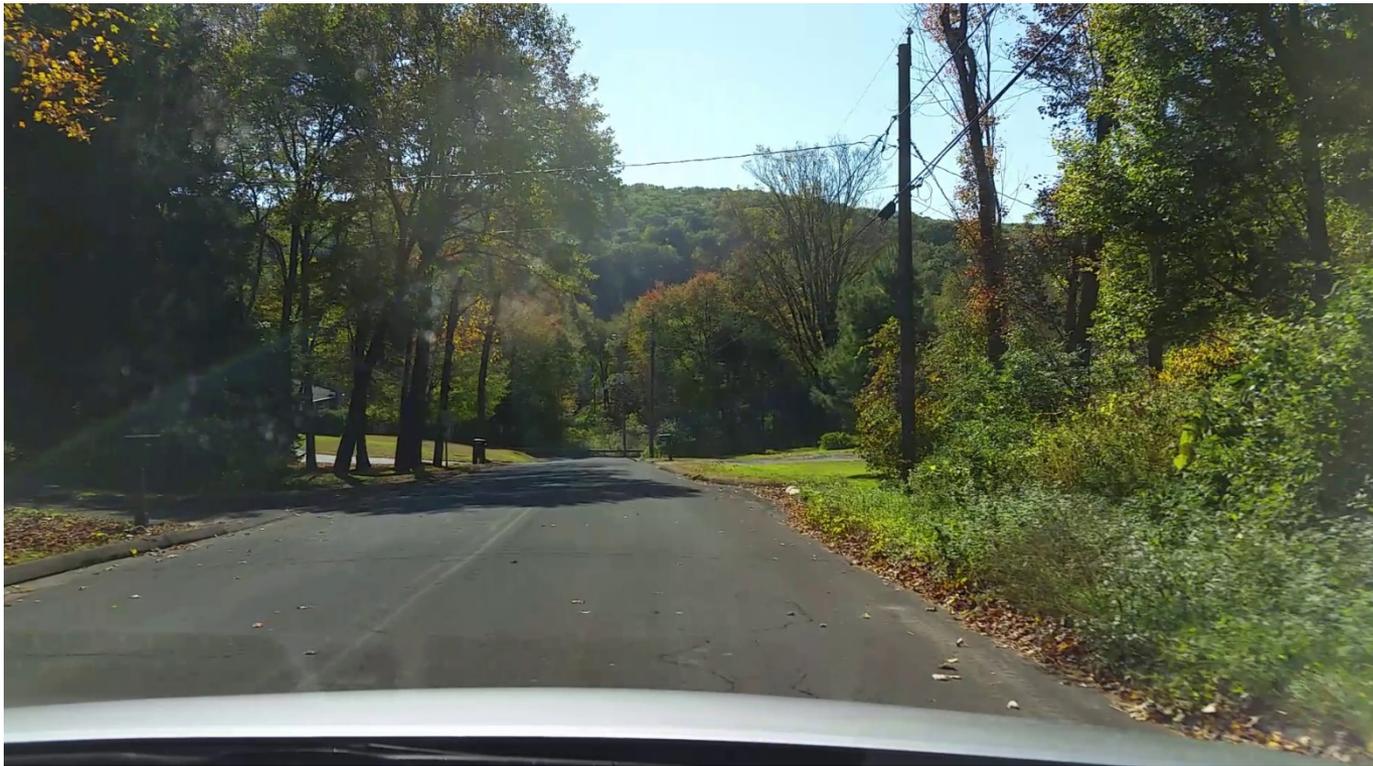
Do Nothing Condition (PCI 93-100)



Bemis Street

Pavement Treatment Bands

Routine Maintenance Condition (PCI 83-92)



Allen Street

Treatment options – Crack Sealing

Pavement Treatment Bands

Preventive Maintenance Condition (PCI 71-82)



Wilton Road

**Treatment options – Crack Seal & Patch,
Chip Seal, Microsurface**

Pavement Treatment Bands

Structural Improvement Condition (PCI 56-70)



South Main Street

**Treatment options – Mill & Overlay with
patching preparation as needed**

Pavement Treatment Bands

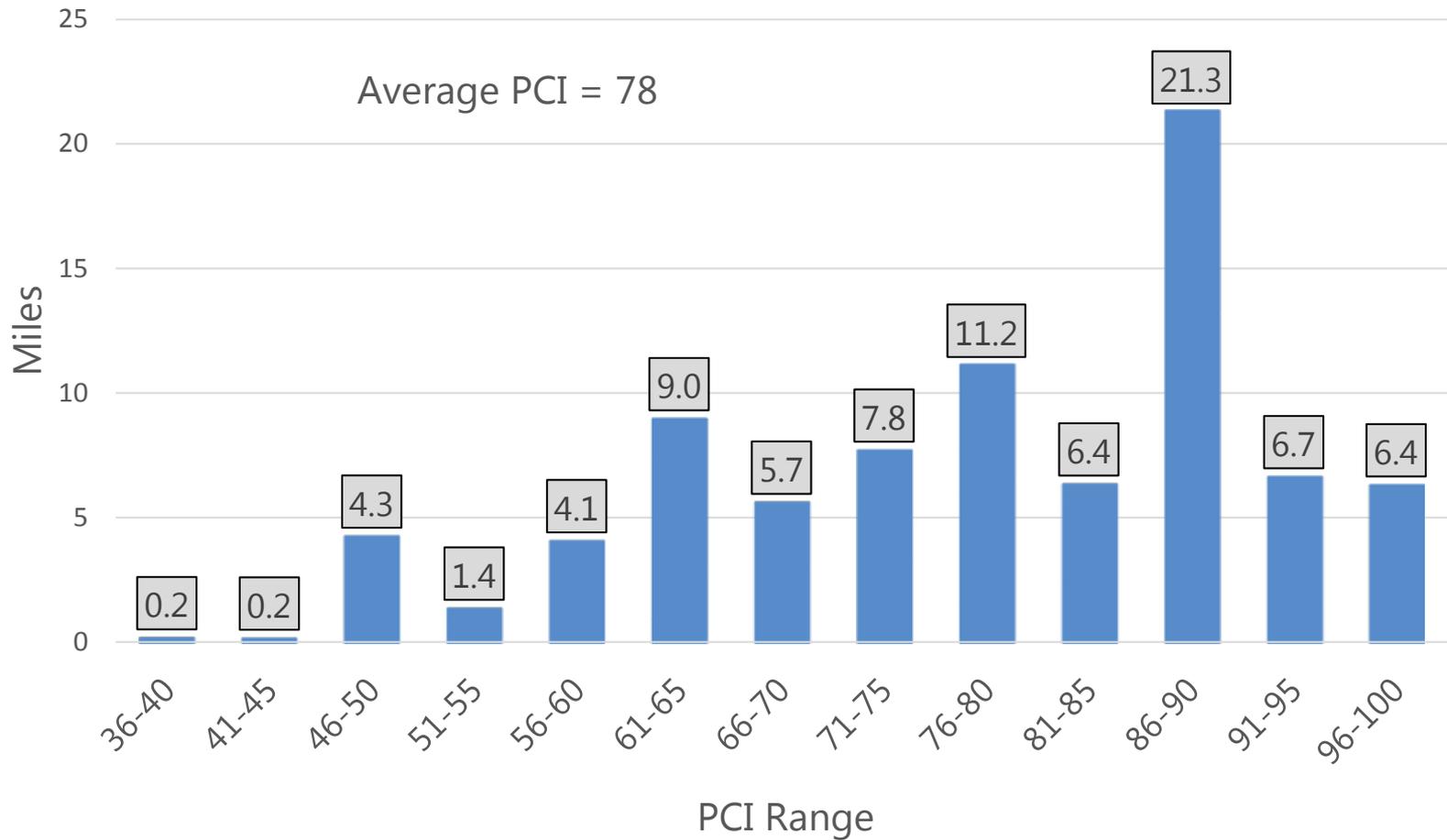
Base Rehabilitation Condition (PCI 0 - 55)



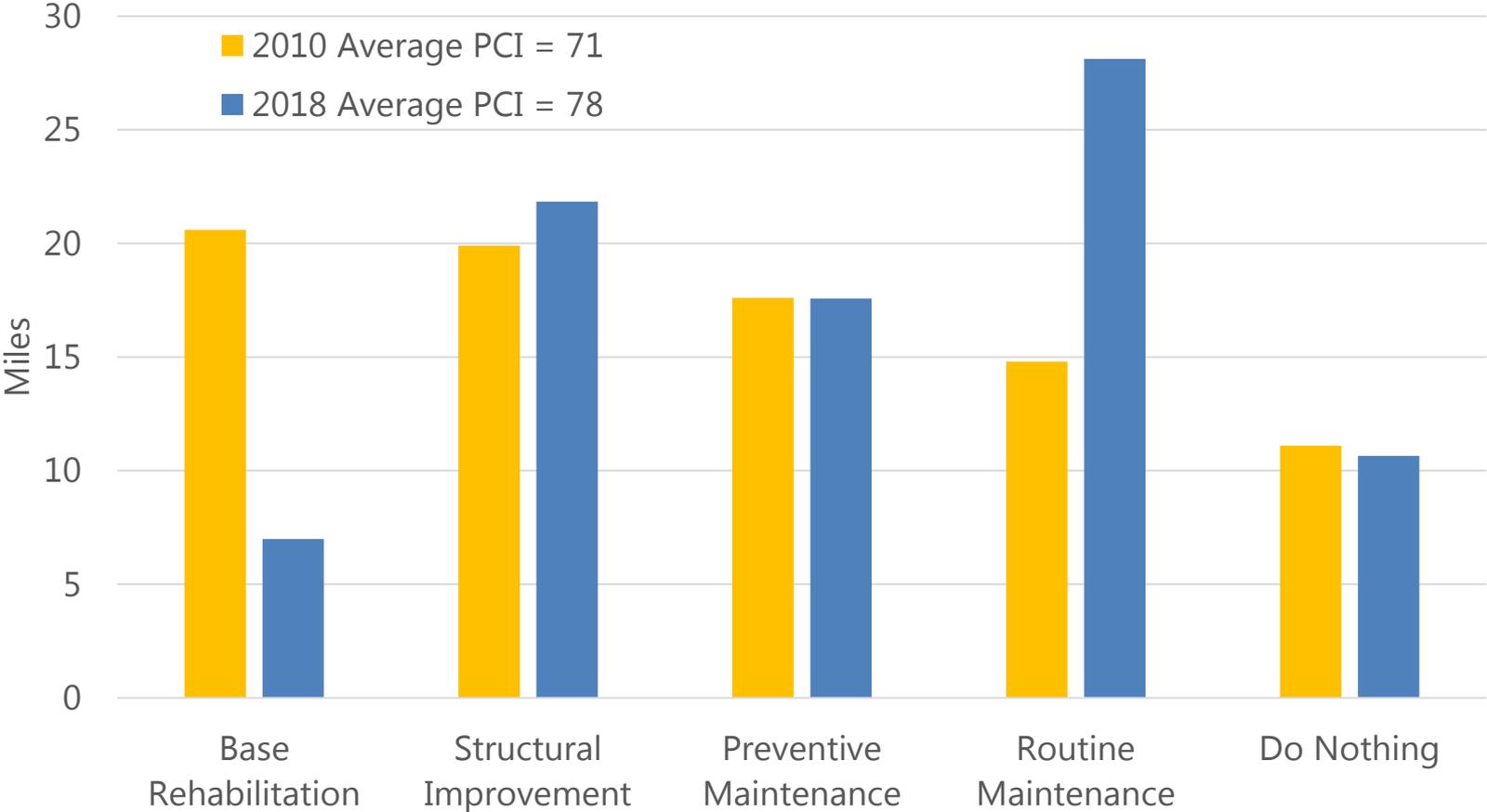
Harwinton Avenue

**Treatment options – Reclamation,
Reconstruction**

Current PCI Distribution



Condition Comparison: 2010 vs 2018



GIS Integration

Legend

PCI

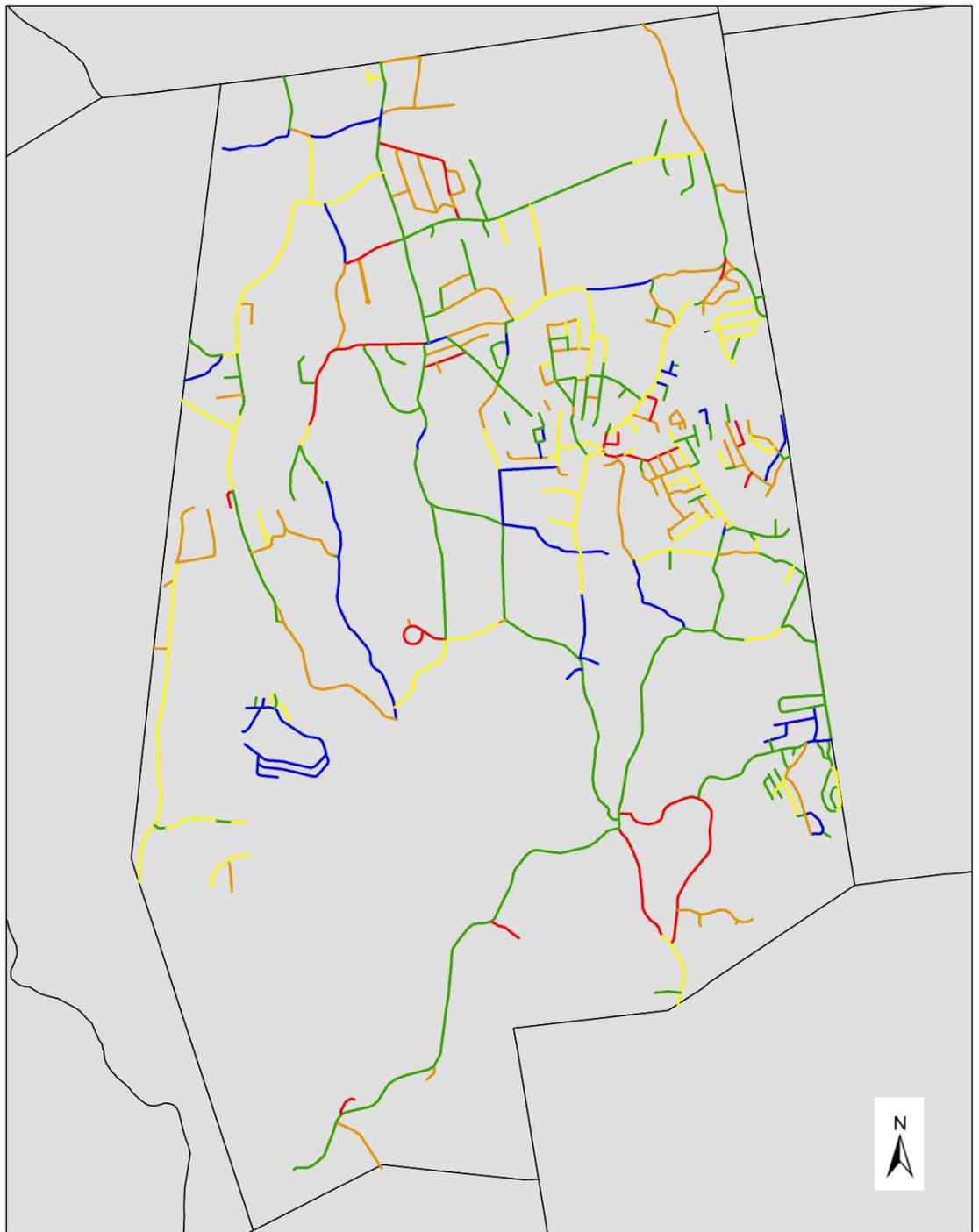
40 - 55

56 - 70

71 - 82

83 - 92

93 - 100

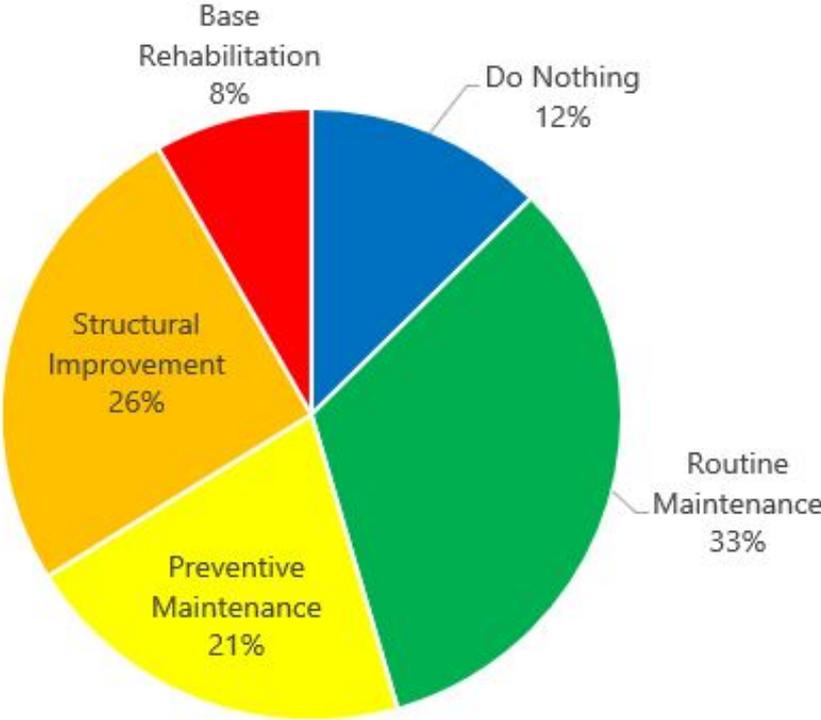


Pavement Backlog Summary

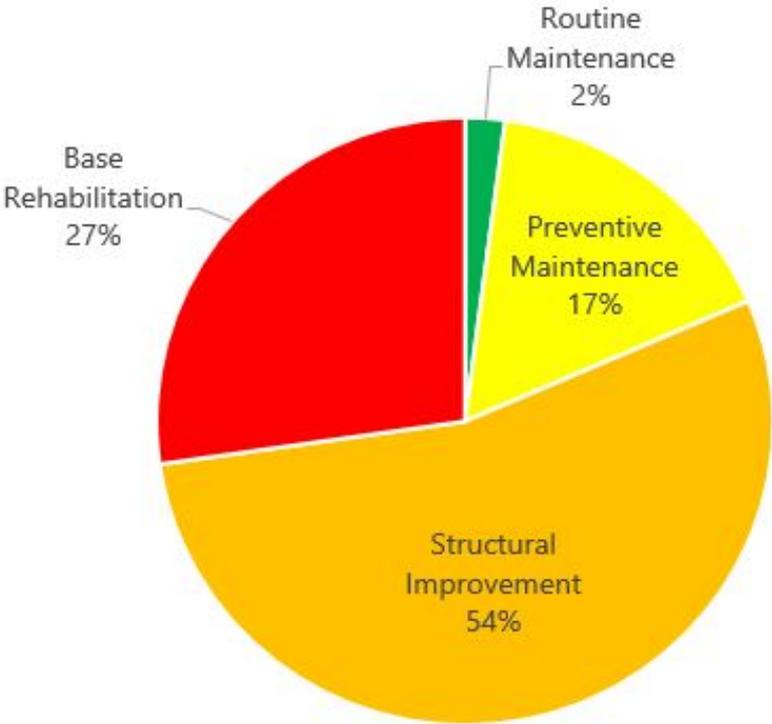
Treatment Band	Dollar Value	Miles
Do Nothing	-	10.7
Routine Maintenance	170,282	28.1
Preventive Maintenance	1,336,497	17.6
Structural Improvement	4,412,874	21.8
Base Rehabilitation	2,217,427	7.0
Grand Total	\$ 8,137,080	85.2

Pavement Backlog Summary

Backlog by Miles



Backlog by Cost

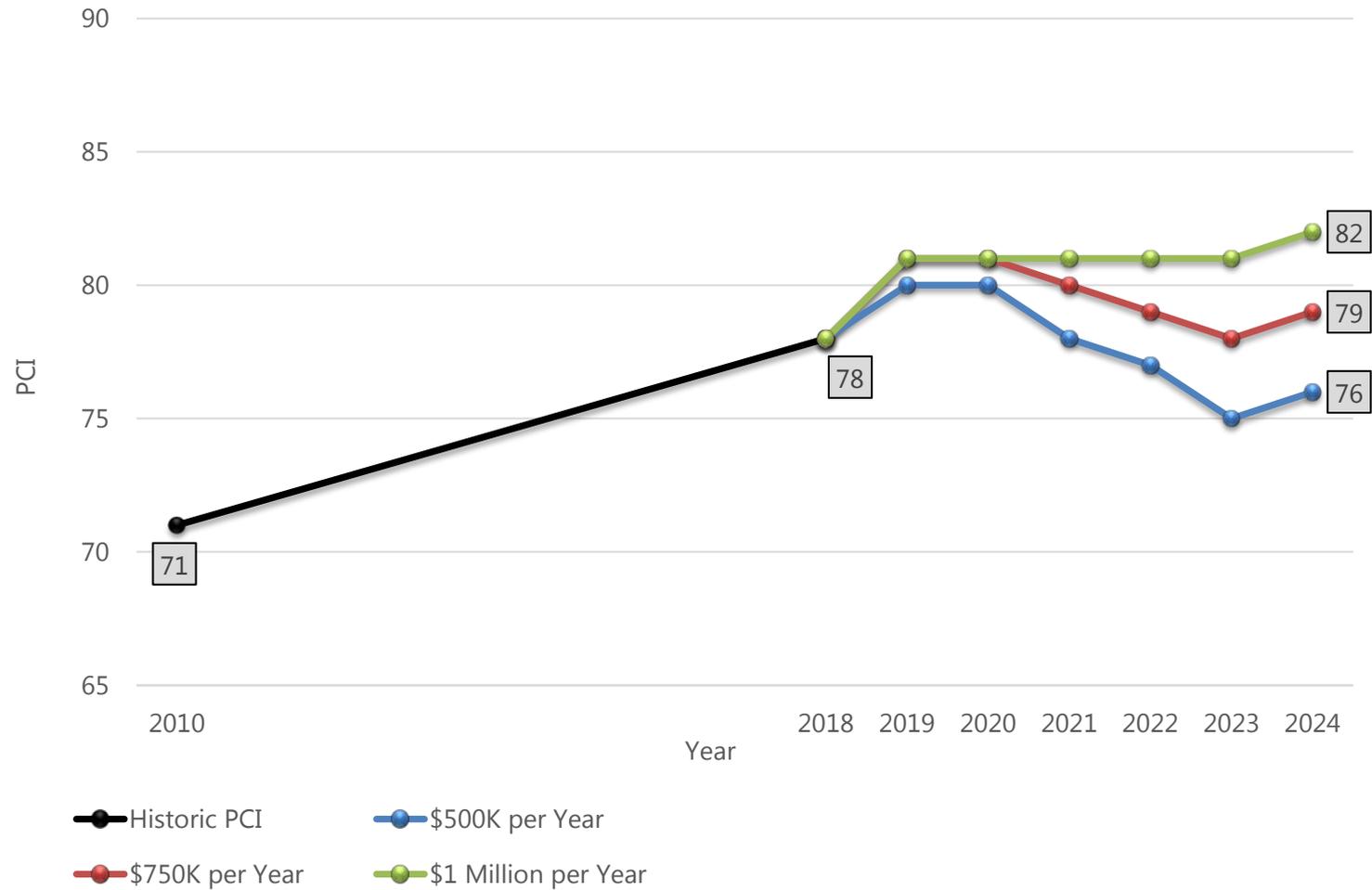


Pavement Funding Scenario Analysis

VHB compared the predicted effects of 3 potential funding scenarios:

- \$500k per year for 6 years
- \$750k per year for 6 years
- \$1 Million per year for 6 years

Pavement Funding Scenario Analysis



Development of Annual Road Program

Process

- Determine projected funding levels
- System recommends roads of highest benefit, computed as:

$$\text{Benefit Value} = \frac{\text{ADT} \times \text{Expected Life}}{\text{PCI} \times \text{Unit Cost}}$$

- Engineering and local judgment is used to adjust the program to coordinate with utility work, other projects, and group work within a neighborhood.

Concluding Remarks & Moving Forward

- Significant improvement in overall pavement conditions since 2010
- Determine appropriate funding level to reach the Town's pavement condition goals
- Maintain a balanced program that includes both maintenance treatments and capital improvements
- Develop an annual road program with project lists that consider:
 - Benefit Value
 - Coordination with utility work
 - Coordination with other projects
 - Local knowledge for grouping of projects

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Questions & Answers

