

Town of North Castle, NY Pavement Management Study



Presented by: Vanasse Hangen Brustlin, Inc.
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Presentation Overview



- Pavement Management Concepts
- Pavement Management in North Castle
 - ❖ Current Conditions & Backlog
 - ❖ Budget Analysis
- Recommendations

Pavement Management Concepts



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"

Pavement Management Concepts



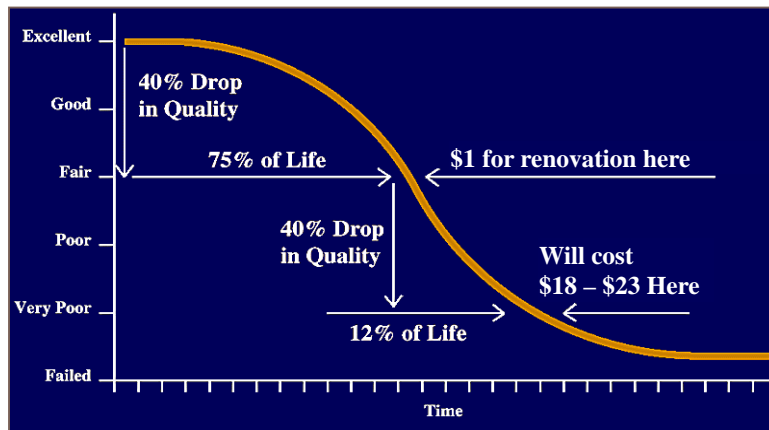
The Process

- Pavement Section Inventory
- Pavement distress identification and quantification
(Visual Inspection Only)
- Pavement Condition Index (PCI) calculation on a 0 - 100 scale
- Define Treatment Options and Costs
- Test various Budget Scenarios
- Develop list of candidate projects
- Apply engineering and local judgment to define annual road program

Pavement Management Concepts



Pavement Deterioration Curve



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No Immediate Maintenance (PCI 93-100)

Birch Grove Drive

Treatment options – Do Nothing

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Routine Maintenance Condition (PCI 86-92)



Hissarlik Way

Treatment – Crack seal

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Preventive Maintenance Condition



Byram Lake Road

Treatment – Chip Seal

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Structural Improvement Condition (PCI 51-72)



Banksville Road

Treatment – 2" Overlay

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Base Rehabilitation Condition (PCI 0-50)



Lafayette Ave

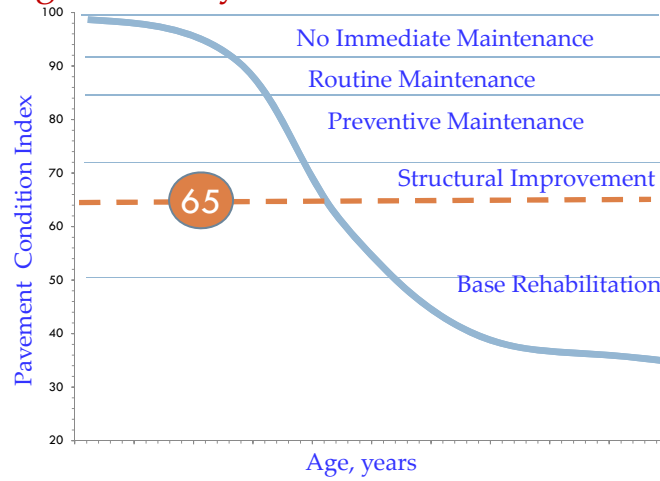
Treatment – Reclamation

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Pavement Management in North Castle



Average Roadway Pavement Condition Index = 65

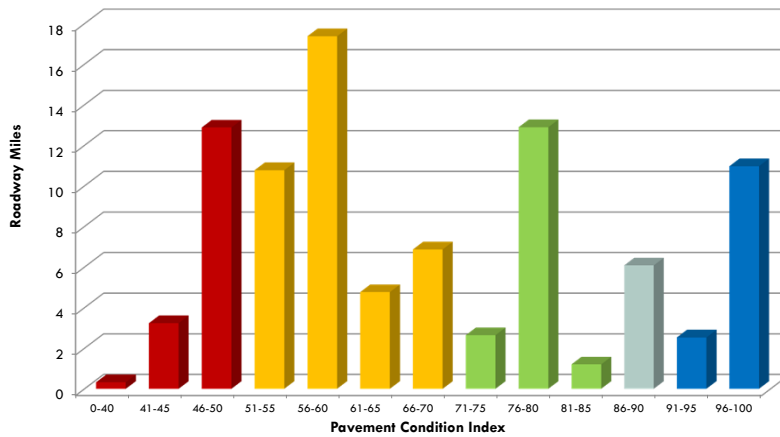


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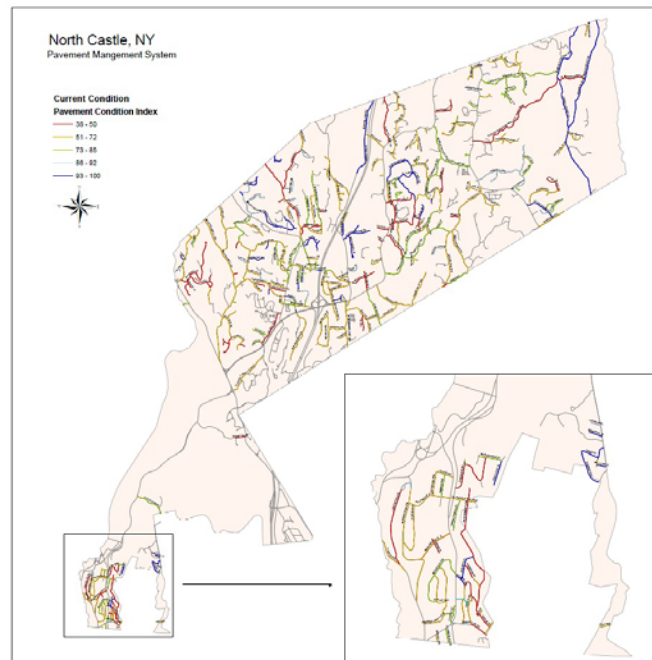


Roadway Pavement Condition Index Distribution



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Current Condition GIS Map



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Signs



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Current Roadway Pavement Backlog

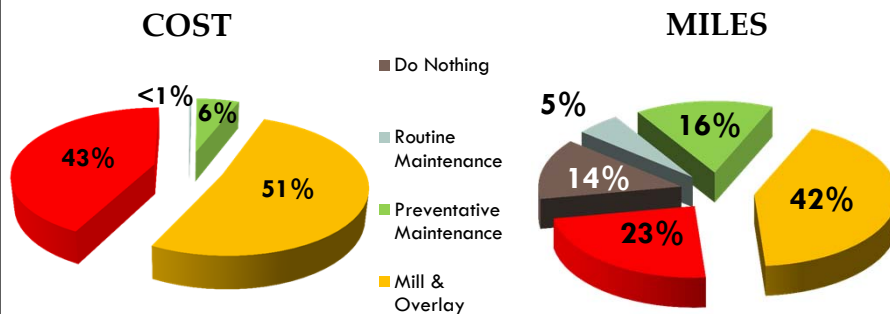
Pavement Treatment Band	Miles	Cost
Do Nothing	12.7	\$0
Routine Maintenance	4.7	\$69,000
Preventative Maintenance	14.4	\$1,470,000
Mill & Overlay	38.8	\$13,300,000
Base Rehabilitation	21.7	\$11,000,000
Pavement totals:	92.6	\$25,840,000

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Current Roadway Pavement Backlog Summary



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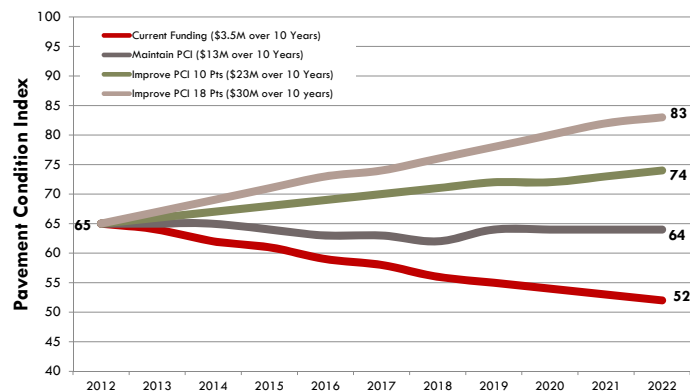
Funding Scenarios

- ❖ Current Funding - \$350 K/yr for 10 years (PCI decreases to 52)
- ❖ Maintain PCI - \$1.3 M/yr for 10 years (PCI remains at 64)
- ❖ Improve PCI - \$2.3 M/yr for 10 years (PCI increases to 74)
- ❖ Improve PCI - \$3 M/yr for 10 years (PCI increases to 83)

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Future Roadway Pavement Condition Comparison



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Annual Maintenance Cost Comparison

Annual Road Budget		Annual Auto Maintenance \$\$\$
\$350,000		\$127
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Total Value of Road Network	=	Value of a New Car
\$55,000,000		\$20,000

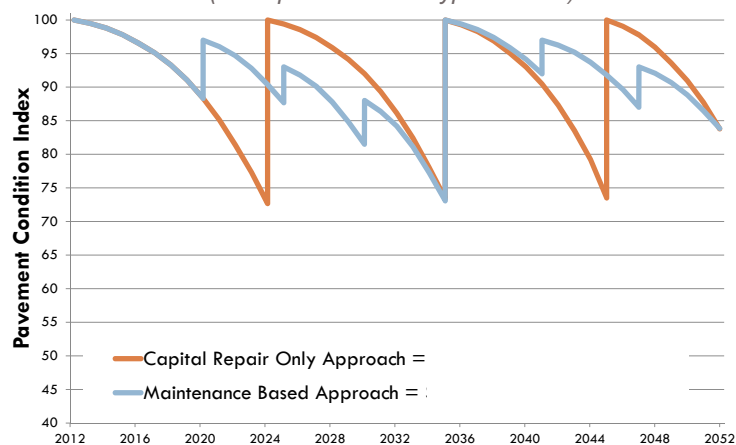
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Cost Comparison of 2 Roadway Repair Practices

(Example below of a typical street)



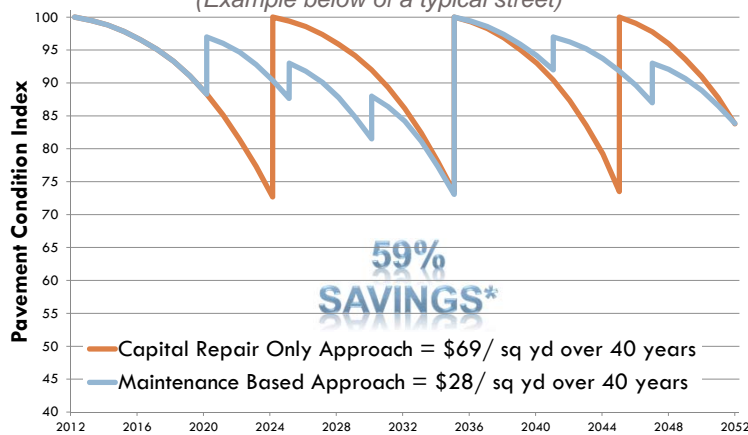
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Cost Comparison of 2 Roadway Repair Practices

(Example below of a typical street)



* Costs in today's dollars

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Annual Road Program Development



- Determine effective funding levels
- System recommends roads of highest benefit to the Town based on:
 - ❖ High Traffic Volume
 - ❖ Lower Repair Cost
 - ❖ Longer Repair Life Expectancy
 - ❖ Poorer Road Conditions
- The system allocates annual budget to high benefit roads and analyzes the effect on overall town wide conditions.
- Engineering judgment is used to adjust the program to reflect coordination with other projects, neighborhood programs, mobilization efficiencies, etc.

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Recommendations



- Identify pavement condition goals
- Budget adequate funds to achieve those goals
- Use the Right Tool at the Right Time in the Right Place
- Implement full spectrum of pavement treatments
- Continue to maintain updated pavement management data
- Continue to utilize pavement management system to help plan optimal road program

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Questions and Answers

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