



Town of Dedham Roadway Management System

**Presented by
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Presentation Outline

- **Pavement Management - Background**
- **Roadway Management in Dedham**
- **Recommendations**

Pavement Management – Background

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.

**Also known as
"Getting the Biggest Bang for your Buck"**

Pavement Management – Background

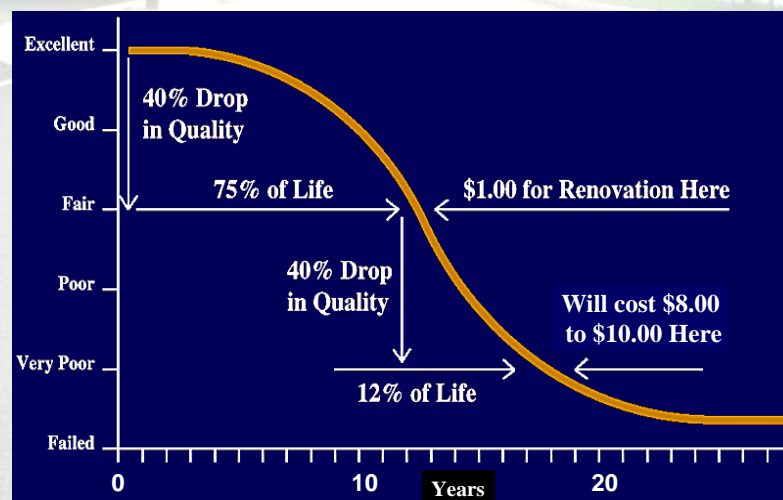
The Process

- Pavement Section Inventory
- Pavement distress identification and quantification (Visual Inspection Only).
- Pavement Condition Index (PCI) calculation on a 0 to 100 scale.
- Define Repair Strategies and Costs
- Test various Budget Scenarios

Pavement Management – Background System Benefits

- Physical street characteristics database
- Historic street repair records
- Road repair recommendations to get the most “Bang for the Buck”
- Estimate repair costs based on key physical street factors and local unit costs
- Project future conditions under various budget scenarios
- GIS Mapping

Pavement Management – Background Pavement Deterioration Curve



Do Nothing Condition

PCI = 99



Routine Maintenance Condition

PCI = 86



Preventive Maintenance Condition

PCI = 73



Structural Improvement Condition

PCI = 65



Base Rehabilitation Condition

PCI = 43

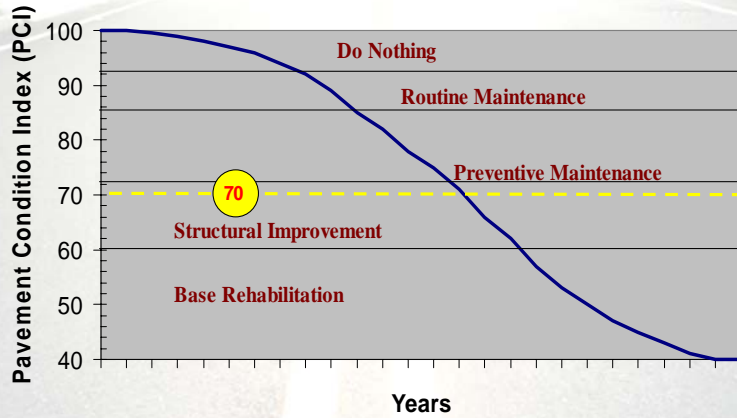


Roadway Management in Dedham

- Town-wide pavement, curb, and sidewalk inventory & evaluation in 2006 by VHB
- All infrastructure linked to Town's GIS
- Pavement Management Software
- System utilized to select candidates for 2007 road program

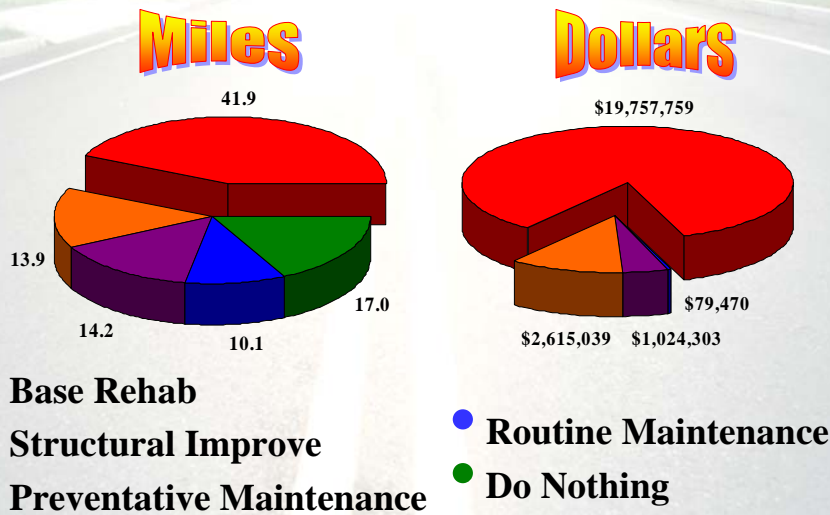
Roadway Management in Dedham

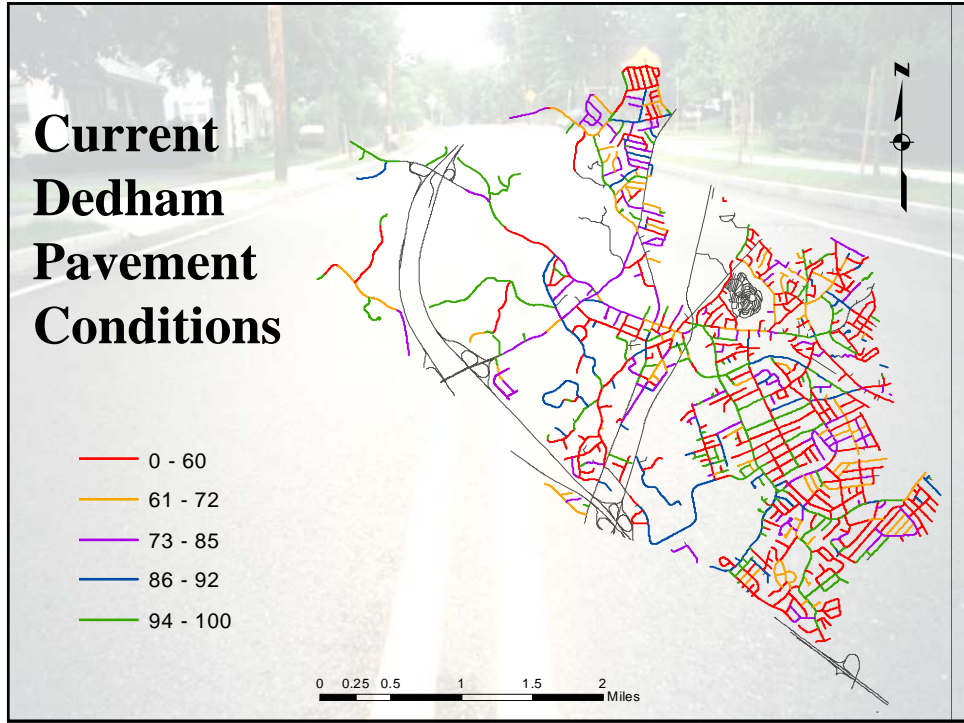
Average Pavement Condition (2006) = 70



Roadway Management in Dedham

Current Backlog – 99 miles, \$23.7 million





- # Roadway Management in Dedham
- ## Other Roadway related Infrastructure
- 99 miles of Roadway
 - Sidewalk Evaluation
 - Curbing Evaluation
 - Pedestrian Ramp Evaluation



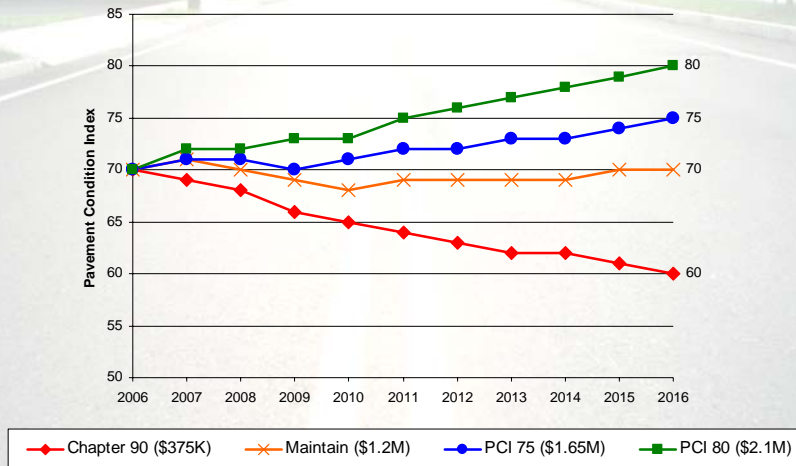
Recommendations

Funding Scenarios (Pavement Only)

- Chapter 90 - only (\$375k) State Chapter 90 allotment available for pavement work
- Maintain PCI- \$1,200,000 total annual road budget to maintain current conditions
- Improve PCI- \$1,650,000 total annual road budget to improve conditions to a PCI of 75
- Target PCI- \$2,100,000 total annual road budget to improve conditions to a PCI of 80

Recommendations

Scenario Comparison (Pavement Only)



Recommendations

Scenario Comparison (\$1.2M vs. \$2.1M for 2007)

Treatment Band	\$1.2 Million per Year		\$2.1 Million per Year	
	Funding	Street Length (Miles)	Funding	Street Length (Miles)
Routine Maintenance	\$ 55,646	9.6	\$ 55,705	9.6
Preventive Maintenance	\$ 161,076	1.9	\$ 135,434	1.7
Structural Improvement	\$ 881,206	4.1	\$ 1,047,922	4.6
Base Rehabilitation	\$ 62,028	0.1	\$ 860,422	1.3
Totals:	\$ 1,159,956	15.7	\$ 2,099,483	17.2

Recommendations

Road Program Development

- Step 1 - establish funding level
- System recommends roads of highest benefit to the Town based on:
 - High Traffic Volume
 - Lower Repair Cost
 - Longer Life Expectancy of Repair
 - Poorer Road Conditions
- System allocates annual budget to high benefit roads and analyzes the effect on overall town-wide conditions
- [Sample system output](#)

Recommendations

- Set Proper Funding Level – need is \$1.2 - \$2.1 Million for pavement, plus other Infrastructure
- Use the right tool at the right time in the right place
- Expand routine maintenance program to preserve good roads
- Repair localized base failure prior to overlay
- Continue to monitor pavement performance, adjust program in future years as necessary
- Maintain database – keep the system “live”