

# City of Providence Pavement Management Analysis



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## *Presentation Overview*

- Pavement Management Background
- Process
- Current Conditions
- Budget Analysis
- Project Selection
- Next Steps

## Pavement Management Background

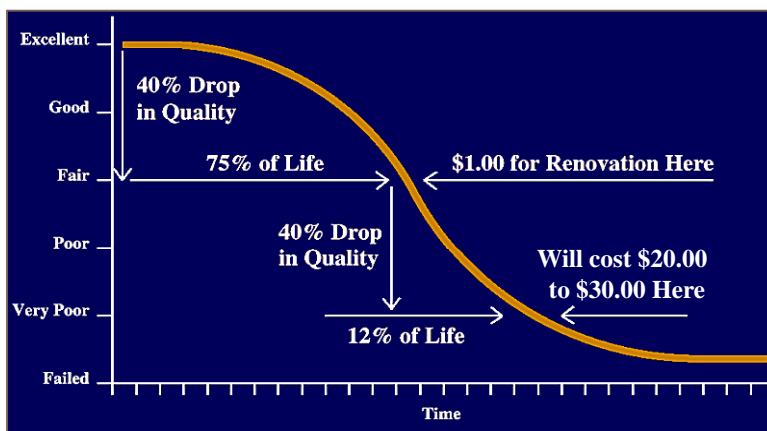
### What is Pavement Management?

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

Otherwise known as  
**“Getting the Biggest Bang for Your Buck”**

## Pavement Management Background

### Pavement Deterioration Curve



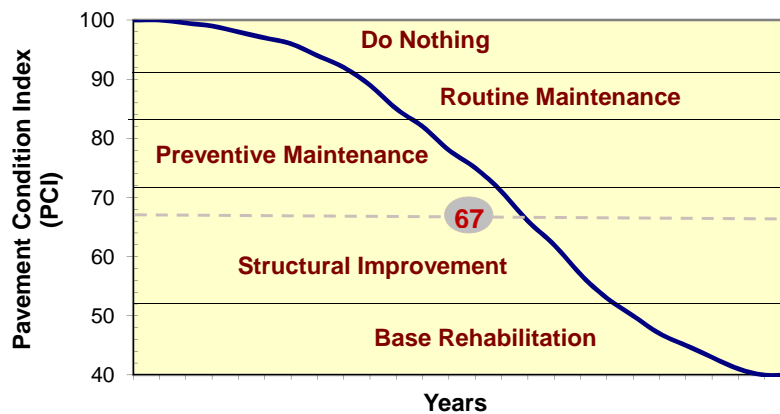
## Pavement Management Process

### The Process

- ❖ Develop Pavement Management Database
- ❖ Pavement distress identification and quantification  
(Visual Inspection Only)
  - Performed in 1997, 2006, 2012 (partial)
- ❖ Refine Pavement Deterioration Curves
- ❖ Pavement Condition Index (PCI) calculation on a 0 - 100 scale
- ❖ Define Treatment Options and Costs
- ❖ Develop list of candidate projects
- ❖ Apply engineering and local judgment to define annual road program

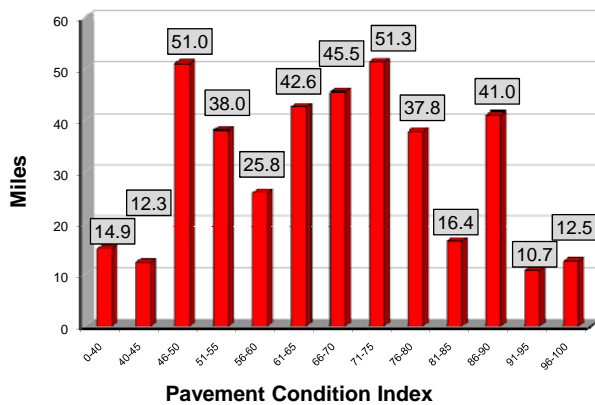
## Current Conditions

Average Roadway Pavement Condition Index = 67



## Current Conditions

### Distribution of Conditions\*

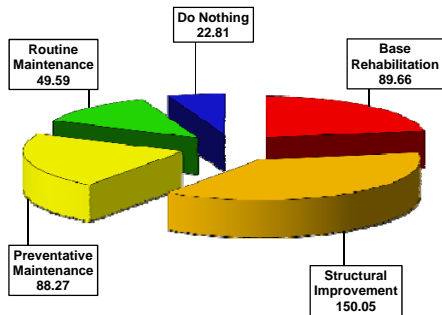


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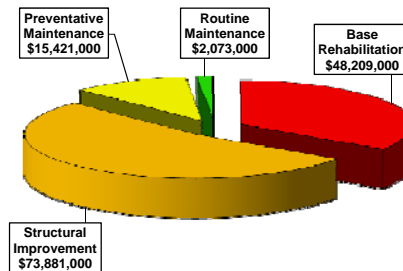
## Current Conditions

### Current Roadway Pavement Backlog Summary

Backlog in Miles  
~400 City Maintained Miles



Backlog in Dollars  
~\$140 Million



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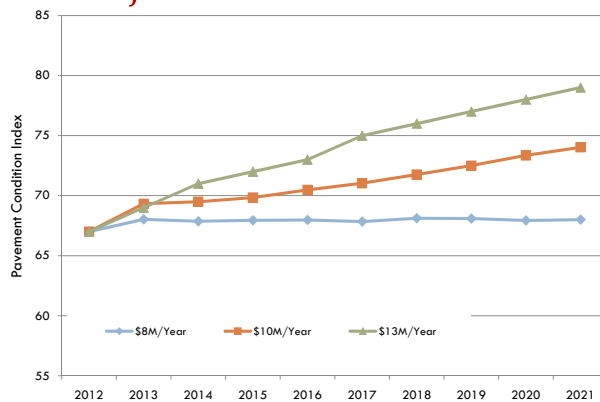
## Budget Analysis

### Budget Analysis

- ❖ \$8 Million per year- Maintains PCI
- ❖ \$10 Million per year- Will increase Average PCI to 74 in 10 years
- ❖ \$13 Million per year- Will increase Average PCI to 75 in 5 years.

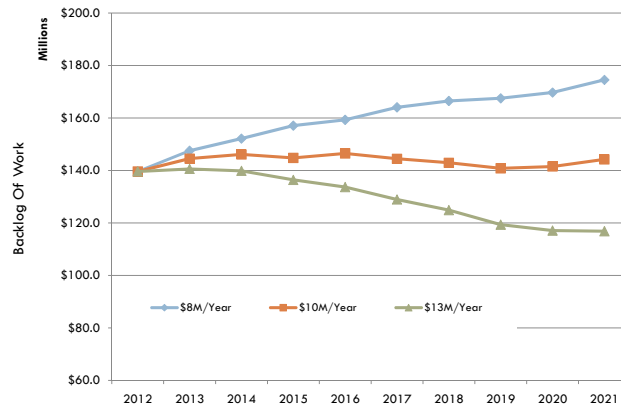
## Budget Analysis

### Projected Pavement Condition



## Budget Analysis

### Projected Backlog of Work



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## Project Selection

- ❖ System uses Cost/Benefit Calculation to Prioritize Projects
  - ❖ Factors Increasing Benefit
    - ❖ Traffic Volume
    - ❖ Lower Cost
    - ❖ Worse Condition (Lower PCI)
    - ❖ How Long the Repair Type is expected to last
  - ❖ Key Concepts
    - ❖ Repair roads before they fall into a more expensive "treatment band"
    - ❖ Fix the Roads used by the most people.

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## Next Steps

- ❖ Determine Funding Level
- ❖ Utilize GIS to Coordinate Projects Geographically
  - ❖ Reduce Mobilization cost for contractors
  - ❖ “Neighborhood” Planning
- ❖ Coordinate with Utility Companies
- ❖ Perform Project Level Evaluations and Testing to determine actual repair for each candidate street.

## Questions & Answers



VHB  
Pavement Engineering  
Services

Gordon Daring, PE and  
Lance Baden

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