HRGreen

Public Works and Maintenance Operations

- Pavement Management Capital Improvement Plan (CIP)
- Public Works Maintenance
- Other Infrastructure Conditions
- Conclusions
- Questions and Answers

CAPITAL IMPROVEMENT PLAN (CIP)

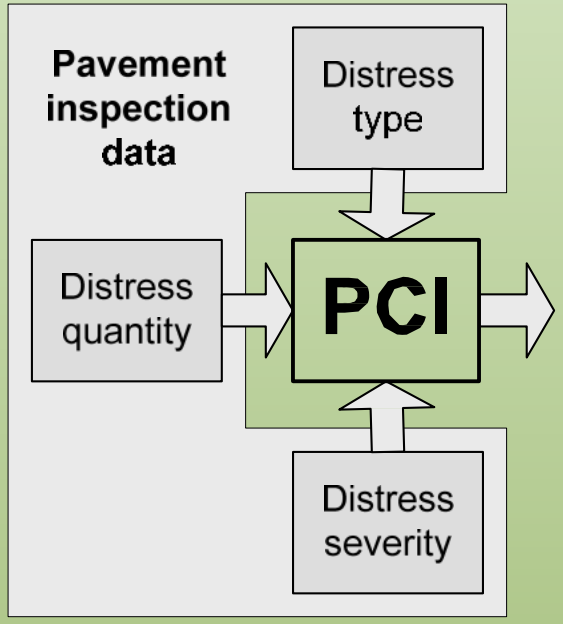
Pavement Management CIP

- Implemented the Paver™ system roadway pavement network.
- Pavement Condition Index (PCI) Survey

  Performed a network-level field condition survey and established a PCI of the Township's roadway pavements.
- Roadway Pavement M&R Budget Analyses

  Performed five-year budget analyses of multiple scenarios using Paver™ to determine future needs of alternative scenario.

Pavement Management CIP



Condition Assessment Scale

Condition Assessment	PCI Value
Excellent	98-100
Very Good	90-99
Good	80-89
Satisfactory	60-79
Fair	60-69
Unsatisfactory	40-59
Failed	0-39

Tasks Part of the CIP – Pavement Only

- Understand of the current roadway condition
- Develop the pavement management plan
- Evaluate the network-level pavement condition survey
- Apply software to identify future M&R needs.
- Determine future maintenance costs
- Develop a 5 year CIP

Good Condition

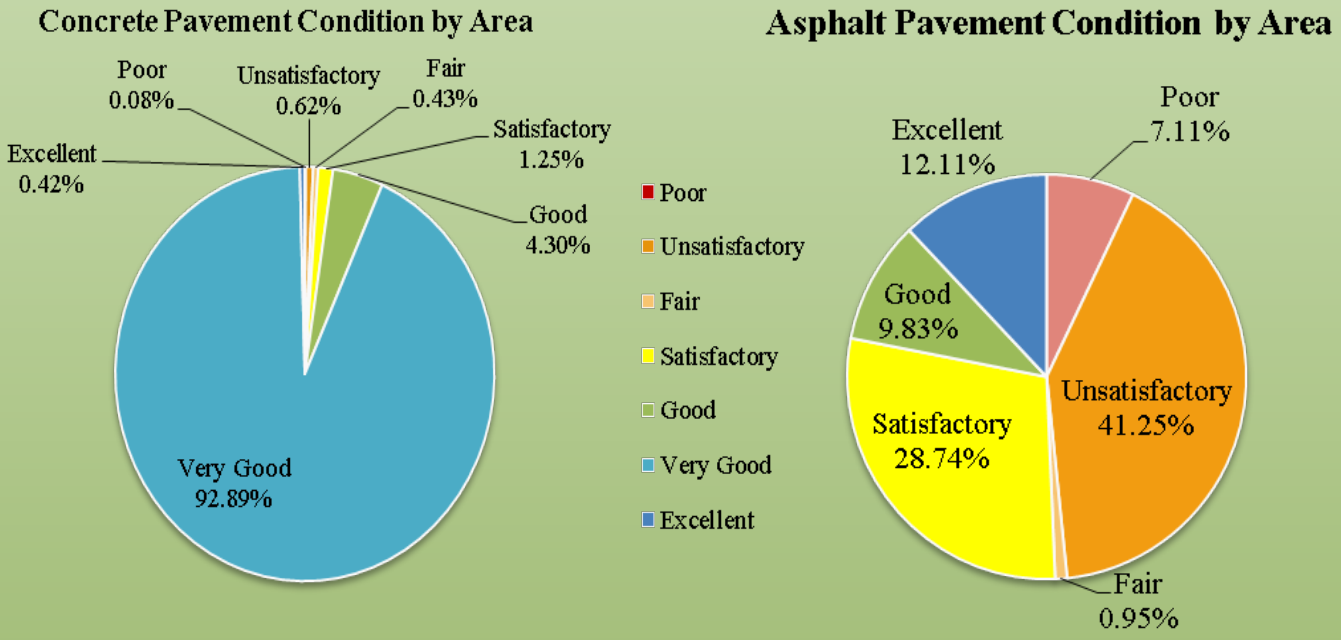
Poor Condition

Existing Pavement Conditions and Field Observations

THE WOODLANDS TOWNSHIP

Table 1: Pavement Condition Distribution of Each Surface Type

Pavement Surface Type	Inspected Pavement Area (SY)	Pavement Area (%)	2018 Average PCI
Asphalt	62,444	0.96	**64.3**
Concrete	**6,425,152**	**99.03**	**95.0**



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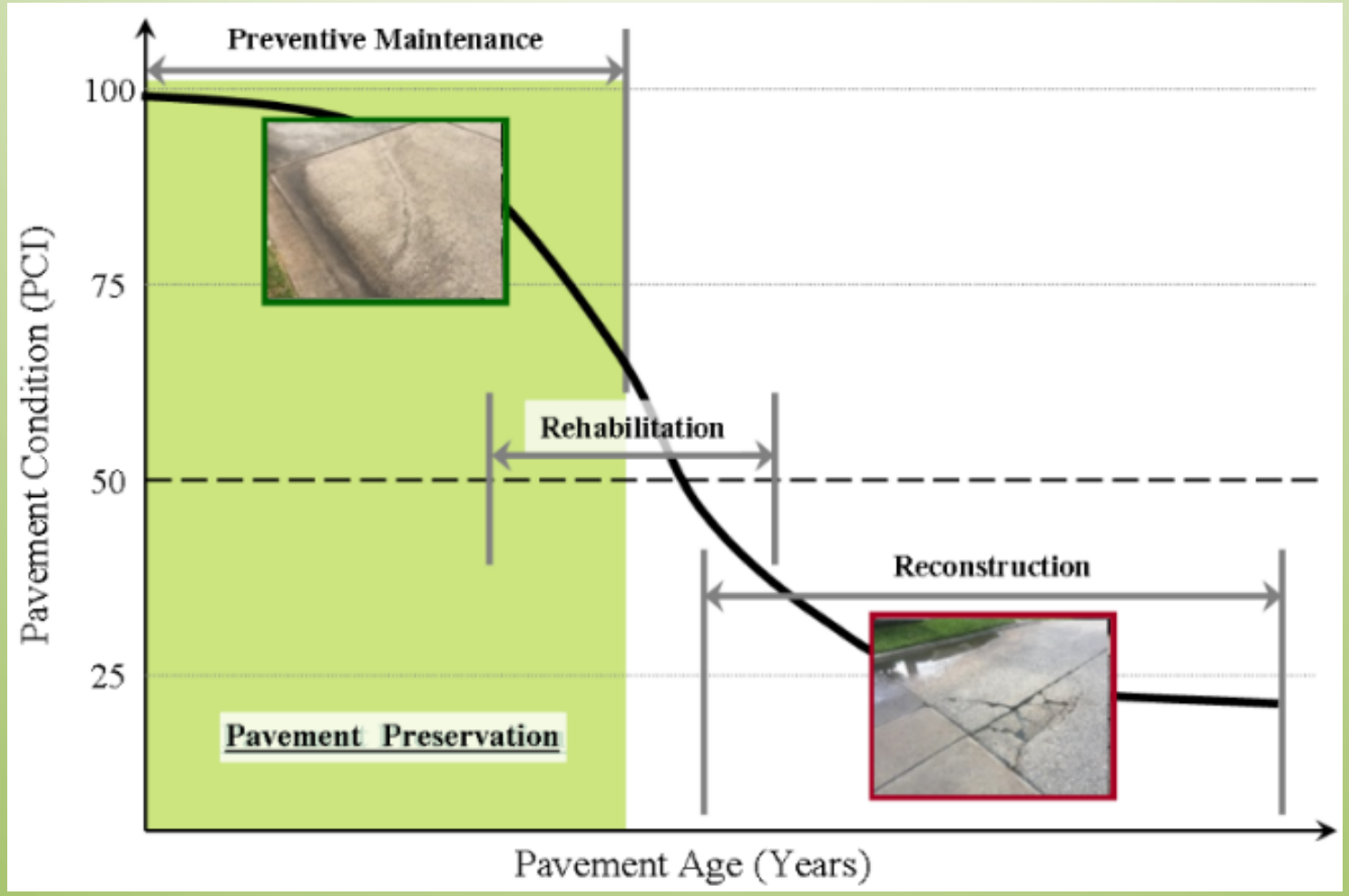
Explain the 100 year Cycle



Explain the 100 year Cycle

- Accepted “norm” for Concrete Pavement Life = 50-60 years
- The current pavement has been built over a 40+ Year Period
- Based on the current PCI of 95 our team felt that a total life span of a100 Year Service Life Span was reasonable
- The CIP reflects a remaining life span of 60 years
  - Developed a short term – 5 year plan
  - Developed a long range – 55 year plan

Maintenance & Rehabilitation Budget Analyses

SHORT RANGE CIP PLAN

(TO BRING CURRENT STREETS TO ACCEPTABLE LEVEL)

Results for Concrete Pavement

5-year Capital Improvements: $6,250,000 ($1,250,000 per year)

Results for Asphalt Pavement

5-year Capital Improvements: $2,500,000 ($500,000 per year)

Five-year Capital Improvements for both Concrete and Asphalt Streets

Yields: $8,750,000 (Over 5 years)

Pavement Management Plan - Other

Stop Gap "Emergency" Fund

- Unforeseen Damage
  - Flooding
  - Utility Breaks
  - Bridges
  - Etc.

- Budget $500,000 Annually

PAVEMENT INVESTMENT PLAN

REVIEWS

- Special Projects, E.G.
  - South County Mobility Plan
  - Bridges

TYPICAL APPROACHES

- Capital Investment when required
- Bond Measures
- Sinking Fund

PUBLIC WORKS

Fiscal Analysis Assumptions

•Assumptions
- Lane Miles= 840
- Assumes Annual Maintenance Cost/Mile= $5,176
- Anticipated Annual Public Works Budget= $4,627,735
- Assumes Annual Maintenance Operating Budget (Excluding Personnel) = $1.9M
- HRG pavement maintenance estimate= $550,000/year
- Remainder= $1,350,000 for other activities($1.9M – 550k)

Conclusions
- Assumptions are conservative
- Reasonable for in-house service - based on peer communities
- Additional cost estimates developed for public works contracting options

Public Works Contracting Options

Optional Delivery Methods

- Provide maintenance operations/services
  - In-house (As Assumed)
  - County (Ongoing Contract)
  - Private Contractor(s)- Maintenance Services Contract

Additional Analysis Option

- Current maintenance service levels are based on lane mile estimates. There is value in establishing a Work Program & Budget for contracting services. Identifies labor, equipment and materials. Use field inventories to establish levels of service

Public Works Maintenance Options

Approach	Total Capital Initial $	# Personnel	*Maintenance Operating Budget $	
In-house	19.4M	34	1.9M	
Private Contractor	1.0M	5 to 7*	1.5M	About a 20% saving

Note: All $ in Millions

Assumes all services levels are the same

*Assumes: Director, Admin, Superintendent, Signal Crew & related equipment (as an option)

OTHER CONSIDERATIONS

Bridge Maintenance and Repair

- A field evaluation Bridges was not completed (Used TDOT Report)
  - Elements
    - Bridge deck repair/maintenance
    - Structural repair requirements
  - Actions
    - Based on very good ratings requires maintenance not major repair
    - Maintenance of bridge decks
      - Estimate: covered by a 10% increase in maintenance budget ($50k)/year
      - Fund uncertainties from stop gap amount
    - Option: Conduct a sampling of the 62 bridges to provide a more accurate estimate for maintenance

- This does not include structural requirements

The MUDs

- MUD Report outlines two options concerning MUDs
  - Option 1 – City takes over MUDs upon incorporation
    - Provides direct control and over flood control and mitigation issues
    - Tax rates in each MUD vary and difficult to fairly distribute tax burden
  - Option 2 - City integrates MUDs over time
    - Facilities in very good condition
    - Helps mitigate tax rate balancing issues
    - Limits the City's ability control operations but provides time to develop a unified flood control strategy
- An additional option is to have the current model remain in place and pursue intergovernmental agreements with the MUDs to create the structure for the Township and/or the City to provide greater direction on flood control strategies

QUESTIONS