Pavement Management
Introduction
City Pavement Assets

- 65.5 miles of paved streets
- 4.0 miles of gravel roadways
- Approximate replacement value of pavement asset $150 million
What is Pavement Management?

• Planning maintenance and repair of a network to optimize pavement conditions
• Consists of:
  – Inventory of pavement conditions
  – Assigning importance of segments
  – Network analysis based on decision criteria
  – Schedule *maintenance* to maintain “good” streets
  – Schedule *repairs* of “poor” and “fair” based on available funding
Classification of Pavement Condition

VERY GOOD (PCI=95)

GOOD (PCI=70)

FAIR (PCI=60)

POOR (PCI=45)

VERY POOR (PCI=20)

GRAVEL (PCI=0)
PCI Diagram

CONDITION

Very Good

Good

Fair

Poor

Very Poor

Failed/Gravel

PAVEMENT LIFE

40% PCI drop

75% of Life

40% PCI drop

12% of Life
Types of Maintenance

1. **Crack Sealing:**
   - The least expensive treatment.
   - Crack sealing prevents the majority of moisture from entering the underlying aggregate base rock.
   - Approximately $0.80 / lineal foot

2. **Fog Seal:**
   - Rejuvenates the oils in the top layer of asphalt
   - Fills small gaps between the aggregate in pavement
   - Reduces deterioration of surface.
   - Approximately $0.60 / sq. yard

3. **Slurry seal / Chip seal:**
   - Slurry is mixture of asphalt emulsion, fine aggregate and water spread at approx 3/8” thick.
   - Chip is coarser aggregate placed on hot asphalt oil
   - Protects pavement from water damage Provides a new surface.
   - Approximately $1.50 (slurry) $2.50 (chip) / sq. yard
Types of Rehabilitation

1. Pavement overlay:
   - Thin lift overlays, thickness of 1-inch
   - Standard overlays are usually 2-inches
   - Increases road grade
   - Approximately $12/sq. yard depending

2. Pavement grinding and inlay:
   - Most common rehabilitation in a city
   - Used on distressed pavement
   - Grind depth depends on distress types, depths, severity, and road capacity
   - Maintains road profile
   - Can combine with overlay for increased thickness / strength
   - Significant cost variability: $15 to $40 / sq. yard
Pavement Condition Index Map

City wide Weighted Average PCI=73

PCI Rating Scale
- Good (70 – 100)
- Fair (55 – 70)
- Poor (0 – 55)
- Not Managed by City or Gravel

Rating Distribution
- 66% Good
- 12% Fair
- 22% Poor
2014 Results Summary

• 2014 pavement budget $150,000 per year
• At current rate, PCI could fall to 60 in 8 to 10 years.
• Backlog of $14 million of pavement maintenance and repairs
• At least $1.9 million/year estimated to maintain current PCI
• Around $2.8 million/year to improve PCI to a “no pothole” standard
City 2015 to 2016 Work

- Reactionary/complaint driven
- Low budgets - $250,000/year
- Why need to improve
- Public opinion
- Last year completed Meridian Street & portions of Main Street
- This year’s project in on Elliot Road & N. Springbrook Road
- Miles of crack sealing....
Why reactionary is bad

- $2 for planned maintenance / repair
- $8 for reactionary band aid
- $20 for reconstruction

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Need Defined

• Citizens to understand:
  – Why we need to maintain our pavement asset
  – Why we don’t want to focus only on POOR streets

• Committee to:
  – Represent your community
  – Advise on priority decision matrix
  – Advise on fair allocation of cost share