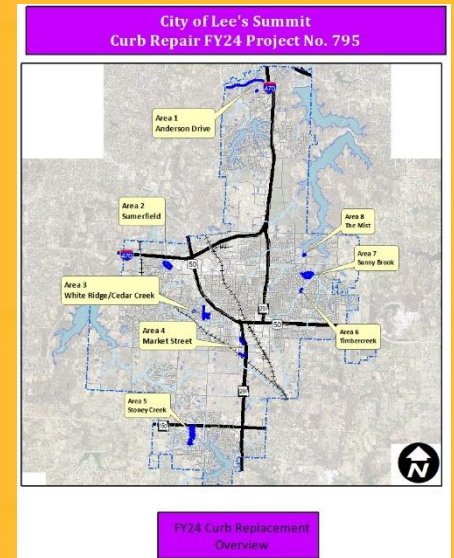
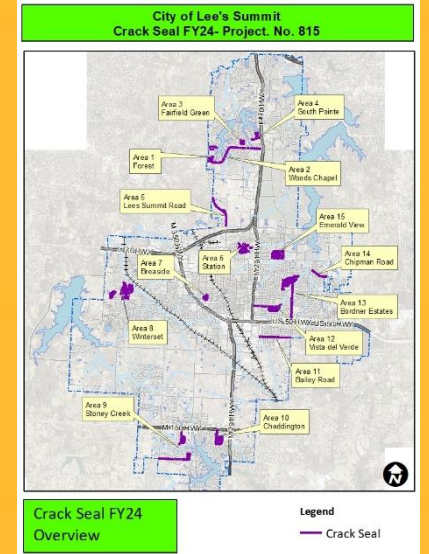
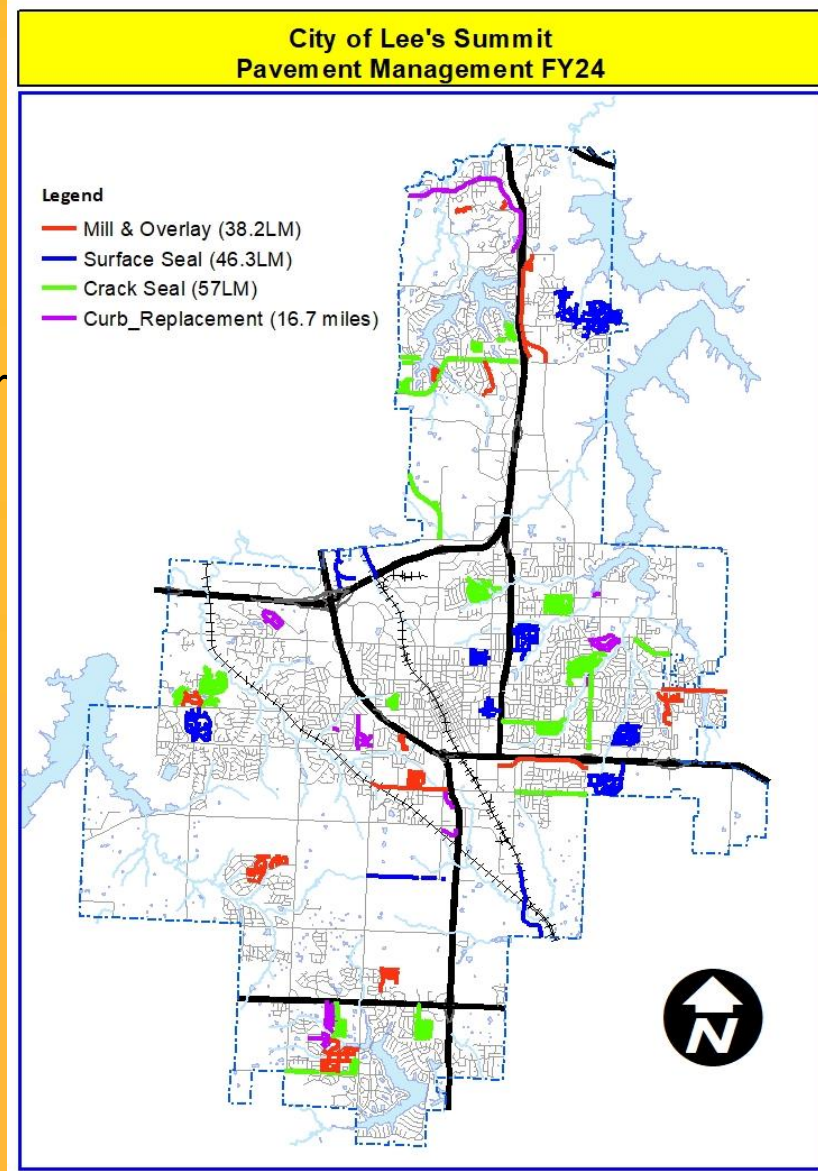
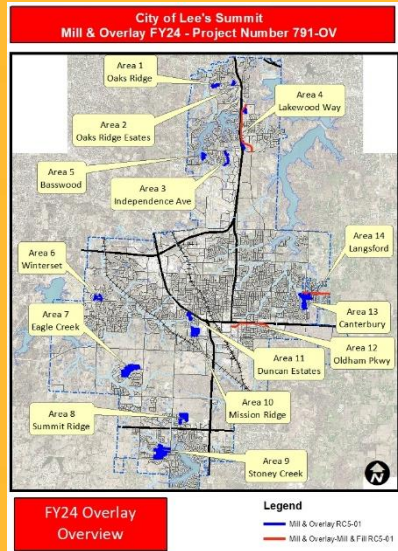


Pavement Management Program

Public Works Committee

March 4, 2024

Vince Schmoeger, Public Works Project Manager



“Keeping Good Streets Good”



Yours Truly

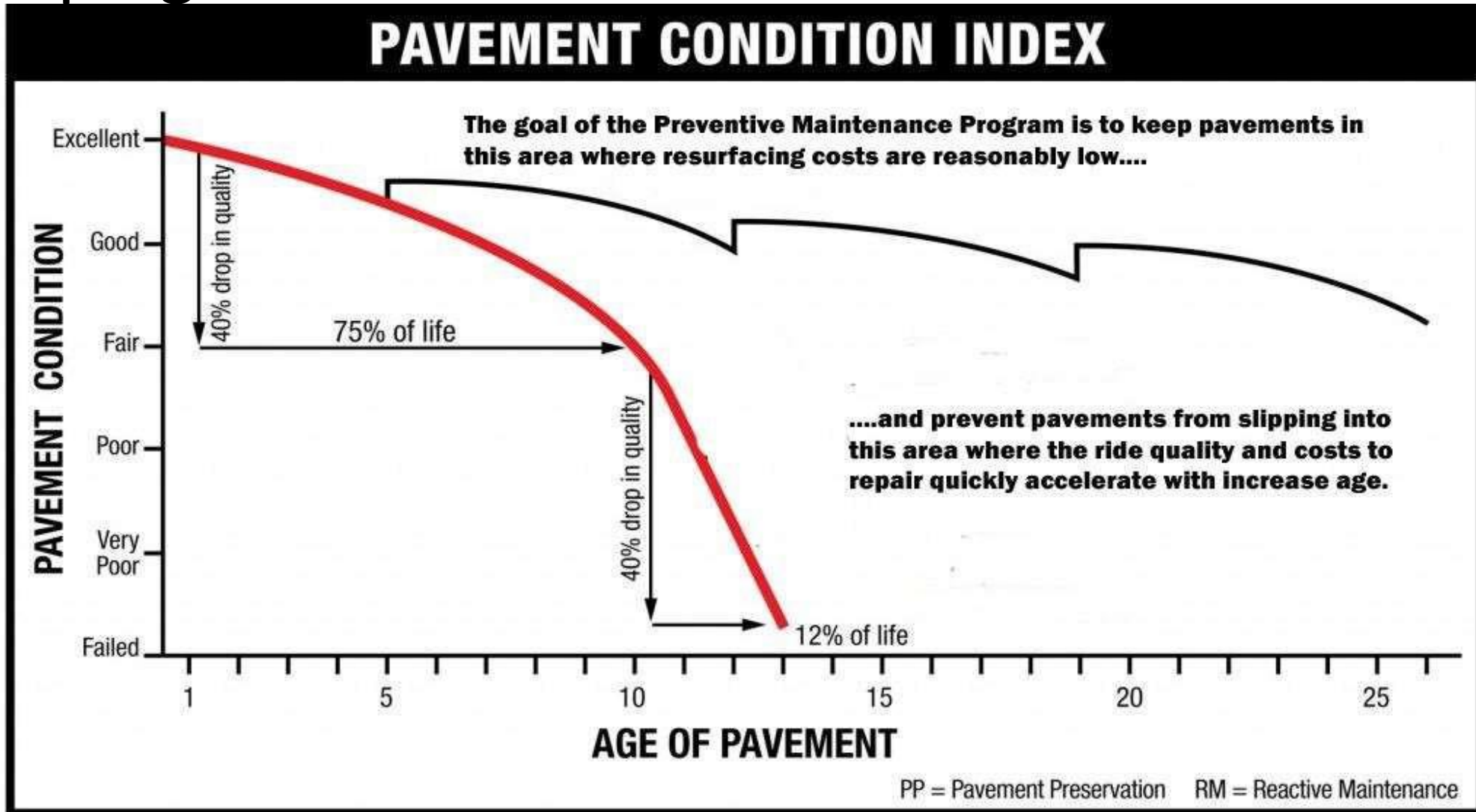
Pavement Management

- Systematic philosophy to keep good pavements in good condition.
- Pavements should be managed, not simply maintained.
- Re-construction costs 10 (plus) times the cost to perform annual maintenance
- FY2024 Pavement Management Program budget \$8.5M for the 4 main programs
 - Mill & Overlay 38.2 lane miles; (\$3.9M; 103K/LM)
 - Surface Seal 46.3 lane miles; (\$1.05 M; \$28K/LM)
 - Crack Seal 57 Lane Miles; (\$340,000; \$5,700/LM)
 - Curb Replacement 16.7 miles (\$2.7M; \$159K/mile)

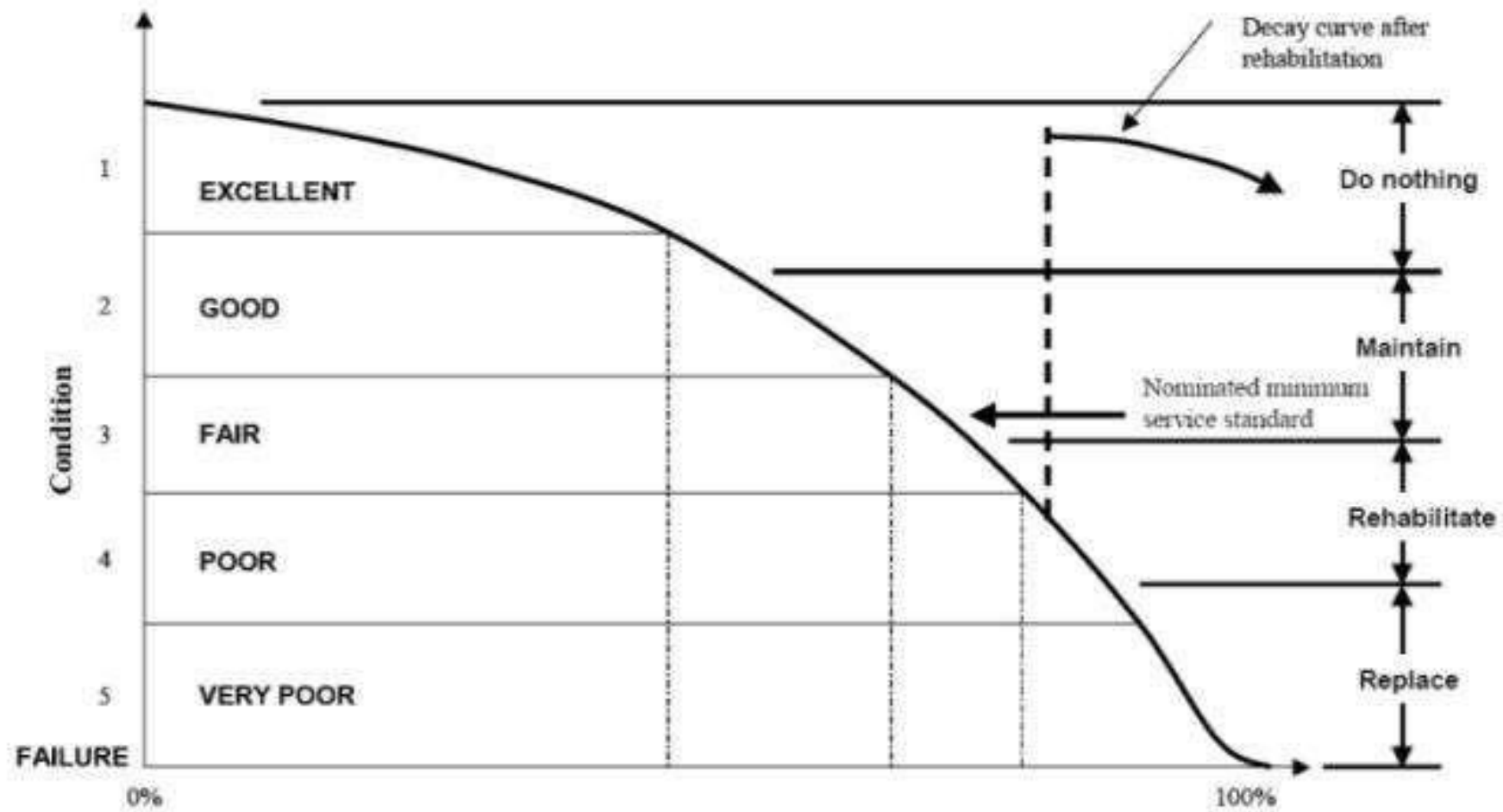
Funding the Pavement Management Programs

- The permanent ½ cent Transportation Sales Tax: \$9M per year
- Current augmentation from 15-year CIP Sales Tax
 - \$5M for curb over 15 years
 - Some curb included in various CIP Projects
- PW Operations
 - \$200K piece curb replacement(contractured)
 - \$200K pothole patching \$950K larger street repairs

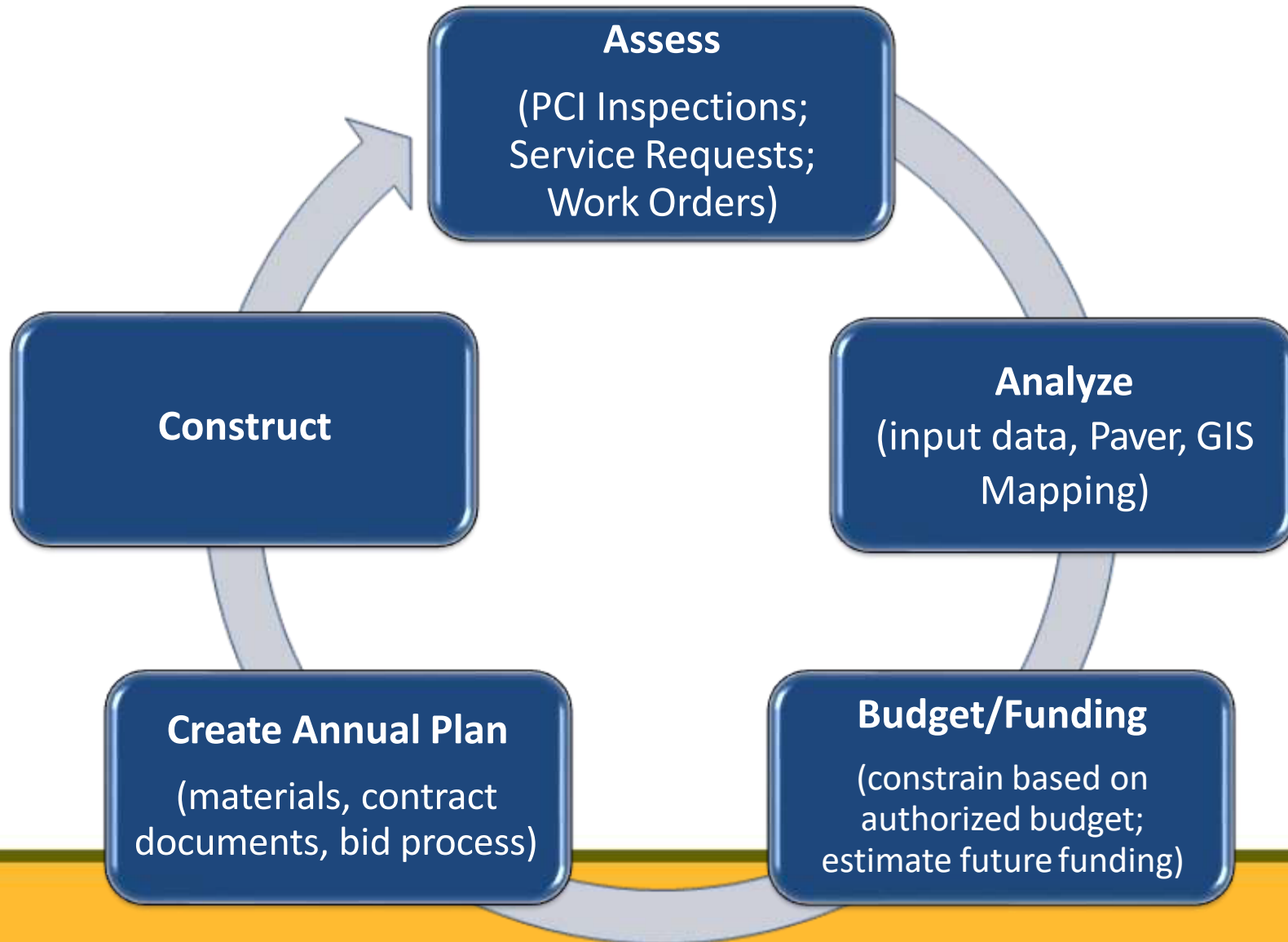
Keeping the Good Pavements in Good Condition



Goal: Right Treatment at the Right Time

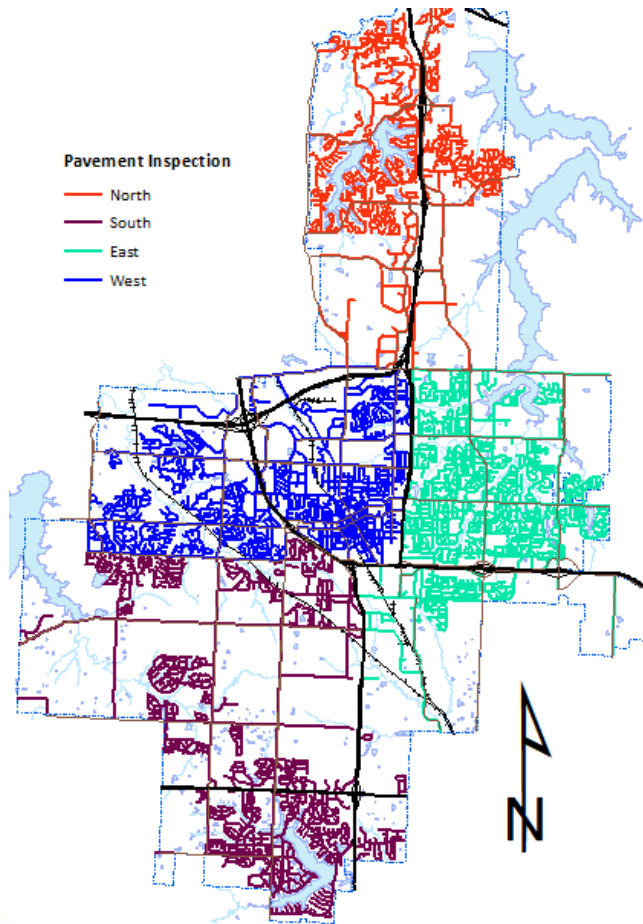


Pavement Management Cycle



PCI Based on Pavement Inspections

Pavements are on a 4-year rotating inspection schedule



Defects
Block Cracking
Fatigue Cracking
Joint Cracking
Patching
Potholes
Raveling
Rutting
Bumps/Sags

What happens after a street inspection?

- The inspection information is downloaded to the PAVER pavement management system to quantify pavement inspections
- PAVER then generates a condition number known as the Pavement Condition Index (PCI) on scale of zero to 100
 - Zero (very bad)
 - 100 (excellent/new)

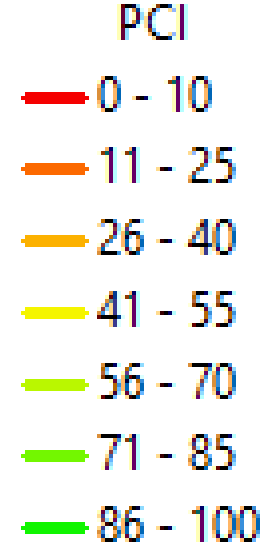
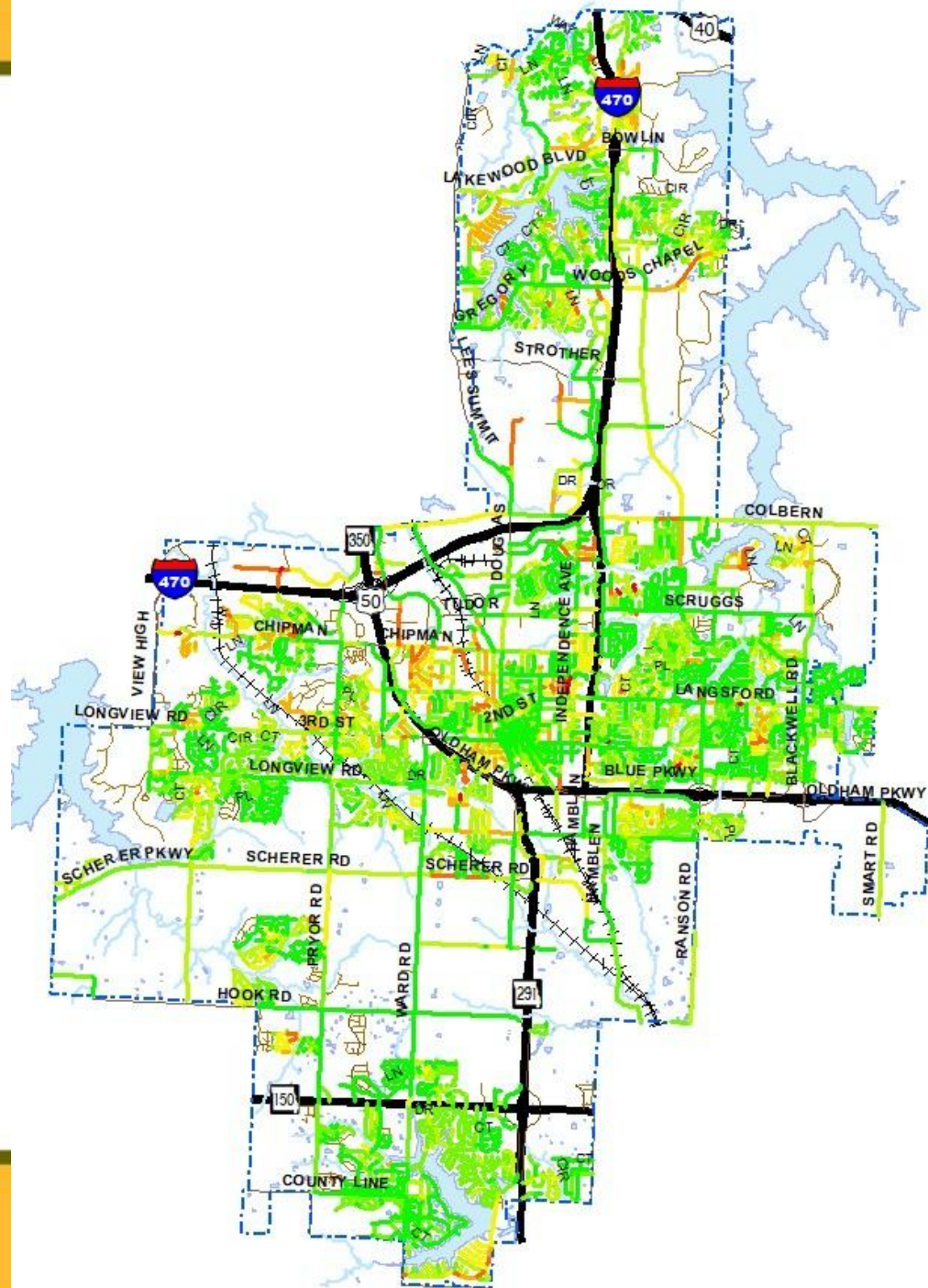
PCI Rating Scale

Red = Poor/Very Poor condition

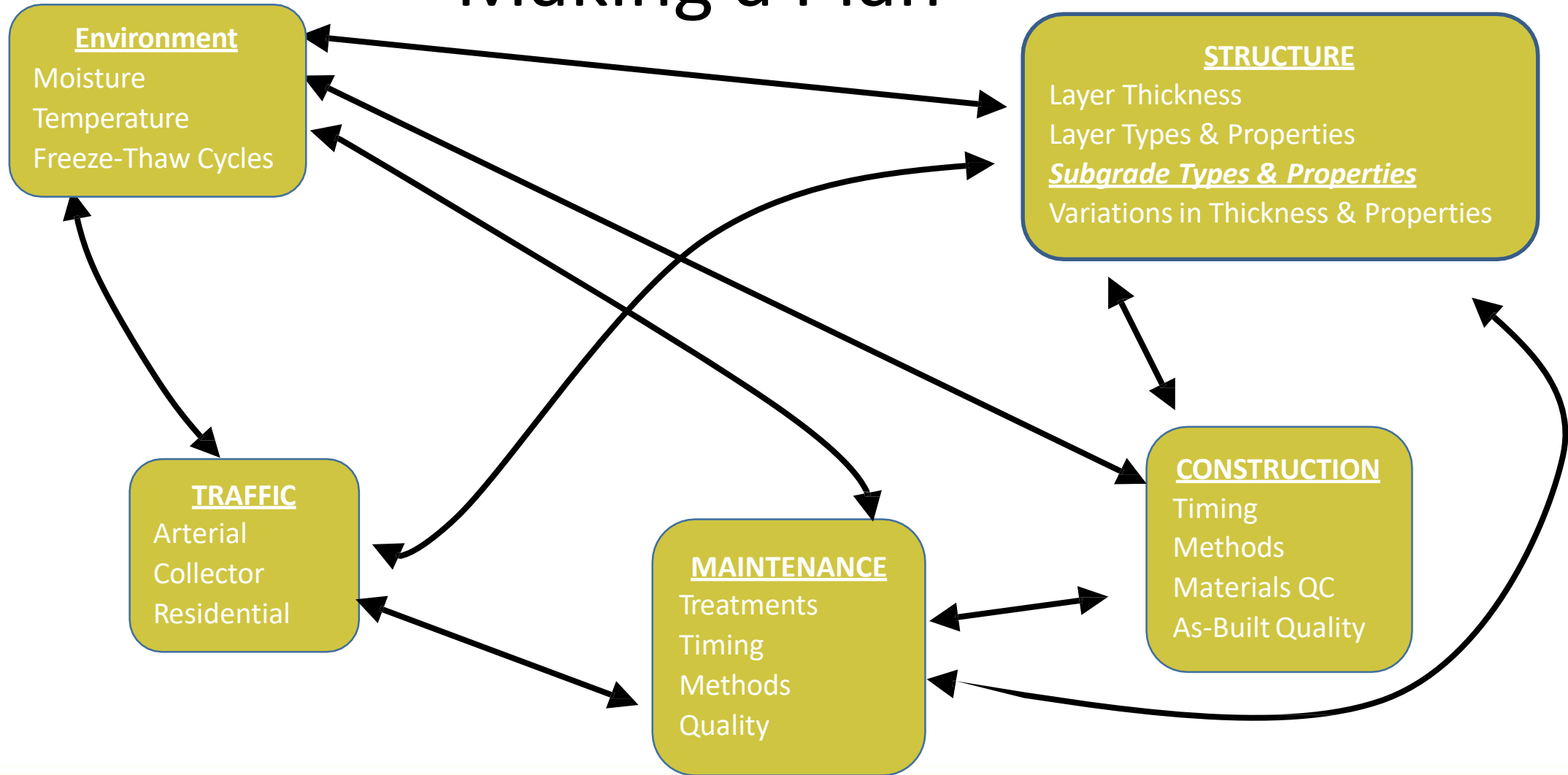
Yellow = Fair condition

Green = Good/Excellent condition

PAVER (PCI)	Pavement Condition	Corrective Action
24 and Below	Very Poor	Overlay – Consider Rebuild
25 - 59	Poor	Overlay
60 - 74	Fair	Surface Seal/Overlay
75 - 89	Good	Surface Seal/Crack Seal
90 and Above	Excellent	Very Unlikely/Crack Seal



Making a Plan



Implementing the Plan

- Improved initial construction materials and pavement sections
 - Updated Material KCMMB A2 (better aggregate and oil)
 - Mill & Fill construction (confined edges)
- To take advantage of economics of scale
 - Residential projects streets are usually grouped by areas
 - Arterial roads usually planned as standalone areas
 - Goal is consistent surface and maintenance cycles.
- Typically, the curb and overlay projects are stacked
 - Curb replacement in the fall
 - Overlay follows curb replacement next summer
- Crack Seal
 - usually installed 4-6 years following an overlay or 7-9 years after new construction.
- Surface Seal 3-5 years following crack seal.

PMP Programs

- Curb Replacement
- Mill & Overlay
- Crack Seal
- Surface Seal

Curb Replacement

- Average \$159,000/mile
- Replaces damaged & deteriorated curb ahead of Overlay
- Sidewalk ramps are reconstructed to current ADA specifications



Construction



Mill & Overlay

- Average \$103,000/LM
- Remove top 2" of street surface
 - make any repairs (patching)
 - replace asphalt
- Restore road close to initial construction
- Improved ride quality



Mill and Overlay Construction



Crack Seal

- Average \$5,700/LM
- Cracks blown out & refilled with rubberized asphalt
- Seals water from subgrade:
Slows pothole formation
- Not Pretty
- 3 to 4 years following overlay
- 6 to 9 years following new construction



Construction



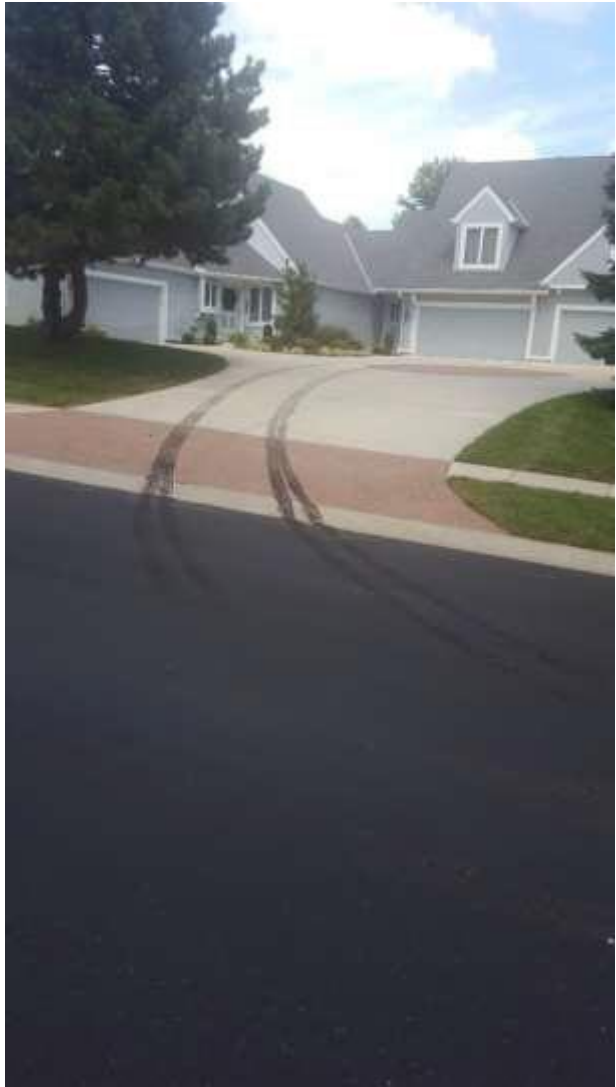
Surface Seal

- Average \$28,000/LM
- Add 1/4" - 3/8" asphalt/polymer/aggregate slurry material to the road surface
- Does not add structural strength to pavement
- Protects Asphalt from UV degradation
- Does not improve ride quality
- Cracks sealed, but visible
- Streets closed for at least 4 hours



Micro Surfacing Construction



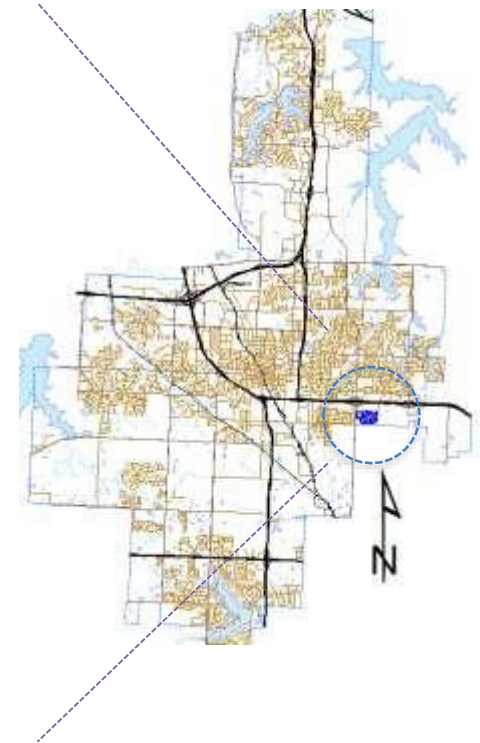
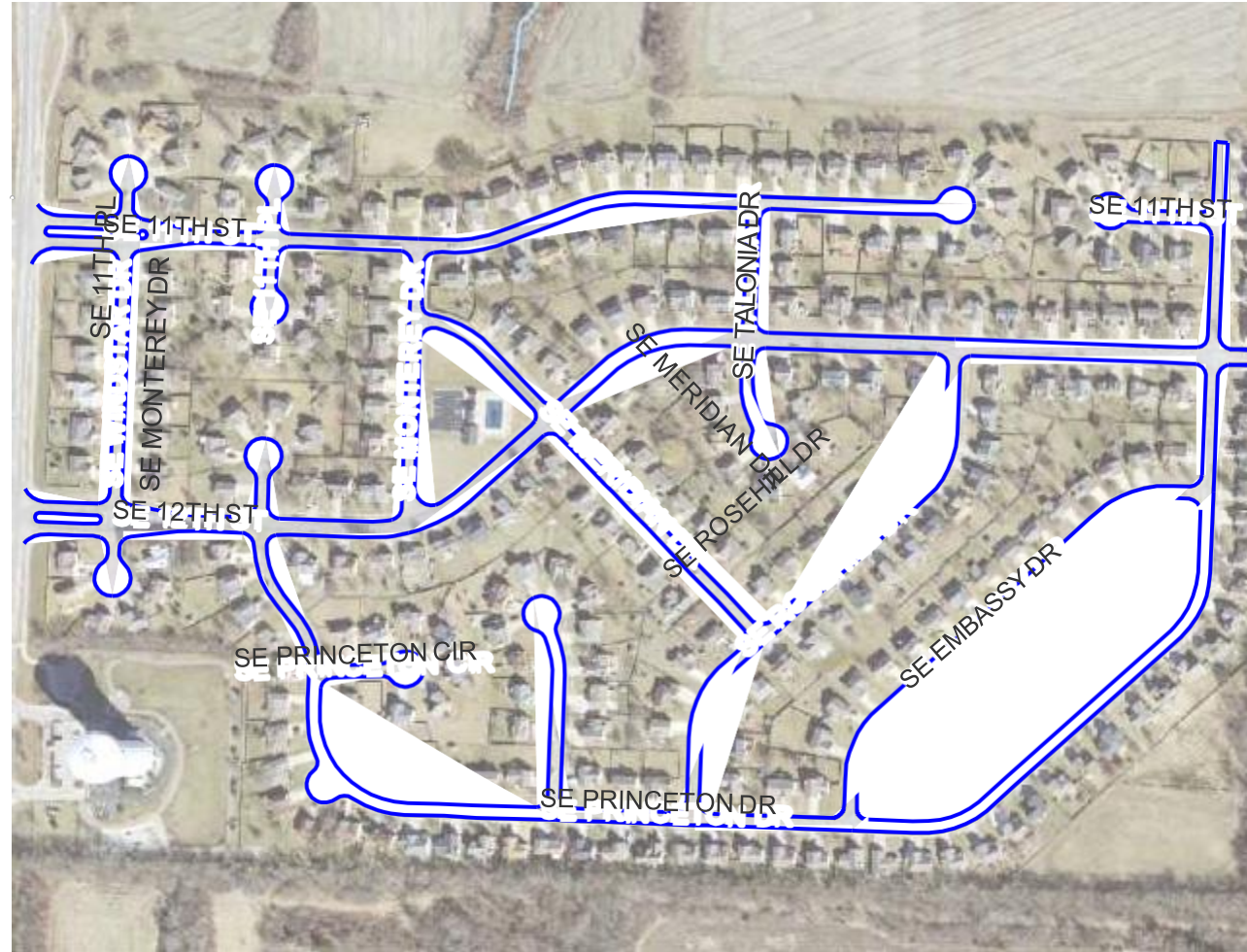


Project: Princeton Heights

- SE 50Hwy & Ranson Road
- 308 Homes
- 5.43 Road Lane Miles
- 5.44 Curb Miles

- Curb - \$ 864,960
- Overlay - \$ 559,290
- Total... \$1,424,250

- Surface Seal - \$152,040
- Crack Seal - \$30,951



Vince Schmoeger,
Public Works Project Manager

