2022 – “State of the Streets”
City of Harvard, IL

Project funding provided by:
Chicago Metropolitan Agency for Planning
(CMAP)

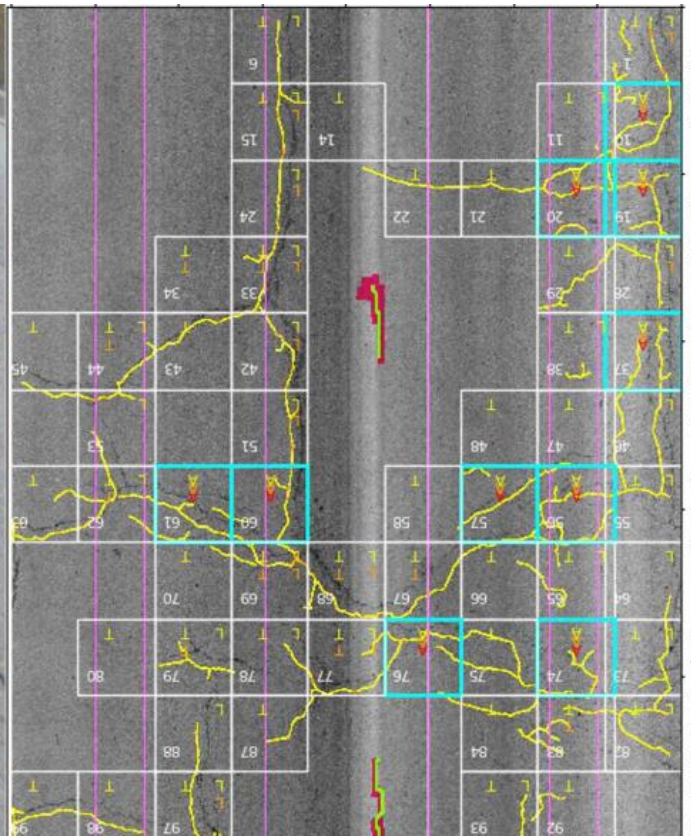
Sadaf Khosravifar, PhD, PE
IMS Infrastructure Management Services, LP
Date: 8/25/2022 (Virtual Meeting)

CMAP Project Goals

- Implement PAVER pavement management system
- Perform a comprehensive pavement condition survey
- Evaluate the impact of the City's existing funding level on future pavement conditions over the next 5 years
- Determine funding levels required to:
  - ✓ Maintain current pavement conditions
  - ✓ Increase overall pavement conditions
  - ✓ Eliminate the Village's existing rehabilitation and reconstruction backlog
- Recommend pavement preservation and rehabilitation projects

Pavement Condition Survey

Pavement Condition Survey



A Crk Low: 1.67 m2, density: 10.77/41
A Crk Mod: 0.42 m2, density: 2.71
A Crk Sev: 0 m2, density: 0.0

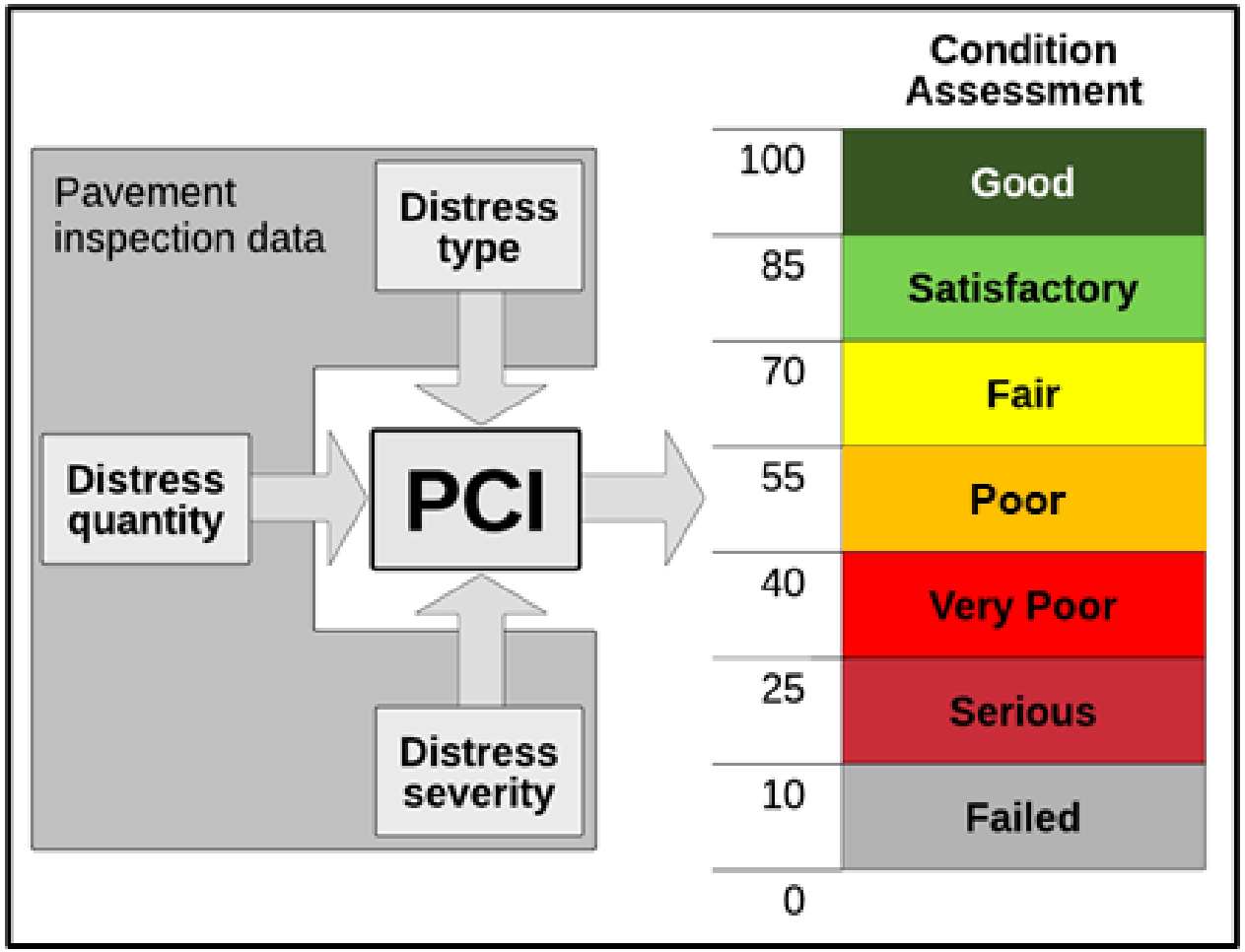
L Crk No: 0.0 m, density: 0.0
L Crk Low: 8.58 m, density: 55.35
L Crk Mod: 0.87 m, density: 5.61
L Crk Sev: 0.0 m, density: 0.0

E Crk No: 0.0 m, density: 0.0
E Crk Low: 0.0 m, density: 0.0
E Crk Mod: 0.0 m, density: 0.0
E Crk Sev: 0.0 m, density: 0.0

T Crk Low: 0.0 m, density: 0.0
T Crk Low: 15.27 m, density: 98.52
T Crk Mod: 0.4 m, density: 2.58
T Crk Sev: 0.0 m, density: 0.0

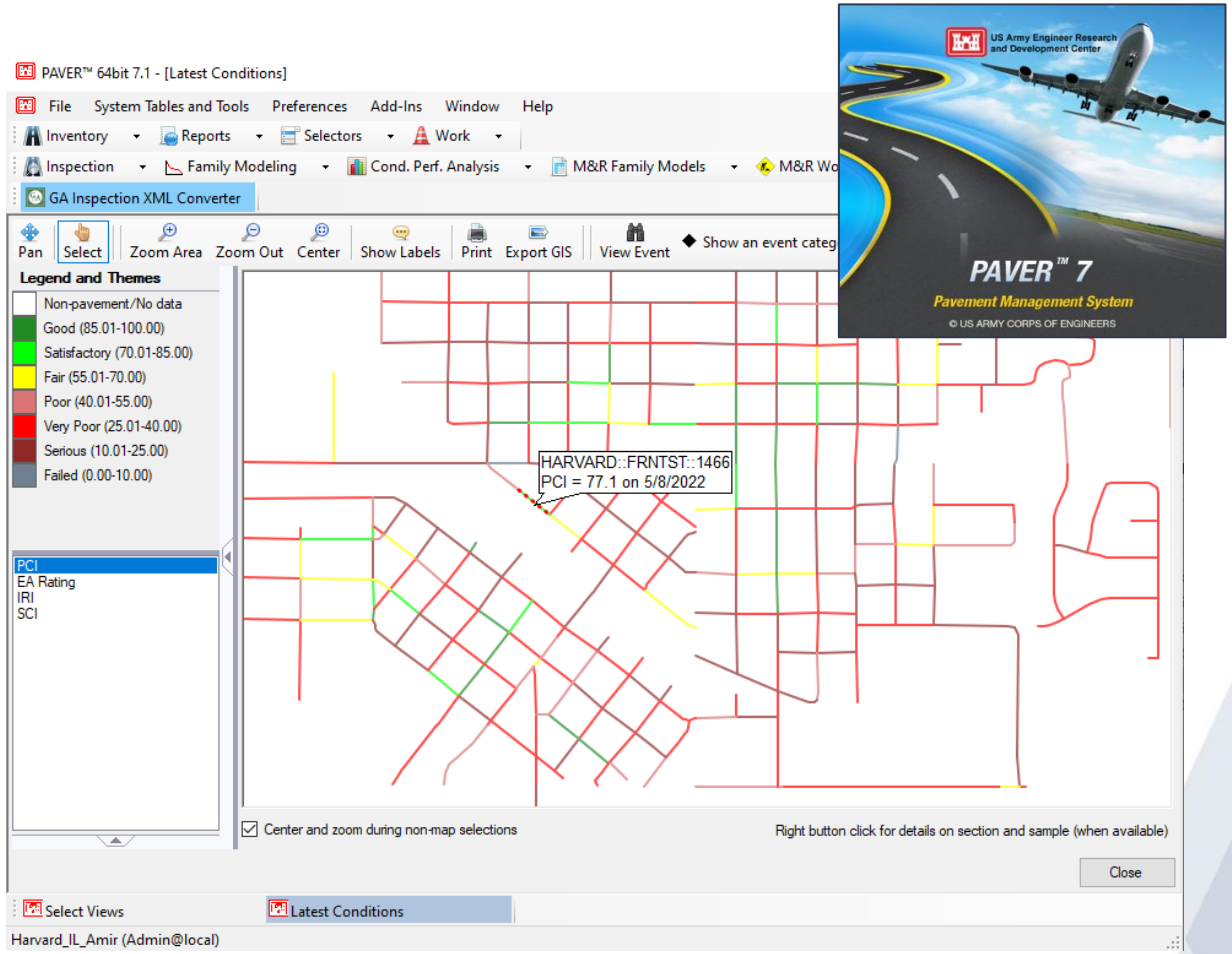
Total Crack Length: 36.81 m
Total Node Length: 25.13 m
Filtered Crack Length: 0 m
S LCrk Len: 0.96 m, density: 6.19
S ECrk Len: 0.0 m, density: 0.0
S TCrk Len: 0.0 m, density: 0.0
S ACrk Len: 0.0 m, density: 0.0

Pavement Condition Index (PCI)

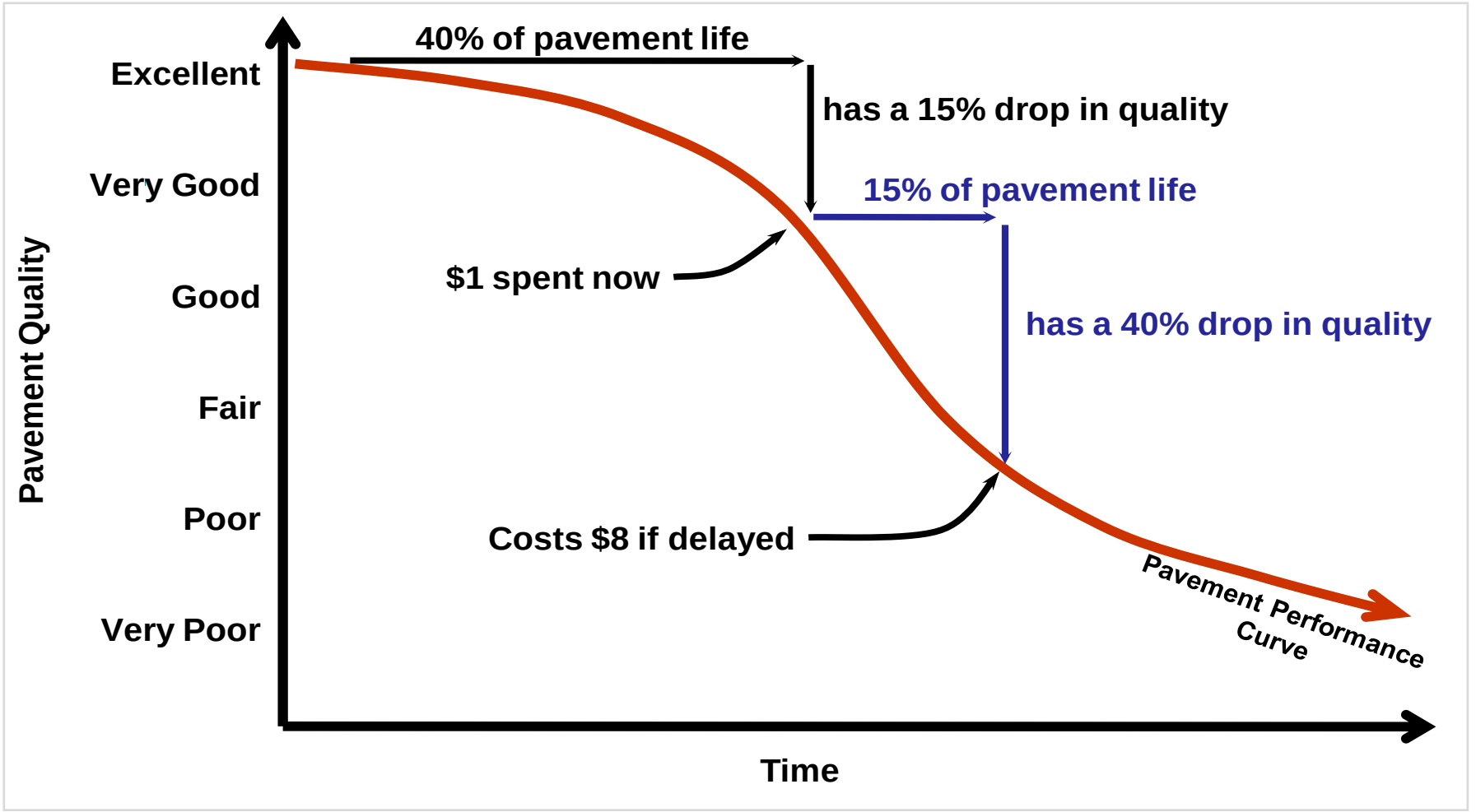


PAVER 7.1

- Manage pavement inventory
- Store routine pavement condition data
- Track pavement work history
- Predict future pavement conditions
- Perform Budget Analysis
- Develop pavement M&R projects

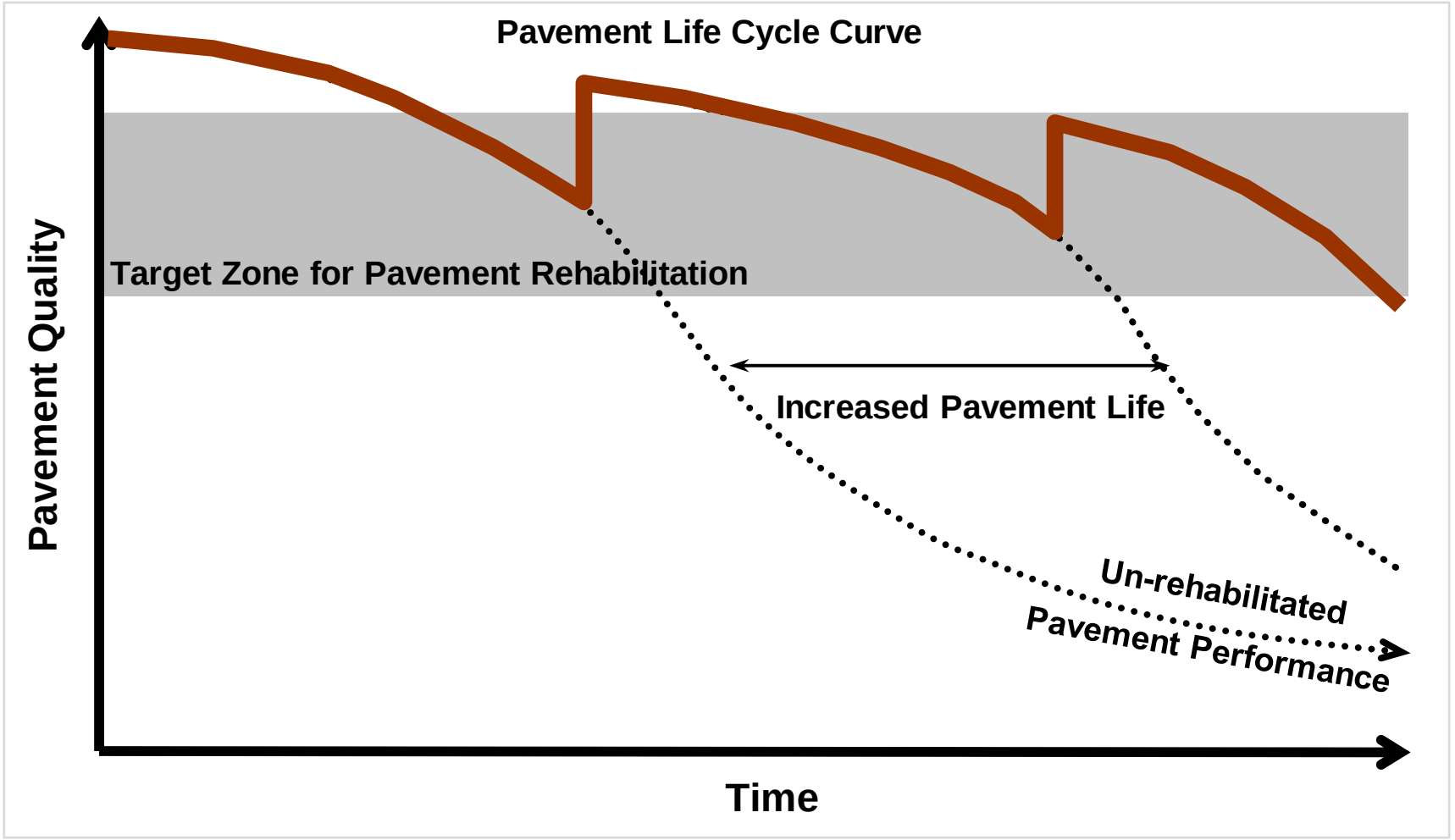


Pavement Management Concepts



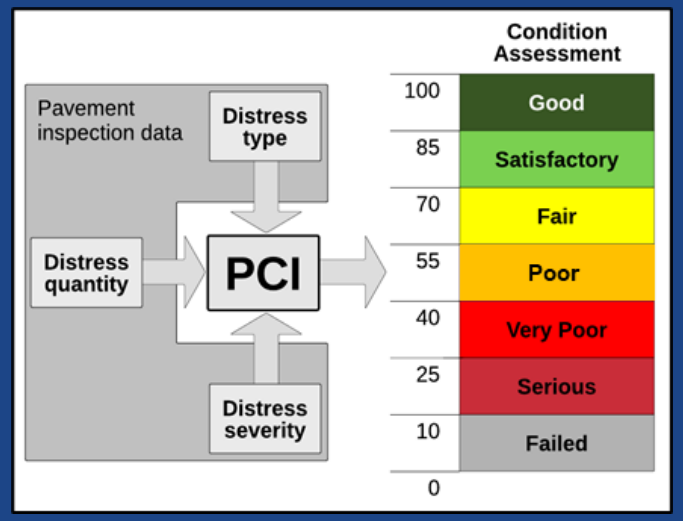
IMS
Infrastructure Management Services

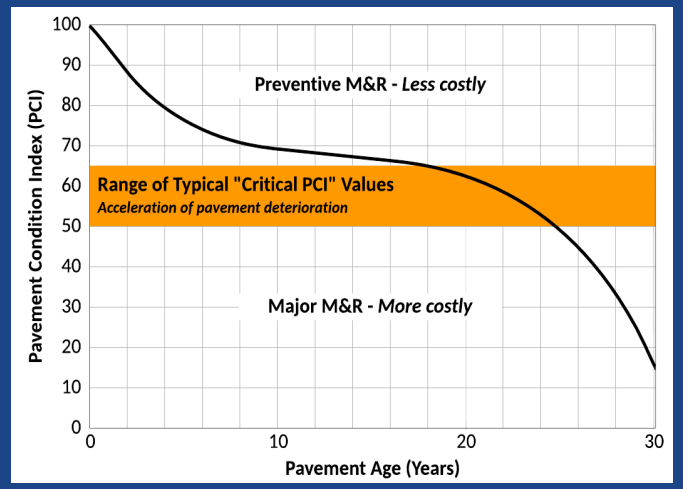
Pavement Management Concepts



IMS
Infrastructure Management Services

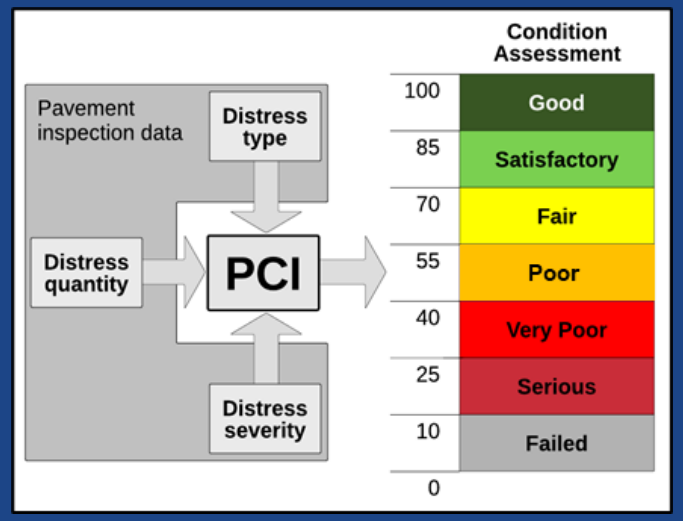
Condition Data Results

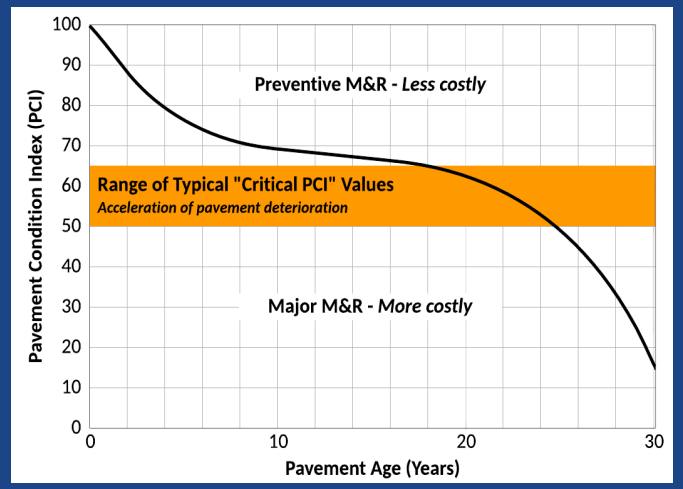




Condition = **Good (85-100)** | PCI = 100
SIXTH ST to 4TH ST
Distress: No Distresses
Recommended Activity: Preventive Maintenance

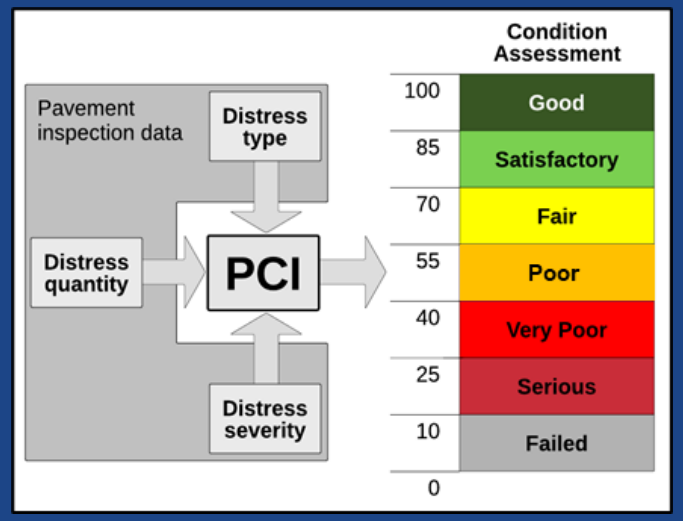
Condition Data Results

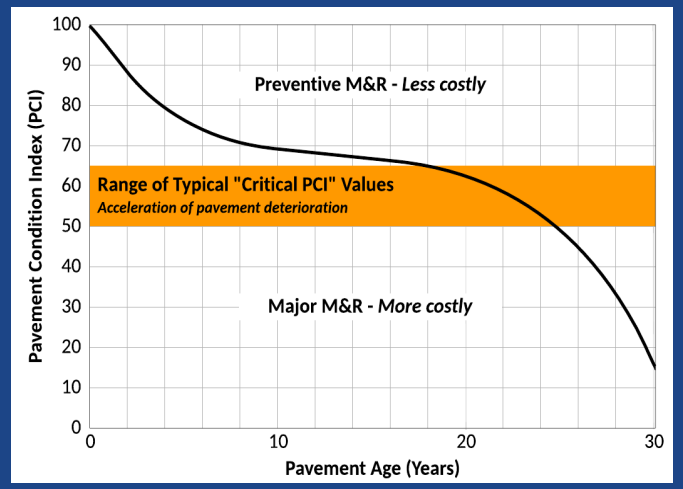




Condition = **Satisfactory (70-85)** | PCI = 71
HOWARD ST to BLANCHARD ST
Distress: Low L&T and Weathering,
Recommended Activity: Crack Sealing and Surface Treatment

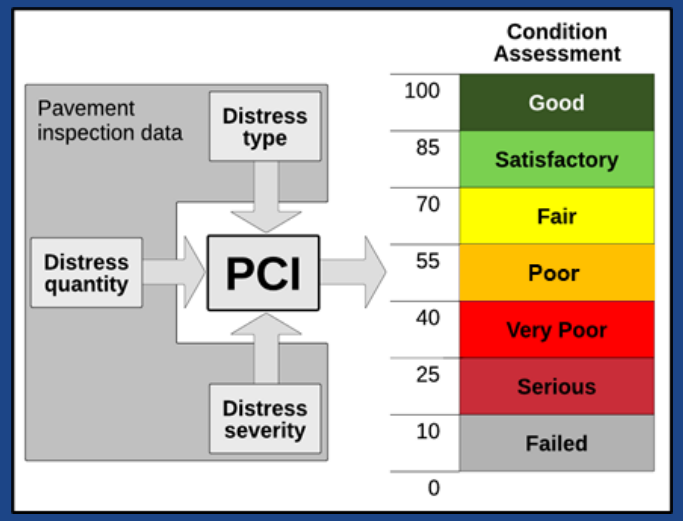
Condition Data Results

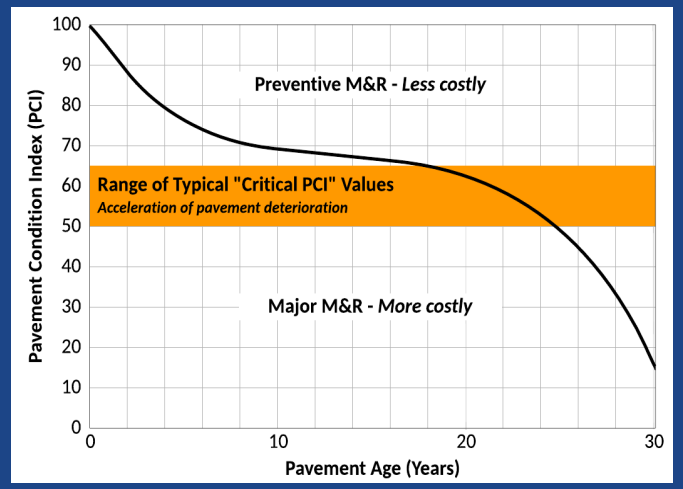




Condition = **Fair (55-70)** | PCI = 66
EOP to W DIGGINS
Distress: Low & Moderate L&T and Edge Cracking, crack seal, patching,
Recommended Activity: Thin Overlay

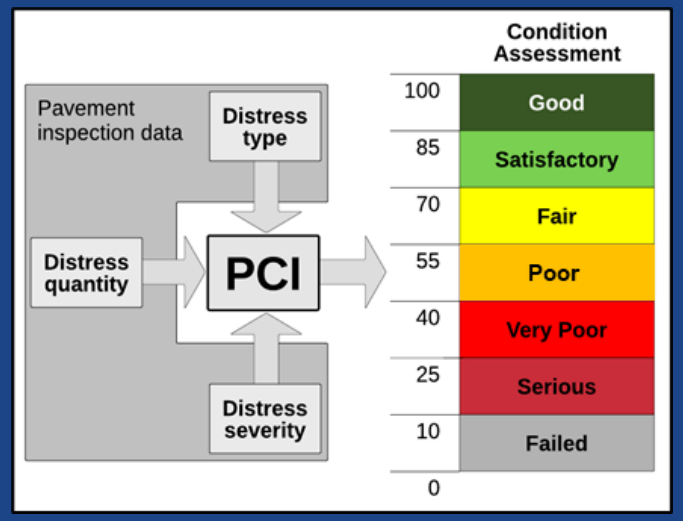
Condition Data Results

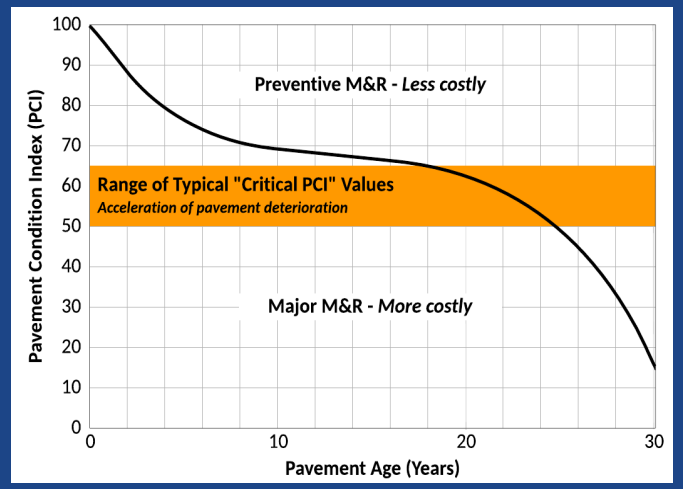




Condition = **Poor (40-55)** | PCI = 52
APPLE VALLEY RD to DS@479FT
Distress: L&T, Alligator, Edge Cracking
Recommended Activity: Suitable for mill and overlay

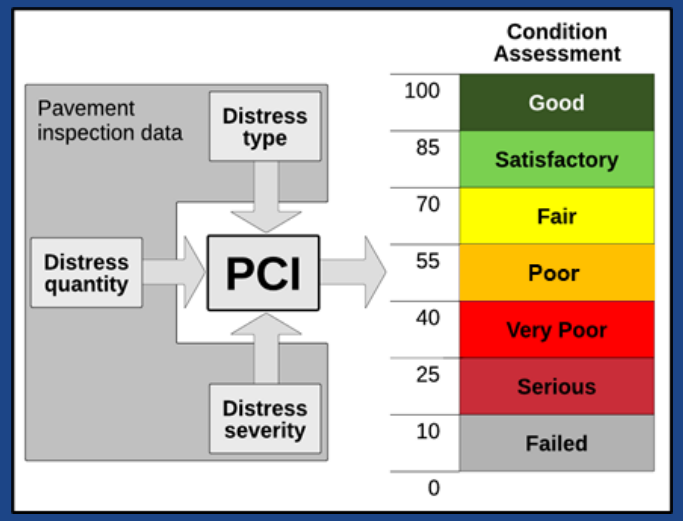
Condition Data Results

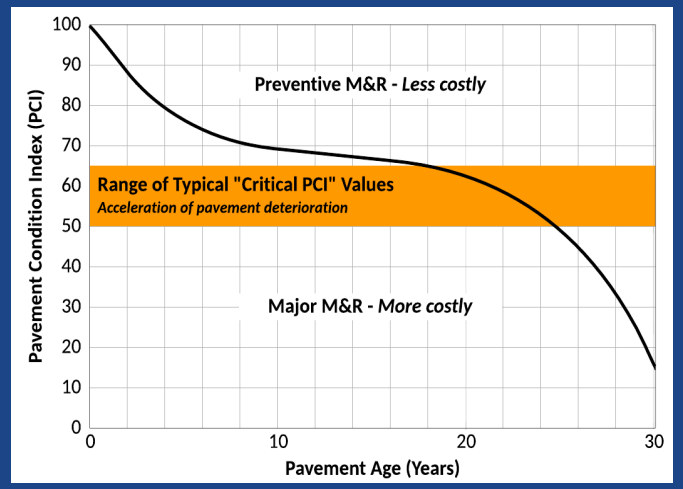




Condition = **Very Poor (25-40)** | PCI = 31
HART BLVD to JEFFERSON ST
Distress: Alligator cracking, Edge Cracking, Raveling
Activity: Thick overlay with extensive patching / Surface Reconstruction

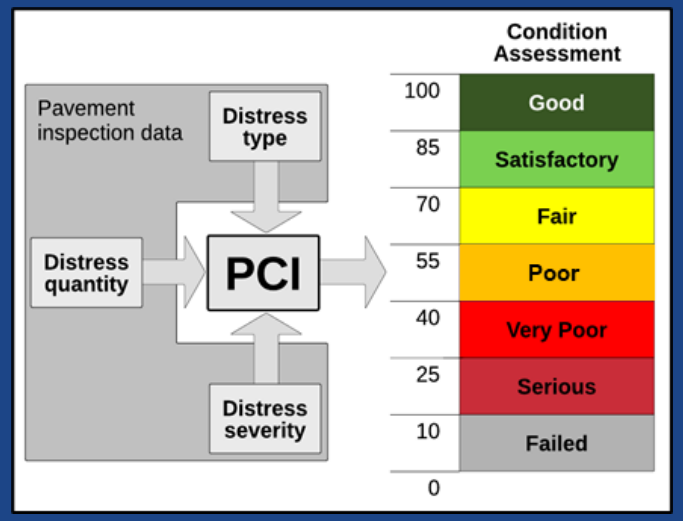
Condition Data Results

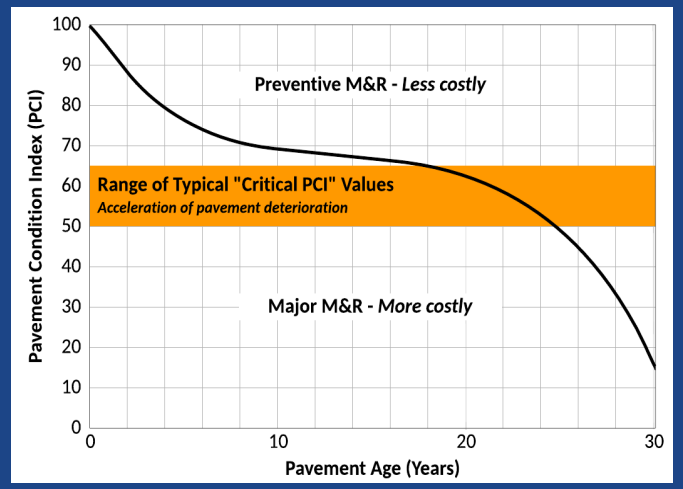




Condition = **Serious (10-25)** | PCI = 21
2ND ST to FIRST ST
Distress: Severe Alligator cracking, Edge Cracking, potholes
Activity: Surface Reconstruction with Base Repairs

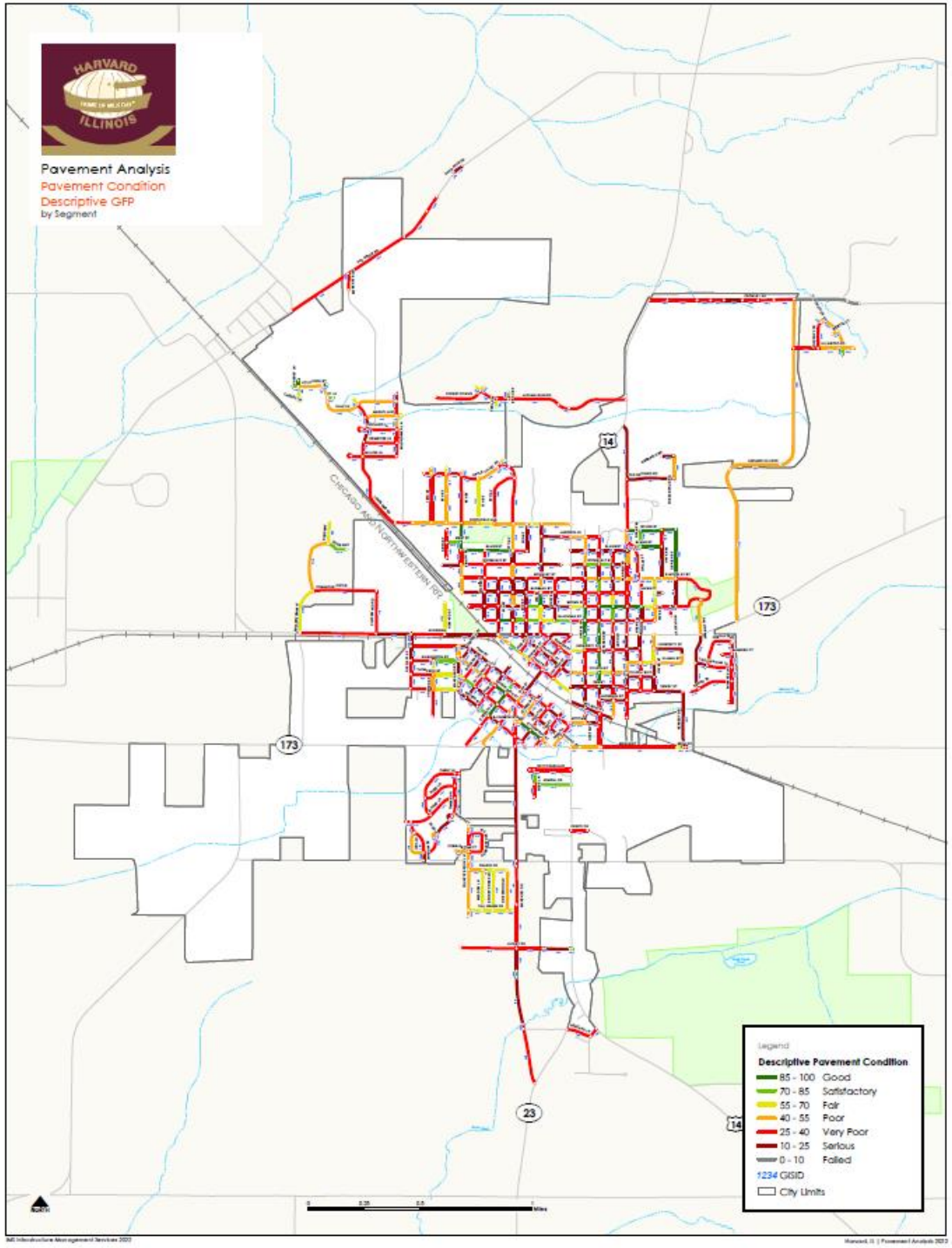
Condition Data Results



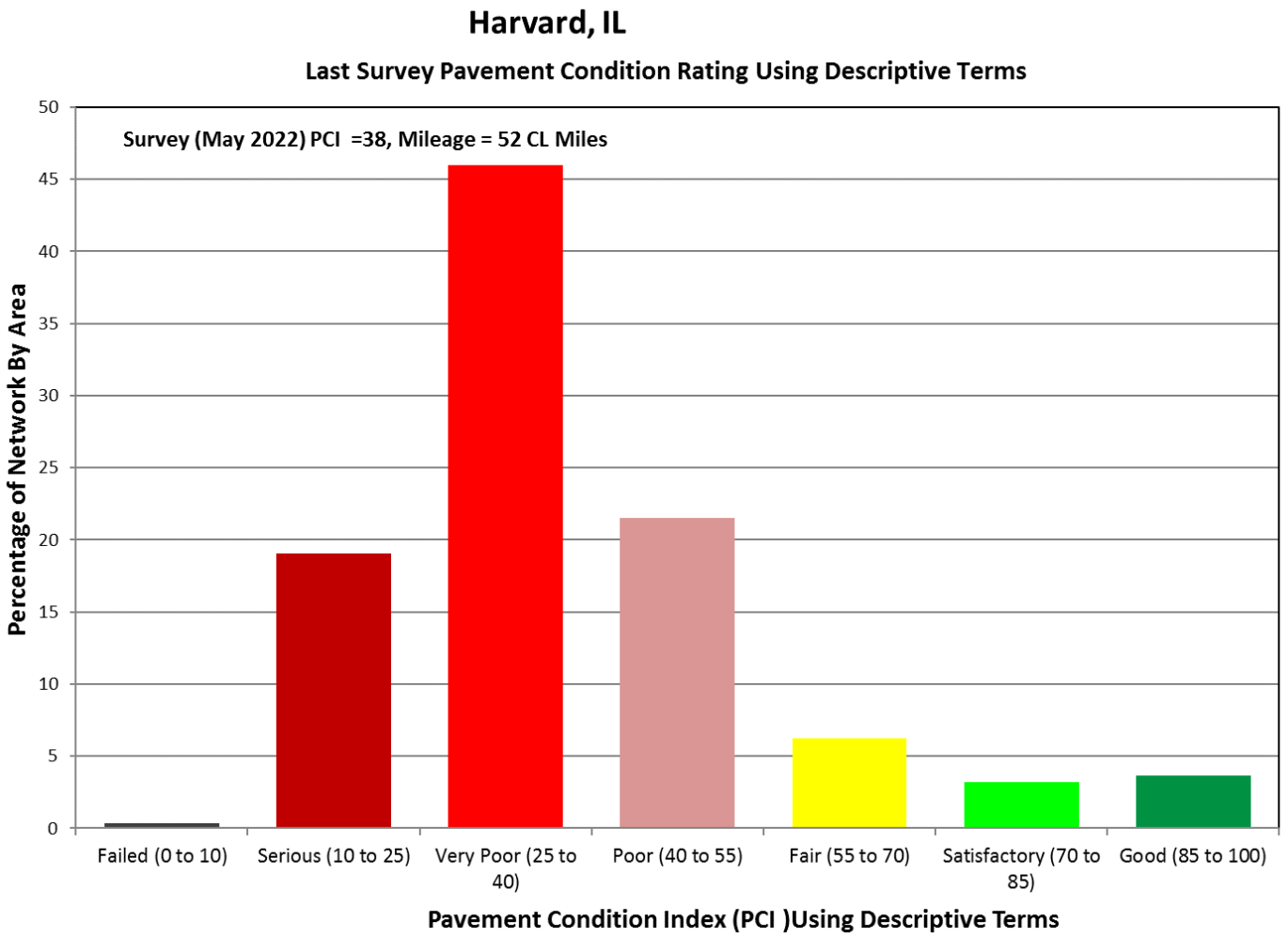


Condition = **Failed (0-10)** | PCI = 9
BLACKMAN ST to DIGGINS ST
Distress: Severe Alligator cracking and potholes
Activity: Full Reconstruction

Condition Data Results



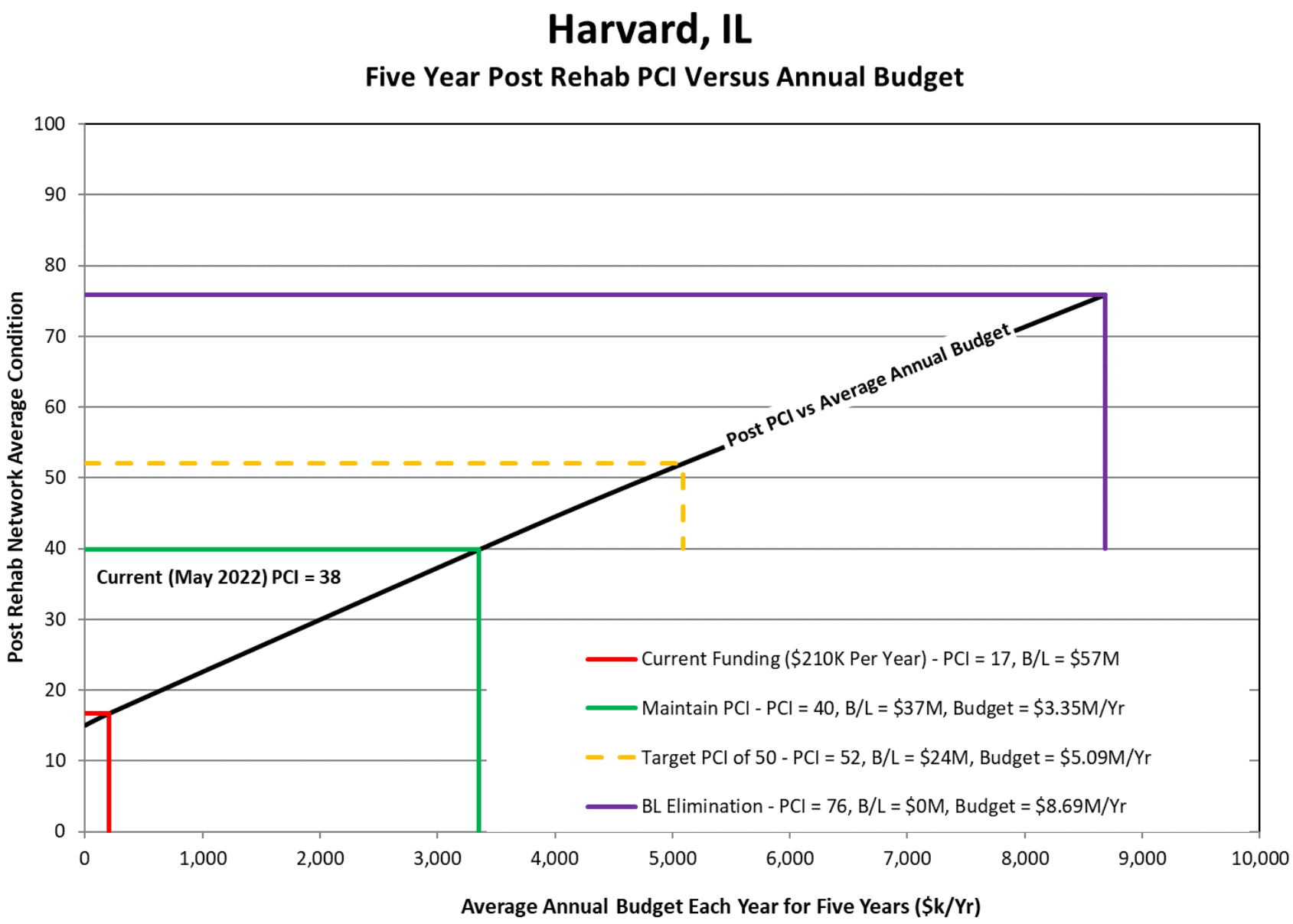
Condition Data Results



Analysis Results

Scenario Description	Annual Budget ($/Yr)	5 Year Total Spending ($/Yr)	Remaining B/L ($Yr)	Total Cost (Spending + B/L) ($k)	PCI at the End of Analysis
Do Nothing	$0	$0	$58M	$58M	15
Current Funding ($210K Per Year)	$210k	$1M	$57M	$58M	17
Maintain Current PCI	$3.3M	$16M	$37M	$54M	40
Target PCI of 50	$5.1M	$25M	$24M	$49M	52
BL Elimination in 5 years	$8.7M	$43M	$0	$43M	76

Analysis Results



Pavement Management Recommendations

1. Implement preservation techniques such as crack sealing, Reclamite, and localized patching, as funding becomes available
   - Paver estimates about $12k for crack sealing and $75k for localized patching
2. Increase funding for maintenance and rehabilitation projects
   - The current funding level is expected to result in a decline in the pavement conditions
3. Update pavement management system
   - Enter work history annually
   - Perform routine pavement condition inspections, every 2-3 years
   - Update inputs (rehab strategies and unit costs, deterioration models, etc.)

Acknowledgment

- City of Harvard
- Chicago Metropolitan Agency for Planning (CMAP)
- AECOM – Project management for CMAP