



Pavement Management for Locals

Innovations in County Road and City Street Condition Assessments

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Local governments have spent millions on building and maintain the local network.

Wichita Metro

System Component	Capital	Operations & Maintenance	Total
State Highway System	\$74 million	\$6 million	\$80 million
Local Roads System	\$41 million	\$29 million	\$70 million
Public Transit System	\$4 million	\$15 million	\$19 million
Bike/Ped Network	\$1 million	N/A	\$1 million
Total	\$120 million	\$50 million	\$170 million

Table 1: Annual Average Spending by System Component (2013-2017)

These people are members of the community that care about where they live. So what I hear when I'm being yelled at is people caring loudly at me.

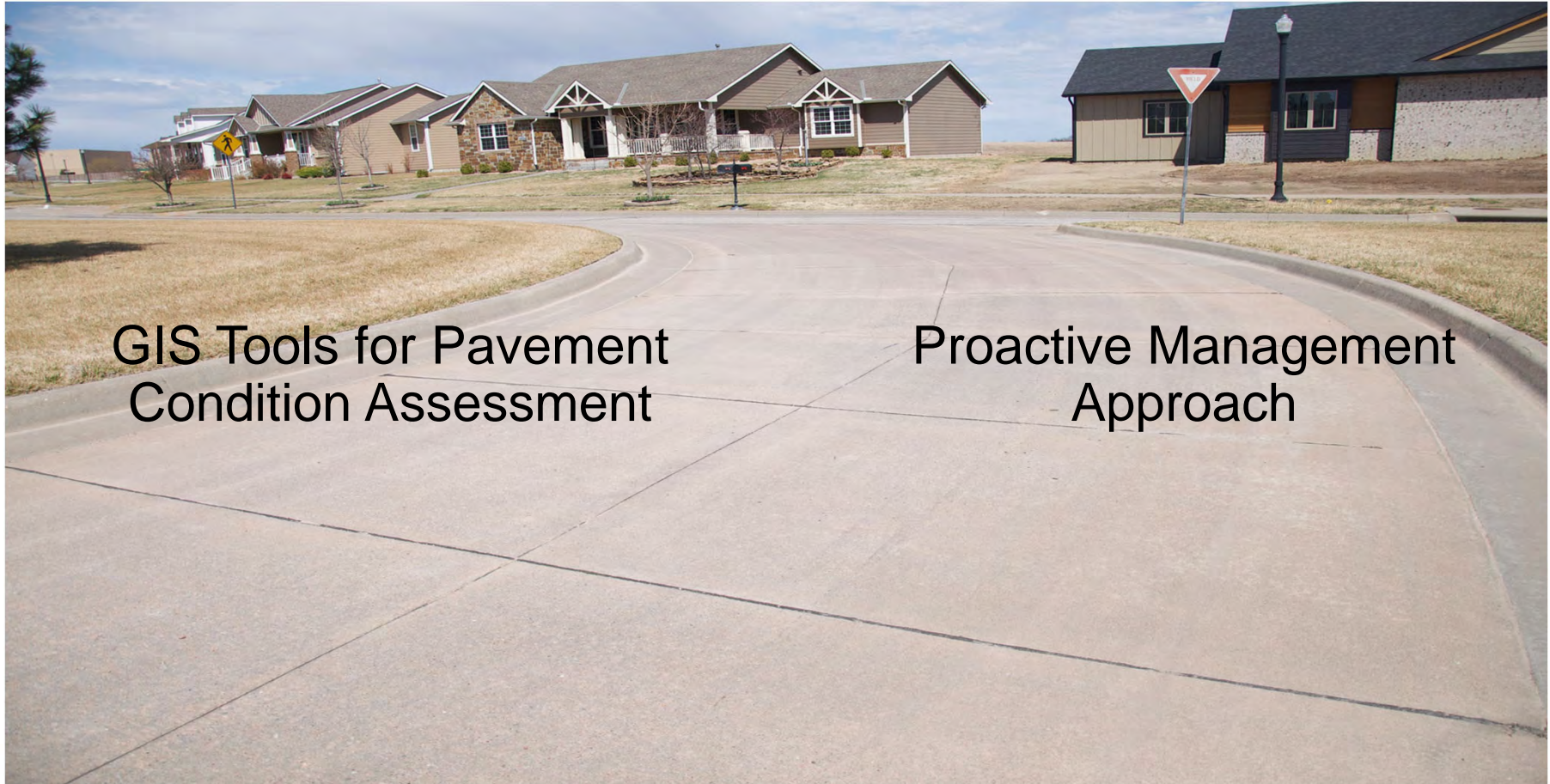
- Leslie Knope



replicapants.tumblr.com



People care about the streets they drive on everyday.



GIS Tools for Pavement
Condition Assessment

Proactive Management
Approach

GIS TOOLS



Condition Assessment - Engineer

Asphalt Inspection

Asphalt Surface Defects:
Select All That Apply

Raveling Flushing Polishing

Asphalt Surface Deformation:
Select All That Apply

Rutting Distortion-Rippling & Shoving
 Settling Frost Heave

Asphalt Cracks:
Select All That Apply

Transverse Reflection Slippage
 Longitudinal Block Alligator

Asphalt Patches and Potholes:
Select All That Apply

Patches Potholes

PASER Rating: *

1 - Failed 2 - Very Poor
 3 - Poor 4 - Fair
 5 - Fair 6 - Good
 7 - Good 8 - Very Good
 9 - Excellent 10 - Excellent

Comments on Pavement Conditions:

Comments on Drainage Conditions:

Recommended Maintenance:

ASPHALT PASER RATINGS

Surface rating	Visible distress*	General conditions/ treatment measures
10 Excellent	None	New construction.
9 Excellent	None	Recent Overlay Low level
8 Very Good	No longitudinal cracks except deflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or light repair less than 1" wide.	Repair located in area and minor. Little or no maintenance required.
7 Good	One strip of raveling, rutting or shoving, some traffic wear. Longitudinal cracks (open 1/2" or less) or reflections on paving joints. Transverse cracks (open 1/2" or less) or most edges. One or more small potholes. No raveling or any fine patches in existing condition.	End signs of aging. Minor with surface seal, filling.
6 Good	Slight swelling, loss of firmness and traffic wear. Longitudinal cracks (open 1/2" to 1"). Transverse cracks (open 1/2" to 1"). Surface patching less than 10' long. No raveling, rutting or shoving. Moderate raveling or patching. Occasional potholes in good condition.	Minor signs of aging. Superficial condition. Needs treatment to help reconstruct surface less than 2'.
5 Fair	Moderate to severe swelling, loss of firmness and rutting. Longitudinal and transverse cracks (open 1/2" or more). One or more strips of raveling, rutting or shoving. Moderate to severe raveling. Moderate to severe potholes. Block cracking up to 50% of surface. Occasional to severe raveling or patching. Some potholes or edge work in good condition.	Surface aging. Severe texture condition. Needs treatment to help reconstruct surface less than 2'.
4 Fair	Severe surface swelling. Multiple longitudinal and transverse cracking with small swelling. Longitudinal and transverse cracks (open 1/2" or more). Severe raveling or patching. Severe potholes. Block cracking over 50% of surface. Moderate to severe raveling. Severe potholes or edge work. Severe raveling or patching. Severe potholes or edge work.	Light to moderate aging and fine signs of raveling. Moderate texture condition. Needs treatment to help reconstruct surface less than 2' or more.
3 Poor	Clearly visible longitudinal and transverse cracks often showing swelling and small raveling. Severe block cracking. Severe raveling. Severe potholes. Block cracking over 25% of surface. Potholes in fair to poor condition. Moderate raveling or patching greater than 10' long and more than 2' wide. Occasional potholes.	Minor to moderate aging and poor texture condition. Needs treatment to help reconstruct surface less than 2' or more.
2 Very Poor	Algebra cracking (over 25% of surface). Severe raveling or patching (2' or more long). Severe potholes or edge work. Severe raveling or patching. Severe potholes or edge work.	Severe deterioration. Needs reconstruction with extensive base repair. Rehabilitation of old pavement is advised.
1 Failed	Severe raveling with extensive loss of surface integrity.	Equal to new after reconstruction.

* Individual pavements will not have all of the types of distress listed for any particular rating. They may have only one or two types.

Pictures:

Take Picture(s):

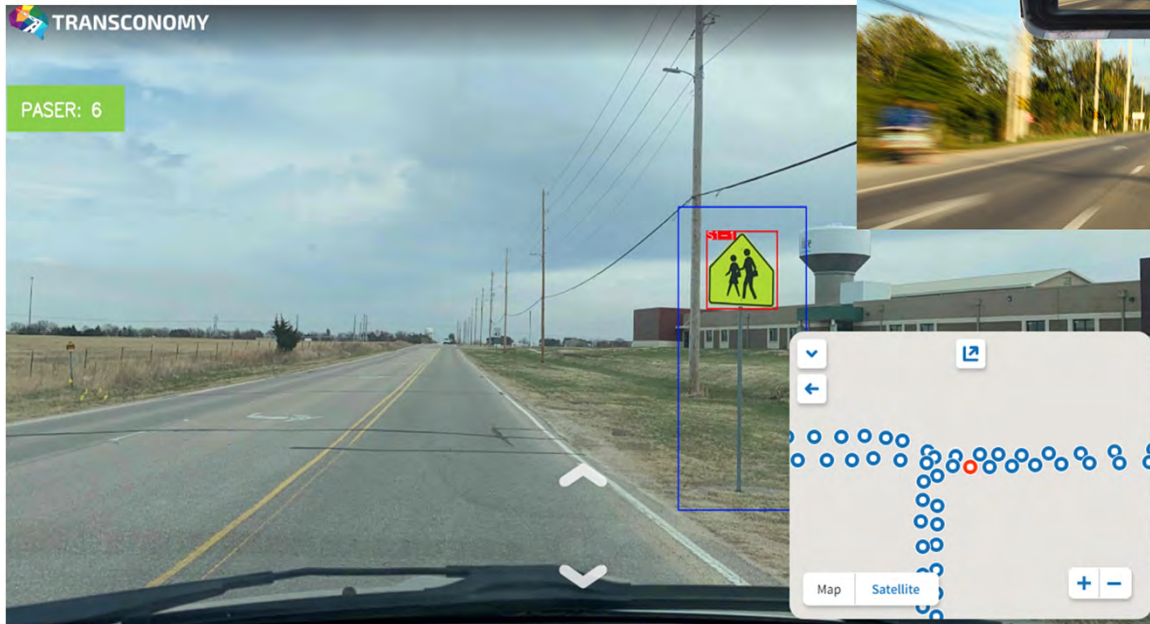
Enter Location of Picture:

1 of 1

GIS TOOLS

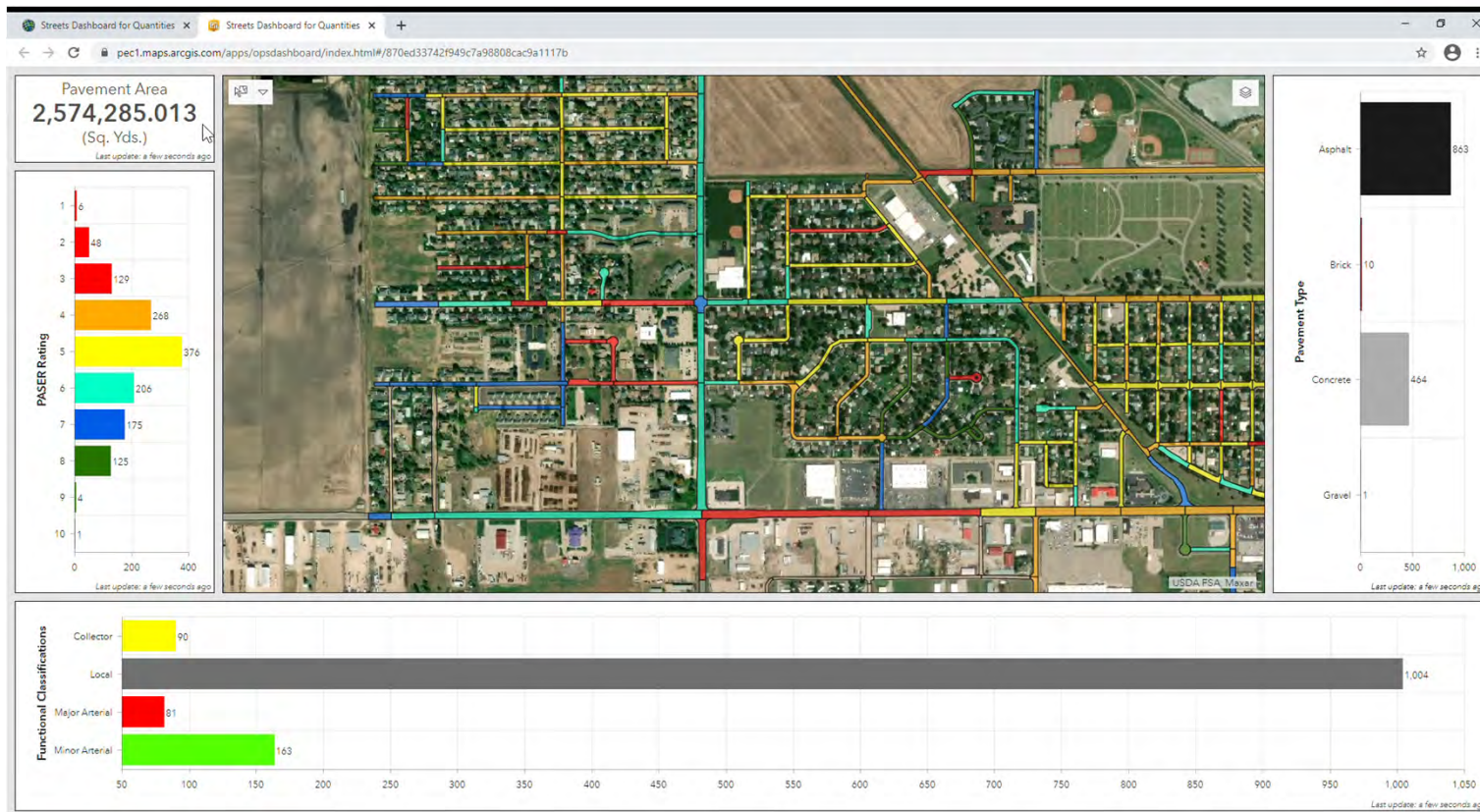


Condition Assessment – Artificial Intelligence



GIS TOOLS

Pavement Evaluation Dashboard



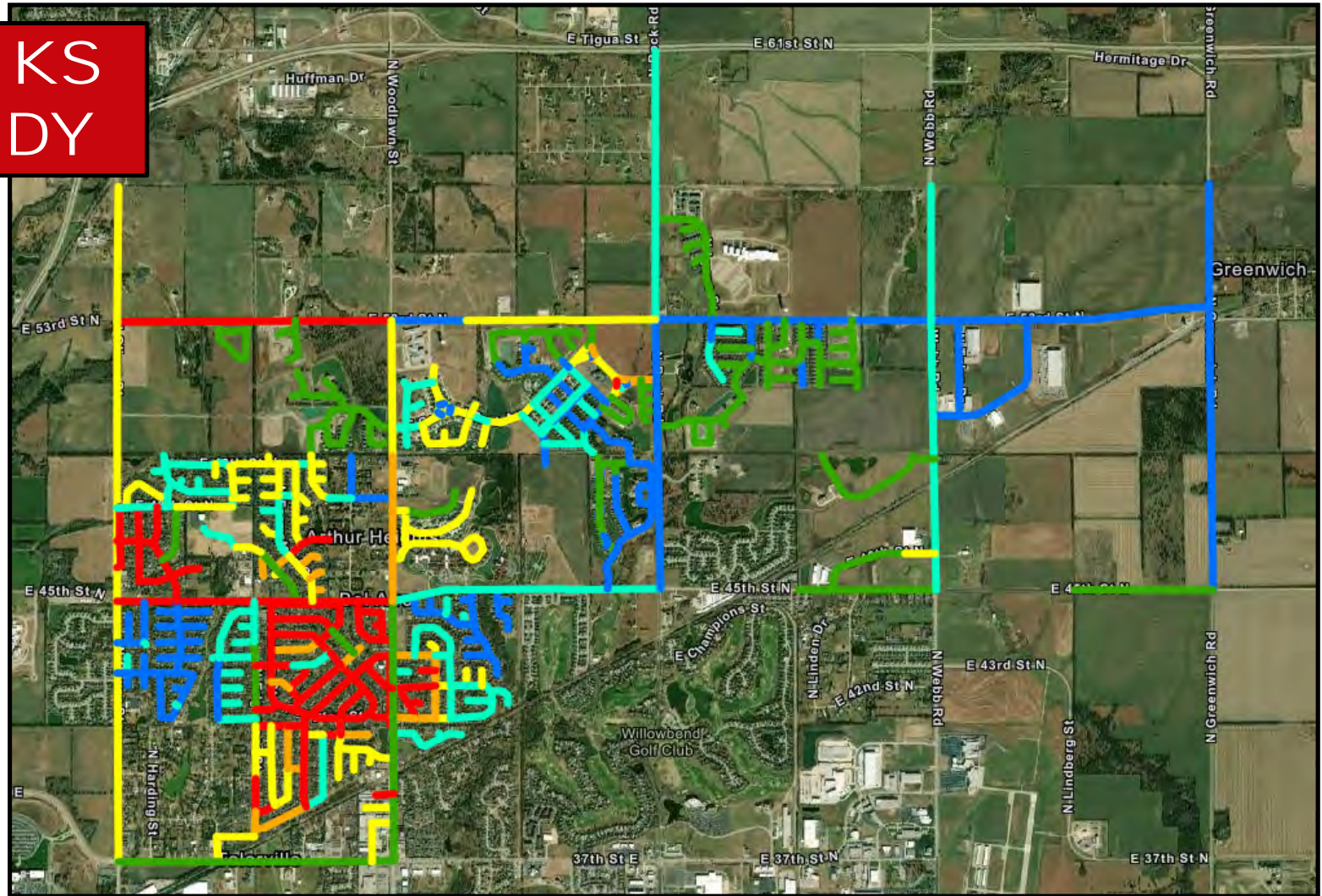
GIS TOOLS



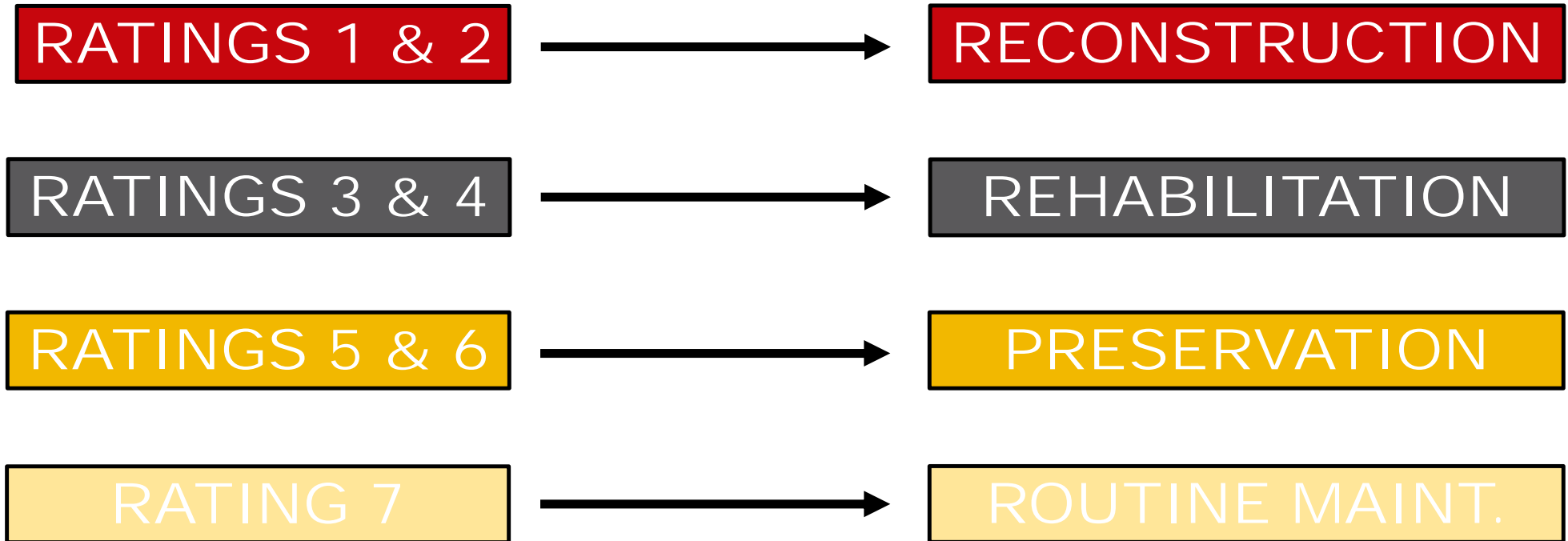
Pavement Evaluation Dashboard



BEL AIRE, KS CASE STUDY



TREATMENT RELATIVE TO RATING



RATING 8 – LITTLE OR NO MAINTENANCE

RATINGS 9 & 10 – NO MAINTENANCE



RECONSTRUCTION

RATINGS 1 & 2

FULL PAVEMENT
RECONSTRUCTION

REHABILITATION

RATINGS 3 & 4

ASPHALT OVERLAY
MILL AND OVERLAY
FULL DEPTH PATCHING

PRESERVATION

RATINGS 5, 6 & 7

SCRUB SEALING
SLURRY SEALING
CHIP SEALING
MICROSURFACING
CRACK SEALING
MASTIC SEALING
FOG / REJUVENATING SEAL
THERMAL CRACK REPAIR

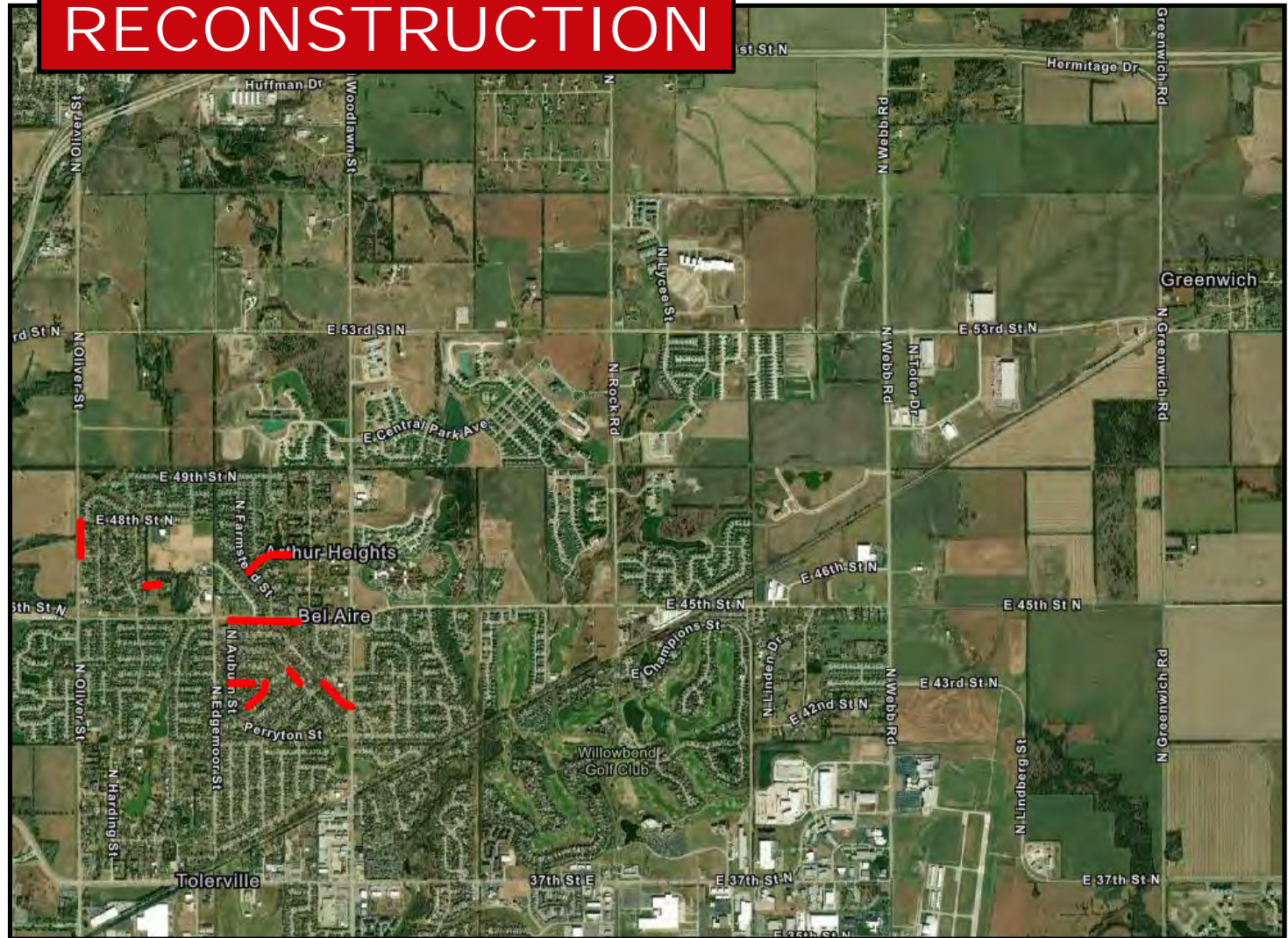
ROUTINE MAINT.

RATINGS 8, 9 & 10

CRACK SEALING
POTHOLE FILLING

RECONSTRUCTION

RATINGS 1 & 2





POTHoles



ALLIGATOR
CRACKING



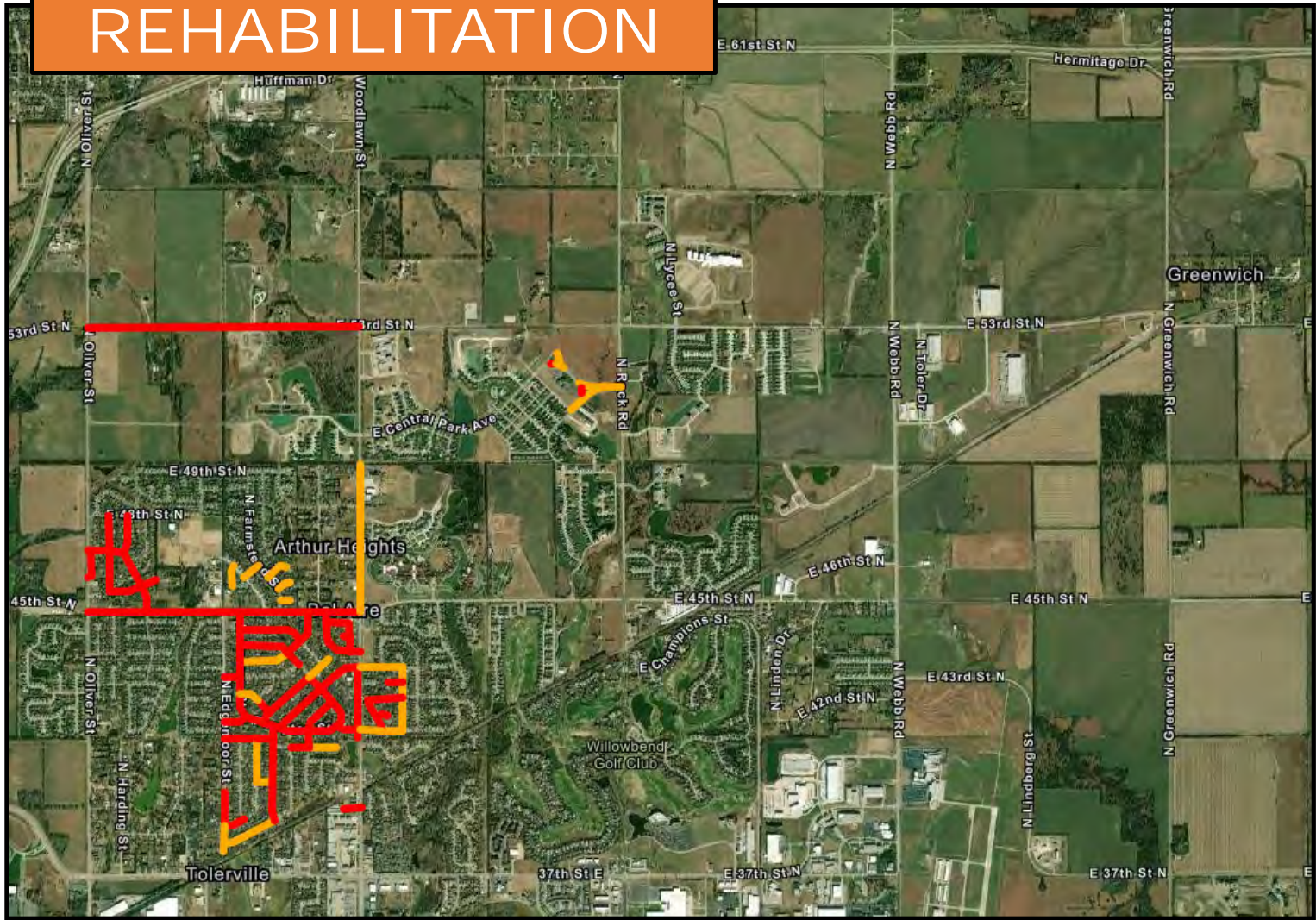
RATINGS 1 & 2



SEVERE
DISTORTIONS

REHABILITATION

RATINGS 3 & 4



RATINGS 3 & 4



EDGE CRACKING



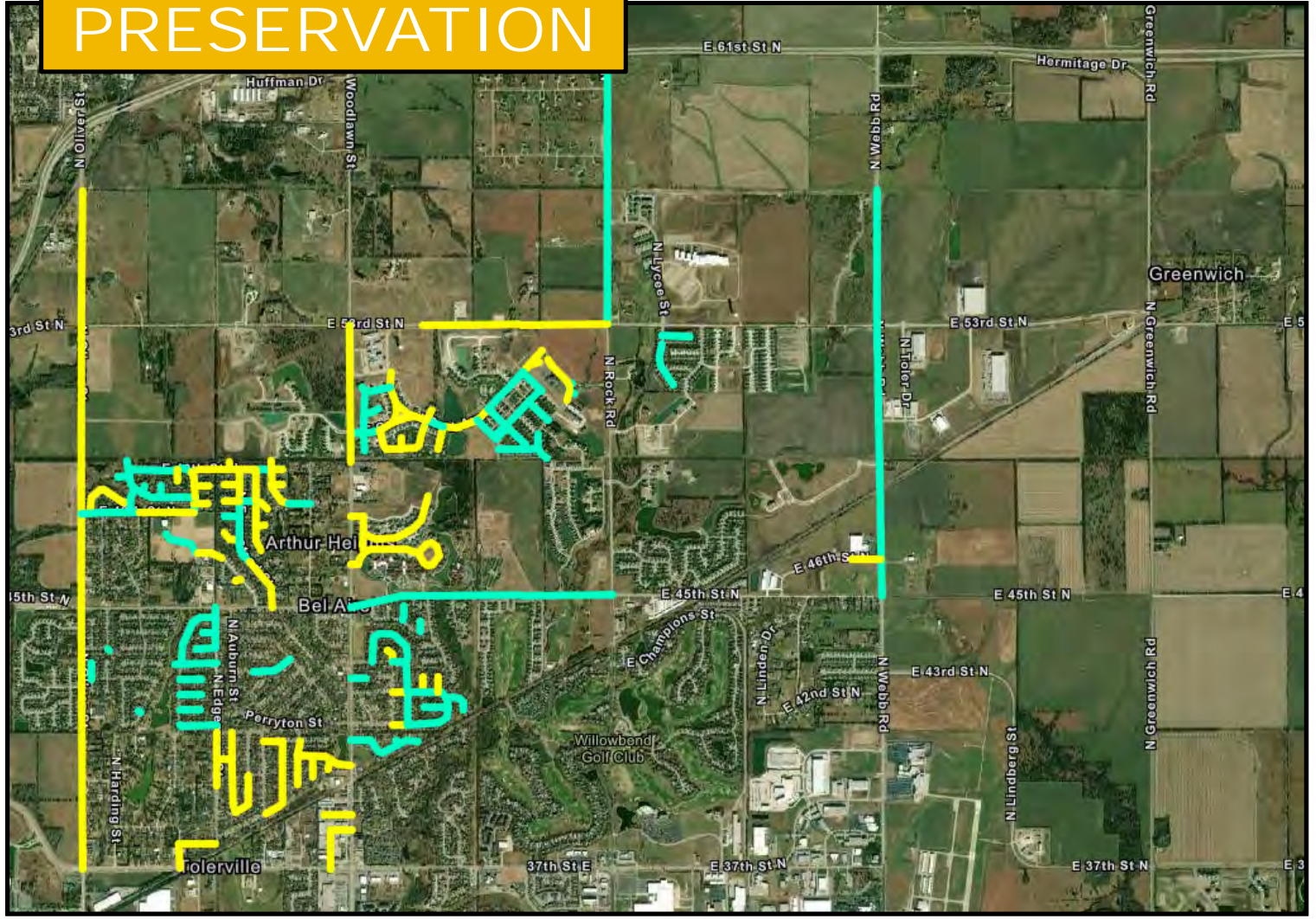
FAIR to POOR
PATCHES



EXTENSIVE BLOCK
CRACKING

PRESERVATION

RATINGS 5 & 6





TIGHT or SEALED
CRACKING



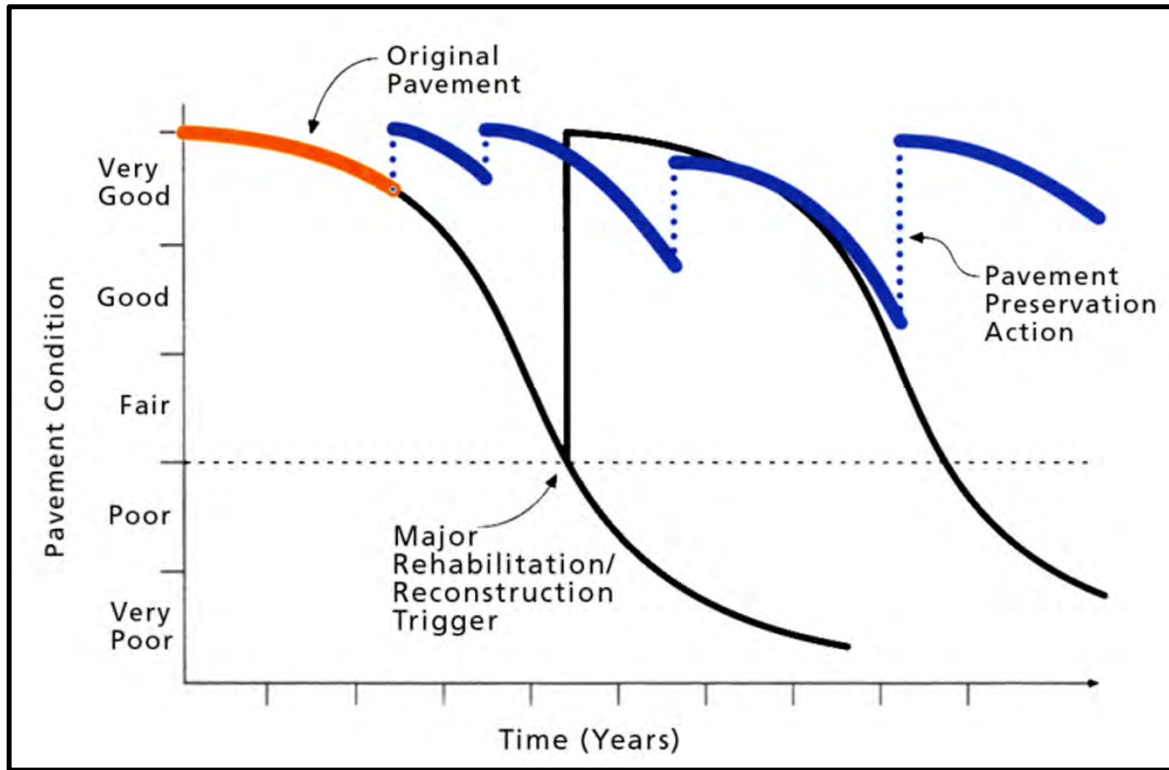
RATING 5 & 6



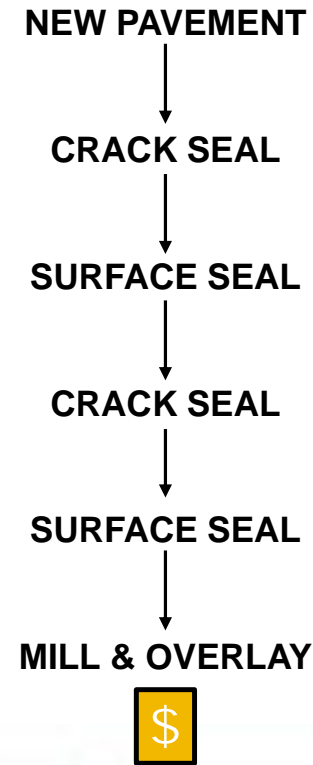
SEALCOATED or
CRACKED
SEALED BUT
BEGINNING TO
SHOW SIGNS OF
DISTRESS



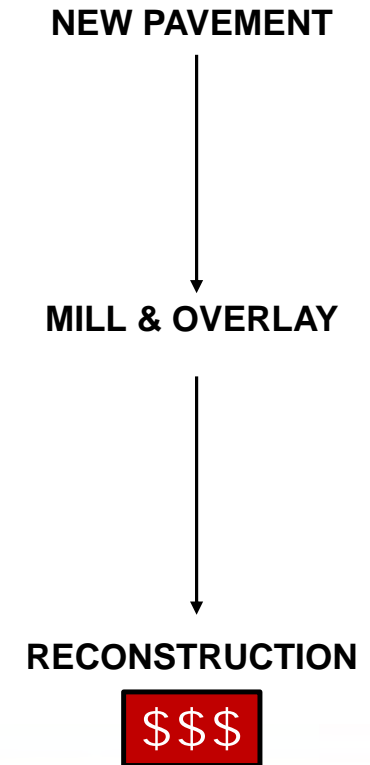
PAVEMENT PRESERVATION STRATEGY



PROACTIVE STRATEGY



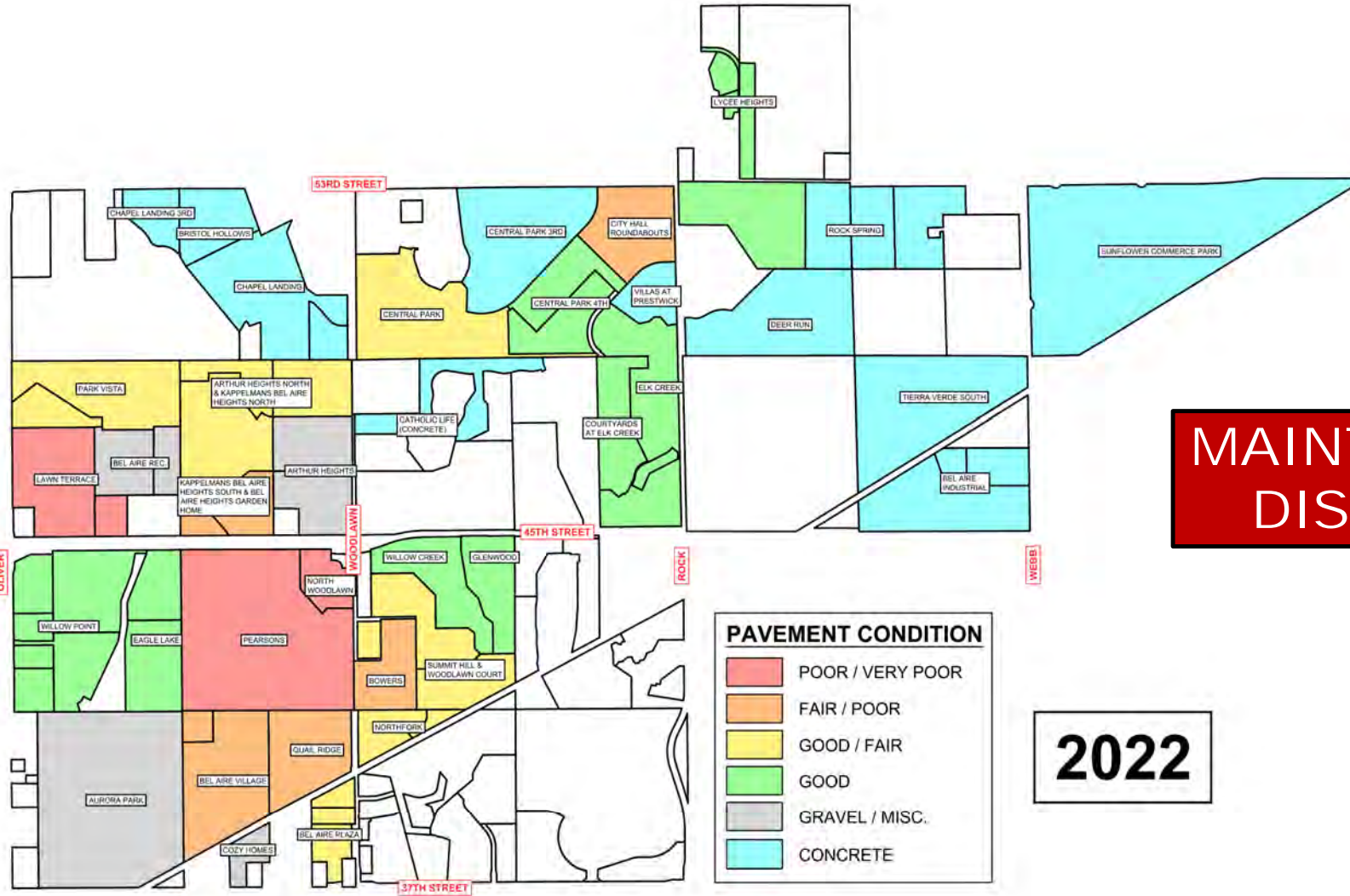
REACTIONARY STRATEGY



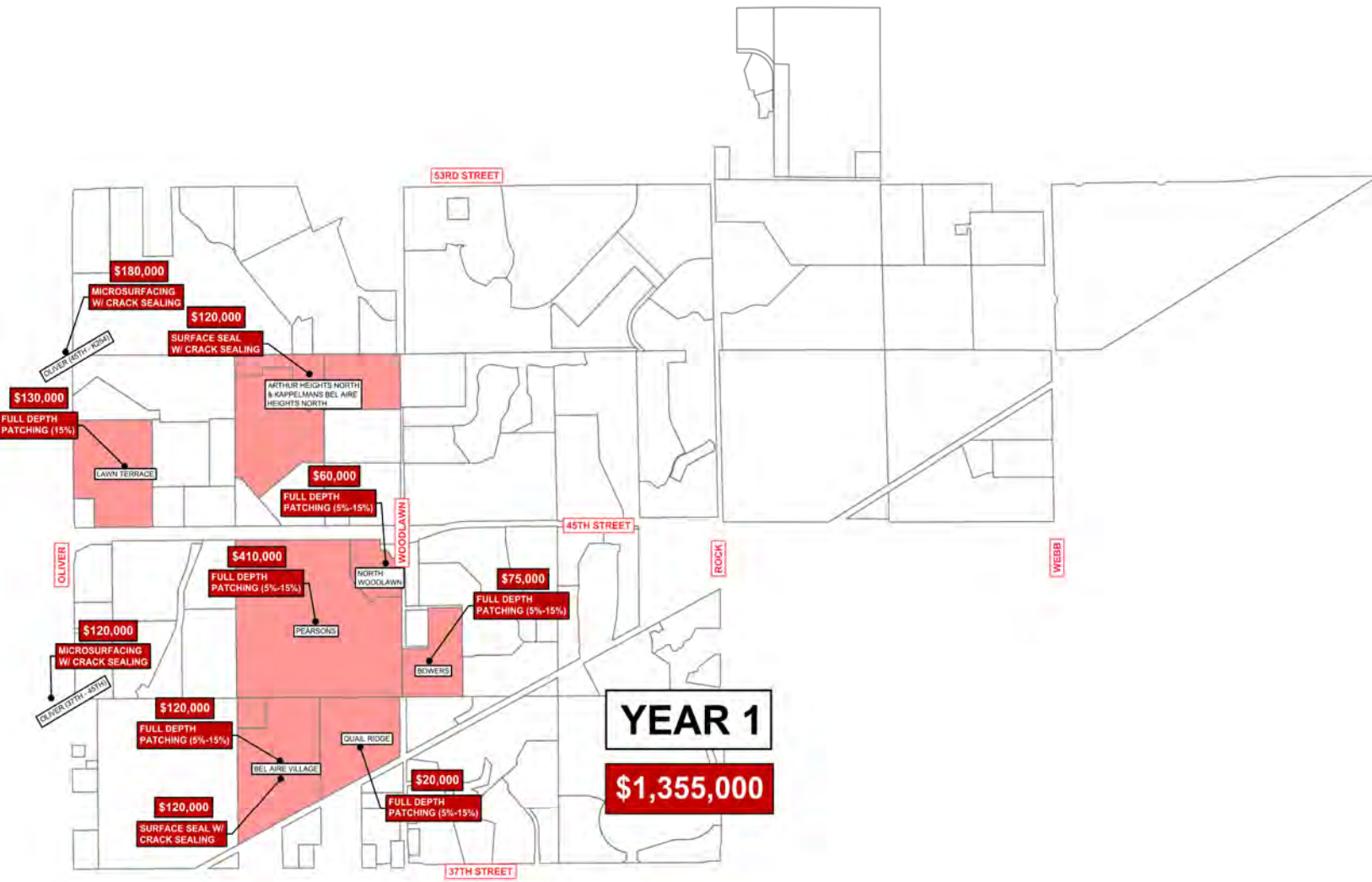
EFFECTIVE PAVEMENT PRESERVATION STRATEGY

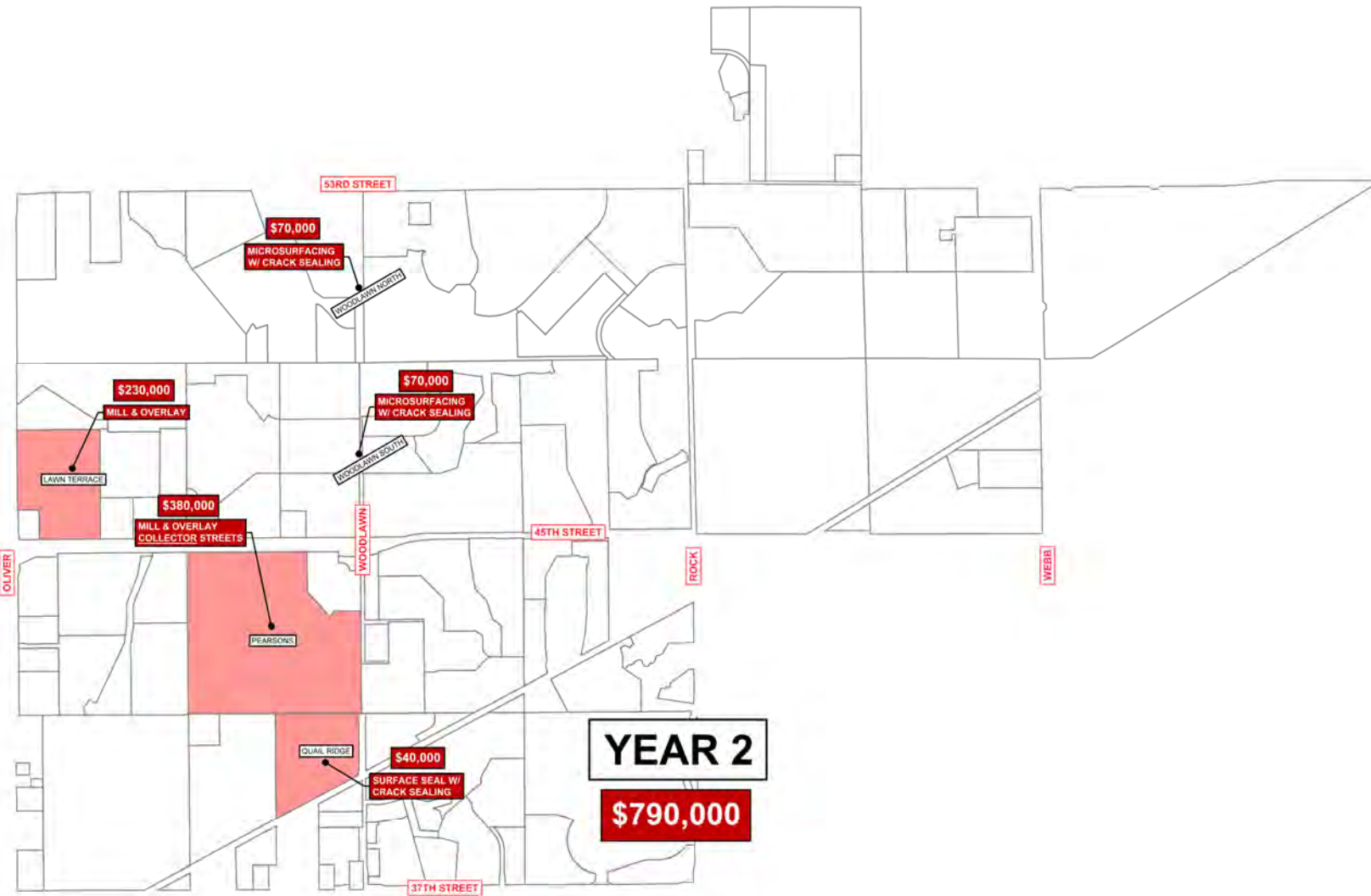


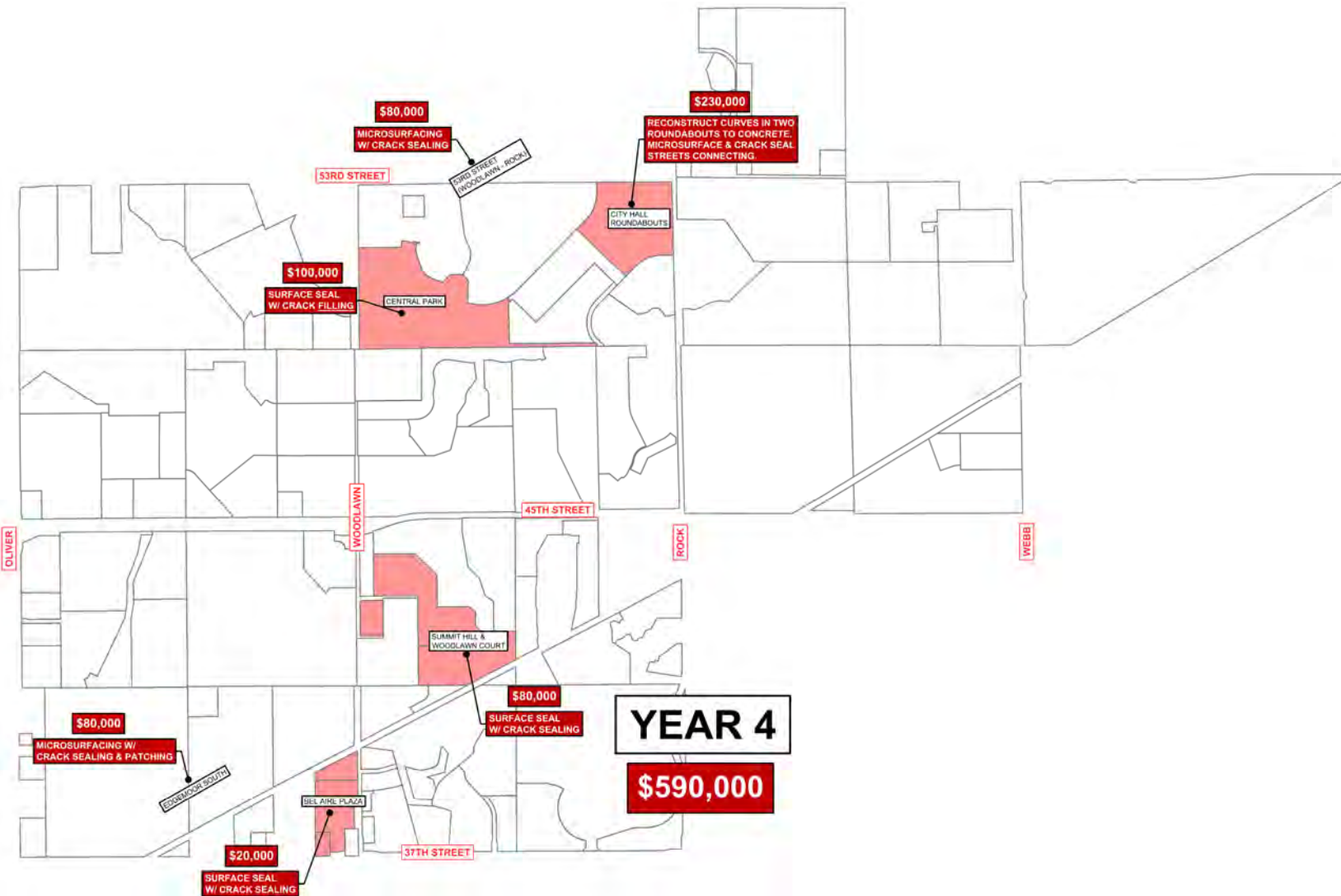
- ADDRESSES GOOD PAVEMENT AHEAD OF DISTRESSES
- APPLIED AT THE RIGHT TIME, PAVEMENT IS RESTORED TO ALMOST NEW CONDITION
- CUMULATIVE EFFECT OF TREATMENTS POSTPONE REHAB AND RECONSTRUCTION
 - LESS EXPENSIVE IN THE LONG RUN
 - LESS DISRUPTIVE TO TRAFFIC

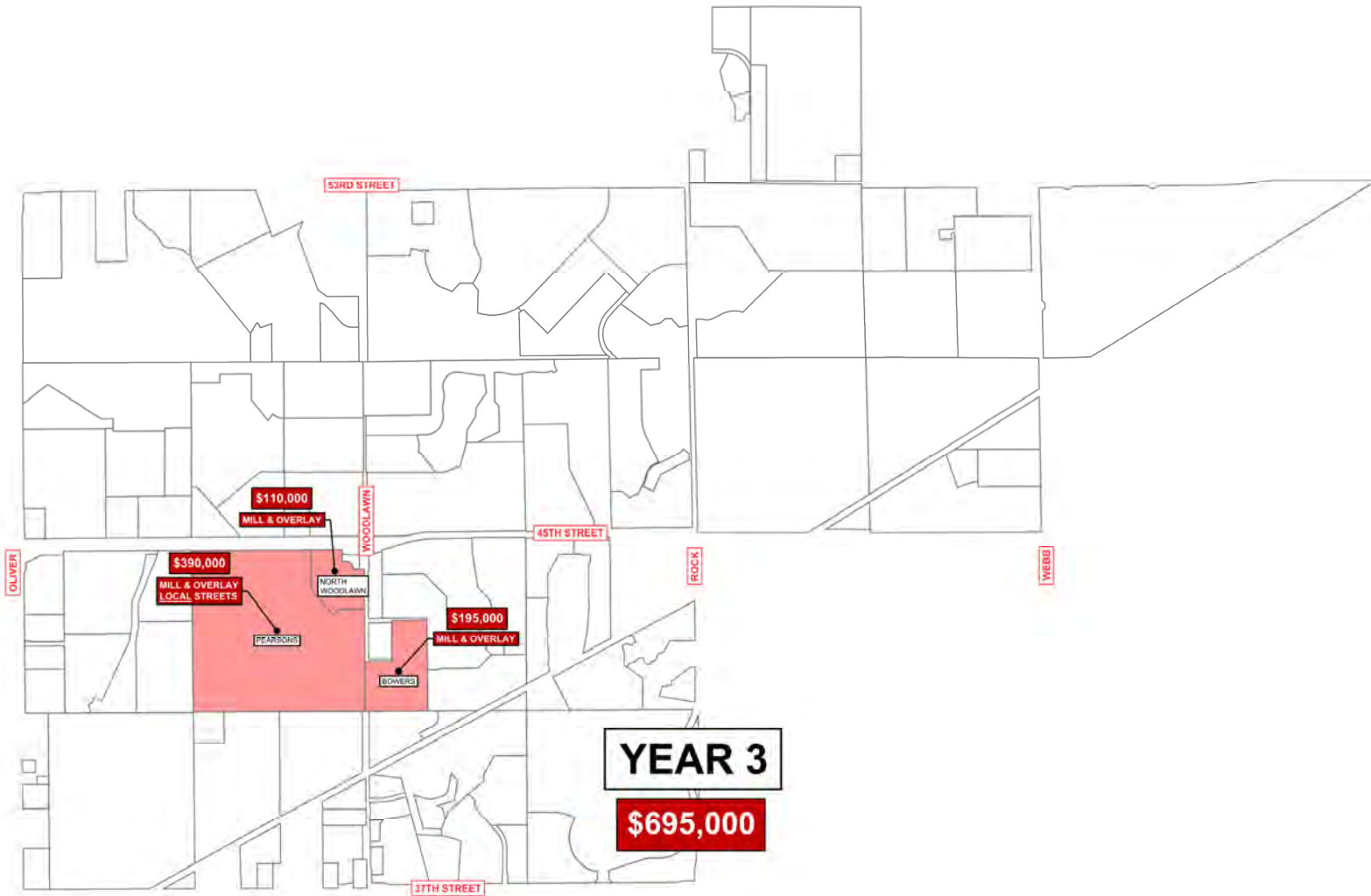


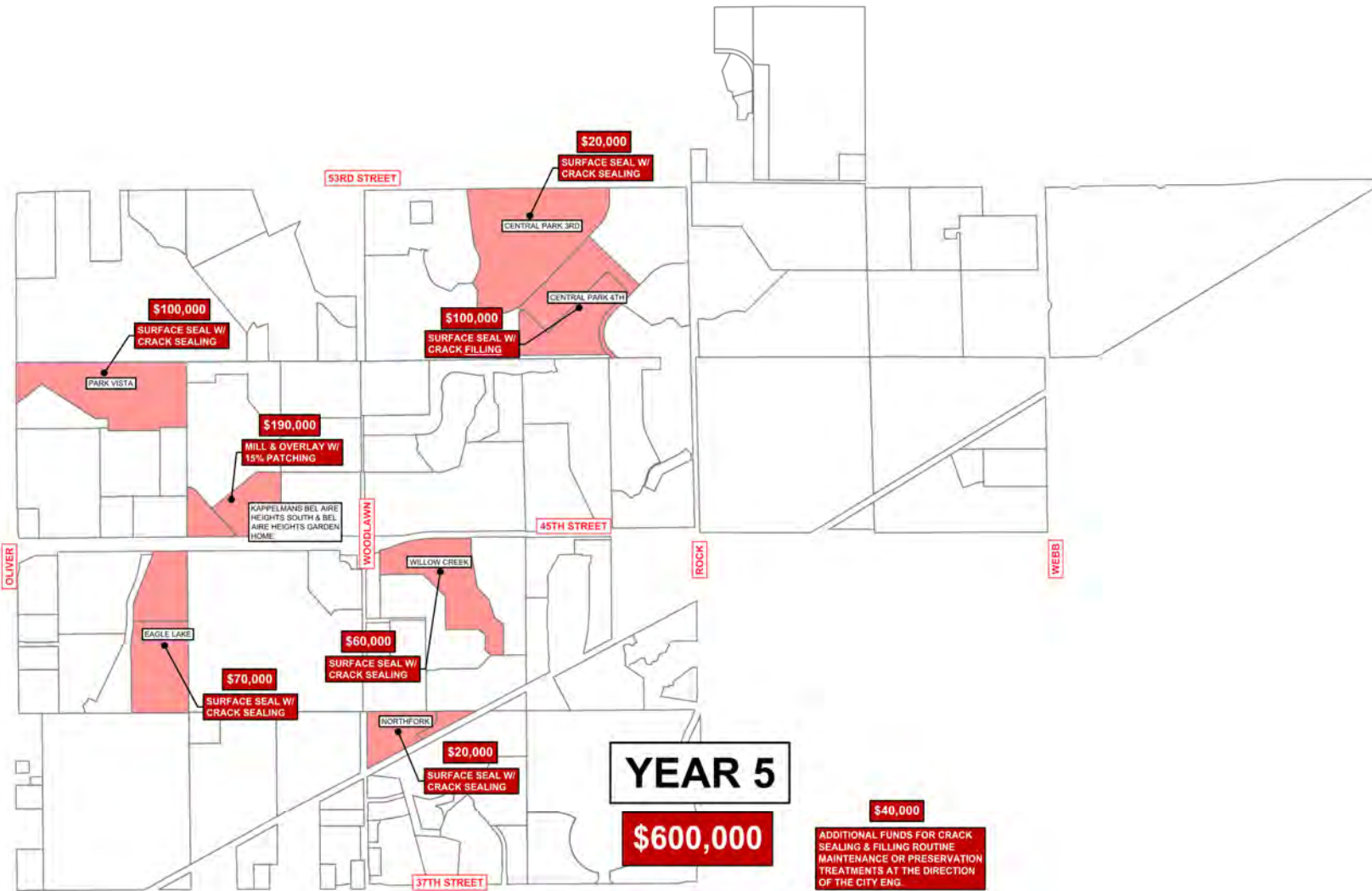
MAINTENANCE DISTRICTS

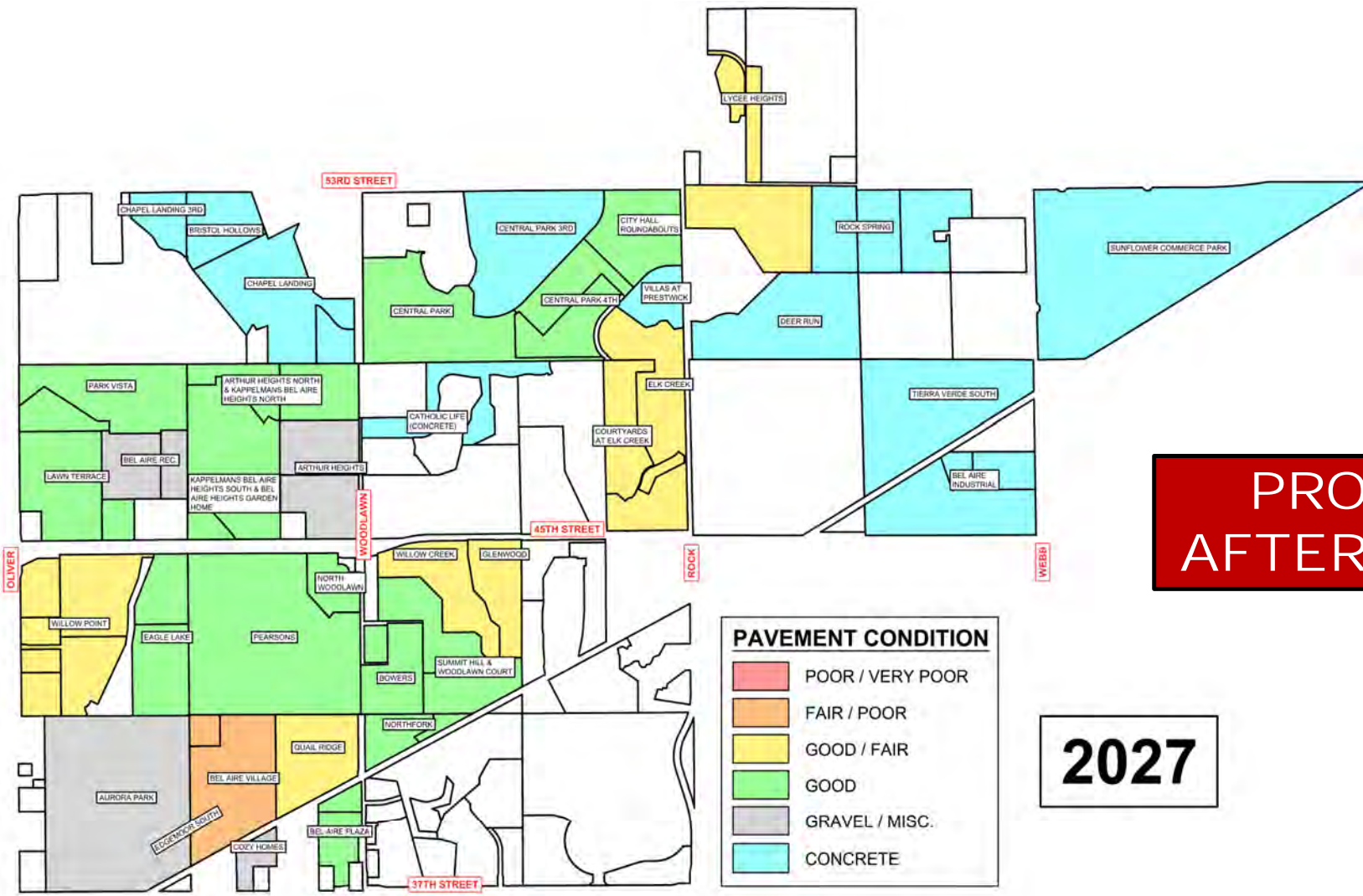








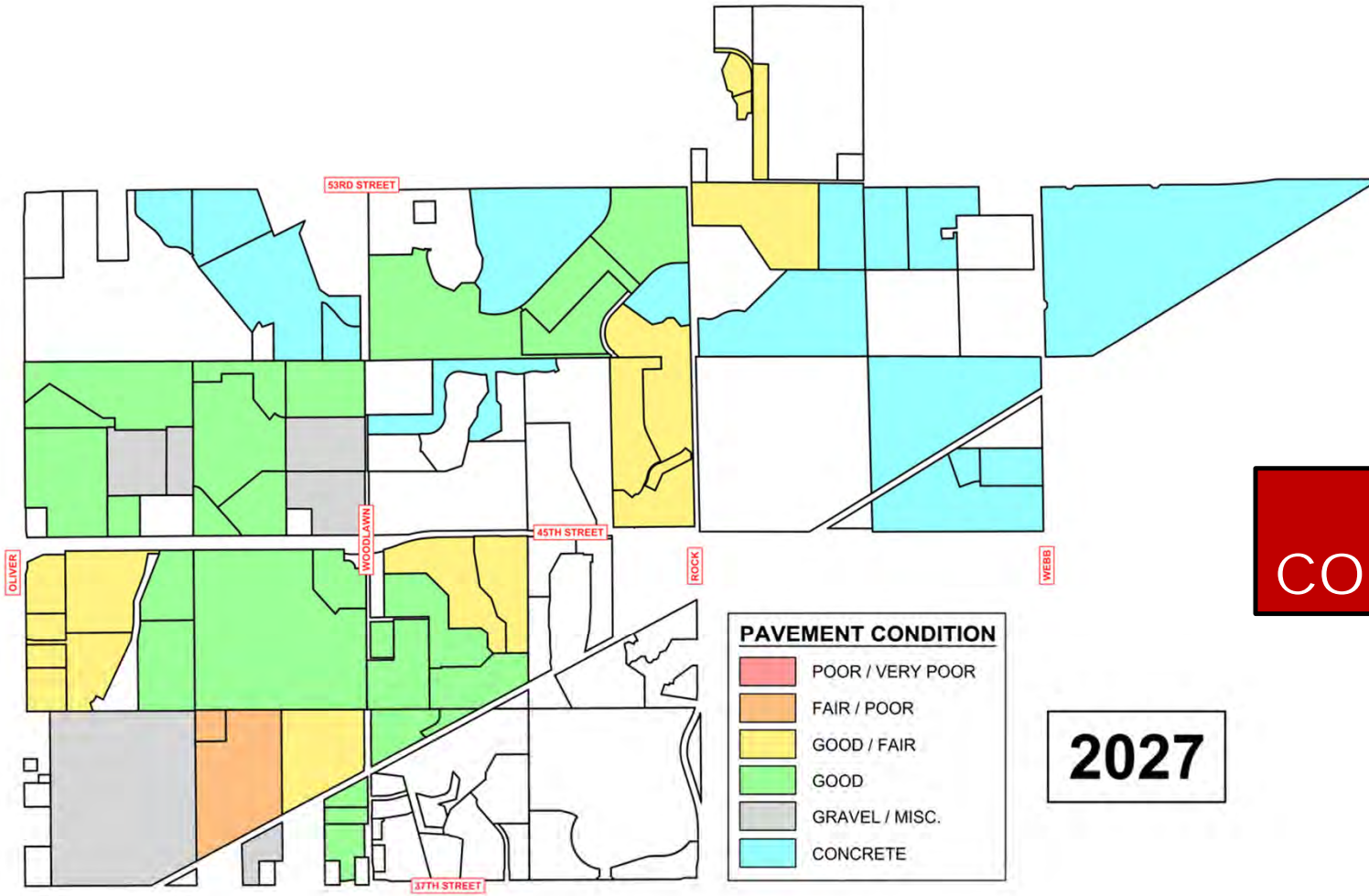




**PROGRESS
AFTER 5 YEARS**

2027

PAVEMENT CONDITION	
	POOR / VERY POOR
	FAIR / POOR
	GOOD / FAIR
	GOOD
	GRAVEL / MISC.
	CONCRETE



5 YEAR
COMPARISON

2027



QUESTIONS?