



*El Paso County*  
*2024 Paving Program*

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# Pavement Maintenance

## ▶ OBJECTIVES

- ▶ Preserve and extend life of paved roads
- ▶ Maintain current roadway operations
- ▶ Budget optimized preservation plan
- ▶ Increase Pavement Condition Index (PCI) of paved road network

## ▶ WORK INVOLVED

- ▶ No change to geometry
- ▶ Repair/improve surface materials

# EPC Road System

- ▶ Paved road system - 2023 centerline miles (2022)
  - ▶ 1,159.21 centerline miles (1,150.54 in 2022)\*
  - ▶ 2,364.44 lane miles (2,349.27 in 2022)\*
- ▶ Gravel road system - 2023 centerline miles (2022)
  - ▶ 1,046 centerline miles (1,047 in 2022)^
  - ▶ 2078 lane miles (2,080 in 2022)^

\* EPC Road System paved centerline miles have increased due to acceptance of new subdivisions within the County (current as of Q3 2023)

^ EPC Road System gravel centerline miles have decreased due to a portion of Squirrel Creek Pl being gated and removed from County Maintenance (current as of Q3 2023)

# 2023 Field Data Collection

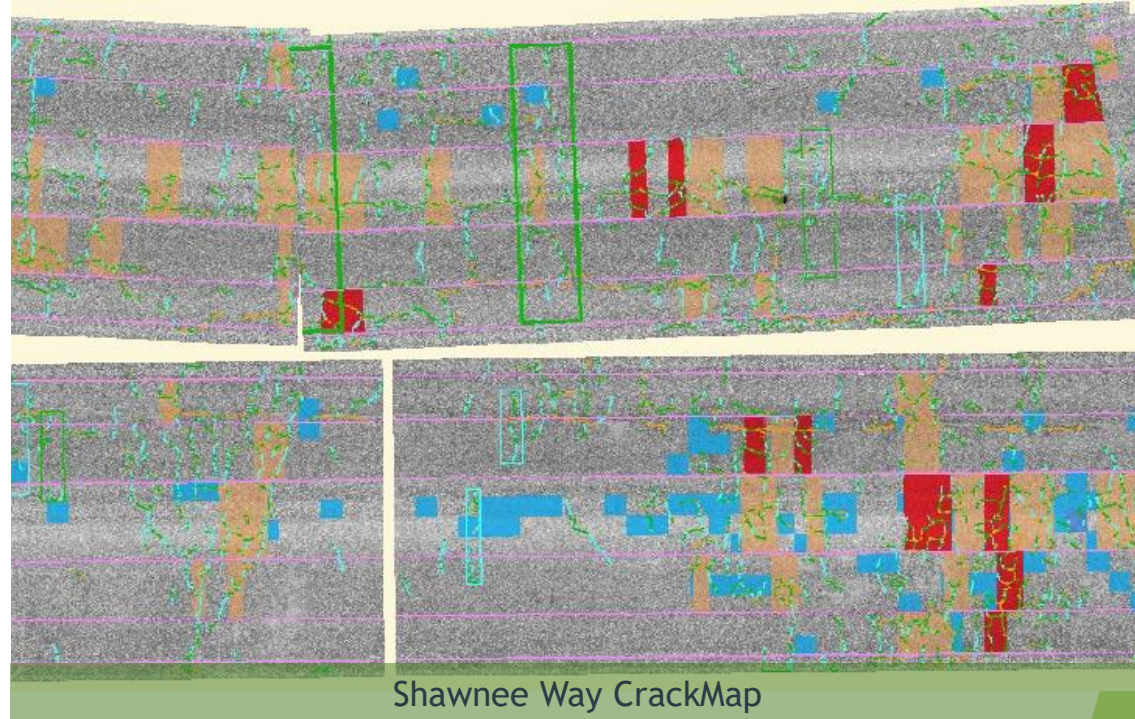
- ▶ 3D Laser Crack Measurement System
  - ▶ Pavemetrics Laser Crack Measurement System 2 (LCMS2)
  - ▶ high-speed cameras
  - ▶ an inertial navigation system
  - ▶ Advanced optics to acquire high-resolution 3D profiles of the road





# CrackMap Orthophotography

The image (right) is a MrSID compression file (CrackMap Orthophotography) of LCMS2 data displayed in map format. Any distress from the LCMS2 laser measurements is superimposed onto the .jpeg images and laid flat on the centerline. The severity level standards are displayed in colors over the exact location of the cracks to easily distinguish between different pavement severities. The LCMS2 orthophotography can be added as a layer to our ArcGIS environment.

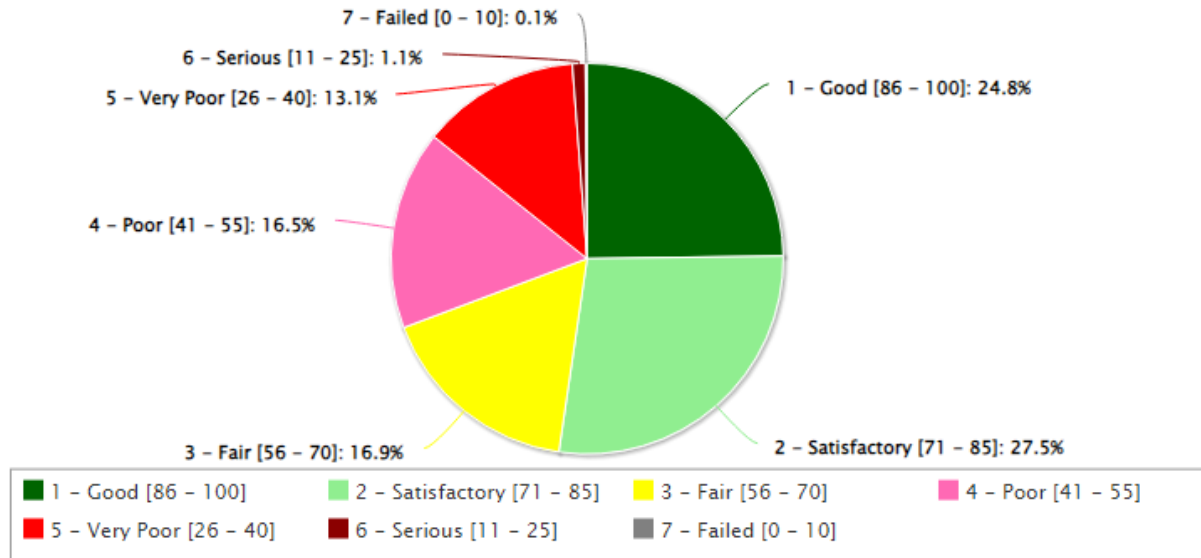


# New Pavement Management System

## ▶ Agile Assets Pavement Express

- ▶ Purpose-built pavement management system for public works agencies
- ▶ Software-as-a-service (SaaS) deployment on the Microsoft Cloud
- ▶ New data collection completed summer 2023
- ▶ Budget optimization vs prioritization

Overall Current Network Performance



# Optimized Work Plans

- ▶ Define budgeting and performance scenarios that account for various funding levels, timelines, roadway surface types, and more.
- ▶ Turn analysis results into optimized work plans that you can be tailored to our priorities.
  - ▶ Set appropriate budget amount for treatment categories
  - ▶ Set optimization to increase the County PCI as much as possible
  - ▶ Field evaluation of initial road list from program
  - ▶ Adjust treatments as needed

* Name	* Start Year	Length	Results	* Analysis Type	* Network Type
Maintain PCI 69-73	2023	5	Yes	Multi-Constraint	Roadway

Constraints		Objectives	
* Name	* Type	* Name	* Type
▶ Pavement Condition Index (I	Weighted Avg	▶ Treatment Cost	Total
Pavement Condition Index (F	Weighted Avg		
Pavement Condition Index (F	Weighted Avg		
Pavement Condition Index (F	Weighted Avg		
Pavement Condition Index (F	Weighted Avg		

Example scenario

# Example Scenarios

Current County PCI is 68

- ▶ Do Nothing
  - ▶ PCI falls to 52.6 after 5 years
- ▶ Funding reduced
  - ▶ PCI falls to 61 after 5 years
- ▶ PCI increase 1 point
  - ▶ Requires \$23M budget

Scenario Name	Do Nothing	Objective	Pavement Condition Index (PCI) Weighted Avg	
Objectives Results		Actions ▼		
Name ▲	Type ▲	Scenario Year ▲	Resulting Value	
▶ Pavement Condition Index (PCI)	Weighted Avg	2024	64.2698	
Pavement Condition Index (PCI)	Weighted Avg	2025	61.0418	
Pavement Condition Index (PCI)	Weighted Avg	2026	58.013	
Pavement Condition Index (PCI)	Weighted Avg	2027	55.2009	
Pavement Condition Index (PCI)	Weighted Avg	2028	52.6062	



# Review Process



Complete a pavement analysis on the entire roadway network



Optimization process



Finalize for program budget of \$20 million



Informal BoCC discussions (today)



Schedule Board of County Commissioner's resolution



Plan to begin construction as early as late April

2023 PPRTA paving began April 26  
2024 PPRTA could begin early May or late April

## 2024 (2023) County Wide Program (Centerline Miles)

### Paving 2024 (2023)

District 1:	14.85	(11.97)
District 2:	13.52	(22.95)
District 3:	3.94	(0.37)
District 4:	3.30	(11.35)
District 5:	0.27	0.43
Paving Total:	35.88	(47.07)



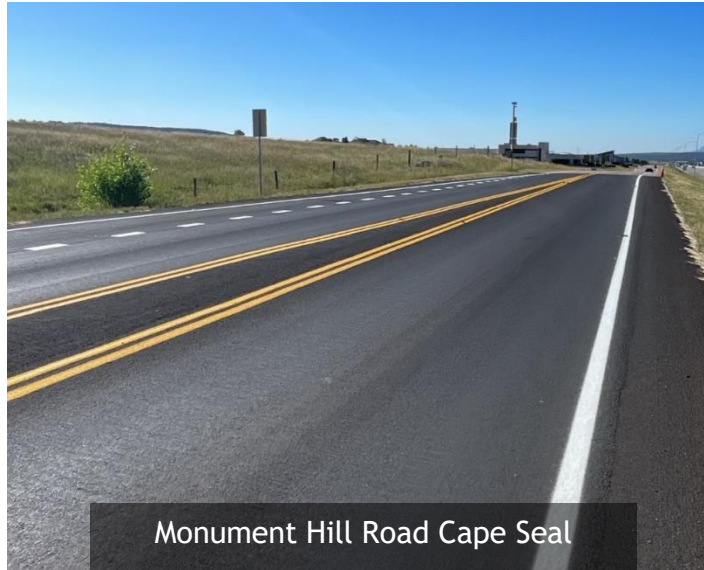
Asphalt Pavement Preservation 2024 (2023)

District 1:	33.07	(22.14)
District 2:	35.10	(29.14)
District 3:	5.63	(0.11)
District 4:	31.12	(28.12)
District 5:	0	1.86
Preservation Total:	104.92	(81.37)



# Innovation Processes

- ▶ Cape Seal
  - ▶ Two-part application; chip seal and slurry seal
  - ▶ High traffic volume roads
  - ▶ Longer life expectancy
- ▶ Micro - Surfacing
  - ▶ Expanding treatment use in EPC
  - ▶ Good for placement in high shade areas such as Black Forest
- ▶ Wide Crack Repair
  - ▶ Full depth repair of transverse cracks
  - ▶ Typically greater than 1” in width
- ▶ Dust Abatement with Sustainable Byproducts
  - ▶ County has trialed wheat germ with success
  - ▶ Plan to trial beet juice/pulp in the future
  - ▶ Potentially two test segments, not more than 6 miles



# Questions