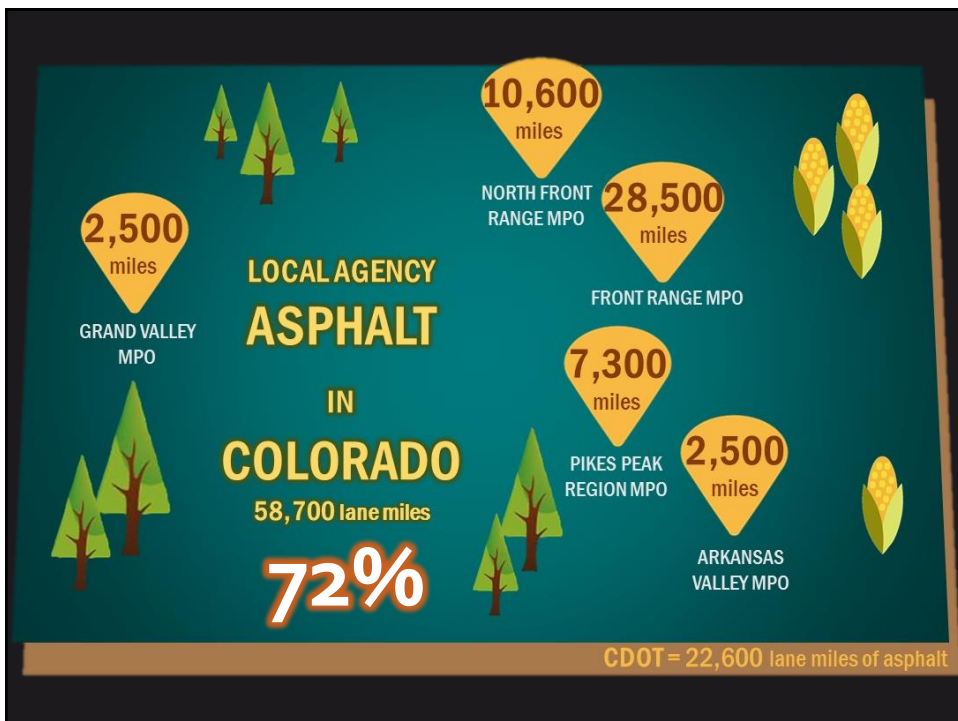


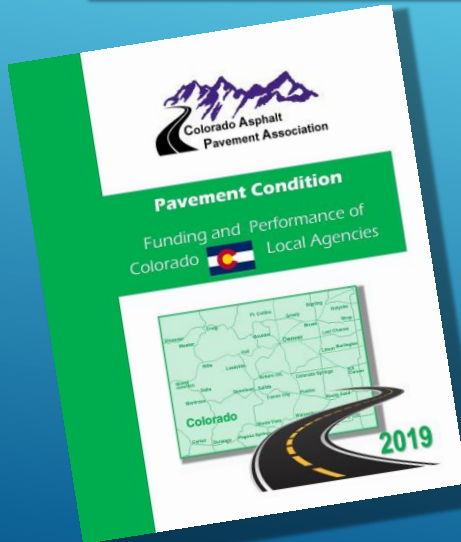
1



2



## 2019 Pavement Condition Funding & Performance



Colorado travelers were asked to prioritize where investment dollars should be spent.....maintaining the existing **transportation infrastructure** was considered the highest priority.

5



### Local Agency Roadway Condition/Funding Survey

#### Street Improvement Budget

- Capital Improvements
- Mill & Overlay
- Preventive/Crack Seal
- Concrete

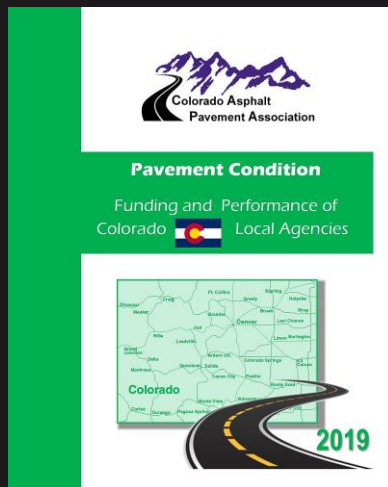
#### Pavement Condition

- Network PCI
  - Use the available data to help with approaching your council or commissioners to increase funding



6

# Local Agency Responses



2019 79 Agencies

2018 68 Agencies

2017 54 Agencies

2016 27 Agencies

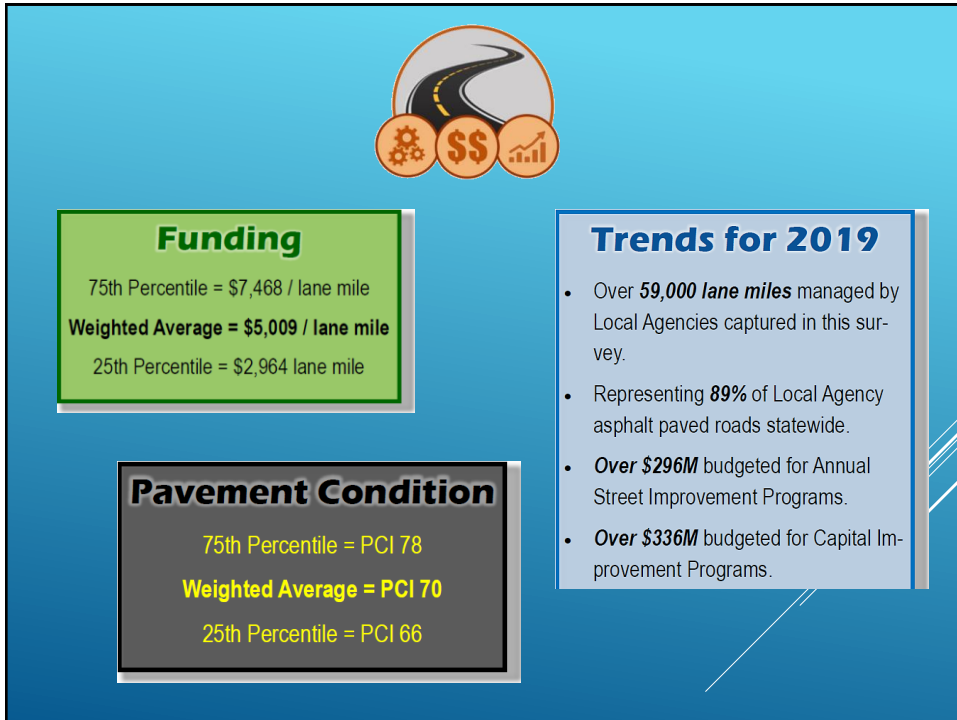
59,000 lane miles

89% of Local Agency miles

7

Local Agency	Paved Lane Miles	Year	Annual Asphalt Program		PCI	Public Works CIP
			Mill/Overlay + Maintenance	\$ / lane mile		
Adams County	1482	2019	\$15,350,000	\$10,358	72	
Arapahoe County	1162	2019	\$4,327,000	\$3,724	69	
Arvada	1586	2019	\$6,900,000	\$4,351	68	
Aspen	72	2019	\$820,000	\$11,389		
Aurora	4091	2019	\$15,117,580	\$3,695	68	\$17,341,580
Basalt	41	2017	\$258,210	\$6,298	55	\$141,891
Boulder County	806	2019	\$1,000,000	\$1,241	79	\$17,000,000
Boulder	628	2019	\$3,475,000	\$5,533	75	\$6,000,000
Broomfield	529	2019				\$15,800,000
Breckenridge	120	2017	\$750,000	\$6,250	78	
Cañon City	194	2019	\$5,000,000	\$25,773	37	
Castle Pines	82	2019	\$1,500,000	\$18,293	75	
Castle Rock	683	2019	\$4,725,000	\$6,918	76	\$14,000,000
Centennial	979	2017	\$7,700,000	\$7,865	79	
Cherry Hills Village	90	2019	\$330,000	\$3,667	75	
Colorado Springs	5688	2019	\$31,155,000	\$5,477	56	\$28,000,000
Commerce City	540	2017	\$2,190,400	\$4,056	69	\$20,147,000
Cortez	109	2019	\$1,050,000	\$9,633		\$1,605,000
Delta	134	2016	\$400,000	\$2,985		\$400,000

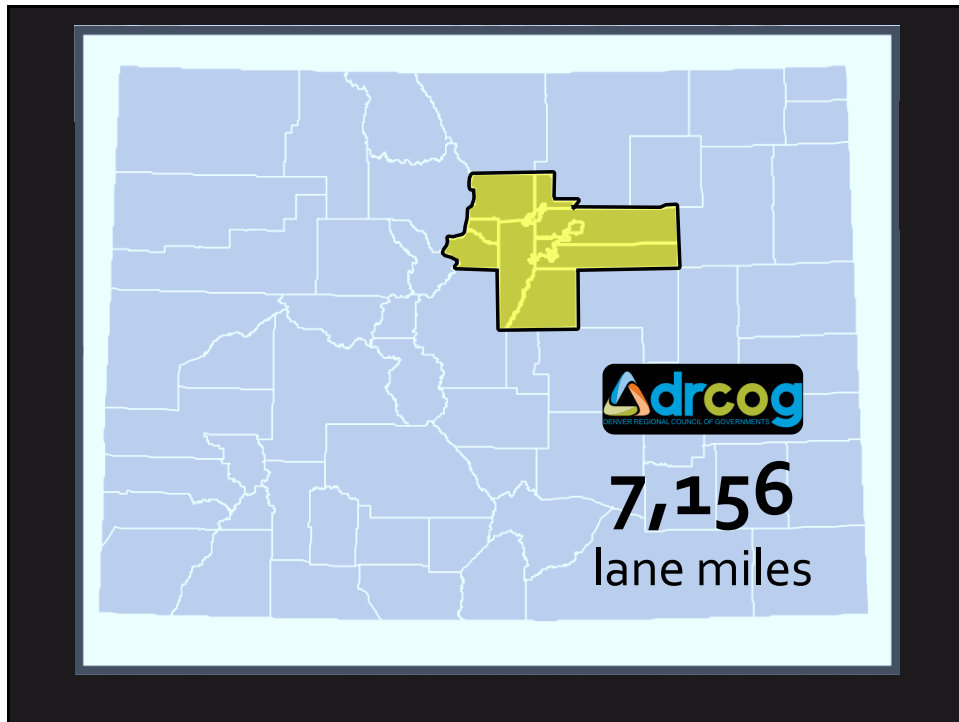
8



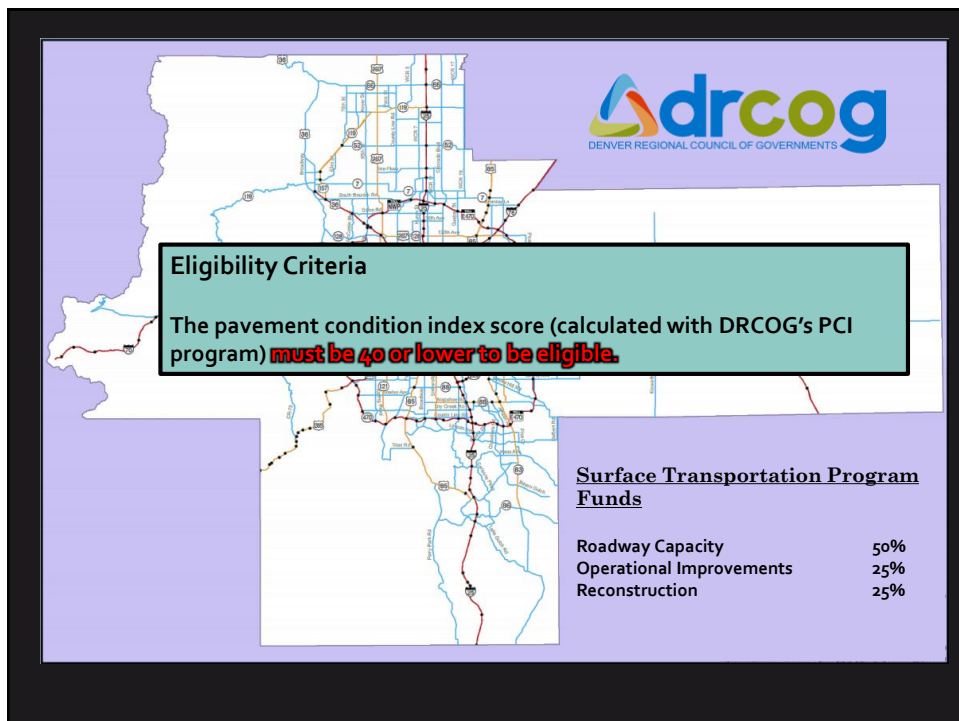
9



10



11



12

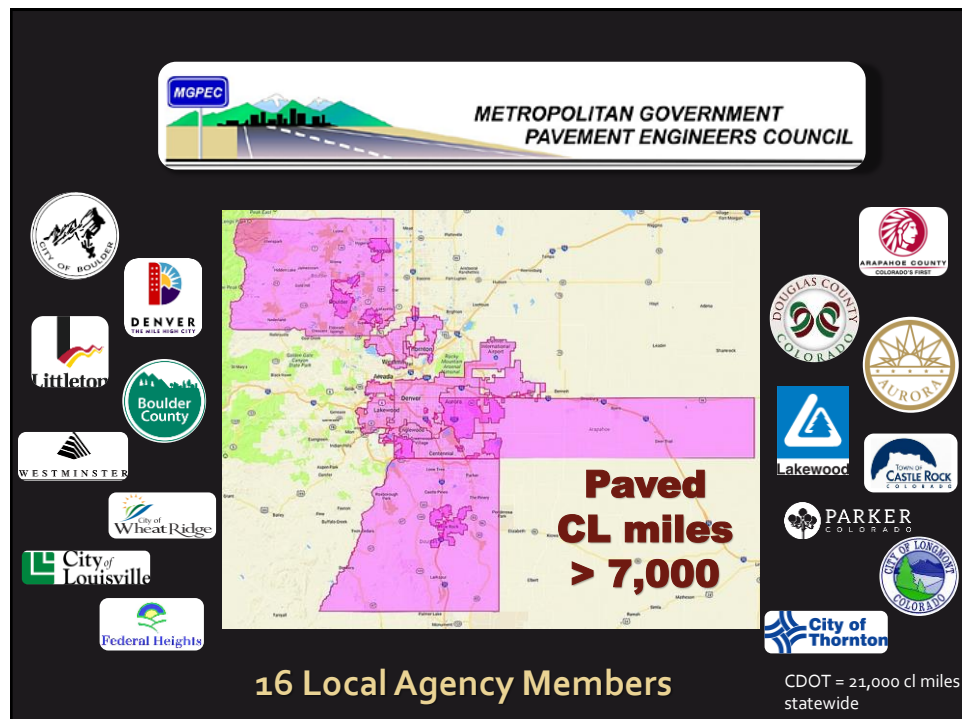




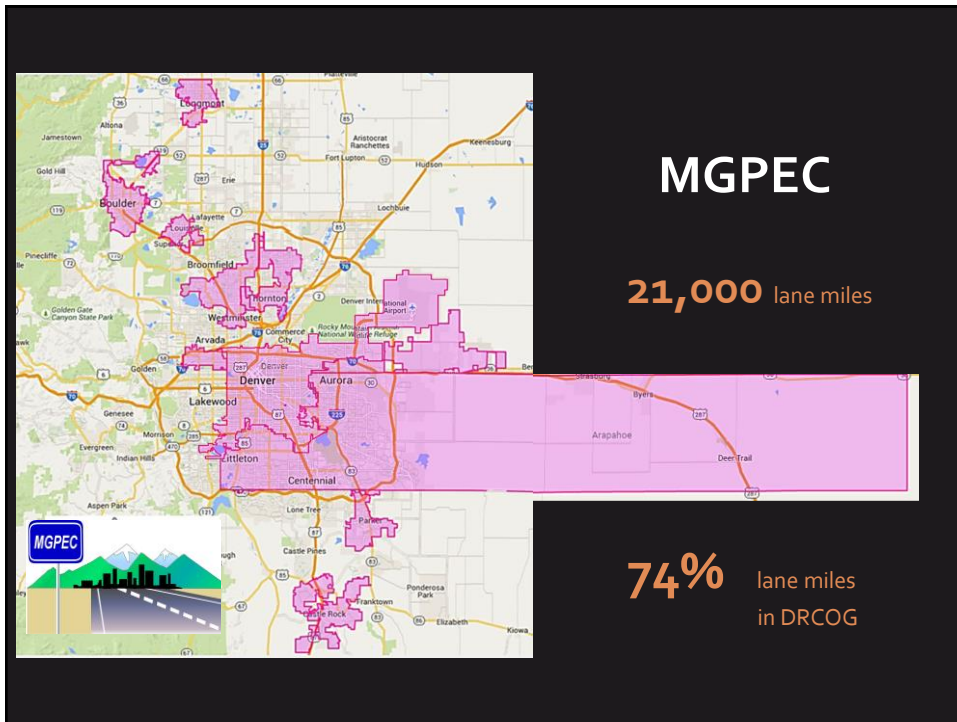
MGPEC was founded in 1993, the mission of the organization was:

1. Standardize pavement designs, materials and maintenance recommendations.
2. Standardize pavement management programs for local agencies.

13



14



15

Local Agencies Facing:

**Situation**

- increased costs
- less revenue
- resistance to tax increases

Decision makers have chosen:

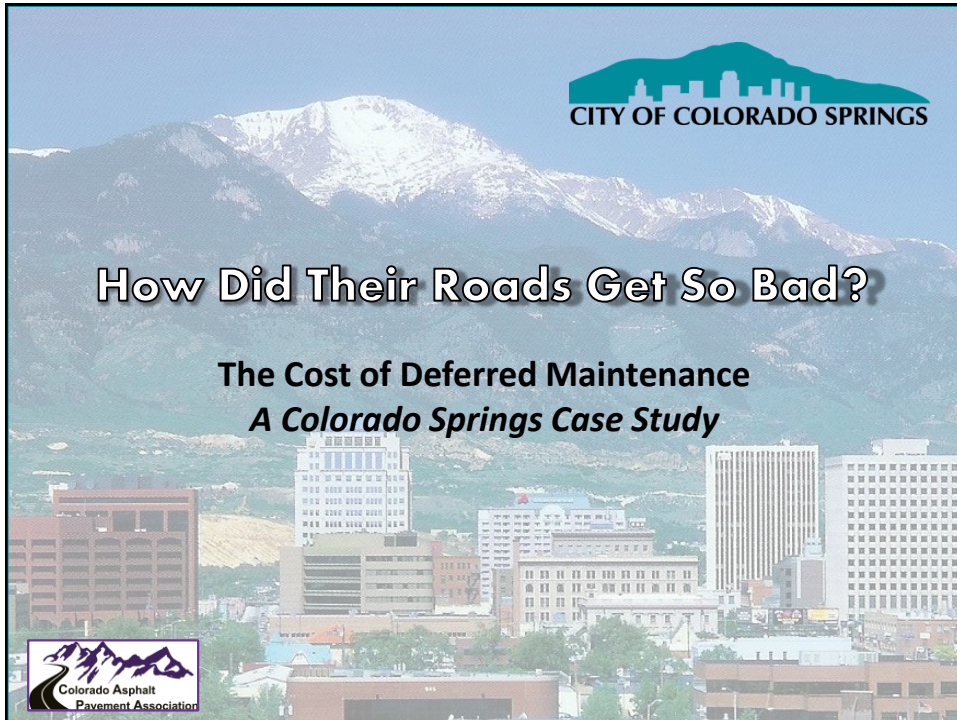
**Reaction**

- "low profile" budget cuts by deferring maintenance

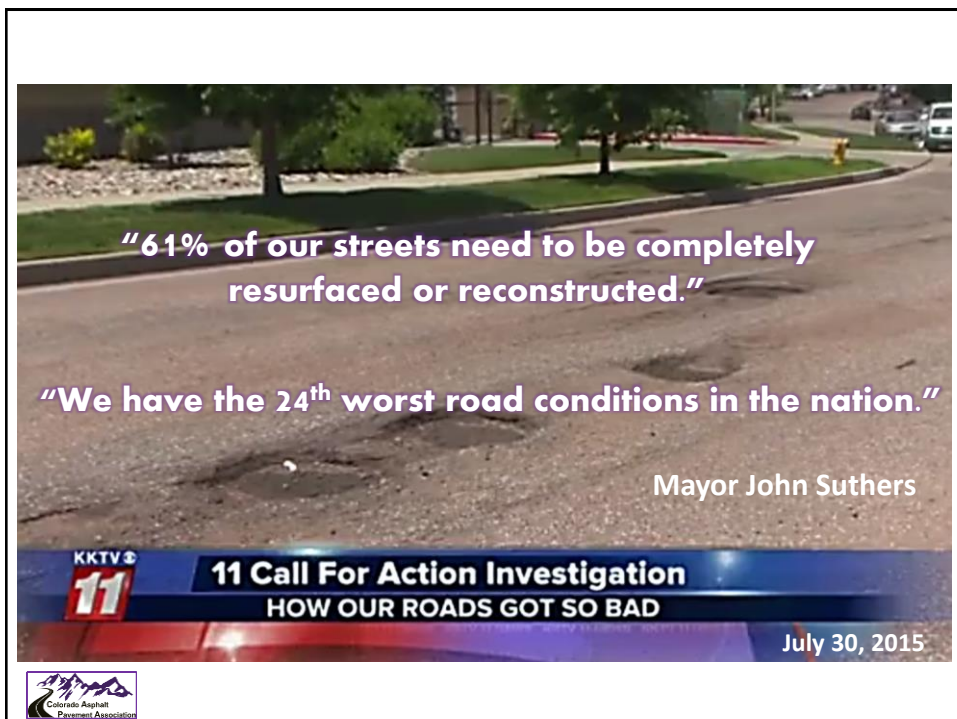
**APWA**  
AMERICAN PUBLIC WORKS ASSOCIATION

16

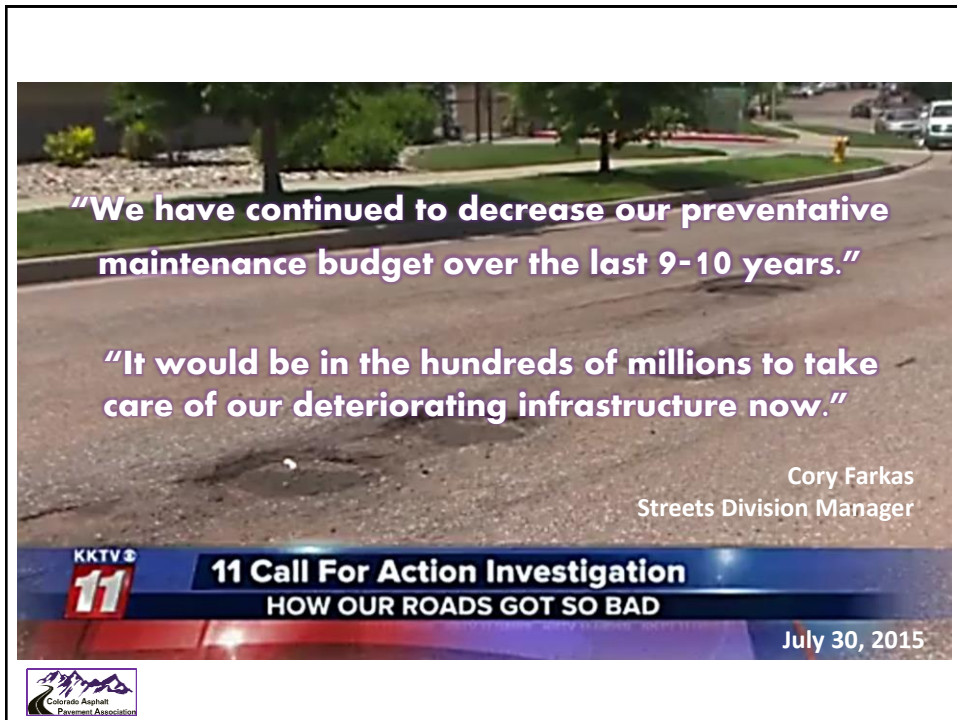




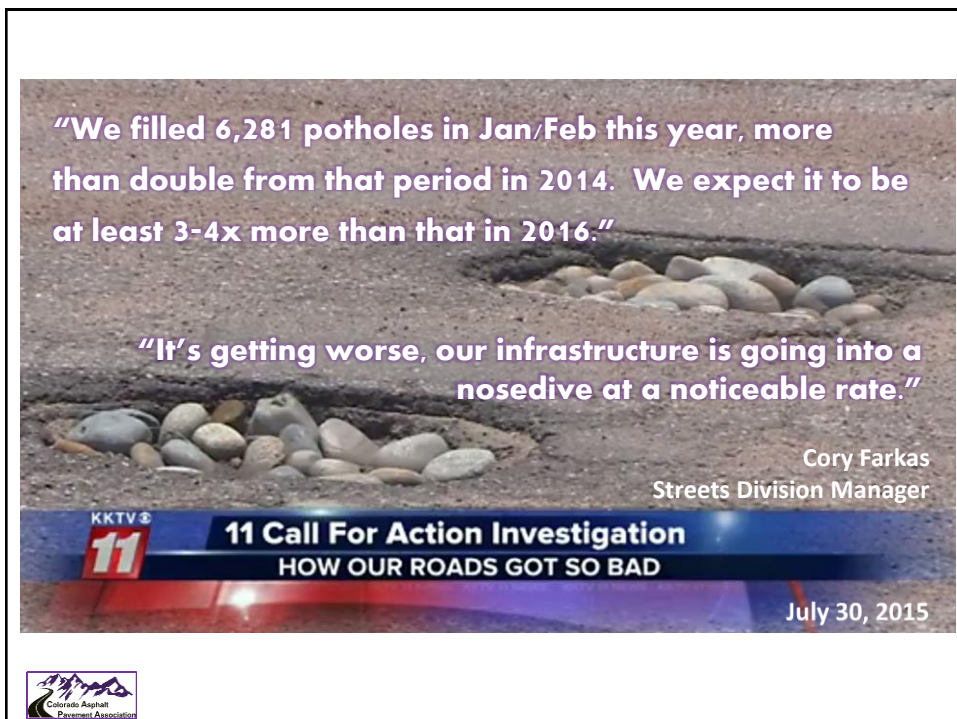
17



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19



20



## How Did it Get So Bad?

This tax-averse city is about to learn what it looks and feels like when budget cuts slash services most Americans consider part of the urban fabric.

The city won't pay for any street paving, relying instead on a regional authority that can meet only about 10 percent of the need.

**THE DENVER POST**

Jan 31, 2010

***"I guess we're going to find out what the tolerance level is for people."***

**Chuck Fowler  
Businessman**



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## How Did it Get So Bad?

"With that downturn (2008), one of things you do is reduce across the board. Every department had budget restrictions and that ultimately impacted our Capital Improvement Budget."

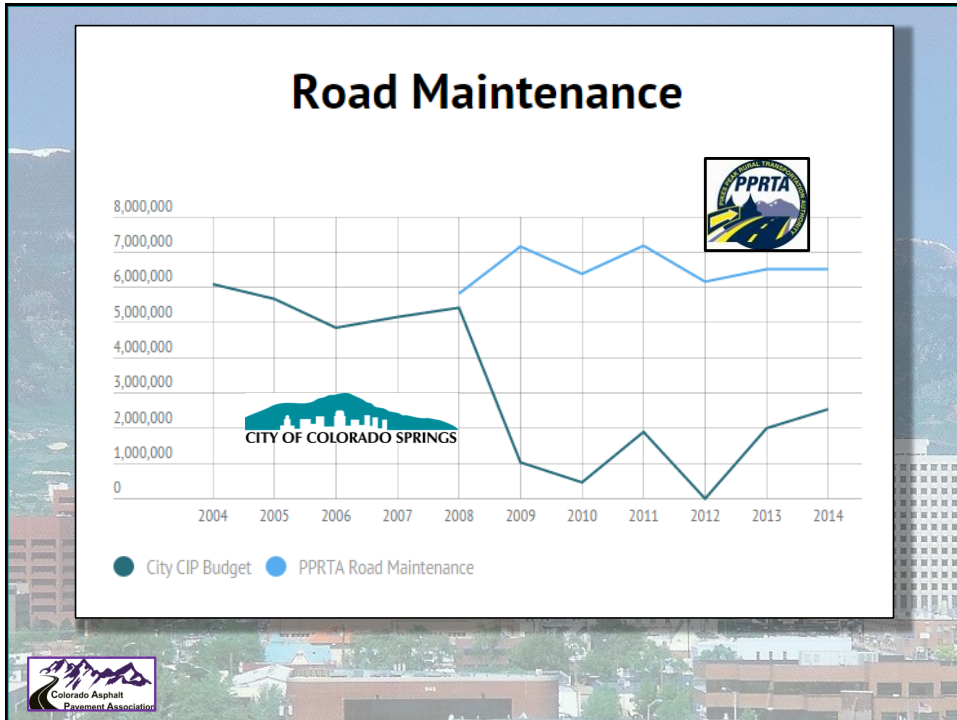


**Kara Skinner  
Chief Financial Officer  
City of Colorado Springs**

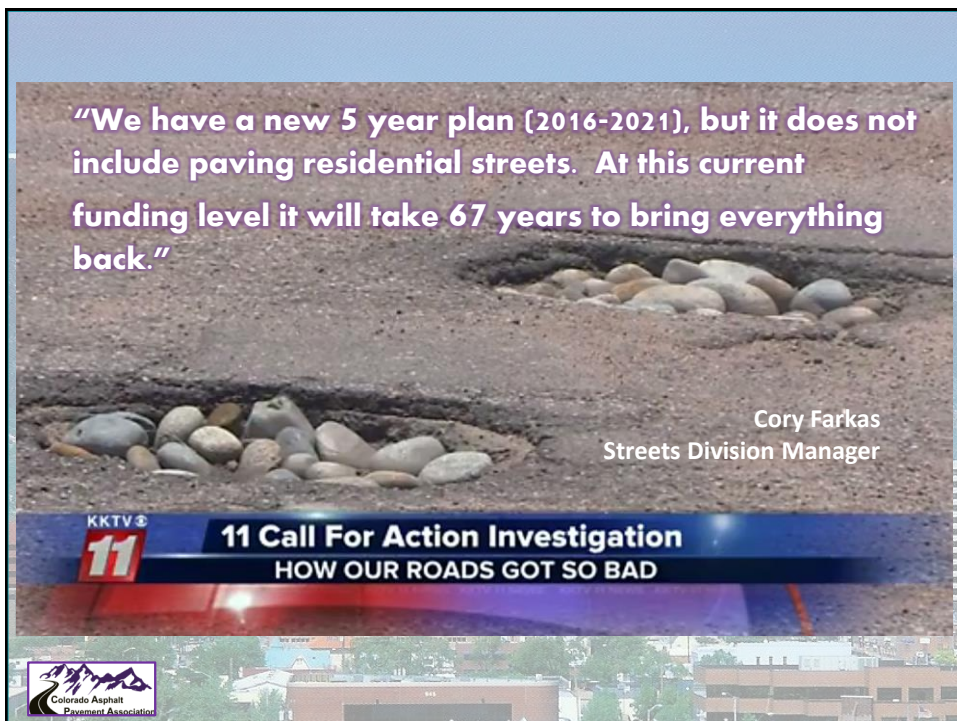
Other local agencies addressed the economic downturn in different ways. Jefferson County prioritized their departments and reduced budgets according to critical long term impacts. The Road & Bridge Department remained a top priority and has avoided the problematic issues Colorado Springs is now facing.



22

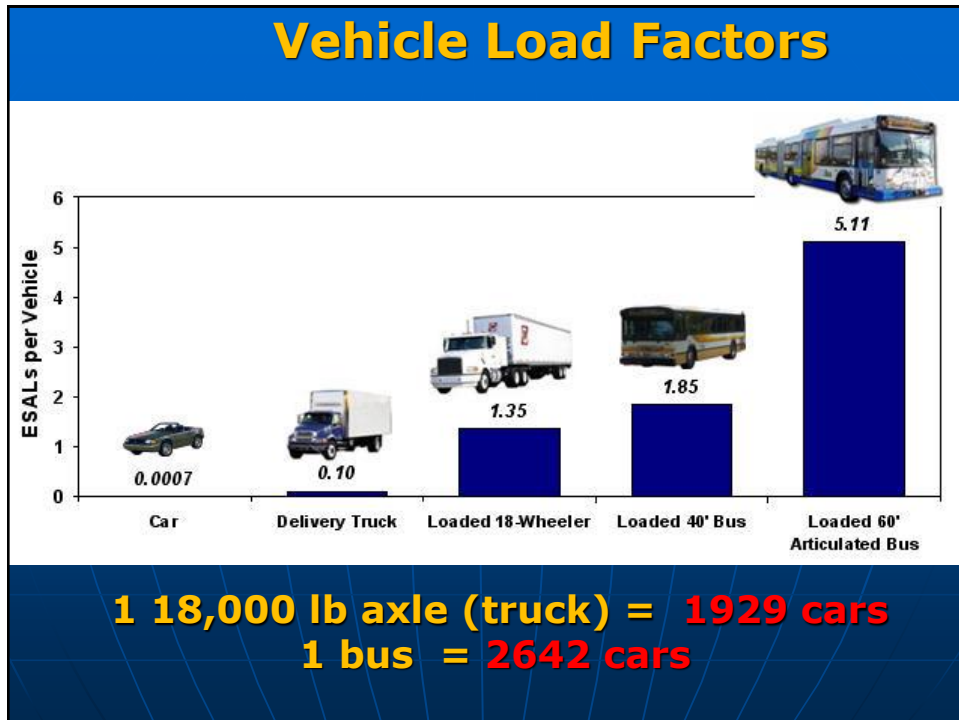


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**TRANSPORTATION ASSET  
MANAGEMENT  
TASK FORCE (2017)**

**Develop Transportation Asset  
Management Policies and Procedures for  
MGPEC.**



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**LOCAL AGENCY  
PAVEMENT MANAGEMENT  
SYSTEMS**

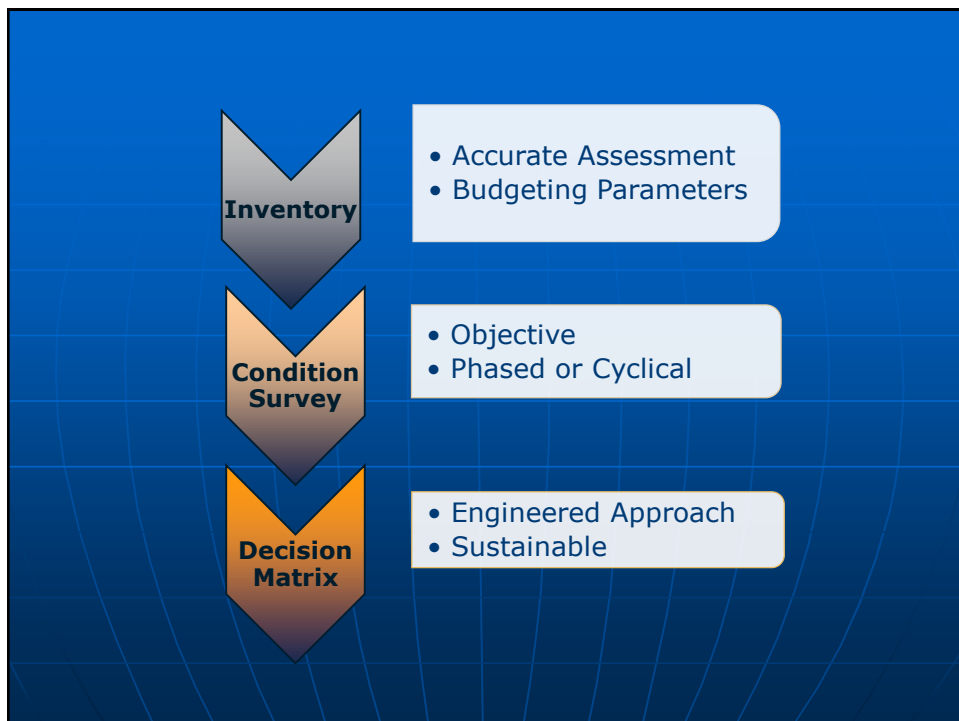
IMPLEMENTATION GUIDE

2019

## CHAPTERS

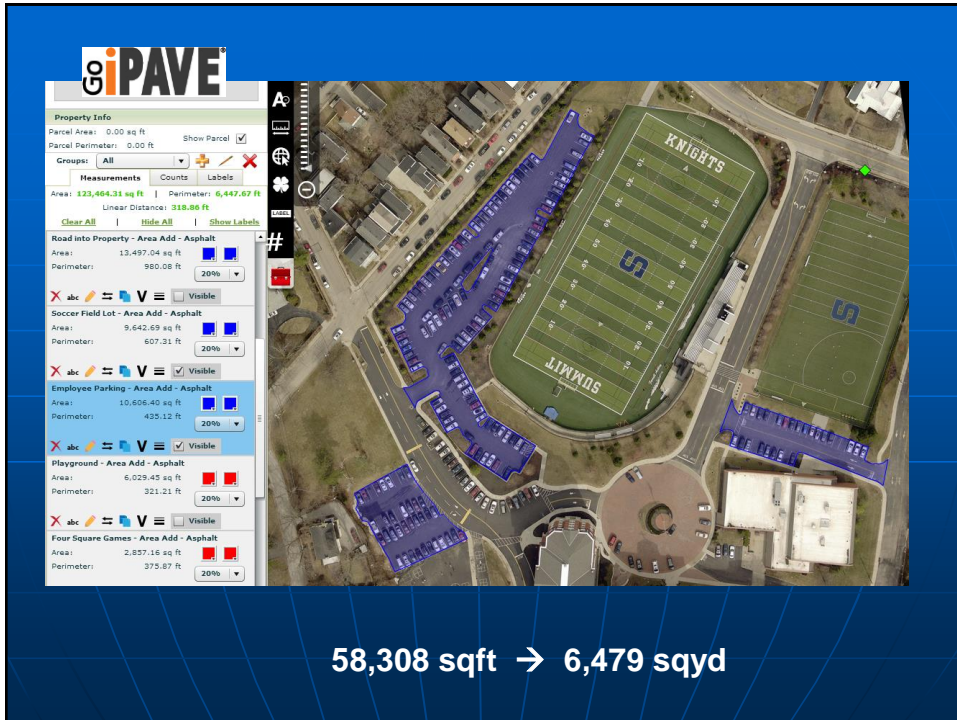
- Introduction to the Guide
- What is Pavement Management?
- What are the costs & benefits of a PMS?
- Why Invest in PMS?
- Designing a PMS
  - Inventory
  - Collecting Data
  - Predicting Condition
  - Selecting Treatments
  - Reporting
  - PMS Tool
  - Staying Current
- Summary

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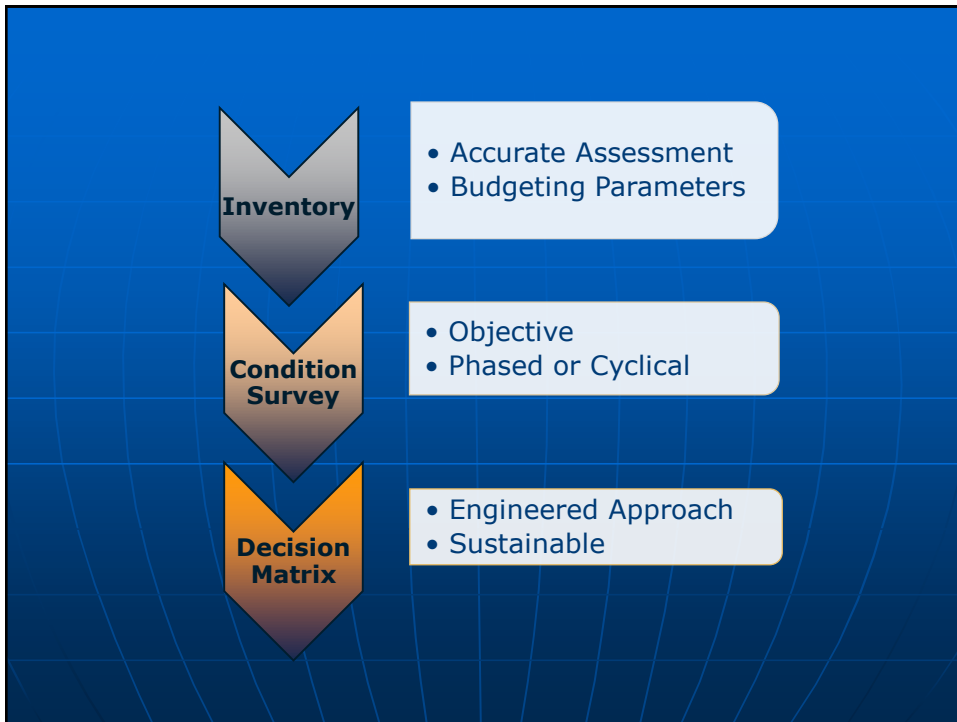




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## Pavement Condition Index

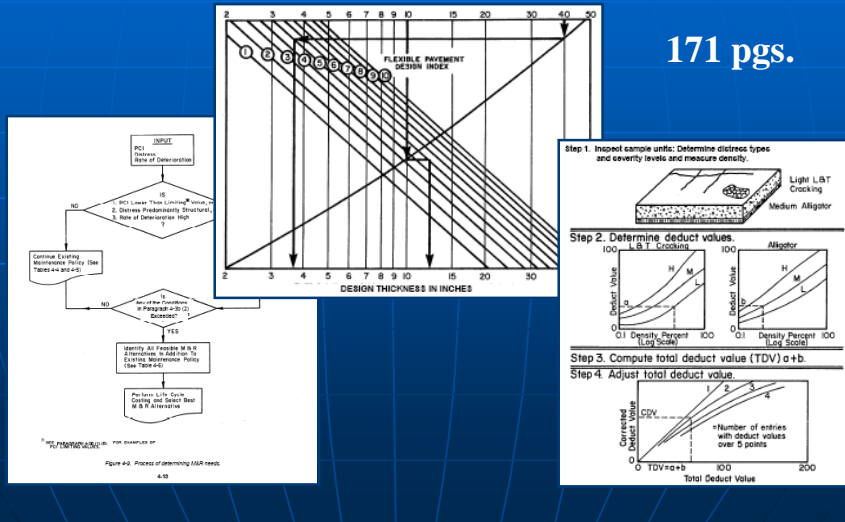
PCI	RATING
86 - 100	Excellent
71 - 85	Very Good
56 - 70	Good
41 - 55	Fair
26 - 40	Poor
11 - 25	Very Poor
0 - 10	Failed

US Army Corps of Engineers

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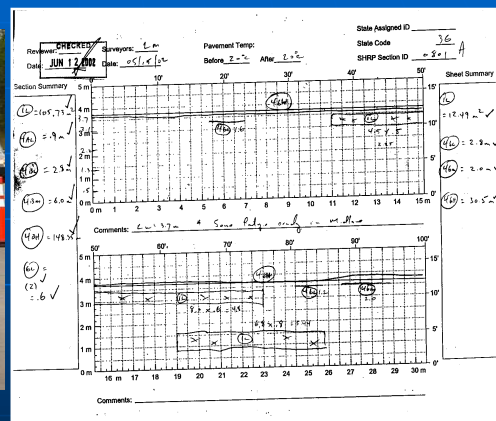
# Department of the Army TM 5-623 (1982)

171 pgs.



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## Pavement Distress Manual Data Collection



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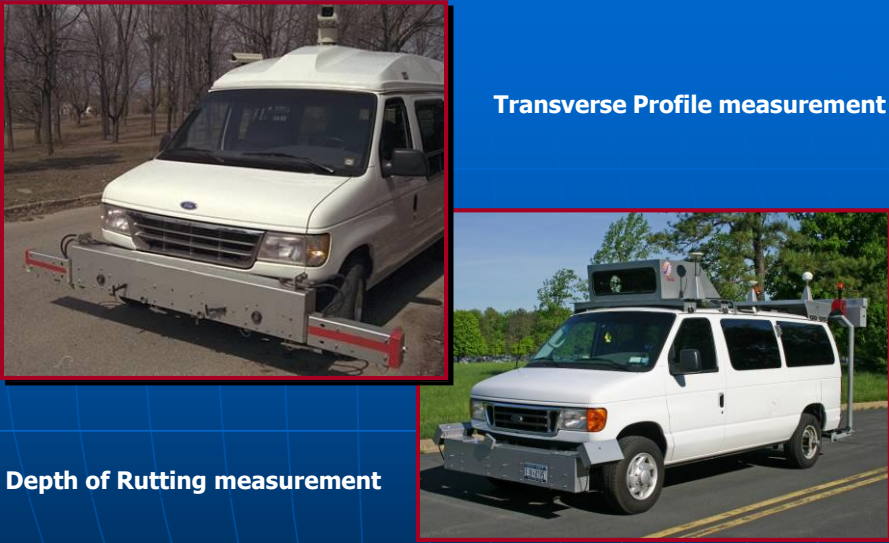


35



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Transverse Profile measurement

Depth of Rutting measurement

**Ride Quality**

37



**Non-Destructive Structural Evaluation**

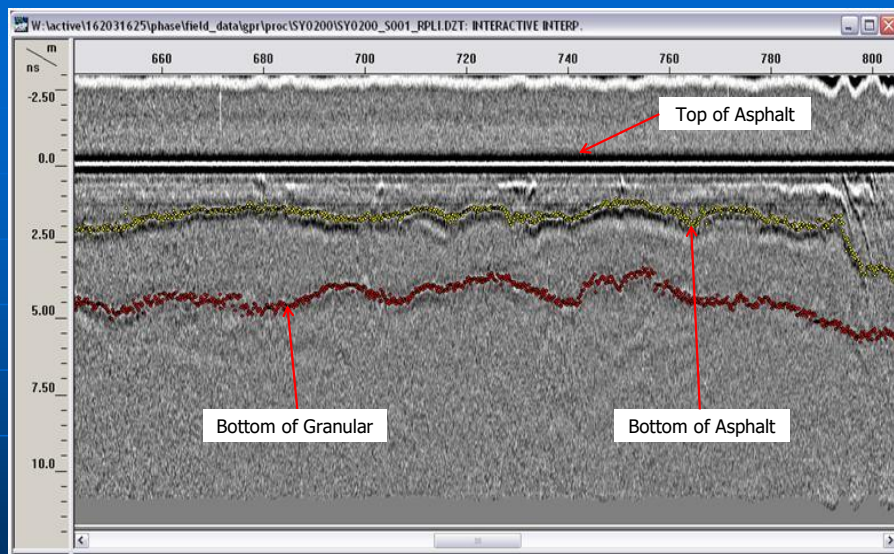
Falling Weight Deflectometer (FWD)

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**Ground Penetrating Radar**

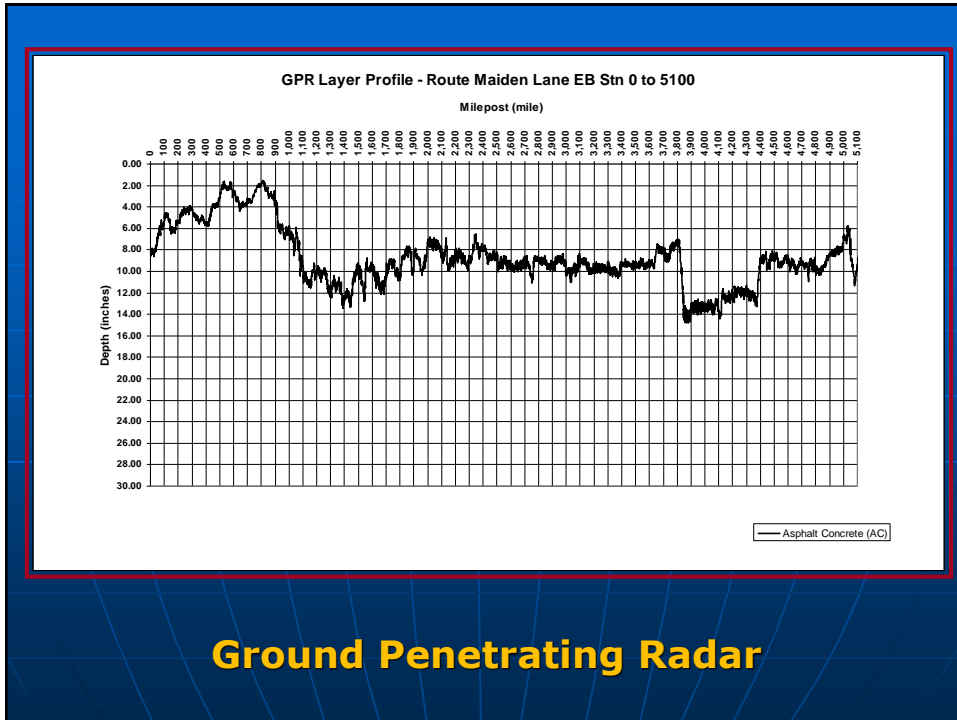
39



**Ground Penetrating Radar**

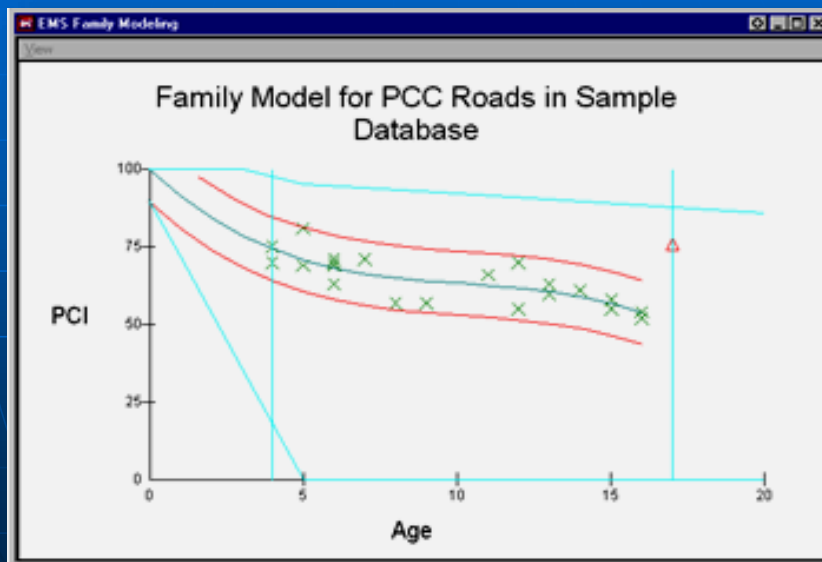
40



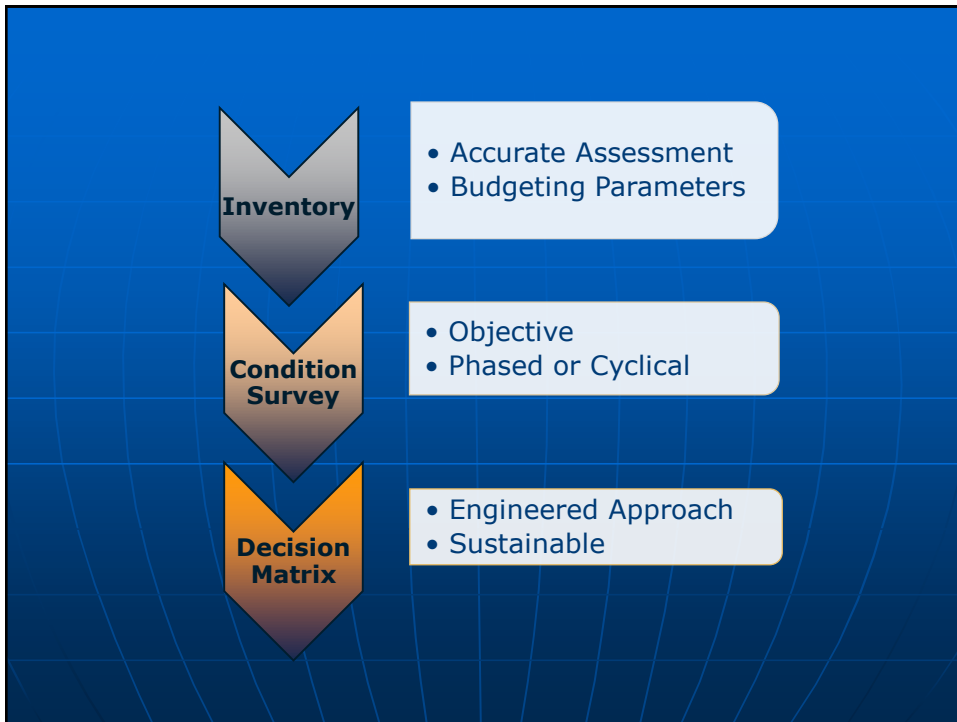


41

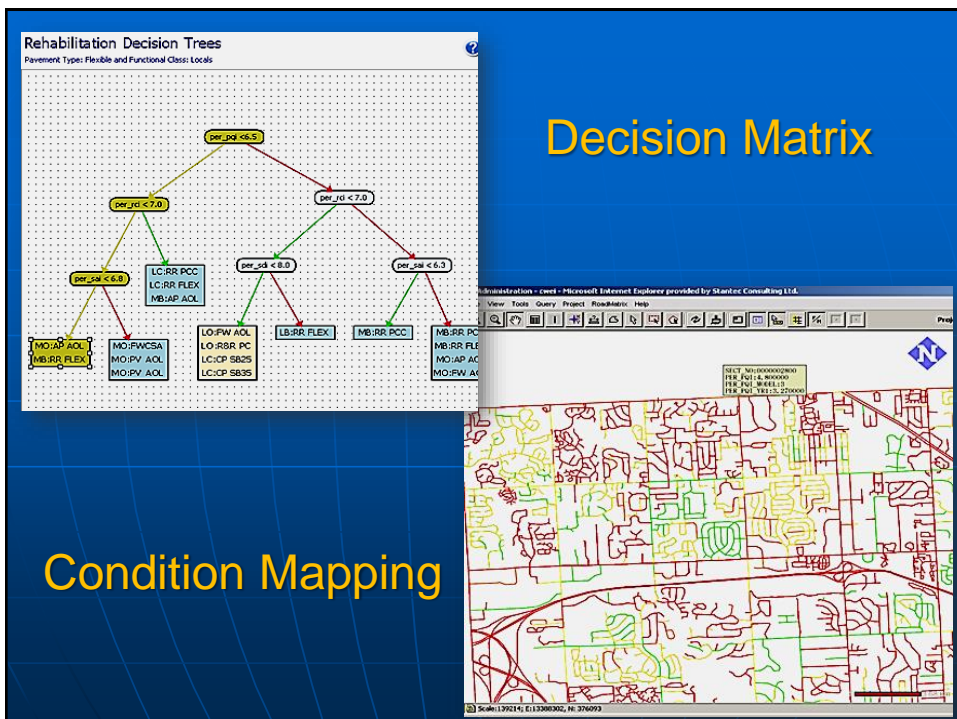
## Deterioration Curves



42

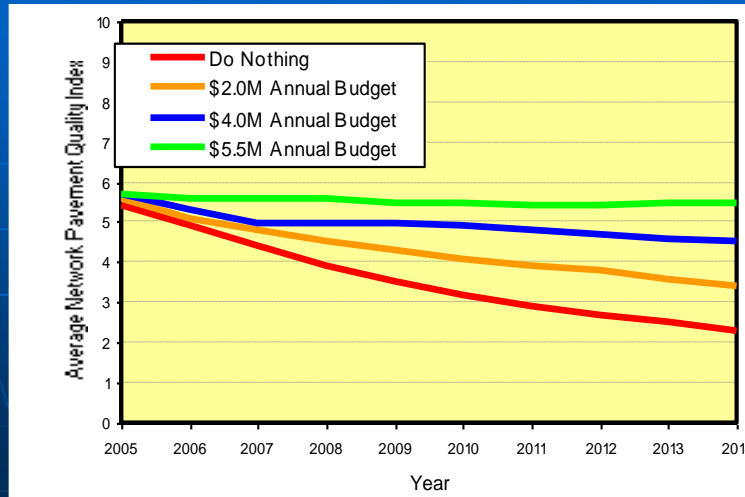


43

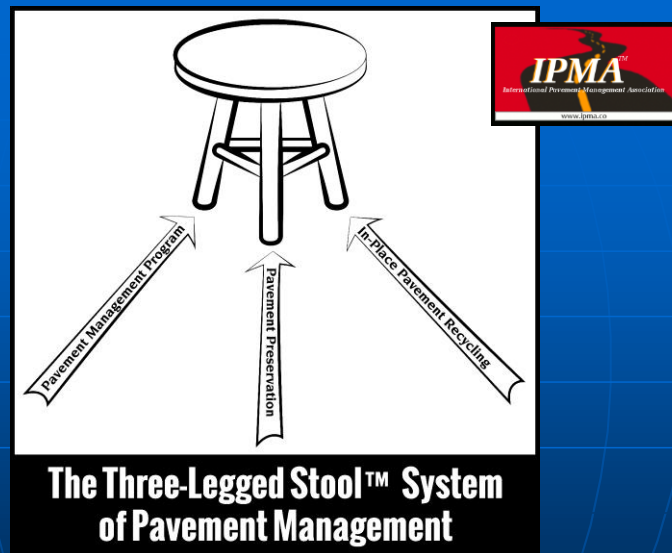


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## Pavement Network Performance Scenarios

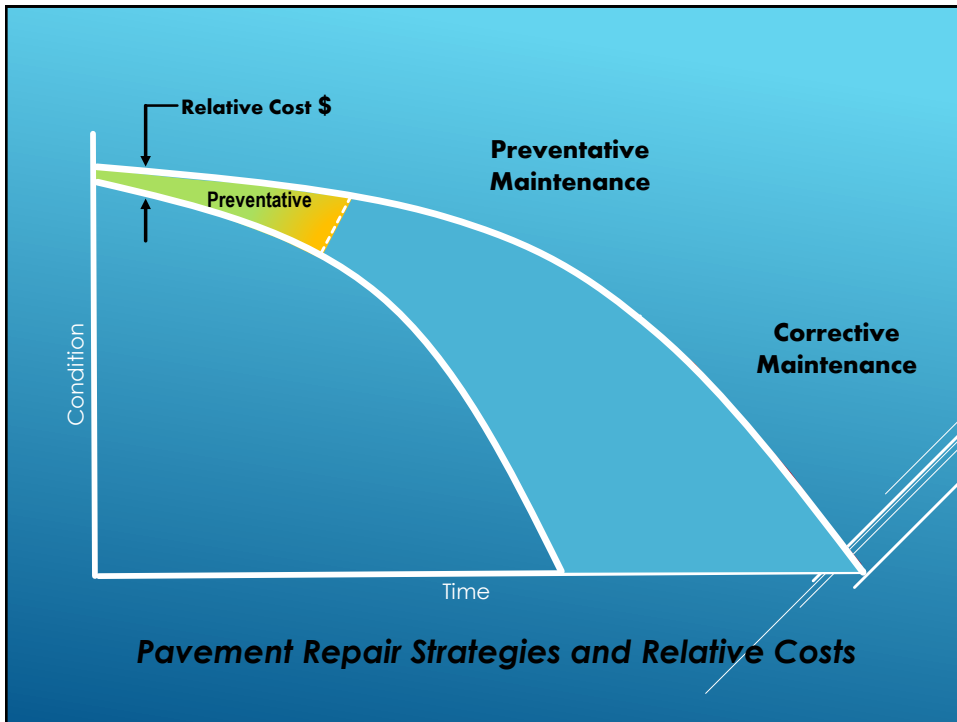


45



**Maximize the service life of the infrastructure assets that  
you have already paid for**

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### ***Making the Case for Pavement Preservation***

- Preservation means to preserve, not to restore.
- Deferred maintenance is the arch enemy of pavement preservation.
- Involvement of elected officials in pavement improvement programs needs to be managed.



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## ***Making the Case for Pavement Preservation***

- Partner with your contractors to stretch program funds.
- Citizens can help make the case for road funding.
- Crack sealing is the most cost effective pavement preservation strategy.



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**METROPOLITAN GOVERNMENT  
PAVEMENT ENGINEERS COUNCIL**



**Thank You**

**How Would You Rehab These Pavements?**

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