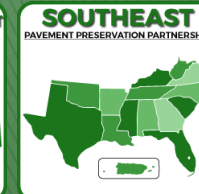
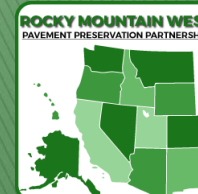


# Managing Local Streets and Roads Through StreetSaver Program

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# Overview

- ▶ MTC as a regional government
- ▶ Maintenance Needs Assessment
- ▶ PMS Successful Applications
- ▶ Performance Management: KPI



## San Francisco Metropolitan Region

Population = **7.4** million

**9** counties

**100** cities

**43,000** lane-miles of local streets & roads

**6,850** lane-miles of state highway (Caltrans)

**23** transit agencies

**7** toll bridges

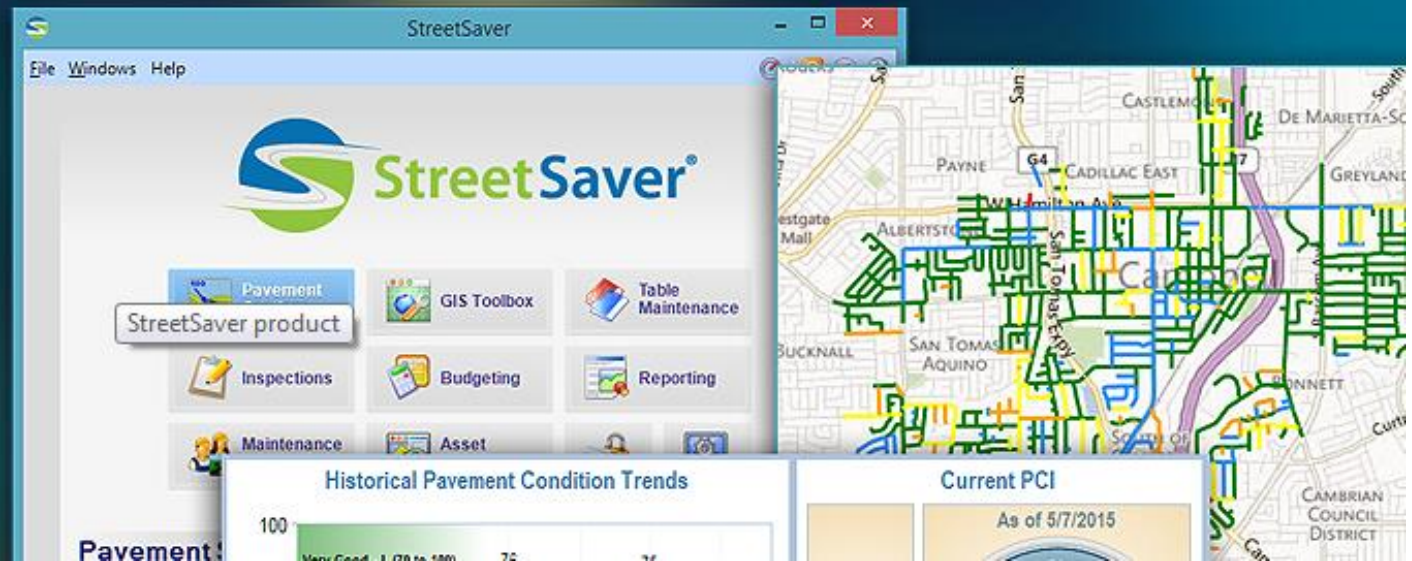
**One MPO** –  
Metropolitan  
Transportation  
Commission

# Pavement Management Software

## StreetSaver<sup>®</sup>:

- ▶ Network Level System
- ▶ Commercially available since 1987
- ▶ Designed for Local Agencies
- ▶ Emphasized on pavement preservation
- ▶ Used by all Bay Area Jurisdictions; 500 nationwide

**StreetSaver**  
Keeping good roads good!



# Pavement Management Successful Practices

1. Regional Investment in Pavements Needs Assessment
2. Support California Statewide Local Streets & Roads Maintenance Needs Assessment
3. Condition Funding on Performance

# Local Streets & Roads Needs Assessment:

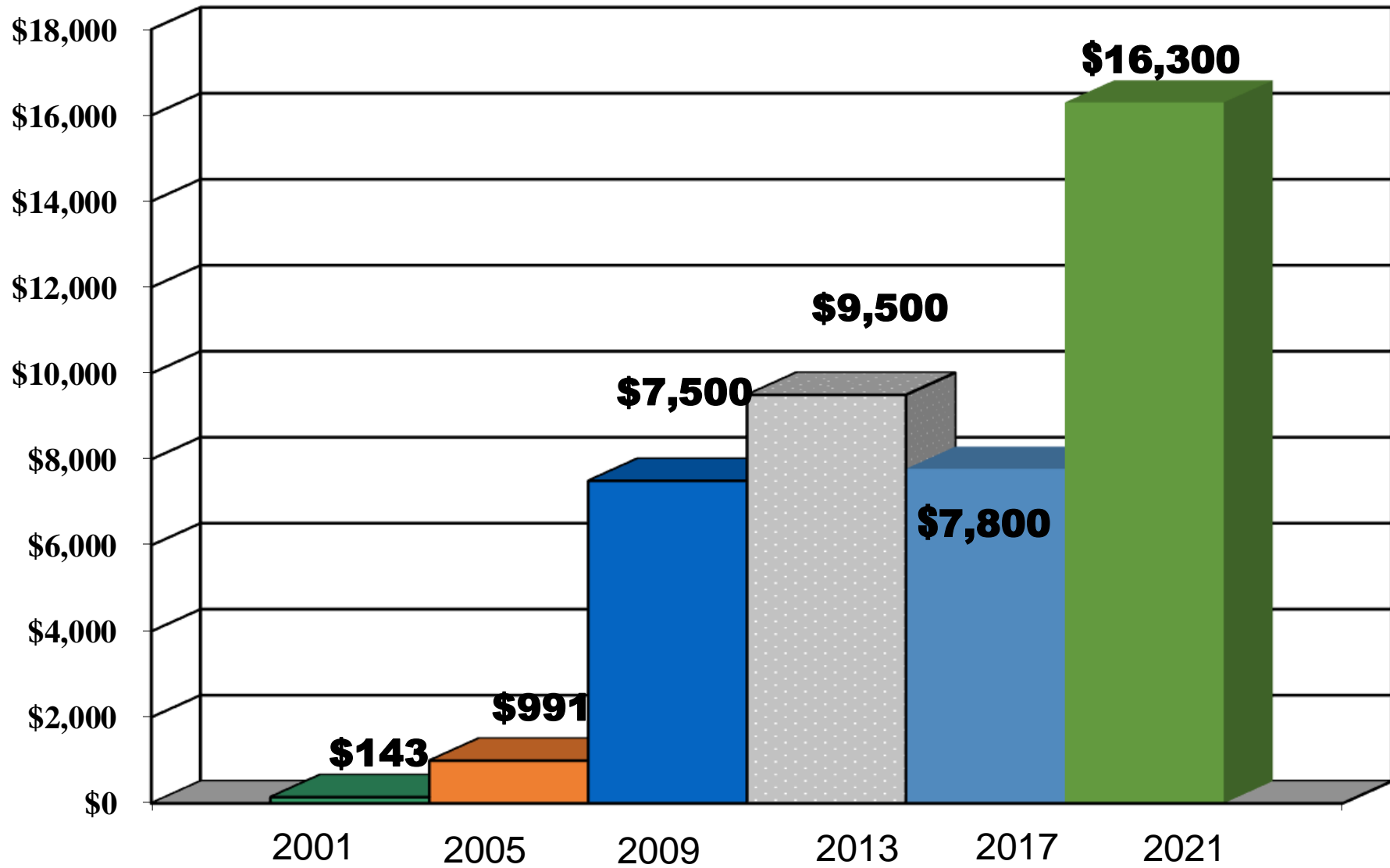
- Answer how much we need to invest as a region for maintenance in:
  - ✓ Pavement
  - ✓ Non-Pavement
  - ✓ Local Bridges
- Facilitate Regional Transportation Plan (RTP) discussion and funding policies
- Exclusive use of a common PMS by Bay Area jurisdictions makes it very easy

# 25-Year Needs Assessment

(\$ in millions)

County	Avail. Revenues	Pavement Needs	Non-Pavement Needs	Total Capital Needs	Total Remaining Capital Needs
Alameda	\$ 2,148	\$ 3,715	\$ 4,082	\$ 7,798	\$ 5,650
Contra Costa	\$ 2,915	\$ 3,111	\$ 2,674	\$ 5,786	\$ 2,871
Marin	\$ 655	\$ 865	\$ 641	\$ 1,506	\$ 852
Napa	\$ 219	\$ 1,087	\$ 429	\$ 1,516	\$ 1,297
San Francisco	\$ 2,299	\$ 2,416	\$ 2,363	\$ 4,778	\$ 2,480
San Mateo	\$ 1,440	\$ 1,929	\$ 1,984	\$ 3,913	\$ 2,473
Santa Clara	\$ 3,374	\$ 5,776	\$ 5,118	\$ 10,894	\$ 7,520
Solano	\$ 488	\$ 1,906	\$ 1,289	\$ 3,195	\$ 2,707
Sonoma	\$ 994	\$ 3,699	\$ 1,319	\$ 5,018	\$ 4,023
<b>REGION</b>	<b>\$14,500</b>	<b>\$24,500</b>	<b>\$20,000</b>	<b>\$44,500</b>	<b>\$30,000</b>

# Impact of Needs Assessment on Regional Policy



(Discretionary funding to maintain current condition, \$ in Million)



# Measure T—Fix Our Local Roads

## How did we get here?

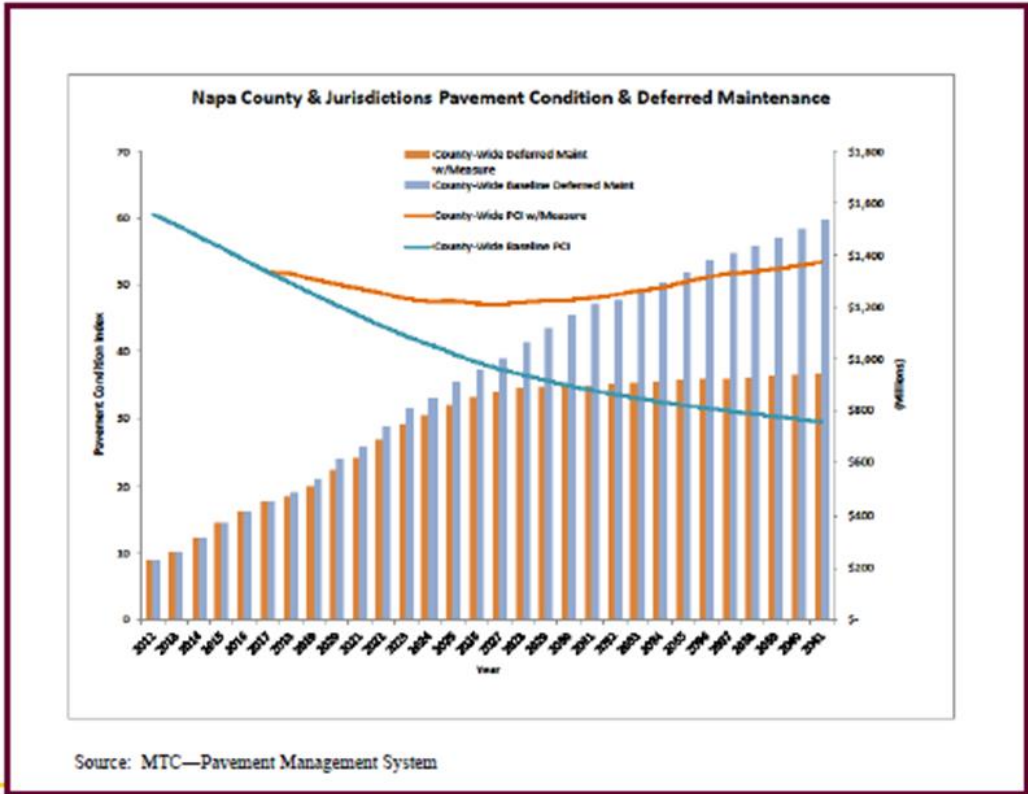
Federal and State revenues over the last 10 years have been declining in both real and nominal terms. The 18.4¢ per gallon tax deposited in the National Highway Trust Fund for surface transportation projects has not been increased since 1993. Reductions in federal funds has been compounded by the diversion of millions in State Highway and local streets and roads funds for highway needs or to backfill shortfalls in the State's general fund.



## What's the Problem?

The Cities, Town, and County of Napa have almost \$300 million in deferred road maintenance. Without a near-term infusion of new revenues, this figure is projected to grow to almost \$2 billion over the next 25 years. Measure T will not solve all of the county's problems but will help get a handle on exponential growth of Streets & Roads Deferred Maintenance needs.

**NAPA'S ROADS ARE THE WORST IN THE REGION - ON A SCORE FROM 25 (LOW) TO 89 (HIGH) - 90% OF NAPA'S ROADS ARE CONSIDERED VERY POOR OR AT RISK ON THE REGION'S PAVEMENT CONDITION INDEX (PCI).**



Source: MTC—Pavement Management System

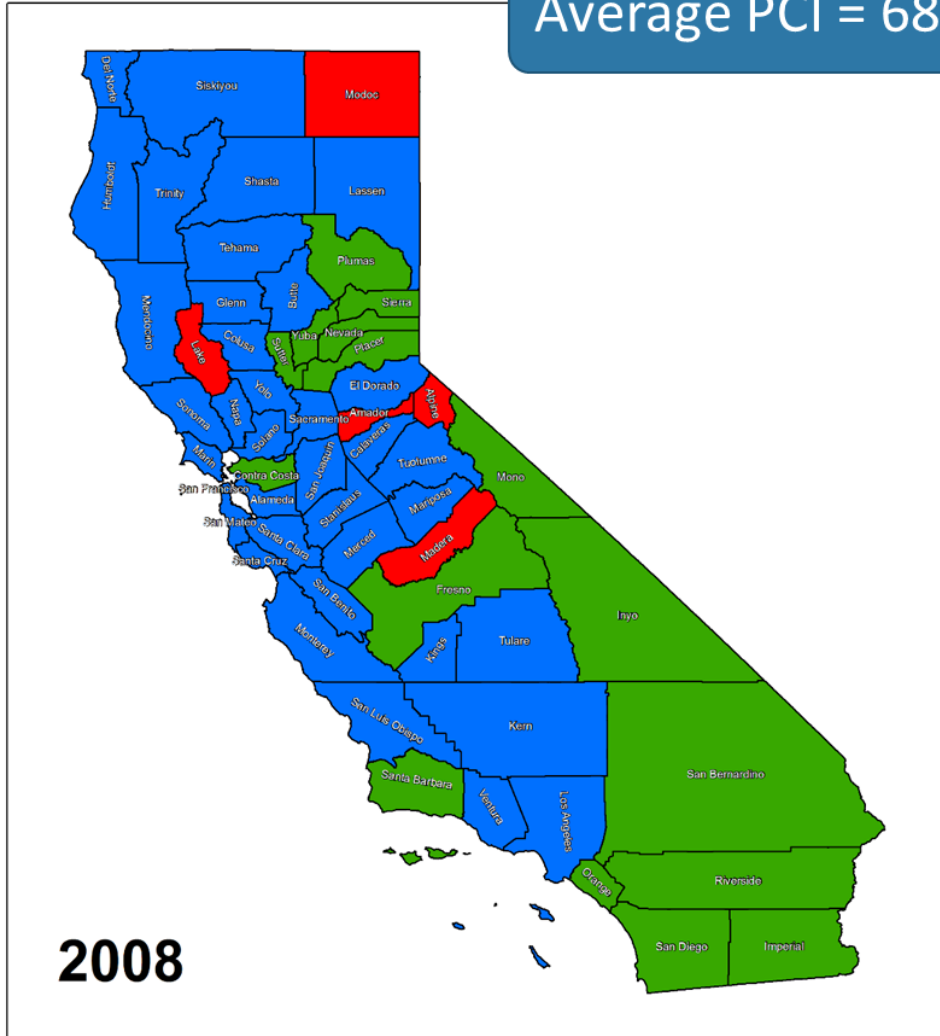
# Napa Countywide Road Maintenance Act

- ~\$300 million over 25 years
- Dedicated funding:
  - ✓ 99% Local Streets Maintenance
  - ✓ 1% Administration
- 75% YES votes

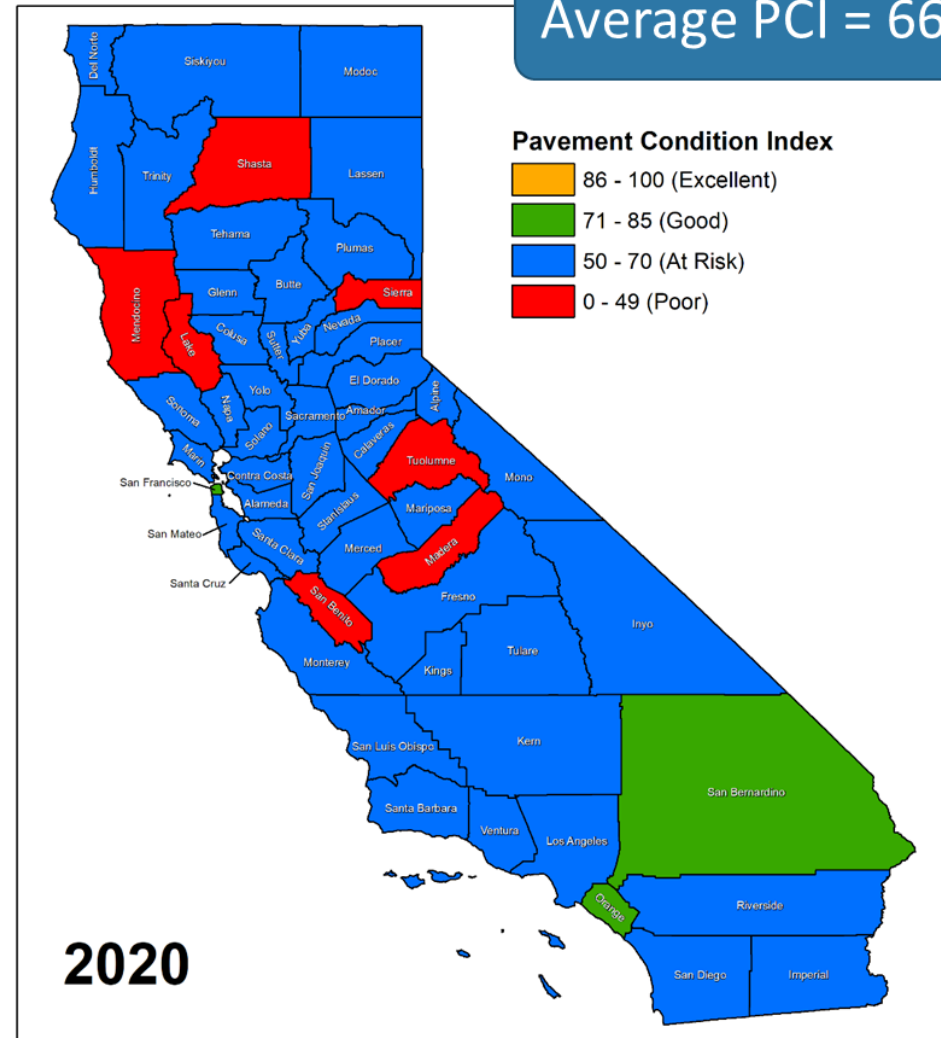


# California Statewide Local Streets & Roads Needs Assessment

Average PCI = 68



Average PCI = 66



### Pavement Condition Index

- 86 - 100 (Excellent)
- 71 - 85 (Good)
- 50 - 70 (At Risk)
- 0 - 49 (Poor)

# What Are Funding Shortfalls?

**Senate Bill 1 passed in April 2017:**

- Increase gas tax by 12 cents
- \$1.5B/year for LSR maintenance

Transportation Asset	2016		
	Needs	Funding	Shortfall
Pavement	\$ 70.0	\$ 19.8	\$ (50.2)
Essential Components	\$ 32.1	\$ 11.0	\$ (21.1)
Bridges	\$ 4.6	\$ 2.9	\$ (1.7)
<b>Totals</b>	<b>\$ 106.7</b>	<b>\$ 33.7</b>	<b>\$ (73.0)</b>

A gas tax increase of 49 cents/gallon will erase this shortfall

Transportation Asset	Needs (\$B)
	2018
Pavement	\$ 61.7
Essential Components	\$ 34.1
Bridges	\$ 5.5
<b>Totals</b>	<b>\$ 101.3</b>

2020 (\$B)		
Needs	Funding	Shortfall
\$ 76.0	\$ 38.4	\$ (37.6)
\$ 35.5	\$ 13.4	\$ (22.1)
\$ 7.2	\$ 2.9	\$ (4.3)
<b>\$ 118.7</b>	<b>\$ 54.7</b>	<b>\$ (64.0)</b>

# Condition Funding on Performance

# Pavement Preservation Decision Tree

	Edit	PM Category Name	Treatment Name	Cost/Sq Yd, except Seal Cracks in LF	Years Between Crack Seals	Years Between Surface Seals	# of Surface Seals before Overlay
--	------	------------------	----------------	--------------------------------------	---------------------------	-----------------------------	-----------------------------------

Arterial

▼ AC

Condition Category I - Very Good							
	Crack Treatment	SEAL CRACKS		\$2.60	3		
	Surface Treatment	SLURRY SEAL		\$6.50			
	Restoration Treatment	ULTRA THIN LIFT HMA		\$25.00			
Condition Category II - Good, Non-Load Related							
		CAPE SEAL		\$20.00			

Condition Categories

100

PCI Cap 90

70

50

**Very Good - I**

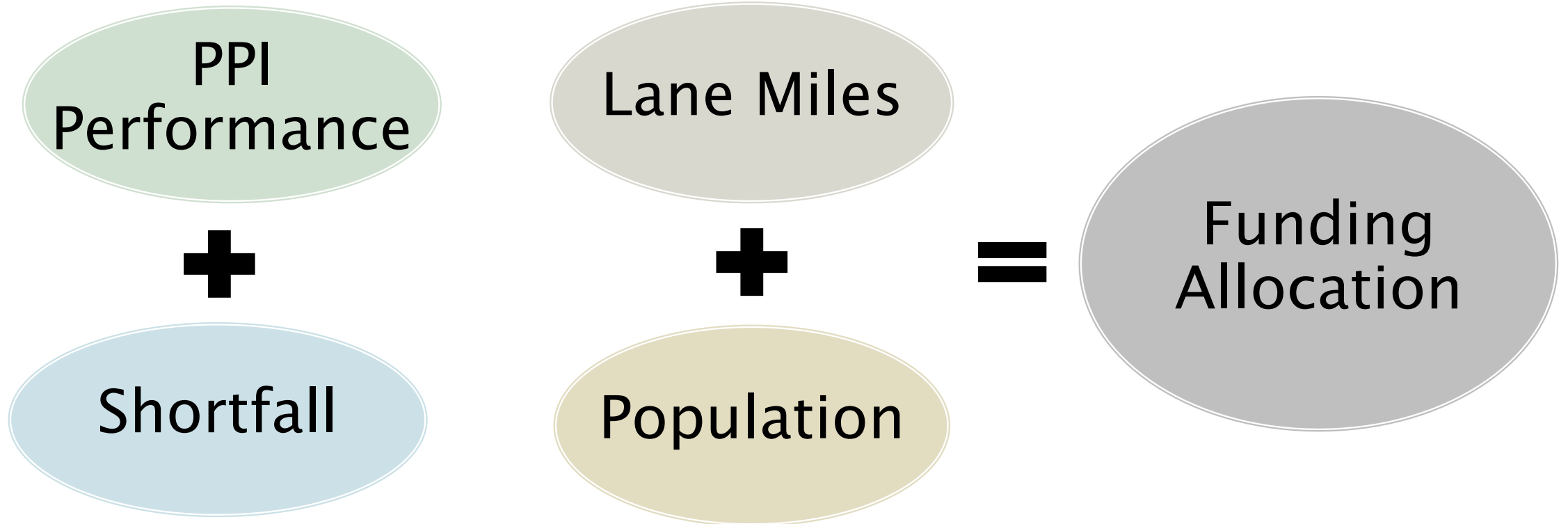
Non Load - II    Load - III

**Good - II/III**

Using Transitional Windows

▶ Condition Category III - Good, Load Related

# Success Story – MTC



# Outcome-Driven Performance Measure

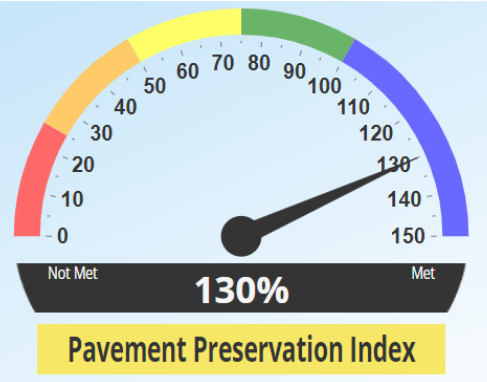
## Funding Allocation Formula:

- ❑ No advantage or disadvantage
- ❑ Data from StreetSaver PMS
- ❑ Promotes pavement preservation principles
- ❑ Replaces “Maintenance of Effort”

**Behavior Change:** Shifts practice from “worst first” to pavement preservation



# Pavement Preservation Index (PPI)



$$PPI = \frac{\text{Percentage of Actual Pavement Preservation Expenditures}}{\text{Percentage of Recommended Pavement Preservation Expenditures}}$$

100 Section - KPI

## Needs - Projected PCI/Cost Summary

Interest: 0.00%      Inflation: 0.00%      Printed: 5/24/2022

Year	PCI Treated	PCI Untreated	PM Cost	Rehab Cost	Cost
2022	83	43	\$30,970	\$1,936,170	\$1,967,140
2023	81	41	\$2,123	\$183,051	\$185,174
2024	83	39	\$1,539	\$168,096	\$169,635
2025	86	37	\$116,980	\$303,046	\$420,026
2026	85	35	\$17,542	\$0	\$17,542
2027	85	32	\$19,972	\$227,600	\$247,572
2028	89	30	\$106,263	\$62,004	\$168,267
2029	87	28	\$12,778	\$220,824	\$233,602
2030	86	27	\$21,902	\$0	\$21,902
2031	84	25	\$37,444	\$0	\$37,444
			<b>PM Total Cost</b>	<b>Rehab Total Cost</b>	<b>Total Cost</b>
			<b>\$367,513</b>	<b>\$3,100,791</b>	<b>\$3,468,304</b>
			<b>% PM</b>		
			<b>10.60%</b>		

Percentage of Recommended Pavement Preservation Expenditures

$$\frac{\$367,513}{\$3,468,304} \longrightarrow 10.593 \%$$

↑  
Pavement Preservation

↑  
Total Budget Needs

# KPI: Pavement Preservation index

What is the effort toward pavement preservation?

County	Jurisdiction	Network PCI	\$PM/% Actual Lane Mile	PM	% PM Needs	Pavement Preservation Index
	<b>Regional Benchmarks</b>	<b>66</b>	<b>\$ 1,336</b>	<b>17%</b>	<b>16%</b>	<b>1.06</b>
Alameda	ALAMEDA	66	\$ 1,271	13%	15%	0.88
	ALAMEDA CO.	71	\$ 671	18%	28%	0.67
	ALBANY	58	\$ 1,247	10%	13%	0.78
	BERKELEY	58	\$ 263	2%	11%	0.20
	DUBLIN	87	\$ 3,124	50%	79%	0.62
	EMERYVILLE	75	\$ 48	100%	35%	2.87
	FREMONT	63	\$ 5,140	40%	16%	0.76

# Key Performance Indicators

## Key Performance Indicators

PAVEMENT AREA

0.18  
SQUARE MILES

CENTERLINE MILES

36.51

LANE MILES

70.88

SECTIONS

161

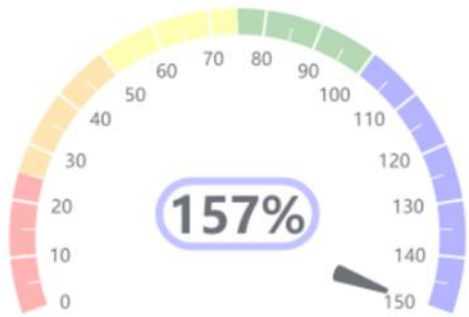
\*PEER COMPARISON

0  
SIMILAR SIZE AGENCY PCI

AS OF: PEER

Y

PAVEMENT PRESERVATION INDEX ?



NOT MET

MET

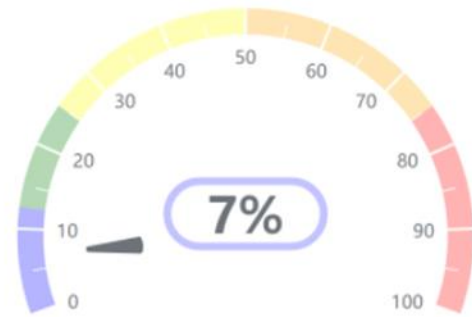
ASSET SUSTAINABILITY INDEX ?



NON-SUSTAINABLE

SUSTAINABLE

BACKLOG/NAV



MET

NOT MET

PP COST PER LANE MILE ?



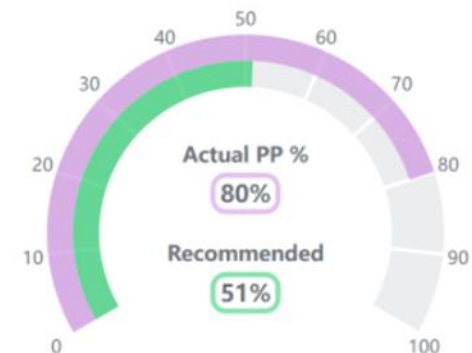
SGR = State of Good Repair

M & R COST PER LANE MILE ?



SGR = State of Good Repair

ACTUAL PP % VS. RECOMMENDED



# KPIs Summary

KPI	Data Source(s)
<b>Pavement Preservation Index (PPI)</b>	<ul style="list-style-type: none"> <li>• Historical M&amp;R Costs (3 Years Prior to Analysis Period).</li> <li>• Needs – Projected PCI/Cost Summary.</li> </ul>
<b>Asset Sustainability Index (ASI)</b>	<ul style="list-style-type: none"> <li>• Historical M&amp;R Costs (3 Years Prior to Analysis Period).</li> <li>• Needs – Projected PCI/Cost Summary.</li> </ul>
<b>Backlog/NAV</b>	<ul style="list-style-type: none"> <li>• Needs – Projected PCI/Cost Summary.</li> <li>• GASB 34 – Cost Summary.</li> </ul>
<b>PP Cost per Lane Mile (Actual)</b>	<ul style="list-style-type: none"> <li>• Historical Pavement Preservation Costs (3 Years Prior to Analysis Period).</li> <li>• Network Summary Statistics</li> </ul>
<b>PP Cost per Lane Mile (SGR)</b>	<ul style="list-style-type: none"> <li>• Needs – Preventive Maintenance Treatment/Cost Summary.</li> <li>• Network Summary Statistics.</li> </ul>
<b>M&amp;R Cost per Lane Mile (Actual)</b>	<ul style="list-style-type: none"> <li>• Historical M&amp;R Costs (3 Years Prior to Analysis Period).</li> <li>• Network Summary Statistics</li> </ul>
<b>M&amp;R Cost per Lane Mile (SGR)</b>	<ul style="list-style-type: none"> <li>• Needs – Projected PCI/Cost Summary</li> <li>• Network Summary Statistics</li> </ul>
<b>Actual PP% vs. Recommended</b>	<ul style="list-style-type: none"> <li>• Historical M&amp;R Costs (3 Years Prior to Analysis Period).</li> <li>• Needs – Projected PCI/Cost Summary</li> </ul>

# Critical Performance Questions:

1. How much budget is needed to reach the “State of Good Repair”?
2. Compare actual pavement expenditures to recommended investments.
3. Monitor the sustainability of pavement network investments.

## Million Dollar Questions:

- How effective is your pavement preservation effort?
- Can you measure it objectively?
- Can you measure it quantitatively?

# Questions?

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