

Practical Guidelines to Set Good Performance Targets:

The MPO and Local Agency's Perspectives

Sui Tan, PE

Metropolitan Transportation Commission

Northwest Pavement Management Association Conference, October 29, 2014



Why is it Important?

MAP-21

Requirements

Focus on:

- Performance
- Accountability
- Transparency

From Small Business **to**
Fortune 500:
How is Success being
measured?





Profit Margin =
80%

Year to Year Sales
= 200%

Food Spoilage =
2%

We fix
potholes !!!

Our roads
are fine!

I know which
ones to fix !

Good

75

10%

**Money
is no
object**

What
backlog???

Performance Chaos ?

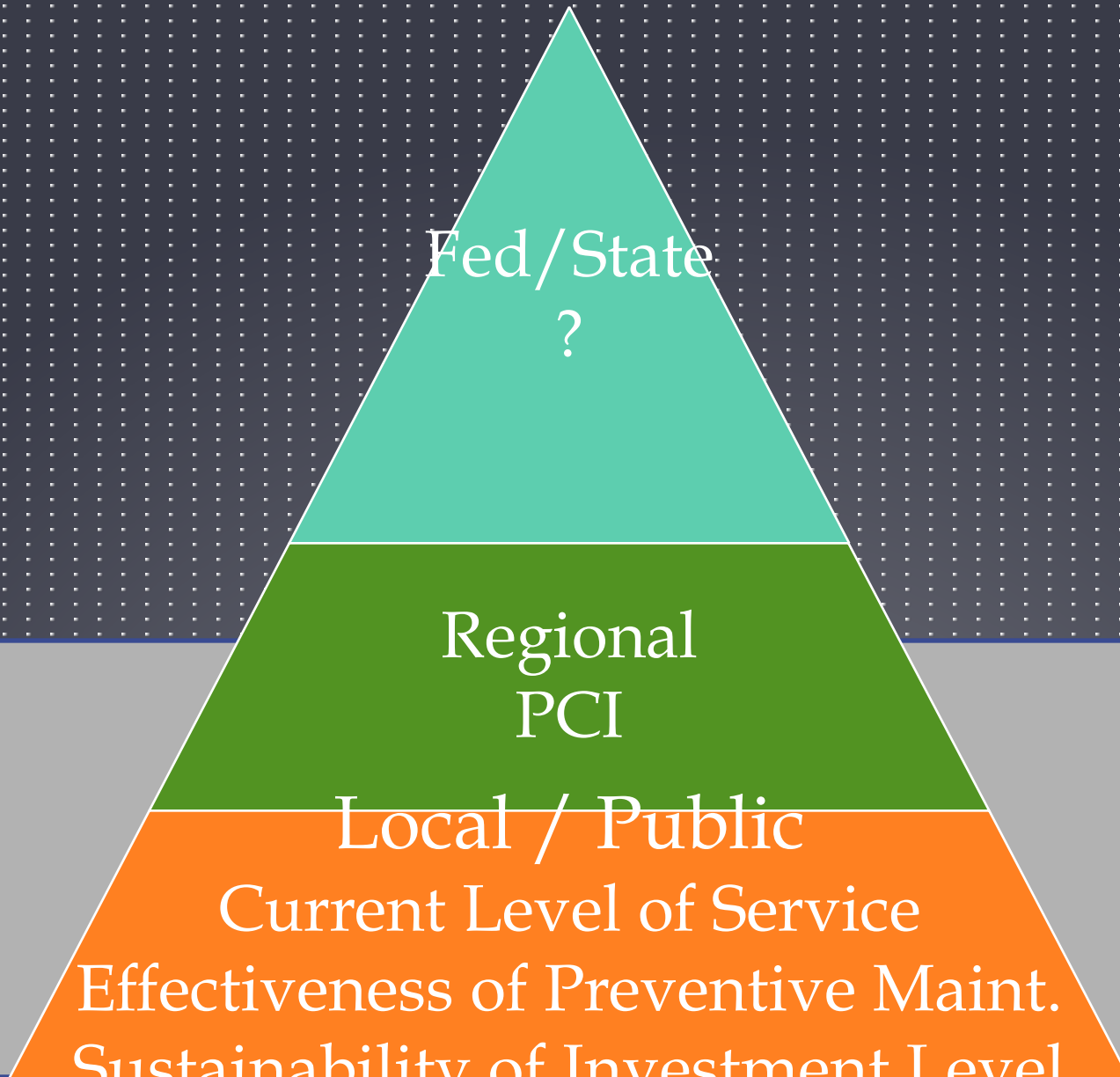
GUIDING PRINCIPLES

- Measurable
- Objective as possible
- Can be fairly applied
- Utilize data widely available
- Meaningful (e.g. promotes pavement preservation)

“One Size Fits All”?



PERFORMANCE METRICS





TRANSLATING

- Key Performance Indicators (KPIs)
- Strategic plan
- Quantify goals and objectives

303

SAVING OUR STREETS

A Strategic Plan for Maintaining the
Bay Area's Local Streets and Roads

May 2007

Pavement
Preservation Index
(PPI)

Prepared by the Local Streets and Roads
Working Group of the Bay Area Partnership

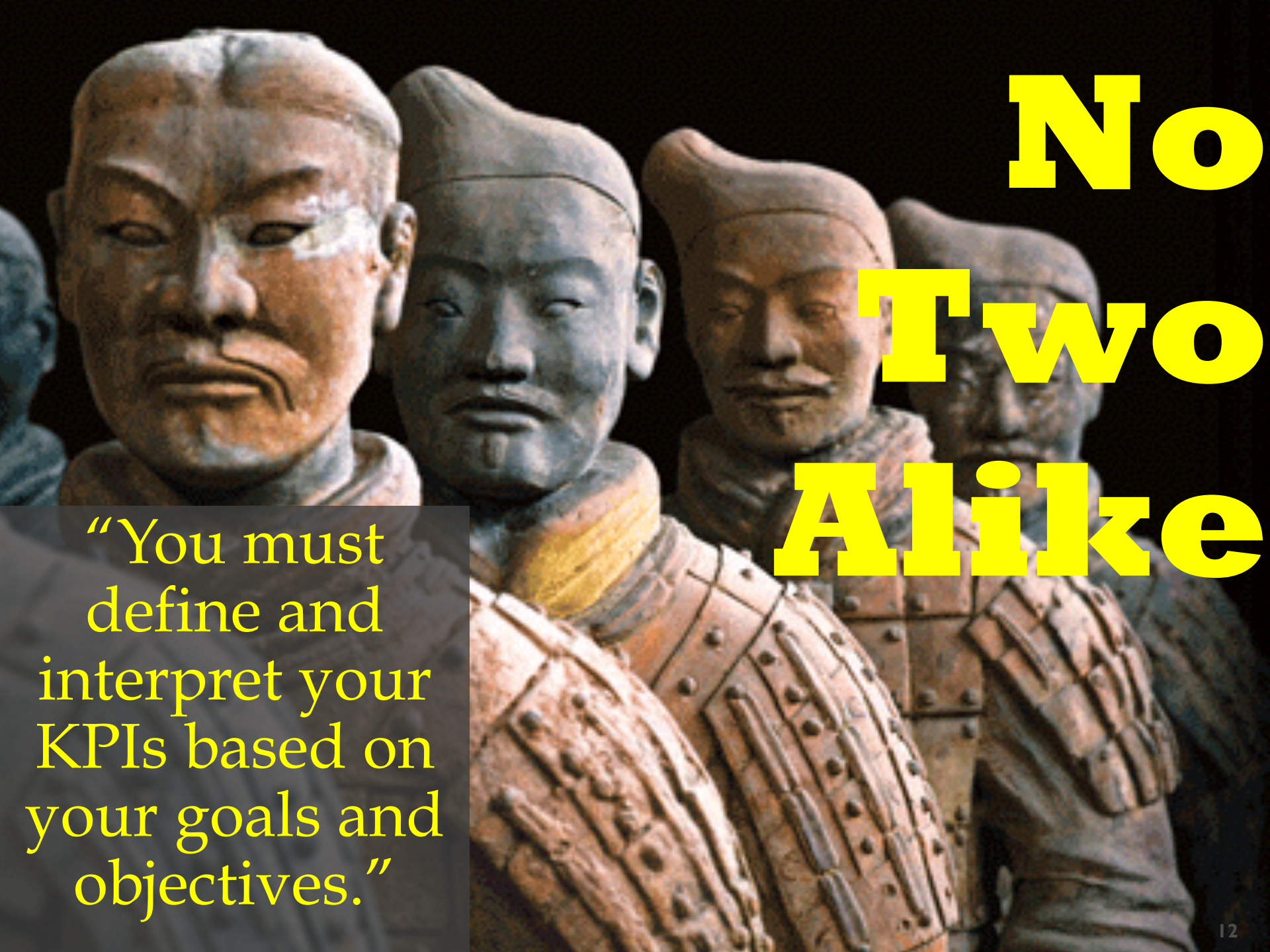
GOAL 1:

Fix it First

- Develop maintenance strategies & performance standards to effectively allocate resources

MEASURING

- Reduce current backlog by 50% in 2018
- Increase PCI by 5 points by 2024 to 75
- Invest 50% of the budget on Preventive Maintenance



No Two Alike

“You must define and interpret your KPIs based on your goals and objectives.”

DOW

NASDAQ

S&P

S&P 500

SNPINDEX:^GSPC

1,703.20 10.64 (0.63%)



Jan

Apr

Jul

DJIA

15,237.11



111.04

NASDAQ

3,791.87



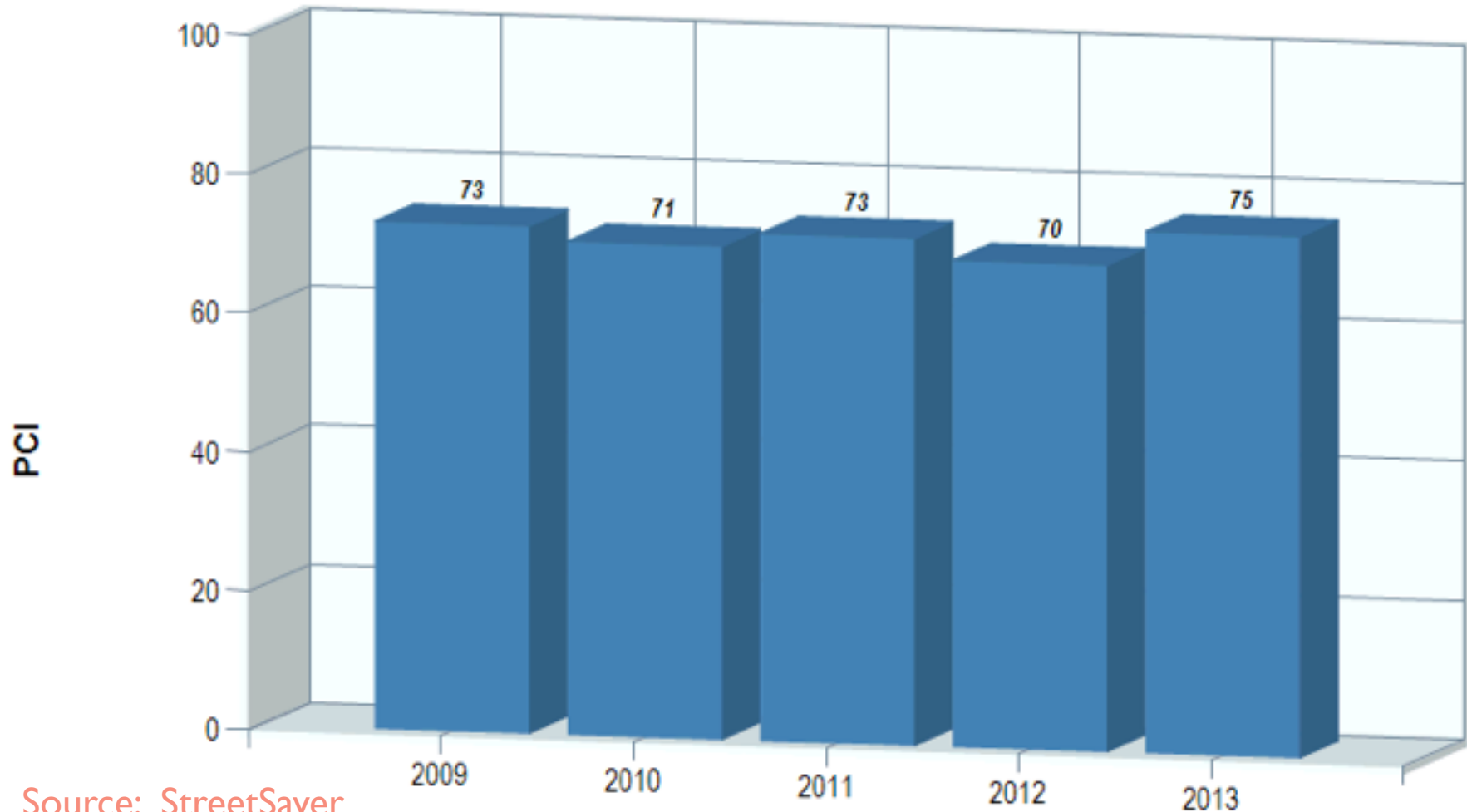
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BENCHMARKS

- Compare to previous performance
- Industry peers
- Neighboring
- Region

Performance Measures

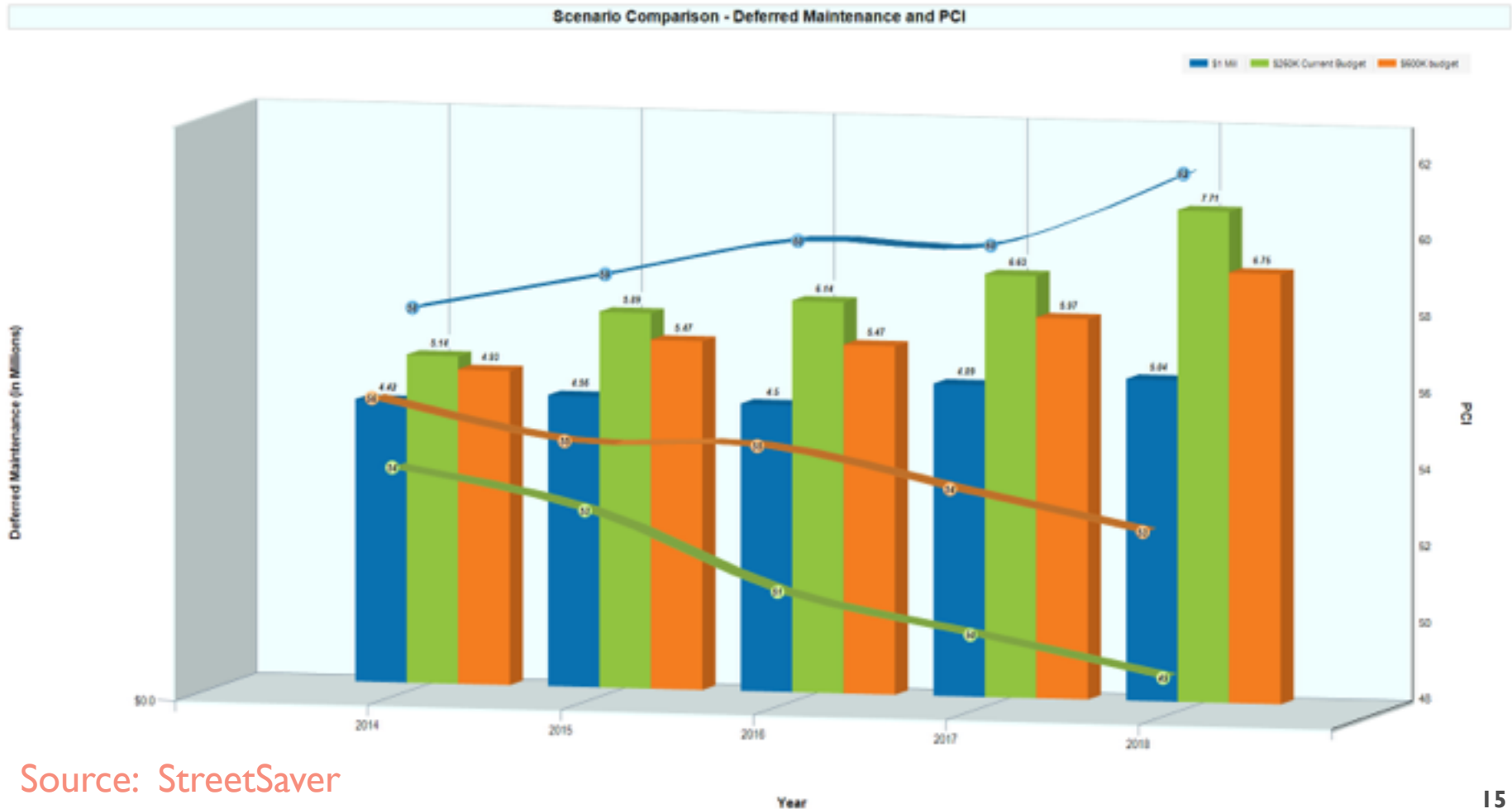
Weighted Average Pavement Condition Index



Source: StreetSaver

Performance Measures

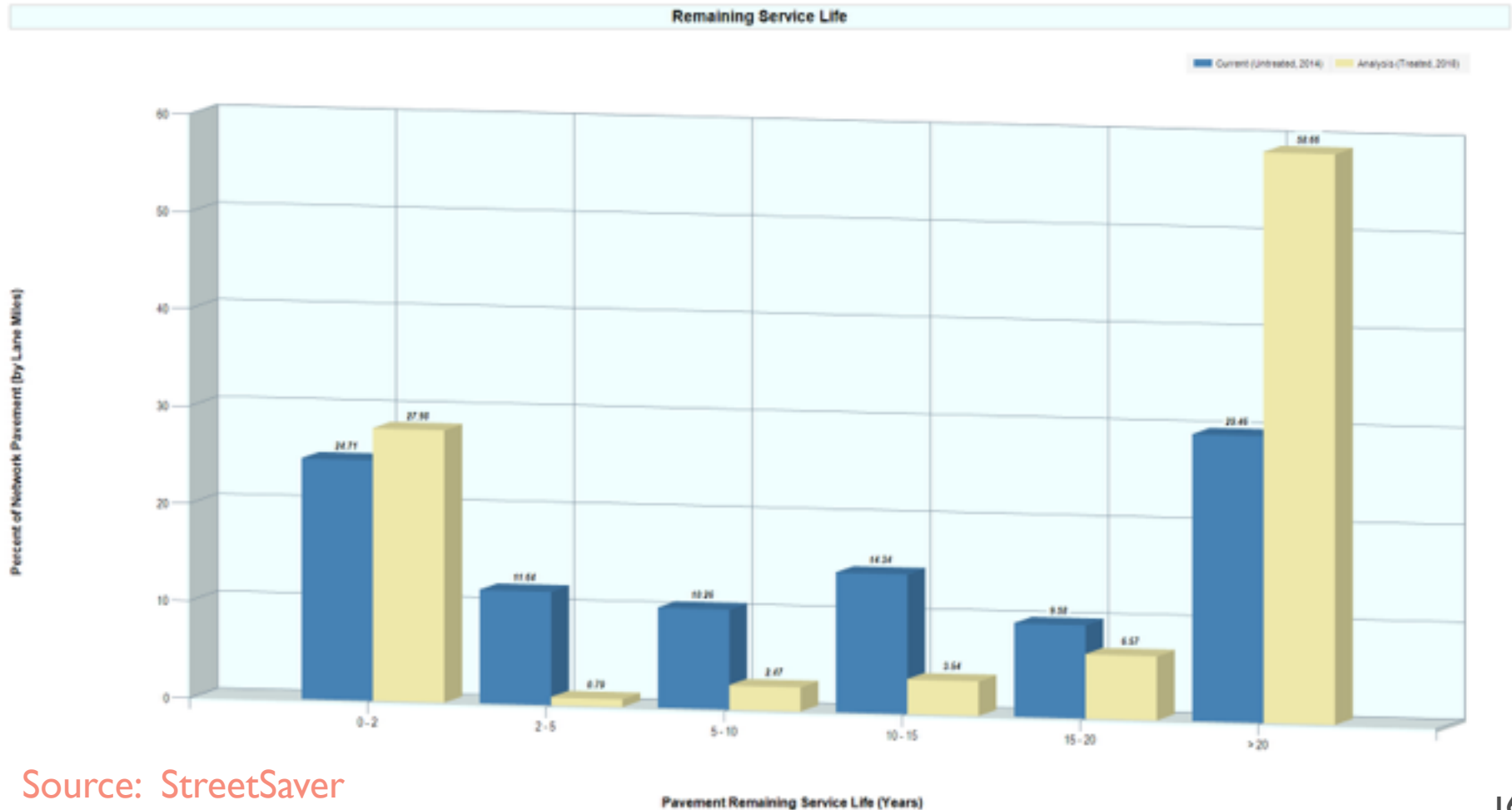
- Pavement Condition Index (PCI) vs Deferred Maintenance



Source: StreetSaver

Performance Measures

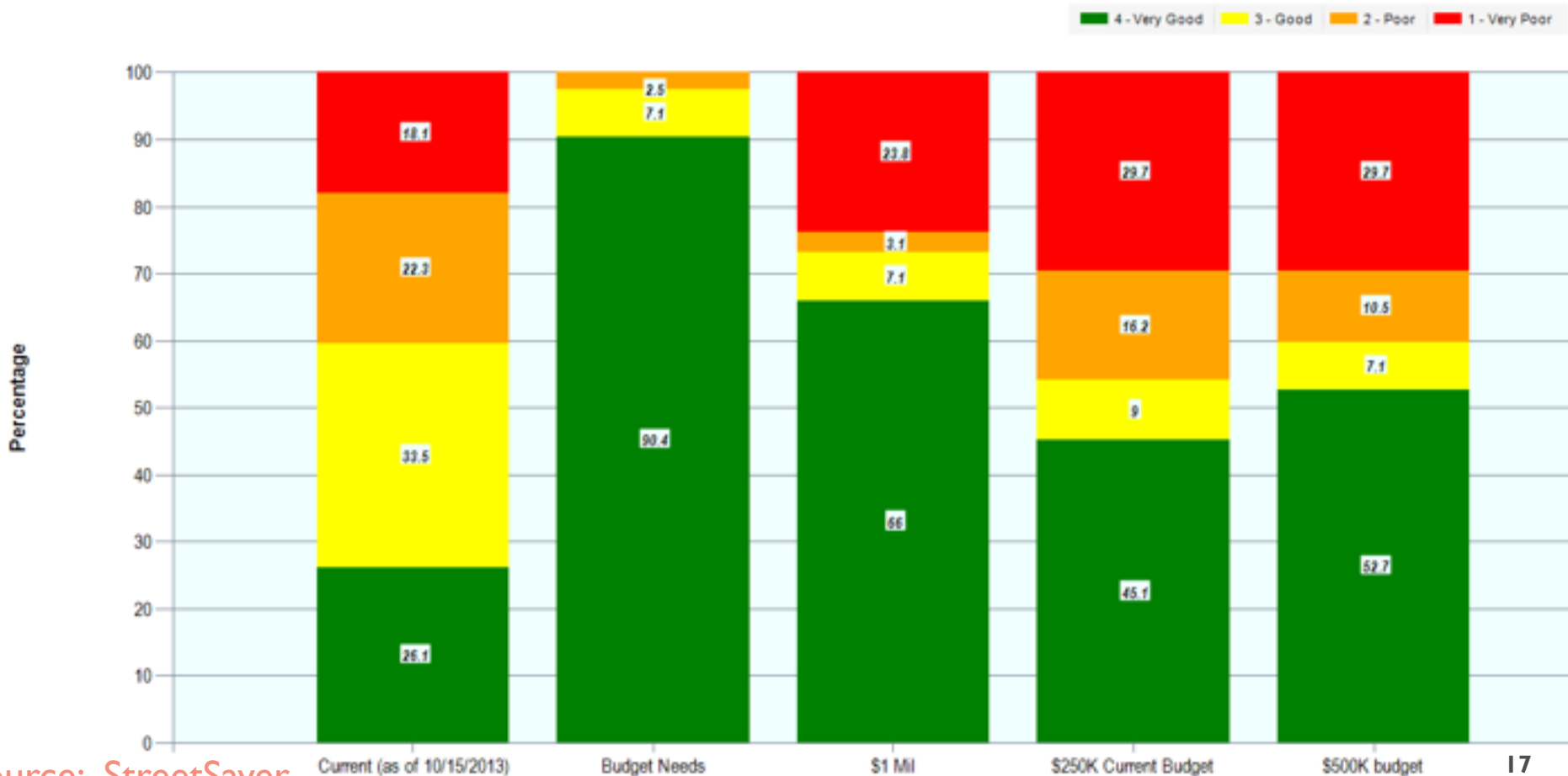
- Remaining Service Life



Performance Measures

- Max. % in Poor Condition/ Min. % in Good or Very Good

Pavement Condition Changes under Budget Scenarios as of 2018



Performance Measures

- Visual Condition Index (VCI)
- Pavement Health Index (PHI)
- Pavement Quality Index (PQI)
- Current Confidence Score
- State of Good Repair (SGR)

Performance for Local Agencies

- Existing condition?
- Maintenance \$ currently invested?
- \$ needed to achieve the state of good repair?
- Effectiveness of pavement preservation effort?

Key Performance Indicators

- % Poor or Failed; % of Very Good or Better
- Network PCI, 3-yr Moving Avg PCI

Current Level of Service												
County	Jurisdiction	Total Lane Miles	Total CL Miles	% Poor or Failed	% Very Good or Better	2012 PCI				3-yr Moving		
						Art	Coll	Res	NET	2010	2011	2012
	Regional			24%	31%	73	66	63	66	66	66	66
ALA	ALAMEDA	303.9	137.8	22%	29%	70	72	62	66	66	67	68
	ALAMEDA CO.	990.3	471.8	9%	16%	71	73	71	71	72	73	71
	ALBANY	59.1	29.4	36%	20%	64	60	54	58	60	58	57
	BERKELEY	452.8	216.2	38%	28%	70	50	58	58	60	59	59
	DUBLIN	254.0	116.0	0%	84%	88	85	88	87	82	84	86
	EMERYVILLE	47.1	19.8	5%	51%	77	75	70	75	77	78	78
	FREMONT	1064.9	496.9	30%	31%	73	61	57	63	64	63	63

Key Performance Indicator

- Pavement Preservation Index (PPI) =

$$\frac{\text{Actual PM \%}}{\text{Recommended PM\%}}$$

County	Jurisdiction	Network PCI	\$PM/ Lane Mile	% Actual PM	% PM Needs	Pavement Preservation Index
	Regional Benchmarks	66	\$ 1,336	17%	16%	1.06
Alameda	ALAMEDA	66	\$ 1,271	13%	15%	0.88
	ALAMEDA CO.	71	\$	18%	28%	0.67
	ALBANY	58	\$ 1,247	10%	13%	0.78
	BERKELEY	58	\$	2%	11%	0.20
	DUBLIN	87	\$ 3,124	50%	79%	0.62
	EMERYVILLE	75	\$	100%	35%	2.87
	FREMONT	63	\$ 5,140	43%	16%	2.76

Key Performance Indicator

- Sustainability Index =

$$\frac{\text{Actual M\&R}}{\text{Annualized 10-Year Needs}}$$

County	Jurisdiction	Network PCI	Actual M&R /Lane Mile	Needs/ Lane Mile	Sustainability Index
	Regional	66	\$10,400	\$27,000	39%
Alamed	ALAMEDA	66	\$9,800	\$26,900	36%
	ALAMEDA	71	\$3,600	\$16,200	22%
	ALBANY	58	\$12,700	\$29,800	43%
	BERKELEY	58	\$11,600	\$32,400	36%
	DUBLIN	87	\$6,300	\$5,600	113%
	EMERYVILLE	75	\$0	\$16,100	0%

Key Performance Indicator

- Backlog over Asset Value =

$$\frac{\text{Current Backlog}}{\text{Network Asset}}$$

County	Jurisdiction	Network PCI	Current Backlog (millions)	Network Asset Value (millions)	Backlog/Asset Value
	Regional	66	\$5,645	\$38,814	15%
Alamed	ALAMEDA	66	\$32	\$229	14%
	ALAMEDA	71	\$55	\$647	8%
	ALBANY	58	\$9	\$41	22%
	BERKELEY	58	\$77	\$298	26%
	DUBLIN	87	\$4	\$180	2%
	EMERYVILLE	75	\$3	\$37	7%



Know Your Audience

Teaching...

Tracking

- Monthly: Executive Performance Report
- Annually: SF Bay Area Regional Pavement Condition Report
- Every 4 years – Long Term Transportation Plan



News

GO

Press Releases

For Immediate Release

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Stubborn Mediocrity Marks Local Streets and Roads

Regional Pavement Quality Average Unchanged for Fifth Consecutive Year

Contact:

John Goodwin: (510) 817-5862

Randy Rentschler: (510) 817-5780

OAKLAND, Calif., Oct. 28, 2014 . . . The quality of the pavement on the Bay Area's nearly 43,000 lane-miles of local streets and roads is stuck in "fair" condition, with the typical stretch of asphalt showing serious wear and likely to require rehabilitation soon. Data released today by the Metropolitan Transportation Commission (MTC) puts the region's 2013 pavement condition index (PCI) score at 66 out of a maximum possible 100 points, as calculated on a three-year moving average basis. This marks the fifth consecutive year the region has registered an average PCI score of 66, a reading that has not varied by more than two points since 2006. Each of the Bay Area's three largest cities — San Jose (62), San Francisco (65) and Oakland (60) — recorded three-year PCI scores within the "fair" range.

"Restoring the Bay Area's transportation system to a state of good repair has long been one of the Commission's most important priorities, and one of its most elusive," commented MTC Chair Amy Rein Worth, who also serves

See also:

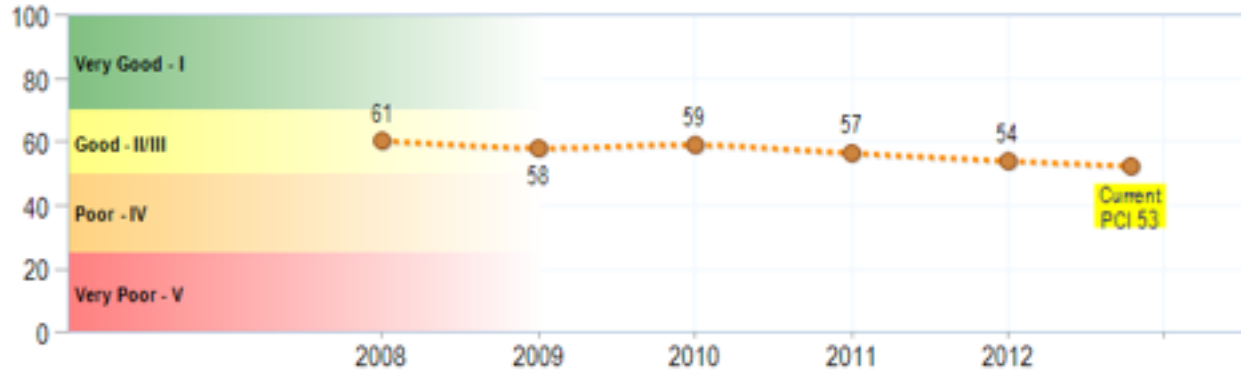
- [Street Fight](#)
A special multi-media report on the ongoing battle for better Bay Area pavement.



- TC
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- Press Releases
- Current Topics
- Transactions
- News
- Exec Report
- Photos
- Video
- Social Media
- Contracts
- & Events
- ved
- Data

Executive Performance Summary

Historical Pavement Condition Trends



Current PCI



Network Inventory

Pavement Area: **0.1**
(square miles)

Miles: **15.5**

Lane Miles: **31.0**

Sections: **128**

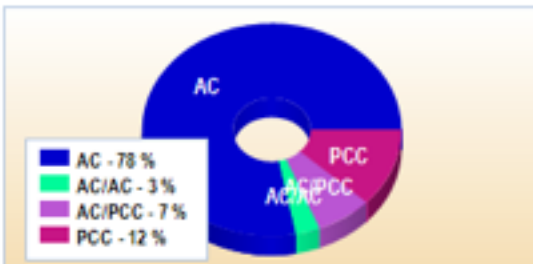
Current PCI by Functional Class



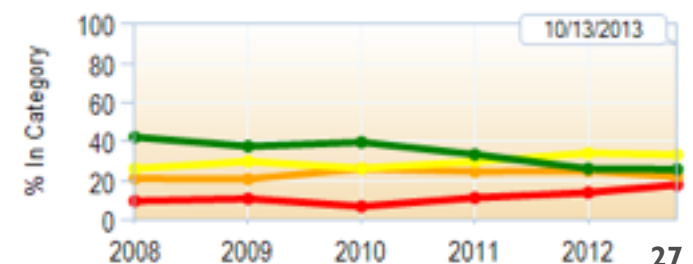
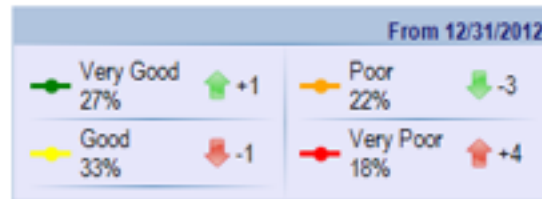
Remaining Service Life (years)



Surface Type

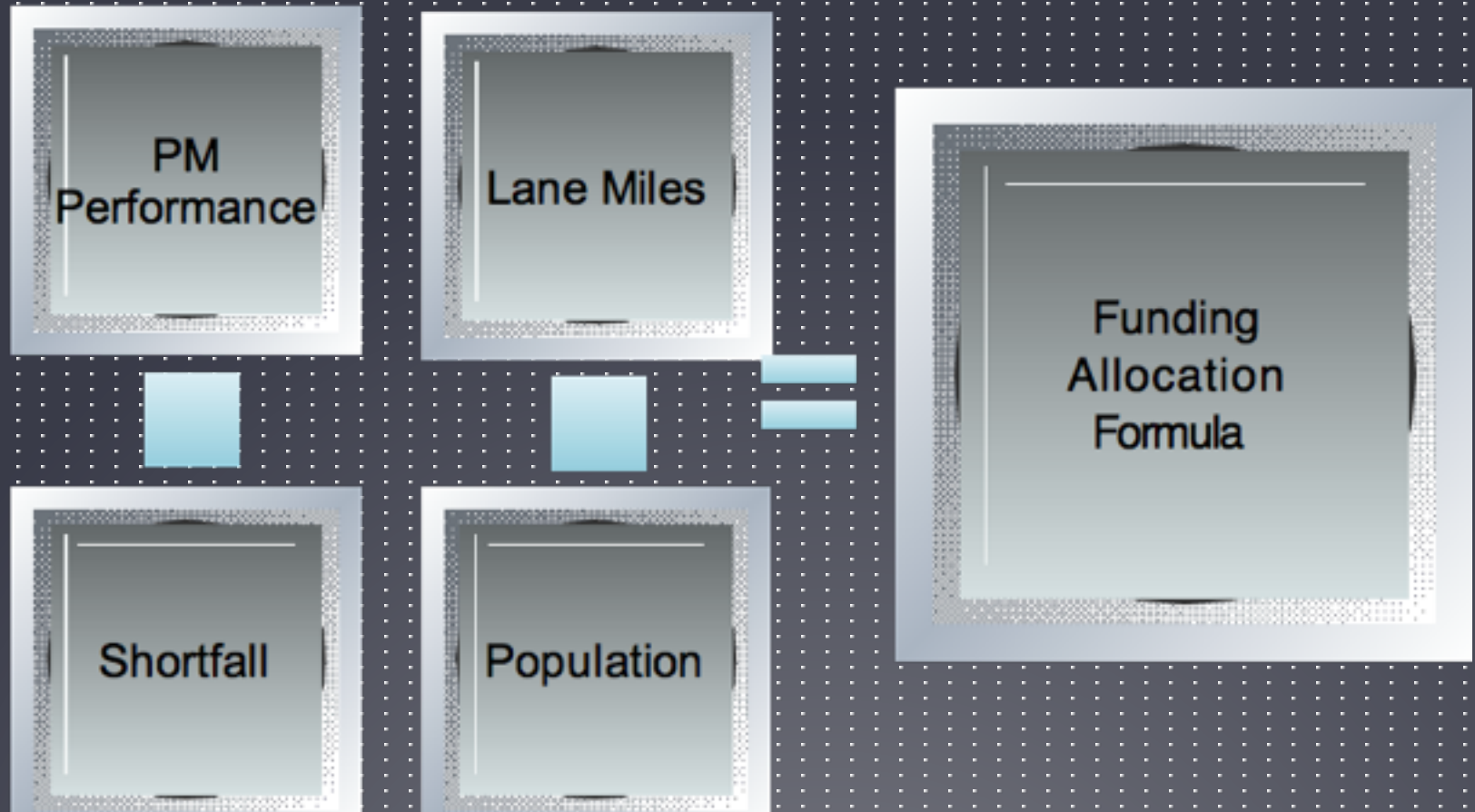


Historical Network Condition Trends



Source: StreetSaver

Success Story - MTC

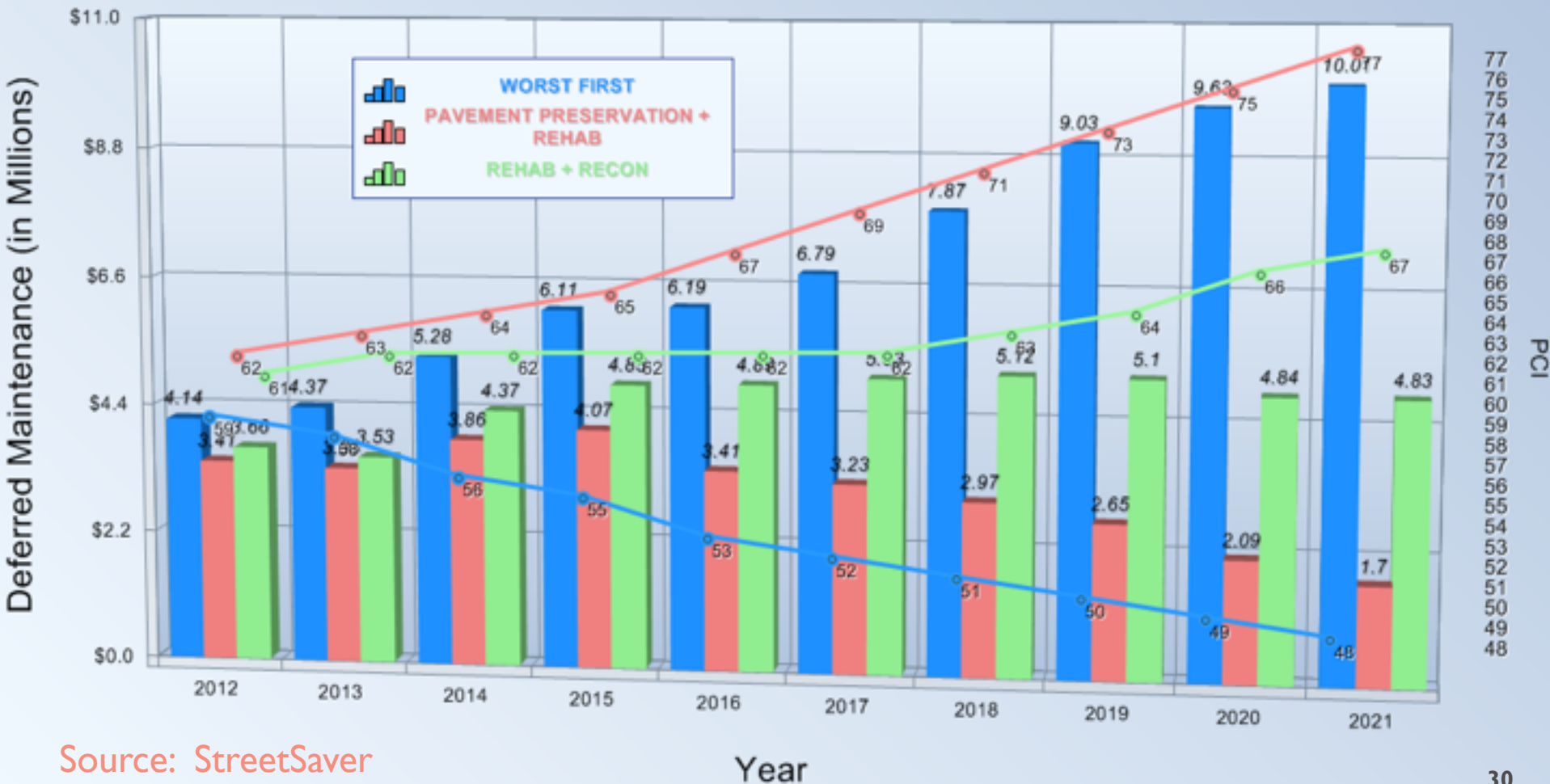


Outcome-Driven Performance Measure

- No advantage or disadvantage
- Data from StreetSaver
- Promotes pavement preservation principles
- Replaces “Maintenance of Effort”
 - ▶ Shifts practice from “worst first” to preventive maintenance

Importance of Pavement Preservation

Scenario Comparison - Deferred Maintenance and PCI



Your Tax Dollars At Work

Performance

- Use of Asset Management
- Promote sound pavement preservation
- Outcome driven – “worst first” to preventive maintenance

Accountability

- Taxpayers know where the money is spent
- Establish “maintenance of effort” for local agencies

Transparency

- Reports for internal & external customers

Action

Look
Beyond
PCI

Questions?

A green rectangular sign with rounded corners, mounted on two silver poles. The sign features the word "SUCCESS" in large, white, bold, sans-serif capital letters. Below the text is a white arrow pointing diagonally upwards and to the right. The background of the slide is a bright blue sky with soft, white clouds.

SUCCESS

Sui Tan, PE

StreetSaver
Program Manager
Metropolitan
Transportation
Commission

stan@mtc.ca.gov

510-800-8428