

MTC's Local Street and Road Sustainability Efforts

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San Francisco Metro Region

- Population = 7.3 Mil
- Nine Counties
- 109 Jurisdictions
- 42,500 Lane-Miles
- 1,500 Miles of Highway
- 23 Transit Agencies
- Seven Toll Bridges
- One MPO: MTC



MTC's Regional Local Street & Road Program

- 25 Years of Support for Local Streets & Roads
 - StreetSaver® Pavement Management Software
 - Training & Technical Support
 - Pavement Management Grant Program
 - Regional Analyses
 - Funding & Policy Advocacy



What is Sustainability?

One Definition:

“Meet present needs without compromising the ability of future generations to meet their needs”

– United Nations, 1987



MTC Sustainability Efforts for Local Streets & Roads

- Environmental
 - Promote preventive maintenance and “green” technologies to reduce GHG emissions
- Economic
 - Obtain sufficient resources to preserve the street and road infrastructure
 - Promote best management practices



Environmental Sustainability

- Recent Emphasis on Environmental Sustainability in Transportation
 - California SB 375
 - Sustainable Communities Strategies
 - Climate Initiatives
- MTC's RSRP Works to Demonstrate How Proper Maintenance Aids Environmental Sustainability
 - Pavement Preservation
 - Technologies

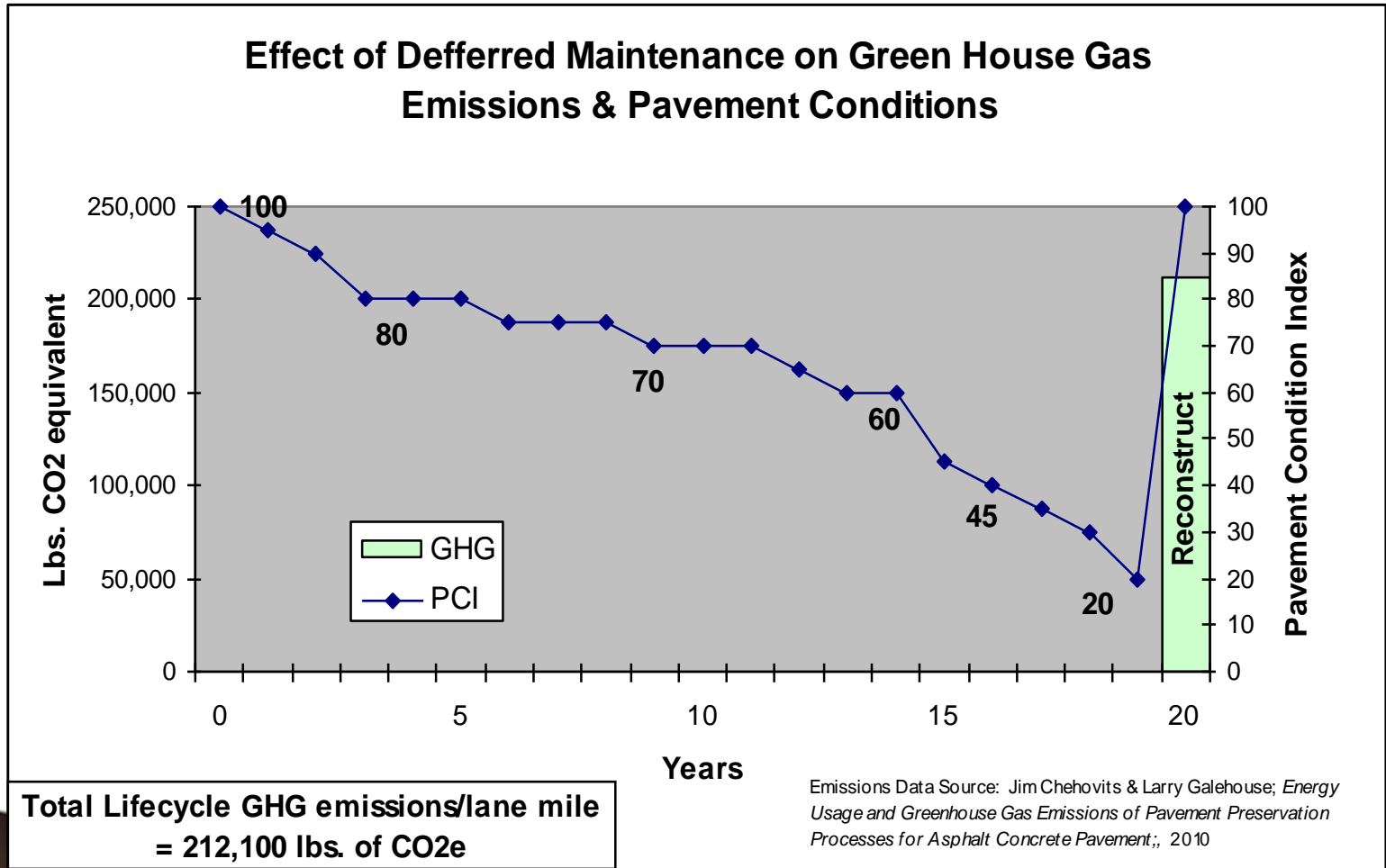


Sustainable Maintenance Practices

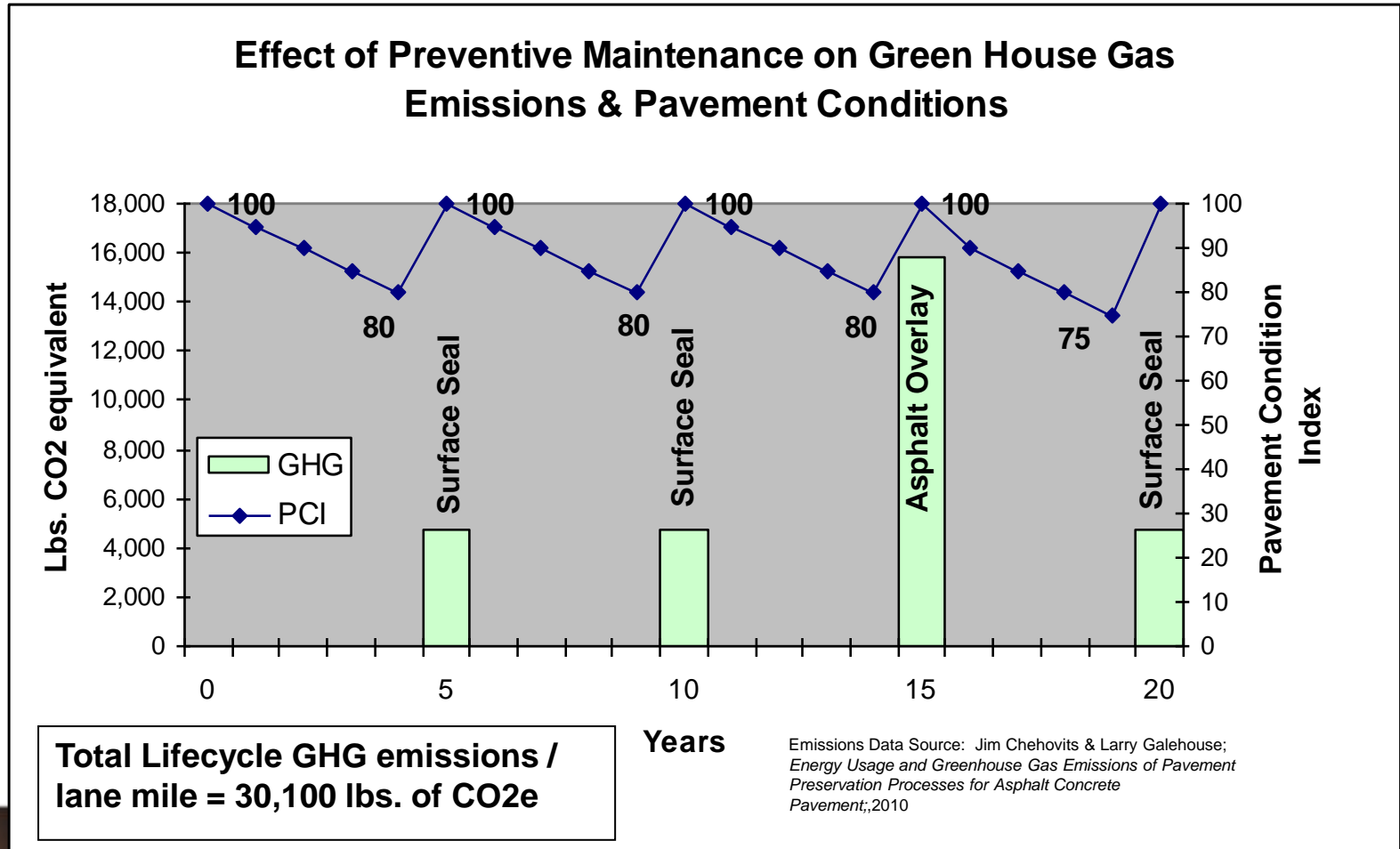
- Preservation Strategies Limit GHG Emissions Associated with Rehab/Reconstruction
- Consistent Pavement Conditions Over Time
- Lower User Costs
- Preventive Maintenance has a 5:1 (minimum) Benefit/Cost Ratio



Sustainable Maintenance Practices



Sustainable Maintenance Practices

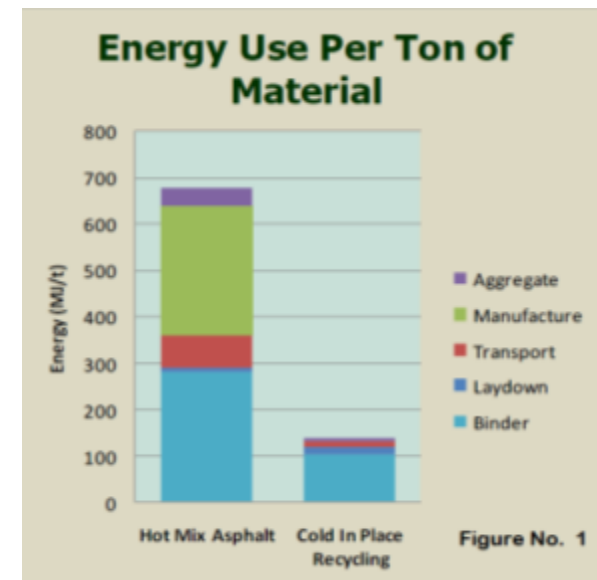


For a typical roadway, pavement preservation strategies can save 182,000 lbs. of GHG emissions per lane mile, as compared to reconstruction. This is equivalent to taking 15 cars off the road for one year.



Paving Can Be “Green”!

True sustainability means not only seeking new ideas, but searching for innovative alternatives to existing methods.



MTC's Climate Initiative Program

- \$2 Million Awarded to Cold in Place Recycling Demo
- Joint Napa/Sonoma County Project
- Estimated Cost Savings = 40%
- Estimated GHG Emissions Savings = 2,2 million lbs.
 - Equivalent to 184 cars off the road for one year



Estimated GHG Savings / Lane Mile with CIR

GHG Emissions Savings:

	GHG Savings		
	CO ₂ e lbs. / ton pavement	Tons pavement / Lane Mile	CO ₂ e lbs. / lane mile pavement
CIR ¹	88	1,485	130,704
Passenger Car Equivalent ²			10.8

- 1) Bilal, Julian; Chappat, Michael; Colas Group; *Sustainable Development: The Environmental Road of the Future*; 2003
- 2) www.epa.gov/otaq/climate/420f05004.htm



On average, for every lane mile of roadway that CIR is used instead of traditional HMA, approximately 130,704 lbs of GHG emissions are saved, which is equivalent to taking 11 cars off the road for one year.



Mileage Suitable for CIR Based on PCI & Estimated GHG Savings

Roadway Condition Range*	% of Total BA LSR Mileage	Lane Mileage	Depth	Length	Width	Tons Asphalt	CO2e Savings / Ton**	Total CO2e Savings
PCI: 60-69	12%	5042	0.167	5280	15	4,991,857	88	439,283,434
PCI: 50-59	10%	4202	0.250	5280	15	6,239,822	88	549,104,292
PCI: 25-49	8%	3362	0.333	5280	15	6,655,810	88	585,711,245
Total:		12,606				17,887,488		1,574,098,970
Annual Passenger Car Reduction Equivalent:								129,819

*Source: MTC's 2009 Local Streets and Roads Regional Condition Summary

The GHG emissions savings potential if all candidate streets in the region were paved using CIR instead of traditional HMA is 1.6 billion lbs of CO₂e, which would be equivalent to taking 129,843 cars off the road for one year.



The GHG emissions savings potential over the next five years if available funding was spent on treating appropriate roadways with CIR instead of HMA is 354 million lbs of CO₂e, which would be equivalent to taking 29,172 cars off the road for one year.



Sustainable Maintenance Practices

- MTC Actively Promotes Other “Green” Paving Technologies:
 - Full Depth Reclamation
 - RAC
- Life Extension Value is Key



Economic Sustainability Efforts

- Economic Analyses
- Maximize Resources
- Advocacy



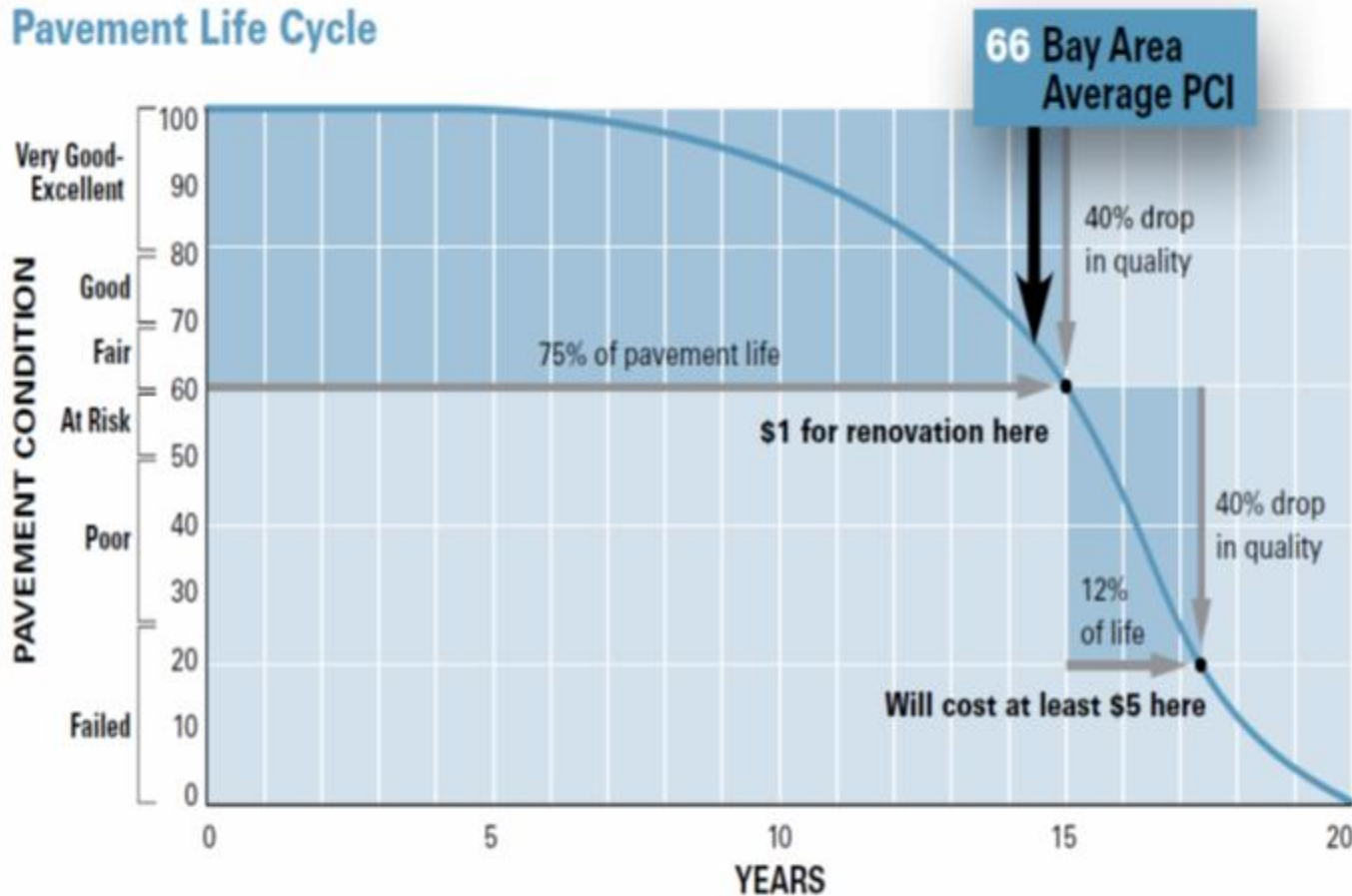
Local Street and Road 28-Year Maintenance Needs

- SF Bay Area's Average PCI = 66
- Target = PCI of 75
- Corresponding Non-Pavement Target
- Total Needs = \$44 B
- Available Revenue = \$15 B
- Remaining Need = \$30B



Economic Analyses

Pavement Life Cycle



Time varies depending on traffic, climate, pavement design, etc.

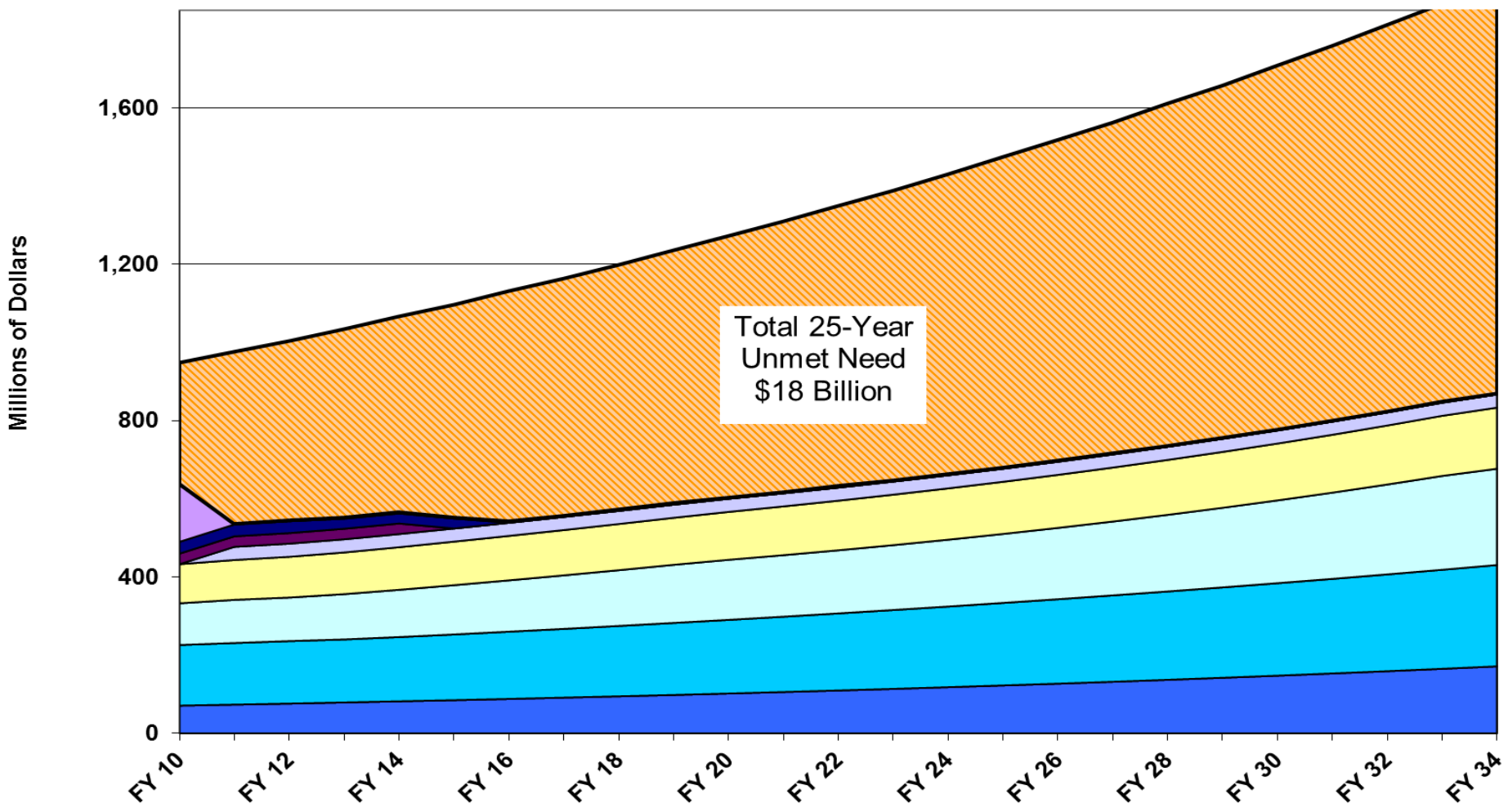
Economic Analyses

28-Year LSR Capital Needs (In Billions)

County	Available 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
REGION	\$ 14,531	\$ 24,504	\$ 19,899	\$ 44,404	\$ 29,872



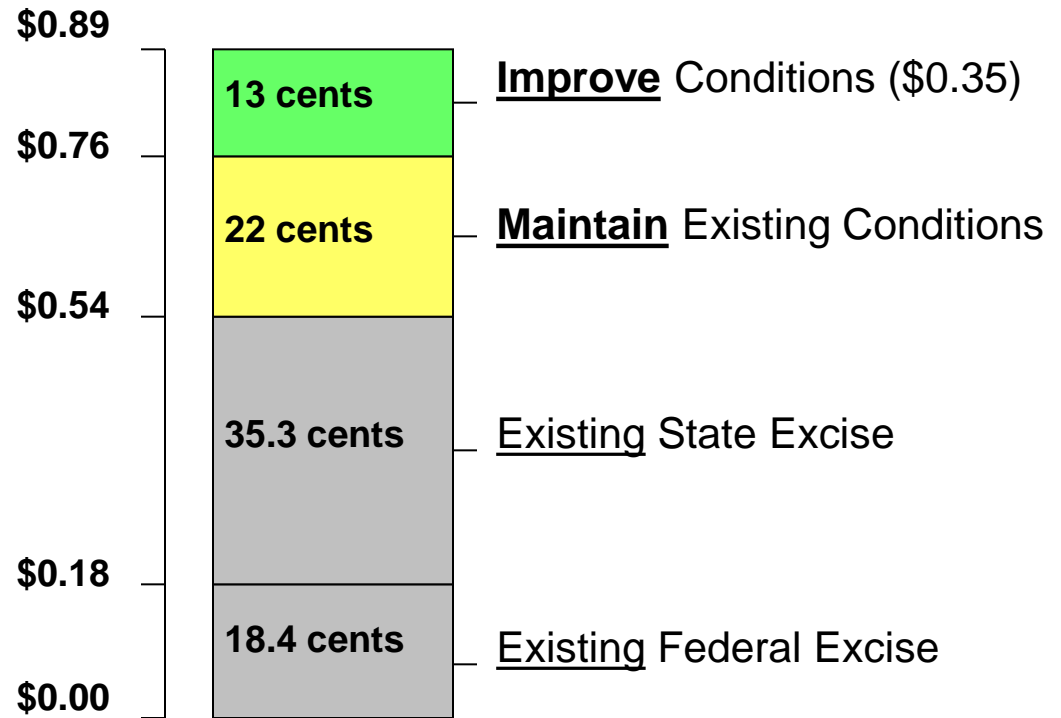
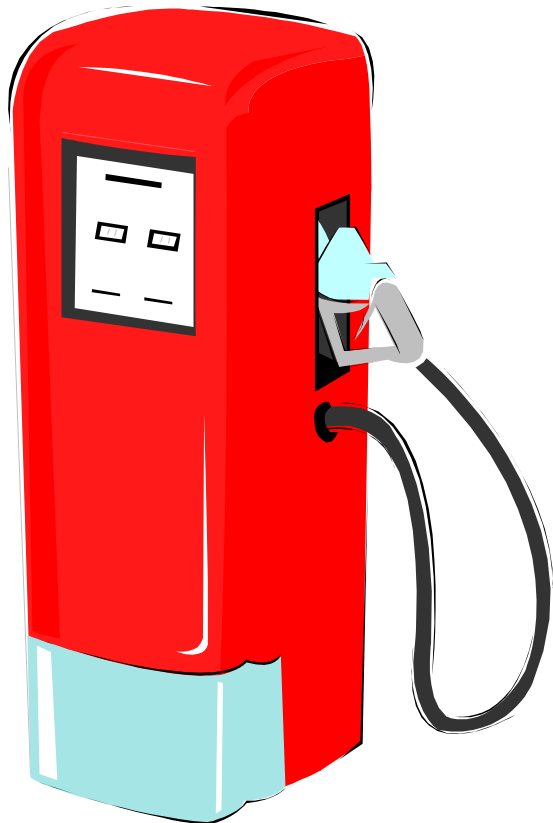
Bay Area Street & Road Capital Revenue by Fund Sources by Year Fiscal Years 2010 - 2035



Total 25-Year
Unmet Need
\$18 Billion

- Sales Tax
 - Gas Tax
 - FSTP
- Local Funds
 - \$10 Vehicle Registration Fees
 - ARRA
- Excise Tax Augmentation (Formerly Prop 42)
 - Prop 1B
 - Unmet Need (Smoothed)

How Much Would We Need to Raise the Gas Tax?



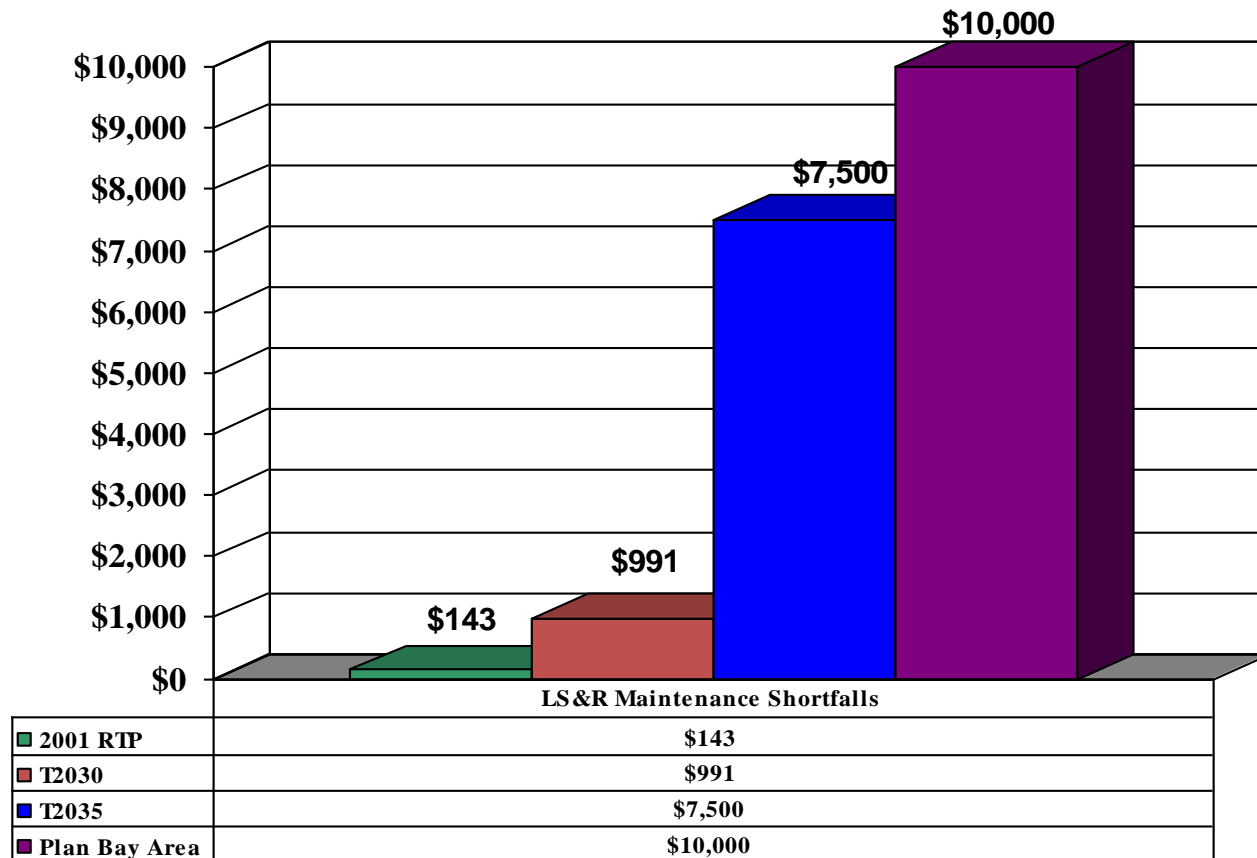
Economic Analyses

	Existing Funding	Maintain Current Pavement Condition	Desirable Funding
Average Regional PCI* in 2035	45	66	75
Pavement Condition	Poor	At Risk	Good
Average Annual Expenditure	\$351 million	\$740 million	\$975 million
Annual Expenditure/Lane Mile	\$8,000	\$17,000	\$23,000
Increase over Existing Funding	0%	110%	177%



Impact of Analyses on Regional Funding Policy

Regional Investment in LSR Over Consecutive RTPs (*Millions*)



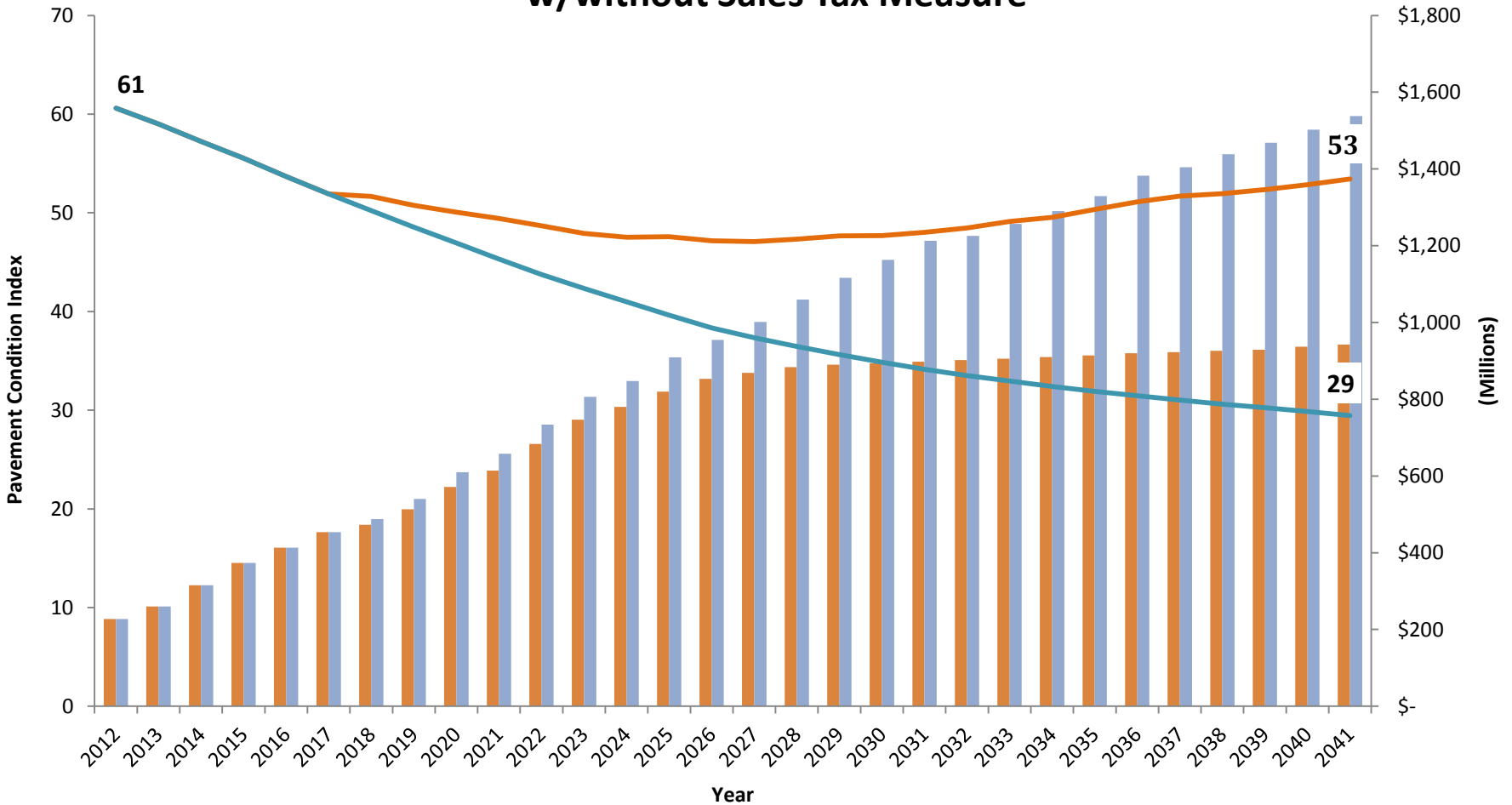
Maximizing Resources

- LSR Funds Conditioned on Performance
 - PMS Certification
 - Projects Recommended by StreetSaver®
 - Performance Based Allocation Formula
- Analysis of Financing Options
 - To bond...or not to bond.



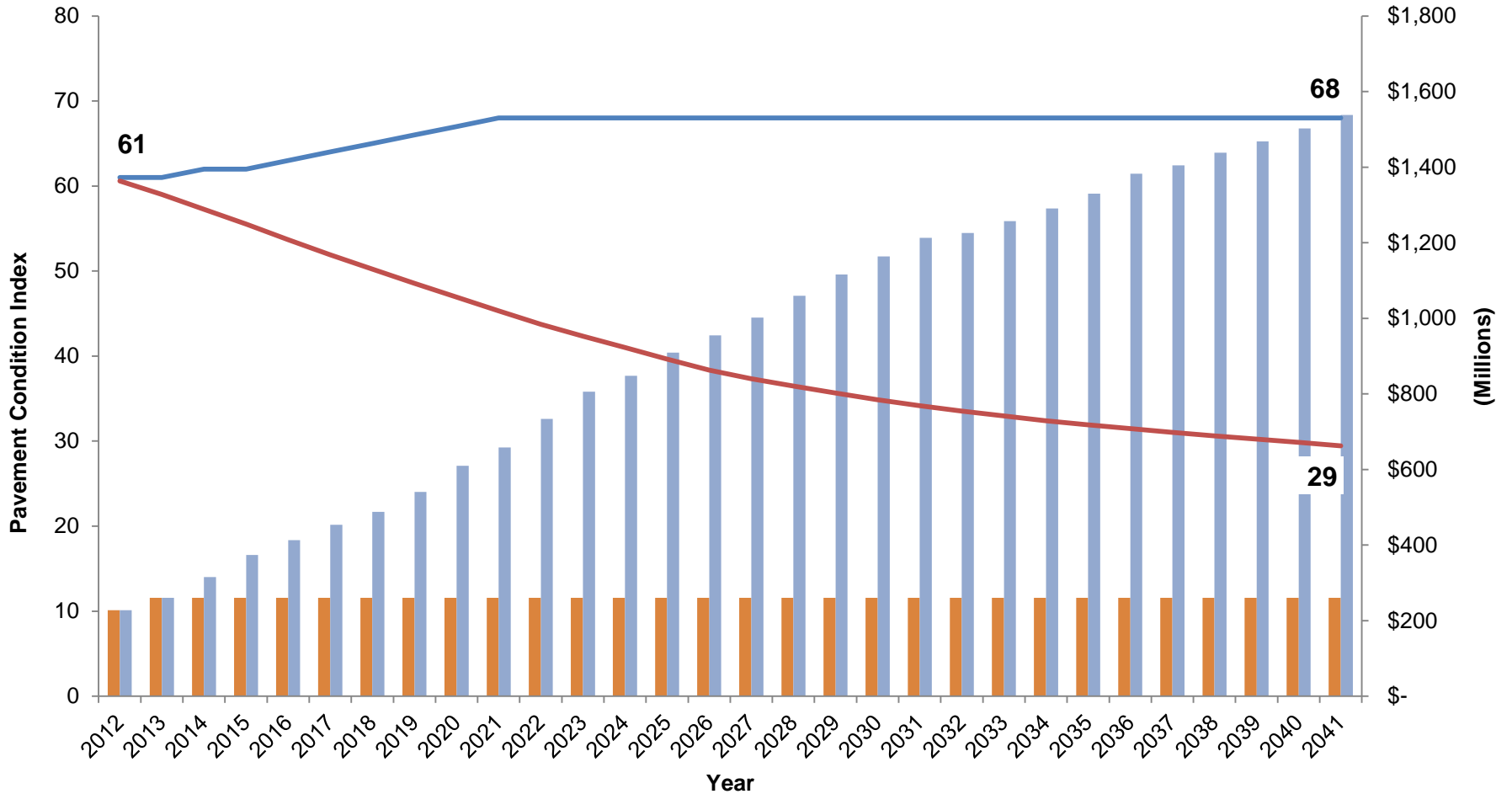
Financing Options

Pavement Condition & Deferred Maintenance w/without Sales Tax Measure



Financing Options

Pavement Condition & Deferred Maintenance Scenarios With/Without Sales Tax Measure



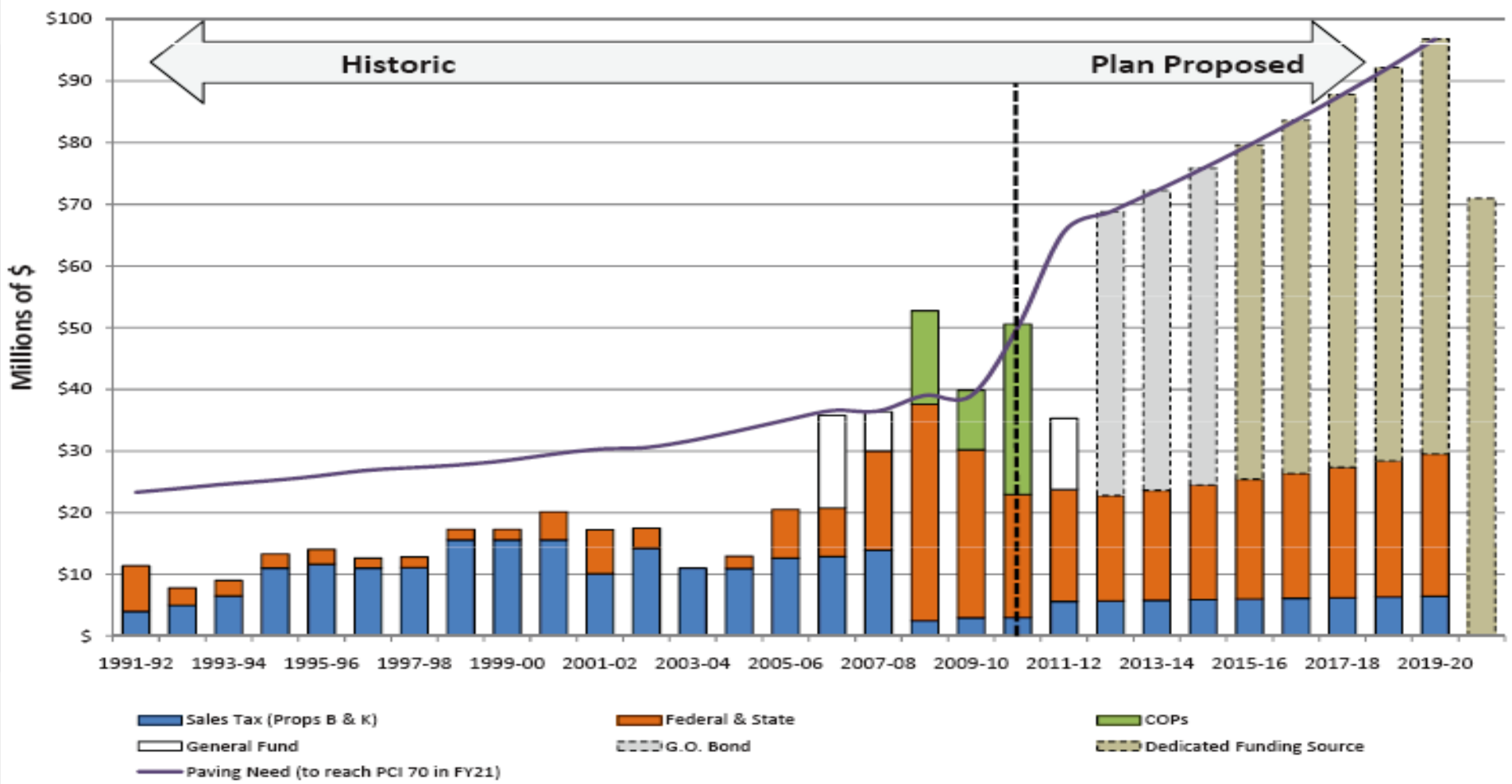
Bonding Success Stories



El Cerrito's Pavement Program and Conditions, 2006 vs. 2010

	2006	2010
Single-year PCI score	48 (Poor)	85 (Very Good)
PCI: 3-year moving average	53 (At Risk)	62 (Fair)
Maintenance backlog	\$21.2 million	\$500,000
Annual budget needed to maintain PCI	\$1.3 million	\$500,000
Annual average funding level	\$250,000	\$500,000

Street Resurfacing Funding: Historic and Proposed



Advocacy – Communicating the Need

- The 2010 *Pothole Report*
- Annual Press Releases
- Statewide Needs Assessment



Questions?

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