

CITY OF WICHITA PAVEMENT PRESERVATION PROGRAM



Public Works & Utilities
February 2013



Pavement Preservation Program Approach

- Condition ratings: PCI $\Rightarrow \Rightarrow \Rightarrow$ ROI
- Life-cycle cost analysis model: ROI-based plan
- Contracted Maintenance Program: 2012 – 2015 (and beyond)
- In-house resource utilization: ROI-based optimization



Wichita's Paved Street Network

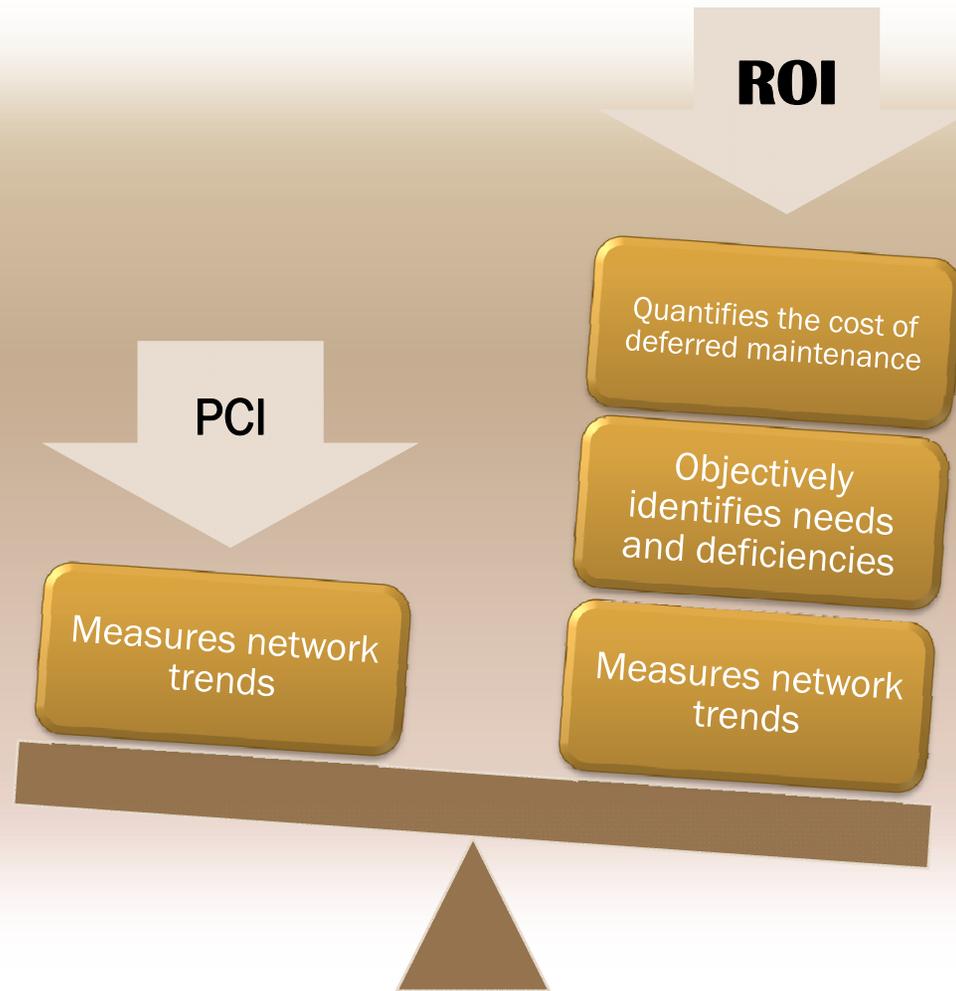
- Comprised of more than 5,000 lane-miles of residential, collector and arterial streets and expressways



- Valued at an estimated \$1.7 billion, per WSU's recent report on community infrastructure

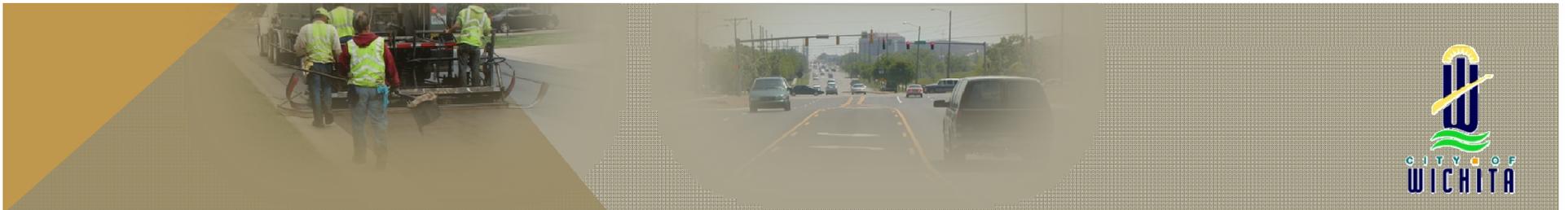
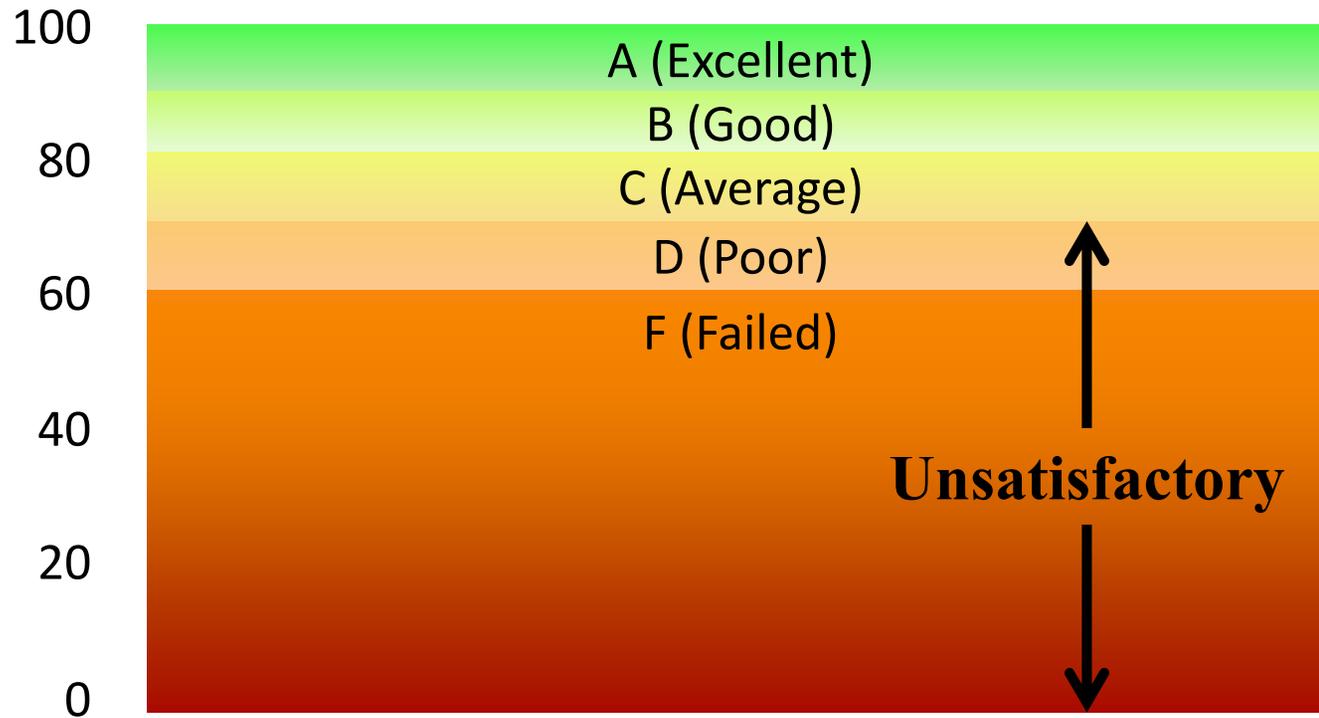


PCI → → → ROI



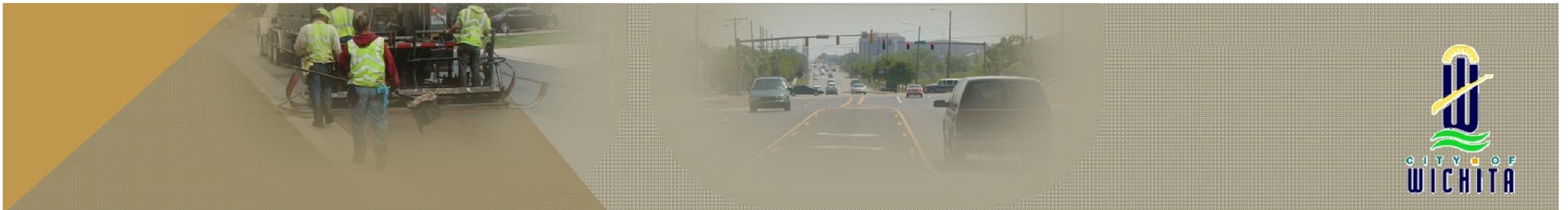
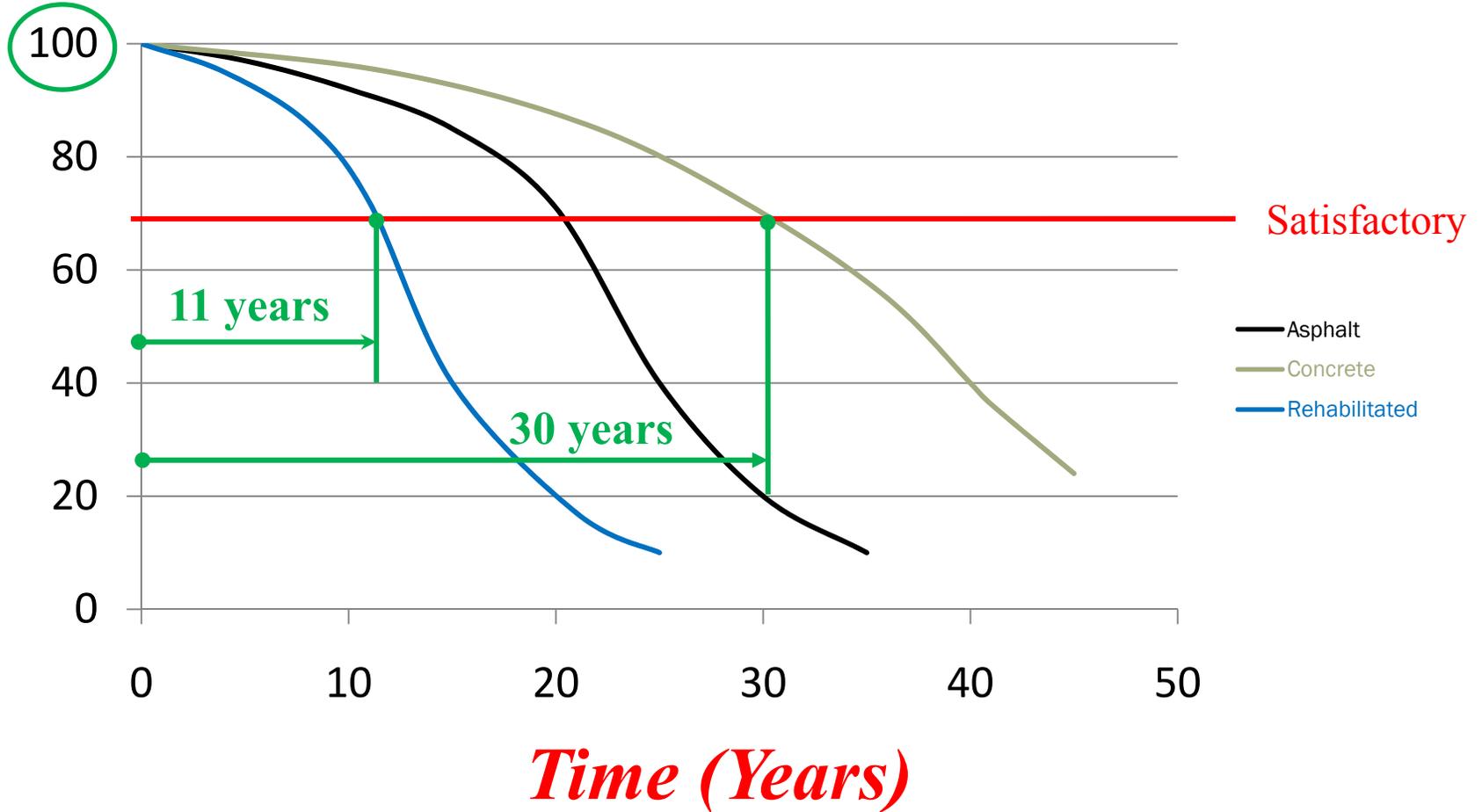
PCI → → → ROI

PCI



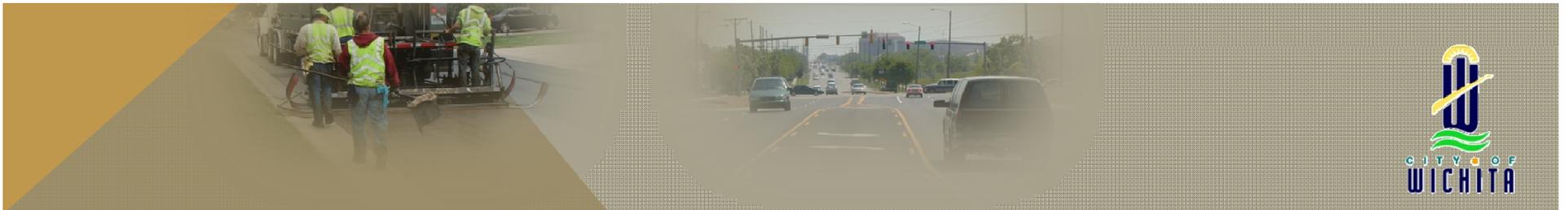
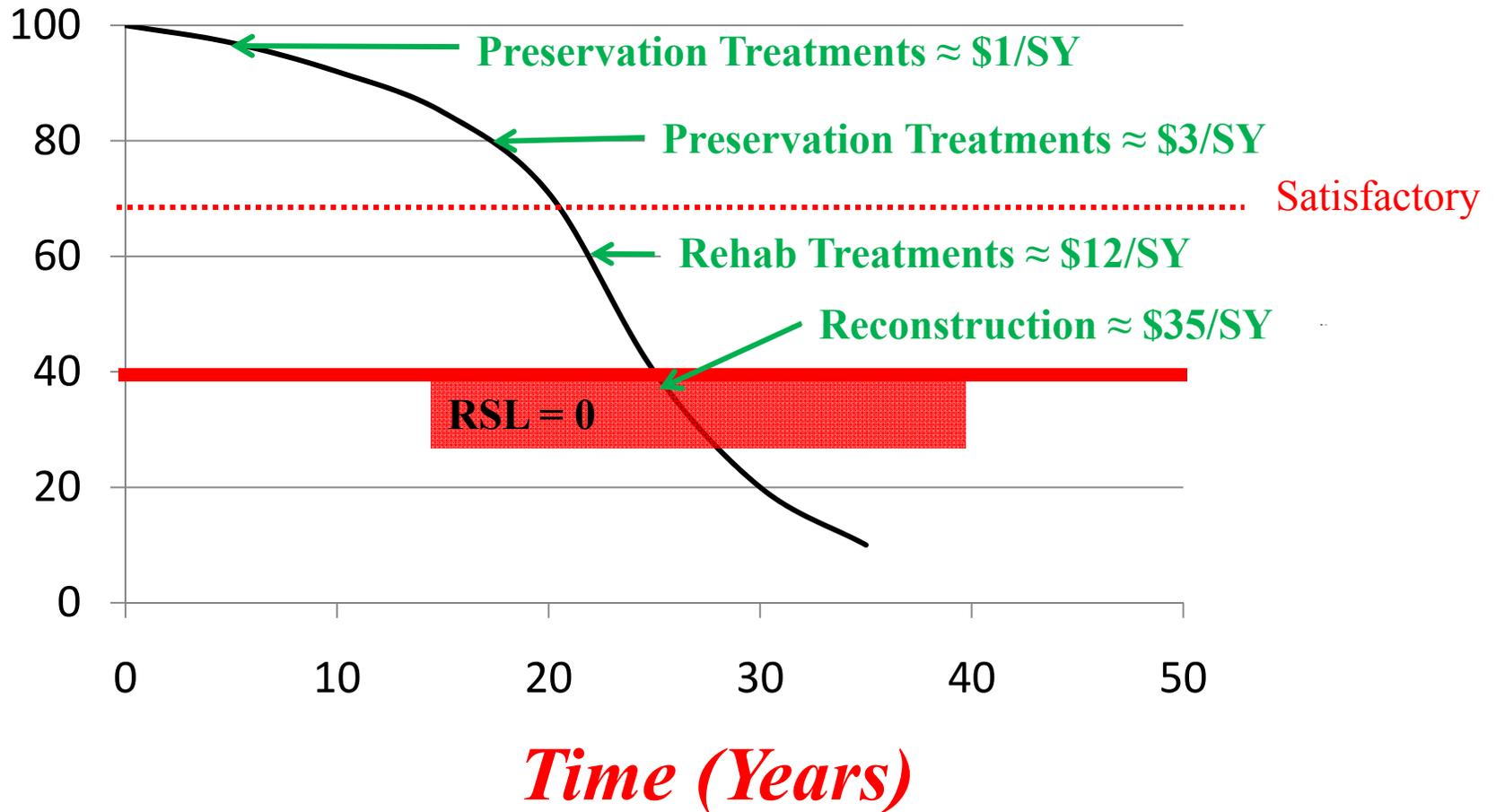
PCI → → → ROI

PCI



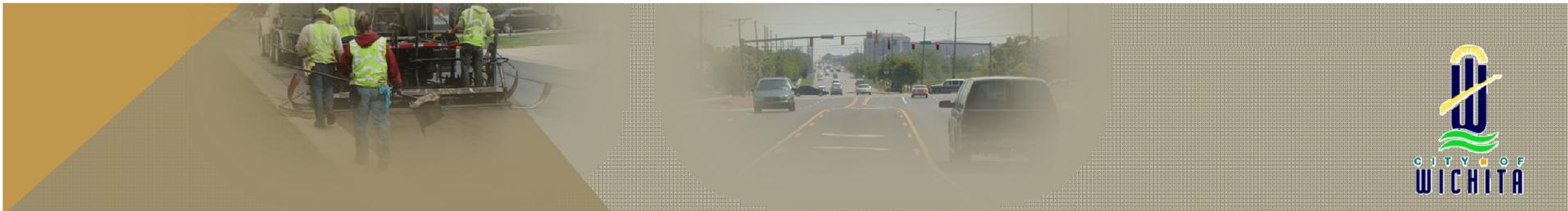
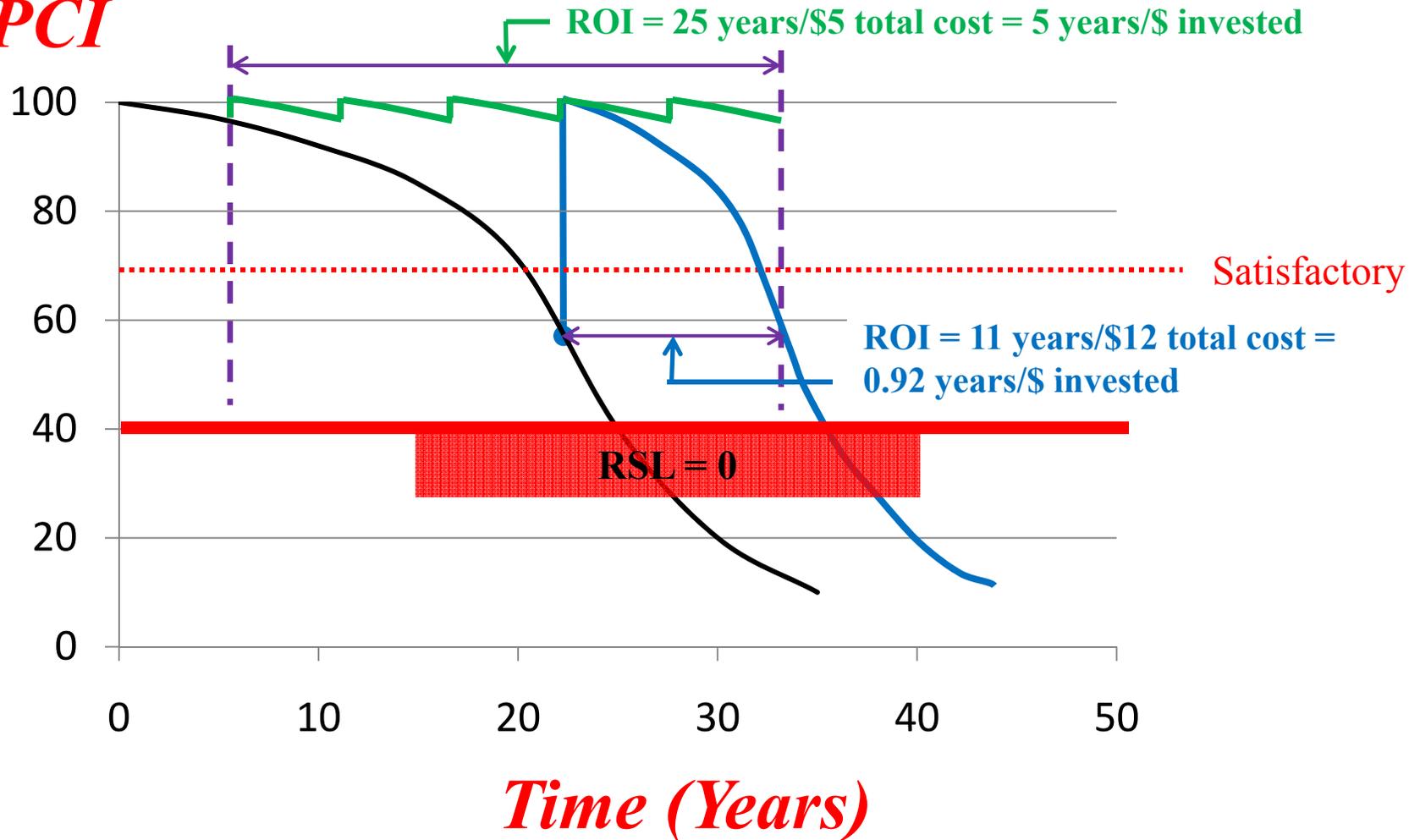
PCI → → → ROI

PCI



PCI → → → ROI

PCI



Data is Key

- Accurate ROI calculations require thorough, accurate and reliable data
- PW&U initiated a pavement condition survey and assessment standardization project in 2012
- Funds are proposed for inclusion in the 2013 CMP, in order to continue annual data collection (either in-house or by contract) in 2013



Life Cycle Model Development

- District-balanced vs. City-wide optimization
- The short and long term results of the department's traditional strategy and budget
- The strategy and budget required to maintain current condition and asset values over time
- The strategy and budget that results in the optimum ROI over time



Life Cycle Model Development

- Model development will continue into 2014, with the intent of unveiling an optimized, model-driven program in 2015
- Funds are proposed for inclusion in the 2013 CMP, in the event that a middleware program is ultimately required



Contracted Maintenance Program (CMP)

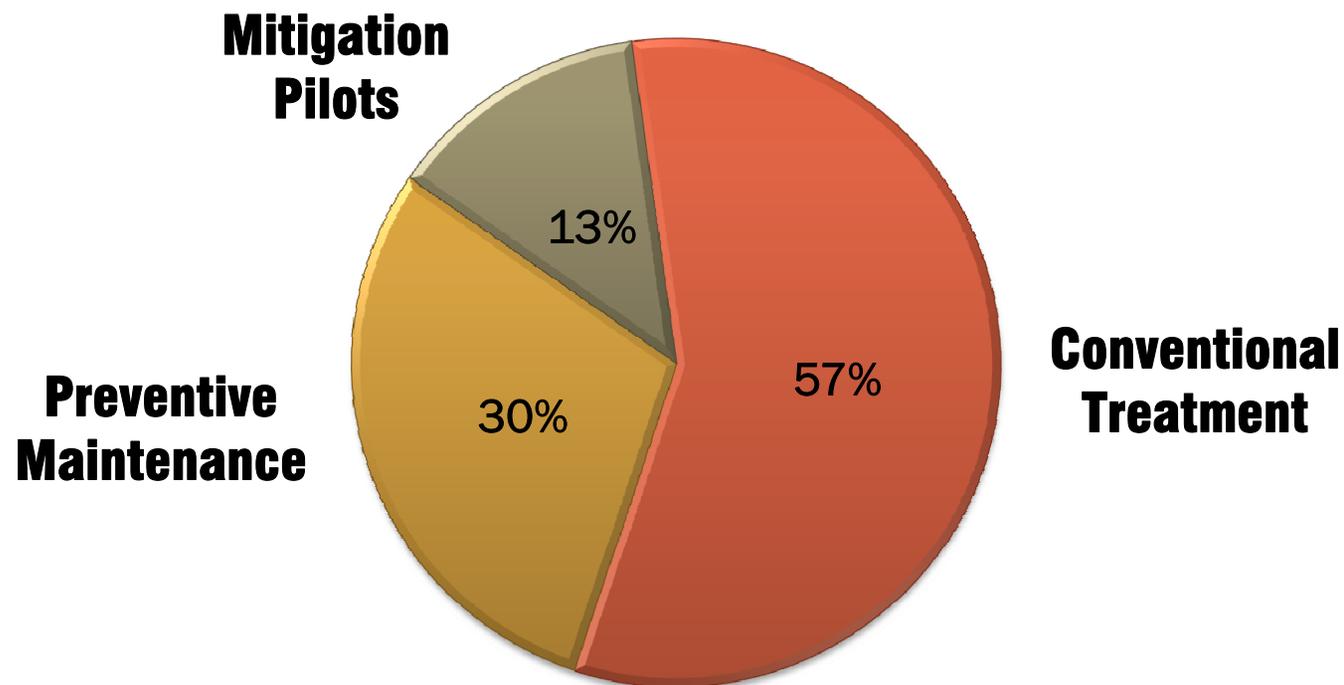
Purpose

- Supplement the critical preventive, corrective and emergency maintenance efforts of City staff
- Leverage the resources and expertise of private contractors
- Effect “the right treatment, on the right road, at the right time”



2012 CMP Recap

- Total 2012 CMP expenditures = \$6.1 million



Proposed for 2013

- Extensive piloting of new technologies and enhancements to traditional techniques
- Continued and intensified emphasis on preventive maintenance
- Life-cycle model development
- Cost-benefit analysis of condition rating options



2013 CMP Funding Summary

- Total 2013 Funding = \$7.5 million
 - \$4.0 million allocated in the 2013-2014 Adopted Budget for Pavement Maintenance
 - \$3.5 million allocated in the 2011-2020 Adopted CIP

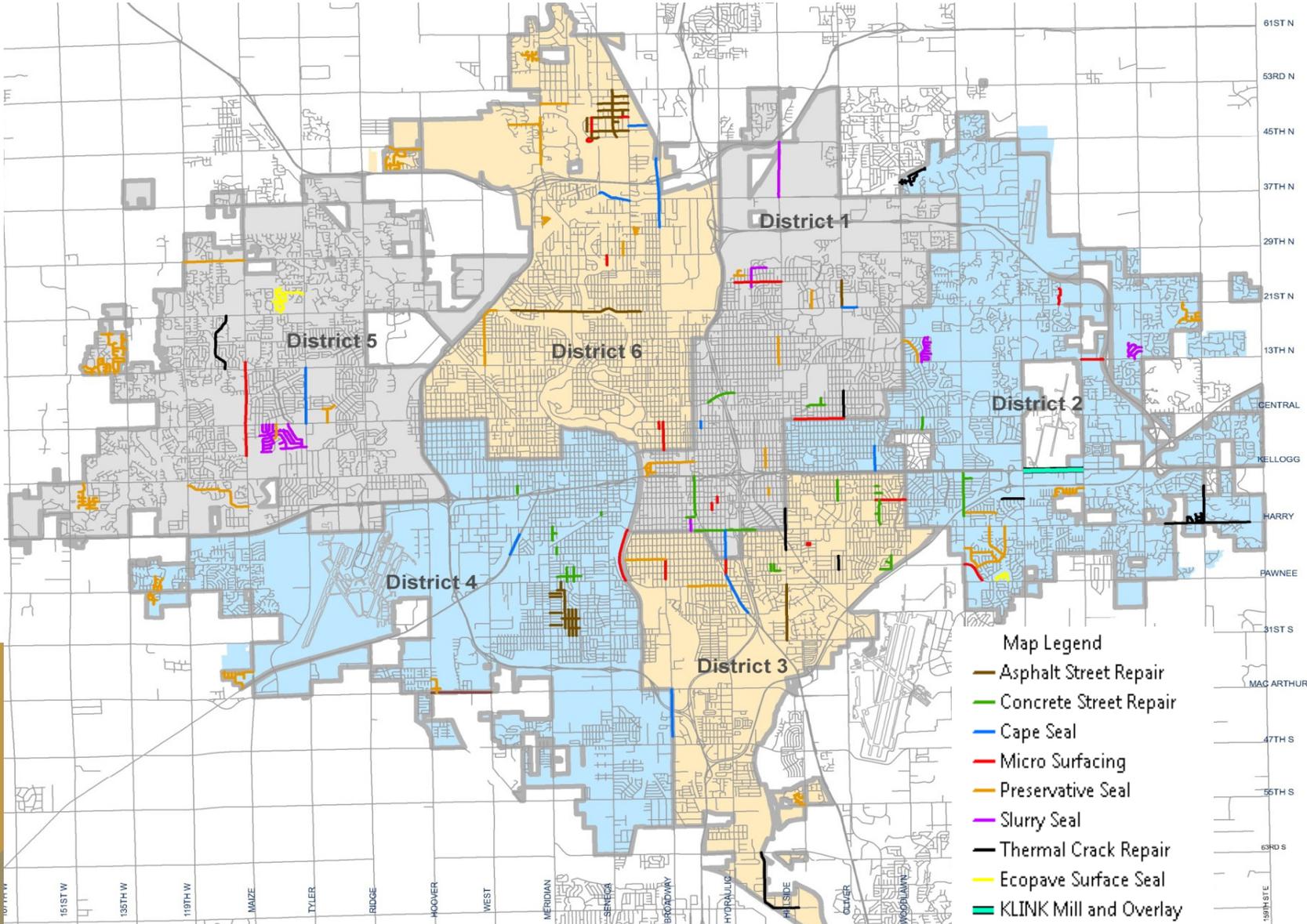


2013 CMP Expenditure Summary

Project	District					
	I	II	III	IV	V	VI
Asphalt Street Repair	\$32,000	\$0	\$65,000	\$124,000	\$0	\$241,000
Cape Seal	\$167,000	\$74,944	\$117,200	\$183,000	\$149,000	\$364,856
Concrete Street Repair	\$310,000	\$158,000	\$435,000	\$347,000	\$0	\$0
Ecopave Surface Seal	\$0	\$50,000	\$0	\$0	\$114,000	\$0
Micro Surfacing	\$106,000	\$230,000	\$147,000	\$132,000	\$226,000	\$164,000
Preservative Seal	\$53,000	\$117,000	\$43,000	\$56,000	\$184,000	\$142,000
Slurry Seal	\$152,000	\$167,000	\$0	\$0	\$142,000	\$0
Thermal Crack Repair	\$22,000	\$126,000	\$64,000	\$0	\$27,000	\$0
District Totals *	\$842,000	\$922,944	\$871,200	\$842,000	\$842,000	\$911,856
* 2012 Transit Funding Carry-Over Adjustment	-\$30,000	\$50,944	-\$800	-\$30,000	-\$30,000	\$39,856
* District Totals Before Carry-Over Adjustment	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000



2013 CMP Location Overview w/2012 District Boundaries



What to Expect in 2014

- The most promising pilot techniques from 2012 and 2013 will be leveraged toward fulfilling prior years' commitments
- Preventive maintenance will continue to be emphasized, as high ROI is assured
- Alternative maintenance techniques will continue to be piloted



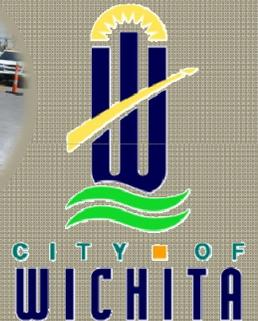
What to Expect in 2015

- Model-driven program
- Based on a strategy that serves to maximize ROI over the long-term (40 years or more)
- Ability to provide information on how, and in which future year, a specific street will be treated



In-House Resource Optimization

- Self-performed vs. outsourced pavement condition ratings
- Project management and inspection resources: impact of increased production (total lane-miles treated)
- Continued piloting of new and emerging technologies, techniques and strategies



Pavement Preservation Program Summary

- Condition ratings: PCI $\Rightarrow \Rightarrow \Rightarrow$ **ROI**
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Questions?

