



City of
Santa Rosa
California



Preservation of City Streets

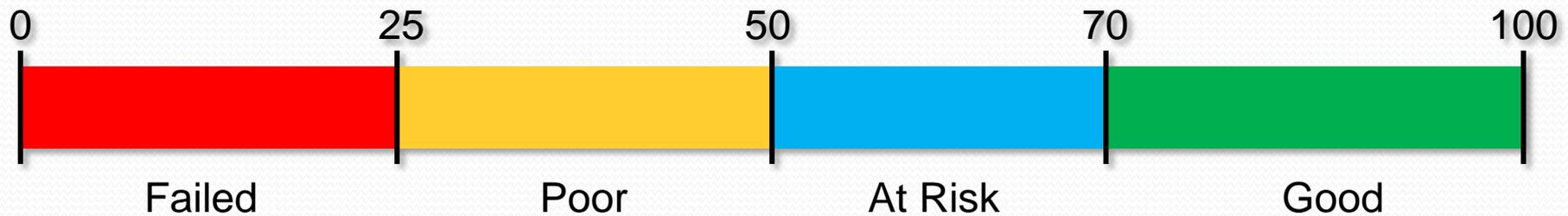
City Council Study Session
April 26, 2022

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PRESENTATION GOALS

- What is PCI?
 - Pavement Condition Index (PCI)
- Current Network Condition
 - Examples of Roadway PCI Conditions
 - Overview of our Roadway Network
- Pavement is a City Asset
 - Current Value of our Pavement System
 - Project Selection Factors
- Types of Pavement Treatments
 - Preservation or Rehabilitation
 - Examples and costs of each
- Future Projects
 - Optimizing Construction Materials
- Network Decline with Current Spending
 - 30 Year Outlook
- Questions?

PAVEMENT CONDITION INDEX (PCI)



- PCI is a rating system for pavement condition.
 - 100 = newly constructed roadway
 - 0 = completely failed roadway
- Factors include impacts from repeated loading, environmental stresses, and utility cuts.
- PCI rating is the industry standard of measurement for pavement condition.

GOOD CONDITION: PCI = 80

PCI between 70-100 is classified as GOOD, 47% of Network



CURRENT NETWORK: PCI = 62

PCI between 50 - 69 is classified as At Risk, 21% of Network



POOR CONDITION: PCI = 35

PCI between 26 - 49 is classified as POOR, 28% of Network

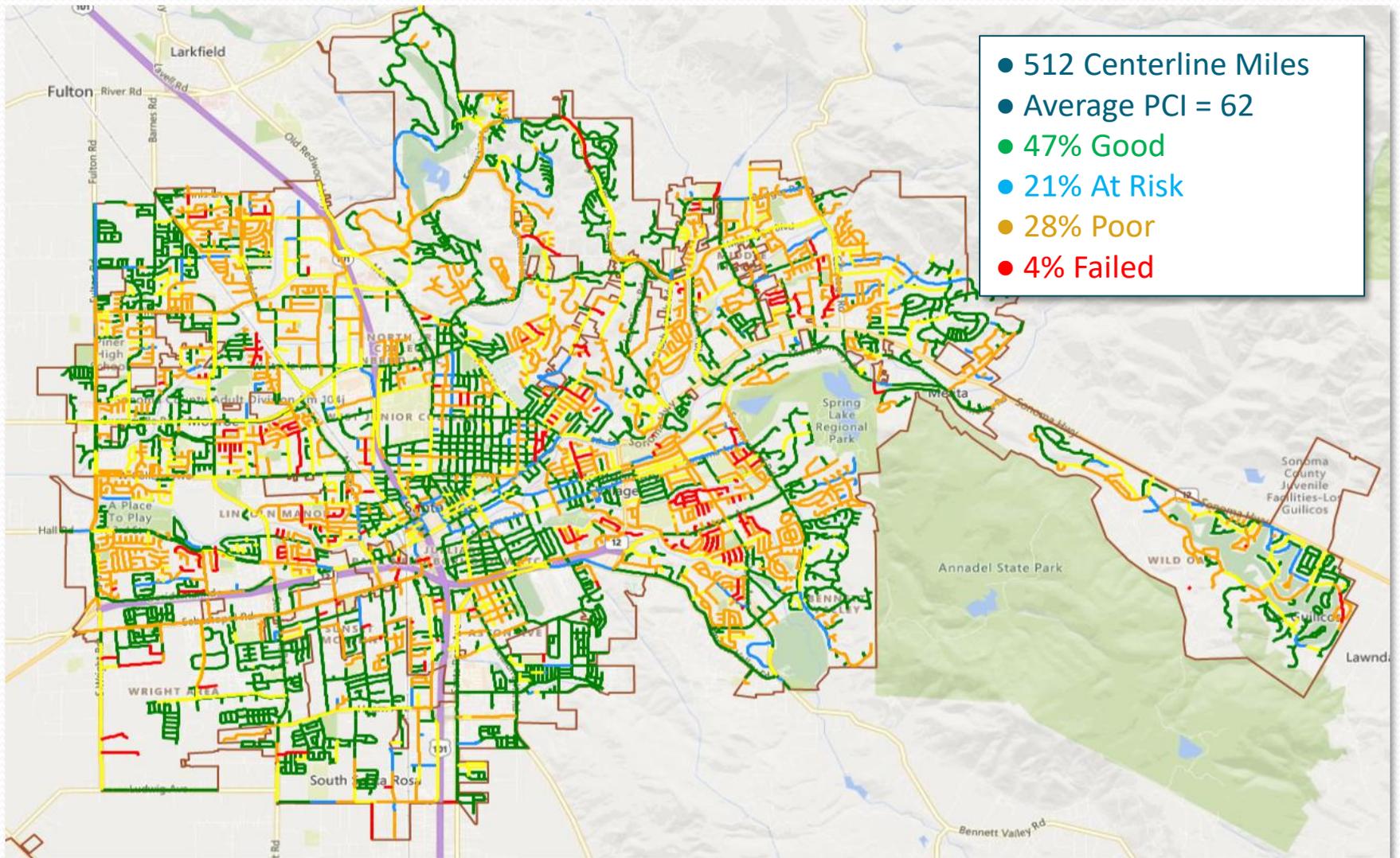


VERY POOR CONDITION: PCI = 12

PCI between 0 - 25 is classified as Failed, 4% of Network



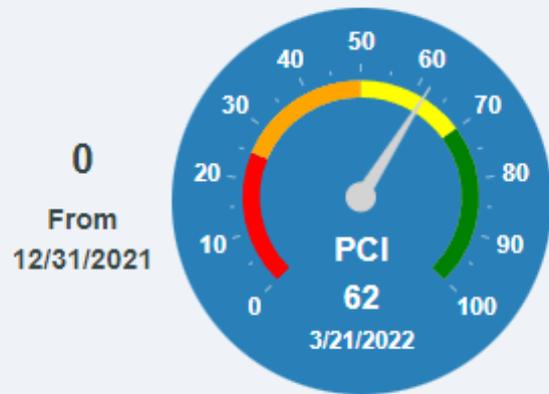
CURRENT NETWORK CONDITION



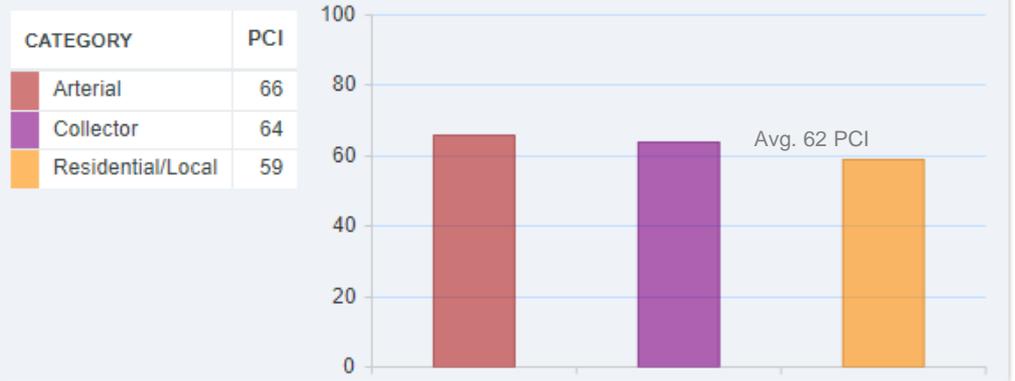
CURRENT NETWORK CONDITION

CONTINUED...

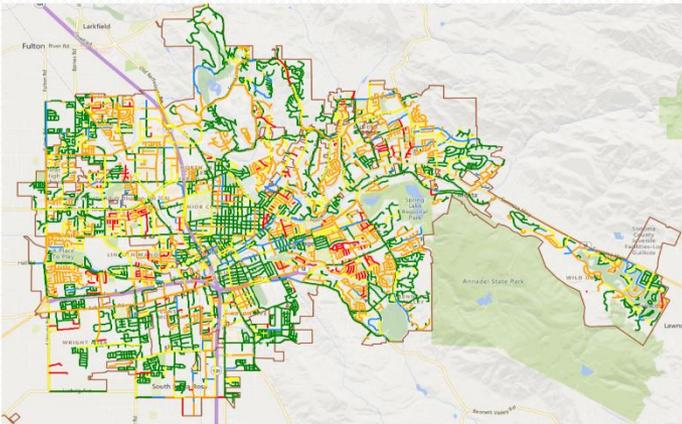
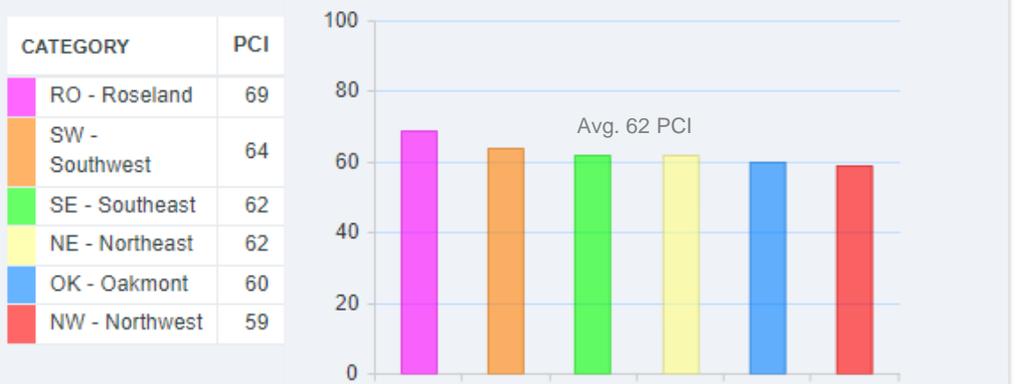
*Current PCI



PCI by Roadway Functional Type:



PCI by Network Area:



STAY AHEAD OF THE CURVE

- Maximize Paving Dollars and Extend Roadway Life Through Pavement Preservation by Keeping Good Streets in Good Condition.
- *“Pavement preservation is a cost effective and greener approach to getting the most life out of your roads and making taxpayer dollars go further. In addition to cost efficiency, a pavement preservation approach is known to produce fewer greenhouse gas emissions, consume less energy, and provide faster application times than the alternative conventional approach” –Roadresource.org*

TREATMENT TYPES AND COSTS

Crack Seal



\$1+ Linear Foot

Slurry Seal



\$4+ Square Yard
Adds 5-8 Years of Life

Cape Seal



\$10+ Square Yard
Adds 8-10 Years of Life

Overlay



\$52+ Square Yard
10-15 Years of Life

HMA Reconstruct



\$200+ Square Yard
20-25 Years of Life

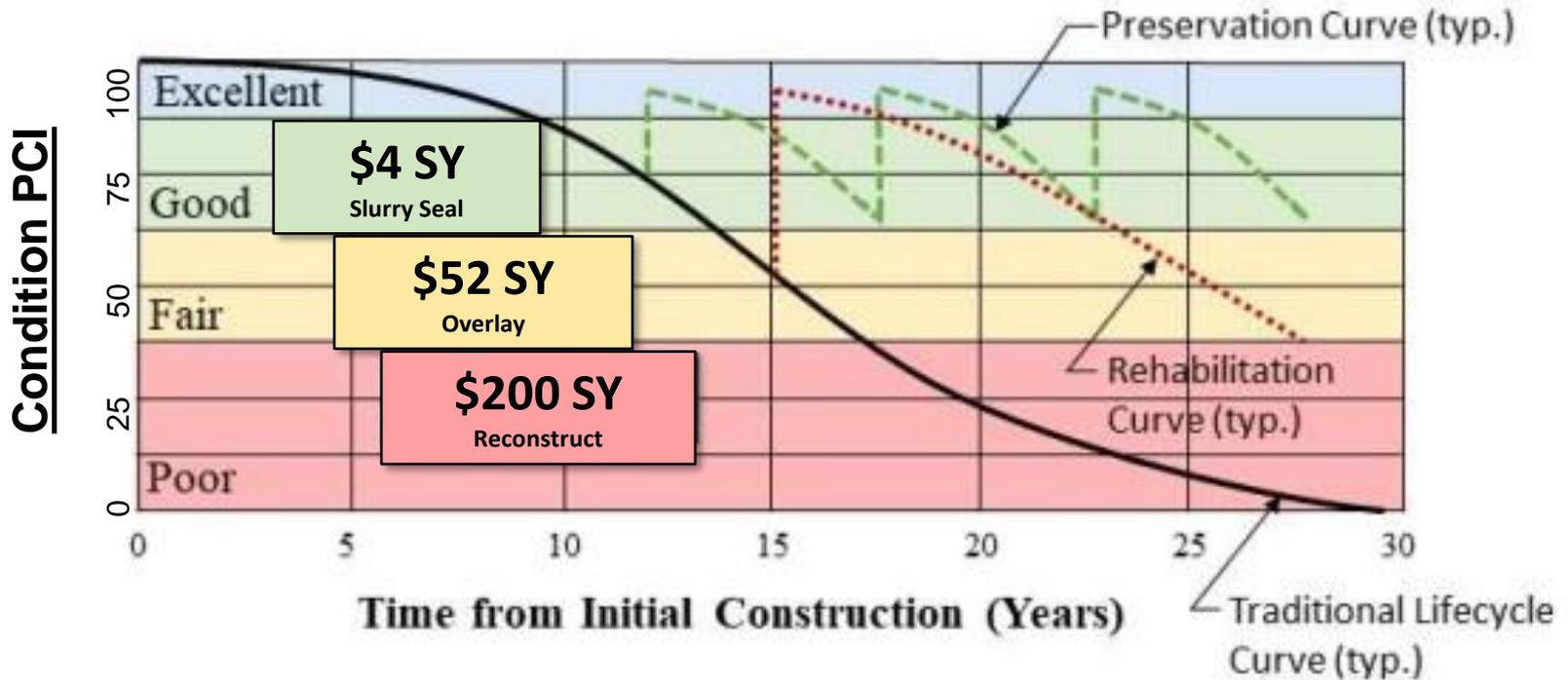
PCC Reconstruct



\$190+ Square Yard
60-75 Years of Life

PRESERVATION CURVE VS. REHABILITATION CURVE

Pavement Project Life-Cycle Cost Per Square Yard

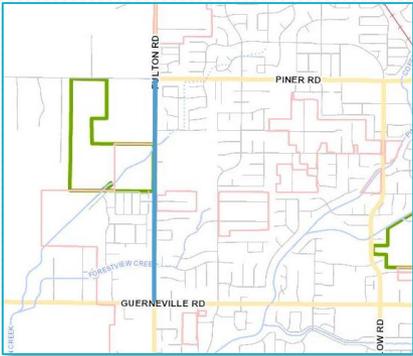


PAVEMENT ASSET & PROJECT SELECTION

- Replacement value of City pavement asset over \$1.4 Billion
- \$15.5M/ year (1.1% of value) to maintain current PCI of 62
 - Now spending about \$11 Million per year .8%
 - 1 PCI point loss in the overall network costs \$15M to recover
- Project Selection Factors
 - Good streets require maintenance and preservation projects that will extend pavement life and prolong the need for costly rehabilitation.
 - Failed streets require full reconstruction and should be paired with Sewer & Water projects to make better use of paving dollars.
 - Other factors include geography, roadway classification, PCI, and future projects.

FUTURE PROJECTS

(MAKING BETTER USE OF PAVING DOLLARS)



Fulton Rd. Widening



Calistoga Rd. Reconstruct



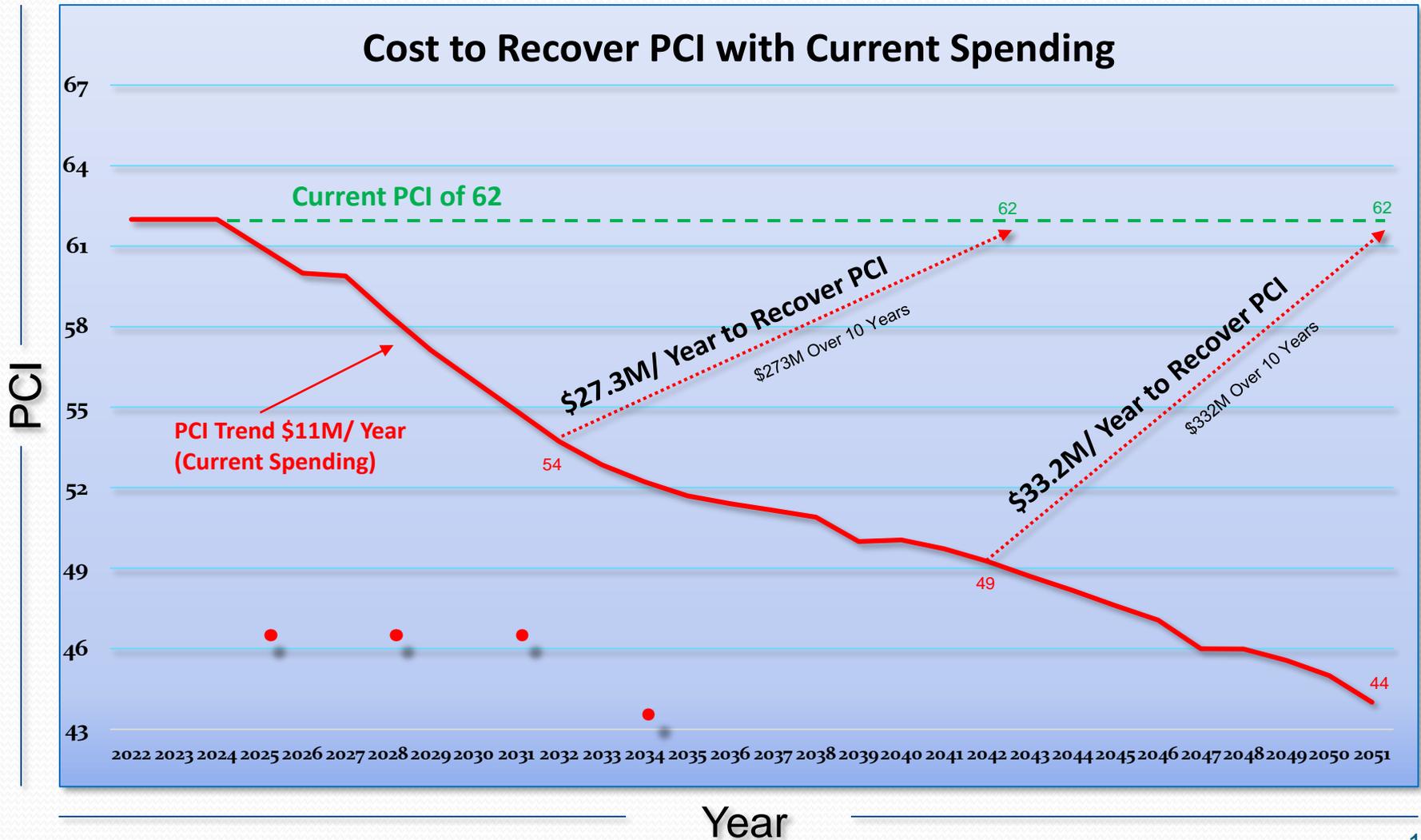
2023 Slurry Streets



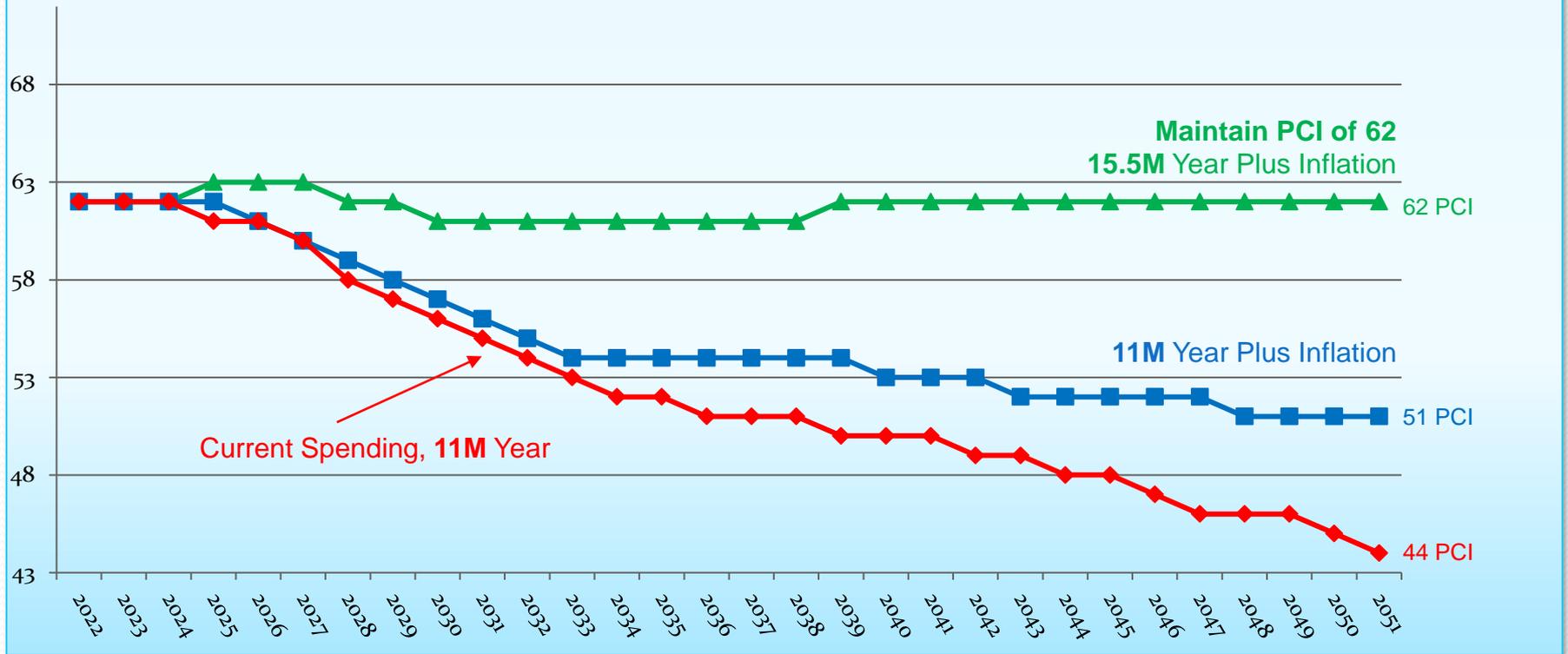
Roseland AR Cape Seal

- Fulton Road will be constructed using Cement Concrete which is far less expensive than conventional Asphalt and has a long design life of up to 60+ years.
- We are also looking at using similar Cement Concrete paving for Calistoga Road.
- These are both examples of how we can make better use of paving dollars to improve and extend the life of our roadways. The use of Concrete is a long-term strategy to reduce future network costs.
- Future Pavement Preservation Projects include Slurry Seal “Downtown” and AR Cape Seal in “Roseland.”

CONCERNS WITH CURRENT SPENDING

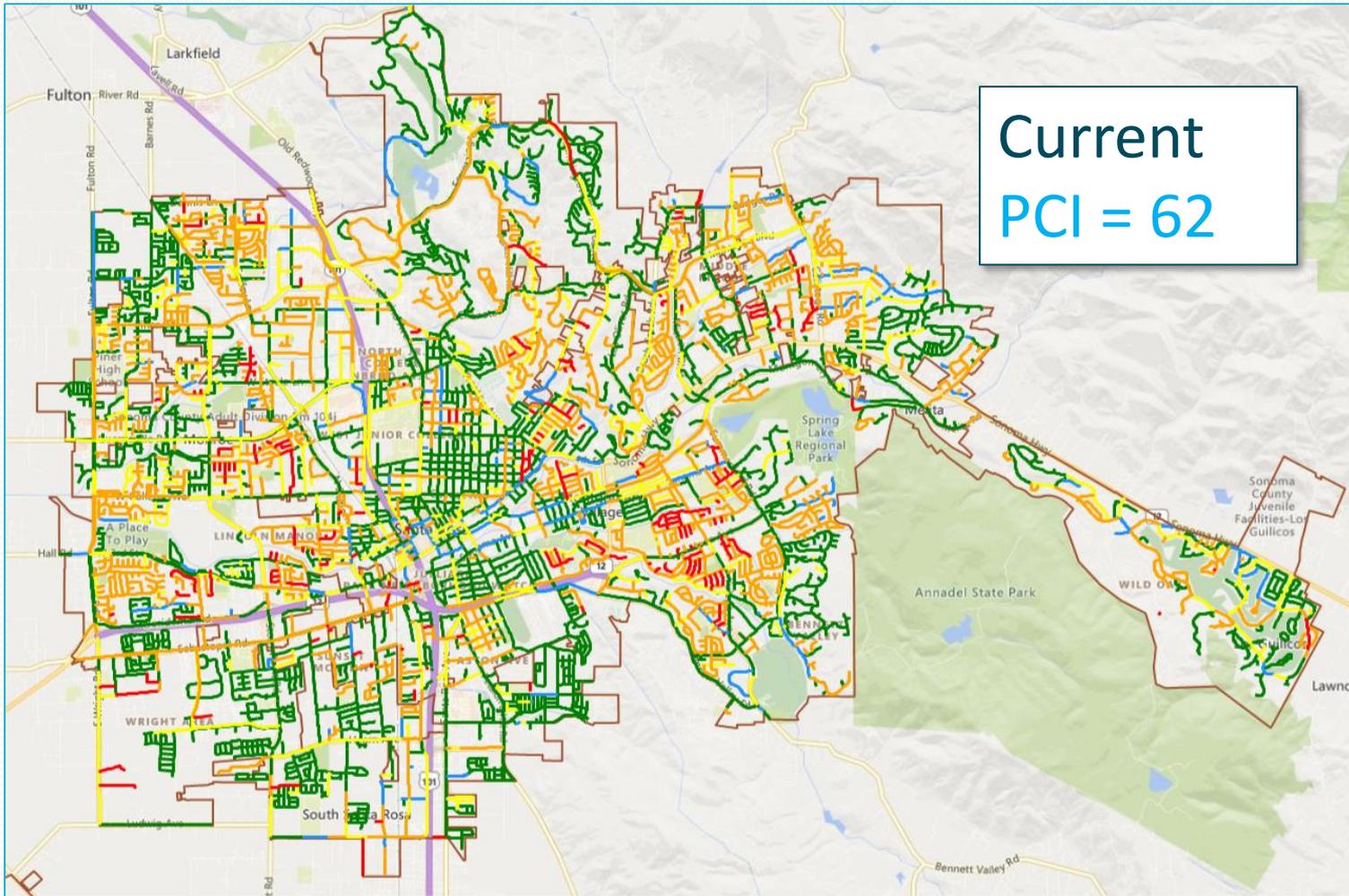


PCI VS. SPENDING

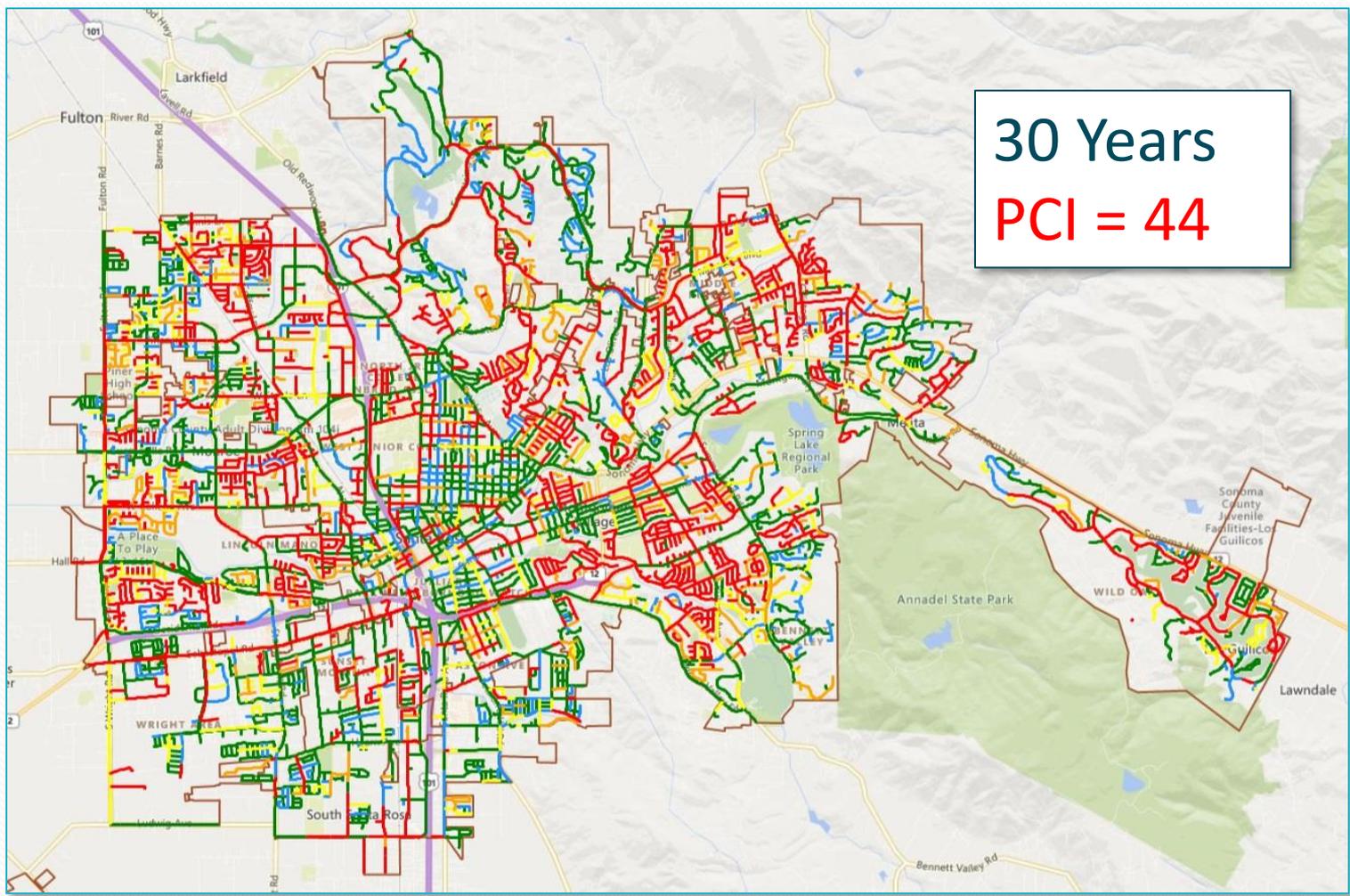


- \$15.5M with inflation adjustment/ year to maintain current PCI of **62** for 30 years.
- \$11M with inflation adjustment/ year = PCI of **51** in 30 years.
- \$11M per year with no adjustments (current) = PCI of **44** in 30 years

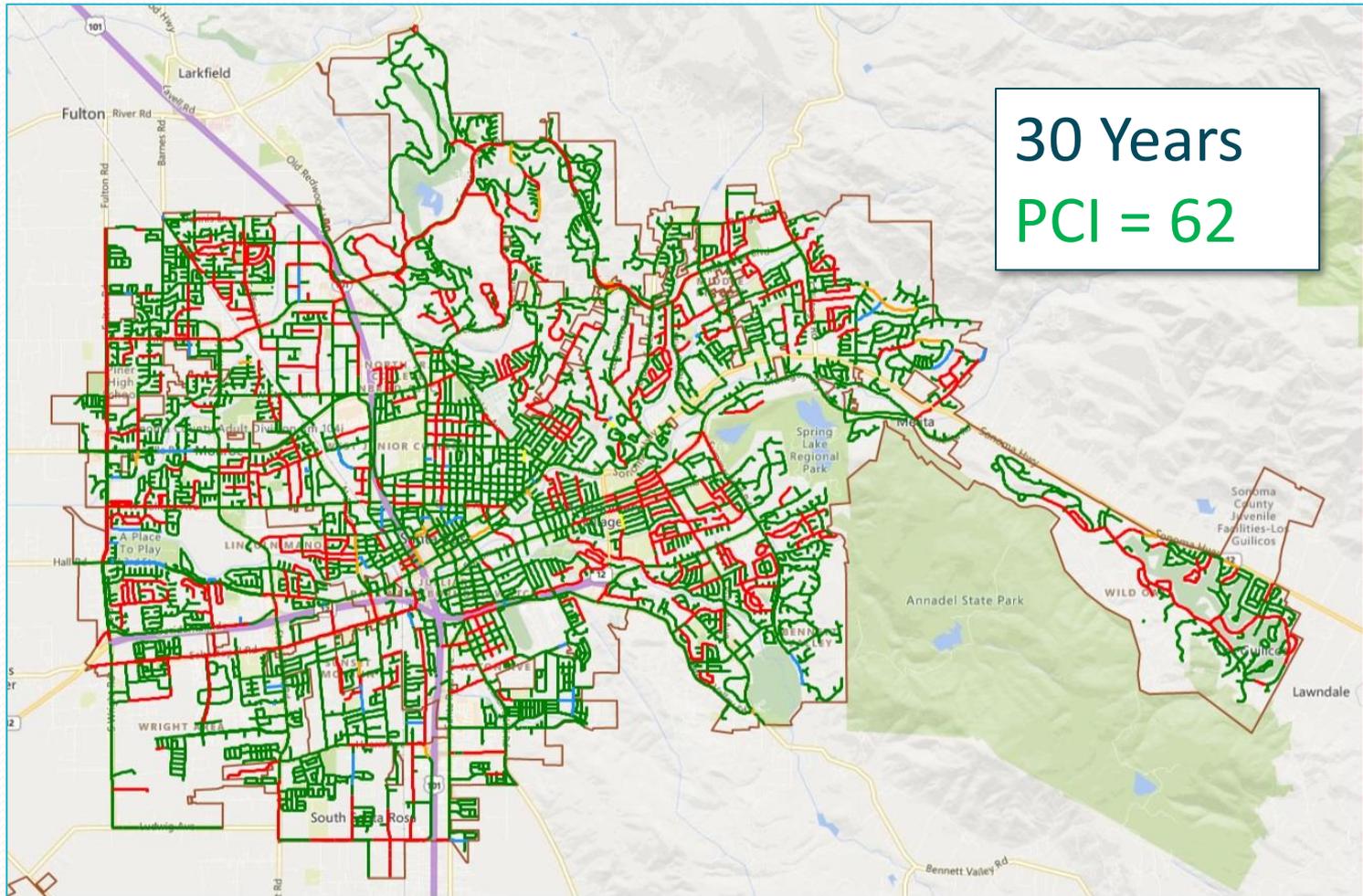
Current Network Condition



30 YEAR PCI WITH CURRENT SPENDING



MAINTAIN CURRENT PCI OF 62 \$15.5M/ YEAR + INFLATION ADJUSTMENT



REVIEW

- Streets are a valuable asset for the City.
- Funding pavement preservation projects now saves money in the future.
- Current spending will not maintain current PCI.
- It is critical to optimize the use of construction materials based their impacts for long term performance.

RECOMMENDATION

It is recommended by the Transportation and Public Works Department that Council hold a study session for to provide a presentation and information on the current status of the City's pavement condition status.

QUESTIONS?