




# Agenda Item #5.D

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DATE: **January 6, 2020**

TO: Honorable Mayor and Members of the City Council through City Manager 

FROM: Jason Beatty, P.E. – Interim Director, Public Works & Utilities Department  
Jeff Stutsman, P.E. – Sr. Traffic Engineer, Public Works & Utilities Department

SUBJECT: Pavement Management Plan Update

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## **RECOMMENDATION**

It is recommended that the City Council consider the information presented and provide feedback.

## **BACKGROUND**

The City has 398 lane miles of paved streets with an average overall network Pavement Condition Index (PCI) of 46 which indicates that the street network is in ‘poor’ condition. This is the worst condition index rating of Bay Area cities. The PCI is a measurement of pavement condition from 1 to 100. A newly constructed or overlaid street would have a PCI of 100 while a failed street would have a PCI under 25.

The City’s current budget for street paving projects, bridge repairs, traffic signal, and streetlight upgrades for the next five years is projected to be:

FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
\$2,391,598	\$5,549,000*	\$3,264,000	\$2,832,000	\$2,952,000

\*Includes a \$2.5M grant for the Petaluma Boulevard South road diet

With our current pavement budget of approximately \$17 million over these five years, and following the plan presented to Council on April 15, 2019, which balances reconstruction of some of our most critical and failed roadways with preventing roadways that are in fair condition from further degradation. This 5-year plan includes reconstructing Maria Drive, North McDowell Boulevard, the reconstruction, and road diet reconfiguration on Petaluma Boulevard South and completing several pavement preservation projects. Despite these efforts the overall network PCI is projected to decrease three points from 46 currently to 43 by 2024. The deferred maintenance backlog is projected to increase from \$96.6 million in 2020 to \$127.6 million in 2024. The City’s street network replacement cost is estimated at \$246.9 million.

## **DISCUSSION**

City of Petaluma uses Street Saver for the Pavement Management System which is required by the Metropolitan Transportation Commission (MTC) as its asset management tool for street paving. MTC provides a Pavement Technical Assistance Program which assesses pavement condition every two years to help cities and counties to update and maintain their pavement management database. City staff worked with MTC to complete the process and update the PCI of all the streets in the City in late 2019. This information can then be used to prioritize projects, identify the best treatment types, and provide a condition rating for the City.

The following scenarios are presented for informational purposes to reflect the magnitude of the capital investment needed in our City Streets. These scenarios are for capital investments above the approximately \$3.2M needed annually for street crew operations:

In order to maintain our current PCI of 46 an annual capital investment level of \$5 million, for a total of \$25 million over five years would be needed. Even though the PCI remains level, the deferred maintenance backlog increases from \$94 million in 2020 to 121.9 million in 2024.

To increase our PCI by 5 points from 46 an annual capital investment level of \$8.5 million, for a total of 42.5 million over five years would be needed. At this funding level the deferred maintenance backlog increases, from \$90.5 million in 2020 to \$106.6 million 2024.

To increase our PCI to 70, which is considered ‘good’ over the next five years an annual capital investment level of \$20 million over the next five years would be needed. Under this scenario the PCI would increase by twenty-four points from 46 to 70. The deferred maintenance backlog decreases from \$79 million in 2020 to \$47.1 million in 2024.

The deferred maintenance backlog refers to the dollar amount of maintenance and rehabilitation work that should have been completed to maintain the street in “good” condition but had to be deferred due to funding deficiencies for preventative maintenance and or pavement rehabilitation program.

The situation of with the City’s deferred maintenance backlog is the result of a long-time shortfall in street maintenance funding. While street maintenance funding has increased over recent years through increased Garbage Franchise Fees, a Pavement Utilization Fee charged to utilities, and Senate Bill 1 (SB1) establishing the Road Maintenance and Recovery Account growing from ~\$2.5M in FY 11/12 to ~\$5.6M in FY 19/20, there is still a short fall in the funding needed to maintain our overall PCI as is, the worst in the Bay Area.

The table below summarizes the previous eight years of capital pavement projects and their funding sources. It wasn’t until 2017, that the City had street maintenance funding above the levels above what was needed only for operating expenses and could begin to fund capital paving projects.

<b>Year</b>	<b>Street</b>	<b>Funding Source</b>
2011	Crinella Drive	Grant
2012	Sonoma Mountain Parkway	Grant
2013	Petaluma Blvd Road Diet (Downtown)	Grant
2015	East Washington (Hwy 101 to Ely)	PG&E, Water
2016	Lakeville Street	Grant
2017	Ely Blvd, McDowell, and Lakeville St	Street Maintenance, Grant
2018	Various Streets - pavement preservation projects	Street Maintenance
2019	Sonoma Mountain Parkway Reynolds Dr, Belleview, Hayes, Nob Hill Terrace	Street Maintenance Waste Water

The capital investment scenarios above assume that the City follows a pavement management philosophy of prioritizing preventative maintenance over rehabilitation. While this triage approach is the most cost effective, utilizing scarce resources to keep good streets in good condition while letting failed roads continue to deteriorate, it is not how the community typically wants to see the limited resources spent. The City staff incorporated community and Council input into the prioritization of the five-year pavement management plan as well as the following considerations:

- Street Saver treatment and project recommendations
- Public Safety Consideration
- Connectors to transit and bikeways
- Geographic locations
- Street Maintenance Staff Input
- Community Input
- Council Input
- School zones
- Development projects
- Grant opportunities
- Utility work (Sewer & Water)
- Traffic signal work
- Road classification (Arterial, Collector, Residential)

The current proposed five-year paving plan includes the following:

<b>Year</b>	<b>Road Segment</b>	<b>Project type</b>	<b>Projected funding</b>
FY 19/20	Maria Drive (Sonoma Mountain Pkwy to Rainier)	Reconstruction	\$2,391,598
FY 20/21	Petaluma Blvd S. (D St to Crystal Ln)	Reconstruction	\$2,800,000
	Various Streets	Preventative Maintenance (PM)	2,749,000
FY 21/22	North McDowell Blvd (Southpoint to Old Redwood Hwy)	Reconstruction	\$3,264,000

FY 22/23	Various Streets	Reconstruction & PM	\$2,831,000
FY 23/24	Various Streets	Reconstruction & PM	\$2,952,000

**PUBLIC OUTREACH**

The City’s Pavement Management Plan is presented to Council and the public for input three times a year:

- In early spring, as part of SB1, the California Transportation Commission requires a project list for the following fiscal year be submitted by May 1<sup>st</sup> each year. Although there is an allowance for flexibility after the list is submitted, the intended list of paving projects must be approved by Council.
- As part of the annual budget cycle, and CIP budget presentation the pavement management plan is presented.
- In the winter, staff will provide an update to the Pavement Management Plan seeking feedback prior to the required SB1 project list submission.

An additional public workshop on Street Infrastructure will be held on March 7, 2020 as part of the Fiscal and Organizational Sustainability (FOS) effort.

**FINANCIAL IMPACTS**

There is no financial impact with the direction provided from this presentation. Any recommended action that would have financial impact not already approved would be brought before Council again for Authorization.

**ATTACHMENTS**

1. PowerPoint slideshow on Pavement Management Plan



# Pavement Management Plan (PMP)

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MIDYEAR UPDATE

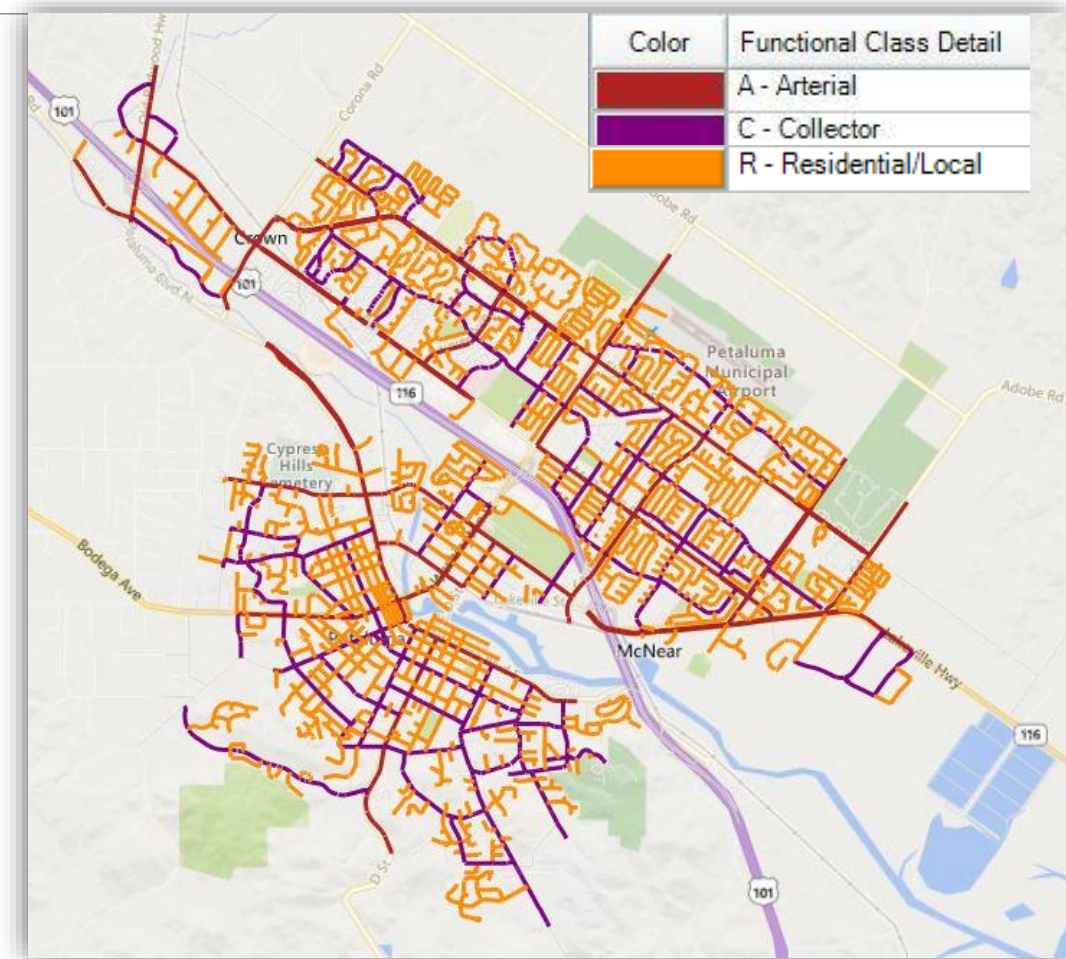
# Agenda

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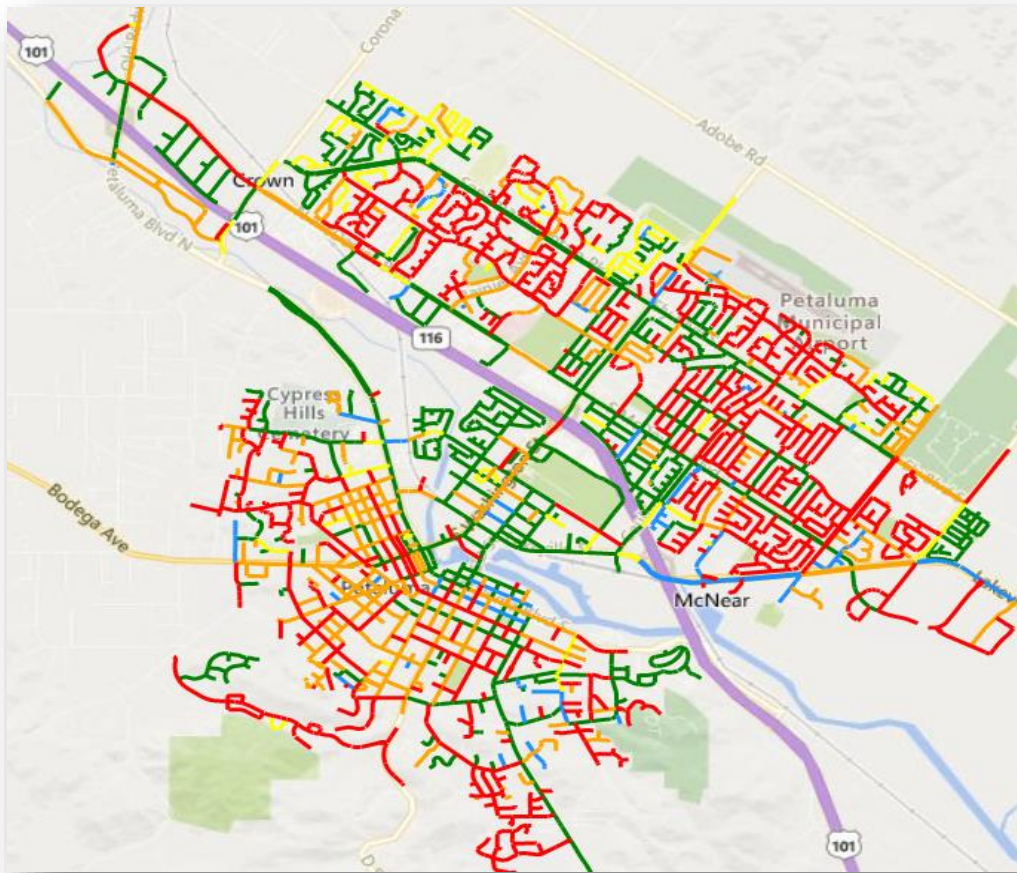
- Purpose
  - Mid-Year Update
  - Input ahead of SB1 project list submission due May 1<sup>st</sup>.
- Overview of Street Condition
- Funding Update
- Project Status Update
- Prioritization Process
- 5 Year Plan
- Discussion and Feedback

# Overview of Street Infrastructure

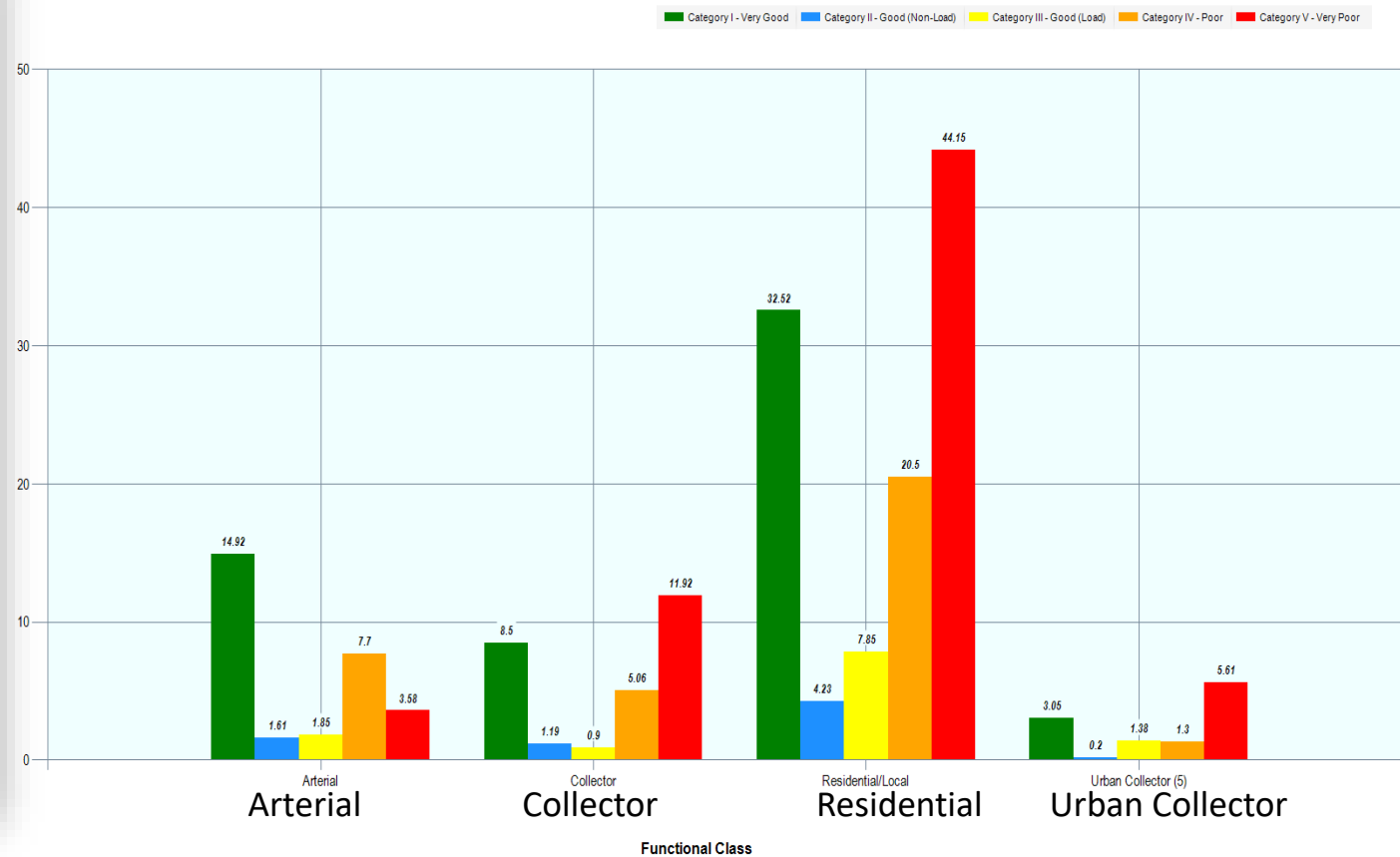
- 396 Lane Miles of Streets
- 350+ Miles of Sidewalks
- 51 Signaled Intersections
- Crosswalks, Signage, Markings
- 8 Bridges
- 5,458 Streetlights
- 23 Miles of Class I Bike Paths
- City Staff
  - 11 Maintenance/Operations
  - 2 Admin/Engineering



# Overview of Street Condition

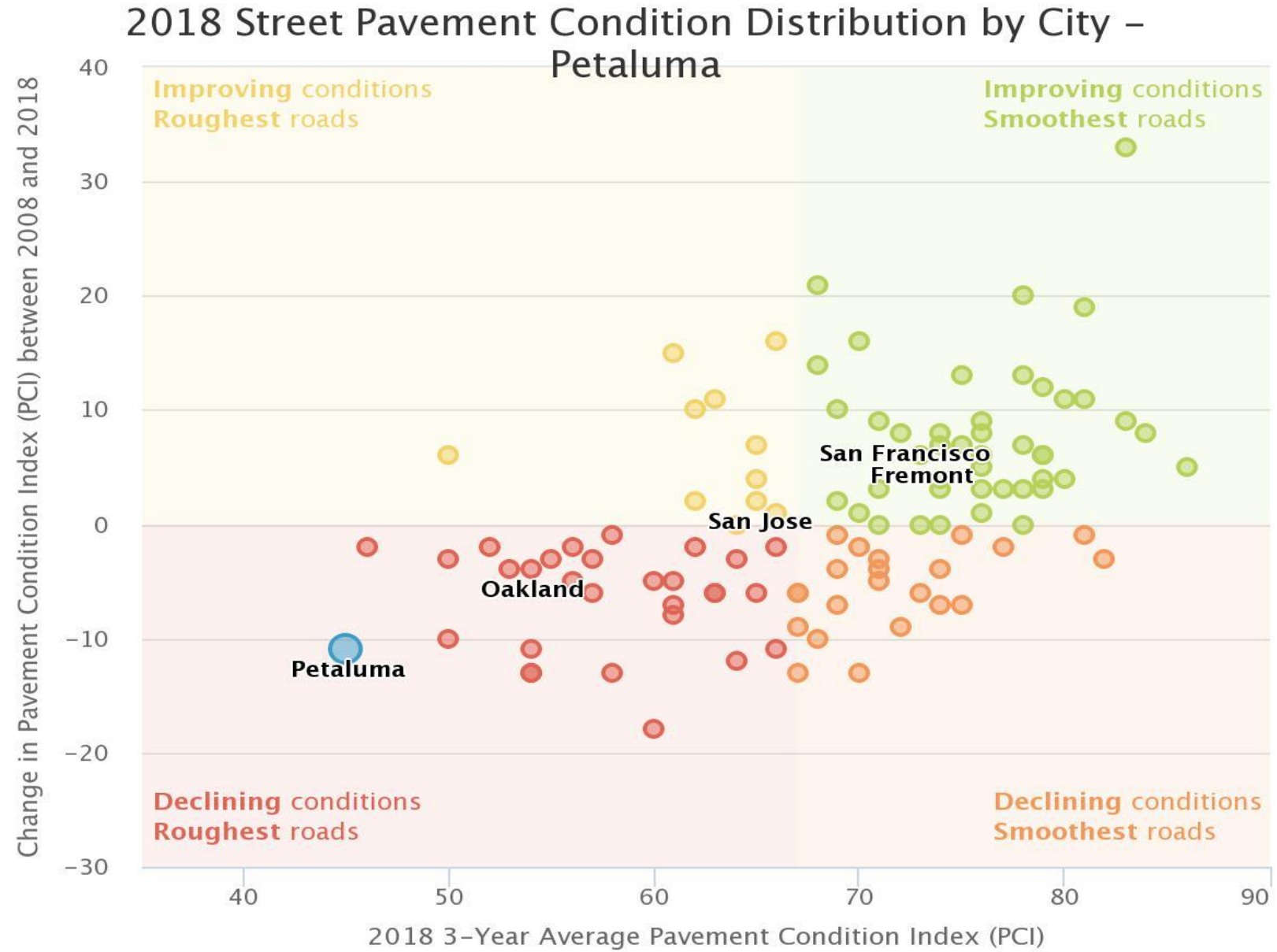


Condition by Functional Class

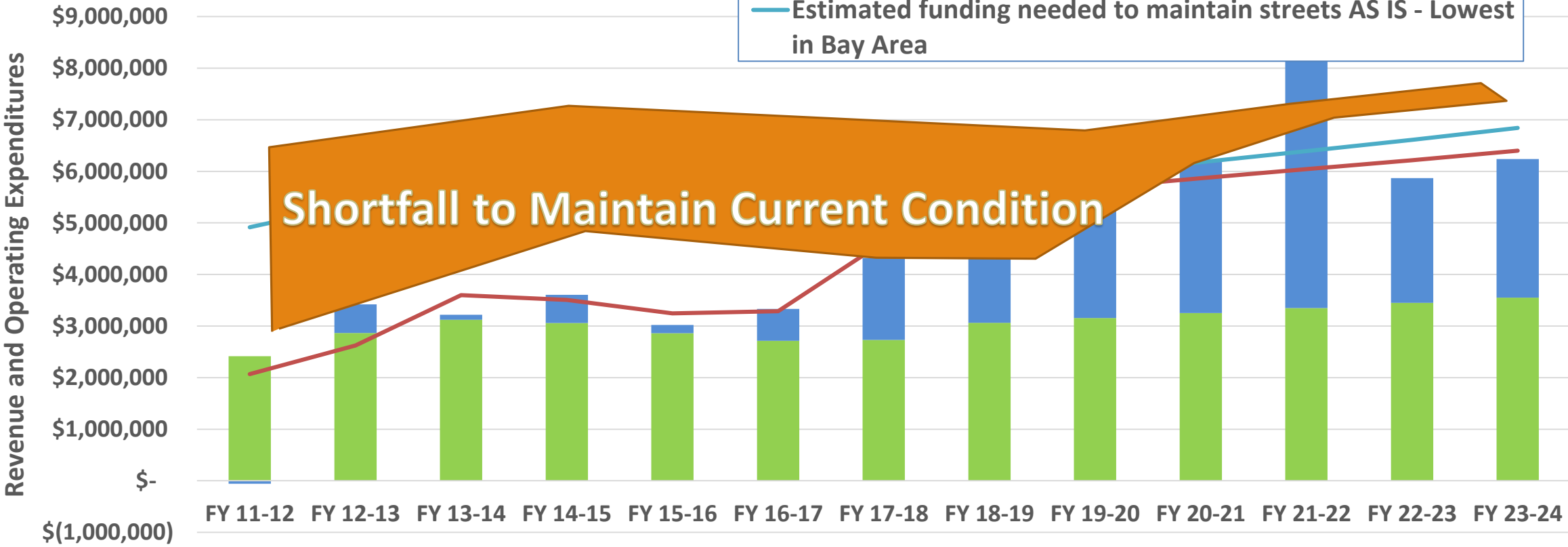
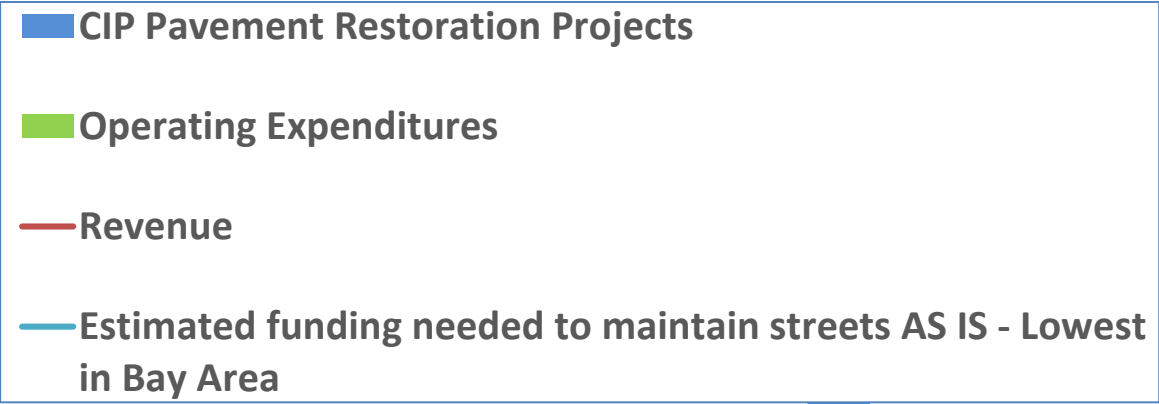




# Overview of Street Condition



# A Look Back – Street Funding



# A Look Back – Pavement Restoration Projects Over Last 8 Years

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2011 – Crinella Drive (Grant)

2012 – Sonoma Mountain Parkway (Grant)

2013 – Petaluma Blvd Road Diet Thru Downtown (Grant)

2015 – East Washington- HWY 101 to Ely (PG&E, Watermain)

2016 – Lakeville St (Grant)

2017– Ely Blvd, McDowell & Lakeville St (Street Maintenance Fund)

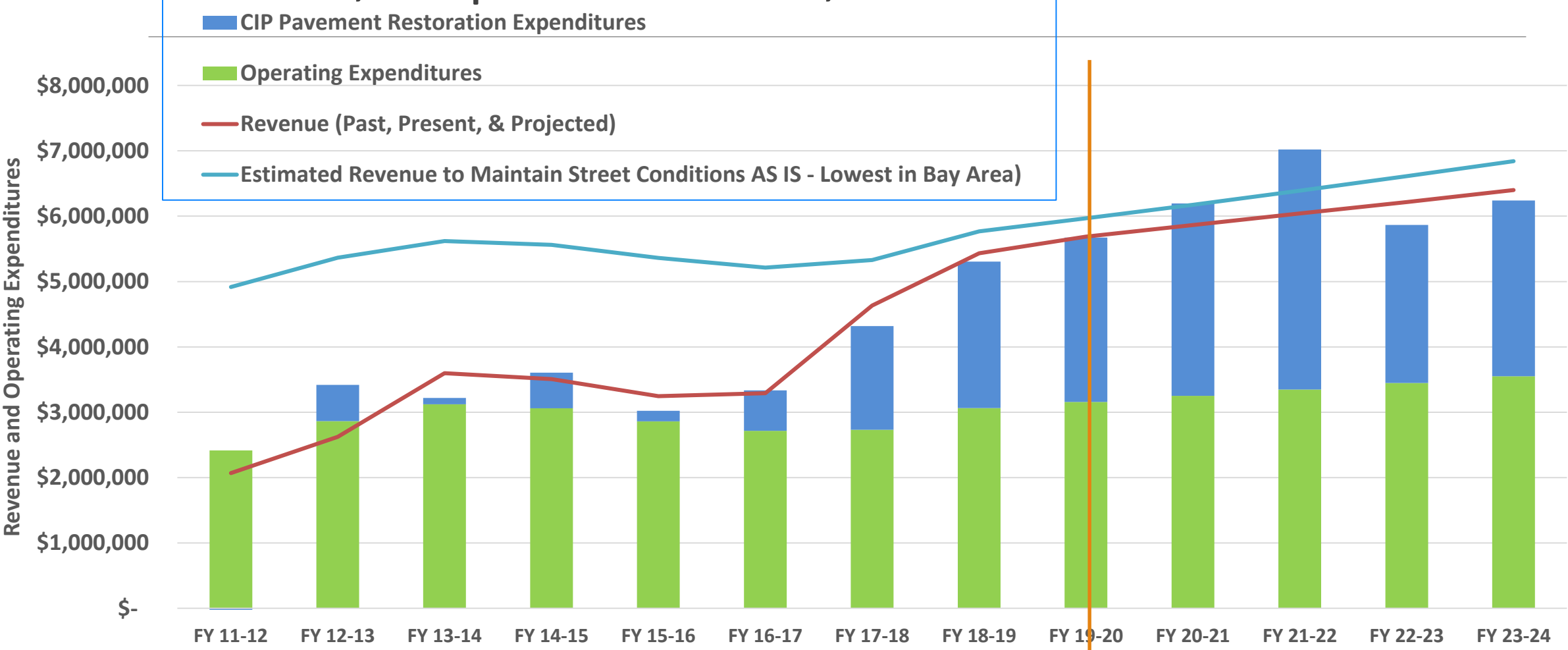
2018 – Various Streets (Street Maintenance Fund)

2019 – Sonoma Mountain Parkway (Street Maintenance Fund)

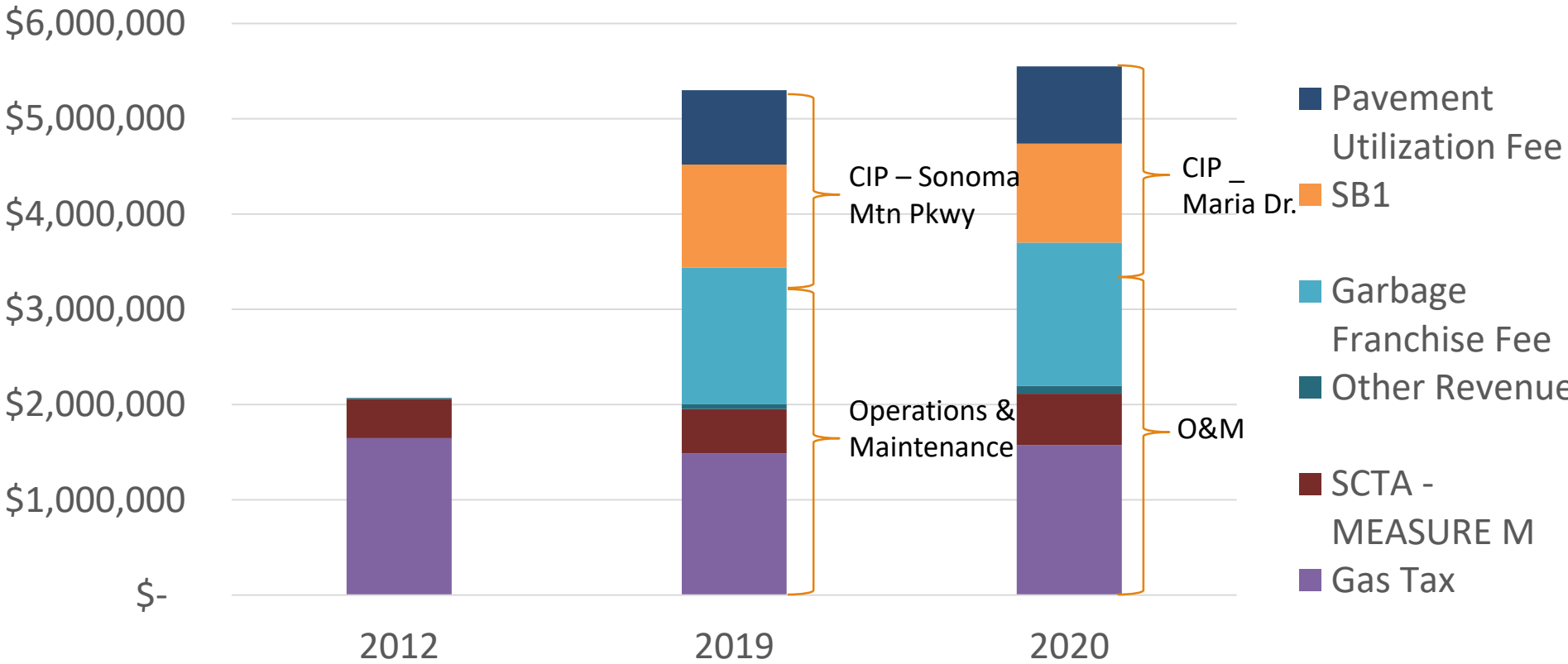
– Reynolds, Hill, Belleview, Hayes, Nob Hill Terrace (Waste Water)

# Financial Overview: A Look Ahead

## Revenues, Expenditures, and CIP

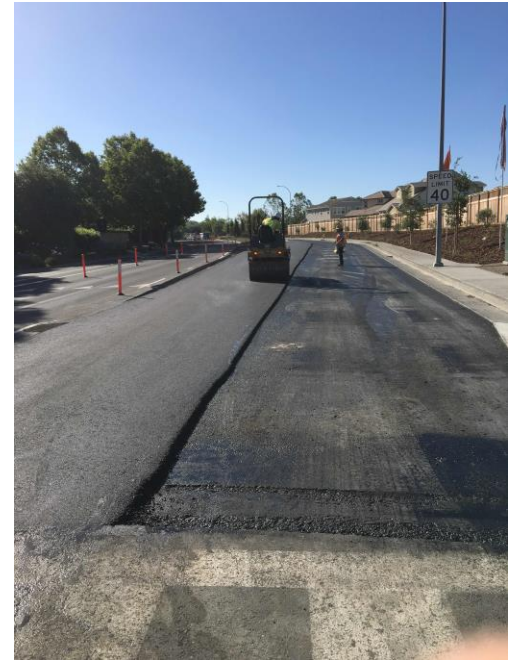


# Street Maintenance Funding- Where it comes from



# Sonoma Mountain Parkway

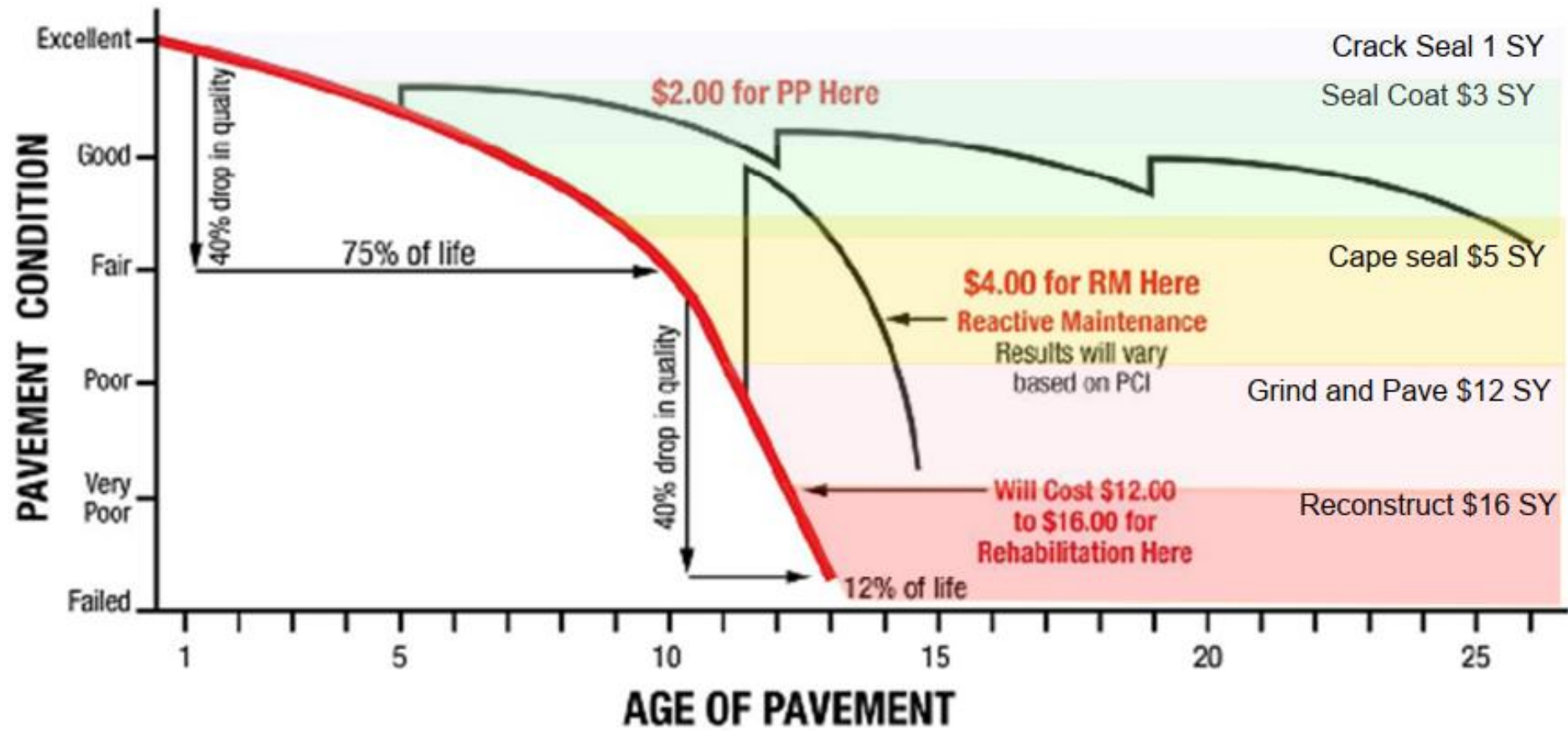
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# Maria Drive

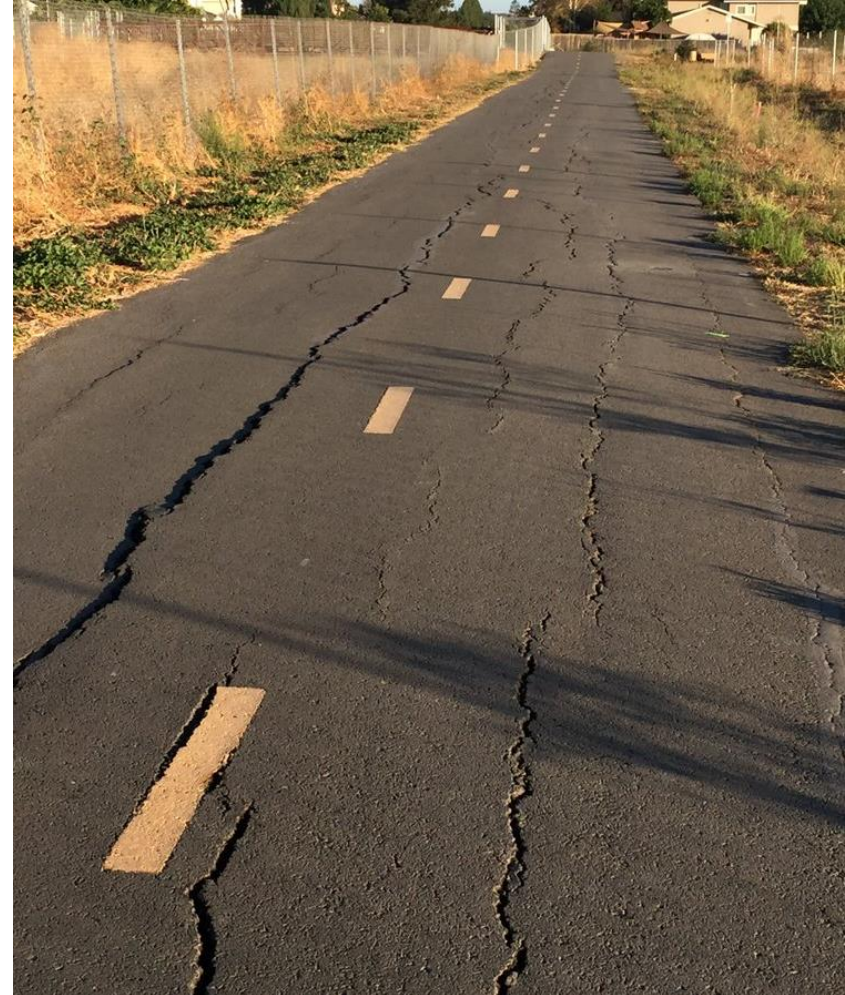


# Pavement Deterioration Curve



PP = Pavement Preservation RM = Reactive Maintenance





Petaluma's Additional Challenge – Adobe Clay Expansive Soils



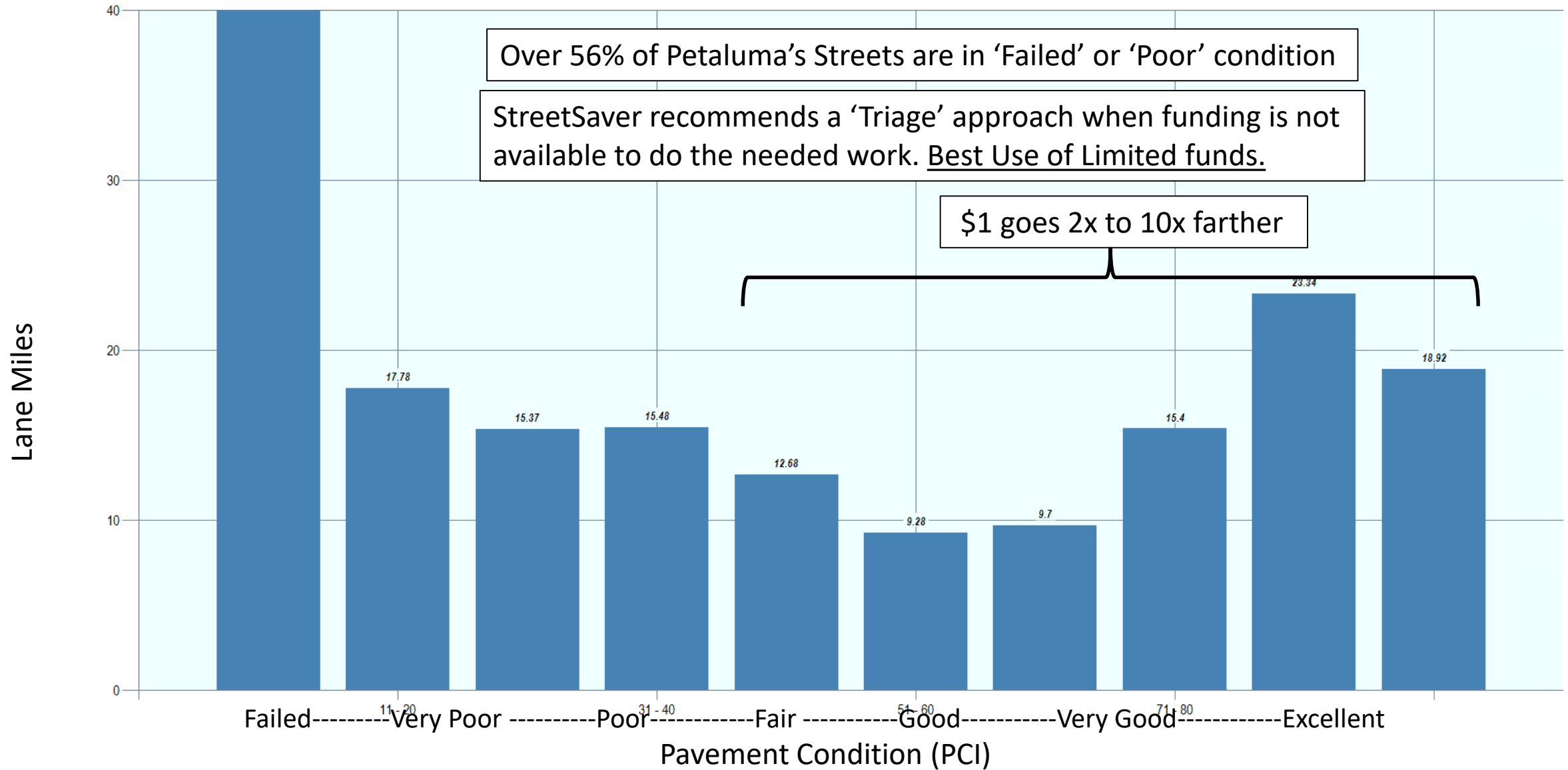
StreetSaver® Pavement Management Software



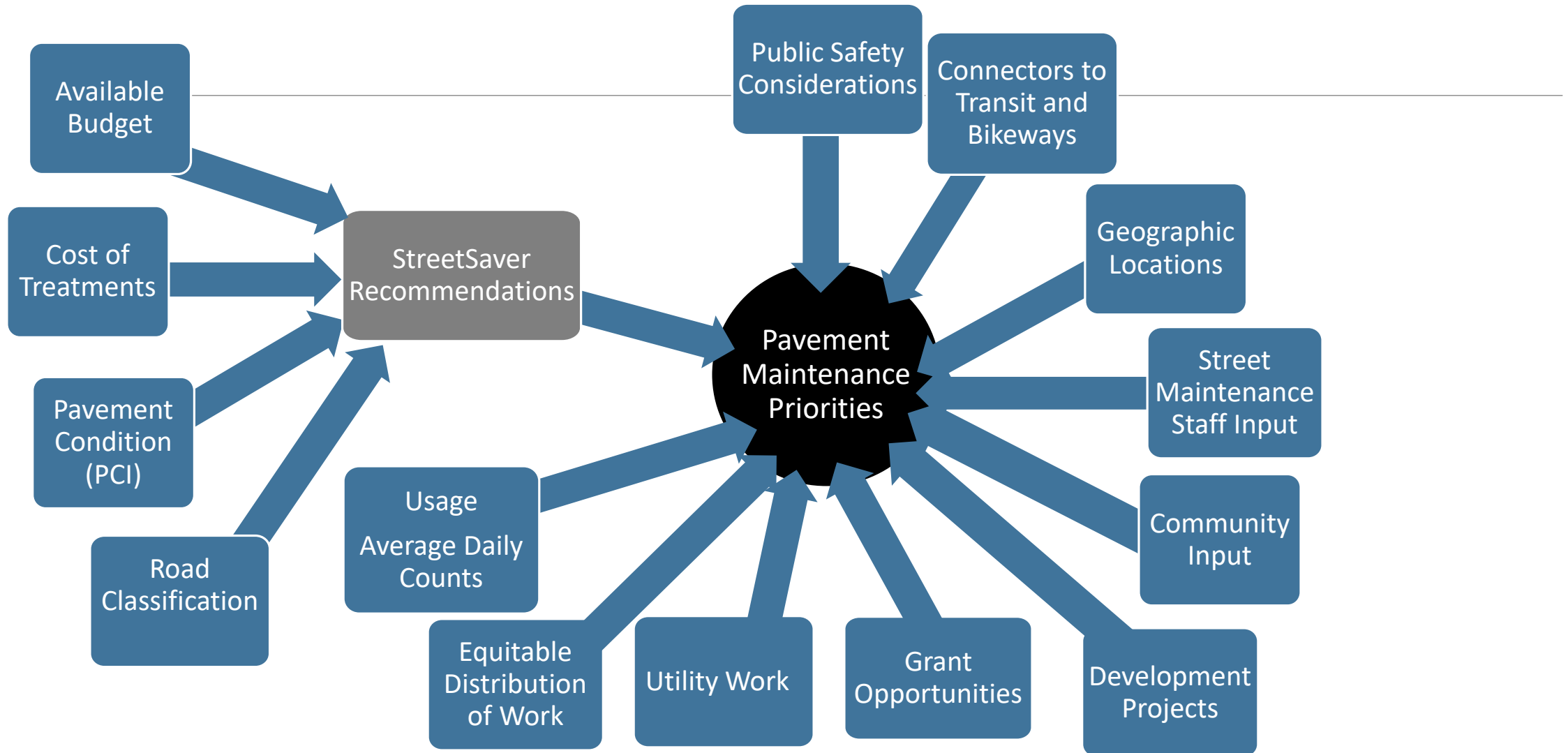
Applying the **RIGHT TREATMENT**  
to the **RIGHT PAVEMENT**  
at the **RIGHT TIME**  
using the **RIGHT MATERIALS**

**Best Use of Limited Funds to Extend Service Life of Road System**

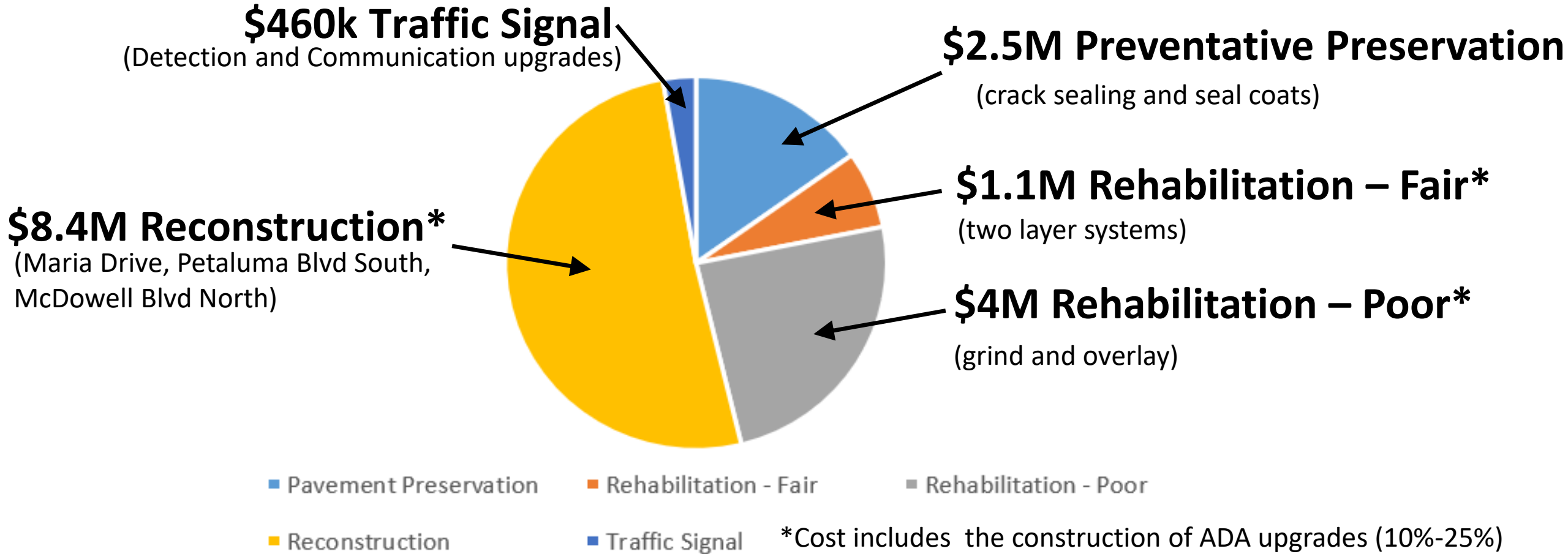
# Petaluma Street Condition by Lane Miles



# How do we Prioritize the limited funding?

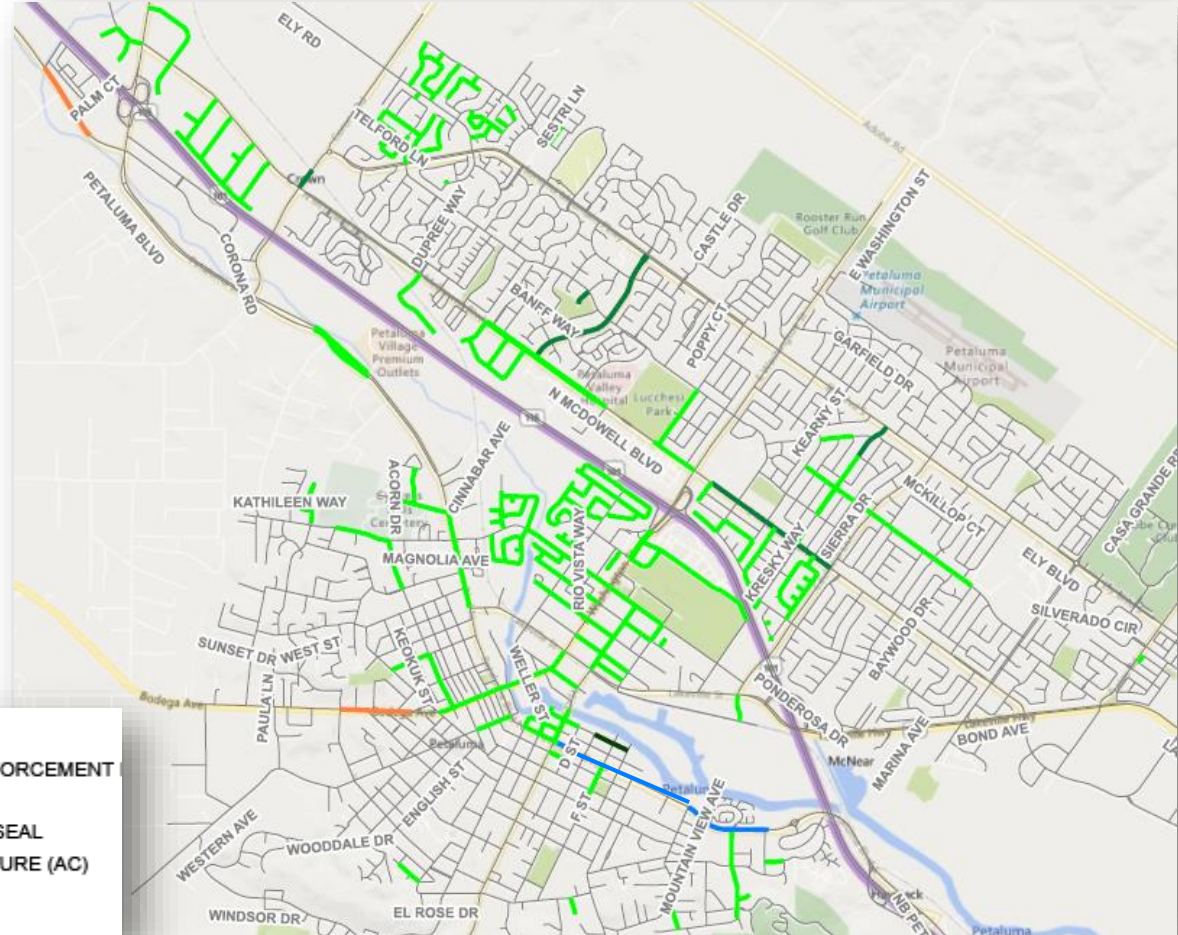
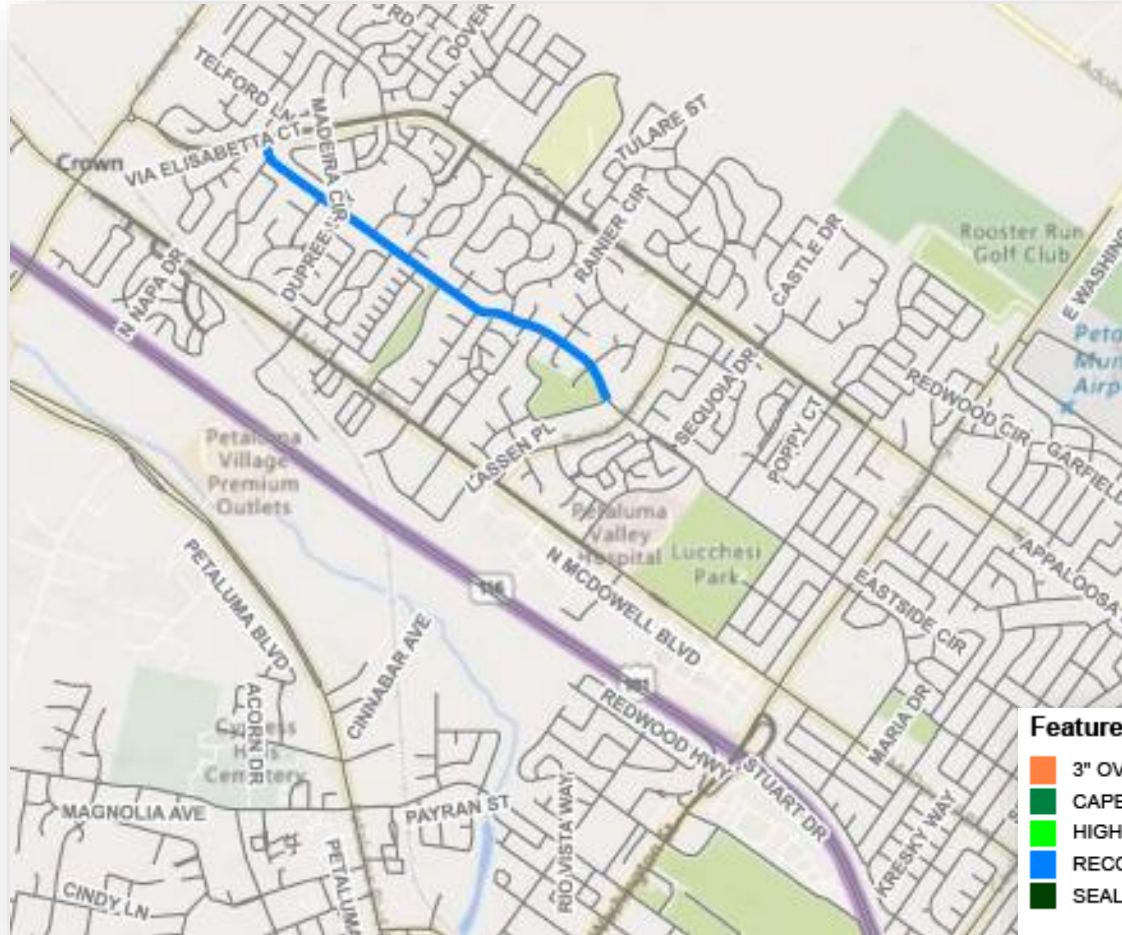


# Proposed 5 Year Plan



# Proposed Projects

FY19-20 FY20-21



**Feature Legend**

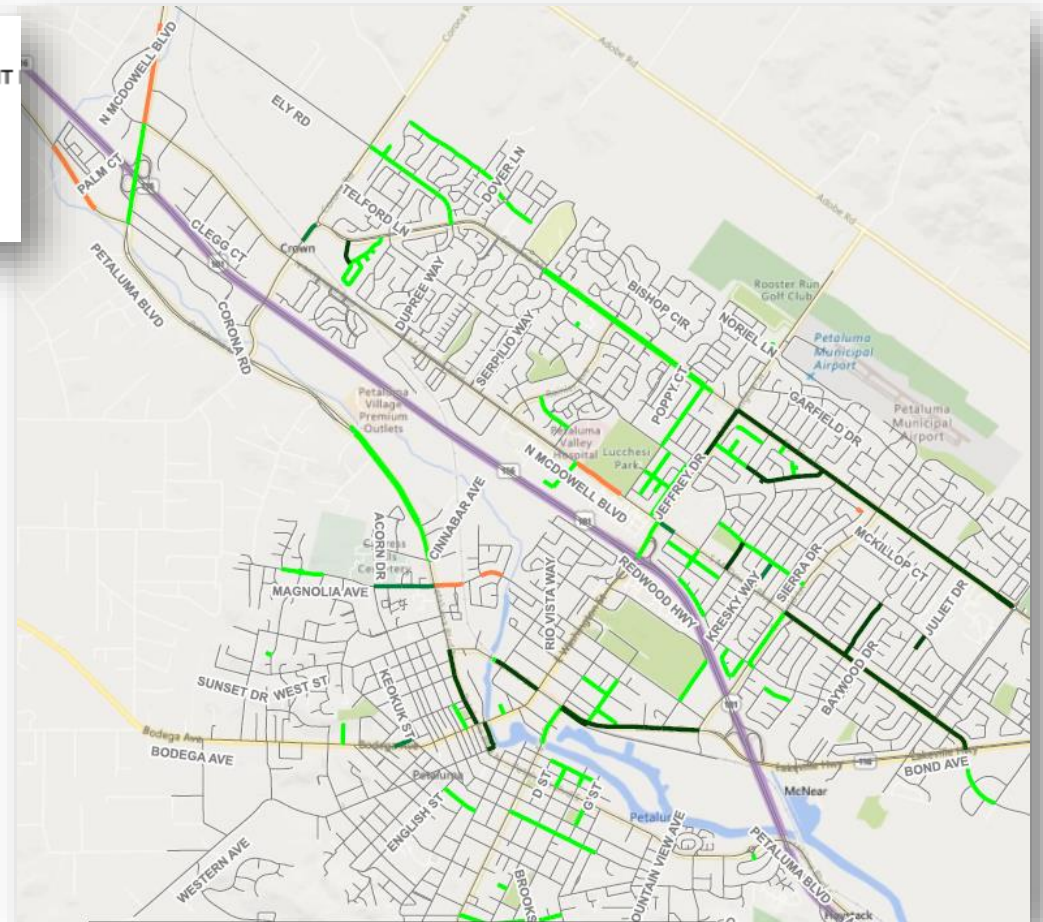
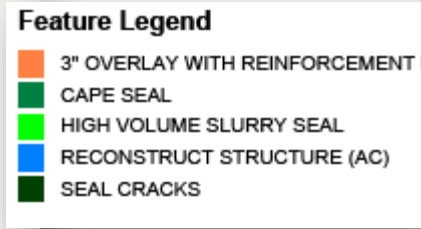
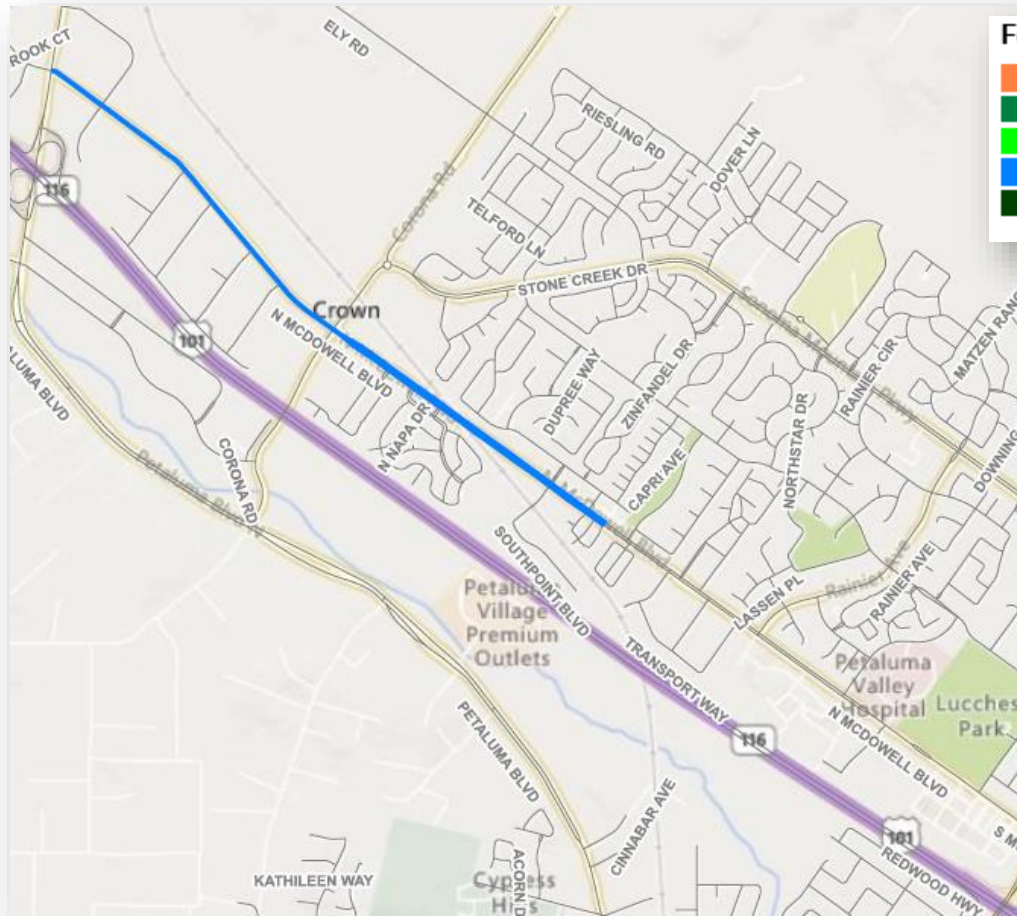
- █ 3" OVERLAY WITH REINFORCEMENT
- █ CAPE SEAL
- █ HIGH VOLUME SLURRY SEAL
- █ RECONSTRUCT STRUCTURE (AC)
- █ SEAL CRACKS

\*This list is subject to change if City's priorities change or funding is lower than expected\*

# Proposed Projects

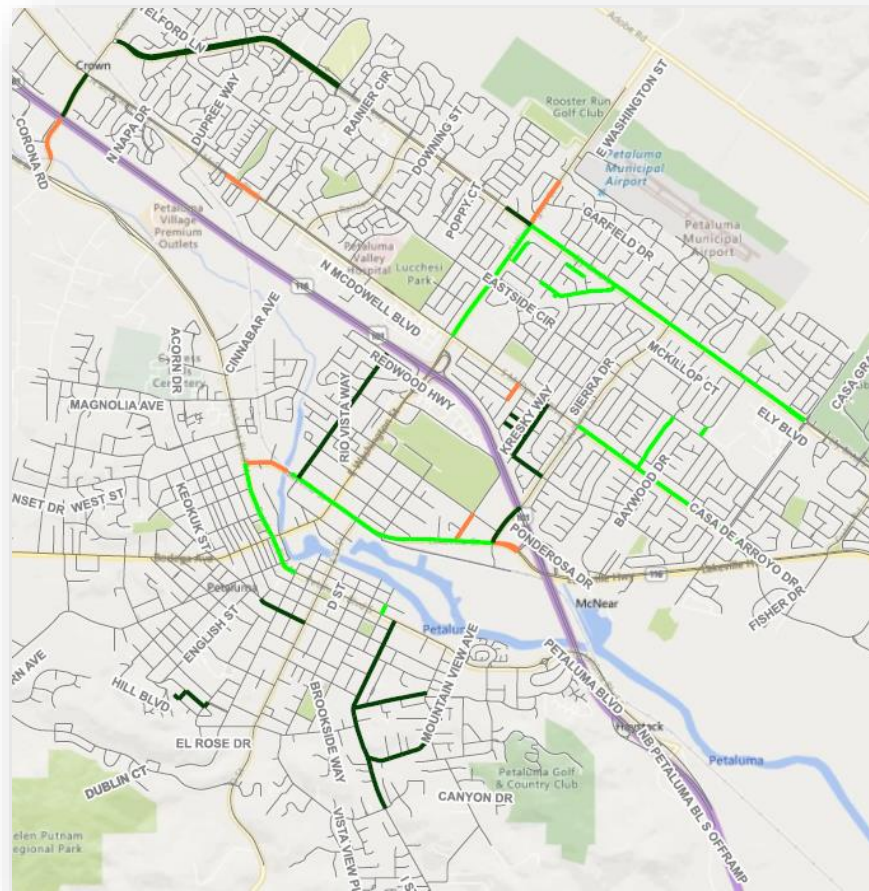
## FY22-23

## FY23-24



\*This list is subject to change if City's priorities change or funding is lower than expected\*

# Proposed Projects FY24-25



## Feature Legend

- 3" OVERLAY WITH REINFORCEMENT
- CAPE SEAL
- HIGH VOLUME SLURRY SEAL
- RECONSTRUCT STRUCTURE (AC)
- SEAL CRACKS

\*This list is subject to change if City's priorities change or funding is lower than expected\*



# Annual Planning Process

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- Winter – Mid-Year Update
- March – SB1 priority list brought to Council
- May – Budget Presentation