



# Public Works Department

**BUILDING A BETTER FRESNO**

# Public Works Department Pavement Management Update

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## Workshop Goals:

- Discuss recent storms that have resulted in more potholes and street repair needs
- Review FY23 budgeted activities and upcoming paving
- Revisit the Pavement Management Report from 2021

# Public Works Department Pavement Management Update

## Pothole management

### Average number of calls for potholes per week

- Weekly average from Jan-Dec 2022: 51 calls
- Average calls during storms: 200-300 calls
- The number of calls during January 2023: 1,648 calls

### Average number of two-person crews on pothole duty

- 4-6 crews on average days
- 6-10 crews during storm response



# Public Works Department Pavement Management Update

## Pothole management

### Pothole causes

- Water and Vehicles
  - Rainwater sinks through cracks in asphalt and is soaked up by rock, gravel and sand that supports the road
  - Vehicles passing over force water through the roadbed, eroding parts of it
  - Asphalt sinks into the eroded parts knocking pavement loose
- Any condition – a pothole can form in even the best conditions due to leaking pipes



# Public Works Department Pavement Management Update

## Pothole management

### HOW DOES A POTHOLE FORM?



Rainwater sinks through cracks in the asphalt. The water saturates the mixture of rock, gravel, and sand that supports the road.



Vehicles passing over the road force water through the saturated roadbed, eventually eroding parts of it.



Asphalt sinks into the eroded portions of the roadbed and eventually cracks under the continued impact of vehicle tires. Chunks of asphalt become loose.



Holes may be patched with cold patch or hot patch materials.



# Public Works Department Pavement Management Update

## Pothole Management

### Pothole Program Budget

- FY23 - \$725,000
- We have funding and skilled employees on the Street Maintenance team
- 311 calls, FresGO and staff observations

### Total Miles of City streets

- Roughly 1,768 miles of City streets to maintain
- \$505 million in deferred maintenance

### Pothole material used per day

- 25,000 lbs. or 12.5 tons



# Public Works Department Pavement Management Update

## FY23 Budget Highlights

### Street Maintenance

- FY23 - \$34.5 million
  - Includes Potholes, Paving, Concrete Repair, Paint and Sign Maintenance, Street Cleaning, Streetlight and Traffic Signal Maintenance

### Overlay & Paving Program

- FY23 - \$5.4 million in Street Maintenance (Resurfacing and Asphalt Repairs)
- FY23 - \$6.5 million in Capital Construction Projects for Paving

### Major Paving Projects

- Dakota Avenue – Cedar to Maple Avenues
- Kings Canyon Road – Chestnut to Maple Avenues
- Broadway Street – Olive to Belmont Avenues
- Fresno Street – Clinton to Shields Avenues
- Abby Street – Divisadero to Olive Avenue
- First Street, Ventura to Tulare
- Peach Avenue at RR Crossing south of Hamilton
- Barstow Avenue – Blackstone to Fresno Street
- Barton Avenue – Church to Florence Avenue

# Public Works Department Pavement Management Update

What does the City of Fresno own or maintain?

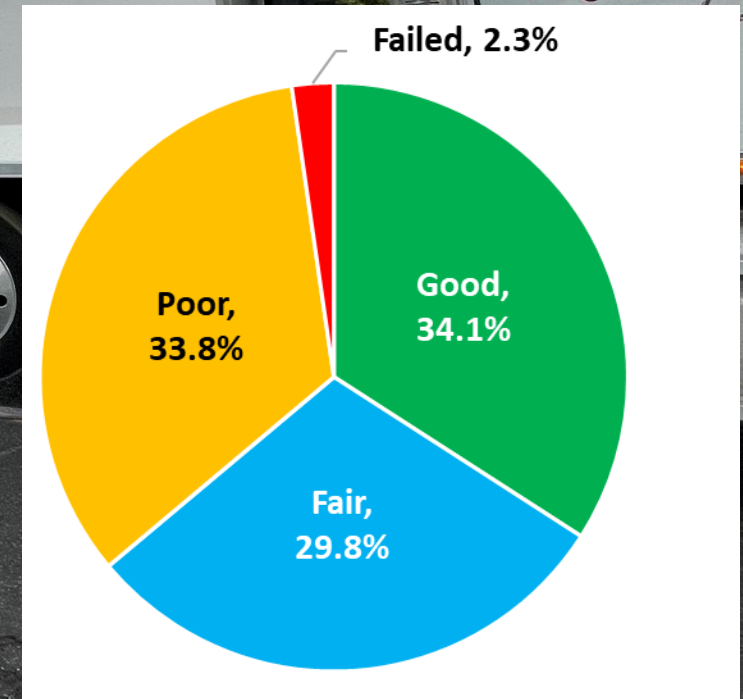
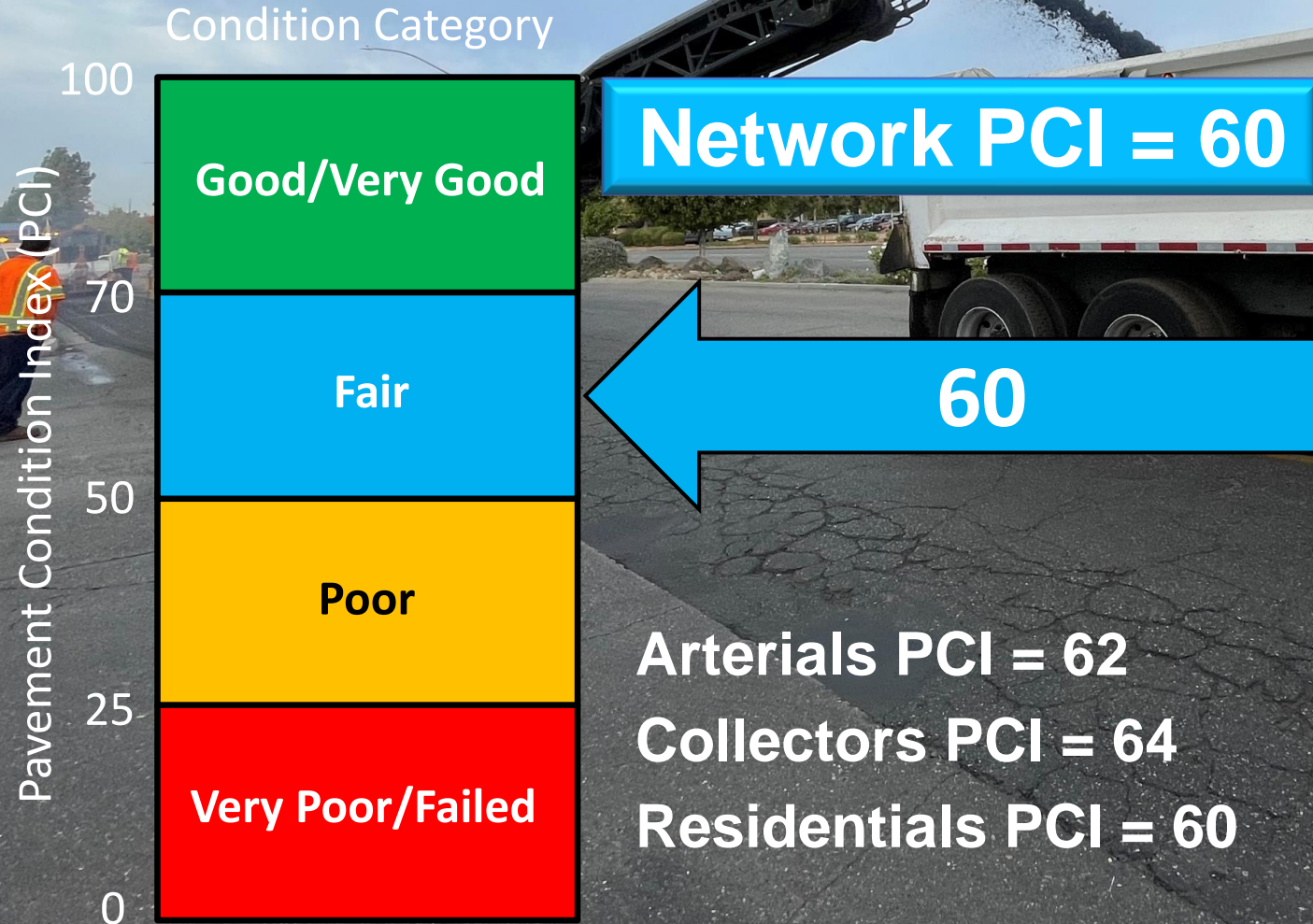
Functional Class	Centerline Miles	% of the Entire Network (by Pavement Area)
Arterials	340.7	20.9%
Collectors	209.6	15.8%
Residentials	1217.3	63.3%
<b>Total</b>	<b>1767.6</b>	<b>100%</b>

**Asset value = \$4.5 billion**



# Public Works Department Pavement Management Update

What condition are streets in?



# Public Works Department Pavement Management Update

Determining the level of street conditions



Good/Very Good

Network  
PCI = 90  
No  
Treatment  
Needed

# Public Works Department Pavement Management Update

Determining the level of street conditions



**Network  
PCI = 75  
Treatment is  
crack and  
slurry seal**

# Public Works Department Pavement Management Update

Determining the level of street conditions



**Network  
PCI = 60  
Treatment  
Is Base  
repairs and  
overlay**

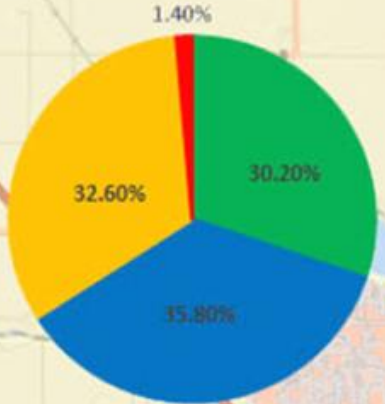
# Public Works Department Pavement Management Update

Determining the level of street conditions



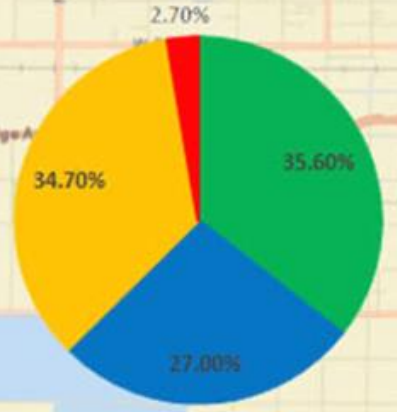
**Network  
PCI = 20**  
Treatment is  
surface  
reconstruction

PCI: 59  
North Fresno



■ PCI >= 70 ■ 50 <= PCI < 70 ■ 25 <= PCI < 50 ■ PCI < 25

PCI: 60  
South Fresno

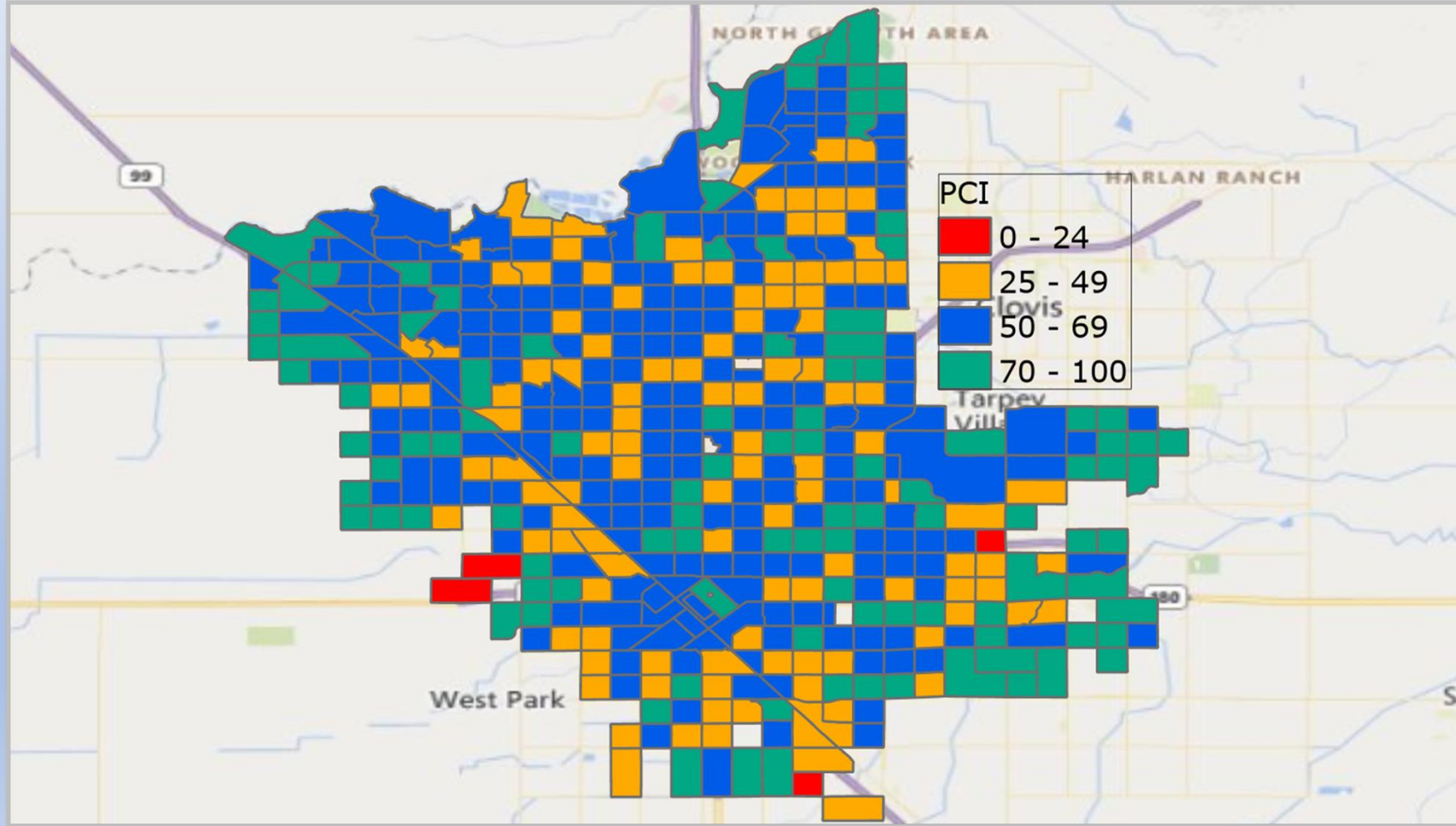


■ PCI >= 70 ■ 50 <= PCI < 70 ■ 25 <= PCI < 50 ■ PCI < 25

Shaw Avenue

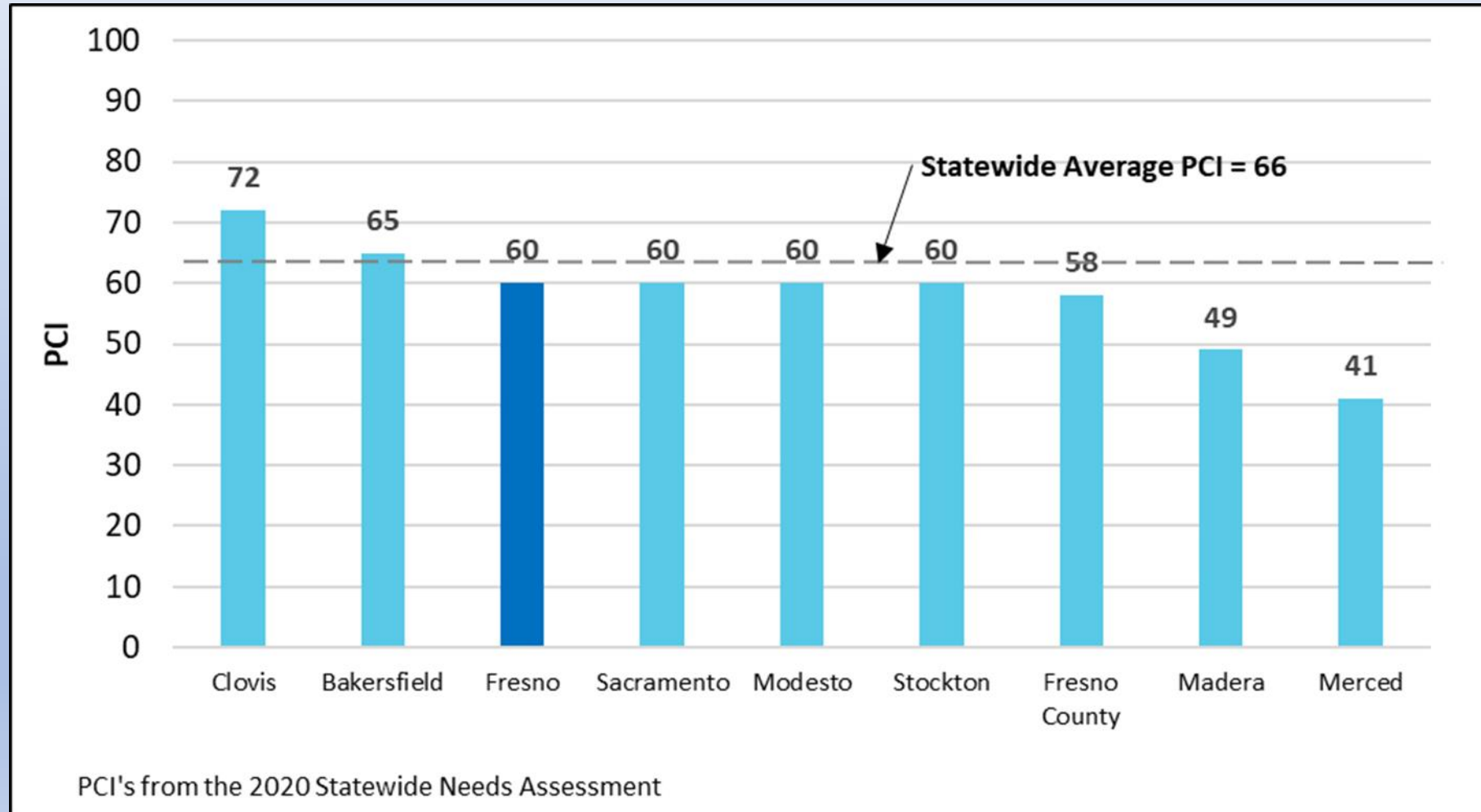
# Public Works Department Pavement Management Update

## Street conditions area overview



# Public Works Department Pavement Management Update

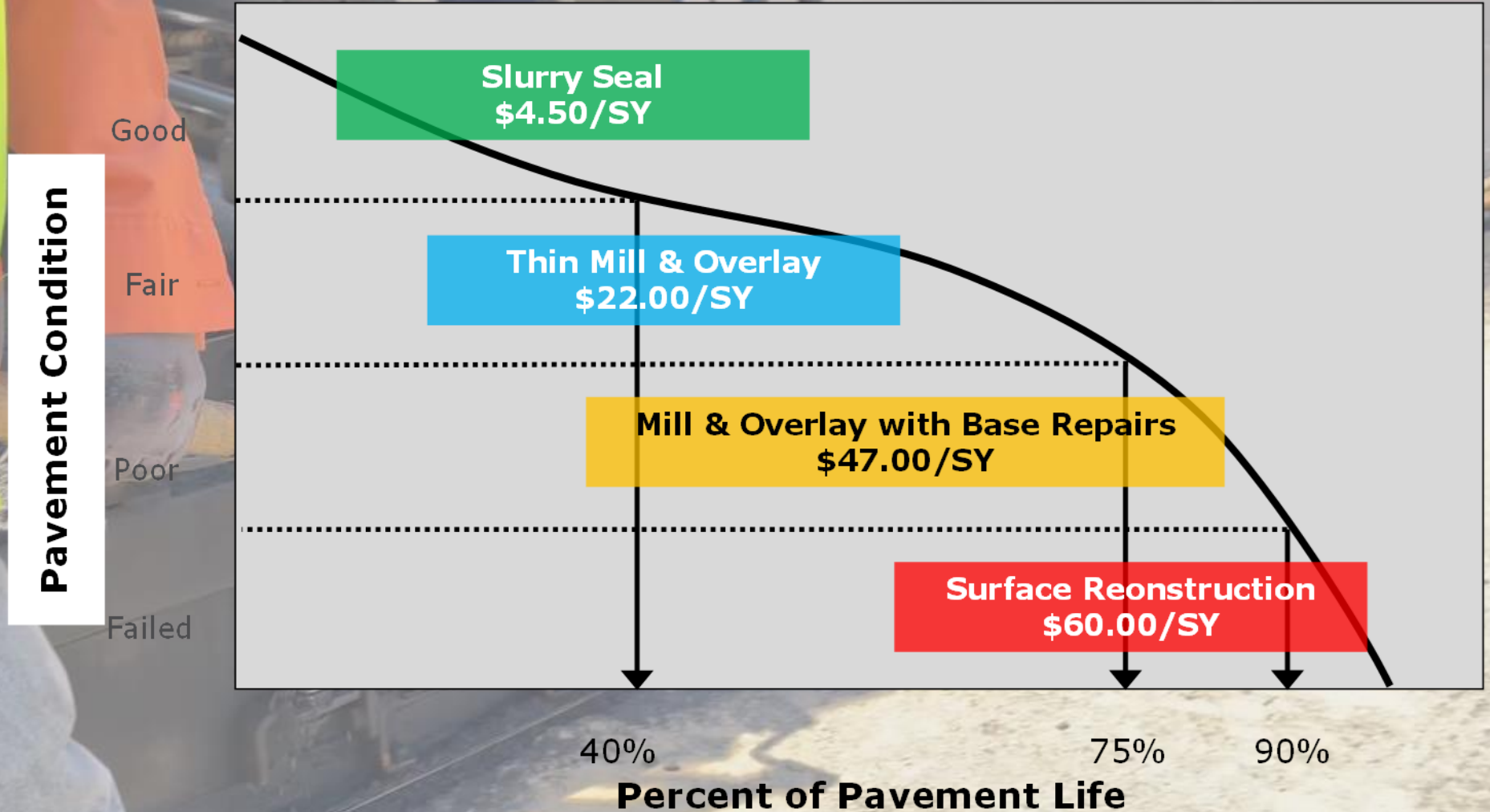
## How does Fresno compare to other cities?





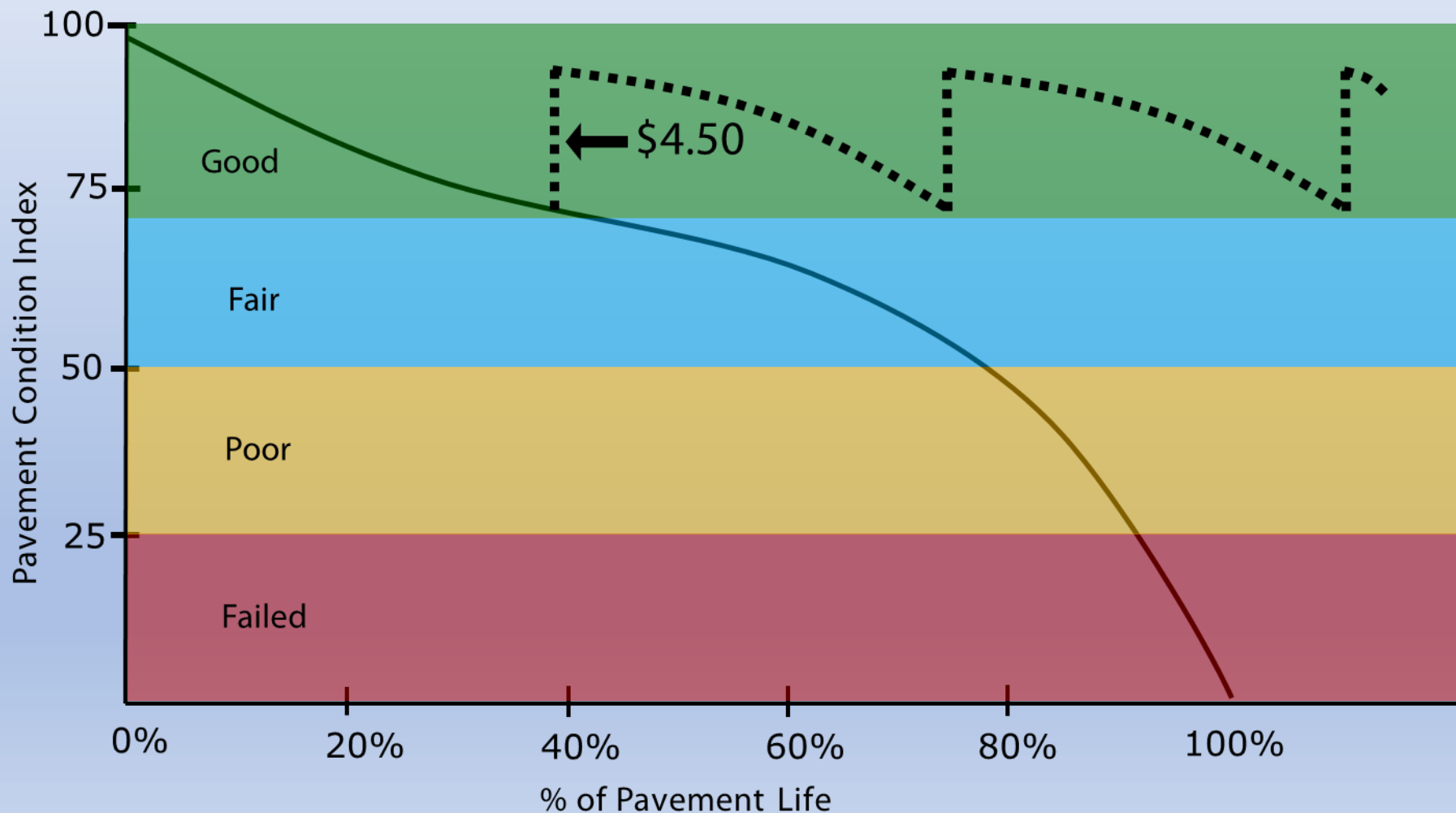
# Public Works Department Pavement Management Update

Good roads cost less to maintain



# Public Works Department Pavement Management Update

What is the importance of preventative maintenance?



Residents experience a higher level of service & City saves money

# Public Works Department Pavement Management Update

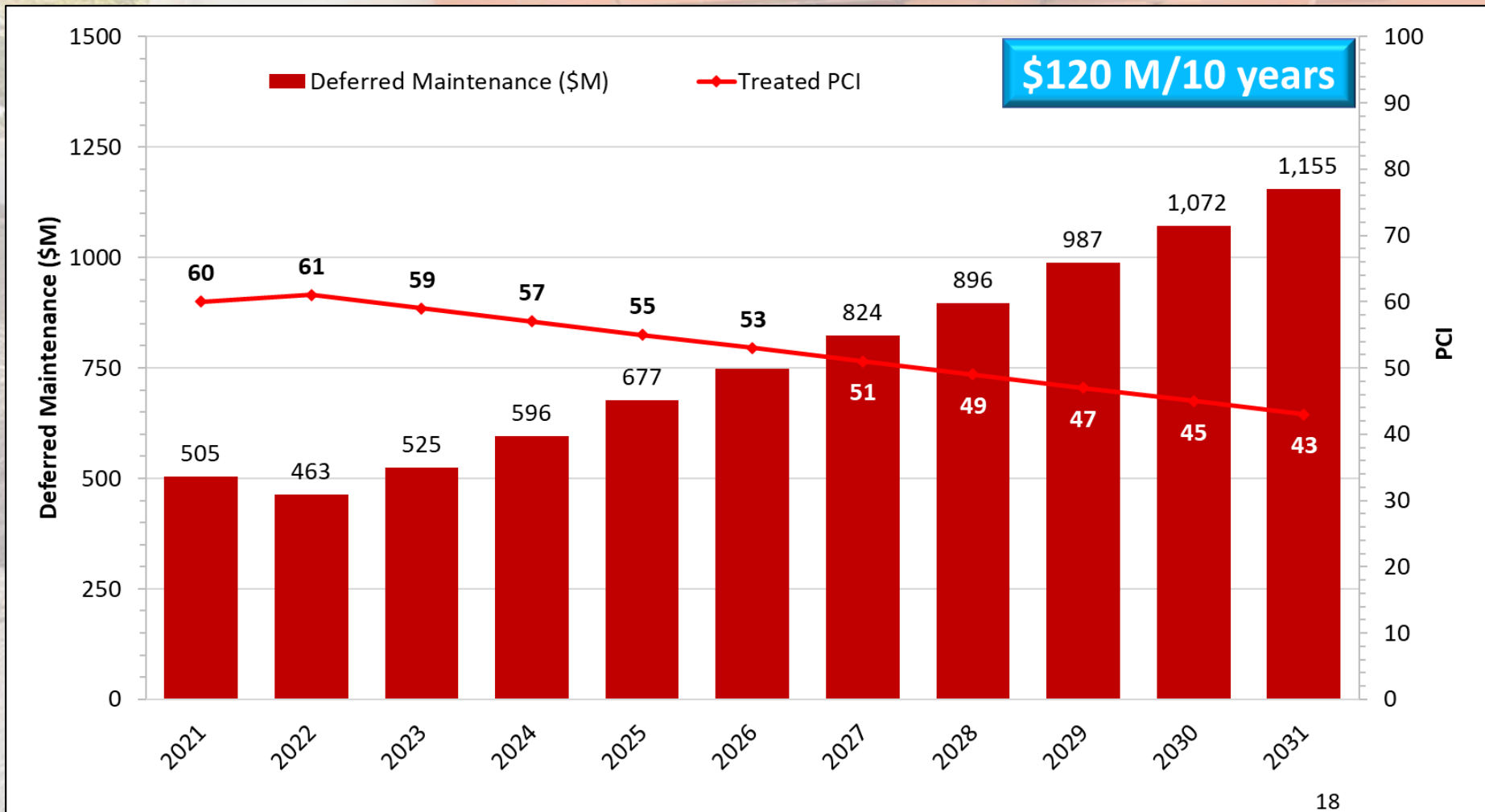
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## What are the funding sources?

- Scenario 1: City's Existing Funding (\$12 M/year)
- Scenario 2: Maintain PCI at 60
- Scenario 3: Improve PCI by Functional Class
  - Arterials/Collectors PCI → 70
  - Residential PCI → 65

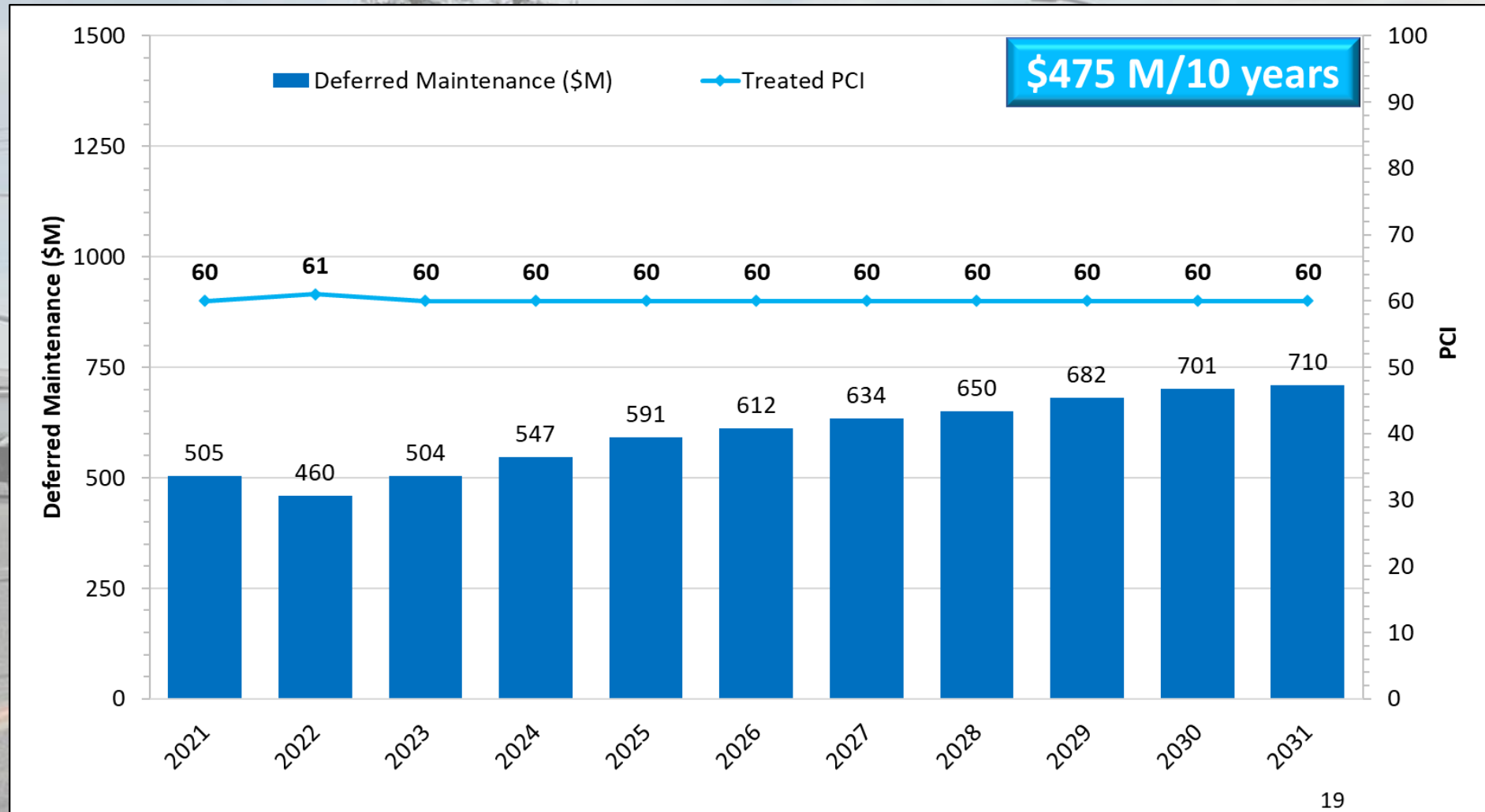
# Public Works Department Pavement Management Update

## The City of Fresno's existing funding



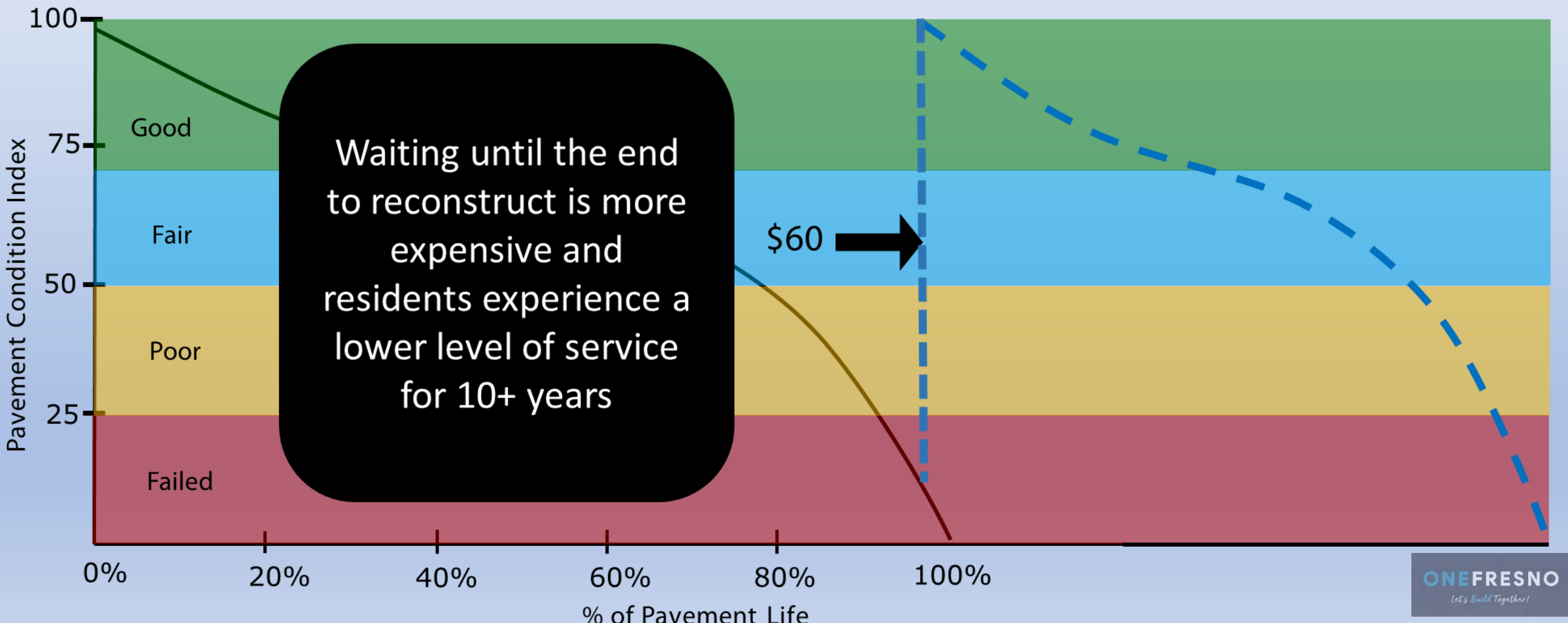
# Public Works Department Pavement Management Update

## Maintaining 60 PCI



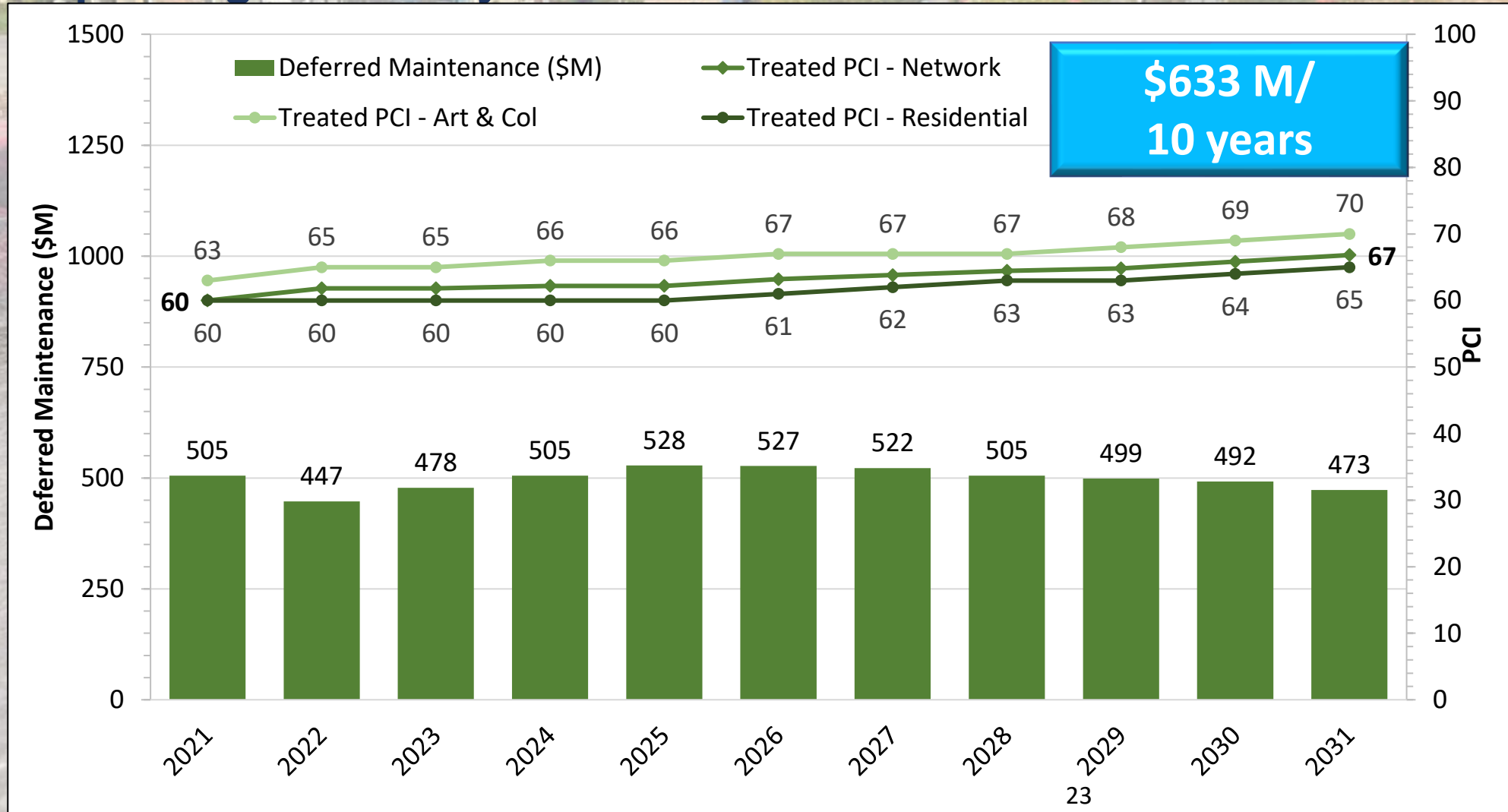
# Public Works Department Pavement Management Update

## Why is reconstruction not as cost effective?



# Public Works Department Pavement Management Update

## Improving the PCI by functional class

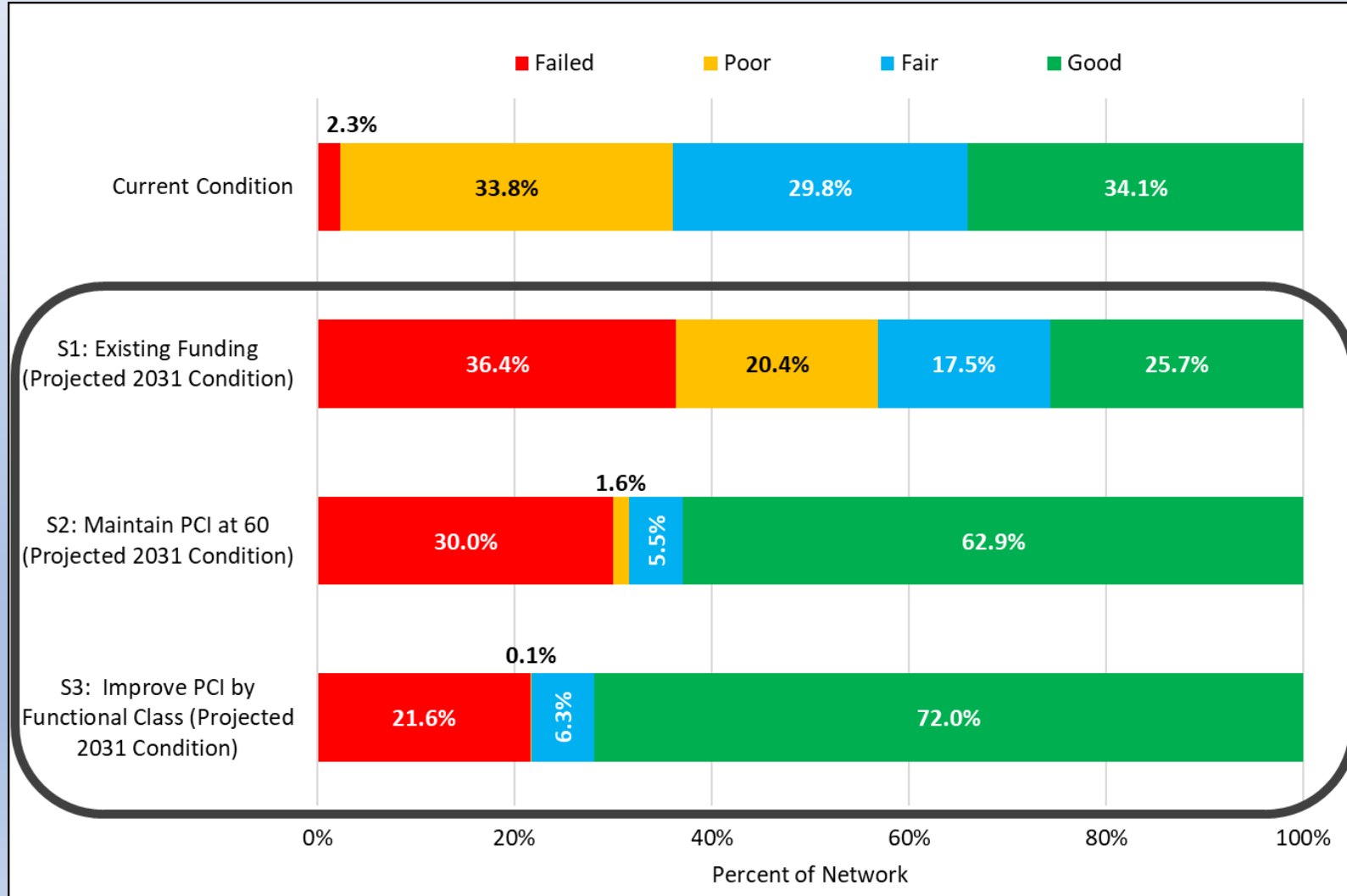


# Public Works Department Pavement Management Update

## Network condition breakdown

Today →

Future  
2031  
Projections →



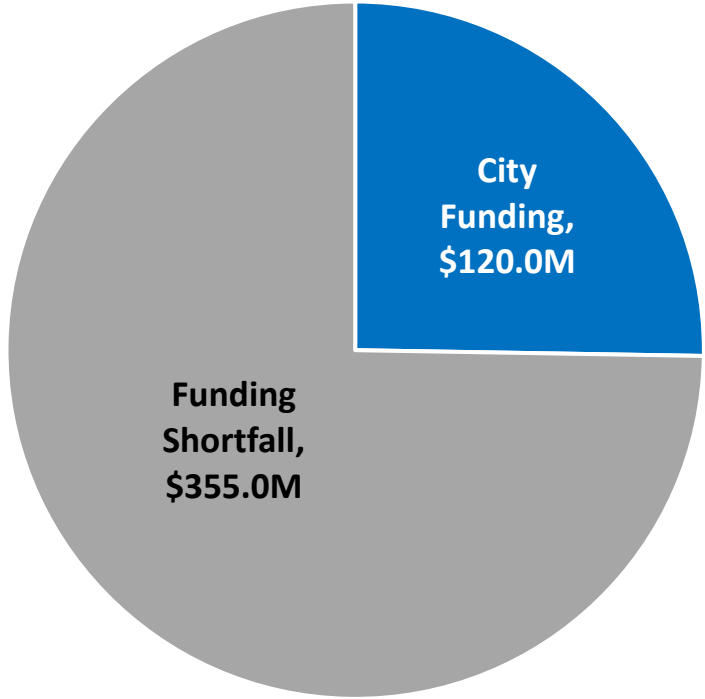


# Public Works Department Pavement Management Update

## 10-Year Funding Shortfall

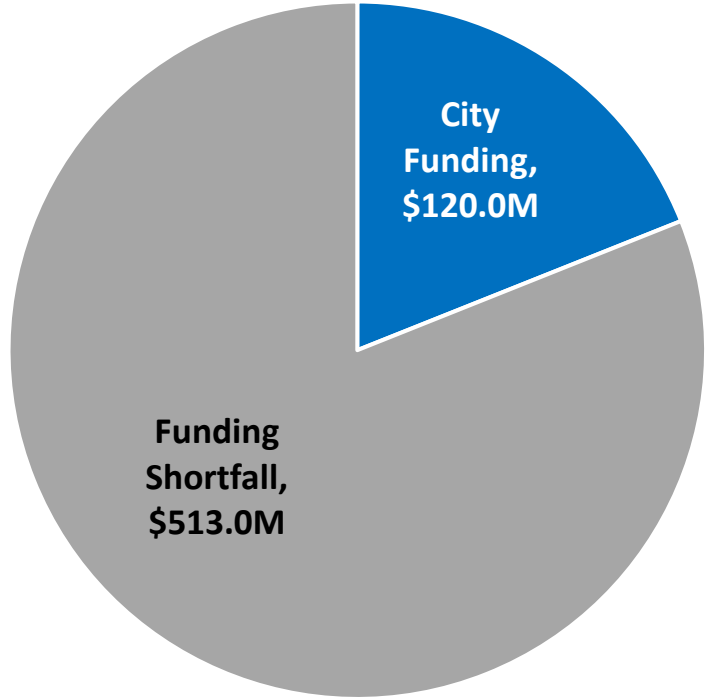
Scenario 2:

Maintain PCI at 60



Scenario 3:

Improve PCI by Functional Class



# Public Works Department Pavement Management Update

## Paving Conclusion

- City has a substantial investment in the street network (\$4.5 Billion)
- Network is in “**Fair**” condition with a **PCI of 60**
- **Existing average budget (\$12 M/year) is insufficient**
  - PCI will deteriorate to 43
  - Deferred maintenance will double to \$1,155 Million
  - 56.8% of network will be in “Poor” or “Failed” condition by 2031



PUBLIC WORKS