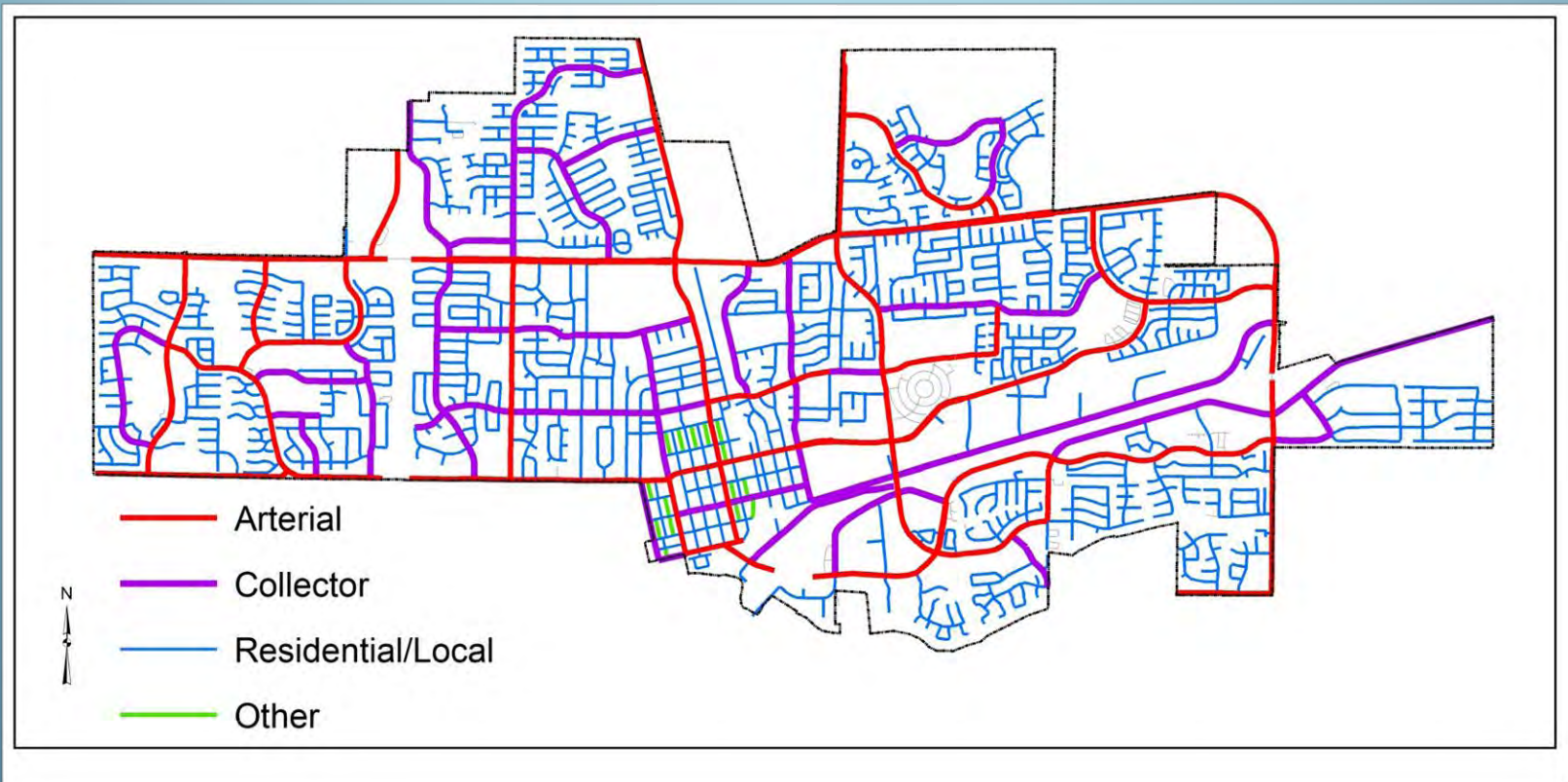


# City of Davis Pavement Management Program



# Davis Street and Bike Path System

- 163 centerline miles of streets (33 million square feet)
  - 34.6 miles of arterials 21%
  - 22.8 miles of collectors 14%
  - 103.9 miles of local streets 64%
- 52 miles of bike paths (3 million square feet)

# Pavement Management Consultant

- City conducted competitive selection process
  - 6 proposals received
  - 3 firms interviewed
- Entered into agreement with Nichols Consulting Engineers in August 2012
  - Surveyed all City streets and bike paths in fall 2012
  - Prepared three budget scenarios
  - Report will be posted on PW webpage


# Pavement Condition Index (PCI)

- Definition: Method of quantifying pavement condition
- Score from 0 to 100
  - Score of 100 given to a newly paved street or path

# Pavement Condition Index (PCI)

- Average PCI of Davis streets = 62
- Average PCI of bike paths = 59

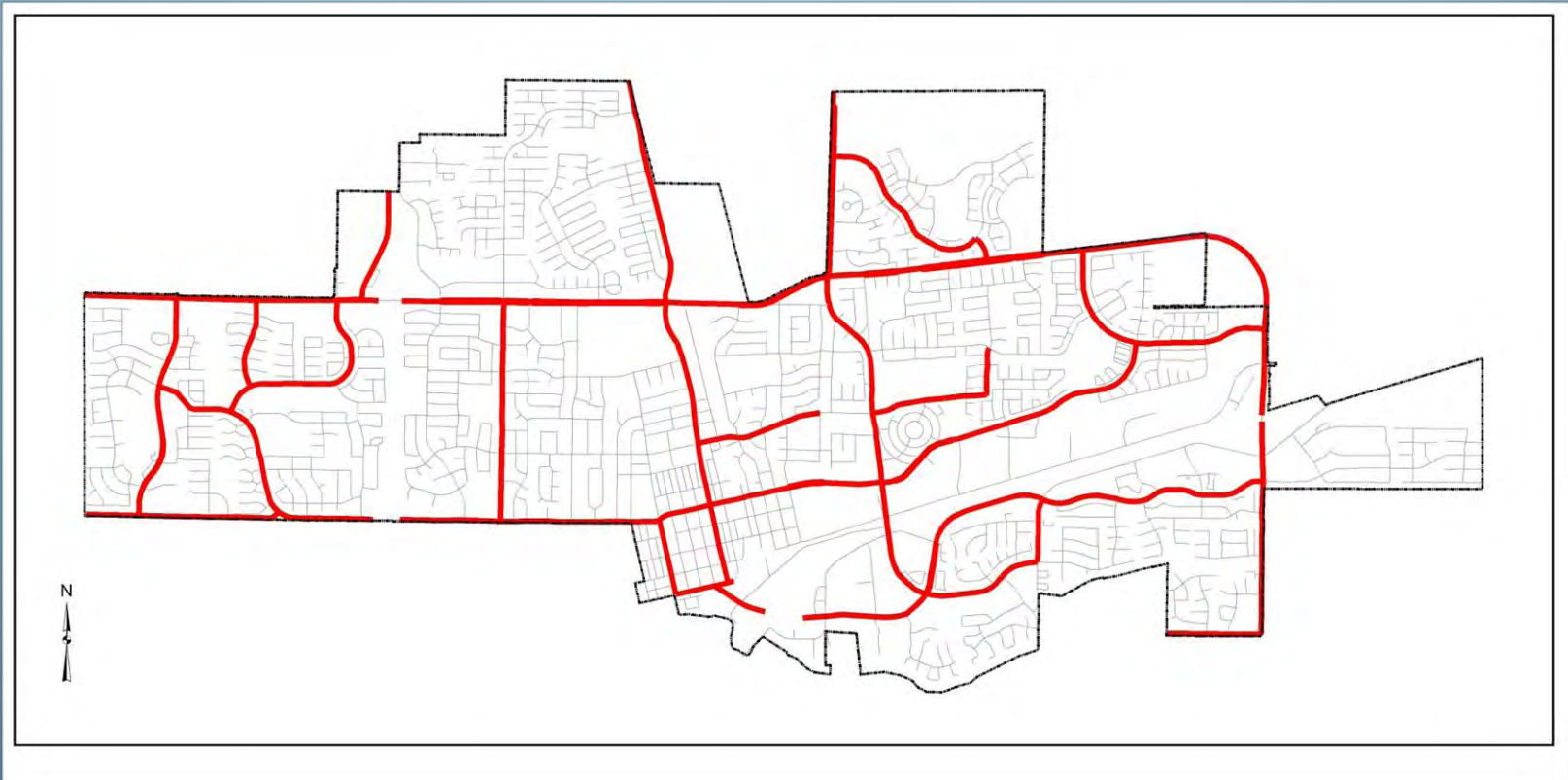
Condition Category	Pavement Condition	PCI Category
I	Very Good	100
II/III	Good	70
IV	Poor	50
V	Failed	25
		0



Courtesy of NCE

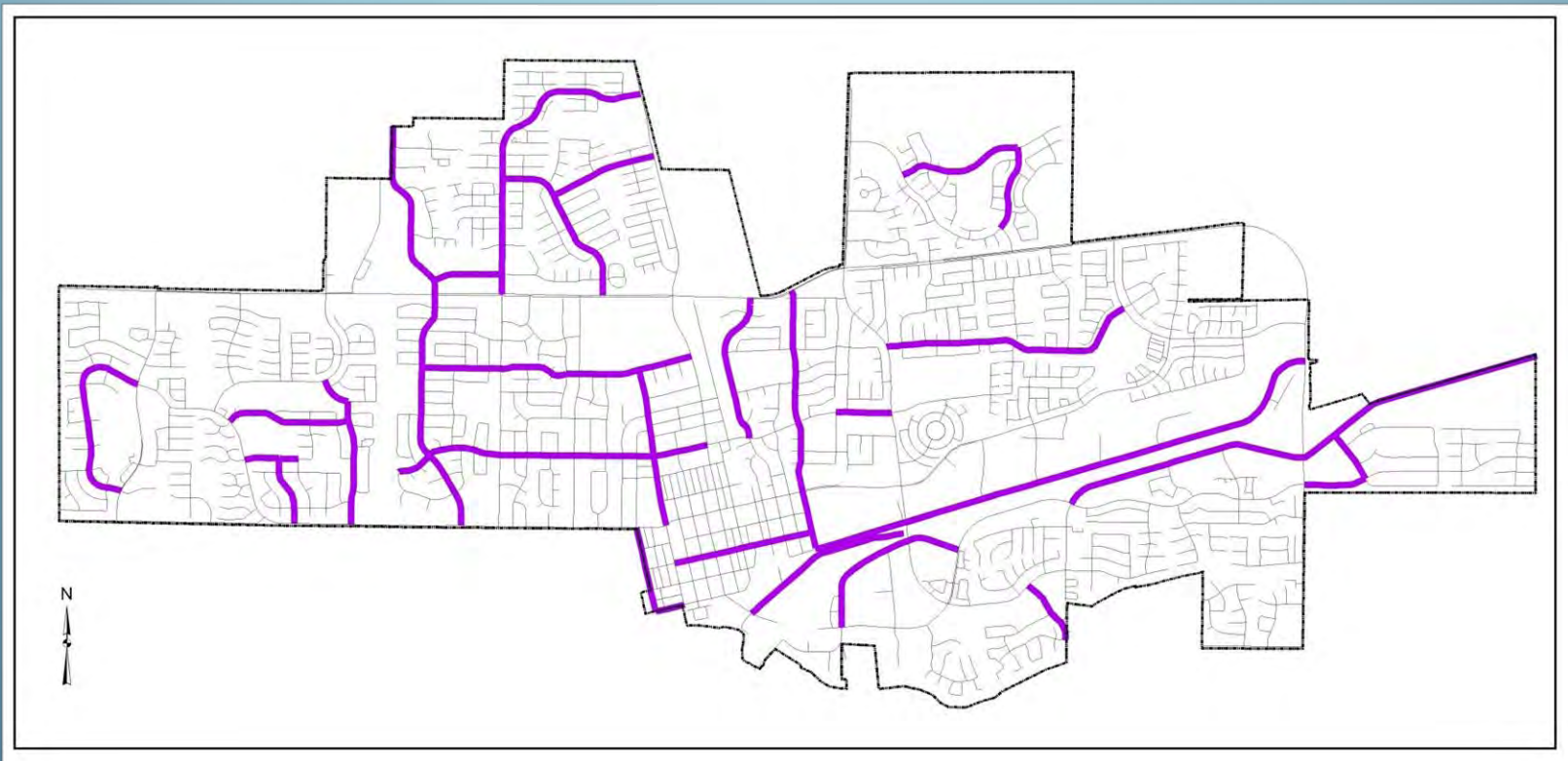
# Arterials

Functional Class / Category	Centerline Miles	Average PCI
Arterials	34.6	63



# Collectors

Functional Class / Category	Centerline Miles	Average PCI
Collectors	22.8	60



# Local Streets

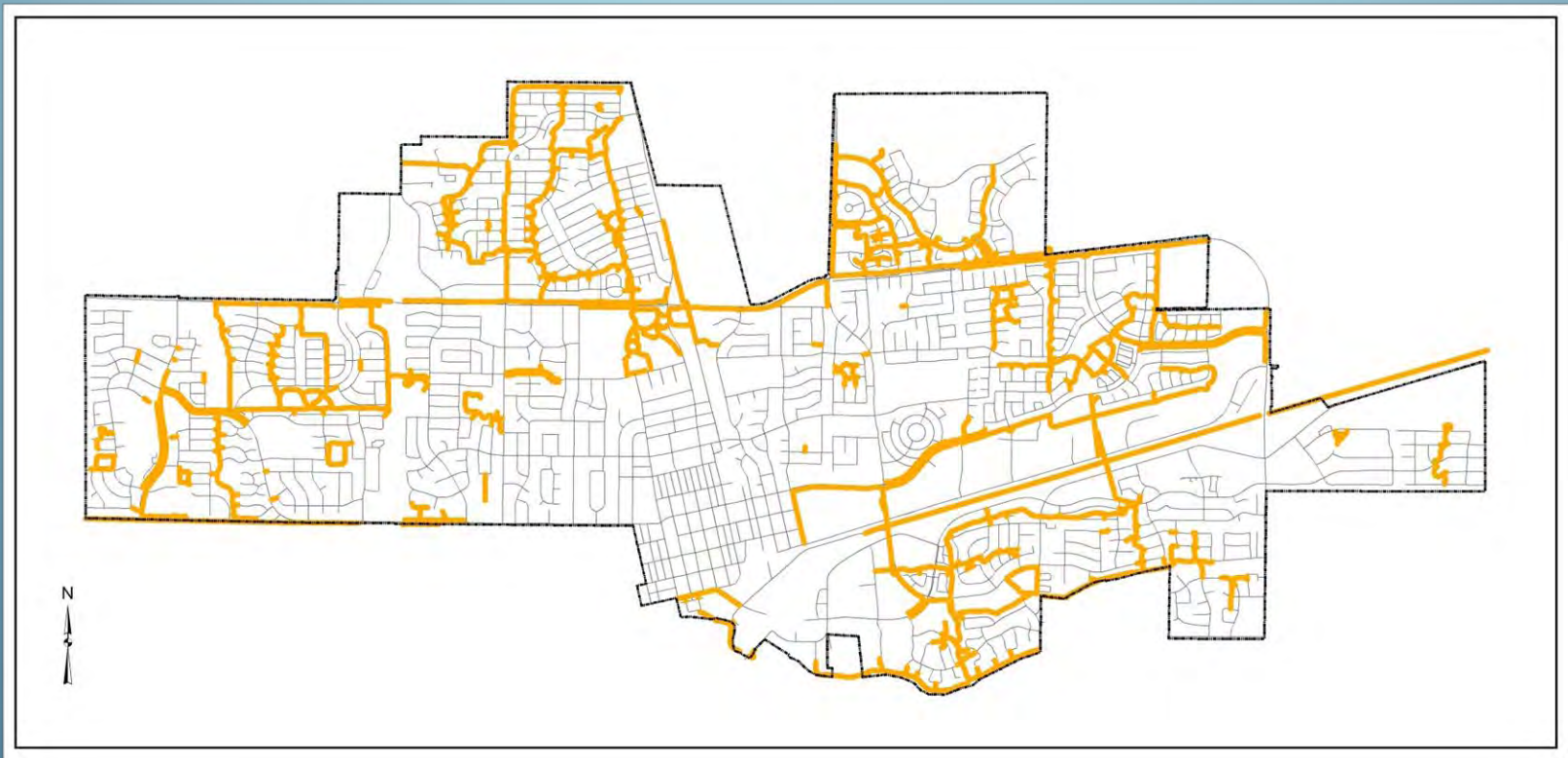
Functional Class / Category	Centerline Miles	Average PCI
Local	103.9	62





# Bike Paths

Functional Class / Category	Centerline Miles	Average PCI
Bike Paths	51.7	59



# Summary

Functional Class / Category	Centerline Miles	Average PCI
Arterials	34.6	63
Collectors	22.8	60
Local	103.9	62
Average Street		62
Bike Paths	51.7	59



# City of Davis

## “State of the Pavements”

Margot Yapp, P.E.  
Nichols Consulting Engineers, Chtd.  
February 5th, 2013

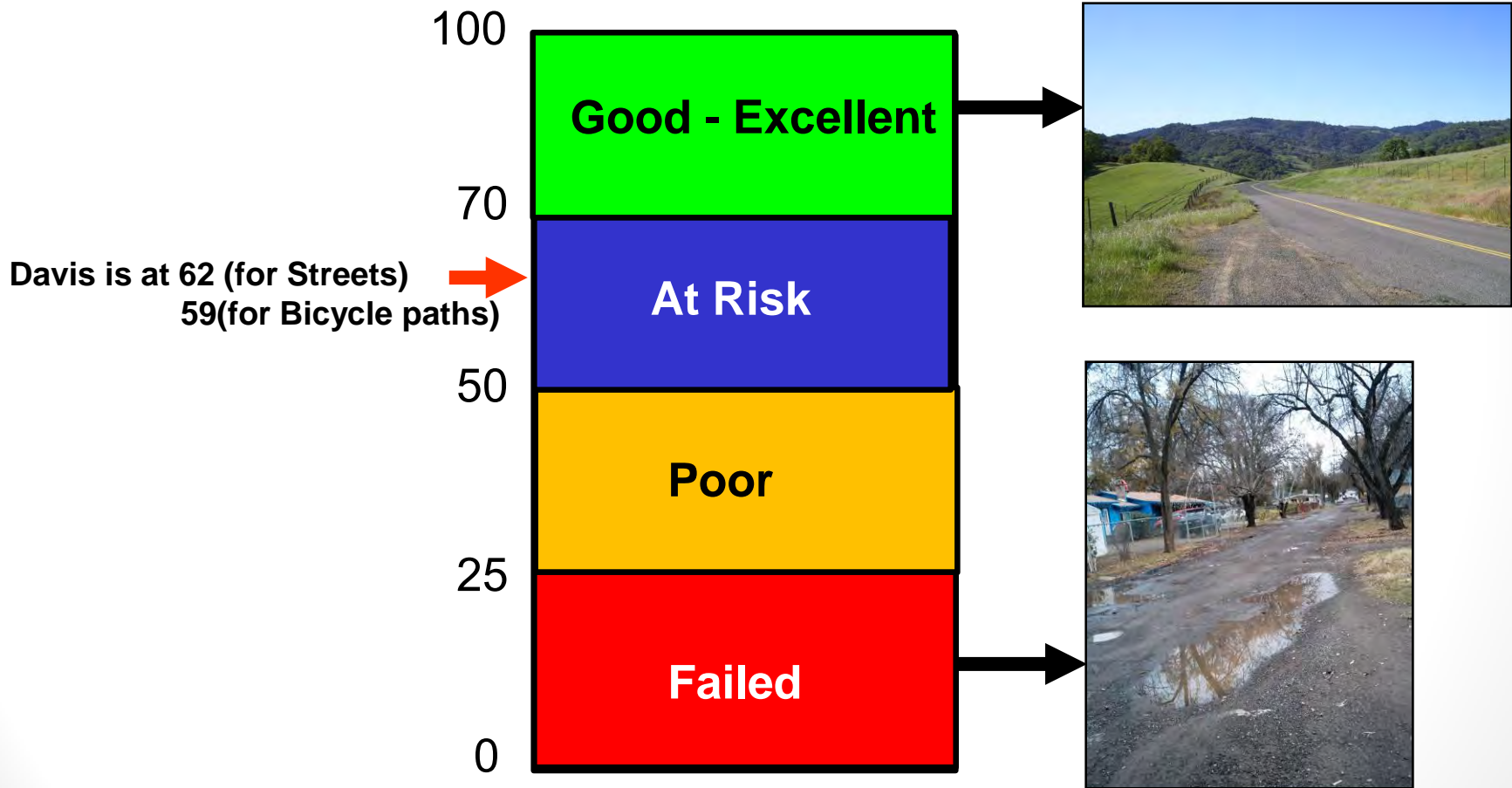


# What is a Pavement Management Program?

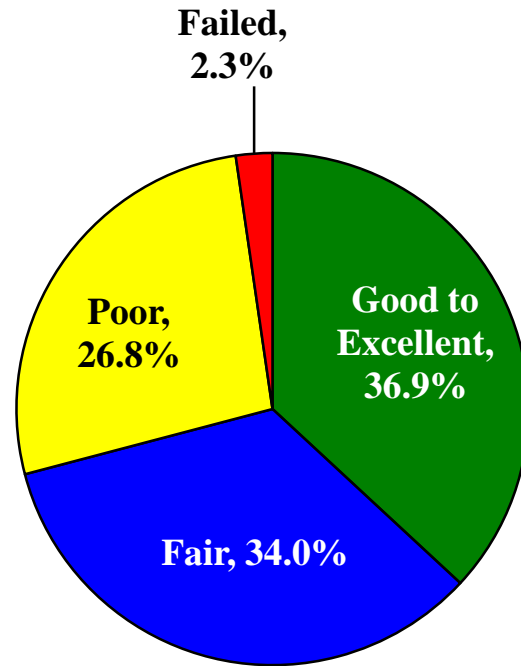
- A tool to assist Cities make cost-effective decisions
- Answers 4 main questions:
  - What does Davis have in the street & bike network?
  - What condition is it in?
  - What repairs are needed and when?
  - How much money is required to maintain or improve streets/bike paths cost-effectively?
- StreetSaver® software



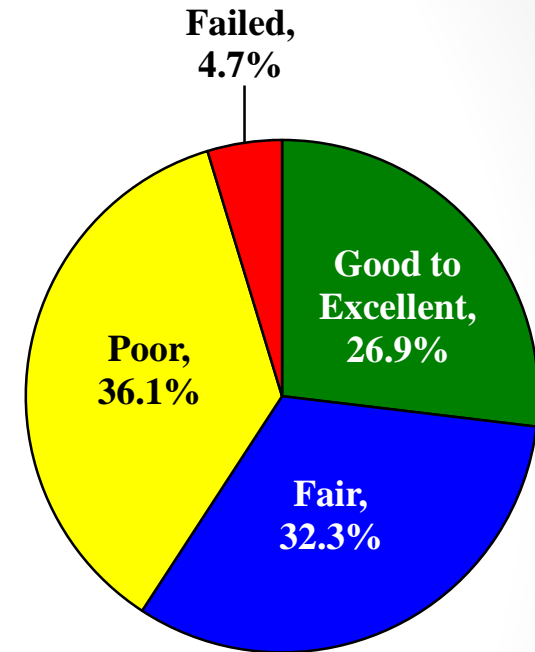
# How is Condition Measured?







# Current PCI condition- 2012



Street Network



Bicycle Paths

-  Good (71-100)
-  At Risk (55-70)
-  Poor (25-54)
-  Failed (0-24)



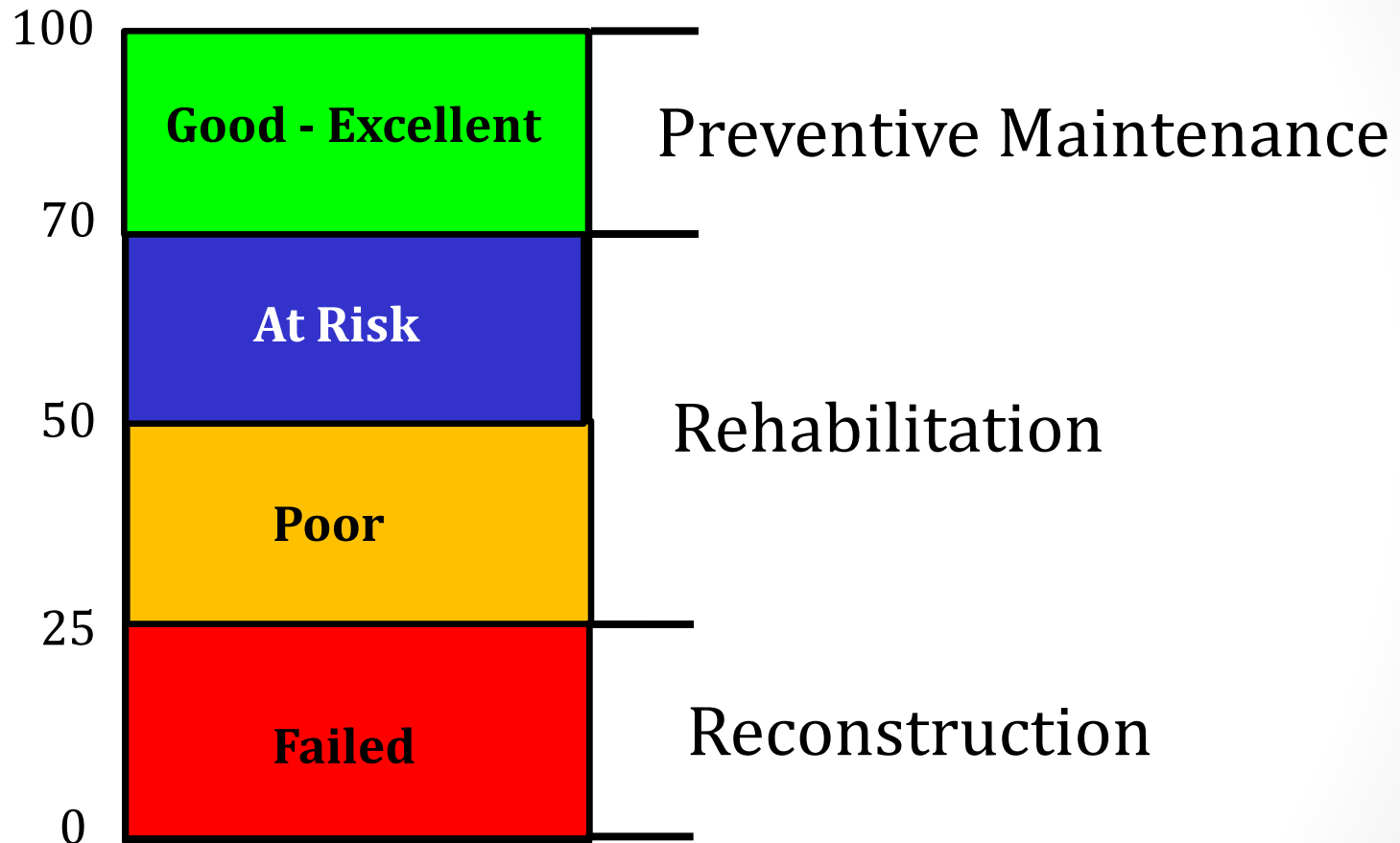
# “Right” Treatment Depends on . . .

- Existing pavement
  - Distresses, structure, drainage, etc.
- Environment
  - Climate, traffic, etc.
- Life cycle costs
  - Initial, maintenance, rehab & downtime costs, service life, etc.
- Locally available treatments
  - Materials, contractors, quality, performance, costs, etc.





# Types of Treatments



# Preventive Maintenance Treatments

Crack Seal



Fog Seal



Slurry Seal



Scrub Seal



Chip Seal



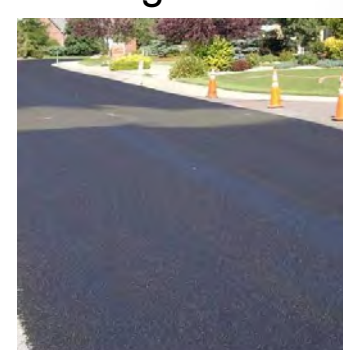
Cape Seal



Micro-Surfacing



Ultrathin Bonded Wearing Surface



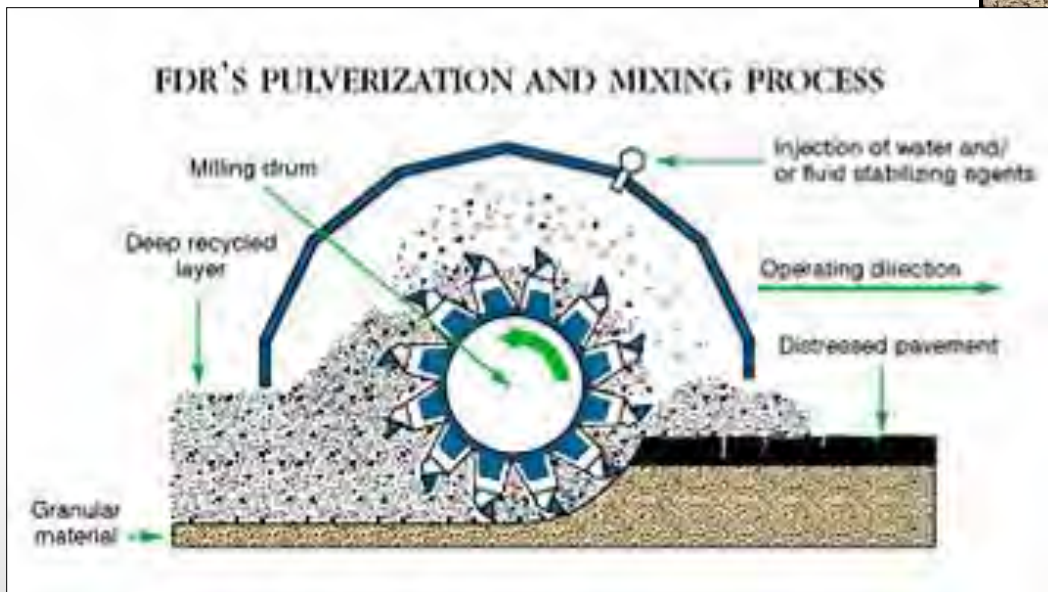
# Rehabilitation

- AC overlays
  - Rubberized AC
  - Warm mix asphalt
- Mill and fill
- Cold in place recycling
- Recycle AC at plant

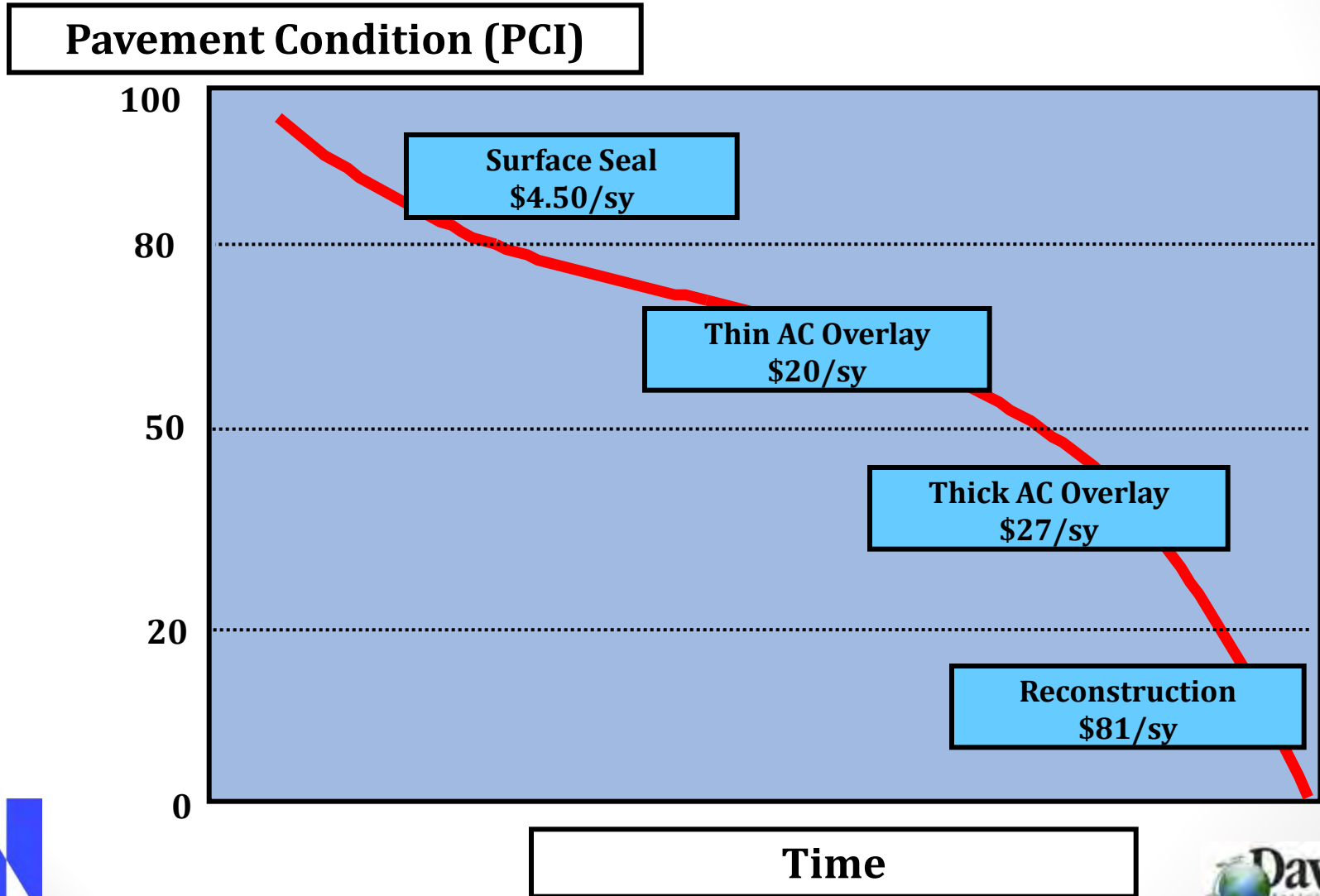


# Reconstruction

- Remove and replace
- Full depth reclamation (FDR)
- Perpetual pavements



# “Pay Now or Pay More Later”

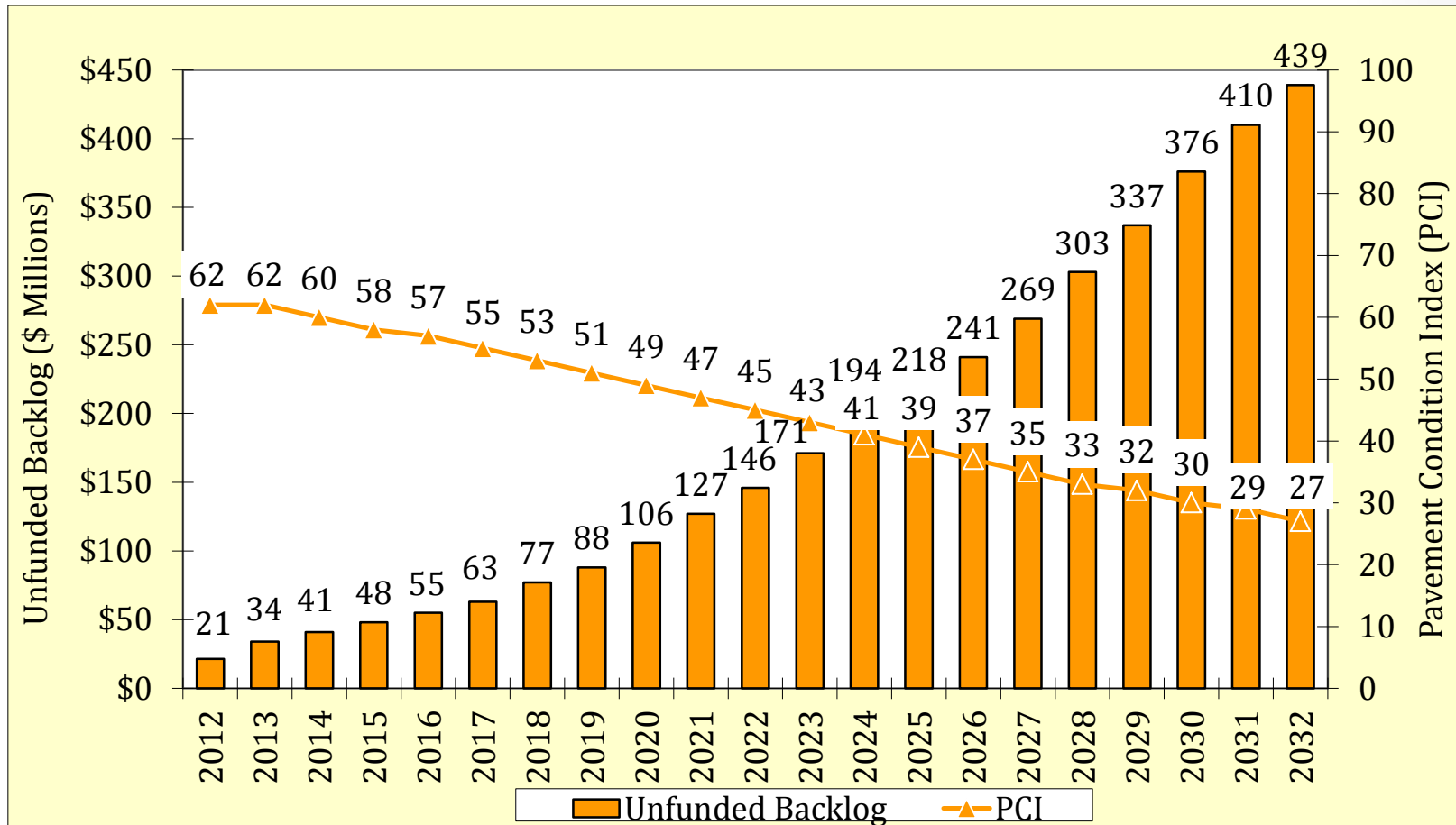


# Funding Scenarios

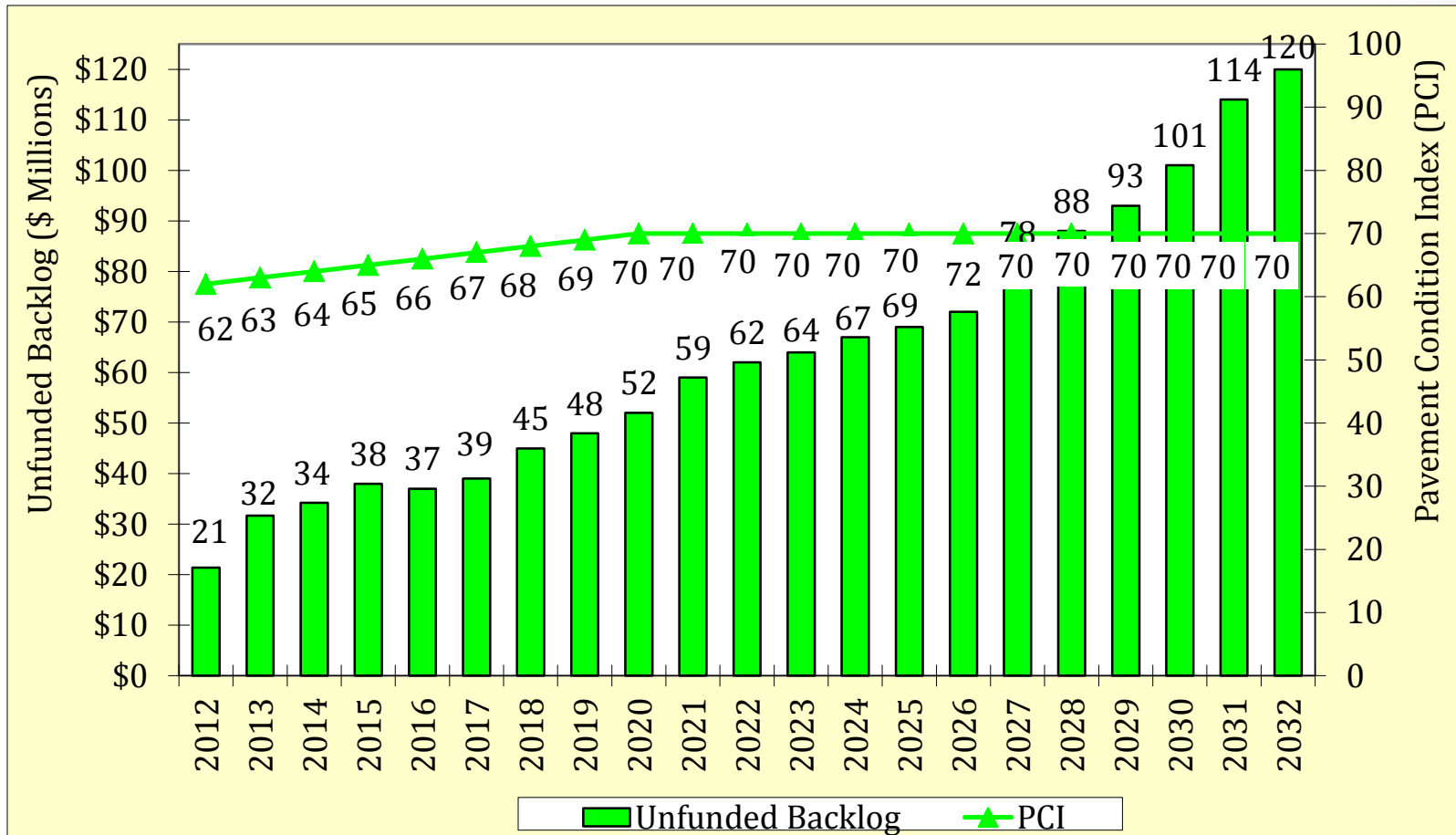
## - Streets -



# Existing City Budget (\$1 M/year)

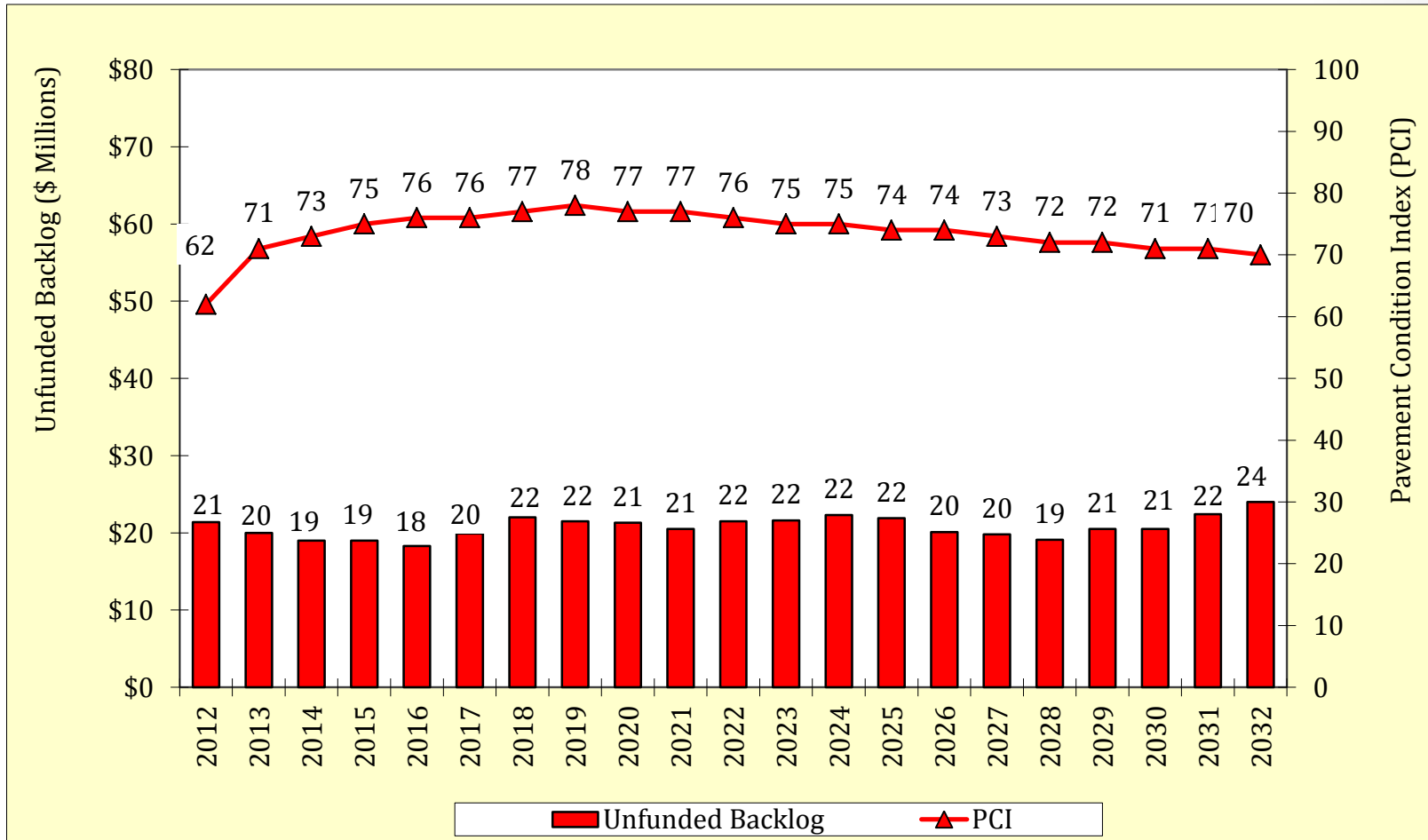


# Improve PCI to 70 (\$8M/year)





# Maintain Backlog (\$7M/year)

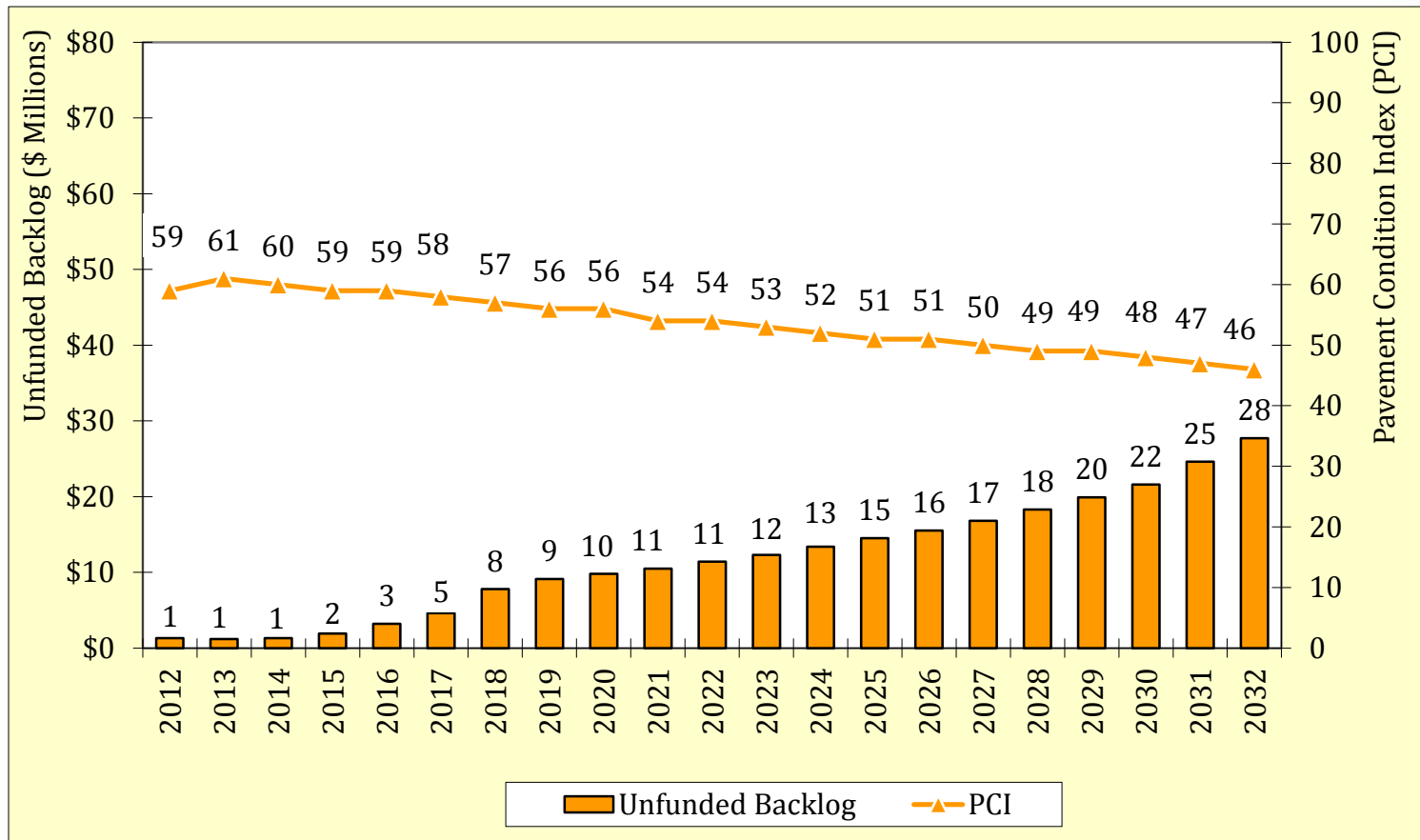


# Funding Scenarios

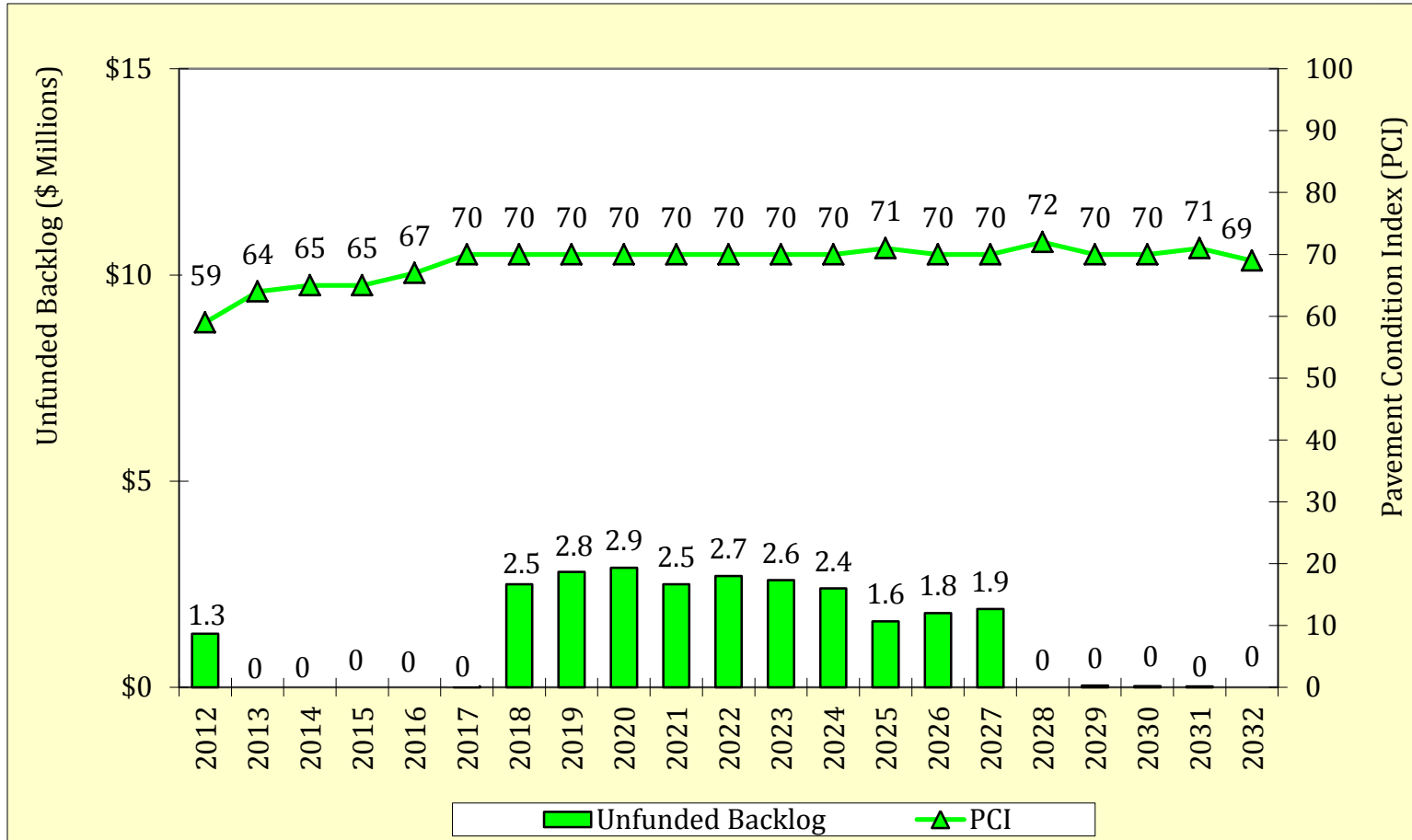
## - Bicycle Paths -



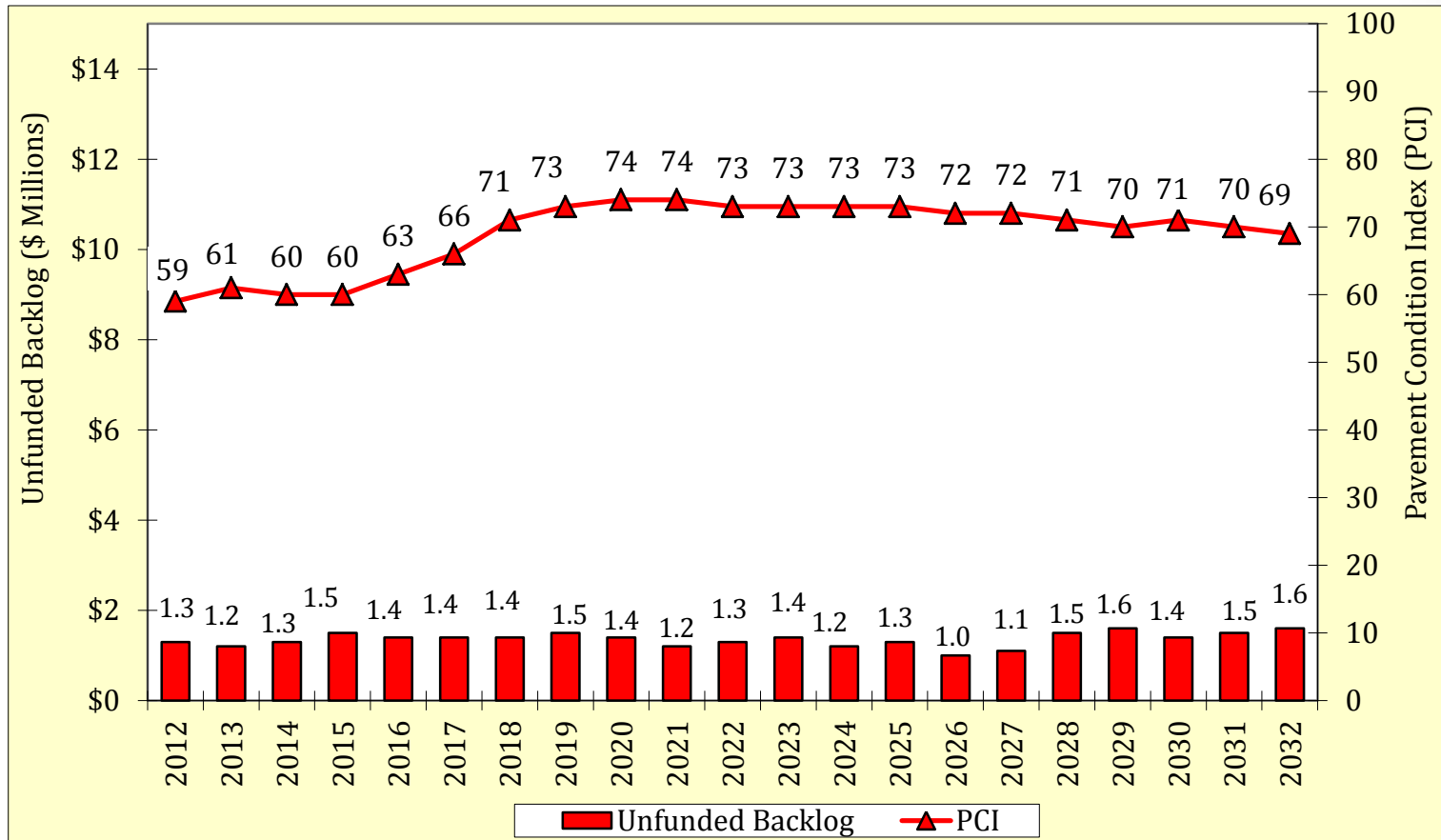
# Existing City Budget (\$200k/yr)



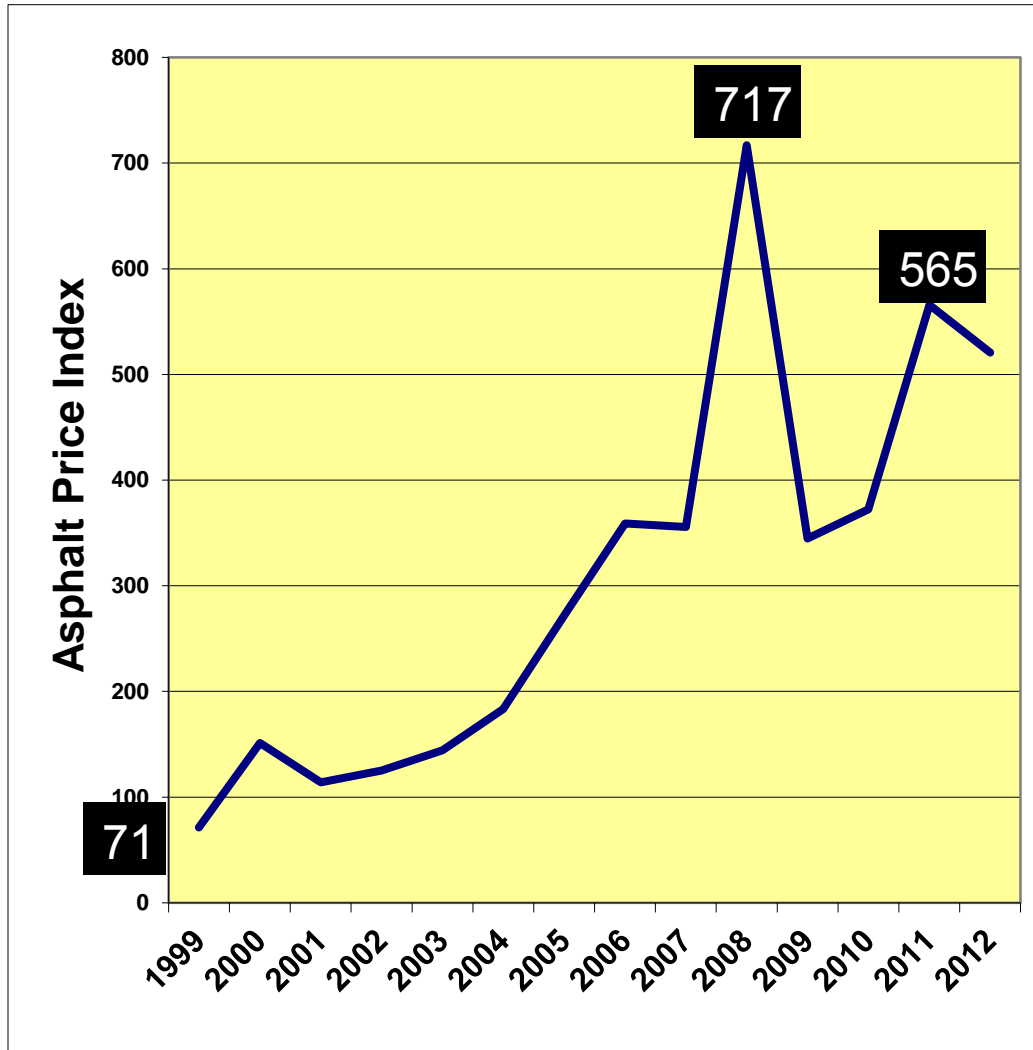
# Improve PCI to 70 (\$0.7M/year)



# Maintain backlog (\$655k/Year)



# Why are costs so high?



Pavements are deteriorating rapidly

Asphalt prices increased eight-fold since 1999

# Conclusions

- Davis has a substantial investment:
  - \$167 M - streets
  - \$24 M - bicycle paths
- Network are in “fair” condition
  - Streets PCI = 62, Bike PCI = 59
- Network will continue to deteriorate under existing funding levels
- Significant funding increases are needed to improve conditions



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(510) 215-3620





# Looking Forward – Policy Considerations

- What additional information would Council like for future meetings?
- Budget Issues (How much to fund, how to fund)
- How to prioritize streets/paths?
  - All treated equally
  - Arterials/collectors versus local
  - Those near schools, parks
  - Let Streetsaver select
- What scenario to use: NCE recommends Scenario 3 but we could select scenario 1 or 2 or develop a fourth (e.g. let no street drop below a threshold PCI)