Pavement Condition Analysis Results and Recommendations

Council Work Session

9/10/24

City Council Strategic Objective

*"*Prioritize reducing the number of road miles of city-owned streets that fall into the Very Poor or Poor classifications on the Pavement Condition Index, and maintain higher classifications to the extent possible.*"*

Evaluating Existing Conditions

- Prior to 2019 – visual assessment
- Now – automated analysis through radar
- Funding through SVMPO
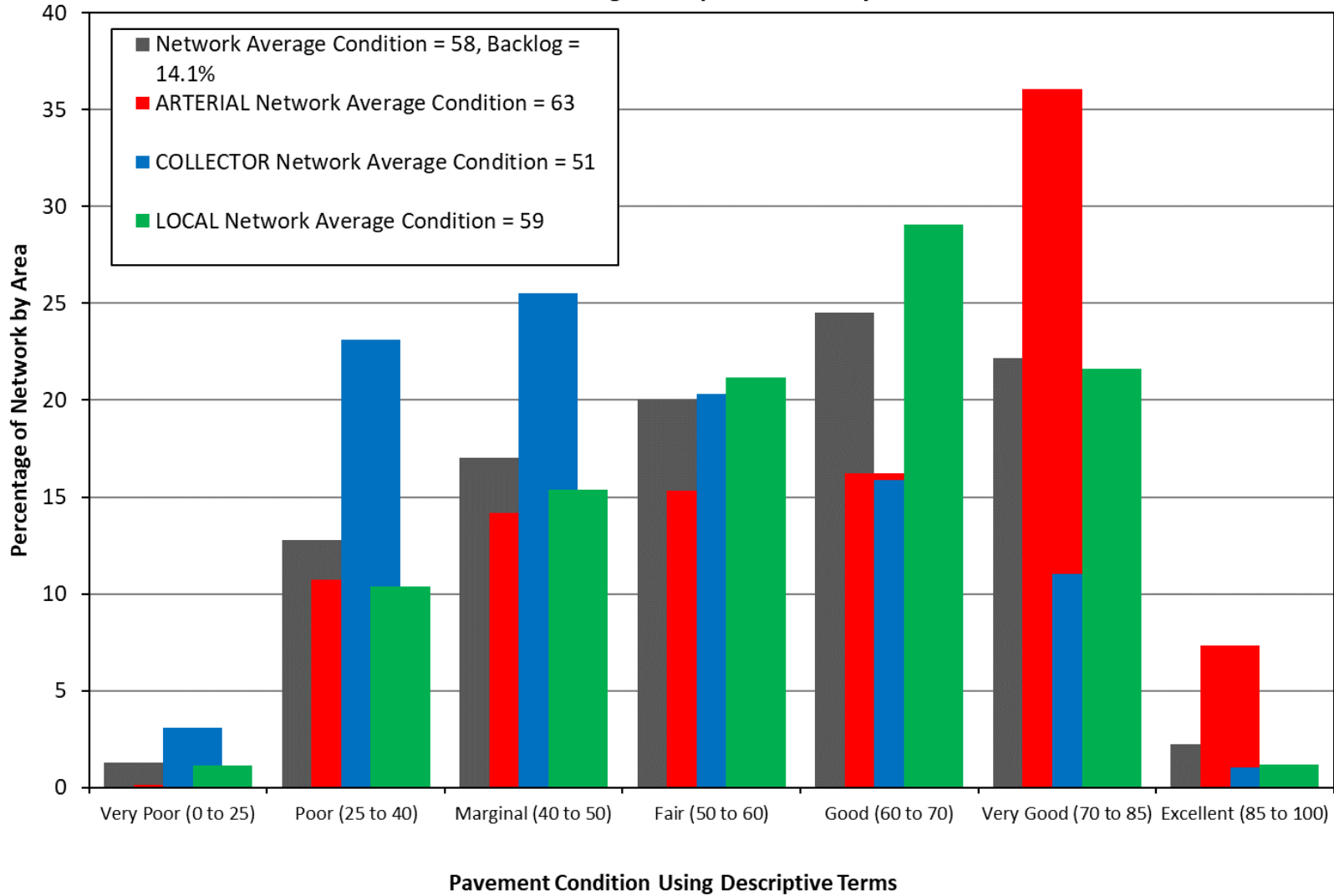- Pavement Condition Index (PCI)
- Backlog

Key Findings

	Sierra Vista 2019	Sierra Vista 2024	National Average 2019*
Average Pavement Condition Index	64	58	60-65
Percent of Excellent	8.6%	2.2%	15%
Percent of Poor or Very Poor	6.2%	14.1%	12-15%

City of Sierra Vista, AZ

Pavement Condition Using Descriptive Terms By Functional Class

Legend:
- ■ Network Average Condition = 58, Backlog = 14.1%
- ■ ARTERIAL Network Average Condition = 63
- ■ COLLECTOR Network Average Condition = 51
- ■ LOCAL Network Average Condition = 59

Y-axis: Percentage of Network by Area

X-axis categories: Very Poor (0 to 25), Poor (25 to 40), Marginal (40 to 50), Fair (50 to 60), Good (60 to 70), Very Good (70 to 85), Excellent (85 to 100)

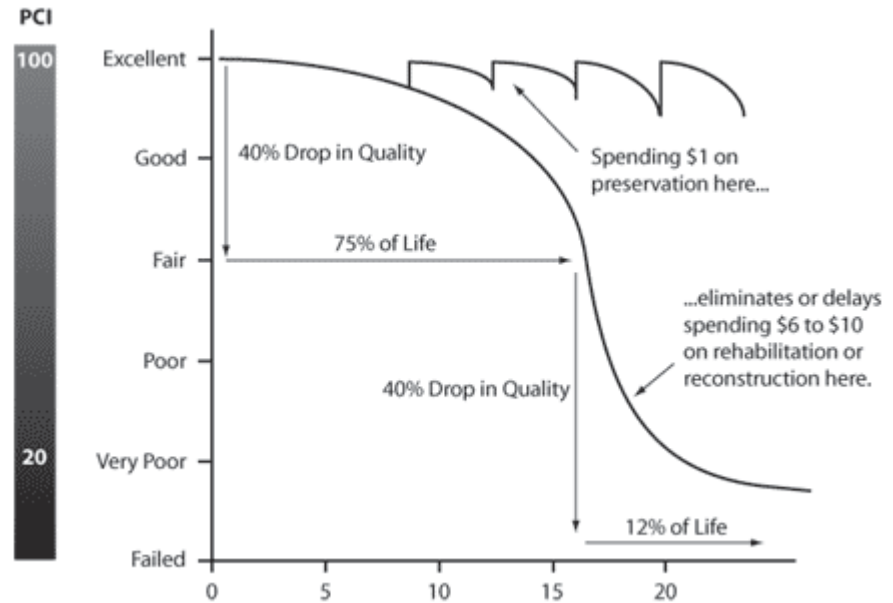X-axis label: Pavement Condition Using Descriptive Terms

Challenges of Roadway Maintenance

- Aging infrastructure
- Antiquated funding streams
- Changes in vehicle weight
- Increase in larger vehicles
- Inflationary pressure
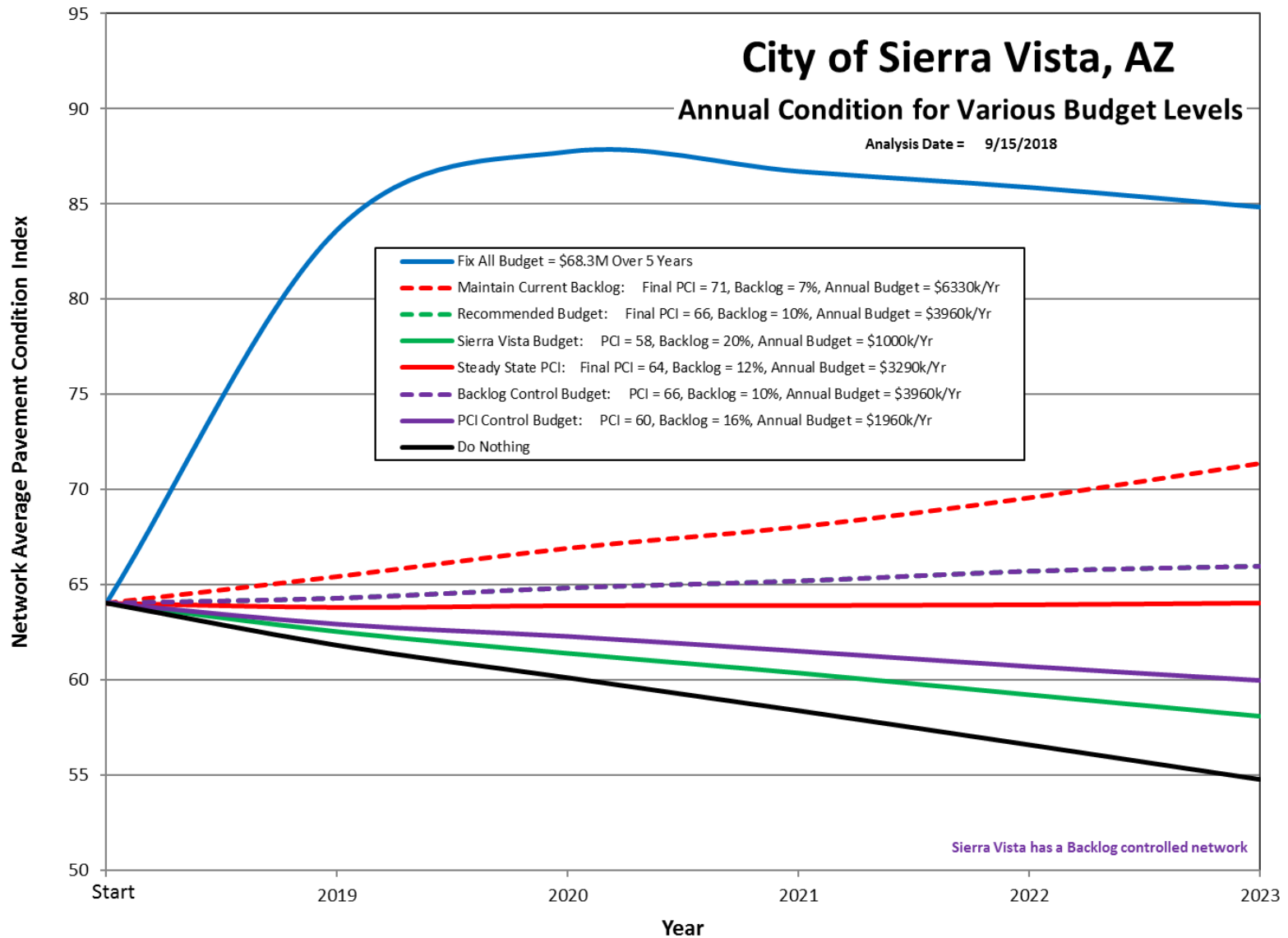- Increased vehicle trips

Maintenance Strategies

- Crack Seal
- Slurry Seal
- Chip Seal
- Overlay
- Mill and Fill
- Reconstruction

City of Sierra Vista, AZ
Annual Condition for Various Budget Levels
Analysis Date = 9/15/2018

Network Average Pavement Condition Index vs Year

Legend:
- Fix All Budget = $68.3M Over 5 Years
- Maintain Current Backlog: Final PCI = 71, Backlog = 7%, Annual Budget = $6330k/Yr
- Recommended Budget: Final PCI = 66, Backlog = 10%, Annual Budget = $3960k/Yr
- Sierra Vista Budget: PCI = 58, Backlog = 20%, Annual Budget = $1000k/Yr
- Steady State PCI: Final PCI = 64, Backlog = 12%, Annual Budget = $3290k/Yr
- Backlog Control Budget: PCI = 66, Backlog = 10%, Annual Budget = $3960k/Yr
- PCI Control Budget: PCI = 60, Backlog = 16%, Annual Budget = $1960k/Yr
- Do Nothing

Sierra Vista has a Backlog controlled network

Stretching Taxpayer Dollars

- Cluster work in neighborhoods
- Use economies of scale
- Evaluate new technologies
- Watch for the tipping point
- Be realistic about the strategy

Strategies for the Future

- Update GIS to help visualize trends.
- Continue to evaluate new technologies
- Reconsider pavement cross sections
- Update survey every few years
- Aggressively pursue grants for larger roadways