



Ethics, Excellence, Engagement

Public Works Division

Presented by Klay Eckles, Interim Public Works Director

Infrastructure condition and Pavement Management Program Alternative Strategies

May 2021



What is PMP?



8150 Barbara Ave. Inver Grove Heights, MN
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www.invergroveheights.org

TYPES OF PM TREATMENTS

- Crackseal
- Sealcoat
- Patching
- Mill and Overlay
- Full-Depth Pavement Replacement
- Full-Depth Reclamation
- Partial Reconstruction
- Full Reconstruction

What is PMP?

- City has close to \$1B replacement value infrastructure (sewer, water, streets, storm)
- Streets fail first—so management programs revolve around pavement management
- **Goal is to get maximum life and quality for minimum investment**
- Waiting too long does not serve this goal

What is PMP?

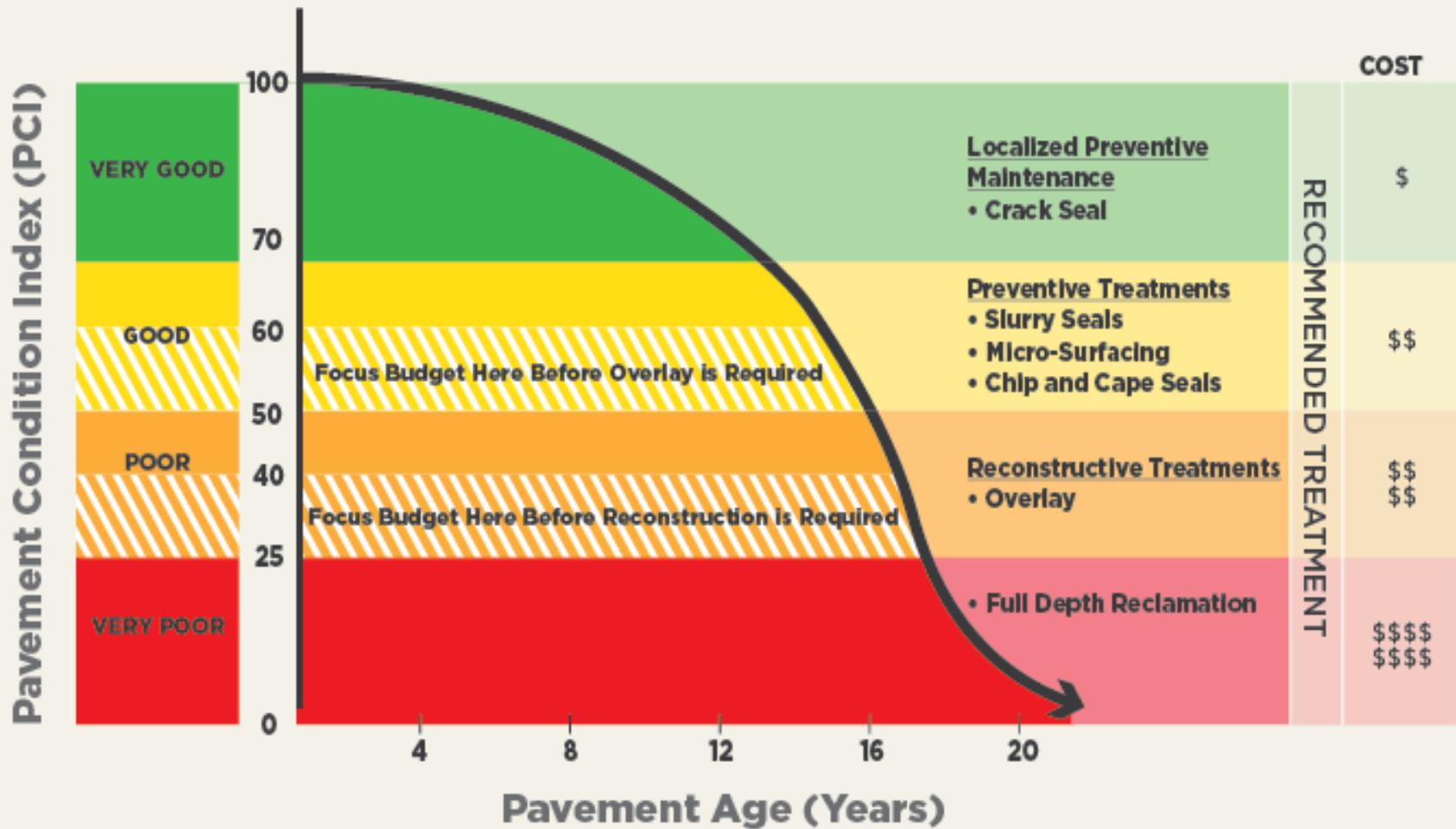
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The Challenge of Time

- Failing to take action has little immediate impact
- Long term delay or underfunding yields an almost insurmountable problem-
 - Projects are more complicated and expensive
 - Funding sources are limited any one year
 - Other resources are limited too (staff and professional services)

THE CONCEPT OF PAVEMENT PRESERVATION

CATCH STREETS BEFORE THEY FAIL

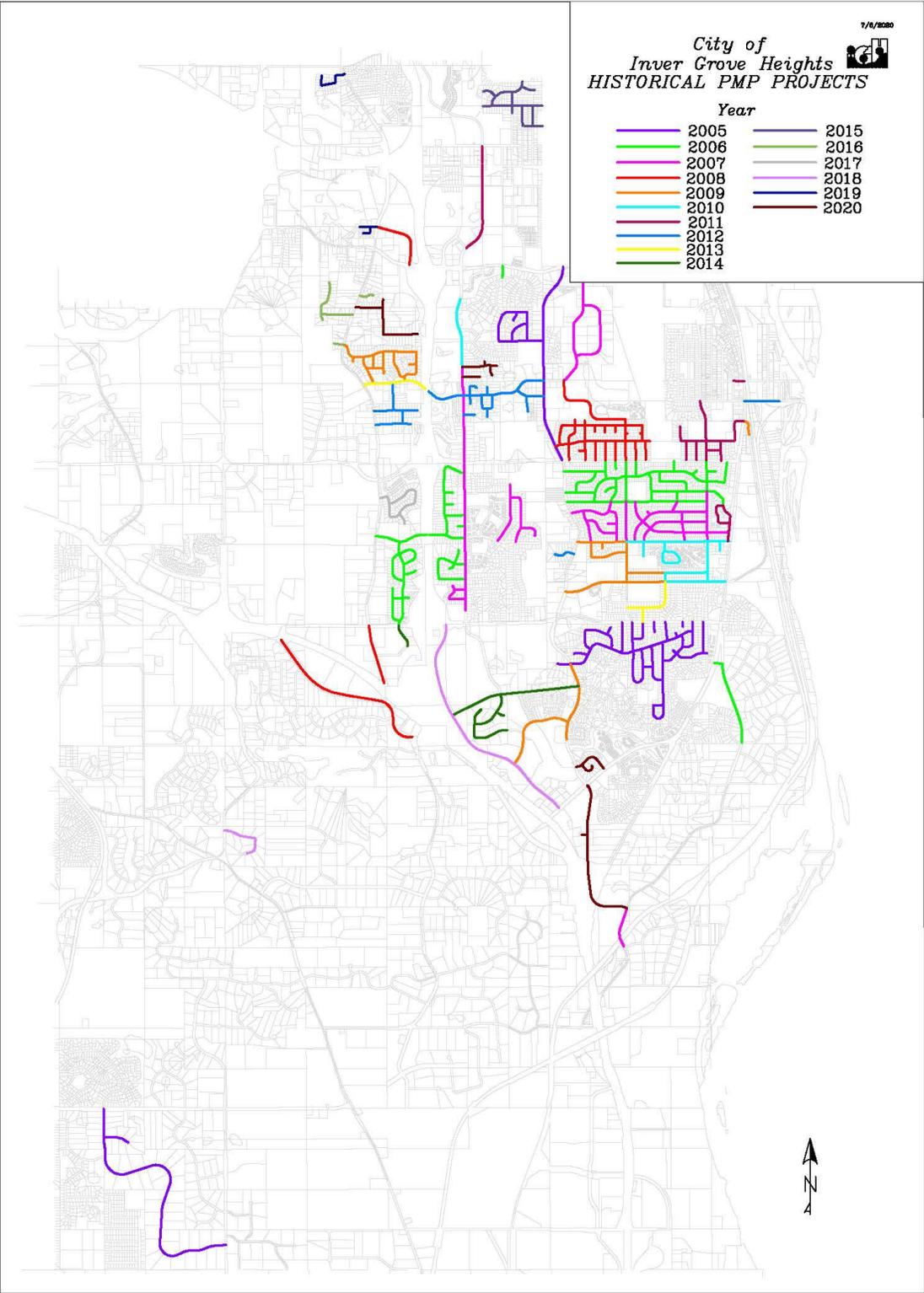


PMP HISTORY

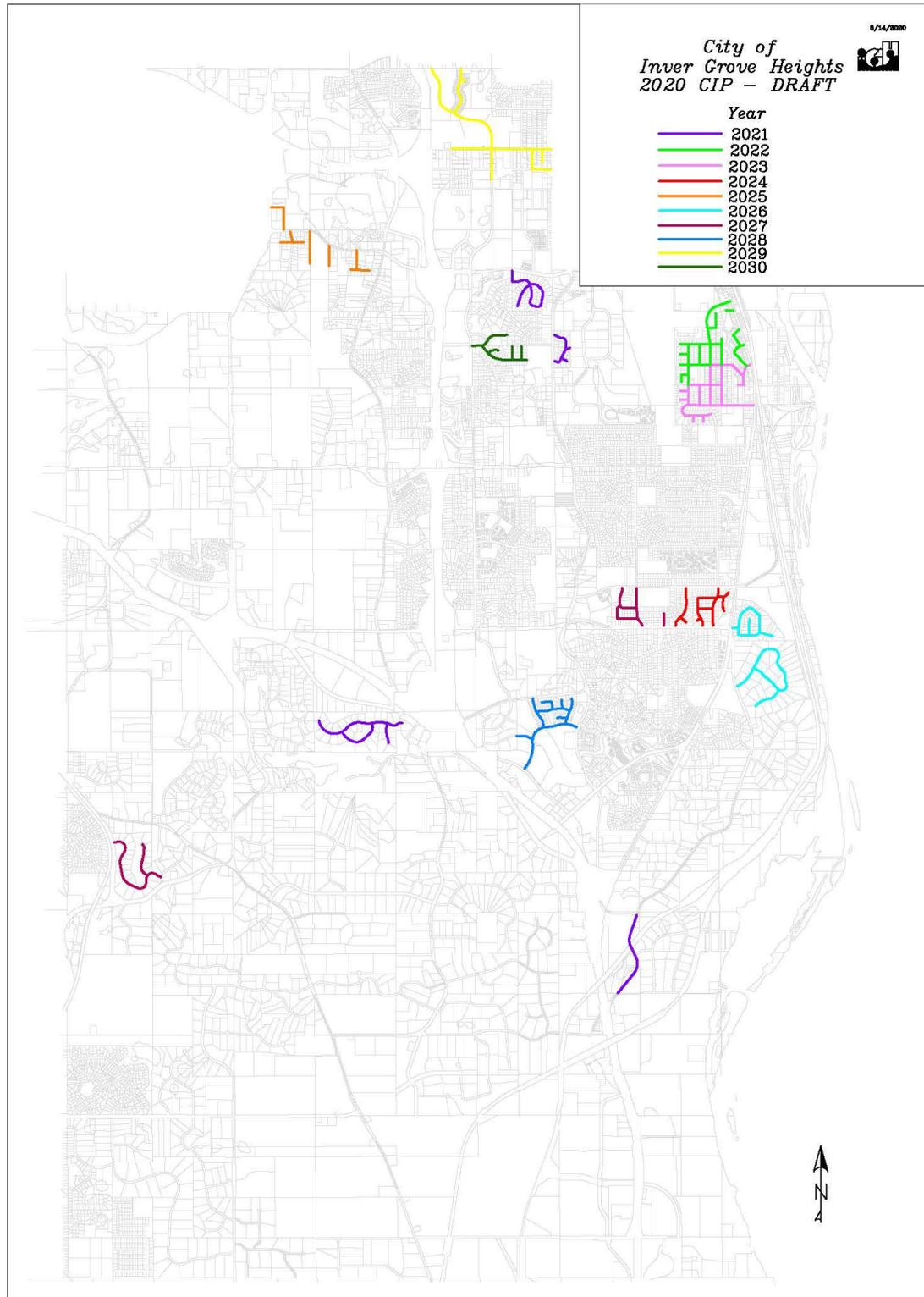
- Adopted July 2001
- Established use of ICON software for tracking pavement condition and estimating rate of deterioration
- Established Pavement Condition Index (PCI) and scale range for considering various major maintenance treatments
- Established initial funding policy



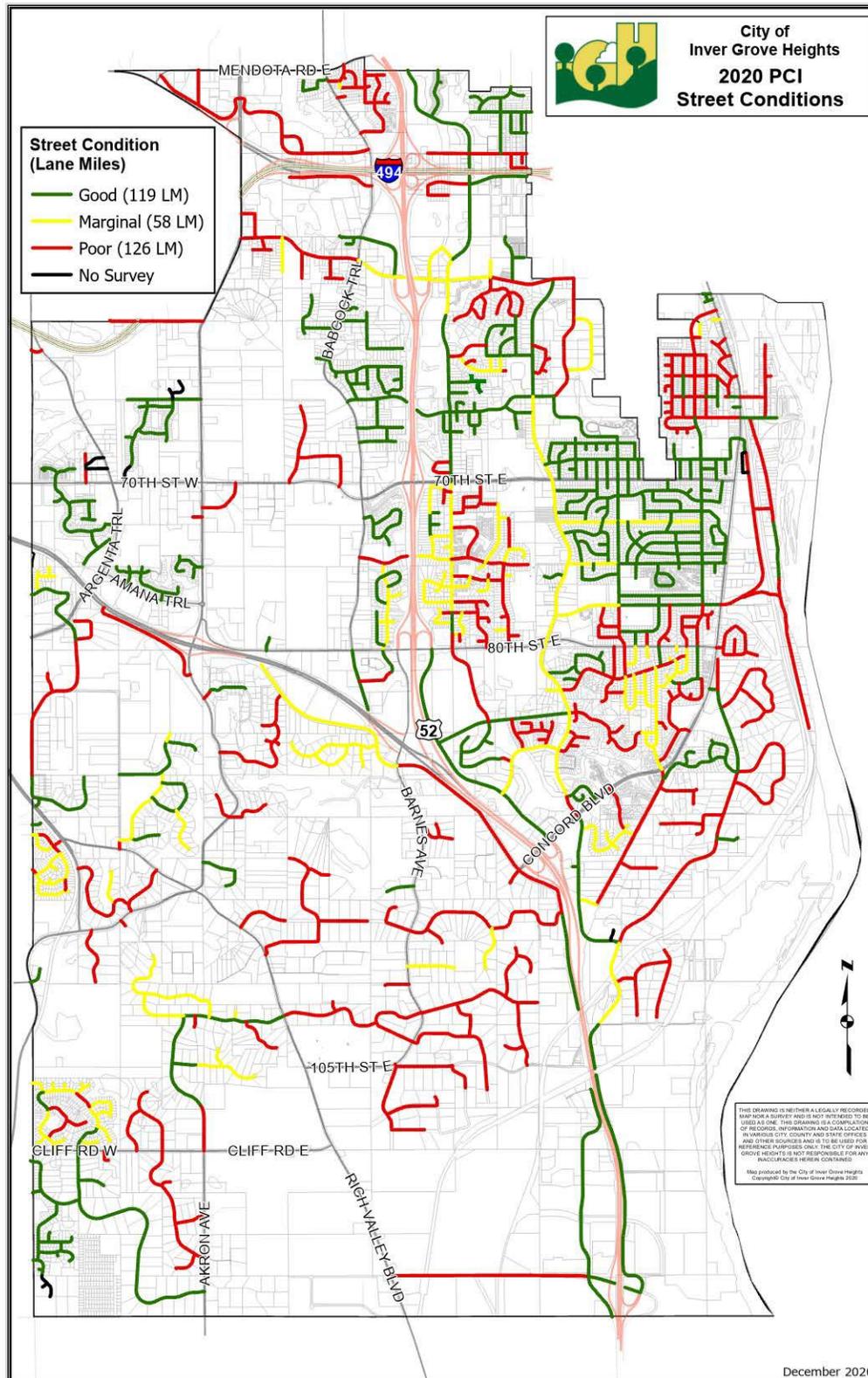
City has
not
been
idle



Future
plan had
many
miles of
Recon



But not enough to keep up or catch up



RESULTS OF GEOTECHNICAL ANALYSES

- Three separate studies in 2013, 2018 and 2020 covered about 90 percent of system
- Identify PMP treatment needed per the City's current standards
- Estimated cost to address identified needs (\$151 million in 2020 dollars)



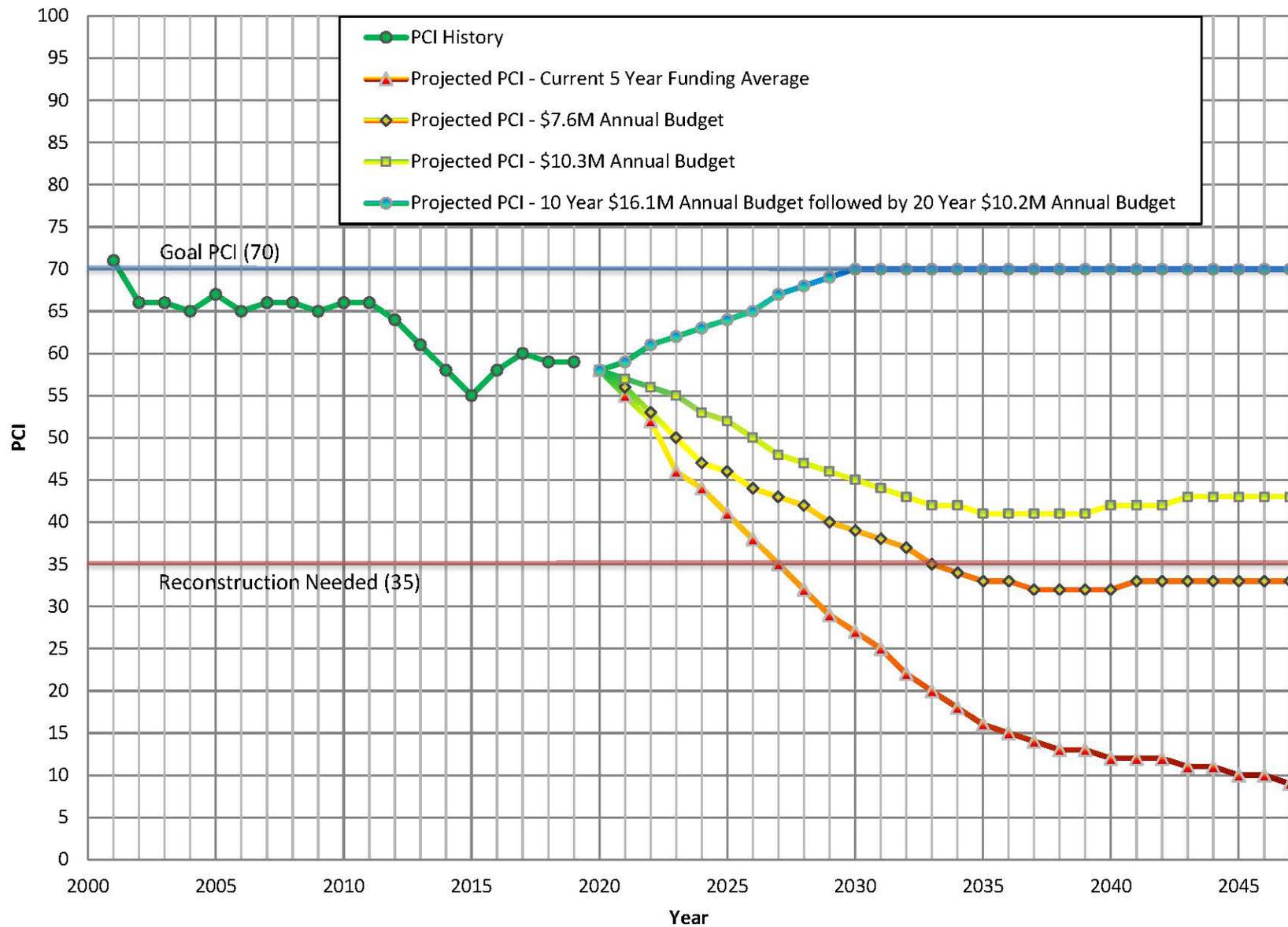
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Pavement Management Program Update

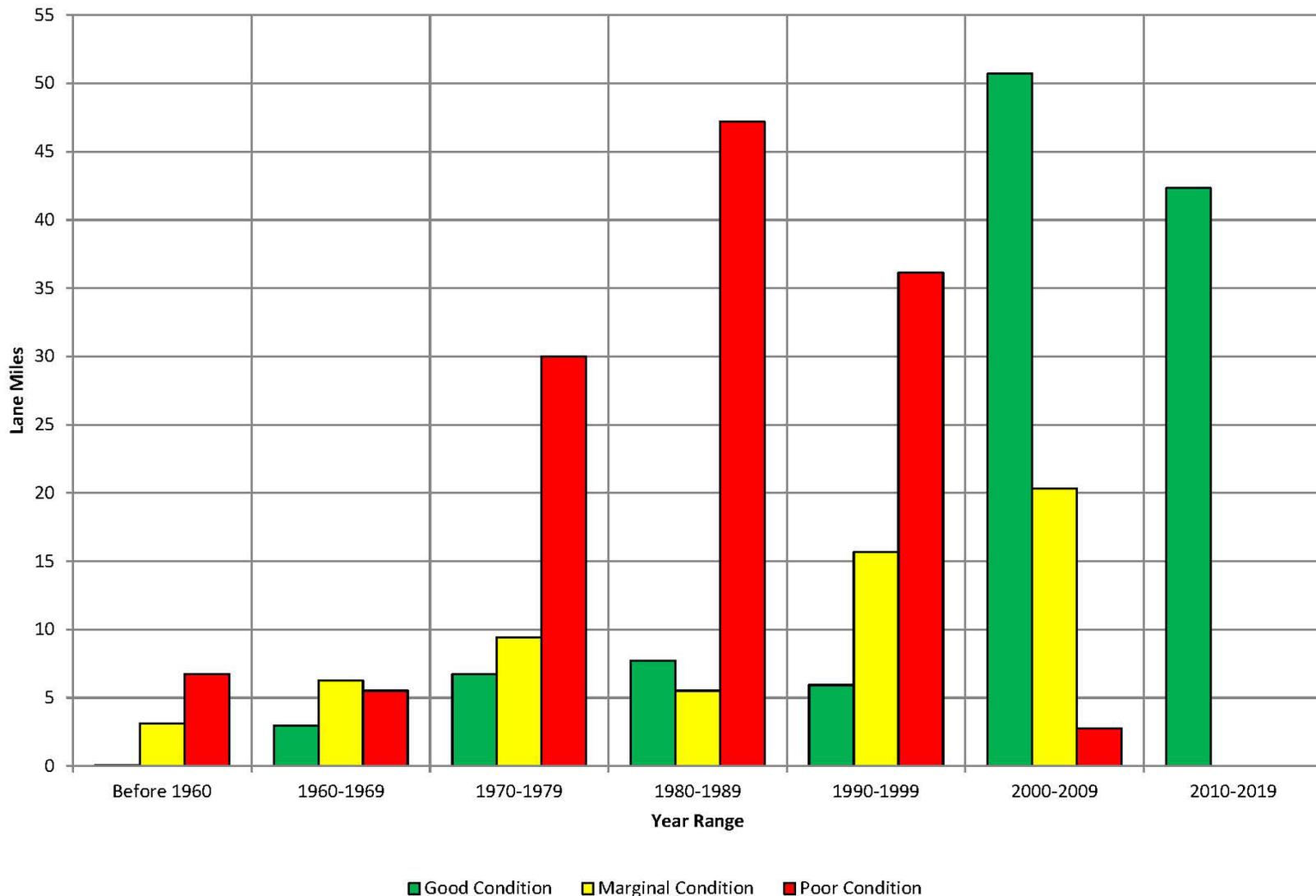
August 3, 2020

Presented by: Scott D. Thureen, Public Works Director

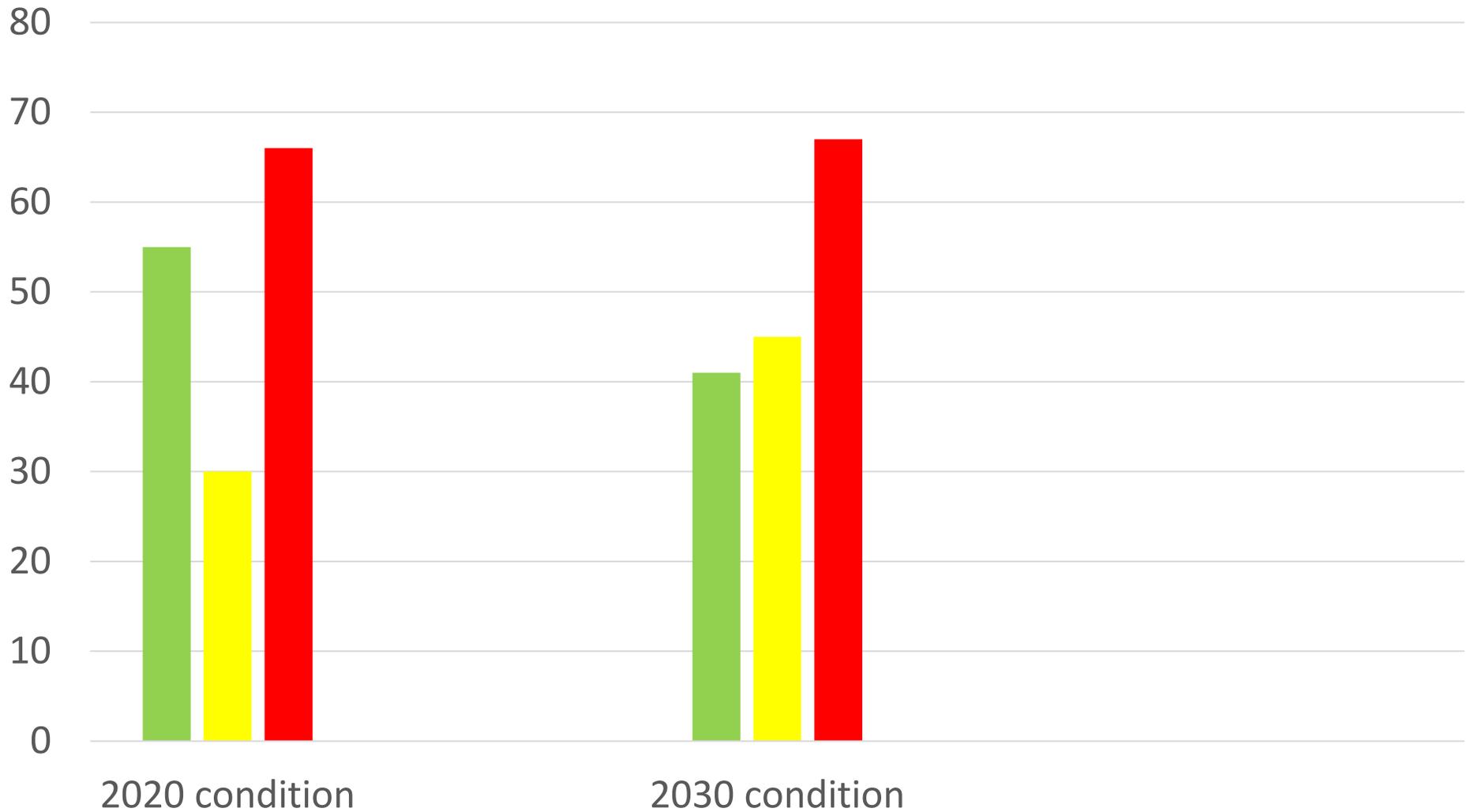
PAVEMENT CONDITION INDEX (PCI) HISTORY AND FUTURE PROJECTIONS



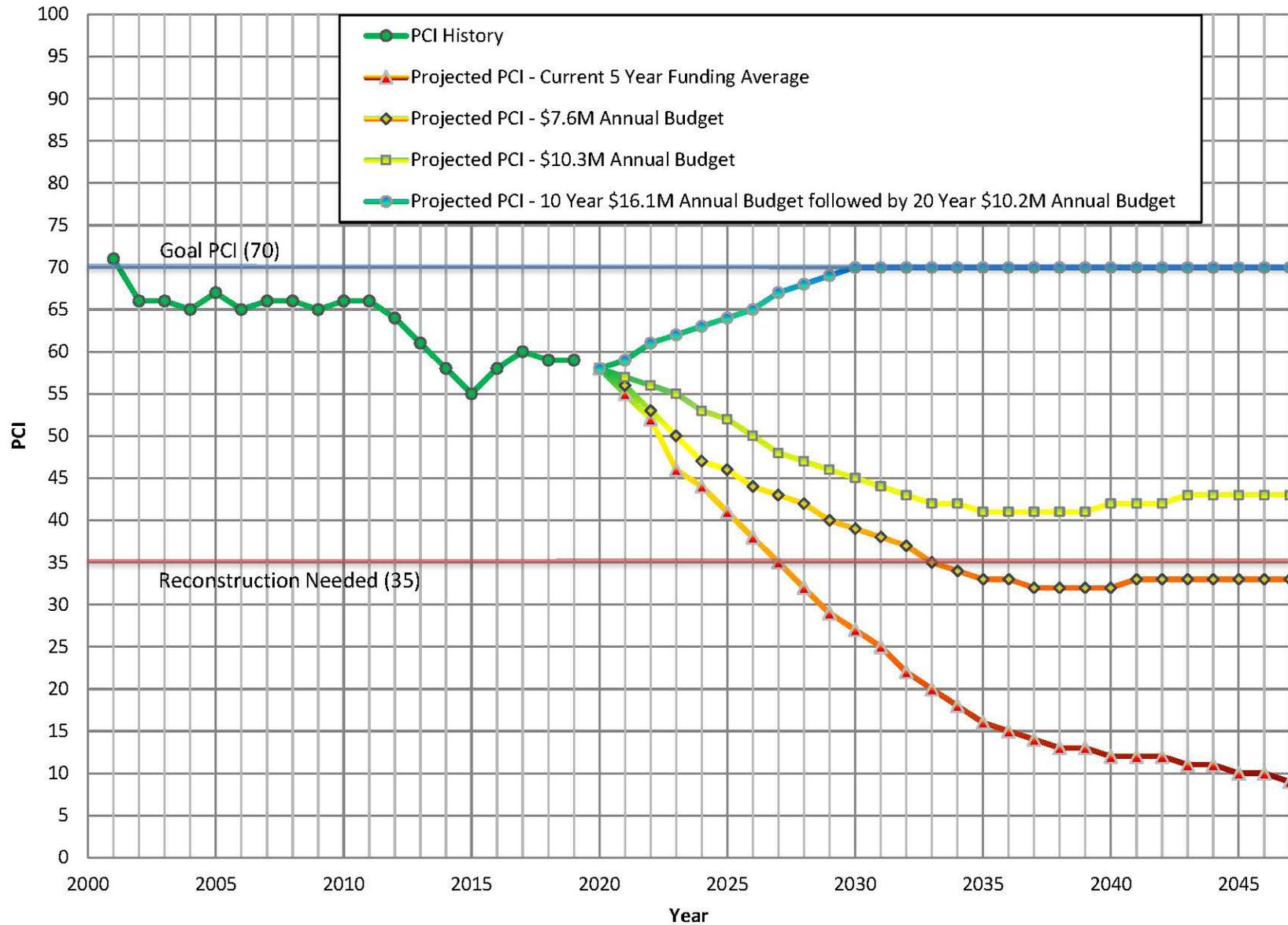
Pavement Condition and Year of Latest Construction



10 Year Change at Current Rate

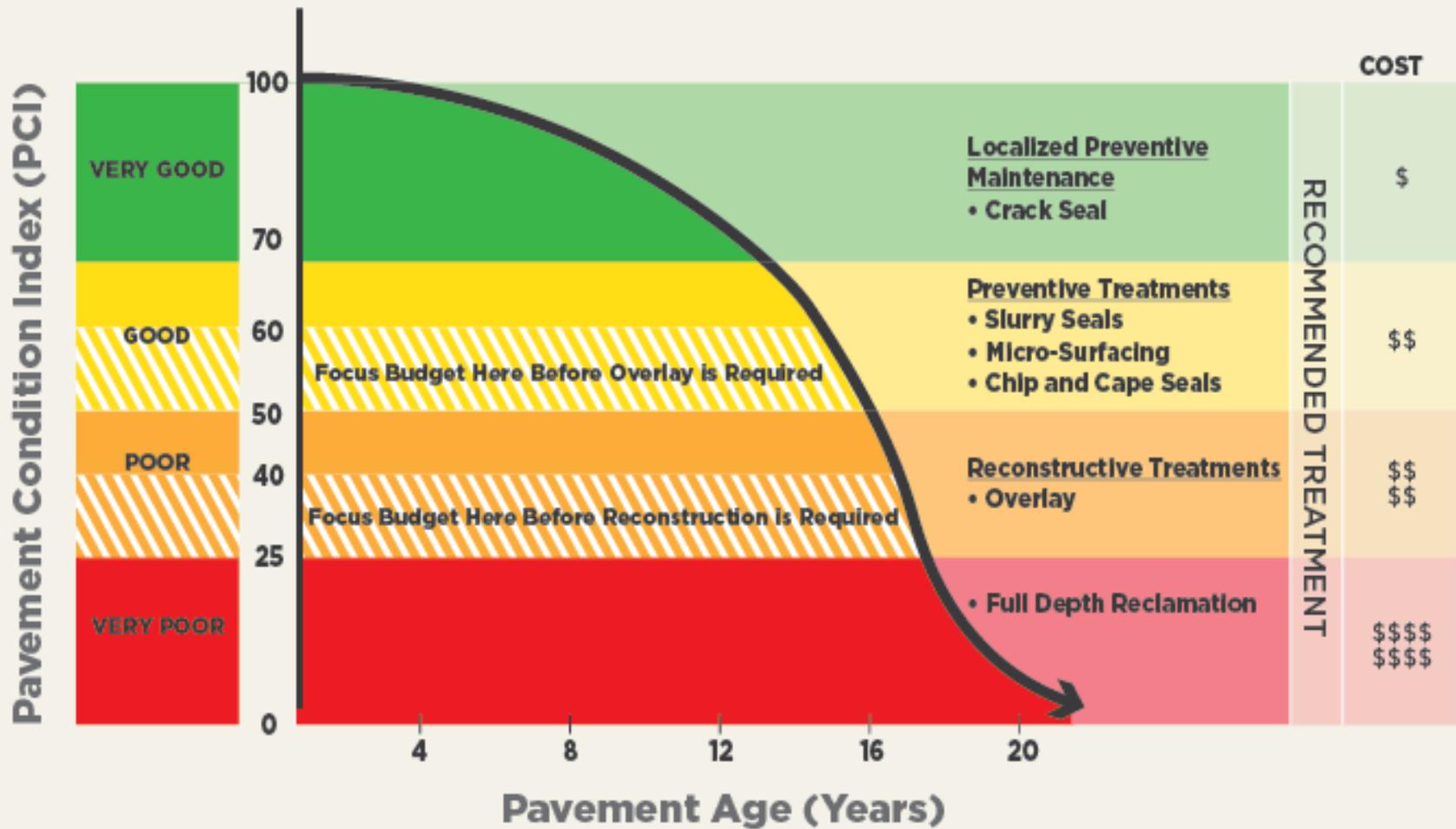


PAVEMENT CONDITION INDEX (PCI) HISTORY AND FUTURE PROJECTIONS



THE CONCEPT OF PAVEMENT PRESERVATION

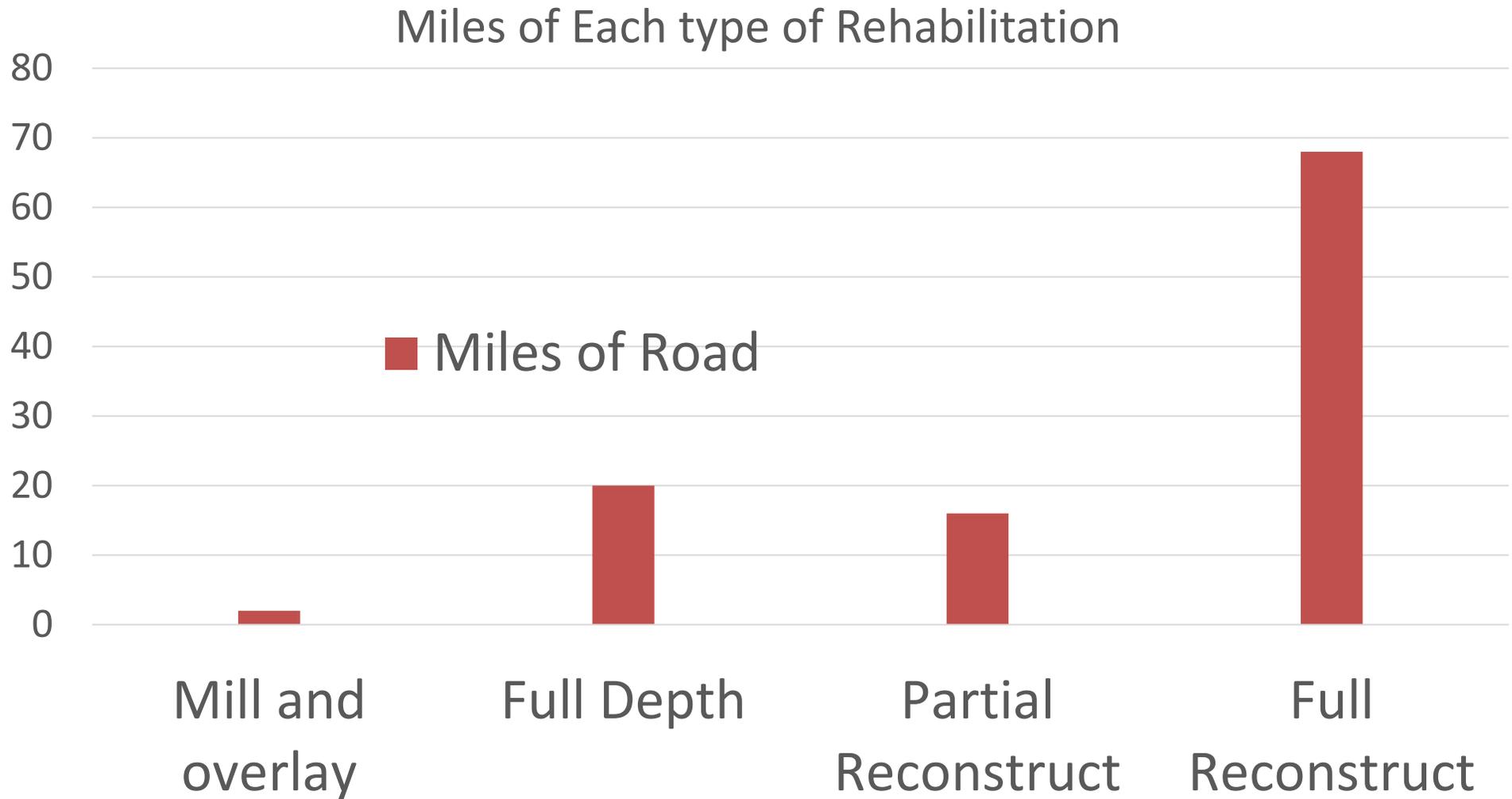
CATCH STREETS BEFORE THEY FAIL



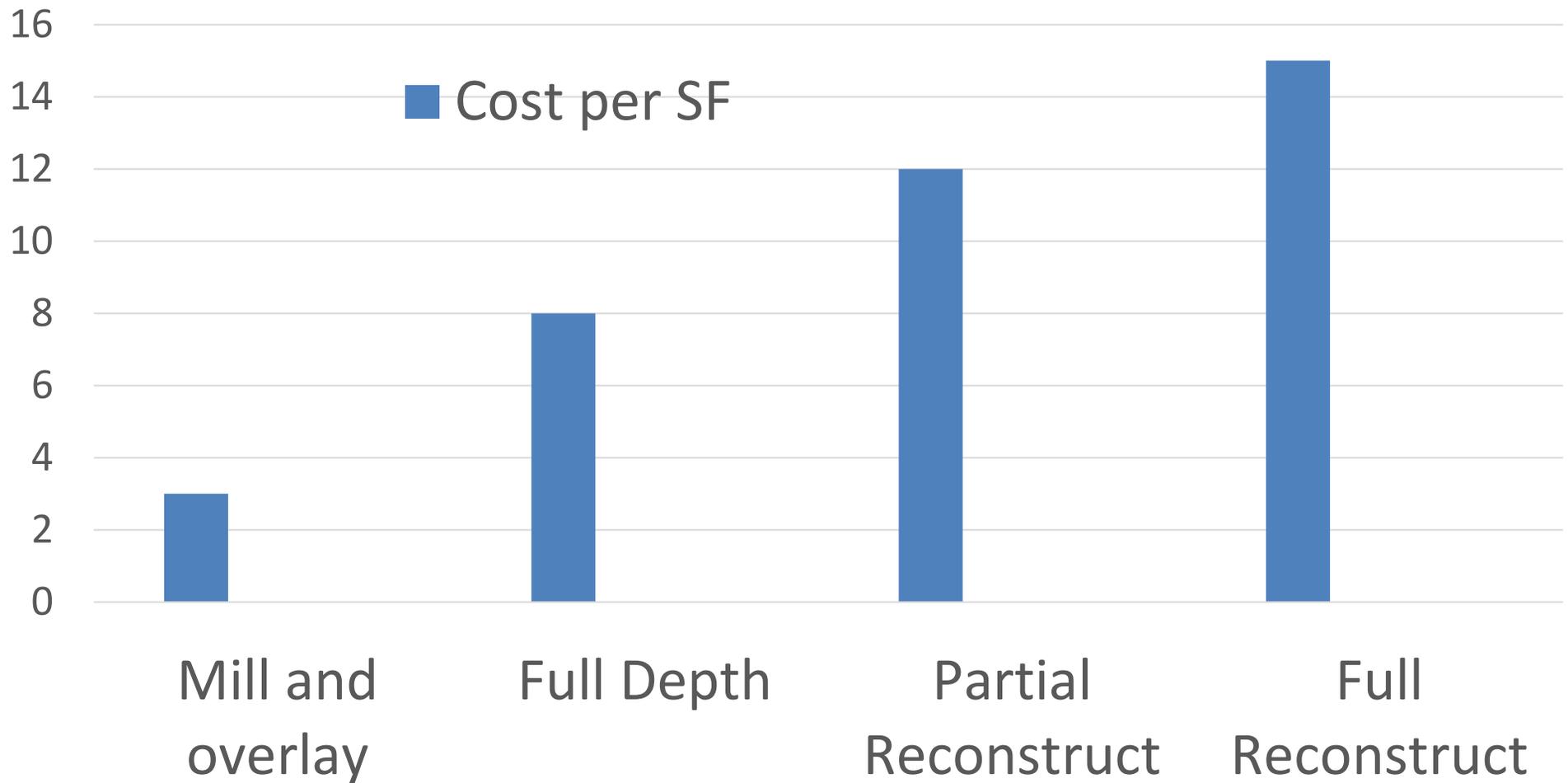
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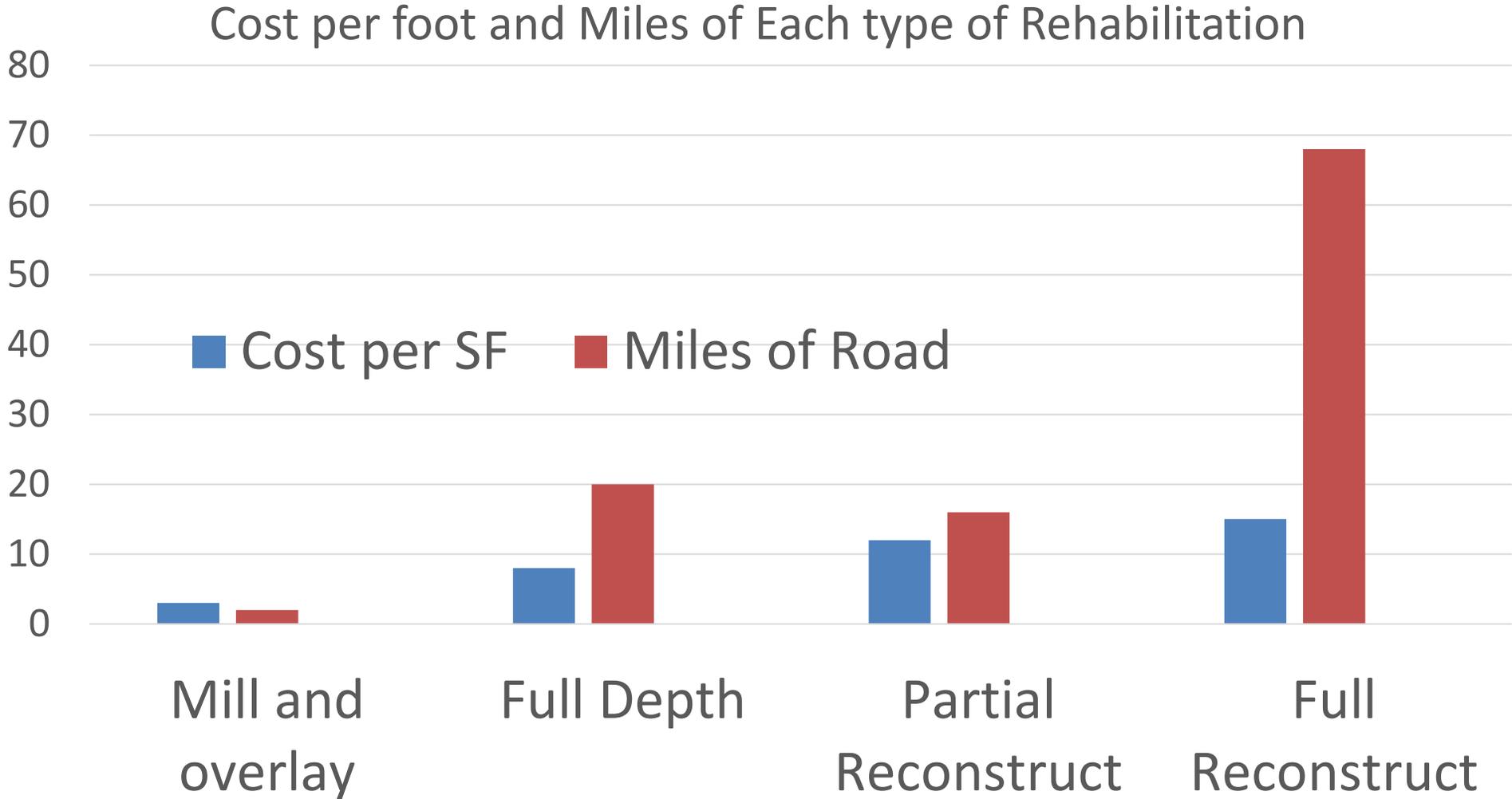
“Recommended” Strategies



Full Reconstruct is 5x of an Overlay



Full Reconstruct is 5x of an Overlay



What are the alternatives?

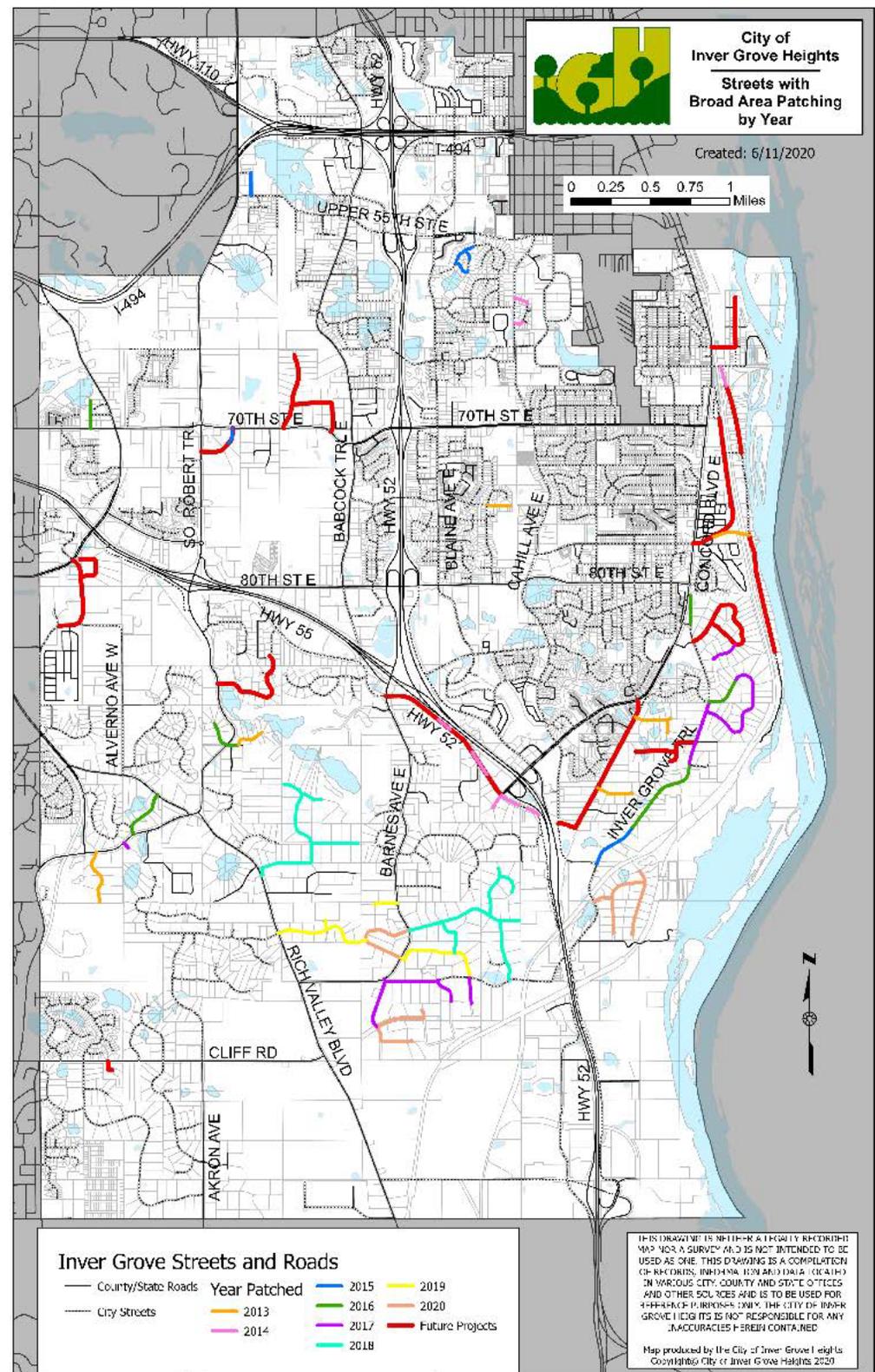
- Mill and Overlay as much as possible?
- Can we M&O roads that engineers recommend something else?
- What are ramifications of not following soils engineering recommendations?

TYPES OF PM TREATMENTS

- Crackseal
- Sealcoat
- Patching “Broad Area Patching”
- Mill and Overlay
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What is Broad Area Patching?

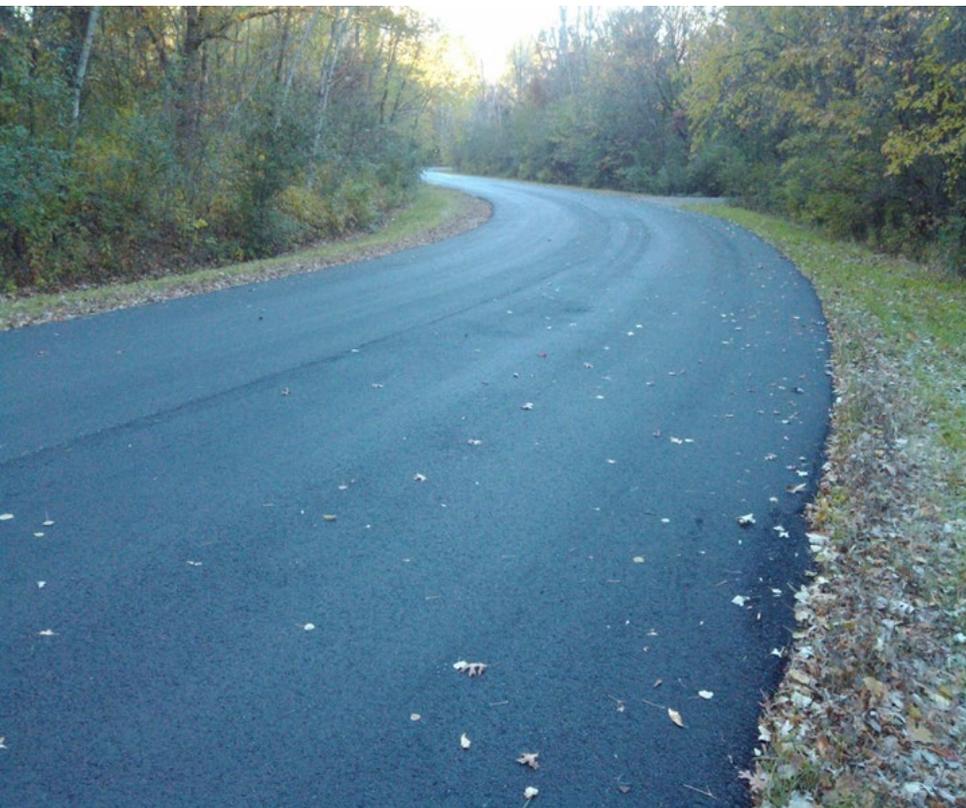
PW crews, faced with massive patching needs every spring have resorted to using the city paver in rural areas—A **Minimal Approach**



Broad Area Patching—A simple Overlay



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Arkansas Ave 2013 to 2021





Inver Trail 2015 to 2021

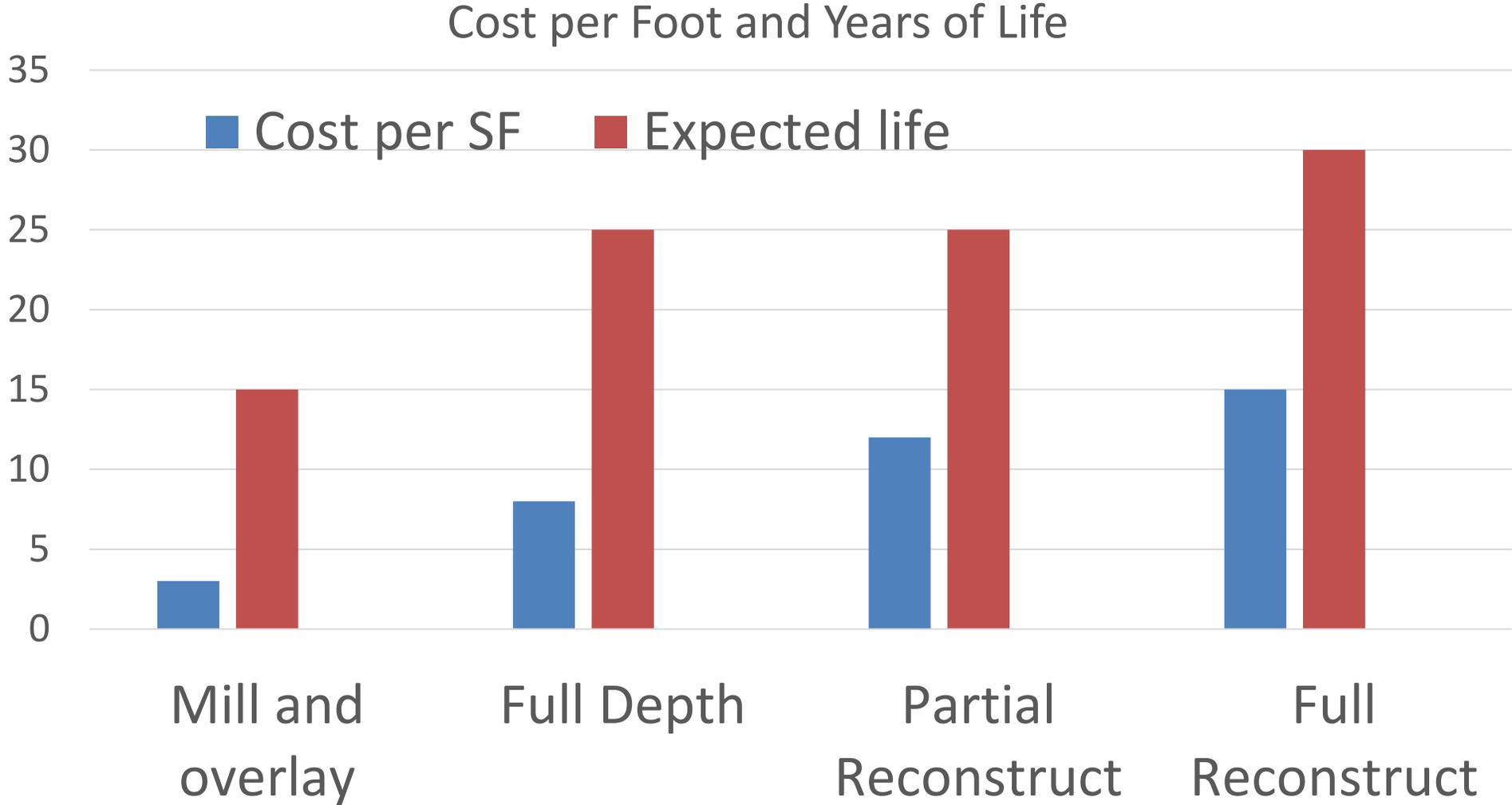


Comparison of Impact

Improvement	Cost per SQ Ft	City Contribution	Miles Rehabilitated
Reconstruction	\$15	\$1,000,000	0.6
Mill/Overlay	\$3	\$1,000,000	8.6

Note that Life of a M&O is 15 years or less, compared to 25+ years for Reconstruction

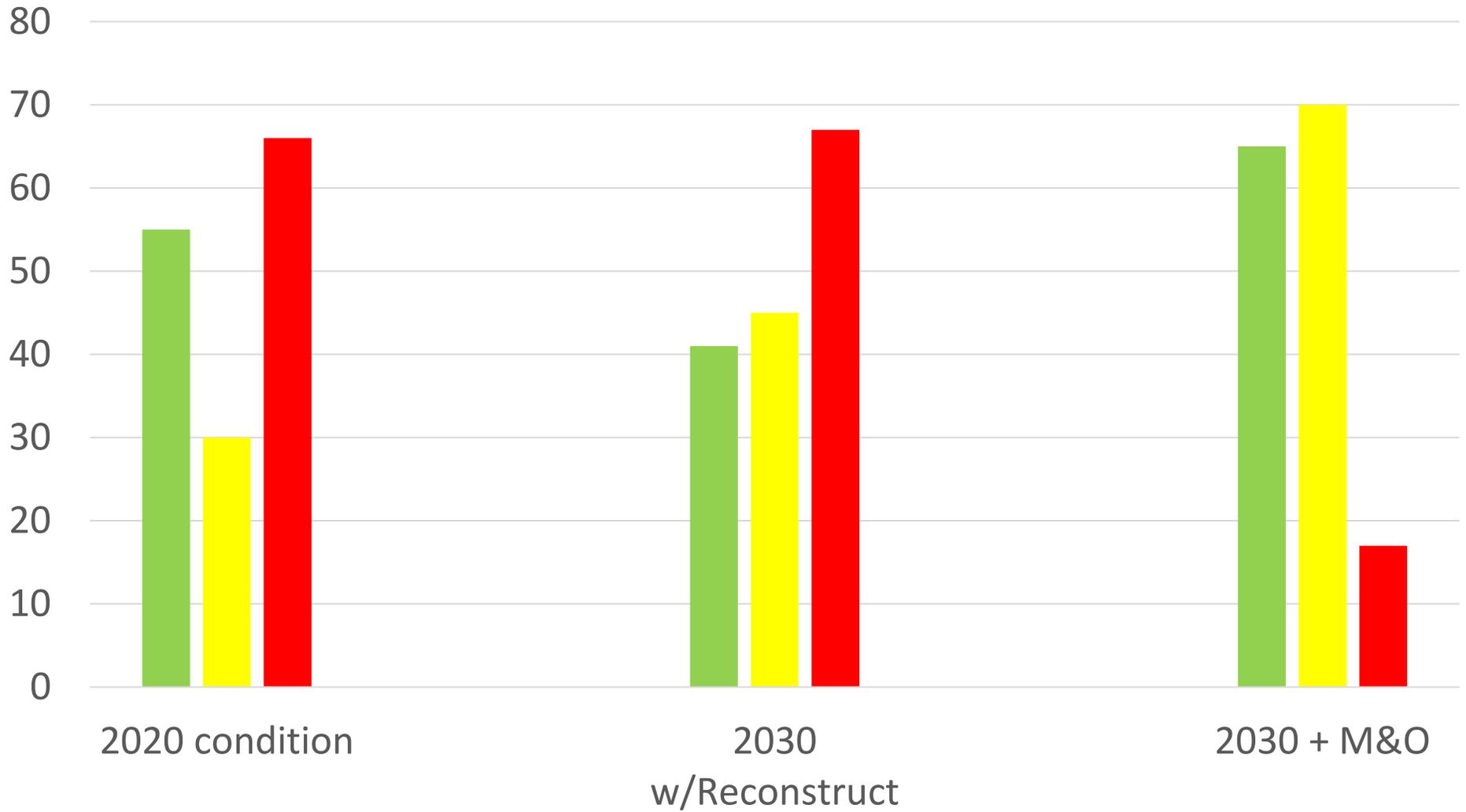
Minimalist Overlay has Good Value



Minimalist Strategy- a Possibility

- Mill and Overlay as much as possible
- Relatively inexpensive
- Lower engineering effort
- Average 15 years of life
- Could provide a stop-gap on many roads
- Would “Stretch out” the bulge in the curve

Best Case with Aggressive M&O



Minimal Strategies- not a Magic Bullet

- Not appropriate for all cases
- Still would need more funding
- Service life and quality of the product is lower
- Would need a strong education component
- Significant assessment revenues extend impact but residents fund a higher proportion

Recommended Steps

- Confirm the current trends are not acceptable
- Explore more robust PMP funding strategies
- Consider a Minimal approach using Overlays
- Complete the Sewer and Water Renewal Study
- Consider a Citizen's task force with Council Liaison

QUESTIONS/COMMENTS

