HANFORD
CALIFORNIA

Public Works Street Maintenance

Topics of Discussion

- Street Division Responsibilities
- Street Classification and Definitions
- Circulation Element
- Pavement Condition Index Study
- PCI Historical Data
- Budget Scenarios
- Selection Process
- Treatment Methods
- Signalized Intersections
- Street Concerns
- Funding Sources

Street Division Responsibilities

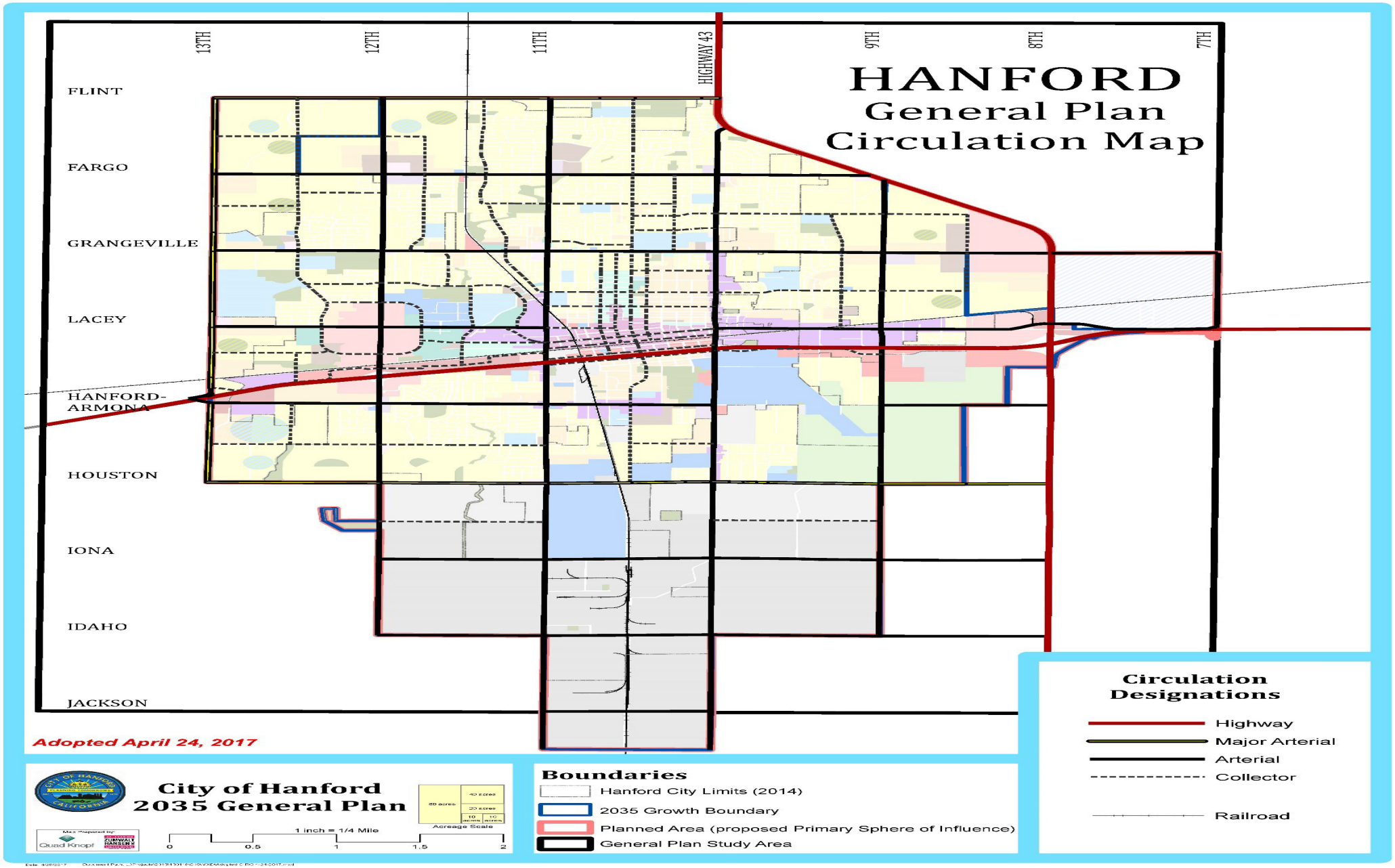
- Maintain and repair City streets
- Maintain and repair all City signage to meet CAMUTCD requirements
- Maintain and repair all City-owned traffic signals/some street lighting
- Paint all City traffic markings annually to meet refelectivity requirements
- Assist other City divisions with street-related issues
- Emergency street closures for police and fire
- Install ADA ramps to improve accessibility
- Work with property owners to improve local sidewalks
- Hang and remove banners in the downtown area, maintain twinkle lights, install and remove Christmas Decorations
- Maintain downtown parking lots

Street Classifications and Definitions

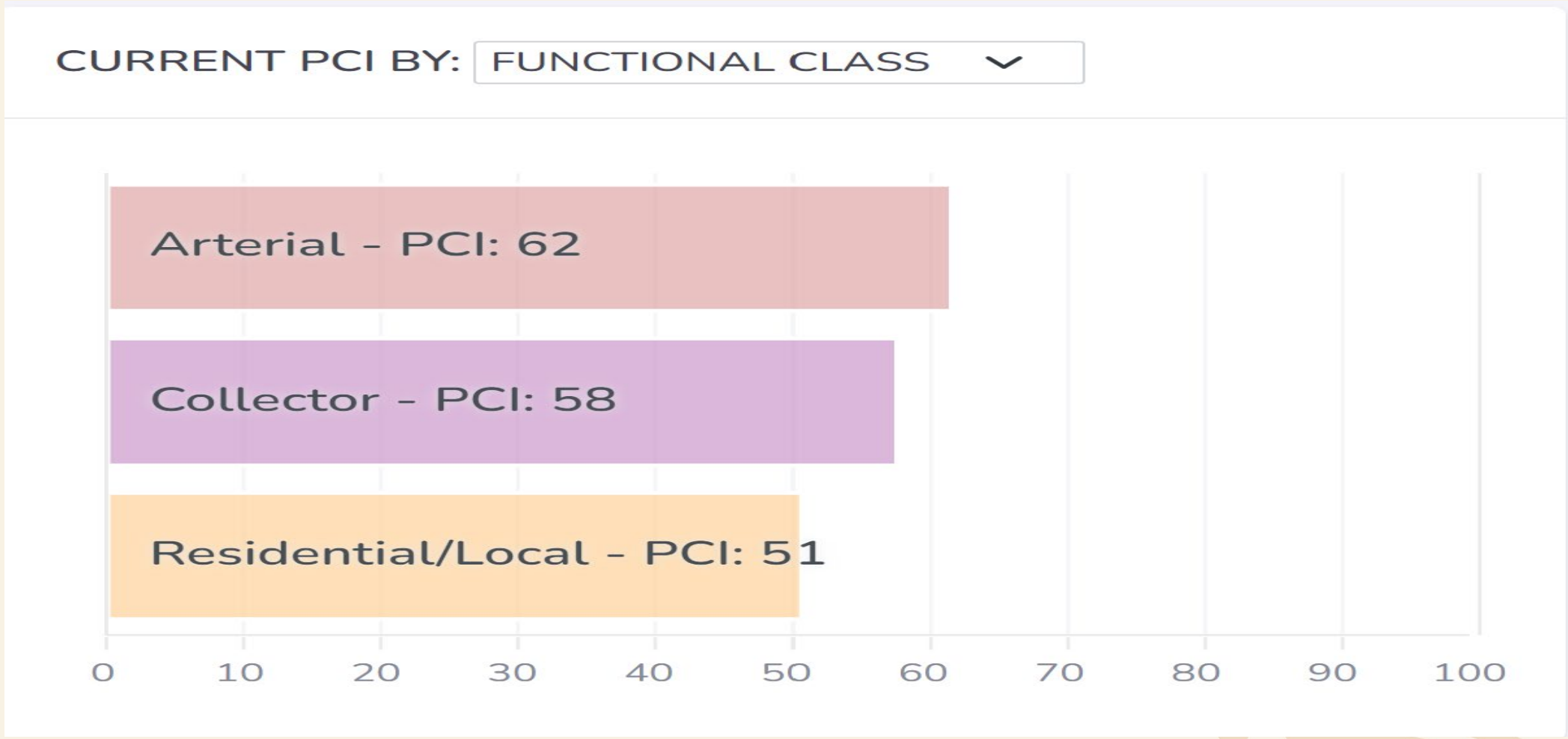
- Residential – Local streets that provide direct access to adjoining land and connections to collectors.
    - Example would be any street you would find in a neighborhood.
- Collector- Collectors can provide a balance of land access and mobility functions within residential, commercial, and industrial land use. Collectors connect local streets to arterials.
    - Examples would be Centennial, Leland, Douty, and Glacier.
- Arterial- Provide a high level of mobility with limited access to adjacent properties. Arterials connect highway interchanges and support the principal roadway system. Arterials provide access to collectors and some local streets.
    - Examples would be Grangeville, Lacey, Hanford-Armona, Fargo, 10th, 11th and 12th Ave.
- In all, Hanford has 231 miles of streets, equal to 1.69 square miles or 5,234,972 Square Yards
- The street system is the largest asset the City owns

Pavement Condition Index (PCI) Study

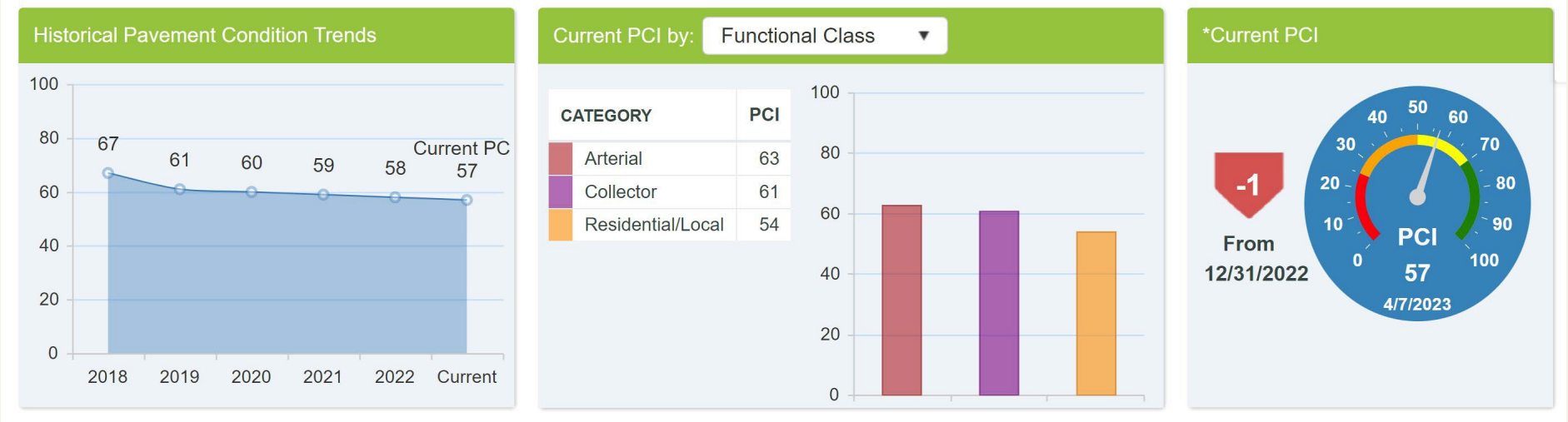
- 2019/2020 NCE was selected by King County Association of Governments (KCAG) to implement a pavement management system for various agencies within Kings County, including Hanford.
- May of 2020 NCE provided its final report to the City.
- NCE accessed every street in Hanford and assigned a PCI number (Pavement Condition Index).
- Data is updated annually by City staff.


HANFORD
General Plan
Circulation Map
13TH
12TH
11TH
HIGHWAY 43
9TH
8TH
7TH
FLINT
FARGO
GRANGEVILLE
LACEY
HANFORD-
ARMONA
HOUSTON
IONA
IDAHO
JACKSON
Adopted April 24, 2017
City of Hanford
2035 General Plan
1 inch = 1/4 Mile
0
0.5
1
1.5
2
Acreage Scale
Boundaries
Hanford City Limits (2014)
2035 Growth Boundary
Planned Area (proposed Primary Sphere of Influence)
General Plan Study Area
Circulation Designations
Highway
Major Arterial
Arterial
Collector
Railroad

Hanford's Current Street System



PCI Historical Index



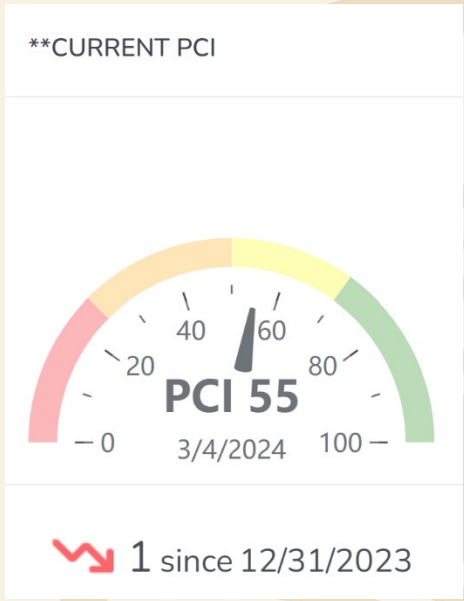
PCI in 2018 was 67

The current PCI is 57/55

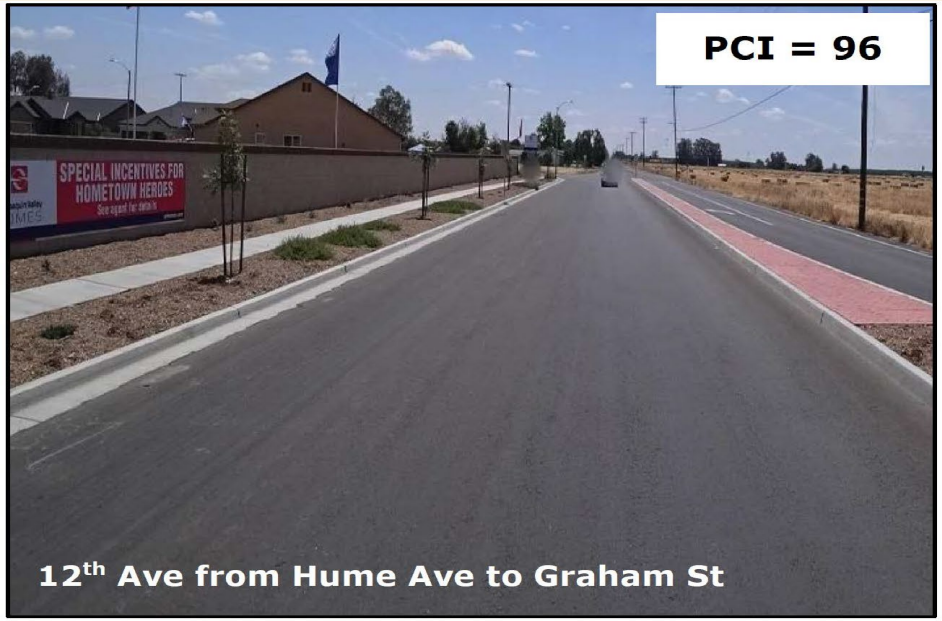
Arterial Streets are at 63/62

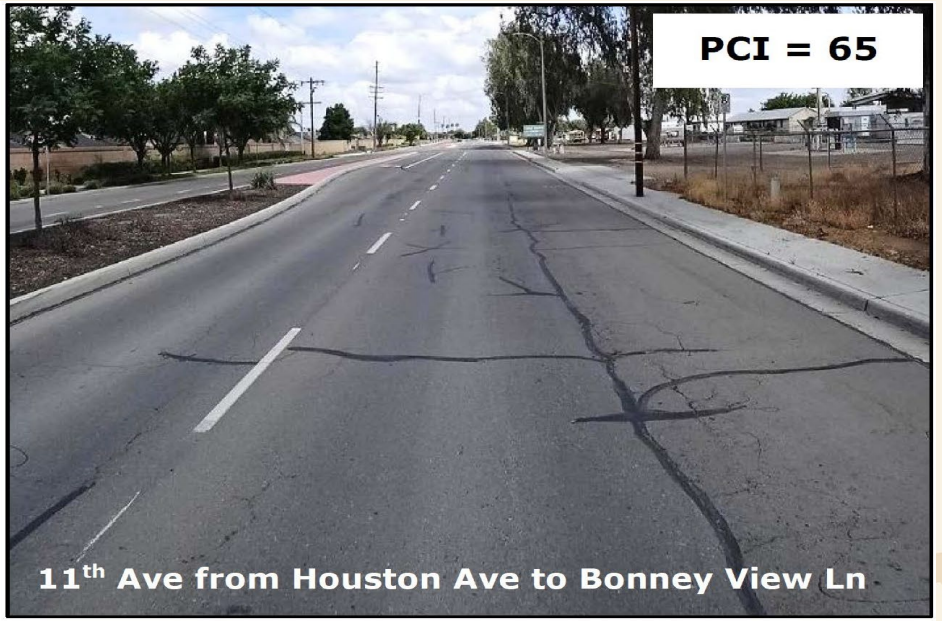
Collector Streets are at 61/58

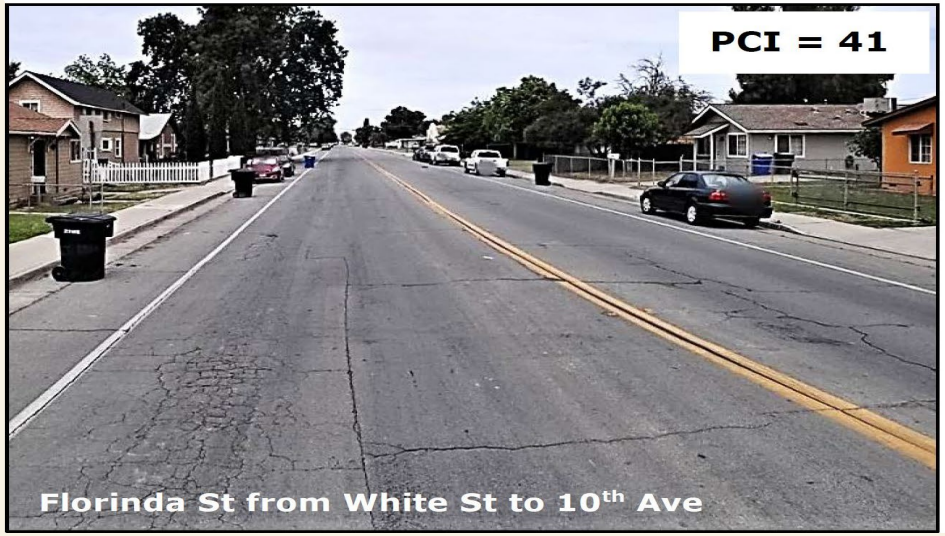
Residential Streets are at 54/51



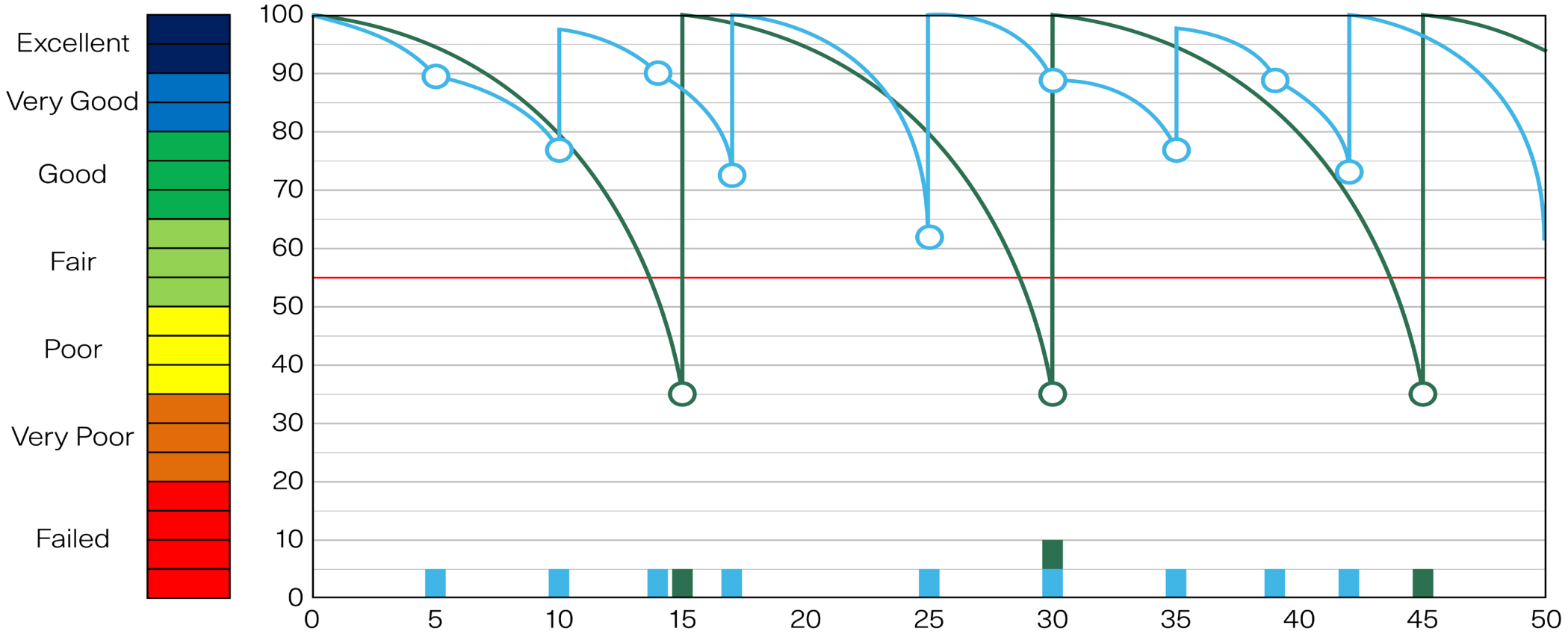
PCI Examples







Preservation vs. Rehabilitation



Preservation Strategy:

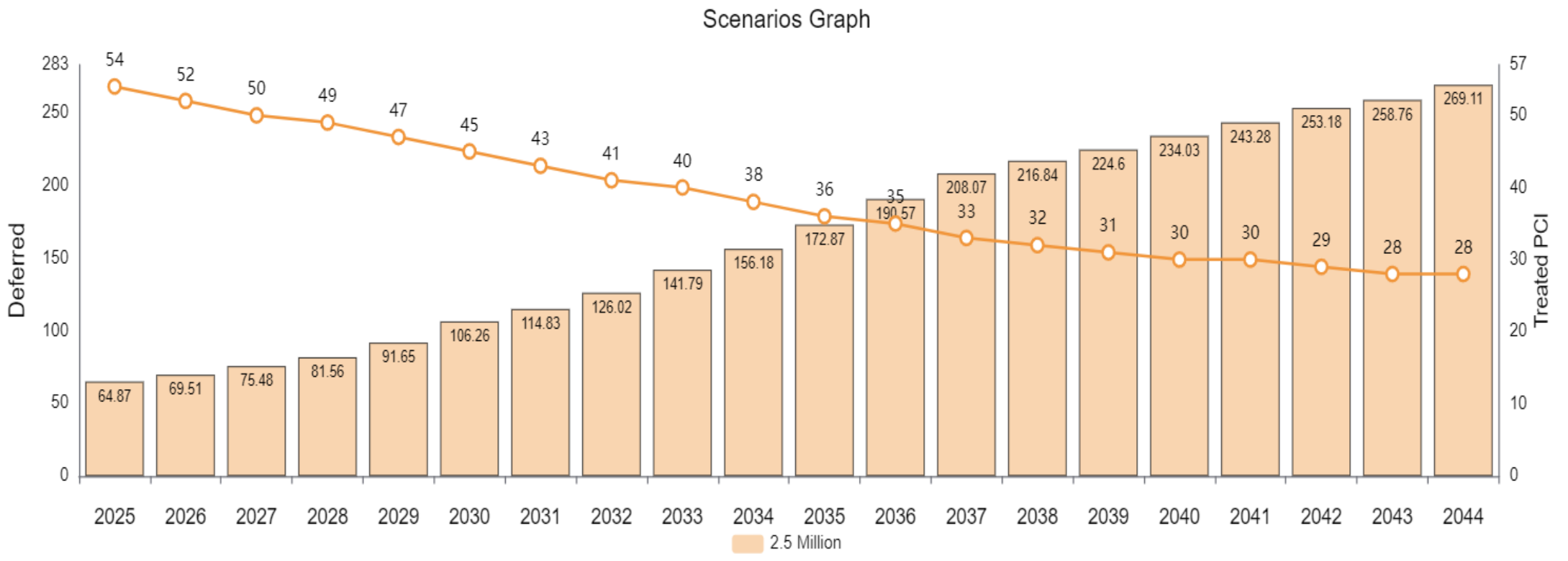
Years 5, 14, 30 & 39:	Crack Sealing
Years 10 & 35:	Micro Surfacing (Double)
Years 17 & 42:	Chip Seal
Year 25:	Mill & Pave

Rehabilitation Strategy:

Year 15:	Unstabilized FDR plus 4” HMA Overlay
Year 30:	Unstabilized FDR plus 4” HMA Overlay
Year 45:	Unstabilized FDR plus 4” HMA Overlay

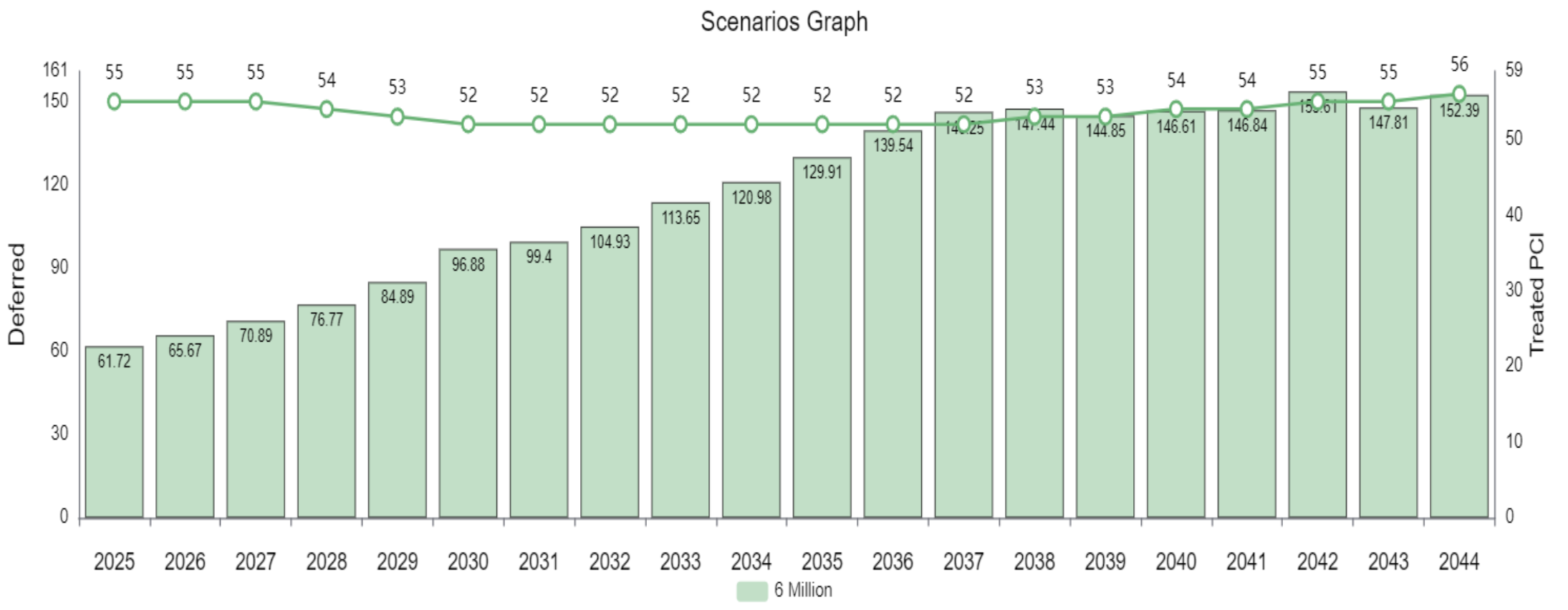
2024 Scenario 1

- Scenario 1: The City's anticipated funding for paving projects is approximately $2.5 million per year. At this funding level, the network PCI is expected to decrease from 54 to 47 by FY 2029
- Due to funding limitations the PCI has already fallen to 55 in 2024



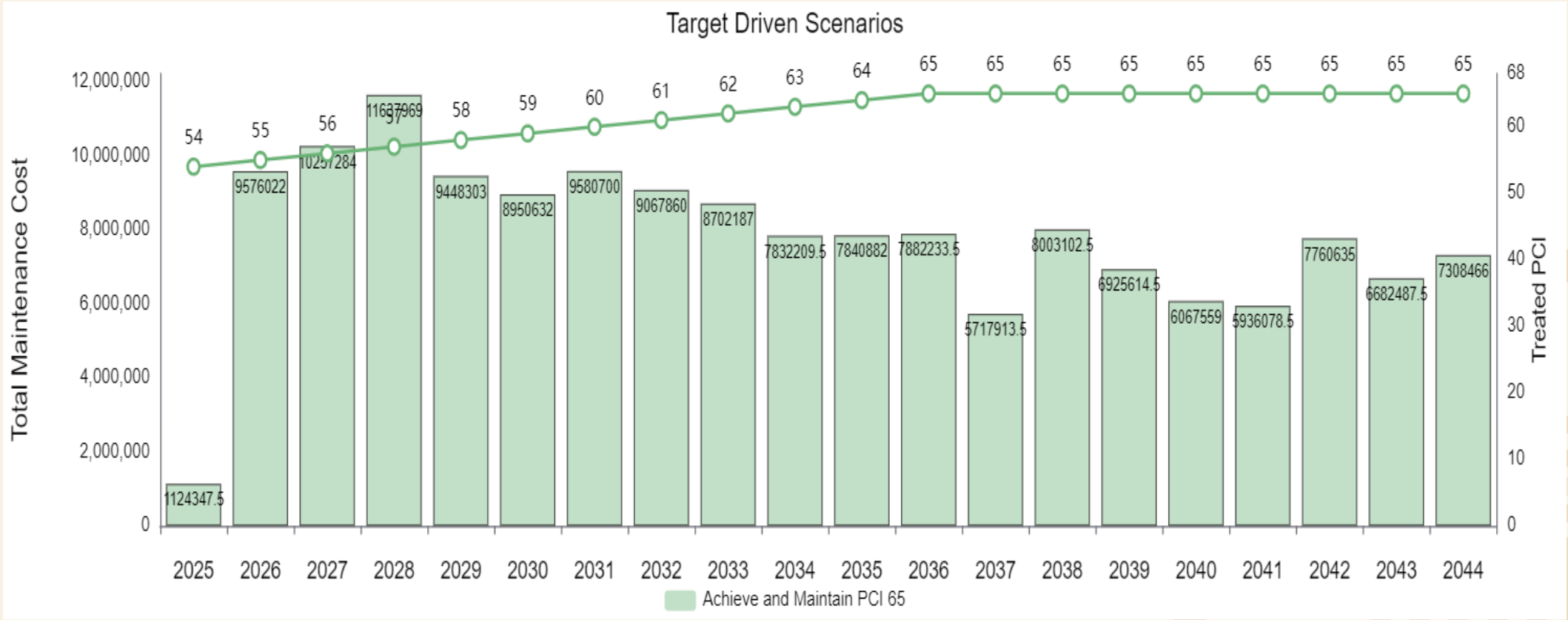
2024 Scenario 2

- Scenario 2: Maintain current PCI at 55
- An additional increase to 6 million dollars would be need to maintain status quo



2024 Scenario 3

- Scenario 3: To improve PCI to 65 and maintain
- Target-driven scenario



Maintenance Selection Process

- Staff uses the Street Saver program for project recommendations, along with calls from the public and visual inspections to determine future projects.
- ADT (Average Daily Traffic), surface condition, and subgrade issues are all taken into consideration when determining projects and applications.
- There are occasions, such as this year, when we must pivot from one area to another due to circumstances out of our control, such as a change in traffic patterns, new residential and commercial developments, or weather.

Treatment Methods

Ordered from Brain surgery to Band-Aid

• Reconstruction	$163.65	SY
• CIR (Cold in Place Recycling)	$45.48	SY
• Mill and Fill	$33.21	SY
• Double Fiber Seal	$6.75	SY
• Single Fiber Seal	$3.19	SY
• Deep Patching	$3.66	SY
• Crack Sealing	$1.64	LF
• Slurry Seal	$1.16	SY
• Patching	$1.10	SY
• Reclamite	$0.95	SY

Reconstruction

- Contractor hired to perform work.
- Completely demoed and redesigned.
- Storm drains, sidewalks, curb, and gutter installed.
- Various streets
- $273.45 SY
- 20–25-year life expectancy

Emma Lee Ln between Grangeville and Jana Way

CIR (Cold in-place recycling)

- A contractor is hired to grind asphalt in place.
- Then put back down and re-emulsified and compacted.
- Overlay of fresh permanent paving installed.
- Major collectors
- More cost-effective than reconstruction.
- Lacey, 12th and 11th Ave. done at $36.69 a square yard (2015/16)
- 15-20-year life expectancy.

11th Ave between Grangeville and Lacey Ave

Mill & Fill

A contractor is hired to mill out a predetermined depth of asphalt and pave back the same amount.

City staff will repair subgrade issues ahead of time.

Various areas

$49.16 SY

12–15-year life expectancy.

Campus Dr between Greenfield and Lacey Ave

Double Fiber Seal

City staff will repair subgrade issues and crack seal.

A contractor is hired to apply two lifts of sealant with fiber additive.

Manholes are then lifted to grade.

Done on arterials and collectors

$5.20 per square yard (2022)

8–12-year life expectancy.

Greenfield between Campus Dr and 12th Ave

Single Fiber Seal

City staff crack seals ahead of the project.

A Contractor is hired to apply a single lift of sealant with a fiber additive.

Used on residential streets

Adds additional wear surface

$2.90 per square yard (2022)

5-10 years life expectancy

Richmond and Malone St

Deep Patching

Performed by City Street crews.

77,000 SF deep patched last year.

Various streets.

Repairs subbase issues, such as wheel rutting and base failure.

Performed in advance of the mill and fill and double fiber projects.

City cost for material, labor, and equipment last year was $279,514.96, which equates to $3.63 a SF, including material.

Life expectancy varies on location and additional treatment.

Hanford Armona Rd between 11th Ave. and 12th Ave.

Crack Sealing

- Performed by City staff.
- Prevents water intrusion into the subbase of the street.
- Performed ahead of double/single fiber projects.
- Routine maintenance.
- Applied to various streets.
- The city applied 361,760 LF last year
- Typically needs reapplied every 4 to 5 years if not sealed with another treatment.

11th Ave between Fargo and Flint Ave.

Slurry Seal

City staff crack seals ahead of the project.
A Contractor is hired to apply a single thin lift of small aggregate and oil.
Used on residential streets.
Adds additional wear surface.
.98 per square yard (2016/17)
5-7 years life expectancy.

Foxhill Pl between Cortner and Bella Oaks Way

Patching

Performed by City staff.

Uses cold patch as well as permanent paving.

City staff cleans pothole, applies a tack coat of emulsion, installs new material, and compacts.

Typically, a temporary fix due to other underlying issues, such as base failure or water intrusion.

Various streets.

Cost is minimal, time, labor, and material

Reclamite

- Applied by a contractor.
- Thin lift of penetrating oil applied to the street.
- Sand is applied once the oil sets.
- Sand is then swept up and disposed off.
- Traffic is left to “kneed” the oil into the asphalt.
- Applied to arterials and collectors.
- Cost .85 a square yard in 2021
- Stock picture, not a Hanford application

Signalized Intersections

- 50 signalized intersections in Hanford
- All are operated by TS1 and TS2 cabinets with video detection.
- Hanford uses internally Illuminated overhead street signs (IISS)
- Several are aging and have outdated technology.
- Advances in technology allow for a smoother flow of traffic.

Traffic Control Current Needs

• 31 Cobalt controllers at $4,000 each	$152,000
• 25 battery backup units at $28,000 each	$700,000
• 30 Video detection upgrades at $22,000 each	$660,000
• 8 IISS Upgrades at $7,000 each	$56,000
• Total	$1,568,000

- Does not include any communication upgrades such as fiber or AI systems

Street Concerns

- Failing infrastructure with a limited budget that has not increased in the past 10 years
- PCI in Hanford is falling quickly
- Outdated technology that does not operate at peak efficiency
- Increase in miles of streets maintained with the same budget and staffing levels
- Cost of materials and labor has increased, leaving us with smaller projects to fit within the budget
- ADA issues and the inability to make improvements due to an increase in labor and material
- The City does not have the manpower or equipment to perform large projects, contractors need to be hired at prevailing wage to meet state requirements.

Typical Street Funding Sources

- Federal
  - Highway Transportation Grant Program
- State
  - Gas Tax
  - State Transportation Improvement Program
  - Active Transportation Program
  - Transportation Development Act
- Local
  - General Fund
  - Sales Tax
  - Development Impact Fess (New Streets)
  - Parking and Permit Fees (Cost Recovery)

Maintaining the Status Quo

- Increased delays in emergency response times
- Wear and tear on vehicles
- Decreased economic development
- Increased cost in repairs of streets
- Material and labor continue to increase meaning smaller projects
- Potential future litigation to the City

Questions?