



Pavement Management Program An Introduction

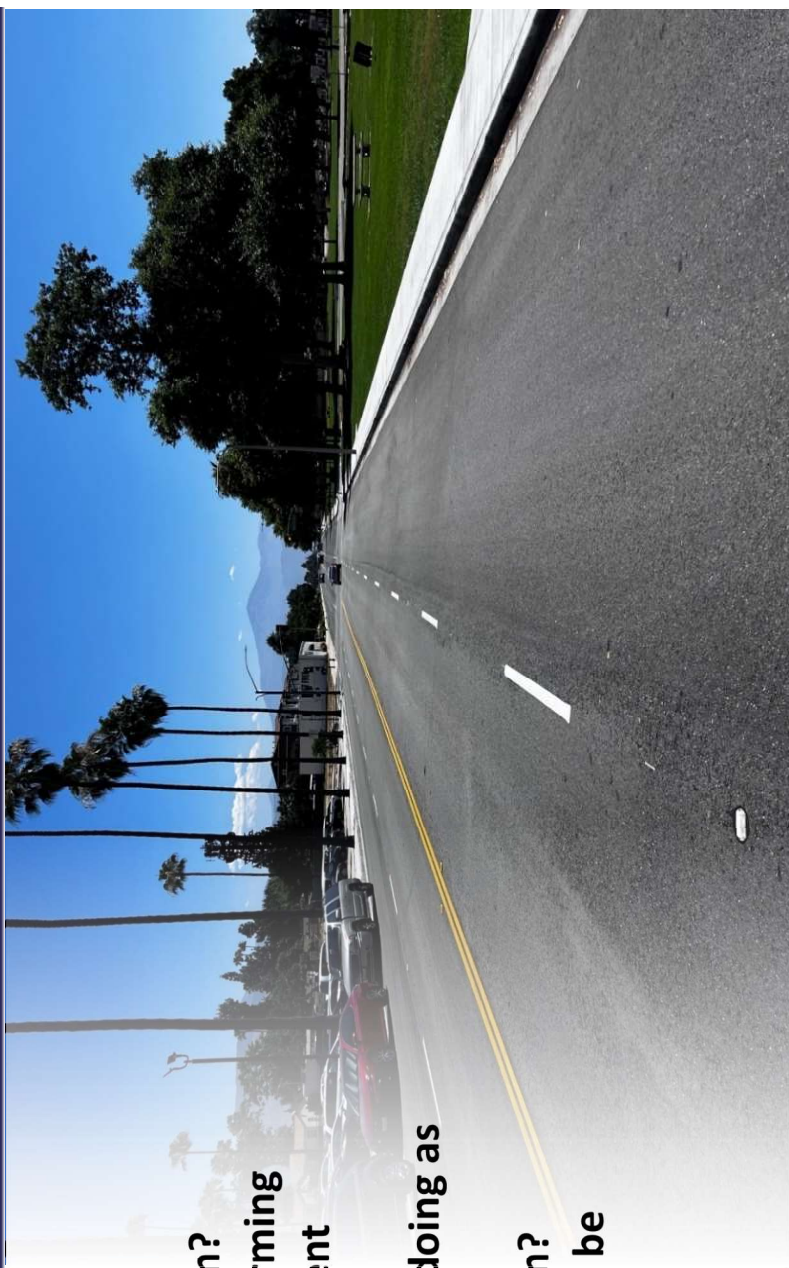
City of San Bernardino
City Council Meeting
April 16th, 2025

Presenter: Vivek Jha, P.E., M.S.
Principal/Southern California Operations Manager
Firm Name: NCE



Meeting Agenda

- What is Pavement Management Program?
- How is the City performing Pavement Management Program?
- What else is the City doing as part of the Pavement Management Program?
- When will the Project be completed?





NCE Overview

Over 200 PMP Clients

- Performed similar PMP projects for over 90 cities and counties in Southern California
- Performs annual distress and PMP software training on behalf of OCTA
- Perform StreetSaver Training on behalf of MTC

Certified (MTC &/or OCTA) Field Inspectors

- Rigorous Quality Control (QC) Practices
 - Surveyed over 120,000 miles of pavements
- Multiple Automated Surveys Data Collection Vehicles
- Testing vehicle has been certified by OCTA and MTC through the Vendor Certification Program (VCP)
- National Expertise in Pavement Technology
- Innovative pavement strategies with sustainable options

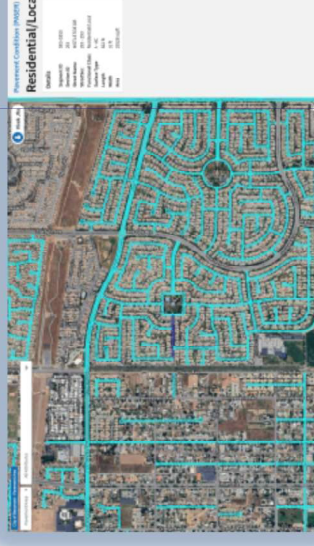
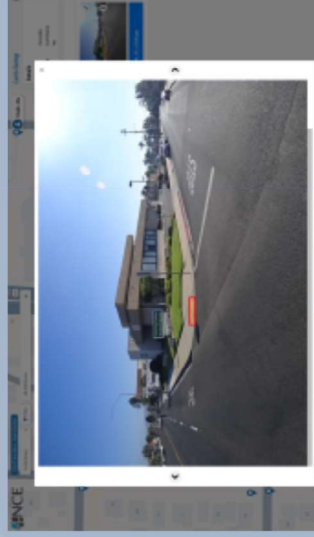
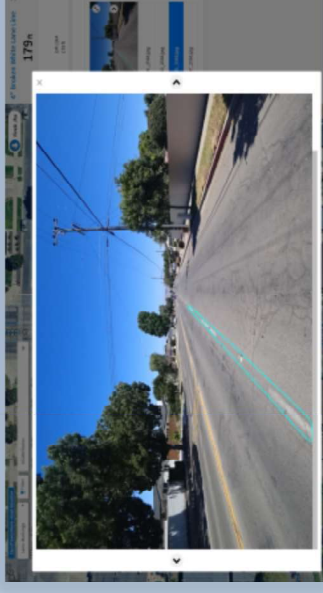




Transforming Infrastructure Management

Key Benefits:

- Comprehensive asset understanding
- Data-driven decision making
- Proactive maintenance planning
- Resource optimization





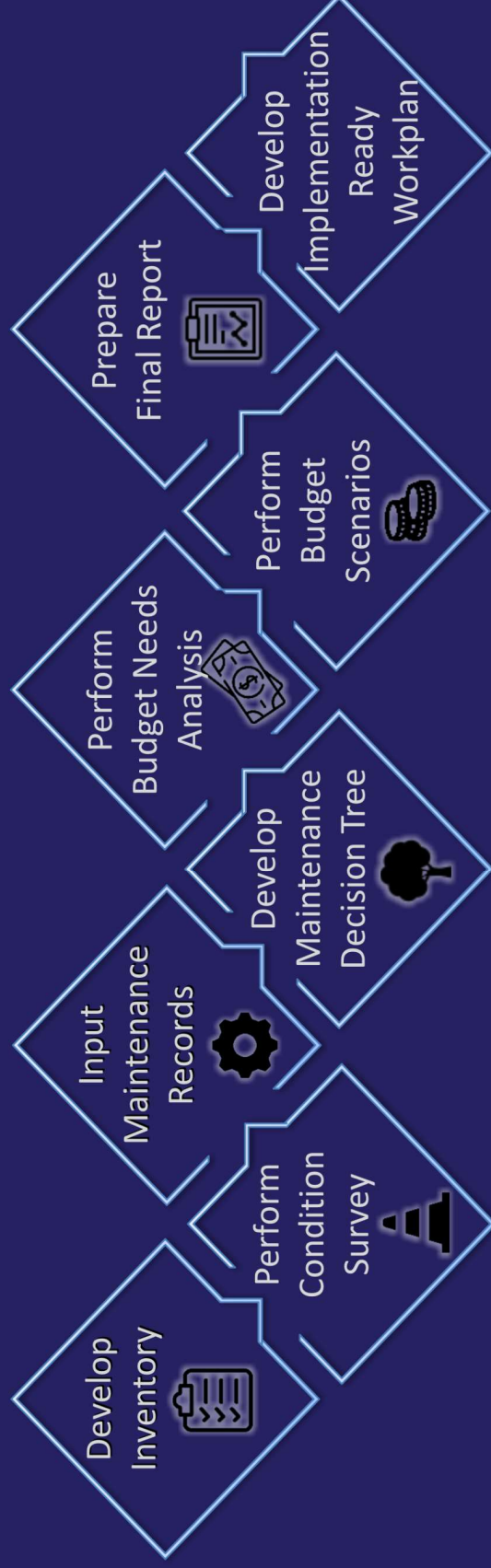
What is Pavement Management Program?

- Approach used to make cost-effective decisions.
- It answers 4 main questions:
 - What streets does the City own/maintain?
 - What **condition** are the streets in?
 - What **repairs** are needed and when?
 - How much **funding** is needed to maintain or improve streets?
- It typically employs software (StreetSaver® or MicroPaver™)





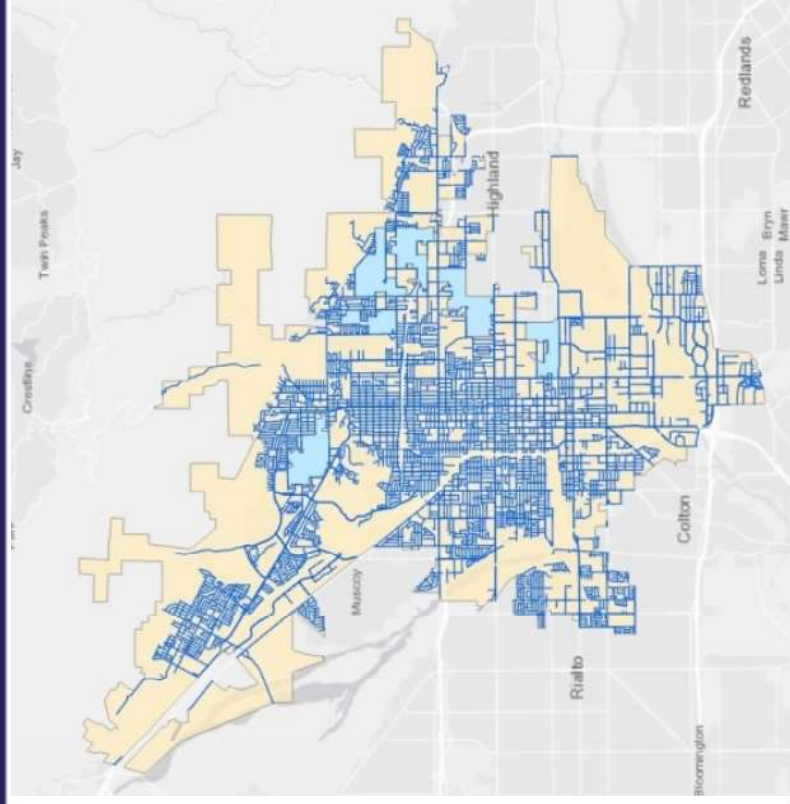
Pavement Management Program





City's Inventory

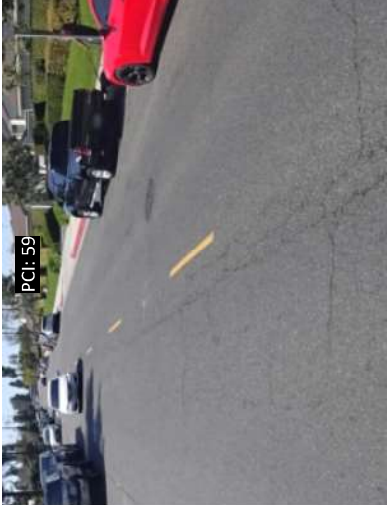
Functional Class	# of Sections	Section Mileage	Centerline Mileage	Lane Miles	Pavement Area (Sqft)	% Pavement Area
Arterial/Collector	1,928	296.2	207.7	629.2	57,001,394	47%
Residential/Local	3,161	350.7	349.3	701.3	63,540,319	53%
Total	5,089	646.9	557.0	1,330.5	120,541,713	100%





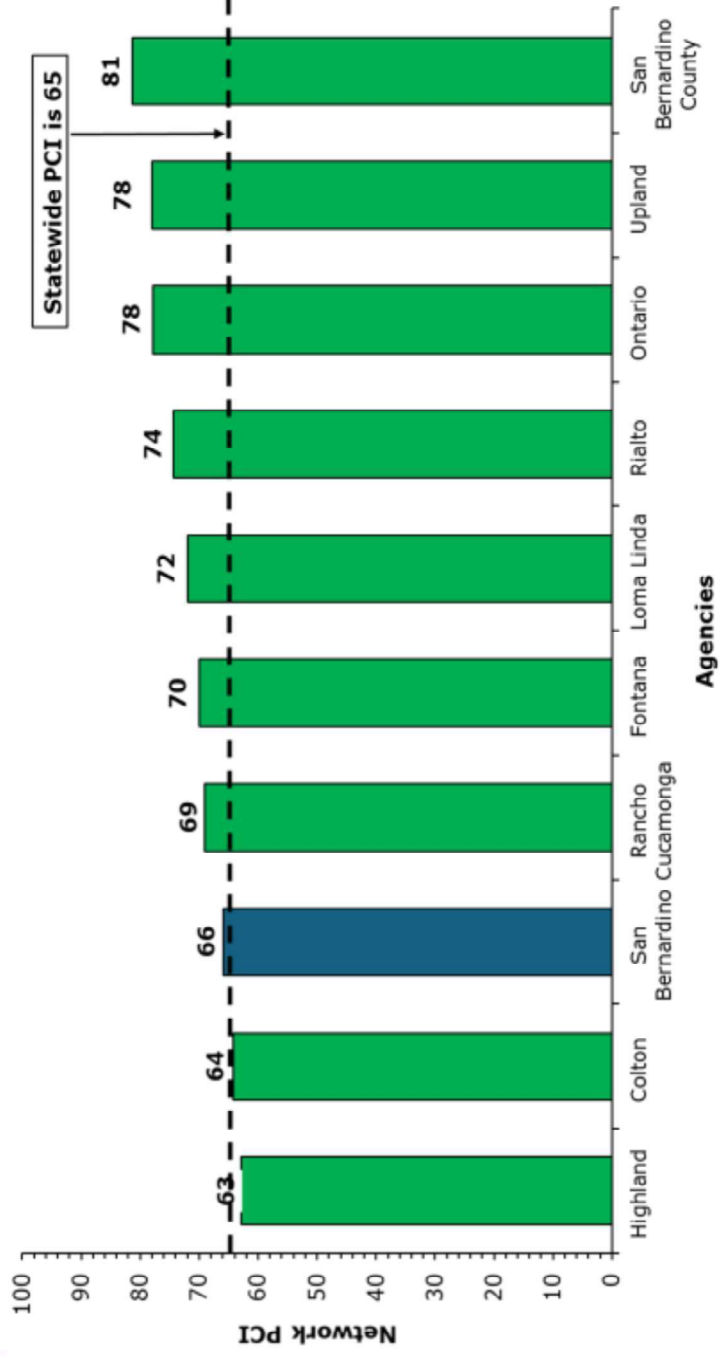
What is PCI?

Condition Category	Pavement Condition	PCI
(I)	Very Good	100
(II/III)	Fair (Non-Load)	70
(II/III)	Fair (Load-related)	50
(II/III)	Poor	25
(II/III)	Very Poor	0



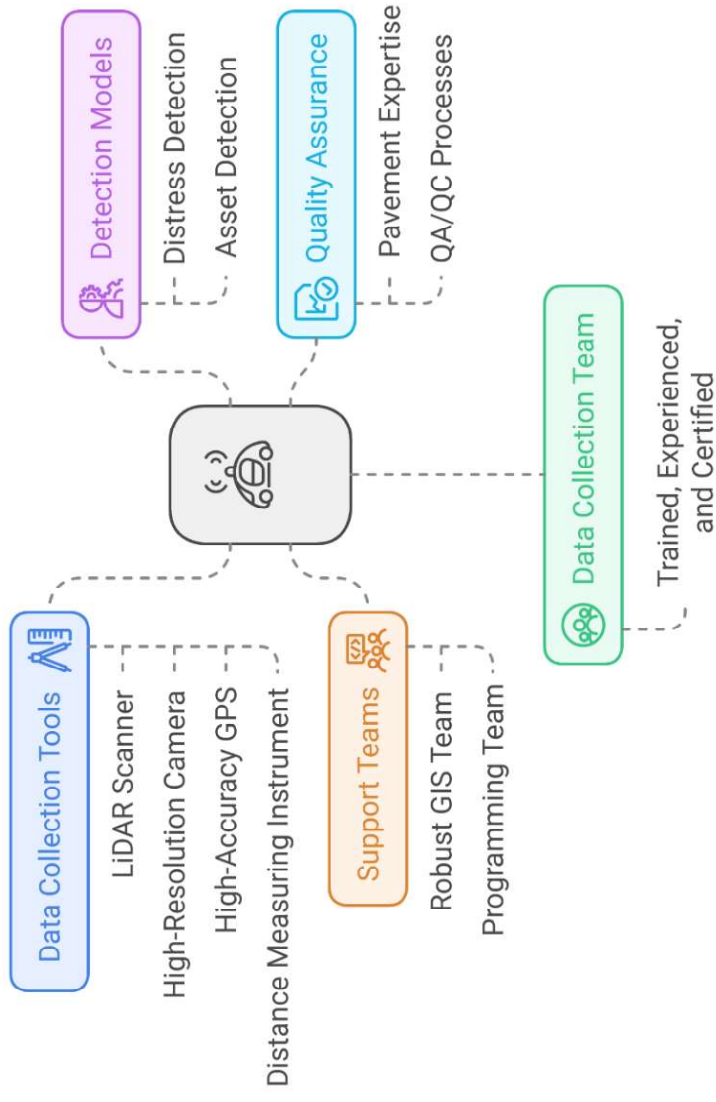


Comparison to Neighboring Agencies





What Do We Need for PCI/PMP?



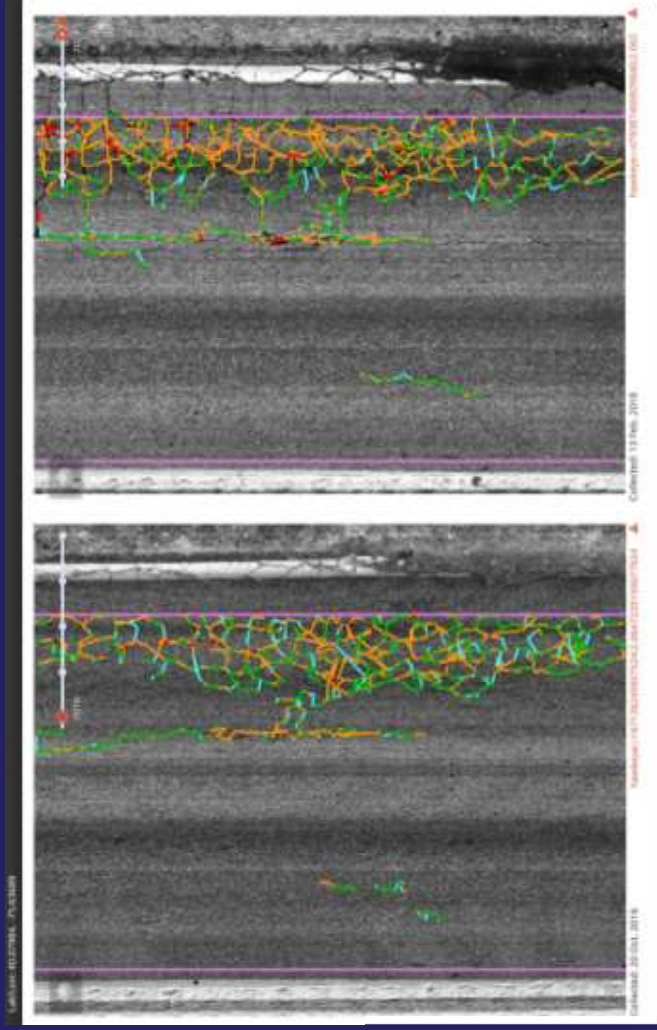
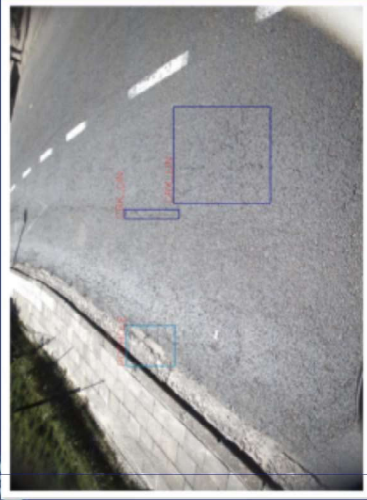


Data Collection Vehicle



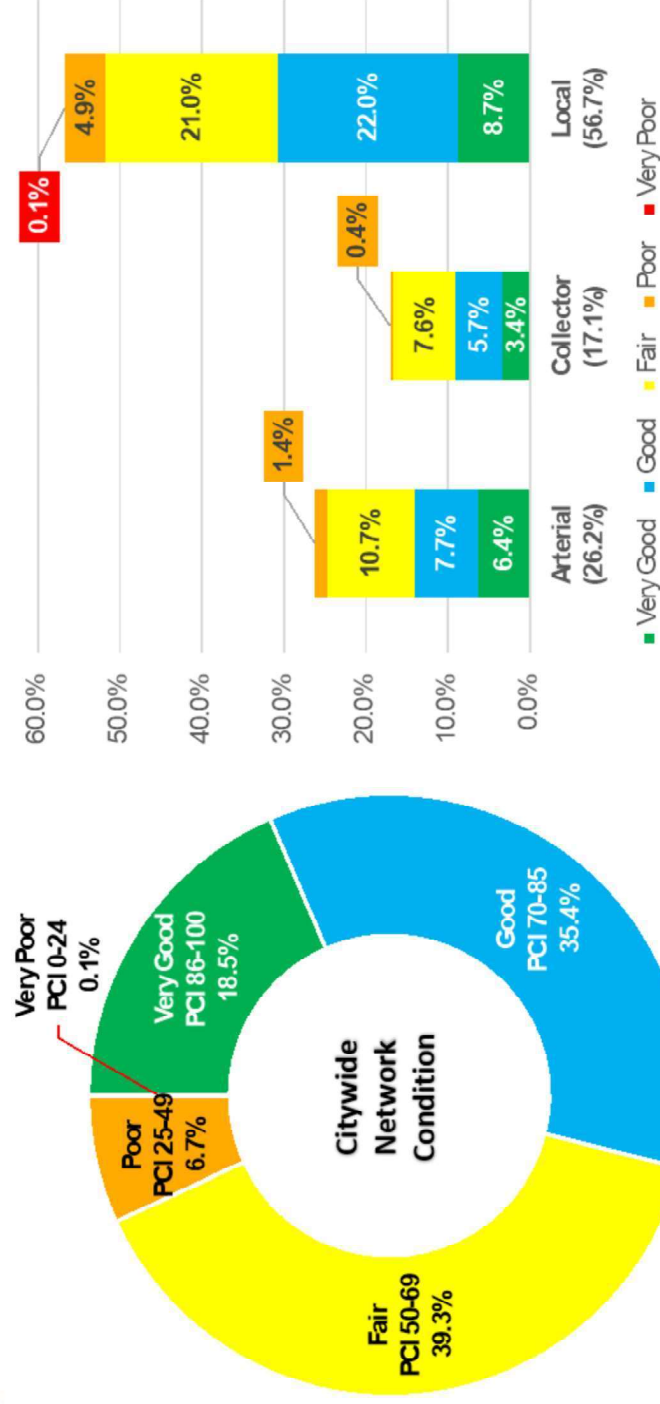


Pavement Stress Identification



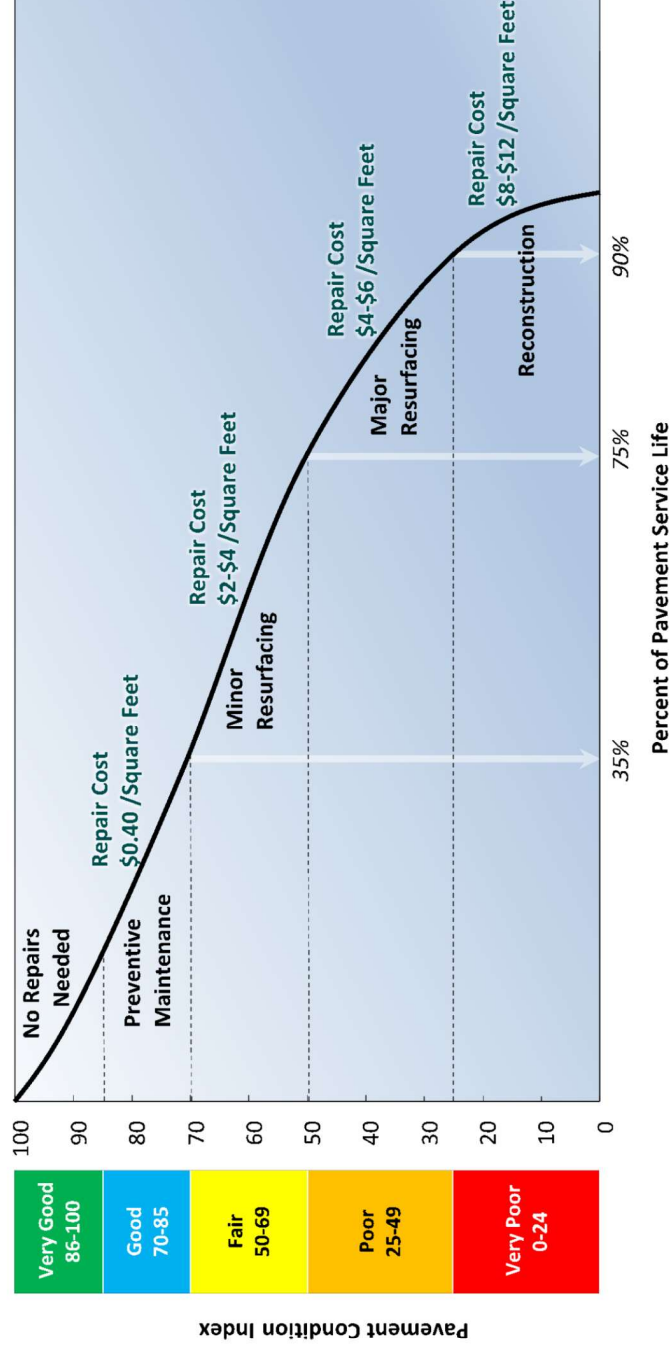


Citywide PCI Condition



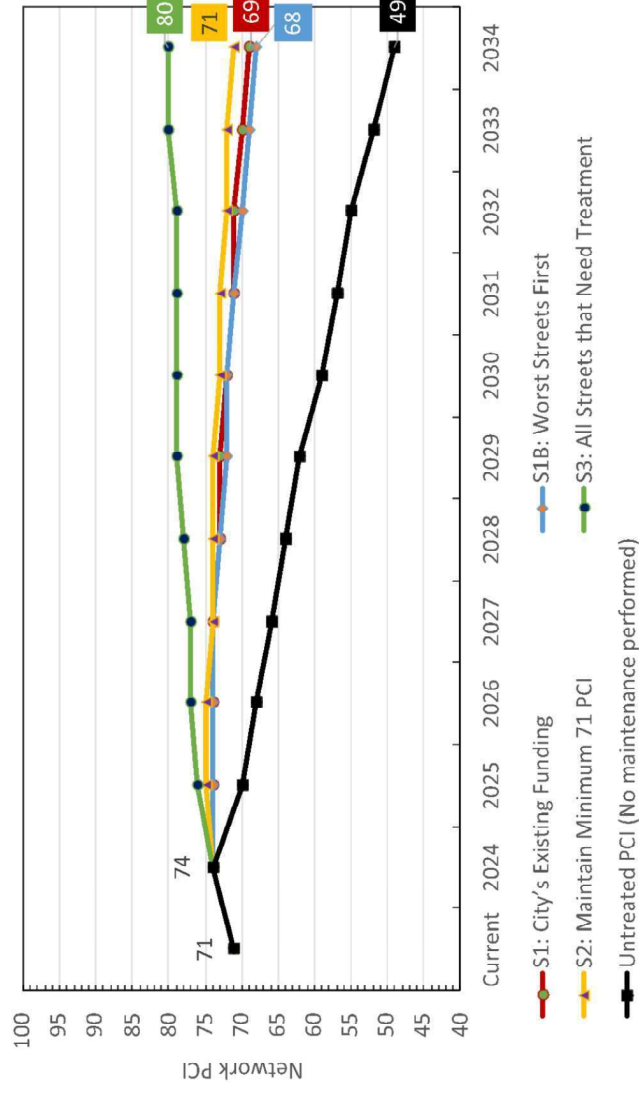


Typical Treatment Strategies based on PCI





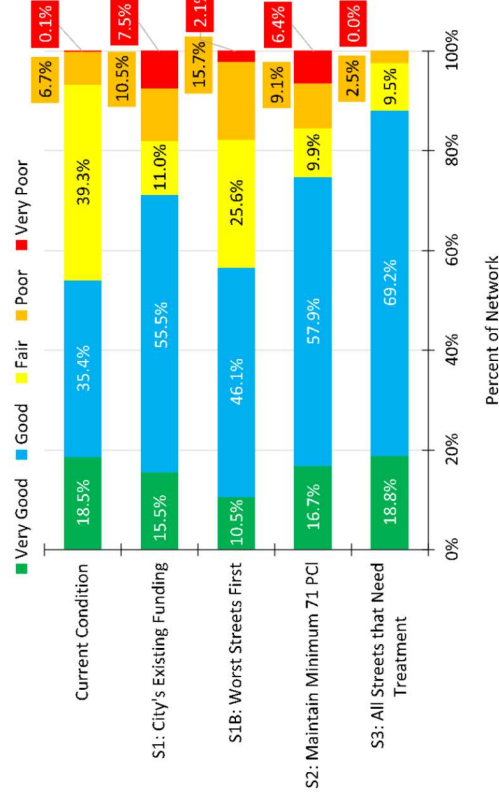
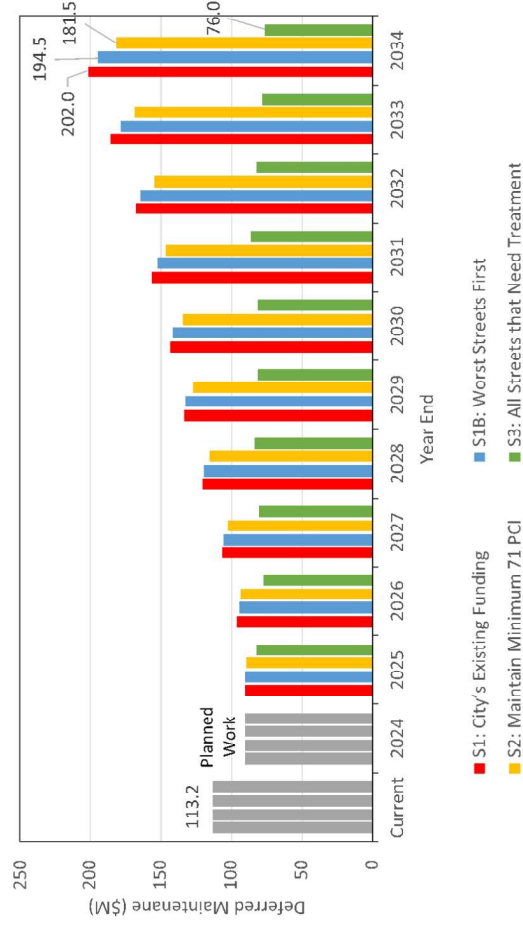
Budget Scenarios



Scenario	Description	Centerline Miles Treated	Pavement Area (SF) Treated
1	City's Existing Funding	225.6	46,810,937
1B	Worst Streets First	117.1	25,866,270
2	Maintain Minimum 71 PCI	241.2	49,758,352
3	All Streets that Need Treatment	293.6	62,745,646



Budget Scenarios

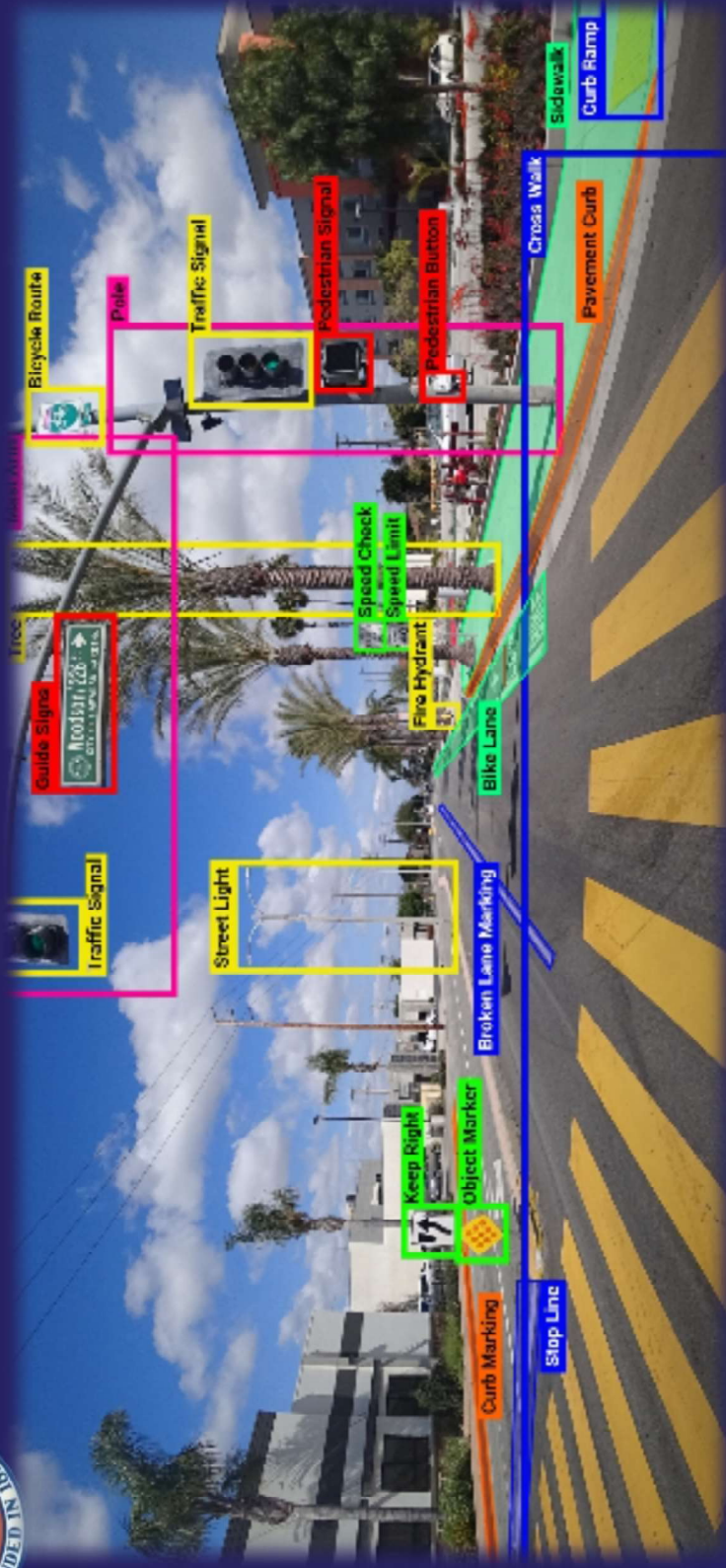


Pavement Condition –
End of Analysis Period

Annual Deferred Maintenance by Scenario



Street ROW Asset Inventory



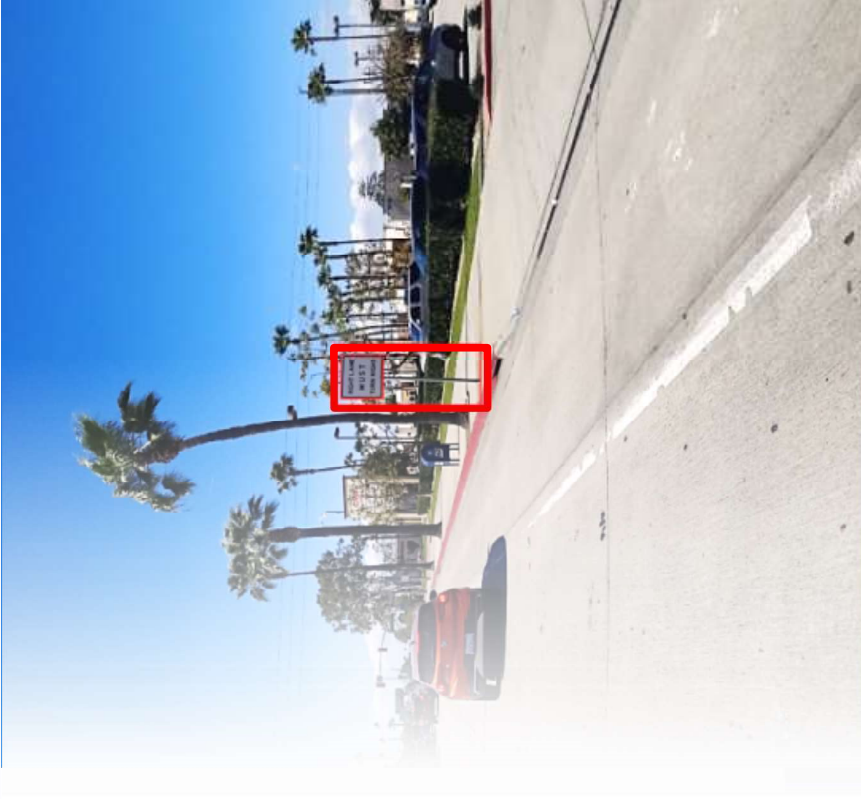


Street ROW Asset Inventory

High-resolution Right-of-Way (ROW) imagery for comprehensive asset visualization

AI-powered machine learning algorithms for automated asset recognition

Automated data extraction and classification to streamline asset inventory




MUTCD - Regulatory Signs, Barricades, And Gates

Details

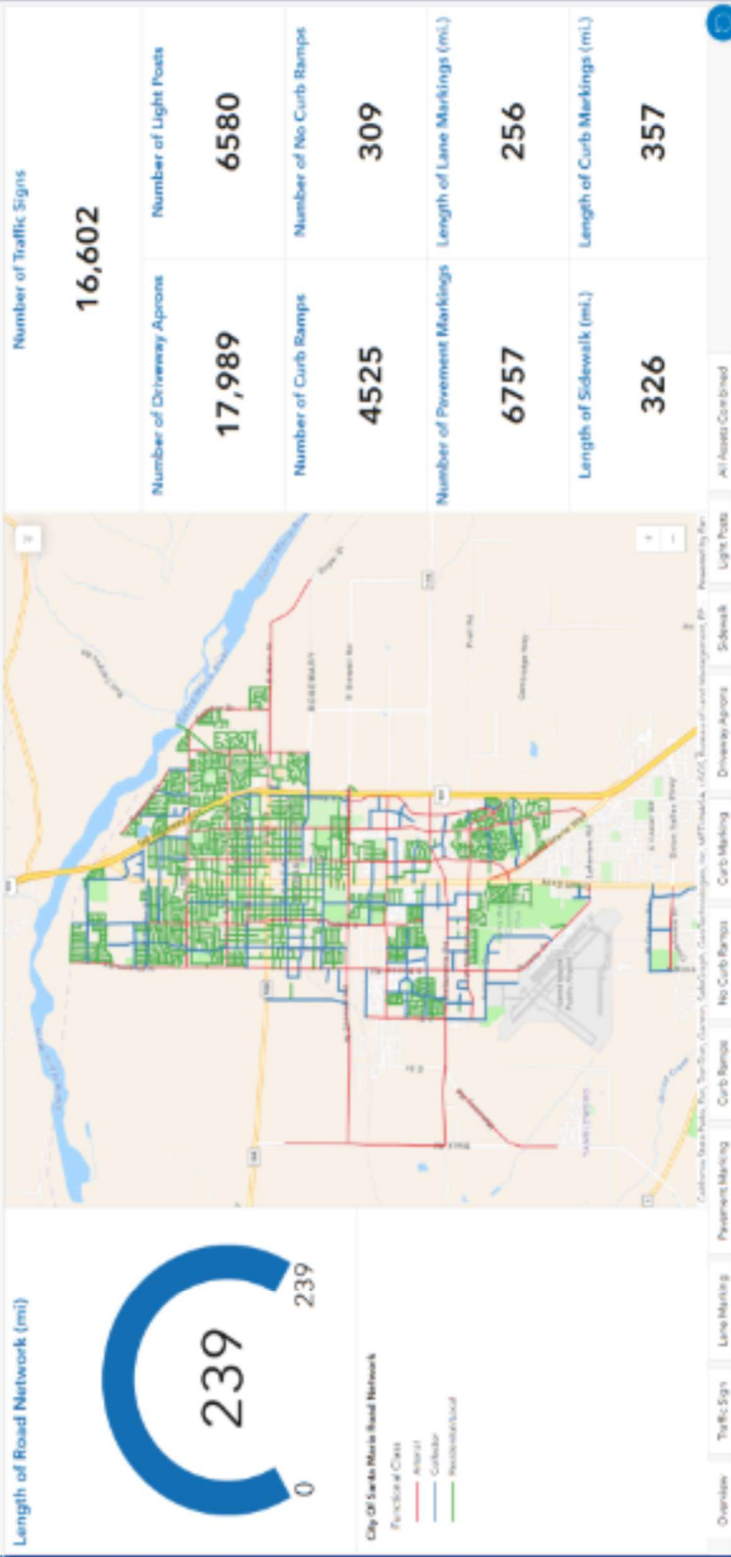
Asset ID	S-0879
Assembly ID	A-0484
CA MUTCD Code	R3-7R
CA MUTCD Name	Right (Left) Lane Must Turn Right (Left)
Sign Text	RIGHT LANE MUST TURN RIGHT
Sign Condition	Good
Sign Orientation	Forward Facing
Sign Width (in)	30
Sign Height (in)	30
Mount Height (in)	85
Sign Order	1
Cardinal Direction	EAST
Post Type	Ground Mounted
Post Material	Steel
Post Condition	Good
Post Count	1
Sign Count	1
Street Name	CARSON ST
Address	Carson Street, Hawaiian Gardens, CA 90716, US
Standardized Comment	The sign has no visible damage.

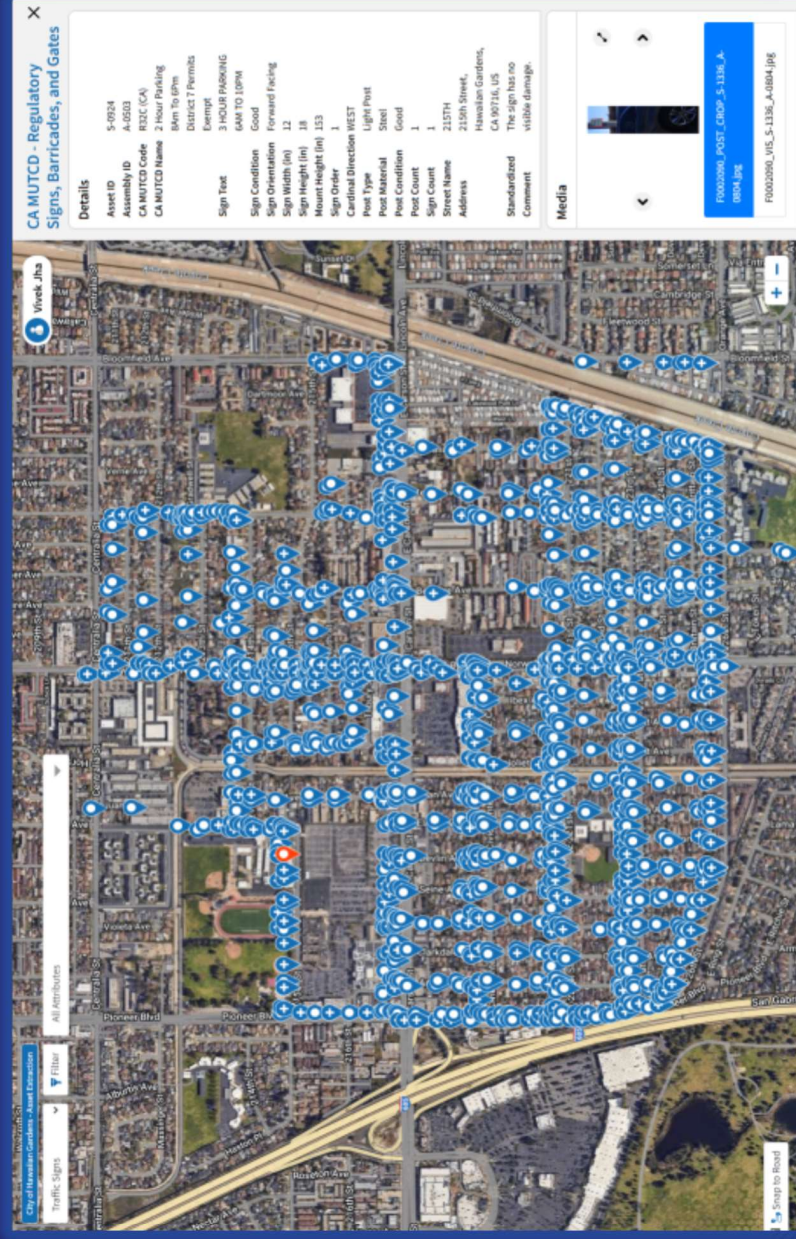
Media





Street ROW Asset Inventory







Schedule

PMP Data Buildup - Complete



- Identifying the Streets Owned by the City
- Determining the Pavement area
- Setting up database in StreetSaver

Pavement Condition Assessment



- Data Collection to Begin – April 3
- Data Collection to End – April 30, 2025
- PCI Assessment – June 25, 2025



Pavement Condition Assessment



- Data Analysis – June 30 – August 29, 2025
- Draft PCI Report – August 29, 2025



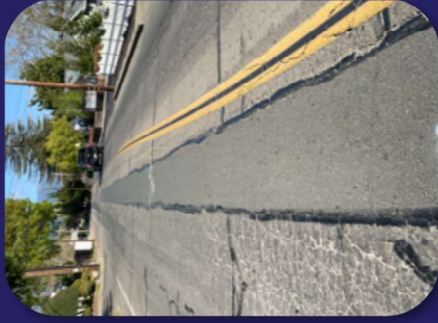


Utility Cut Impact Study (Not in Current SOW)

Question 1: How do utility cuts affect pavement performance?

Question 2: If pavement performance is reduced, what is the corresponding financial impact?

Question 3: Is the current restorations standard sufficient to cover the damage due to the cut?





Utility Cut Impact Study: Typical Fee Ranges

Agency	Criteria	Fee, \$/SF	Study by
Anaheim	PCI	3.60 – 11.60	NCE 2022
Davis	Functional Class and PCI	1.04 – 1.51	NCE 2022
Pacific	Functional Class, Age of the Pavement, Cut Size	1.00 – 4.00	NCE 2021
Ukiah	Functional Class, Age of the Pavement, Cut Size	0.50 – 4.00	NCE 2021
Santa Barbara County (Draft)	Functional Class, PCI, Cut Size		NCE 2023
Covina (Draft)	Functional Class, PCI, Cut Size		NCE 2024
Monterey Park (Draft)	Functional Class, PCI, Cut Size	Under Review	NCE 2024 (Draft)
South San Francisco (Draft)	Functional Class, PCI, Cut Size		NCE 2024 (Draft)
City of Riverside (Draft)	Functional Class, PCI, Cut Size		NCE 2024 (Draft)

Questions?

