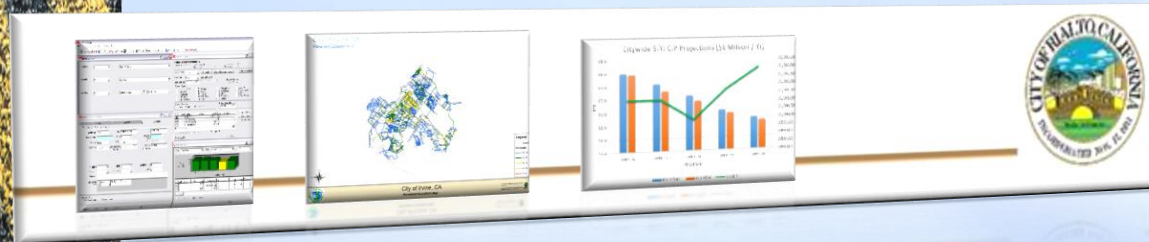


City of Rialto

***2019 PAVEMENT
MANAGEMENT PROGRAM***

January 8, 2019

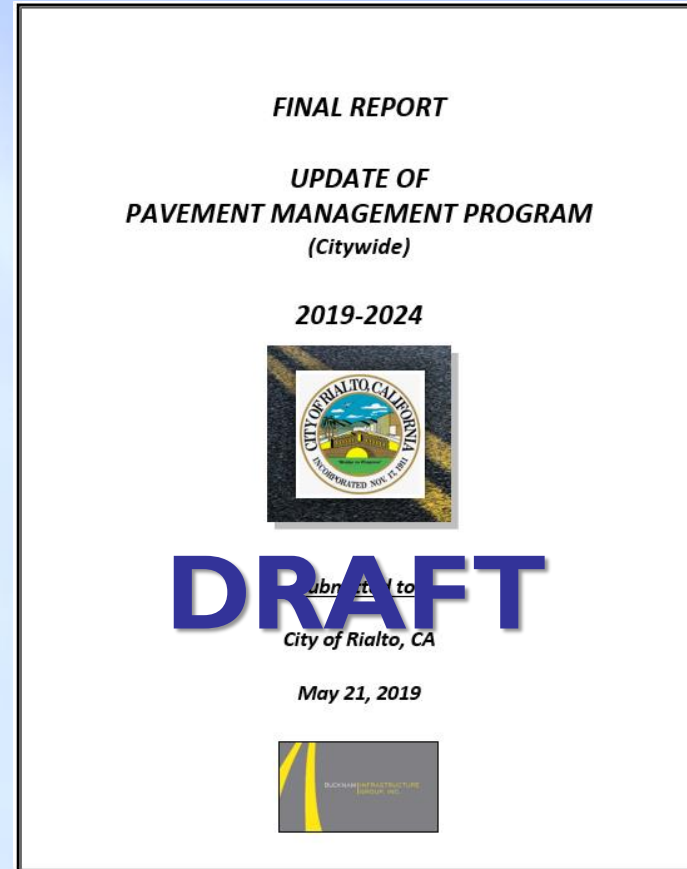


Presentation Outline

- Introductions
- What is Pavement Management?
- Why Pavement Management?
- City Networks and Mileage
- Bucknam Qualifications
- Pavement Management Methodology
- Citywide Pavement Condition
- Budget Projections and Scenarios
- 2019 PMP Update for Rialto
- Q&A

What Is Pavement Management?

- Network Level Planning Tool
- Pavement Inventory
- Visual Surface Inspection
- Pavement Condition Index (PCI)
- Treatment Decision Tree
- Budget Scenario Analysis
- Historical Treatments



Why Pavement Management?

- Efficient Use of Limited Funding
- Maintain Valuable Infrastructure Assets
- Provides Rating of Overall Weighted Condition
- Helps Identify Areas Requiring Treatments
- Planning Tool / Identifies Needed Budgets

Rialto Street Mileage / Networks

Rialto implemented first Pavement Management Program in 2007; last updated March 2014;

- Pavement studies performed in 2007 & 2014
- 94,627,121 square feet of pavement throughout City
- Weighted Citywide PCI = 60.6 (was 62.3 in 2014 and 61.7 in 2012)
- Citywide network – 269.3 miles, includes:
 - 100.3 miles of Arterials, Secondary and Collectors;
 - 169 miles of Locals; and
 - 5,500+ total pavement sections
- Pavement network is City's largest asset: estimated total replacement cost of \$269 million



Bucknam Qualifications

Multidiscipline management consulting firm:

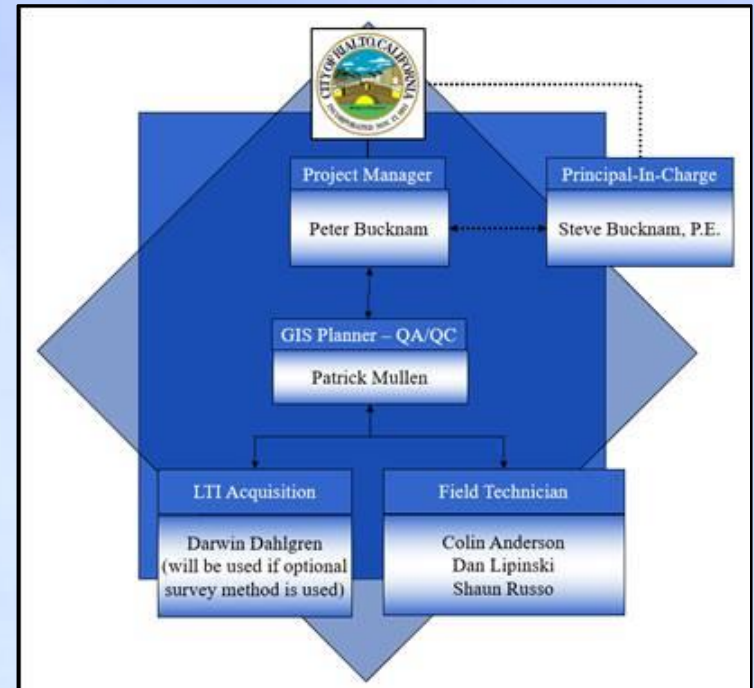
- Infrastructure Management Consulting firm
- Pavement Management (200+ projects in Southern California)
- Public Right-of-Way Infrastructure Inventories
- City GIS Enterprise Services
- Traffic Control Device Inventories
- Airport / Utility Facility Pavement Management
- Digital Roadway Imaging (Pavement, Sign, ROW)
- Offices in Oceanside and Laguna Niguel, CA



Bucknam is currently supporting neighboring local agencies
such as: **Ontario, Pomona, Lake Elsinore, Menifee**

Staffing and Qualifications

- Steve Bucknam, Principal
- Peter Bucknam, Project Manager
- Patrick Mullen, GIS Planner
- Aaron Sutton, GIS Analyst
- Colin Anderson, Field Inspector
- Shaun Russo, Field Inspector
- Dan Lipinski, Field Inspector



All our inspectors are certified with
MicroPAVER and StreetSaver (ASTM D6433-16)

Background and Project Summary

- Update & improve City's 2014 Pavement Management Program
- Integrate proactive, long-range PMP plan into City's Strategic Plan – “how to manage 269 centerline miles of AC & PCC” for next 5 years (i.e. reach/ maintain PCI of 75)
- Bucknam managers & technical staff have worked with MicroPAVER & StreetSaver since 1997
- 100% of all pavement sections to be surveyed within 126 working days (February to April 2019)
- Inspection services provide our clients with two approaches to conditional surveys:
 - Walking based survey
 - Digital Roadway Imaging (full street width & ROW imaging)



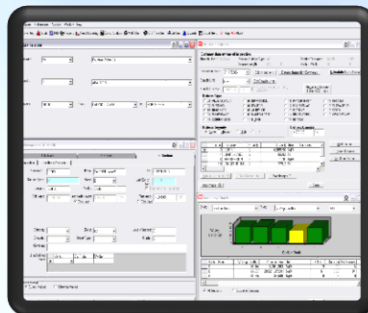
Methodology

1. Project Implementation
2. Client Satisfaction
3. Project Schedule
4. Scope of Work



Major Tasks

- Project Kickoff
- Project Status Meeting – QC (30%, 60%, and 100%)
- Review/ Approve PMP / GIS Segmentation (N to S; E to W)
- Naming Convention corrections / verifications
- Advantage/Disadvantages MicroPAVER vs. Other PMS's



Methodology

- Update Work History
- Pavement Condition Survey (100% - 269.3 miles)
 - Field Data Collection (Tablet – **live**)
 - Multiple tests per area, distress extent, type, quantity
 - Live Rialto GIS files for reference and accuracy
 - **Walking** - Distress types collected based on actual segment surface conditions & physical characteristics. Surveying to be conducted consistent with ASTM D6433-16 & Army Corp of Engineers sampling guidelines, flexible to City sampling requirements
 - Recent overlay, reconstruction and scheduled work to reduce required survey mileage

Create Maintenance and Rehabilitation

File Sections: ADELE 10

Section: ADELE - 10

Date: 09/12/2014 Treatment: SLURRY SEAL

Thickness: 0 Comments: Type II Slurry applied

Sq. Ft. 14580

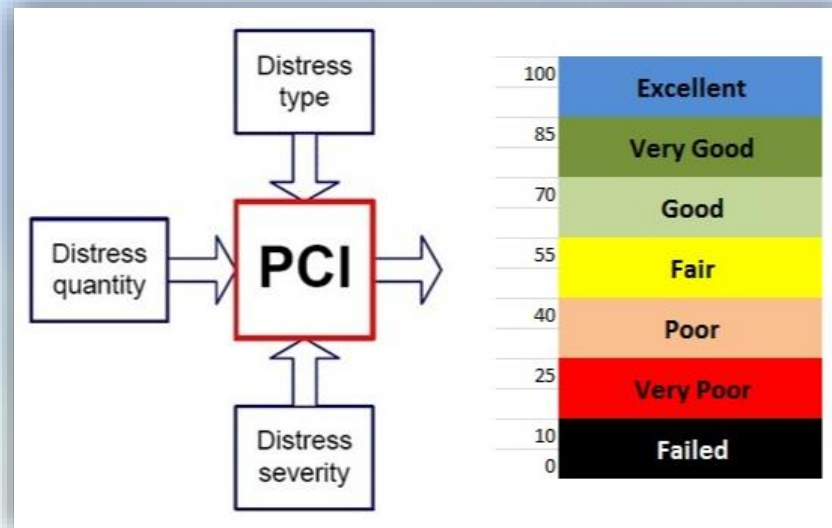
Cost: 6550

Clear Delete Save Save & New Save & Close Close

Citywide Pavement Condition

Pavement Condition Index (PCI) Qualitative Scale

- PCI: a condition rating that ranges from 0 to 100
- Citywide Weighted Average PCI = Pavement section PCI multiplied by its area / by total network area



Sample Pavement Life Cycle

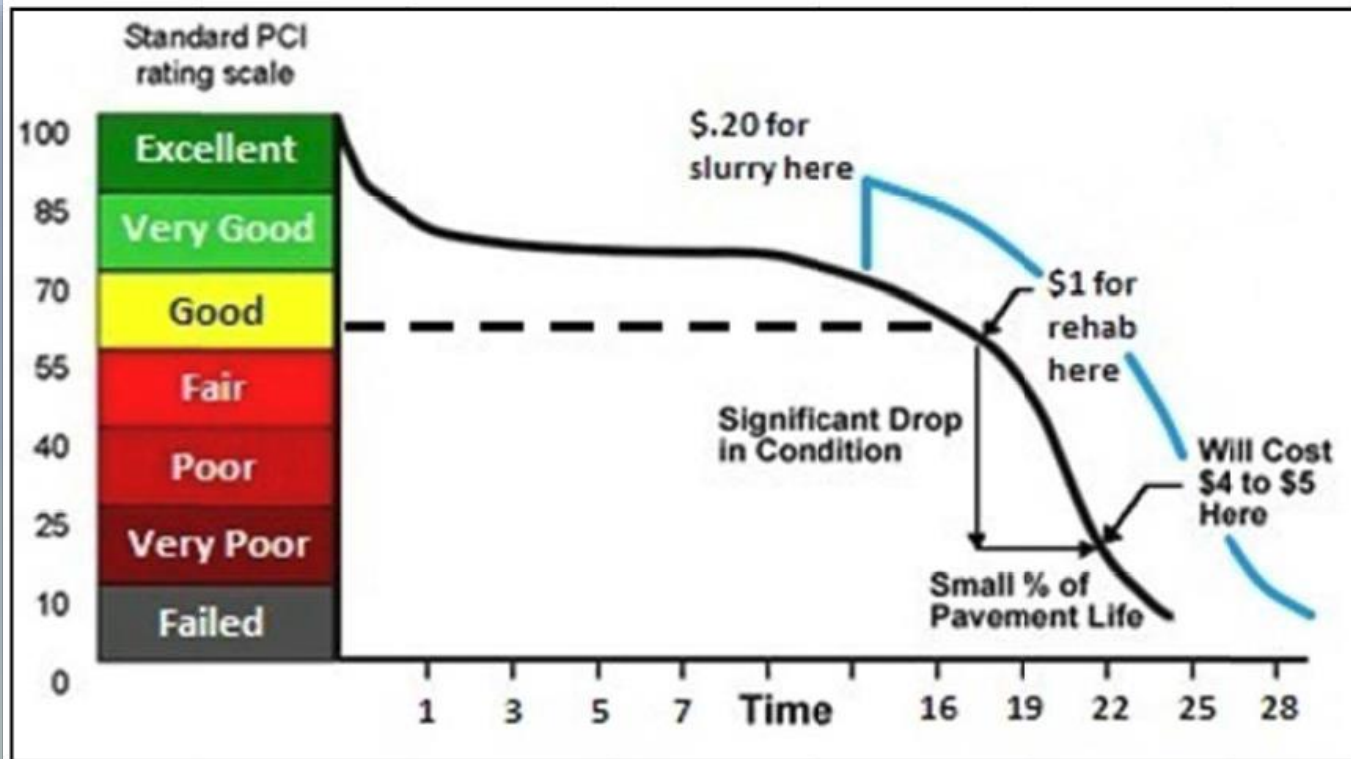


Figure 5 – Sample Pavement Life Cycle / Deterioration Rate

Factors That Effect Pavement Life

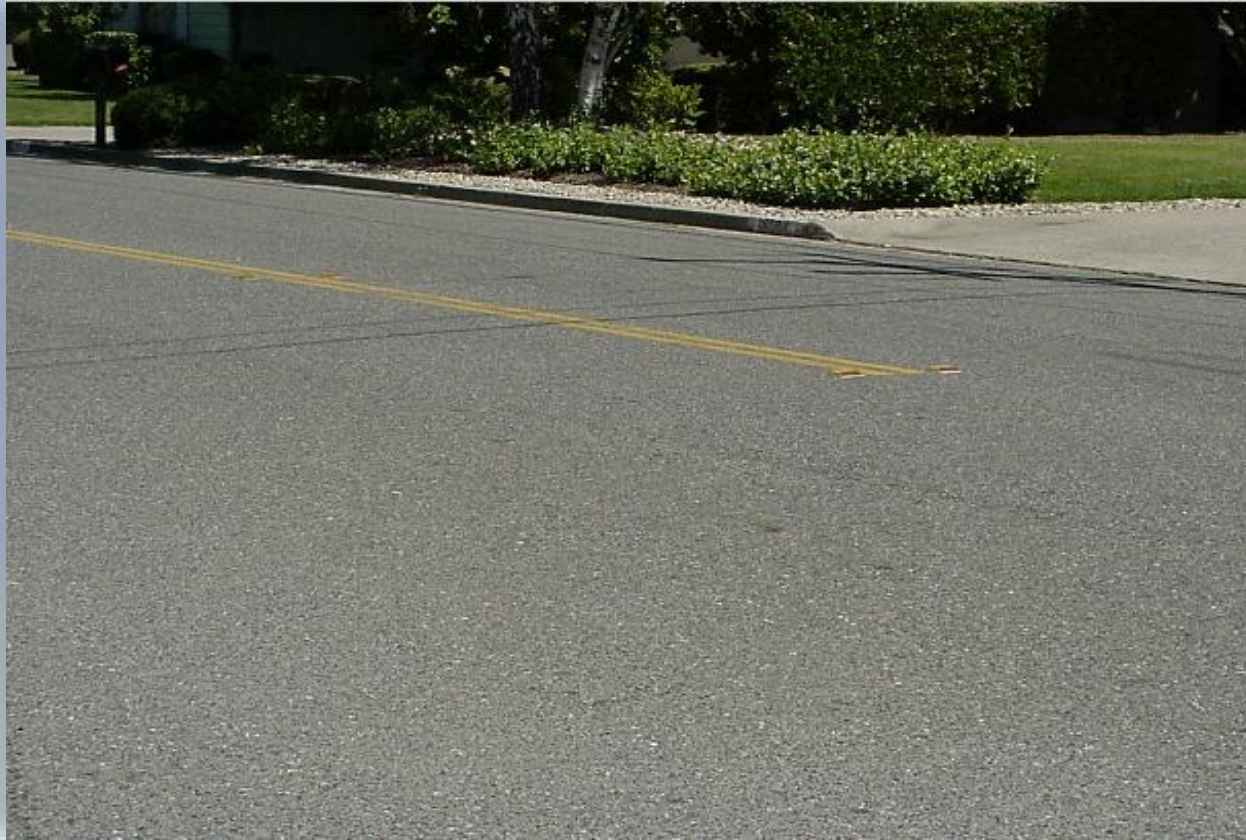
- Traffic volume and static / dynamic loads
- Weather (rain, poor drainage, extreme heat, freezing)
- Type of pavement
- Age of pavement
- Water runoff / pumping (high water)
- Soil and base material under pavement
- Lack of preventative maintenance / rehab M&R efforts, available funding



100 PCI (New)



83 PCI



70 PCI



50 PCI



25 PCI

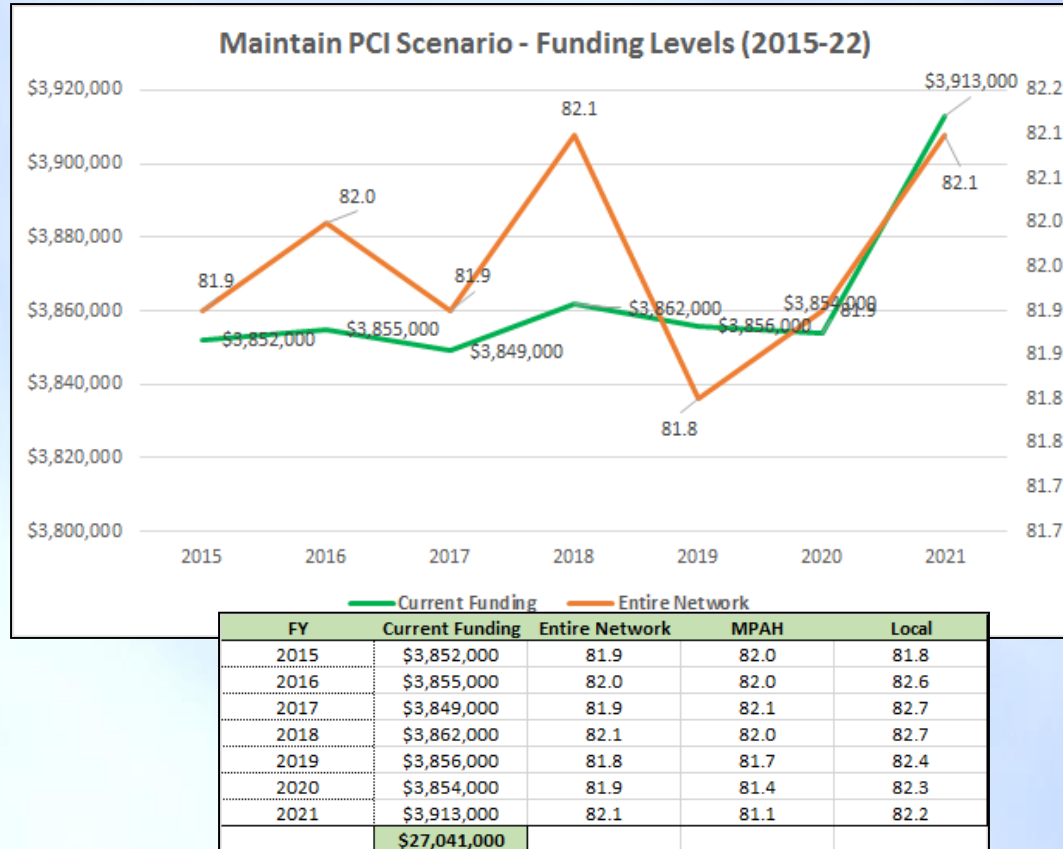


10 PCI (Failed)



Methodology

- Pavement Condition Index (PCI) reporting - QC
- Preparation of Pavement Improvement Report
 - Maintenance & CIP / Budgetary Analysis / Decision Trees
- Development of City-wide CIP Reports / Compliance Report

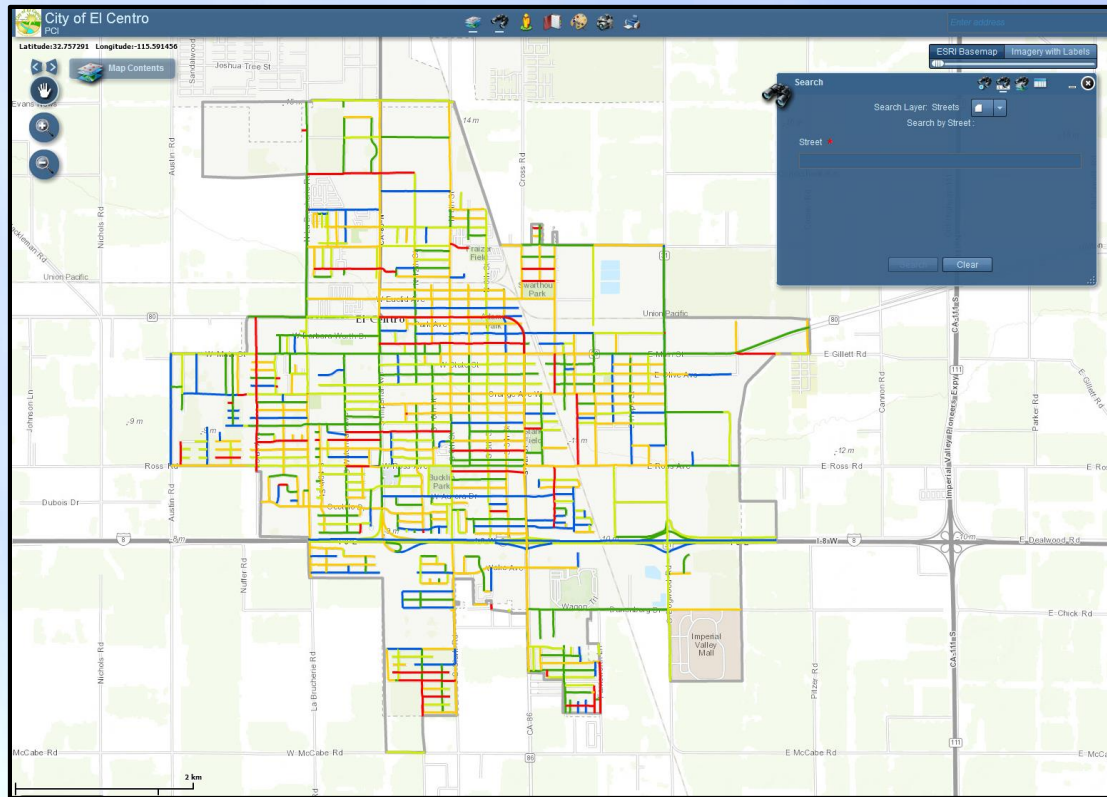


Budget Projections and Scenarios

- Forecast Pavement Rehabilitation Projects:
 - How current CIP budget performs over five years against today's conditions?
 - Funding necessary to “maintain” today's conditions?
 - Funding necessary to “increase” today's conditions?
- Need to Consider:
 - Current Funding – Special Assessment alternatives / Grants
 - Long-term Goals – Proactive Arterial / Local planning
 - Alternative pavement applications
 - Achieve goal of “preventative maintenance” condition

Methodology

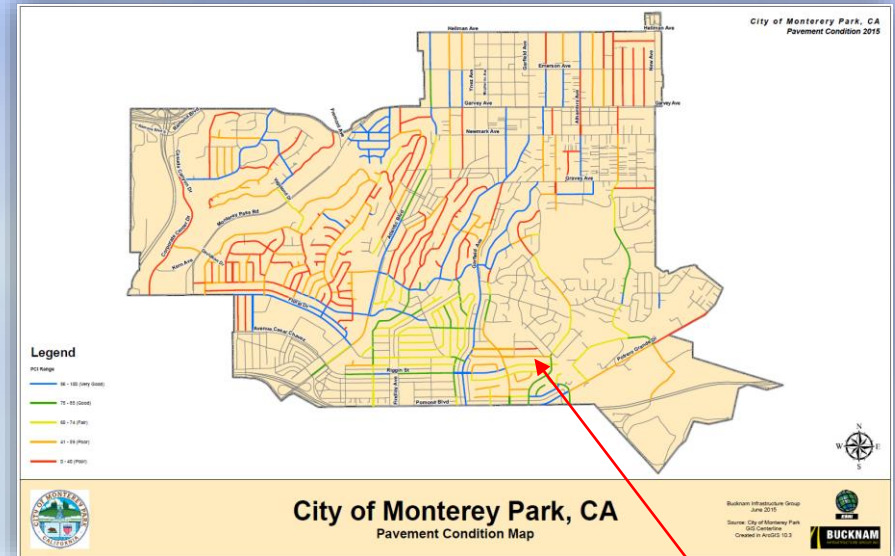
- Mapping & GIS Update (ESRI ArcGIS Online or GIS Toolbox)



- PMP Training – As-needed Technical Support Services
- Rialto PMP Council Presentations - Optional

Rialto – GIS Project Layers

- Rialto PMP- linked to dedicated
- PMP-GIS integrated street layer
- Updated work history/ pavement inspections will establish new PCI mapping, rank classifications, CIP mapping
- This allows for analysis of pavement condition trends/ maintenance priorities
- Bucknam will deliver:
 - PCI Map, Cost Benefit Strategy (5-Yr)
 - Maintenance Schedule Map



SAMPLE OF DELIVERABLE PMP-GIS LINK BETWEEN PMP AND THE CITY'S GIS ENTREPRISE (CITY OF MONTEREY PARK, CA) – LEGEND SHOWS PCI CONDITION RANGES

2019 Update of Rialto's PMP

- Bucknam Infrastructure Group to work with City to assess/ update previous PMP database, pavement segmentation and incorporate recent pavement maintenance work histories
- Bucknam to complete new walking surveys on 100.3 miles of arterial / collectors, 169 miles of local streets to generate updated 2019 Pavement Condition Index (PCI) for each pavement section; verify section accuracy; identify variances
- Develop/ rank street conditions, maintenance recommendations, cost estimates based on today's conditions and maintenance practices
- Develop preventive maintenance and CIP rehabilitation schedule to report overall weighted average PCI anticipated for next five years, on projected needed/available funding
- Produce a common-sense pavement management program to guide City staff with proactive recommendations and sustainable ROI's

Open Discussion and Summary