

# BEST PRACTICES FOR PREPARING AND UPDATING A PAVEMENT MANAGEMENT PROGRAM

A GUIDE FOR AGENCIES

4/3/2023



Harris & Associates





Comprehensive and sustainable pavement management requires leveraging all the tools in the toolbox and applying them strategically to use the right treatment at the right time on the right street. This approach can help agencies develop cost-effective pavement management strategies that maximize pavement life while minimizing life-cycle costs.

—(Anonymous)

**DEVELOP  
AND EXHIBIT  
TRUST**



**Vijay Pulijal, PE, PMP**  
Senior Project Manager

**WORK  
SMARTER,  
TOGETHER**



**Marissa Baclig**  
Assistant Project Manager

**INVEST IN OUR  
PEOPLE**



**Paul Muse**  
Senior Technician

**THINK AND ACT  
INCLUSIVELY**

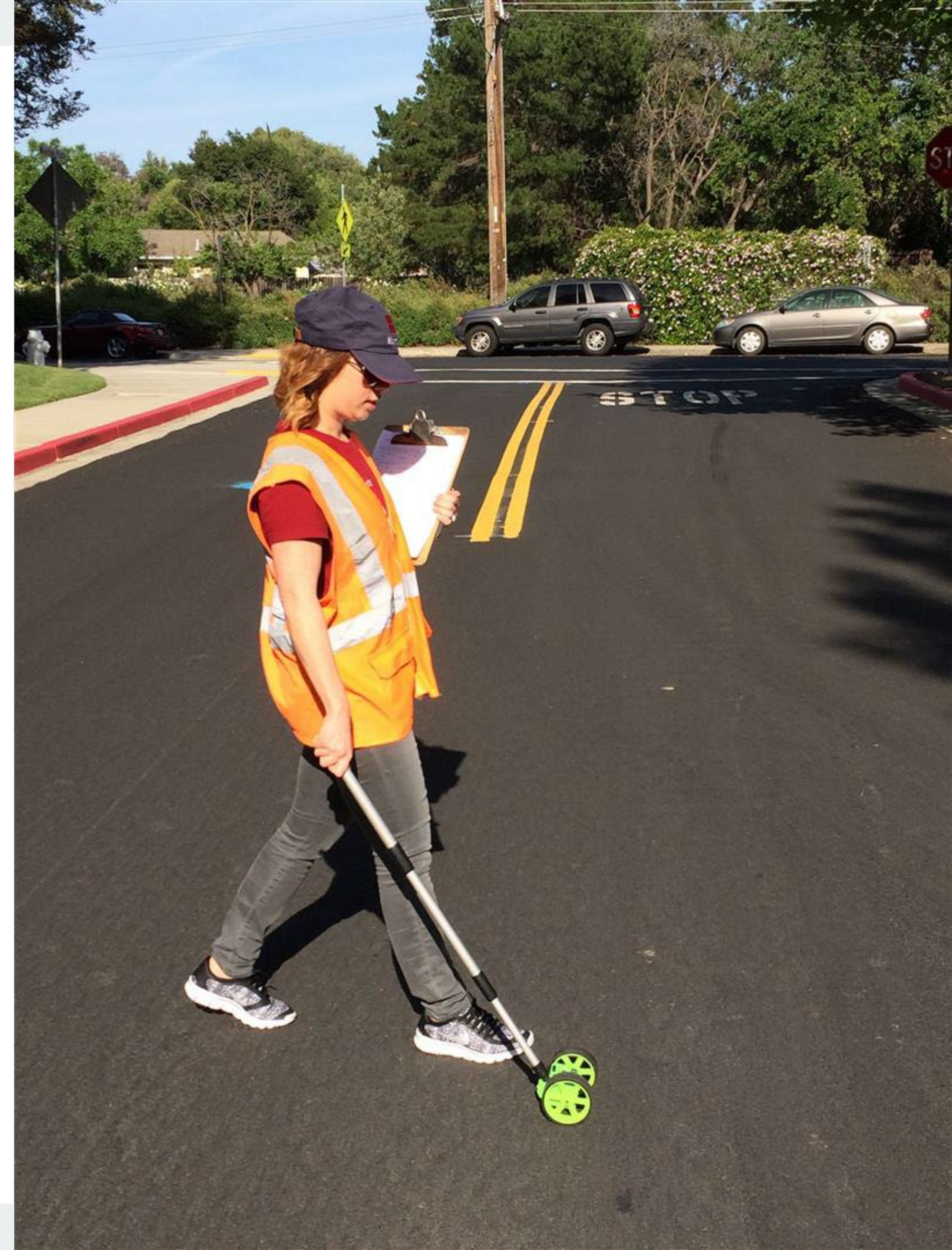


**Matthew Dornbach**  
Technician

**MODEL  
THE  
HARRIS WAY**

# ROAD-MAP

- I. Preparing for the PMP Update
- II. Field Work
- III. Post-Field Work
- IV. Analysis Phase
- V. Expectations for Using PMP Report Results



# PREPARING FOR THE PMP UPDATE

## IDENTIFYING GOALS & SETTING PERFORMANCE MEASURES

- PCI Goals
- Budget & Allocation
- GIS
- Establishing Neighborhoods/Zones/Districts
- Treatment Performance



# PREPARING FOR THE PMP UPDATE

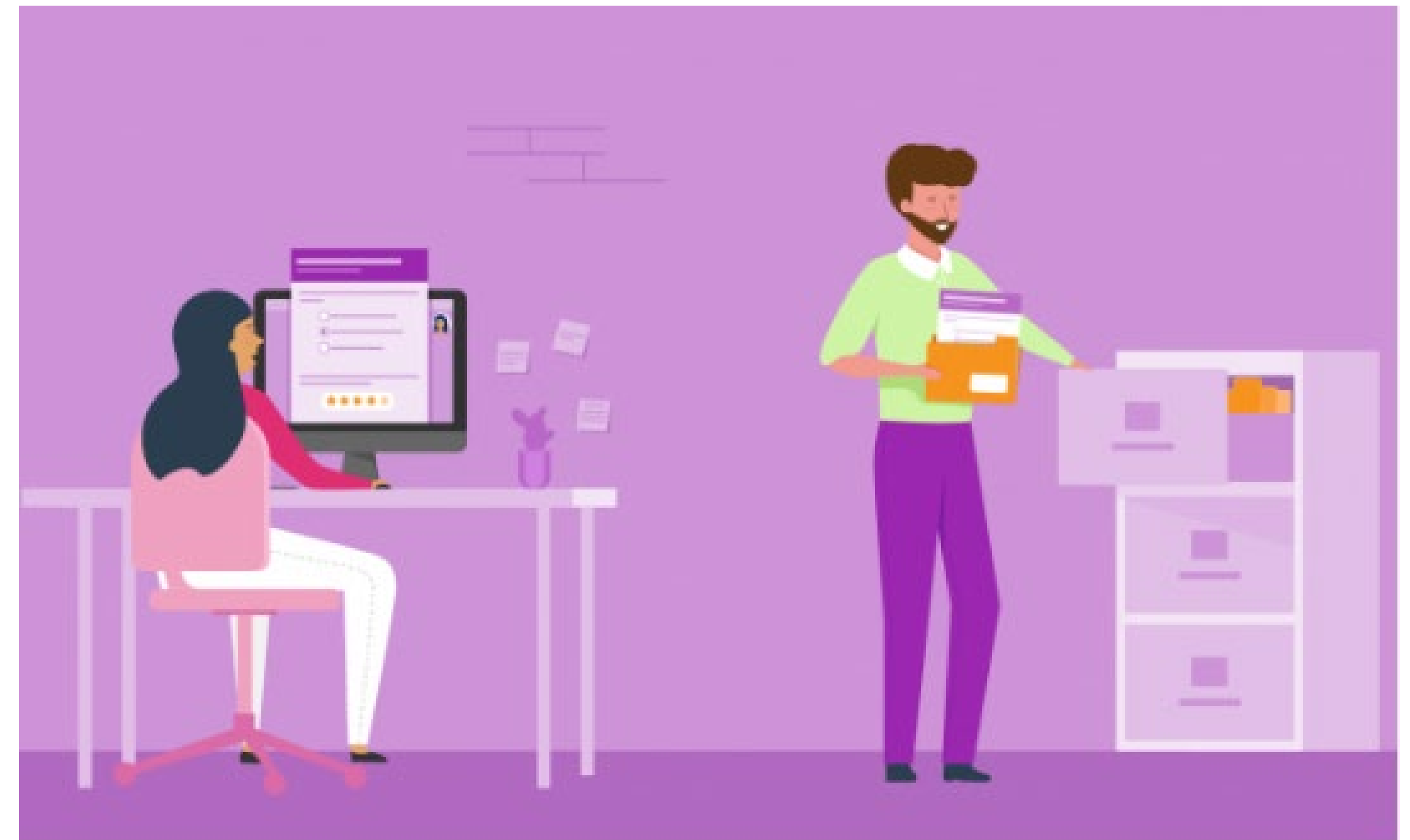
## DATA GATHERING PRIOR FIELD WORK

### Database Modifications

- Program Access
- New Sections
- Historical maintenance
- Future projects
- Projects currently in construction
- Streets of concern

### Analysis Prep

- Bid tabs
- Project planning



# FIELD WORK

- Alert local law enforcement
- Rater Certification
- Safety: OSHA
- Communication
- Ride-Along

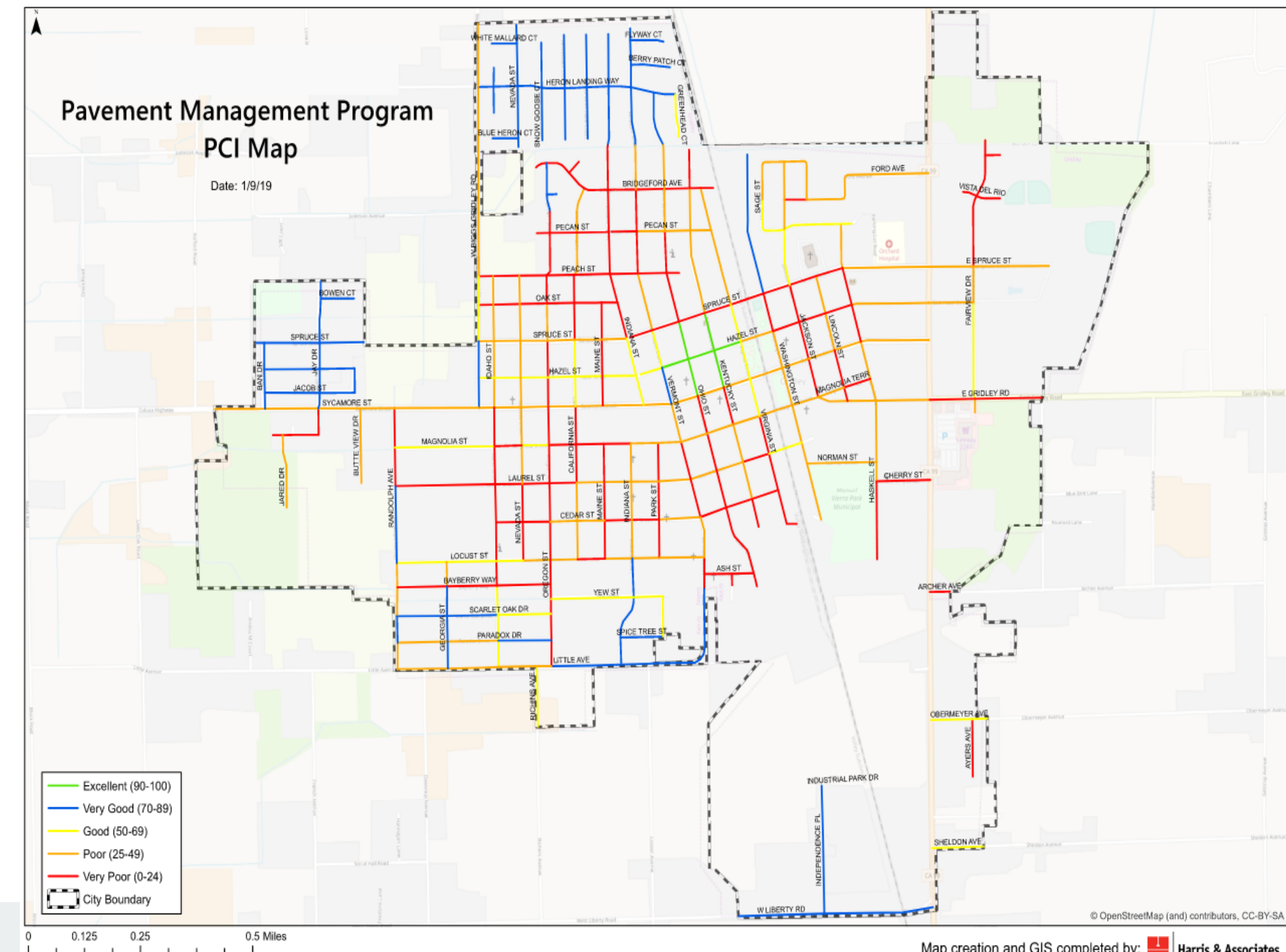


# FIELD WORK

- Quality Management Report (QMR)
  - Condition Report & Map
  - Field Observations
- Post Field Work Meeting

	Total Sections	Total Center Miles	Total Lane Miles	PCI
Arterial	207	51.55	106.23	54
Collector	405	79.59	159.18	49
Residential/Local	1,218	150.05	300.86	54
<b>Total</b>	<b>1,830</b>	<b>281.20</b>	<b>566.28</b>	
<b>Overall Network PCI as of 5/8/2019:</b>				<b>53</b>
<b>**Combined</b>	<b>5</b>	<b>0.36</b>	<b>0.73</b>	<b>N/A</b>
Residential/Local	5	0.36	0.73	N/A

\*\* Combined Sections are excluded from totals. These Sections do not have a PCI Date - they have not been inspected or had a Treatment applied.





# ANALYSIS

## Preparation

- a. Treatments and Costs
- b. Estimated Annual Budget
- c. Interest/Inflation Rate
- d. Number of years in the analysis

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay		
Arterial	AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.70	3				
			Surface Treatment	SEAL CRACKS AND SLURRY SEAL	\$5.40		6			
			Restoration Treatment	THIN OVERLAY	\$28.00			2		
			II - Good, Non-Load Related		CAPE SEAL	\$5.60		8		
			III - Good, Load Related		THIN OVERLAY(MOD.DIGOUTS)	\$35.00				
			IV - Poor		THICK OVERLAY W/DIGOUTS	\$53.00				
			V - Very Poor		RECONSTRUCT SURFACE (AC)	\$150.00				
		AC/AC	I - Very Good	Crack Treatment	SEAL CRACKS	\$1.70	3			
	Surface Treatment			SEAL CRACKS AND SLURRY SEAL	\$5.40		6			
	Restoration Treatment			THIN OVERLAY	\$28.00			2		
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# BUDGET ANALYSIS

- Budget Scenarios
- Target Driven Scenarios
- Program Customization

**Step 1 - Scenario**

Name:

Description:

**Step 2 - Review Optimal Target Caps**

	Condition Before Analysis	Optimal Target Cap
Pavement Condition Index for the Entire Network	67	85
Percentage of the Pavement Network in Very Good Condition	54%	100%
Percentage of the Pavement Network in Poor and Very Poor Condition	20%	0%
Pavement Remaining Service Life for the Entire Network (years)	19	30

**Step 3 - Define Objective**

Objective:

Overall Target  
  Target by Year  
  Target by Functional Class  
  Target by Functional Class and Year

**Step 4 - Objective Values**

Scenario Year	Minimum Network Average PCI
Year 1	68.0
Year 2	71.0
Year 3	72.0
Year 4	73.0
Year 5	74.0
Year 6	75.0

**Step 5 - Weighting Factors**

Functional Class	Factor
Arterial	1
Collector	0.72
Residential/Local	0.55
Other	0.55

**Optional Steps**

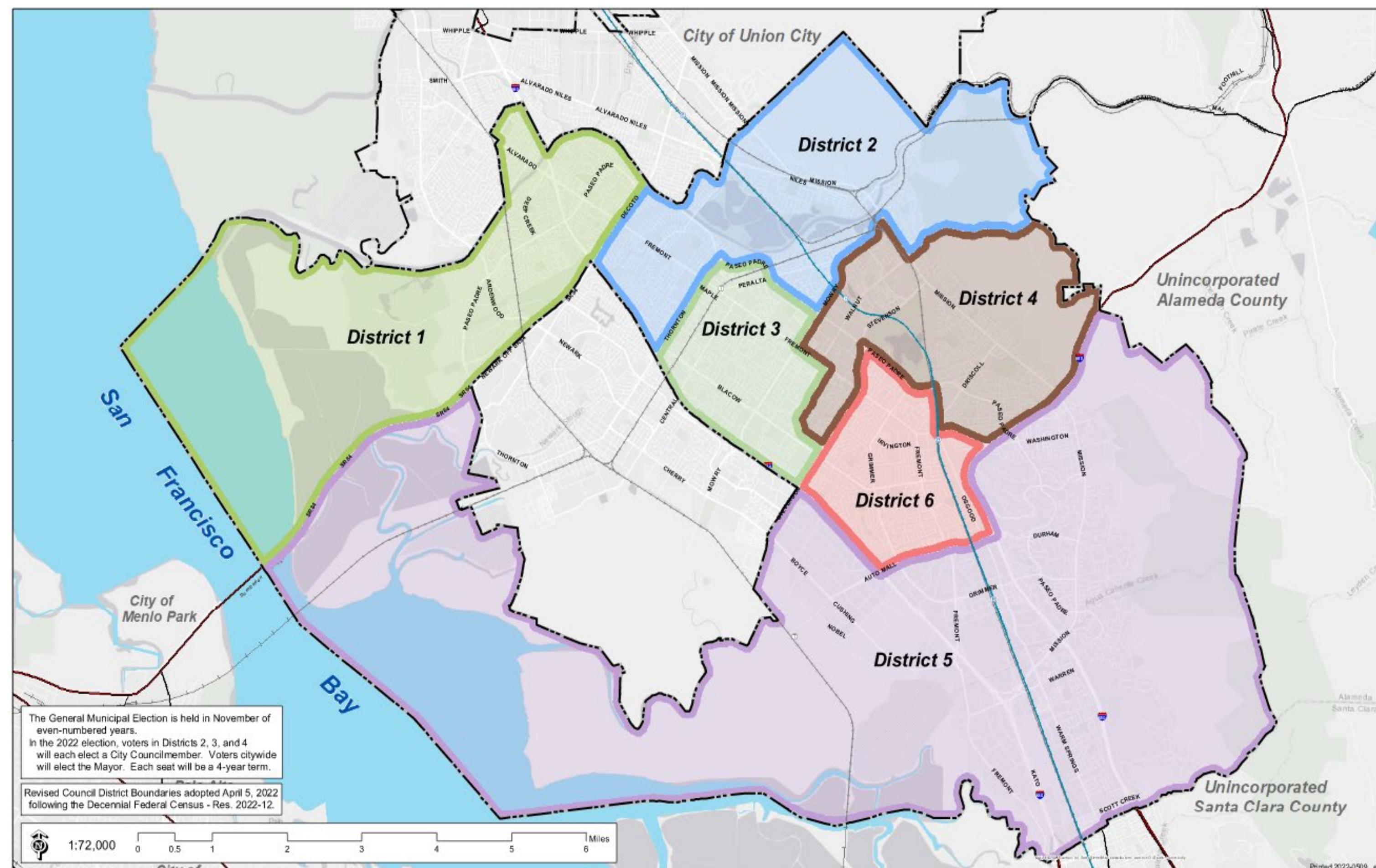
Selection Criteria

Project Selection


# ANALYSIS (CONT.)

## Custom Scenarios

- a. Project Selection
- b. Neighborhoods/Zones /Districts



# TAKE-AWAYS FROM PMP REPORT

- Budget scenario work plan.
- Program Optimization
  - **Conduct field visits** to determine and justify treatment recommendations.
  - Use **engineering judgment** to identify treatment alternatives (scale up/down).
  - **Coordinate with other projects** to maximize resource efficiency.
  - Implement **neighborhood programs** for greater impact.
- Counsel/Board presentation - justifying funding needs.

# CONCLUSION AND KEY TAKEAWAYS

## PMP ROAD MAP



### PMP PREP

- Identifying Goals
- Setting performance measures
- Gathering relevant data (MR/DB Modifications)



### DURING FIELD WORK

- QC Checks
- Ride-Along participation
- Decision Tree Modifications
- Treatment Development
- Cost Estimations (Bid Tabs)



### POST FIELD WORK

- Data Analysis
- Quality Management Report (QMR)
- Program Updates



### ANALYSIS PHASE

- Confirm Treatments and Costs
- Input on budget constraints
- Prioritize pavement strategies
- Review Budget estimates/Scenarios
- Program Updates



### PMP REPORT

- Review recommendations
- Program Optimization
- Board-Council Meeting



# THANK YOU FOR YOUR ATTENTION !

Remember to follow up with any questions or further discussion points. We look forward to hearing from you!

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