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Regional Transportation Planning Agency - Local Transportation Commission  
Monterey County Service Authority for Freeways & Expressways  
Monterey County Regional Development Impact Fee Joint Powers Agency  
Email: [info@tamcmonterey.org](mailto:info@tamcmonterey.org)

## **TECHNICAL ADVISORY COMMITTEE**

**Thursday, October 7, 2021**

**\*\*9:30 AM\*\***

### **REMOTE CONFERENCING ONLY**

*There will be NO physical location of the meeting.*

*Please see all the special meeting instructions at the end of this agenda*

**Join meeting online at:**

<https://us02web.zoom.us/j/950428194?pwd=T0N6RkZXWmN3UDAwTEZpUE9iVTIzQT09>

**OR**

**By teleconference at: +1 669 900 6833**

**Meeting ID: 950 428 194 | Password: 185498**

Any person who has a question concerning an item on this agenda may call the Agency Secretary to make inquiry concerning the nature of the item described on the agenda.

### **1. ROLL CALL**

*Call to order and self-introductions. According to Transportation Agency and Committee bylaws, Committee membership consists of representatives from the Transportation Agency voting and ex-officio members, and other agencies that may be appointed by the Transportation Agency. Currently the Committee membership includes representatives from 12 Cities, the County, MST, Caltrans, City of Watsonville, the Air District, and AMBAG, for a total of 18 members. Five members of the Technical Advisory Committee, representing voting members of the Transportation Agency Board of Directors, constitute a quorum for transaction of the business of the committee. If you are unable to attend, please contact the Committee coordinator. Your courtesy to the other members to assure a quorum is appreciated.*

## 2. PUBLIC COMMENTS

Any member of the public may address the Committee on any item not on the agenda but within the jurisdiction of the Committee. Under this item, each member of the public is allowed three minutes to address concerns. Comments in items on this agenda may be given when that agenda item is discussed. Persons who wish to address the Committee for public comment or on an item on the agenda are encouraged to submit comments in writing to Maria at maria@tamcmonterey.org by 5:00 pm the Tuesday before the meeting, and such comments will be distributed to the Committee before the meeting.

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## 3. BEGINNING OF CONSENT AGENDA

Approve the staff recommendations for items listed below by majority vote with one motion. Any member may pull an item off the Consent Agenda to be moved to the end of the **CONSENT AGENDA** for discussion and action.

**3.1 APPROVE** the draft Technical Advisory Committee Minutes for September 2, 2021.

- Zeller

**END OF CONSENT AGENDA**

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4. **RECEIVE** presentation on Monterey-Salinas Transit's Draft Comprehensive Operational Analysis and Network Re-Design.

-MST Rep

*Monterey-Salinas Transit recently completed a draft Comprehensive Operational Analysis and Network Re-Design, which serves as a comprehensive effort to revamp the entire public transit system in Monterey County while facilitating MST's COVID-19 recovery efforts. The Plan is currently available for public review and comment. More information can be found at [www.mst.org/coa](http://www.mst.org/coa)*

5. **RECEIVE** results from the 2019 pavement management monitoring program from local jurisdictions in Monterey County as required by Measure X funding allocated to roadway repair.

-Bilse

*Measure X outlines the requirements for the use of local road maintenance, pothole repair and safety funds. It includes a requirement for each jurisdiction to have a pavement management program (PMP). The pavement management program examines the overall condition of the street network and highlights options for improving the network's pavement condition by conducting "what if" analyses. The main data point used in this analysis is called the pavement condition index (PCI). TAMC hired a consultant team in 2018 to develop a pavement management program for jurisdictions that needed this assistance. This report summarizes the results from the 2018 pavement monitoring program.*

## 6. ANNOUNCEMENTS

## 7. ADJOURN

**Next Committee meeting will be on  
Thursday, November 4, 2021 at 9:30 a.m.**

**REMINDER:** If you have any items for the next Committee Agenda, please submit them to: Transportation Agency for Monterey County; Attn: Michael Zeller; 55-B Plaza Circle, Salinas, CA 93901, **email:** [mike@tamcmonterey.org](mailto:mike@tamcmonterey.org)

The Committee Agenda will be prepared by Agency staff and will close at noon nine (9) working days before the regular meeting. Any member may request in writing an item to appear on the agenda. The request shall be made by the agenda deadline and any supporting papers must be furnished by that time or be readily available.

## Important Meeting Information

Remote Meetings: On March 12, 2020, Governor Newsom issued Executive Order N-25-20, which enhanced State and Local Governments ability to respond to COVID-19 Pandemic based on Guidance for Gatherings issued by the California Department of Public Health. The Executive Order specifically allowed local legislative bodies to hold meetings via teleconference and to make meetings accessible electronically, in order to protect public health. That order expired on September 30, 2021. Governor Newsom has now signed AB 361, and the TAMC Board of Directors approved a resolution to enact AB 361 on September 22, 2021. This legislation permits teleconferencing for Brown Act meetings during a state of emergency. Thus, TAMC meetings will convene remotely, until further notice. For remote meetings, the public is strongly encouraged to use the Zoom app for best reception. Prior to the meeting, participants should download the Zoom app at: <https://zoom.us/download>. A link to simplified instruction for the use of the Zoom app is: <https://blog.zoom.us/wordpress/2018/07/03/video-communications-best-practice-guide/>.

Remote Meeting Public Comment: Due to current circumstances, there may be limited opportunity to provide verbal comments during remote meetings. Persons who wish to address the Committee for public comment or on an item on the agenda are encouraged to submit comments in writing to [maria@tamcmonterey.org](mailto:maria@tamcmonterey.org) by 5:00pm the Monday before the meeting. Such comments will be distributed to the Committee before the meeting. Members of the public participating by Zoom are instructed to be on mute during the proceedings and to speak only when public comment is allowed, after requesting and receiving recognition from the Chair.

Agenda Packet and Documents: Any person who has a question concerning an item on this agenda may call or email the Agency office to make inquiry concerning the nature of the item described on the agenda. Complete agenda packets are on display online at the Transportation Agency for Monterey County website. Documents relating to an item on the open session that are distributed to the Committee less than 72 hours prior to the meeting shall be available for public review at the Agency website. Agency contact information is as follows:

Transportation Agency for Monterey County  
www.tamcmonterey.org  
Office is closed an all employees are working remotely until further notice  
TEL: 831-775-0903  
EMAIL: info@tamcmonterey.org

Agenda Items: The agenda will be prepared by Agency staff and will close at noon nine (9) working days before the regular meeting. Any member of the Committee may request in writing an item to appear on the agenda. The request shall be made by the agenda deadline and any supporting papers must be furnished by that time or be readily available.

Alternative Agenda Format and Auxiliary Aids: If requested, the agenda shall be made available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 USC Sec. 12132), and the federal rules and regulations adopted in implementation thereof. Individuals requesting a disability-related modification or accommodation, including auxiliary aids or services, may contact Transportation Agency staff at 831-775-0903. Auxiliary aids or services include wheelchair accessible facilities, sign language interpreters, Spanish language interpreters, and printed materials in large print, Braille or on disk. These requests may be made by a person with a disability who requires a modification or accommodation in order to participate in the public meeting and should be made at least 72 hours before the meeting. All reasonable efforts will be made to accommodate the request.

**CORRESPONDENCE, MEDIA CLIPPINGS, and REPORTS - No items this month**



## ***Memorandum***

**To:** Technical Advisory Committee  
**From:** Michael Zeller, Principal Transportation Planner  
**Meeting Date:** October 7, 2021  
**Subject:** **Draft Technical Advisory Committee Minutes - September 2, 2021**

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### **RECOMMENDED ACTION:**

**APPROVE** the draft Technical Advisory Committee Minutes for September 2, 2021.

### **ATTACHMENTS:**

- ▣ DRAFT TAC Minutes for September 2, 2021

## TECHNICAL ADVISORY COMMITTEE MINUTES

Meeting held via Zoom

Draft Minutes of Thursday, September 2, 2021

COMMITTEE MEMBERS	SEP 20	OCT 20	NOV 20	JAN 21	FEB 21	MAR 21	APR 21	MAY 21	JUN 21	AUG 21	SEP 21
R. Harary, Carmel-by-the-Sea (S. Friedrichsen)	P	P	P	P	P	P	P	P	P	P	P
J. Guertin, Del Rey Oaks											P
P. Dobbins Gonzales (M. Sundt)	P	P		P	p	P	P	P	P	P	
D. Pike, Greenfield (T. Nisich)	P(A)	P(A)	P/P(A)	P/P(A)	P(A)	P/P(A)	P/P(A)	P/P(A)	P/P(A)	P	P/P(A)
O. Hurtado, King City, <b>Chair</b> (S. Adams)	P	P	P	P	P	P	P	P	P	P	P
B. McMinn, Marina (E. Delos Santos)	P	P	P	P	P	P	P	P	P	P	P
A. Renny, Monterey (F. Roveri, M. Garcia)	P/P(A)	P	P(A)	P(A)	P	P/P(A)	P(A)	P(A)	P(A)	P/P(A)	P(A)
D. Gho, Pacific Grove (J. Halabi)	P	P	P	P	p	P	P	P	P	P/P(A)	P
A. Easterling, Salinas (J. Serrano)	P	P	P	P	P	P	P	P	P	P	P
L. Gomez, Sand City (A. Blair)	P	P	P	P	P	P	P	P	P		P
S. Ottmar, Seaside (L. Llantero)	P		P	P	P(A)	P	P		P		P
L. Gomez, Soledad (O. Antillon)	P	P	P	P	P	P/P(A)	P/P(A)	P/P(A)	P/P(A)		P
C. Alinio, MCPW, <b>Vice Chair</b> (E. Saavedra)	P(A)			P/P(A)	p	P	P/P(A)	P(A)			P
M. Taylor, AMBAG (P. Hierling)	P(A)	P	P	P/P(A)	P	P	P/P(A)	P/P(A)	P	P	P
O. Monroy-Ochoa, Caltrans (K. McClendon)	P	P	P	P	P	P	P	P	P		
M. McCluney, CSUMB	P	P	P	P						P	
A. Romero, MBUAPCD											
S. Campi, MST (M. Overmeyer)	P(A)	P(A)	P(A)	P(A)	P	P(A)	P(A)		P	P	P

STAFF	SEP 20	OCT 20	NOV 20	JAN 21	FEB 21	MAR 21	APR 21	MAY 21	JUN 21	AUG 21	SEP 21
D. Hale, Exec. Director	P			P	P	P					P
T. Muck, Exec. Director	P	P	P	P	P		P	P		P	P
M. Zeller, Principal Transp. Planner	P	P	P			P	P	P	P	P	P
D. Bilse, Principal Engineer							P	P	P	P	P
M. Montiel, administrative Assistant	P	P	P	P	p	P		P	P	P	P
M. Jacobsen, Transportation Planner	P	P	P	P	P	P	P	P	P	P	P
T. Wright, Public Outreach Coordinator					P						
L. Williamson, Senior Engineer			P		P	P	P				P
A. Hernandez, Asst. Transportation Planner											P
R. Deal, Principal Engineer			P								
S. Castillo, Transportation Planner	P				P						

**OTHERS PRESENT:**

Matt Deal, Monterey-Salinas Transit  
Chris Bjornstad, Caltrans District 5

Tom Bonigut, County of Monterey

**1. ROLL CALL**

Chair Octavio Hurtado, King City, called the meeting to order at 9:30 am. Introductions were made and a quorum was established.

**1.1 ADDITIONS OR CORRECTIONS TO AGENDA**

None.

**2. PUBLIC COMMENTS**

None.

**3. BEGINNING OF CONSENT AGENDA**

**M / S / C: McMinn / Harary / unanimous**

3.1 **APPROVE** the Technical Advisory Committee meeting minutes of August 5, 2021 with a revision to the announcements to reflect that the APWA general meeting was held in July, and the golf tournament is scheduled for October.

**END OF CONSENT AGENDA**

**4. CALTRANS CLEAN CALIFORNIA LOCAL GRANT PROGRAM**

Doug Bilse, Principal Engineer, provided an update on the Caltrans Clean California Local Grant Program. He presented that Caltrans is developing the Clean California Local Grant Program as part of a two-year program which will provide grants to local communities to beautify and improve local streets and roads, tribal lands, parks, pathways, and transit



centers to clean and enhance public spaces. Through the combination of adding beautification measures and art in public spaces along with the removal of litter and debris, this effort will enhance communities and improve spaces for walking and recreation.

The first public workshop regarding the Local Grant Program funding and criteria will be hosted by the Caltrans Headquarters Clean CA group and is scheduled for September 1, 2021. A second workshop is scheduled for October 7, 2021. View the attached Clean California Local Grant Program Factsheet for more information.

## **5. US 101 SOUTH OF SALINAS SAFETY PROJECT UPDATE**

Doug Bilse, Principal Engineer, presented an update on the preliminary concepts of the US 101 South of Salinas corridor study. He presented that US 101 between the Chualar interchange and the Airport Boulevard interchange in the City of Salinas has several at-grade intersections that directly serve side roads. Transportation Agency staff is working with Caltrans, City of Salinas, County of Monterey, and the South of Salinas (SOS) US 101 Traffic Safety Alliance to study options to improve safety along this busy agricultural route. The study will consider alternatives to the existing uncontrolled exit and entrance points along US 101. This will involve upgrading existing interchanges and utilizing a network of frontage roads to serve the rerouted traffic. The study team is ready to conduct public outreach to share design options that address the safety issues along this corridor.

Sloan Campi, Monterey-Salinas Transit, said that his agency is interested in enhancing transit services to South County with the King City Maintenance Facility in construction. He asked if TAMC is considering high occupancy vehicle or transit lanes, or any transit stops where buses will not have to get off? Mr. Bilse responded that the frontage roads will be explored to have transit stops and bike lanes and there is currently no intent to add lanes to US 101. TAMC will work with MST to provide transit access.

Robert Harary, City of Carmel, asked if TAMC is the lead agency? Mr. Bilse responded that Caltrans is the lead agency and the consultant team is GHD.

## **6. ANNOUNCEMENTS**

Doug Bilse announced that the current Brown Act exemption for remote meetings could expire and the next Committee meeting may need to be in-person or hybrid. TAMC will provide more information.

Brian McMinn, City of Marina, announced that October 1<sup>st</sup> will be the APWA golf tournament at Bayonet and Blackhorse.

Leon Gomez, representing the City of Soledad, announced that Oscar Espinoza is the new City Engineer.

Debbie Hale, Executive Director, announced that the contract for Todd Muck to be the new Executive Director will be going to Board in September.

**7. ADJOURN**

The meeting was adjourned at 10:15 am.



## Memorandum

**To:** Technical Advisory Committee  
**From:** Doug Bilsle, Principal Engineer  
**Meeting Date:** October 7, 2021  
**Subject:** **Monterey Salinas Transit (MST) Comprehensive Operations Analysis**

### **RECOMMENDED ACTION:**

**RECEIVE** presentation on Monterey-Salinas Transit's Draft Comprehensive Operational Analysis and Network Re-Design.

### **SUMMARY:**

Monterey-Salinas Transit recently completed a draft Comprehensive Operational Analysis and Network Re-Design, which serves as a comprehensive effort to revamp the entire public transit system in Monterey County while facilitating MST's COVID-19 recovery efforts. The Plan is currently available for public review and comment. More information can be found at [www.mst.org/coa](http://www.mst.org/coa)

### **FINANCIAL IMPACT:**

TAMC provides a substantial amount of funding to Monterey-Salinas Transit for operations and capital expenses through the Local Transportation Fund and various state and federal funding programs. The analysis presents three different funding scenarios for MST's recovery from the pandemic, which will inform the capacity level that MST operates at. Development of the Comprehensive Operational Analysis was funded by COVID-19 stimulus funds received by MST.

### **DISCUSSION:**

Monterey-Salinas Transit (MST) is considering significant changes to its bus network in the course of the Comprehensive Operational Analysis (COA). Many transit agencies review their entire network every five to ten years, to make sure their services align with the community's needs. The last time MST undertook such a comprehensive study was in the late 1990s. The result of the existing network is that many overlapping lines operate at very low frequencies. This means that it can take a very long time to get from destination A to B, even when those locations are nearby. Additionally, over the last 25 years, Monterey County has experienced major shifts in where people live and work and there is unmet demand for service in the City of Salinas.

The COVID-19 pandemic has brought more focus onto equity issues related to transit. MST is utilizing the Comprehensive Operational Analysis as an opportunity to establish the way out of pandemic-era planning, and to facilitate MST's recovery from the impacts of the pandemic.

The Comprehensive Operational Analysis includes the following components:

- An initial assessment of the issues faced by the existing network, detailed in the "Choices Report"
- A consultation with stakeholders and members of the public about their values and priorities for transit, and with bus riders about their experience with the existing system.
- Direction from the MST Board of Directors' Operations Performance Committee to make changes that respond to the concerns heard.

In May 2021, the MST Board Operations Performance Committee directed MST staff to focus on the following three priority areas for the Plan:

- Ridership over coverage: focusing better and more frequent service where more people live and work rather than spreading minimal service to as many areas of the County as possible
- Equity over equality: targeting the areas that have the greatest need for public transit rather than spreading service equally among the population
- Regional balance of transit service: 40% service to Peninsula area, 40% service to Salinas, and the remaining 20% to other areas.

Through the development of the Comprehensive Operational Analysis and Draft Network Plan, MST is considering three different funding scenarios:

- Low Scenario - This is the contingency scenario. It assumes either general fund sources (i.e., fares, State, non-pandemic federal funds, etc...) recover very slowly from the pandemic, or insufficient workforce is available to operate at full capacity, or both.
- Medium Scenario - This assumes regular general fund sources recover to pre-pandemic levels by the time MST's federal pandemic recovery funds run out. This funding scenario also aligns with estimates in MST's FY21/22-FY22/23 operating budget and staffing levels.
- High Scenario - This scenario assumes voters approve a new sales tax including 1/8-cent for service increases, or another similarly sized new source of funding is generated for increased service levels.

MST will provide a presentation on the draft Comprehensive Operational Analysis and provide an overview of the changes proposed under the three different funding scenarios and the timeline for implementation of the re-designed network. In addition to providing public comments, participation in the MST Community Survey is encouraged. The survey can be accessed online at <http://www.mstcommunitysurvey.com/>

#### **WEB ATTACHMENTS:**

MST website materials on the Comprehensive Operational Analysis, including the draft Plan and maps: <https://mst.org/about-mst/planning-development/coa/>



## **Memorandum**

**To:** Technical Advisory Committee  
**From:** Doug Bilsle, Principal Engineer  
**Meeting Date:** October 7, 2021  
**Subject:** Measure X Regional Pavement Management Program Report

### **RECOMMENDED ACTION:**

**RECEIVE** results from the 2019 pavement management monitoring program from local jurisdictions in Monterey County as required by Measure X funding allocated to roadway repair.

### **SUMMARY:**

Measure X outlines the requirements for the use of local road maintenance, pothole repair and safety funds. It includes a requirement for each jurisdiction to have a pavement management program (PMP). The pavement management program examines the overall condition of the street network and highlights options for improving the network's pavement condition by conducting "what if" analyses. The main data point used in this analysis is called the pavement condition index (PCI). TAMC hired a consultant team in 2018 to develop a pavement management program for jurisdictions that needed this assistance. This report summarizes the results from the 2018 pavement monitoring program.

### **FINANCIAL IMPACT:**

Measure X allocates 60% of the funds received to local road maintenance, pothole repairs and safety. The funds are distributed to each local agency in compliance with the approved ordinance.

### **DISCUSSION:**

The approved ordinance for the Transportation Safety & Investment Plan (Measure X) defines the requirements for the use of local road maintenance, pothole repair and safety funds. It includes a requirement for each jurisdiction to have a pavement management program. "Each city and the County of Monterey shall develop, or participate in the development of by TAMC, a pavement management program. They shall submit regular reports on the conditions of their streets, to ensure timely repairs and keep the public informed. Development of the pavement management program by TAMC is eligible to be funded out of this program prior to distribution of funds to the cities and the County." The Measure X funding agreement includes requirements that jurisdictions must complete the following pavement management program tasks:

- Review and update the pavement information for all roads every two years.
- Re-inspect pavement conditions of arterials and collector streets every three years.
- Re-inspect pavement conditions of residential streets and local/rural roads every six years, unless otherwise approved by the Transportation Agency.

In order to receive Measure X funds, the cities and the County shall utilize a pavement management program and submit regular reports on the conditions of their streets, to ensure timely repairs and keep the public informed. The pavement management program should utilize an approved software-based tool for analyzing pavement conditions

and report findings on rehabilitation/maintenance strategies based on funding levels. The pavement management program used by the jurisdiction must contain, at a minimum, the following features:

- Store the inventory all roadways within a jurisdiction (in a compatible database with other jurisdictions).
- Assess the condition of the roadways (based on seven distresses and three severity levels).
- Provide the current PCI for the roadways (as per ASTM D6433). It is important to note that the StreetSaver and Micropaver software programs meet this requirement.
- Identify all pavement sections needing maintenance, rehabilitation, or replacement.
- Calculate budget needs for maintenance, rehabilitation or replacement of deficient pavement sections (for the current year and the next three years at various overall condition levels).
- Develop maintenance strategies for the most cost effective level of maintenance or repair appropriate at the time of the inspection.
- Generate pavement management program reports (in various formats).

Pavement condition is primarily affected by the climate, traffic loads and volumes, construction materials and age. The pavement management program examines the overall condition of the street network and highlights options for improving the network's pavement condition by conducting "what if" analyses. The main data point used in this analysis is called the pavement condition index (PCI). A PCI is calculated for each roadway segment surveyed, and then these survey results are used to calculate a weighted average PCI score for the entire roadway network for that jurisdiction. The PCI score is categorized by the pavement condition per the following table:

PCI Range	Pavement Condition Category
70-90	Good / Very Good
40-69	Fair
20-39	Poor
< 20	Very Poor / Failing

In February 23, 2018 the Transportation Agency hired the consulting firm NCE to assist local jurisdictions prepare a pavement management program. Attached is the NCE report that records the results of the 2018 pavement management program for the local jurisdictions that participated in this effort. The following table summarizes the pavement management data for the jurisdictions that participated in the NCE project:

**FY 2018/2019 Monterey Pavement Conditions  
Jurisdictions with PMP Developed by NCE**

Jurisdiction	Centerline Miles	PCI	Condition	Replacement Cost (\$M)	Remaining Service Life
Carmel-By-The-Sea	27	77	Good	21.6	22
Del Rey Oaks	9.6	74	Good	13.2	18
Greenfield	35.7	66	Fair	23.7	13
King City	30.7	61	Fair	49.8	14
Marina	75.3	64	Fair	98.3	17
Monterey County	1094.9	48	Poor	1,100.0	8
Pacific Grove	66.7	55	Fair	65.9	11
Sand City	5.1	59	Fair	4.7	13
Countywide	1345	52	Fair	1,377.0	10

The countywide local street/road network evaluated by NCE represents 1,345 centerline miles with an estimated replacement cost approaching \$1.4 billion. This can be viewed as the value of the pavement network and is the

amount needed to fund reconstruction of the entire pavement network. This value does not include related infrastructure assets such as sidewalks, signals, markings, or signs. The weighted average pavement condition of roads in Monterey County evaluated by NCE is calculated to be 52 which is considered "fair" condition. This compared to the statewide average PCI 65 which is also considered "fair" condition. The remaining service life for the roads evaluated by NCE was reported to be 10 years, and this is an estimate to when the average pavement is expected to reach failed conditions (PCI<25).

Some agencies in Monterey County decided to develop their own pavement management program and reported the following data to the Transportation Agency to meet their Measure X requirements:

**FY 2018/2019 Monterey Pavement Conditions  
Jurisdictions with PMP Developed by Others**

Jurisdiction	Centerline Miles	PCI	Condition
Gonzales	20.0	60	Fair
Monterey	102.2	66	Fair
Salinas	292.1	51	Fair
Seaside	76.0	63	Fair
Soledad	35.7	76	Good

Local agencies are also asked to submit pavement conditions as part of a statewide effort that is reported annually as the *California Statewide Local Streets and Roads Needs Assessment* that was prepared by NCE. The following data illustrates the different pavement conditions reported to the Transportation Agency as well as the data received by NCE to prepare the statewide report. The table also includes the report prepared by the Regional Transportation Planning Agency. There are some discrepancies in the data that make it difficult to conduct a formal trend analysis.

**Pavement Conditions Trend Analysis  
Monterey County Jurisdictions**

Jurisdiction	CPI: TAMC Measure X			CPI Data Received for Statewide Surveys				CPI data reported by	
	2018	2019	2020	2014	2016	2018	2020	2018	2020
Carmel-By-The-	77	77	N/A	64.0			77.0		77
Del Rey Oaks	74	74	74						70.3
Gonzales	60	60	54		61.0	60.0		61.4	
Greenfield	66	64	65						63.4
King City	61	61	61			50.0			57
Marina	64	62	60		59.0	59.0	61.0		61.2
Monterey	68	66	69			60.0	65.0		64.8
Monterey County	48	48	46				46.0		45.9
Pacific Grove	55	55	55		61.0	64.0			51
Salinas	51	51	55			54.0		55	
Sand City	59	59	59						58.4
Seaside	63	63	63				58.0		57.5
Soledad	76	76	74					67.2	

To assist local jurisdictions meet their ongoing pavement management program requirements, the Transportation Agency staff is in the process of procuring a consultant to provide services available for those agencies selecting to participate. Other jurisdictions must submit their own pavement management program in order to meet Measure X requirements.

ATTACHMENTS:

- TAMC 2019 PMP Report



## TECHNICAL MEMORANDUM

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Date: 12/9/2019

To: Richard Deal, Transportation Agency for Monterey County

From: Margot Yapp, Shahram Misaghi, and Sharlan Montgomery Dunn, NCE

Subject: **DRAFT** Summary of Pavement Management Program Implementation for Monterey County and the Cities of Carmel-by-the-Sea, Del Rey Oaks, Greenfield, King City, Marina, Pacific Grove, and Sand City

Job #: 967.01.55

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### Background

Remarkable changes in the local and state transportation funding picture have been observed with the passage of Measure X in 2016 and the Road Maintenance and Rehabilitation Act (RMRA) in 2017. Combined, these two funding sources will inject more than \$12 million per year into Monterey County (County). To take advantage of these opportunities, Measure X requires local agencies to develop pavement management programs (PMPs) and to submit reports on road conditions. Similarly, access to RMRA funds requires agencies to submit project lists and expenditure reports for approval by the California Transportation Commission. Robust PMPs not only aid in funding receipt, but also provide accountability and transparency to residents. To access these and other benefits, the Transportation Agency for Monterey County (TAMC) selected Nichols Consulting Engineers, Chtd. (NCE) in 2018 to assist the County and seven local cities in developing their own PMPs.

This memorandum summarizes the countywide network and presents the aggregated results of the budget needs and funding analyses performed by NCE in 2018/19 for the County and the cities of Carmel-by-the-Sea, Del Rey Oaks, Greenfield, King City, Marina, Pacific Grove, and Sand City under the PMP implementation scope with TAMC. Note that the following analyses do not include the cities of Gonzales, Monterey, Salinas, Seaside, and Soledad.

### Countywide Street/Road Inventory and Pavement Condition

Together, the County and the seven cities included in the 2018/19 implementation scope maintain approximately 1,345 centerline miles of paved streets and roads, the bulk of which are maintained by the County. Table 1 summarizes each jurisdiction's network including the network replacement cost, the pavement condition index (PCI), and the remaining service life (RSL). The aggregated network (hereafter denoted in this report as the "countywide" network), is also summarized in Table 1.

**Table 1. Countywide Summary Statistics**

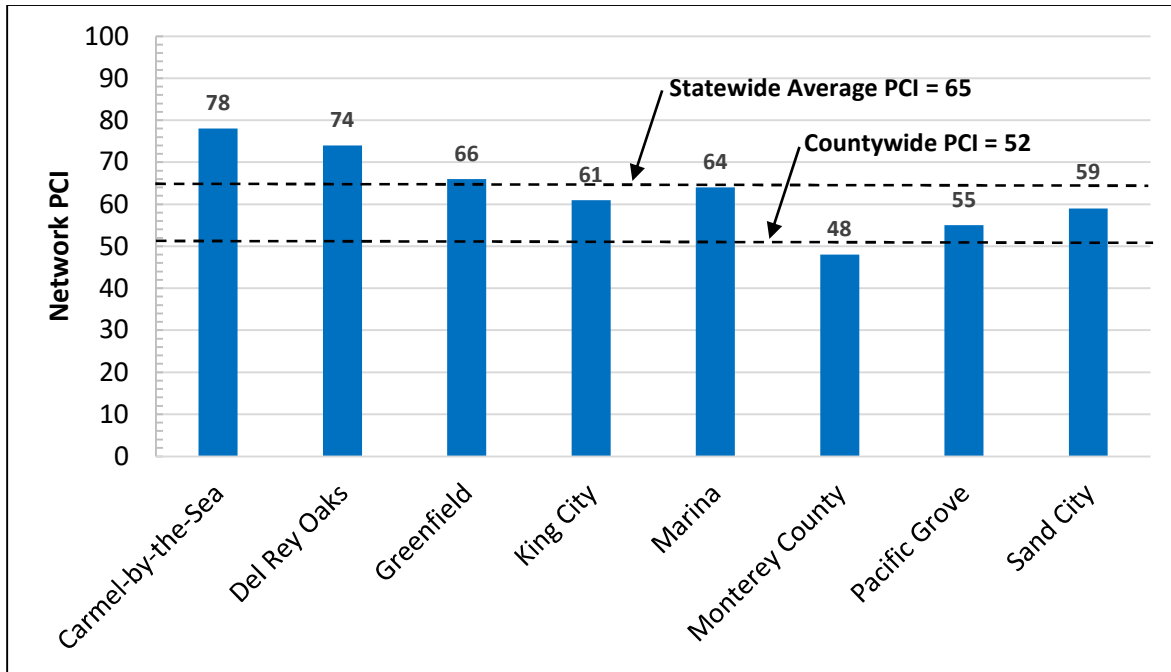
Jurisdiction	No. of Management Sections	Centerline Miles	Network Replacement Cost (\$M)	2018 Pavement Condition Index	2018 Remaining Service Life
Carmel-by-the-Sea	233	27.0	21.6	78	22
Del Rey Oaks	66	9.6	13.2	74	18
Greenfield	229	35.7	23.7	66	13
King City	166	30.7	49.8	61	14
Marina	450	75.3	98.3	64	17
Monterey County	2,281	1,094.9	1,100	48	8
Pacific Grove	360	66.7	65.9	55	11
Sand City	40	5.1	4.7	59	13
<b>Countywide</b>	<b>3,825</b>	<b>1,345</b>	<b>1,377</b>	<b>52</b>	<b>10</b>

**The countywide local street/road network replacement cost is estimated to be \$1.4 billion.** This can be viewed as the value of the pavement network and is the amount needed to fund reconstruction of the entire pavement network. This value does not include related infrastructure assets such as sidewalks, signals, markings, or signs.

The PCI is a measure of the pavement condition and ranges from zero to 100. A newly constructed road has a PCI of 100, while a failed road has a PCI of 25 or less. PCI ratings from 50-69 are considered to be in “Fair” condition. A pavement’s condition is affected by the environment, traffic loads and volumes, construction materials, and age. **The average PCI for the countywide network is 52.** This value is an area-weighted calculation. The 2018 PCIs for each jurisdiction are shown in Figure 1, along with the countywide and 2018 statewide average PCIs<sup>1</sup>.

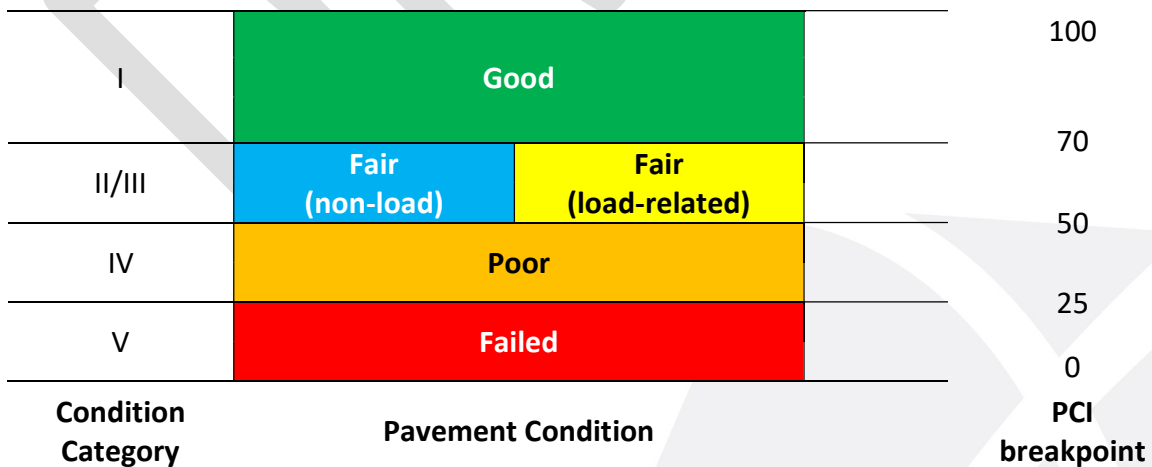
The RSL indicates the time it takes for a pavement section to deteriorate from its current condition to a failed condition (PCI<25) if no maintenance occurs. **The average RSL for the countywide network is approximately 10 years.**

<sup>1</sup> NCE. 2018. *California Statewide Local Streets and Roads Needs Assessment 2018 Update*. October.



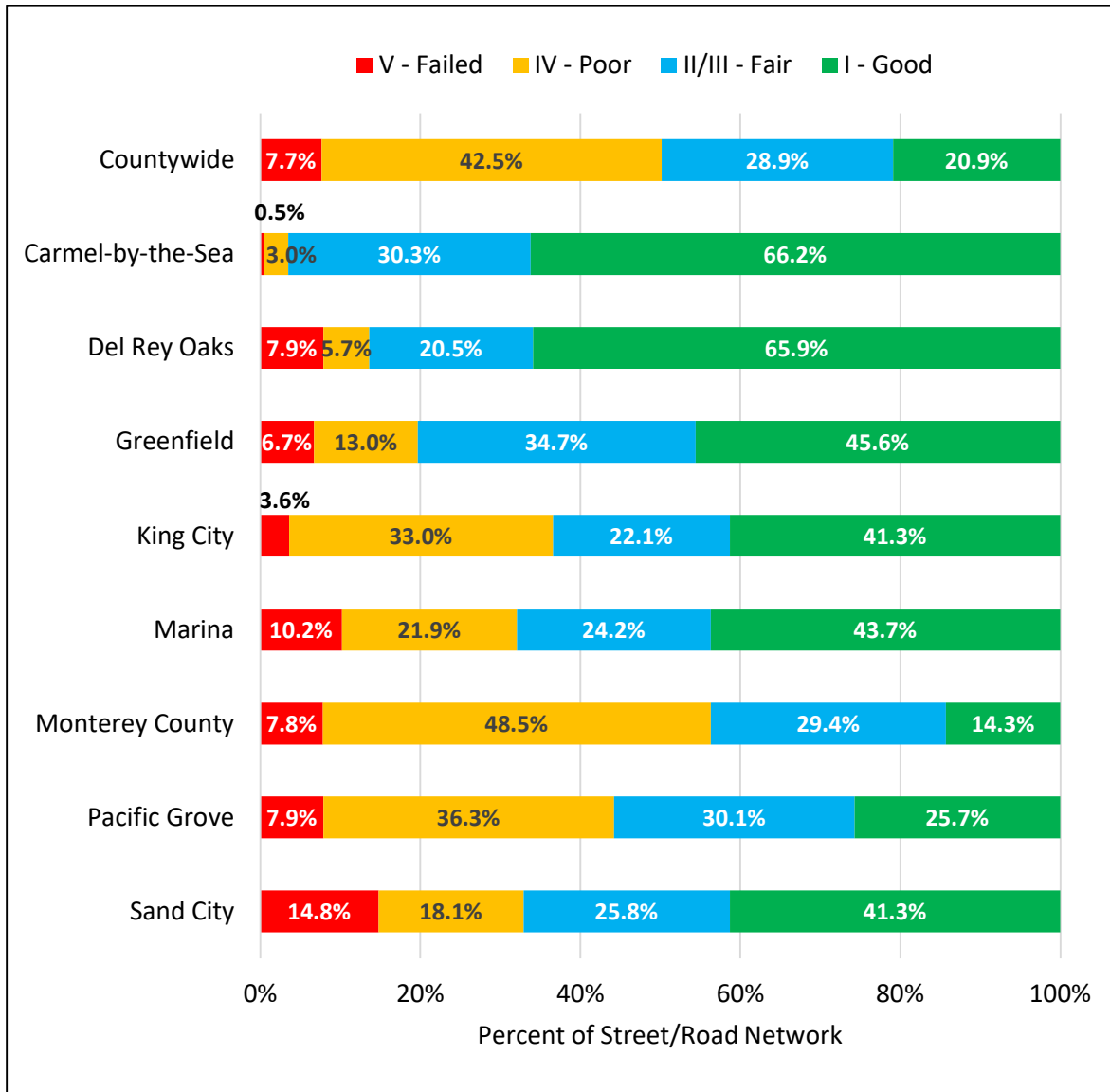
**Figure 1. TAMC Jurisdiction PCIs and Countywide Network PCI**

The PCI scale is divided into five condition categories as shown in Figure 2 using the PCI breakpoints shown on the right of the figure. Pavements in “Fair” condition are divided into two categories representing roads with primarily non-load-related distresses or roads with load-related distresses. Categories I and II have primarily non-load-related distresses (e.g., weathering), and Categories III, IV, and V have primarily load-related distresses (e.g., fatigue cracking). Since the failure mechanisms for load-related distresses are quite different from non-load-related distresses, the treatments used to address them are different, as are their associated costs. Generally, roads with load-related distresses are more expensive to repair.



**Figure 2: Pavement Condition Categories by PCI**

Figure 3 graphically breaks down the countywide network by condition category and also shows the breakdown for each jurisdiction. As shown, 20.9 percent, or about one-fifth, of the countywide network is in “Good” condition, 28.9 percent is in “Fair” condition, 42.5 percent is in Poor condition, and 7.7 percent is in “Failed” condition. By jurisdiction, Carmel-by-the-Sea and Del Rey Oaks have the largest percentages of roads in “Good” condition and Monterey County has smallest.



**Figure 3: Breakdown of Street/Road Network by Pavement Condition Category**

## Budget Needs Analysis

A budget needs analysis was performed to identify the funding required to perform all maintenance and rehabilitation treatments at the optimal time. As shown in Table 2, **the countywide 10-year maintenance budget needs is estimated at \$762 million.**

**Table 2. Summary Results for Needs Analysis**

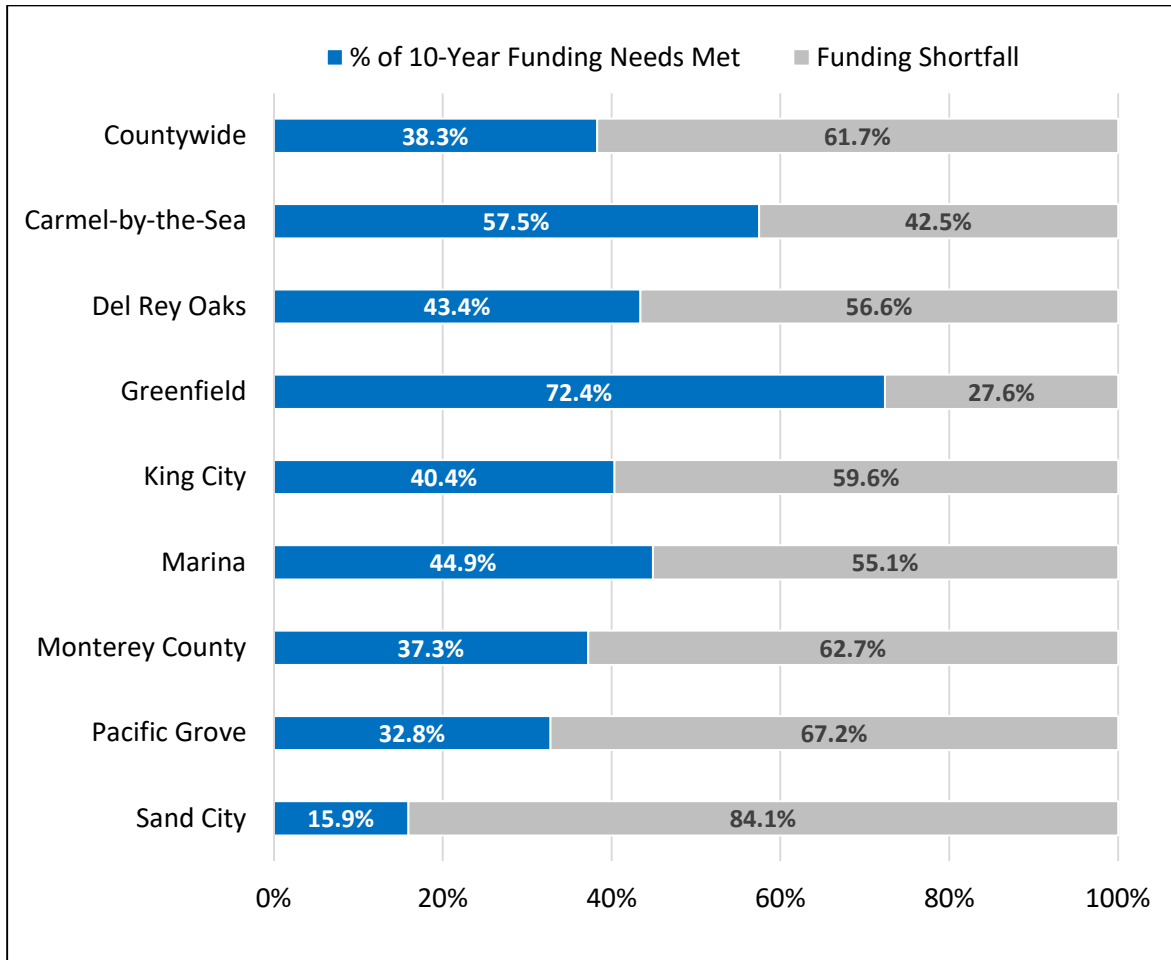
Jurisdiction	10-Year Budget Needs (\$M)
Carmel-by-the-Sea	6.0
Del Rey Oaks	3.2
Greenfield	15.2
King City	22.3
Marina	33.4
Monterey County	644.2
Pacific Grove	34.8
Sand City	2.7
<b>Countywide</b>	<b>761.8</b>

Table 3 lists the 10-year existing funding levels for each jurisdiction, including Measure X and RMRA funds.

**Table 3. Existing Funding by Jurisdiction**

Jurisdiction	10-Year Existing Funding (\$M)
Carmel-by-the-Sea	3.45
Del Rey Oaks	1.39
Greenfield	11.0
King City	9.0
Marina	15.0
Monterey County	240.0
Pacific Grove	11.4
Sand City	0.4
<b>Countywide</b>	<b>291.7</b>

Figure 4 compares the existing funding to the funding needs by showing the percent of funding needs met by the existing funding countywide and for each jurisdiction. The existing funding will only meet approximately 38.3 percent of the countywide needs over the next 10 years.



**Figure 4. Percent of 10-Year Funding Needs Met by Existing Funding**

## Funding Scenarios

In general, three main funding scenarios were performed for each jurisdiction:

**Scenario 1: Existing Funding** – This scenario determines the effect of the existing annual funding on network condition and deferred maintenance.

**Scenario 2: Maintain Current PCI** – This scenario aims to maintain the network PCI at the current level.

**Scenario 3: Best Management Practices** – This scenario aims to achieve a maintainable network by minimizing the deferred maintenance by the end of the analysis period.

Two jurisdictions opted to modify these scenarios:

- King City – Replaced the best management practice scenario (Scenario 3) with one that increased the network PCI to 70 during the first 5 years and then maintained it for the following 5 years.
- Marina – Replaced the maintain current PCI scenario (Scenario 2) with one showing the effect of a \$2.5M per year budget and replaced the best management practice scenario (Scenario 3) with one that improved the PCI to 70 by the end of the analysis period.

## Results of Funding Scenarios

The results of the scenarios for each jurisdiction were aggregated to estimate the countywide budget, PCI, and deferred maintenance. The results of the modified scenarios for King City and Marina were similar to the desired countywide scenarios and were therefore considered an acceptable substitution and were incorporated directly into the aggregated Scenario 2 and Scenario 3.

The funding scenarios indicate that the countywide 10-year budget were \$291.7 million for Scenario 1, \$388.1 million for Scenario 2, and \$837.2 million for Scenario 3. Figure 5 graphically shows the change in PCI over time for each scenario. Under the existing funding (Scenario 1), the countywide PCI will fall to 46 by 2028. For Scenario 2, the countywide PCI will be maintained at 52 throughout the analysis period, and for Scenario 3, the countywide PCI will increase to 78 by 2028.

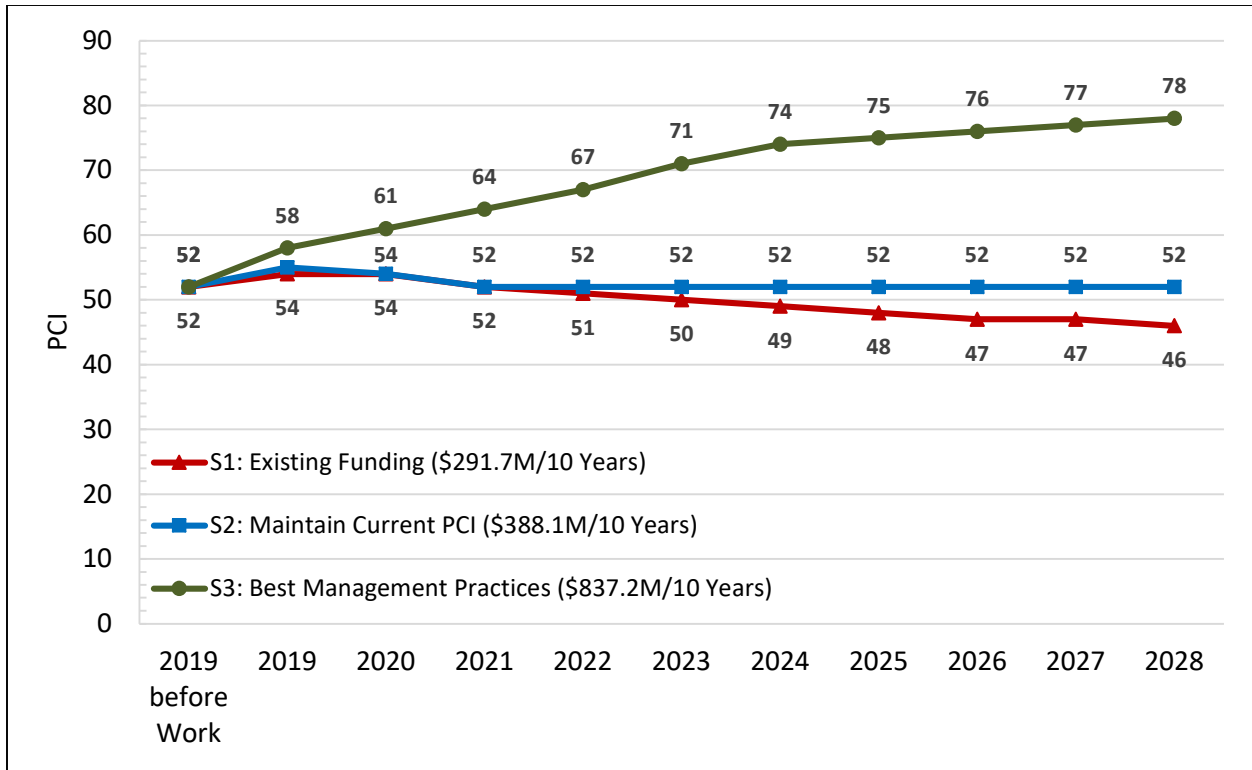
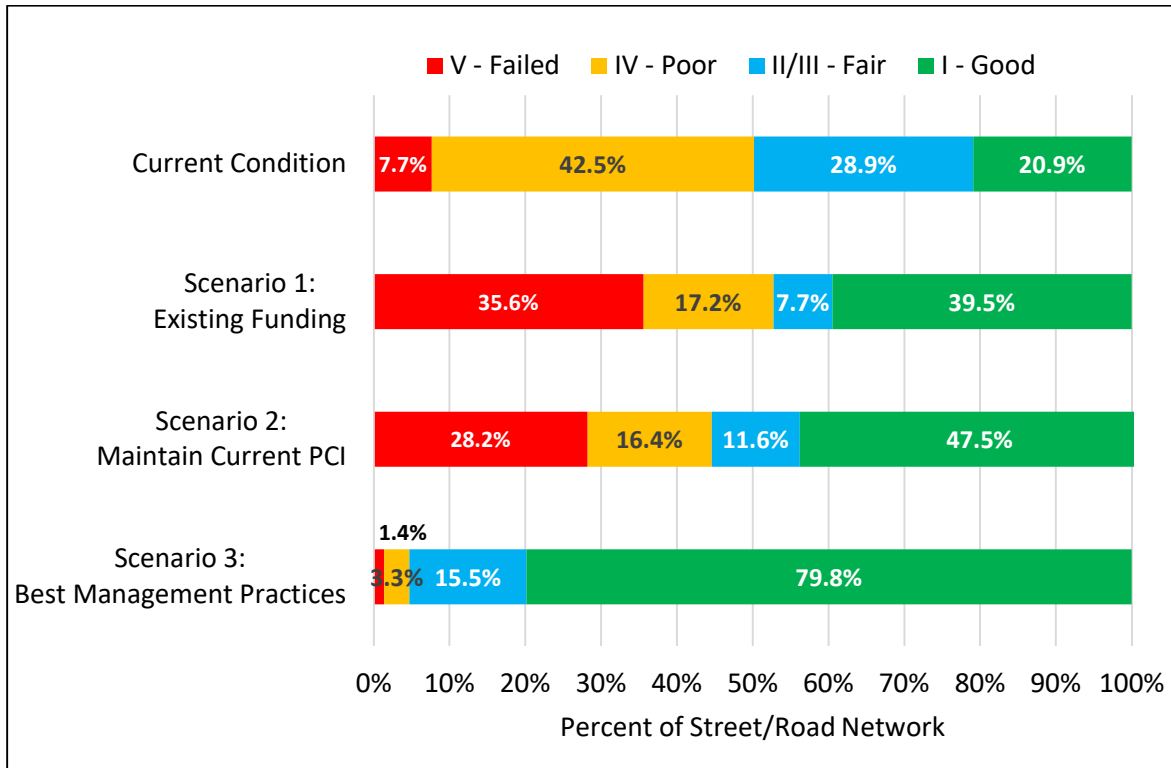


Figure 5. Countywide PCI Over Time for Each Scenario

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Figure 6 shows the current condition of the countywide network compared to the projected condition for each of the three scenarios. All three scenarios will increase the portion of the network in “Good” condition; however, Scenarios 1 and 2 will also significantly increase the portion of the network in “Failed” condition. Only Scenario 3 will see a reduction in the portion of the network in “Poor” and “Failed” condition.



**Figure 6. Current and Projected (2028) Pavement Network Condition for Each Scenario**

Figure 7 illustrates the changes in deferred maintenance over time for each scenario. For Scenario 1, the deferred maintenance will increase by almost two-thirds over the next 10 years. For Scenario 2, the deferred maintenance will still increase, by about one-third. Scenario 3 will nearly eliminate the deferred maintenance by 2028.

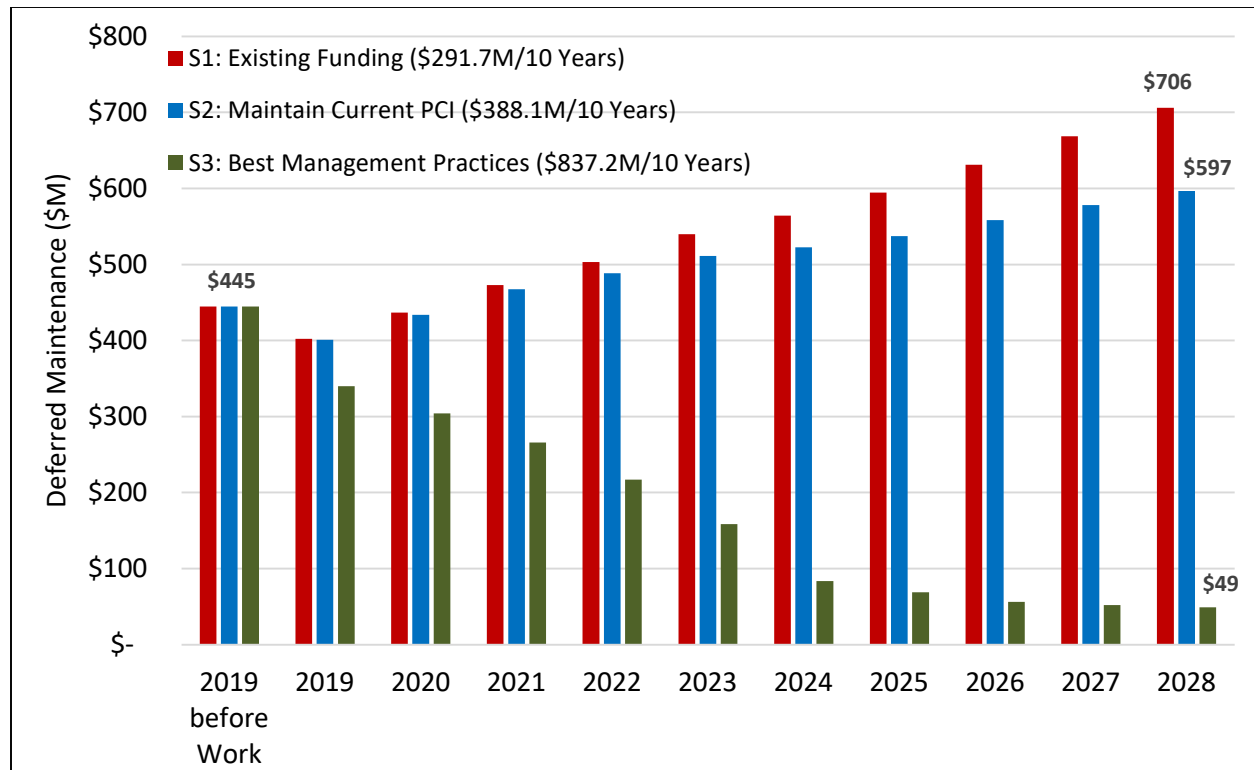


Figure 7. Deferred Maintenance Over Time for Each Scenario

### Summary

In summary, Monterey County and the seven cities included in the 2018/19 pavement management implementation scope have a substantial investment of \$1.4 billion in the pavement network. Overall, the countywide street and road network is in “Fair” condition, with a 2018 network PCI of 52. Of the 1,345 centerline miles throughout the county, about one-fifth are in “Good” condition while about half are in “Poor” or “Failed” condition.

The analyses indicate that approximately \$762 million needs to be spent on pavement maintenance and rehabilitation over the next 10 years to essentially repair all streets and roads and bring the network to a condition level where it can be maintained with on-going preventive maintenance. In the long run, this strategy will save money by preventing future pavement deterioration to levels requiring more costly rehabilitation or reconstruction.

With the existing funding level (\$291.7 million over 10 years), the countywide network will decrease to a PCI of 46 by 2028 and the deferred maintenance will increase to \$706 million. If approximately \$388.1 million is spent on pavement maintenance and rehabilitation countywide over the next 10 years, then the countywide PCI will be maintained at 52 and the deferred maintenance will increase to \$597 million. Additional funding will begin to see the countywide network PCI increase and the deferred maintenance decrease.