

Appendix A

California Statewide Online Survey

This appendix describes in detail the data collection efforts for 2014 statewide study. The goal was to ensure participation by all 58 Counties and 480 Cities.

A.1 Outreach Efforts

As with the previous statewide studies, significant efforts were made to reach all 540 agencies in January-April 2014. This included letters sent out by NCE on behalf of the League and CEAC/CSAC. The contact database had over 2,000 contacts for all the cities and counties. This was compiled from a variety of sources including contacts from the previous surveys in 2012, the memberships of both CSAC and the League, the email listserv for the Regional Transportation Agencies (RTPA) and NCE's contacts.

The contacts included Public Works staff (Directors of Public Works, City Engineers or engineers responsible for pavement/asset management), Directors of Finance, City Managers, County Administrative Officers, RTPAs (Regional Transportation Planning Agencies), and MPOs (Metropolitan Planning Agencies).

Over 2,000 contact letters were mailed out in mid-January 2014 with instructions on how to access the online survey and a fact sheet explaining the project. The deadline for responding to the survey was March 31st, 2014, but this was later extended to April 7, 2014, as there were numerous requests from agencies for more time to respond. NCE made calls and emailed all local agencies (approximately 198) in the Southern California Association of Governments (SCAG) region. MTC also sent numerous emails to its 102 member agencies. The League and CSAC/CEAC use their email listservs to spread the word, and made a special point of publicizing the survey at the annual Public Works Institute conference in late March 2014.

A.2 Project Website

The website at www.SaveCaliforniaStreets.org (see Figure A.1) was originally designed and developed for the 2008 statewide study. This was subsequently modified to accommodate the 2014 survey. The intent of this website was to act as both an information resource on this study and as a repository of related reports that might be of interest to cities and counties. More importantly, it was a portal to the online survey described in Section A.3. The Metropolitan Transportation Commission (MTC) currently hosts the website.

A.3 Online Survey Questionnaire

A survey questionnaire was prepared and finalized in early December 2013. Briefly, it included a request for the following information (bridge data were not requested in this update):

1. Contact name and information for both pavements and financial data
2. Streets and pavements data
3. Safety, traffic, and regulatory components data
4. Additional Regulatory Requirements
5. Funding and expenditure data

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Streets & Roads at Crisis Point

The latest survey results identified a funding shortfall of over \$82 billion over the next 10 years. This information will be used to protect existing state funding for local streets and roads and to advocate for more funding.

[View the 2012 Results](#)

Transportation funding is still at risk. We need your help to make sure that the Governor and Legislature continue to be aware of the critical funding shortfall, and to let them know the consequences of deferring or reducing transportation funds for Cities and Counties.

Your Help is Needed Again!

We need you to update the data you provided in 2012, or provide new data. In particular, we need information on the:

- Contact person(s) for your agency
- Pavement condition data
- Safety, traffic and regulatory data (e.g. sidewalks, storm drains, ADA ramps, streetlights, etc.)
- Funding/expenditure projections

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Many cities and counties contributed funding to this study. These agencies have accepted the leadership responsibility of completing this study.

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Figure A.1 Home Page of www.SaveCaliforniaStreets.org Website

Like the previous studies, no hardcopy surveys were available to the cities and counties, thus requiring all data entry to be made online. The online survey made data aggregation much simpler and faster. The custom database previously designed and developed in 2012 was updated for 2014.

A.4 Results of Data Collection

A total of 399 agencies (74 percent) responded to the survey, which was an increase from the 361 agencies in 2012. When these were added to the agencies who responded in 2008, 2010 and 2012, this represented 99 percent of the total

Data from 99% of the state's local streets and roads are included in this study.

centerline miles of local streets and roads in the state (see Figure A.2). It also represented 98 percent of the state's population.

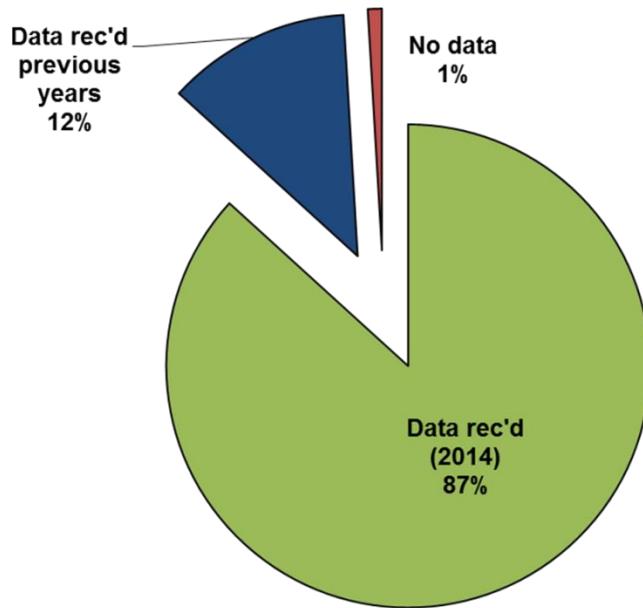


Figure A.2 Responses to Survey (% centerline miles)

Only 24 agencies have not responded to this or any previous survey; of these, 22 have less than 100 centerline miles, and 21 have populations less than 50,000. Many had limited resources in terms of staff time to respond to the survey. Table A.1 illustrates the survey responses by type of data. The pavement data had the most responses (371), but the remaining data elements were able to maintain their past response rate.

Table A.1 Number of Agencies Responding by Data Type

Data Type	2008	2010	2012	2014
Pavement data	314	344	273	371
Unit costs	50	260	211	177
Sustainable practices	-	-	280	269
Complete streets	-	-	269	250
Safety, Traffic & Regulatory	188	296	341	352
Bridges	-	-	177	-
Additional Regulatory Reqts	-	-	220	199
Financial	137	300	238	276

A.4.1 Are Data Representative?

Throughout the data collection phase, it was important to ensure that the data received were representative in nature. This was critical for the analyses – as with the previous studies, the criterion used was network size.

The distribution of responses with respect to network size is shown in Figure A.3. Small agencies are those that have less than 100 centerline miles; medium between 101 to 300 miles, and large agencies have more than 300 miles. Figure A.3 shows all the agencies who responded in 2014 (green), those who responded in 2008/2010/2012 but not 2014 (blue) and the ones who have never responded in red. Clearly, the bulk of the agencies who did not respond had less than 100 miles of pavement network (small cities), but we still had 240 responses in this category, so our confidence in the responses were validated.

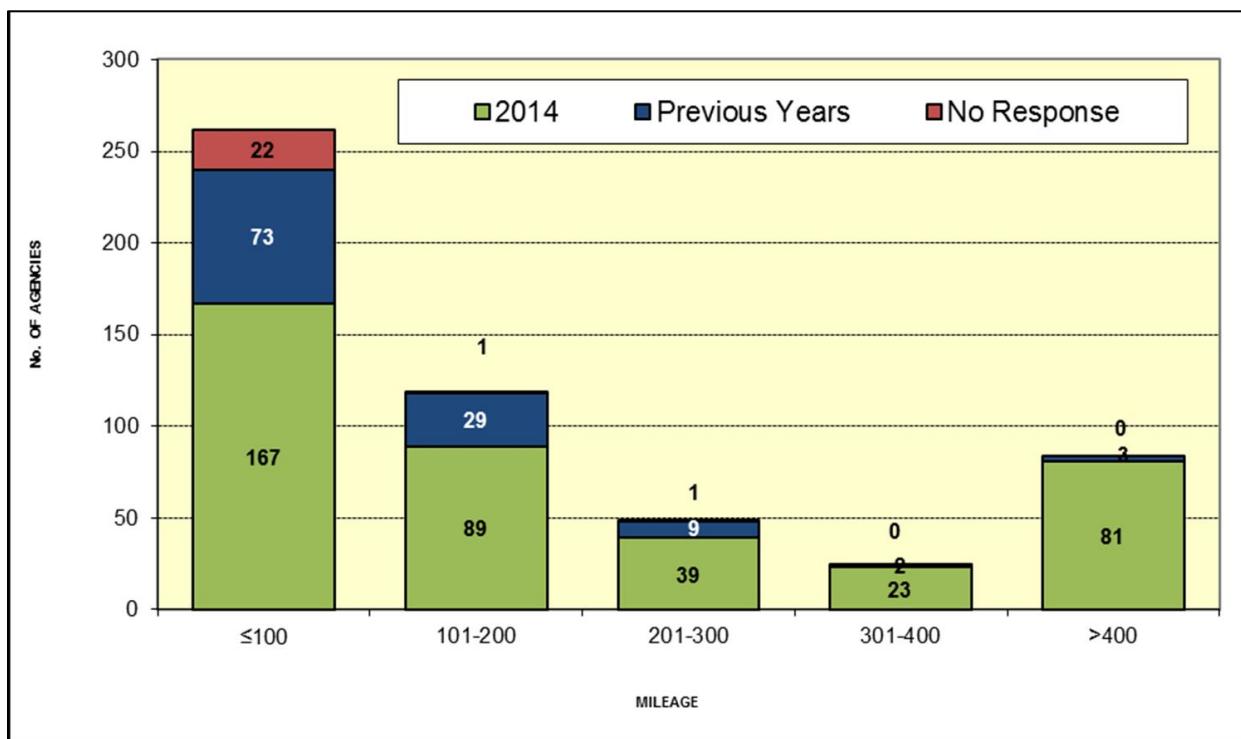


Figure A.3 Distribution of Agency Responses by Network Size (centerline miles)

An important point to note too is that small agencies account for a very small percentage of the state's pavement network. There are 262 cities with less than 100 centerline miles of streets, and 159 cities with less than 50 centerline miles of streets. However, they comprise only 8.2 percent and 2.9 percent of the total miles in the state, respectively. Their impact on the statewide needs is consequently minimal.

A.4.2 PMS Software

The survey responses showed that 85 percent of the responding agencies had a pavement management system (PMS) in place (see Figure A.4). The StreetSaver® (42%) and MicroPAVER (24%) software programs are the two main ones in the state, not surprising given their roots in the public domain and reasonable costs. StreetSaver® was developed and supported by the Metropolitan Transportation Commission (MTC) and MicroPAVER supported by the American Public Works Association (APWA).

Due to the widespread use of a PMS, the quality of the pavement data received contributed immensely to the validity of this study's results.

What is more important is that approximately 94% of the total miles in the state are included in a pavement management system, which lead to a high confidence in the data submitted.

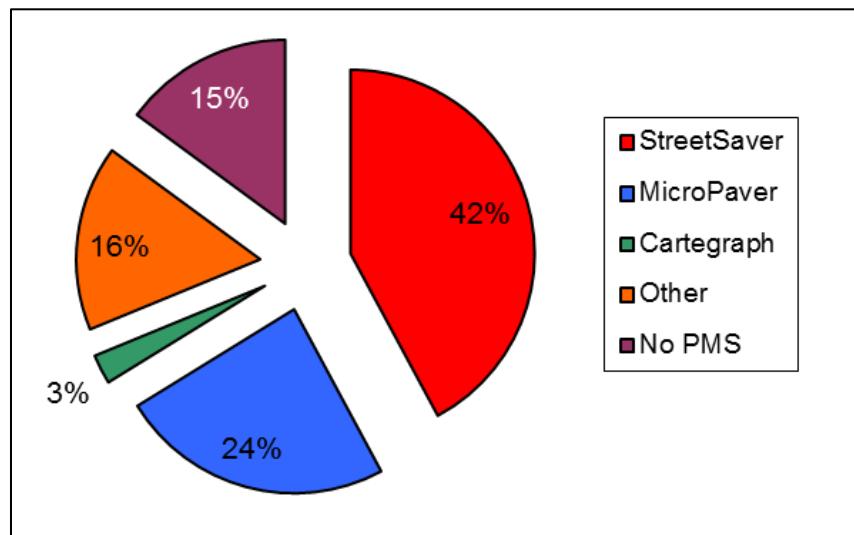


Figure A.4 PMS Software Used from Survey Responses

A.5 Summary

Overall, the number and quality of the survey responses received again exceeded expectations and more than met the needs of this study. To obtain data on 99 percent of the state's local streets and roads network was a remarkable achievement. That 85 percent of agencies that responded also had some pavement management system in place removed many obstacles in the technical analyses. In particular, the consistency in the pavement conditions reported contributed enormously to the validity of statewide study.

Appendix B

Pavement Needs Calculation Procedures

This appendix contains an example of the pavement needs calculation. The calculation assumptions are based on 2008 statewide study. County X was selected, as it was a large county with both rural and urban elements. The following information was provided in the survey.

- **Pavement Area (sq. yd.):** 24 million (major) & 13.4 million (local)
- **Unpaved Roads:** 100 centerline miles
- **Average PCI:** 78 (major), 73 (local)
- **Scenario:** Reach Best Management Practice (BMP) condition in 20 years

The following steps describe the systematic process used to estimate the pavement needs for this scenario.

Step 1: Determine the distribution of pavement area percentages in each of the four condition categories using Table B.1

Again, recall that the survey questionnaire only asked agencies to provide their average PCI; however, they did not include the distribution of pavements in different conditions. As was explained in the report, this did not offer any information on the distribution of PCIs within that particular network or database. For example, if City X reported an average PCI of 75, there was no corresponding information on what percentage of streets were actually 90, or 55 or 32. An infinite number of combinations were possible to arrive at an average of 75. This distribution was required to perform the needs analysis.

Therefore, we examined the distribution of PCIs for 128 agencies and arrived at Table B.1. Most of the 128 agencies came from agencies came from the San Francisco Bay area, since MTC was able to provide this detailed breakdown readily. However, we also included data from rural agencies to ensure that we had a representative sample.

The condition categories are defined as:

- Category I (PCI from 70 to 100)
- Category II (PCI from 50 to 69)
- Category III (PCI from 25 to 49)
- Category IV (PCI from 0 to 24)

These categories were based on widely accepted industry standards as well as from the survey responses (see Figure B.1).

For each condition category, a best-fit curve was developed to calculate the pavement area percentages. Figures B.2 to B.5 present the graphs showing the best-fit curves and the actual data points from the 128 agencies. These curves were used to develop the pavement percentages in Table B.1 (PCI Distribution Table).



Figure B.1 PCI Categories

Since the average PCIs for most of the jurisdictions in California fall between 50 to 85, this portion of the table was used most frequently. Figure B.6 shows that the middle two quartiles of the PCIs from the surveys falls between 60 and 75.

In this step, we used the PCI distribution table (Table B.1) to look up the distribution of pavement areas in the four condition categories.

The average PCI for County X's major roads is 78. From Table B.1, for a PCI of 78, the pavement areas in Condition Category I, II, III and IV are 79.0%, 15.10%, 4.9% and 1.0% of the total area of the major roads, respectively. This row is highlighted in yellow.

The average PCI of County X's local roads is 73. From Table B.1, for a PCI of 73, the pavement areas in Condition Category I, II, III and IV are 69.2%, 18.6%, 9.7% and 2.5%, respectively. This row is highlighted in yellow.

Table B.1 PCI Distribution Table

PCI	Pavement Area (%)				
	Condition Category I (PCI: 70 to 100)	Condition Category II (PCI: 50 to 69)	Condition Category III (PCI: 25 to 49)	Condition Category IV (PCI: 0 to 24)	Total
0	0.0	0.0	0.0	100.0	100.0
1	0.4	0.0	1.1	98.5	100.0
2	0.7	0.0	2.3	97.0	100.0
3	1.1	0.0	3.4	95.5	100.0
4	1.5	0.0	4.5	94.0	100.0
5	1.9	0.0	5.6	92.5	100.0
6	2.2	0.0	6.8	91.0	100.0
7	2.6	0.0	7.9	89.5	100.0
8	3.0	0.0	9.0	88.0	100.0
9	3.4	0.0	10.1	86.5	100.0
10	3.7	0.0	11.3	85.0	100.0
11	4.1	0.0	12.4	83.5	100.0
12	4.5	0.0	13.5	82.0	100.0
13	4.9	0.0	14.6	80.5	100.0
14	5.3	0.0	15.8	78.9	100.0
15	5.7	0.0	16.9	77.4	100.0
16	6.1	0.0	18.0	75.9	100.0
17	6.4	0.1	19.1	74.4	100.0
18	6.7	0.1	20.3	72.9	100.0
19	7.0	0.2	21.4	71.4	100.0
20	7.4	0.2	22.5	69.9	100.0
21	7.7	0.3	23.6	68.4	100.0
22	8.0	0.3	24.8	66.9	100.0

Table B.1 PCI Distribution Table (cont'd)

PCI	Pavement Area (%)				
	Condition Category I (PCI: 70 to 100)	Condition Category II (PCI: 50 to 69)	Condition Category III (PCI: 25 to 49)	Condition Category IV (PCI: 0 to 24)	Total
23	8.3	0.4	25.9	65.4	100.0
24	8.7	0.4	27.0	63.9	100.0
25	9.1	0.4	28.1	62.4	100.0
26	9.3	0.5	29.3	60.9	100.0
27	9.7	0.5	30.4	59.4	100.0
28	10.0	0.6	31.5	57.9	100.0
29	10.4	0.6	32.6	56.4	100.0
30	10.6	0.7	33.8	54.9	100.0
31	11.5	2.1	33.5	52.9	100.0
32	12.4	3.4	33.3	50.9	100.0
33	13.3	4.7	33.0	49.0	100.0
34	14.1	6.0	32.8	47.1	100.0
35	15.1	7.2	32.5	45.2	100.0
36	16.0	8.4	32.2	43.4	100.0
37	17.1	9.5	31.8	41.6	100.0
38	18.1	10.6	31.5	39.8	100.0
39	19.1	11.6	31.2	38.1	100.0
40	20.2	12.6	30.8	36.4	100.0
41	21.2	13.6	30.4	34.8	100.0
42	22.3	14.5	30.0	33.2	100.0
43	23.5	15.3	29.6	31.6	100.0
44	24.6	16.1	29.2	30.1	100.0
45	25.9	16.8	28.7	28.6	100.0
46	27.1	17.5	28.2	27.2	100.0
47	28.2	18.2	27.8	25.8	100.0
48	29.5	18.8	27.3	24.4	100.0
49	30.7	19.4	26.8	23.1	100.0
50	32.1	19.9	26.2	21.8	100.0
51	33.5	20.3	25.7	20.5	100.0
52	34.8	20.8	25.1	19.3	100.0
53	36.3	21.1	24.5	18.1	100.0
54	37.5	21.5	24.0	17.0	100.0
55	39.1	21.7	23.3	15.9	100.0
56	40.5	22.0	22.7	14.8	100.0
57	42.0	22.1	22.1	13.8	100.0
58	43.5	22.3	21.4	12.8	100.0
59	45.0	22.4	20.8	11.8	100.0
60	46.6	22.4	20.1	10.9	100.0
61	48.1	22.4	19.4	10.1	100.0

Table B.1 PCI Distribution Table (cont'd)

PCI	Pavement Area (%)				
	Condition Category I (PCI: 70 to 100)	Condition Category II (PCI: 50 to 69)	Condition Category III (PCI: 25 to 49)	Condition Category IV (PCI: 0 to 24)	Total
62	49.9	22.3	18.6	9.2	100.0
63	51.5	22.2	17.9	8.4	100.0
64	53.0	22.1	17.2	7.7	100.0
65	54.8	21.9	16.4	6.9	100.0
66	56.5	21.7	15.6	6.2	100.0
67	58.2	21.4	14.8	5.6	100.0
68	60.0	21.0	14.0	5.0	100.0
69	61.8	20.6	13.2	4.4	100.0
70	63.6	20.2	12.3	3.9	100.0
71	65.5	19.7	11.4	3.4	100.0
72	67.3	19.2	10.6	2.9	100.0
73	69.2	18.6	9.7	2.5	100.0
74	71.1	18.0	8.8	2.1	100.0
75	73.1	17.3	7.8	1.8	100.0
76	75.0	16.6	6.9	1.5	100.0
77	77.0	15.9	5.9	1.2	100.0
78	79.0	15.1	4.9	1.0	100.0
79	81.0	14.2	4.0	0.8	100.0
80	83.2	13.3	2.9	0.6	100.0
81	85.3	12.3	1.9	0.5	100.0
82	87.4	11.3	0.9	0.4	100.0
83	89.3	10.3	0.0	0.4	100.0
84	90.4	9.2	0.0	0.4	100.0
85	91.9	8.1	0.0	0.0	100.0
86	92.5	7.5	0.0	0.0	100.0
87	93.0	7.0	0.0	0.0	100.0
88	93.5	6.5	0.0	0.0	100.0
89	94.1	5.9	0.0	0.0	100.0
90	94.6	5.4	0.0	0.0	100.0
91	95.2	4.8	0.0	0.0	100.0
92	95.7	4.3	0.0	0.0	100.0
93	96.2	3.8	0.0	0.0	100.0
94	96.8	3.2	0.0	0.0	100.0
95	97.3	2.7	0.0	0.0	100.0
96	97.8	2.2	0.0	0.0	100.0
97	98.4	1.6	0.0	0.0	100.0
98	98.9	1.1	0.0	0.0	100.0
99	99.5	0.5	0.0	0.0	100.0
100	100.0	0.0	0.0	0.0	100.0

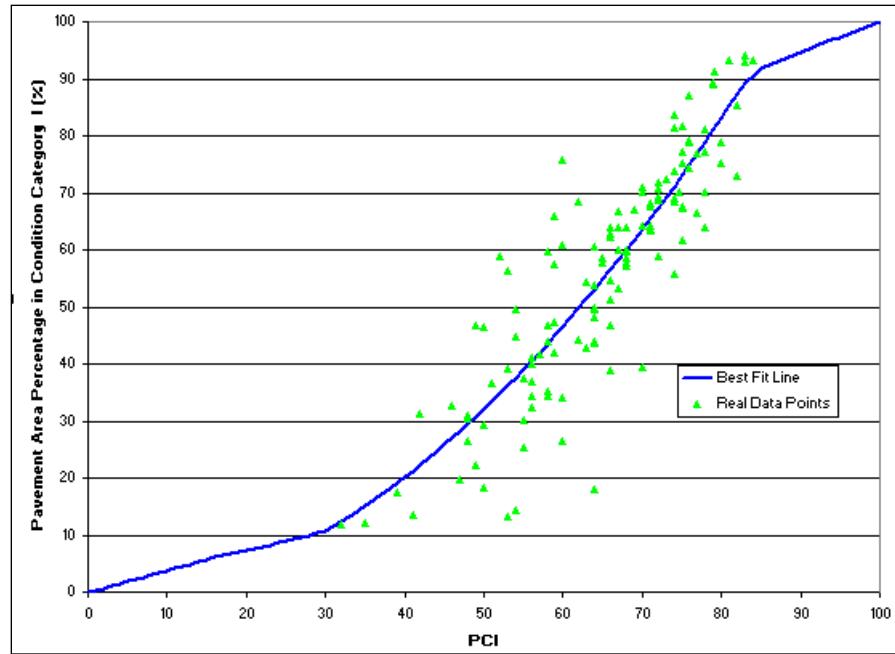


Figure B.2 Pavement Area Distribution in Condition Category I

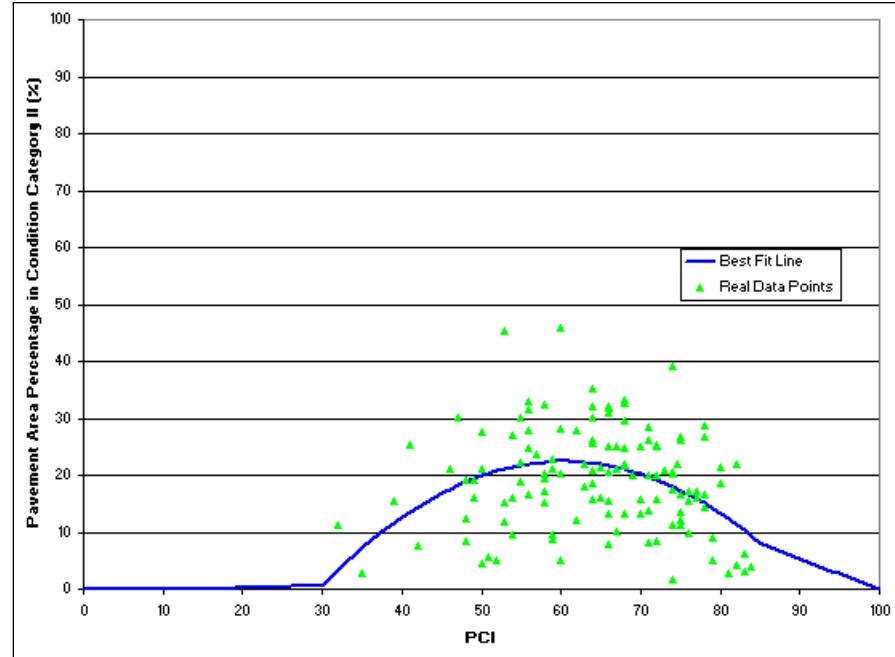


Figure B.3 Pavement Area Distribution in Condition Category II

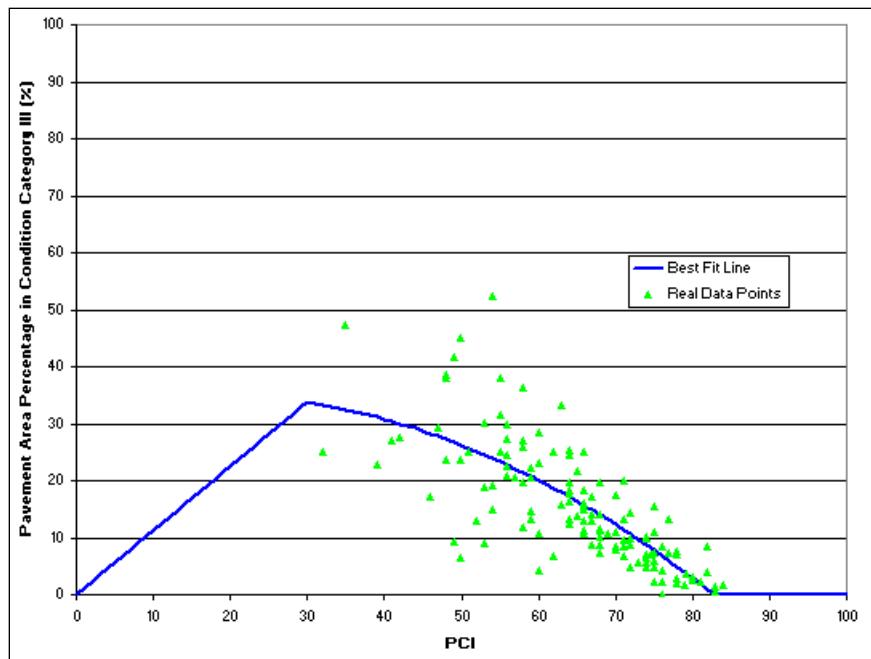


Figure B.4 Pavement Area Distribution in Condition Category III

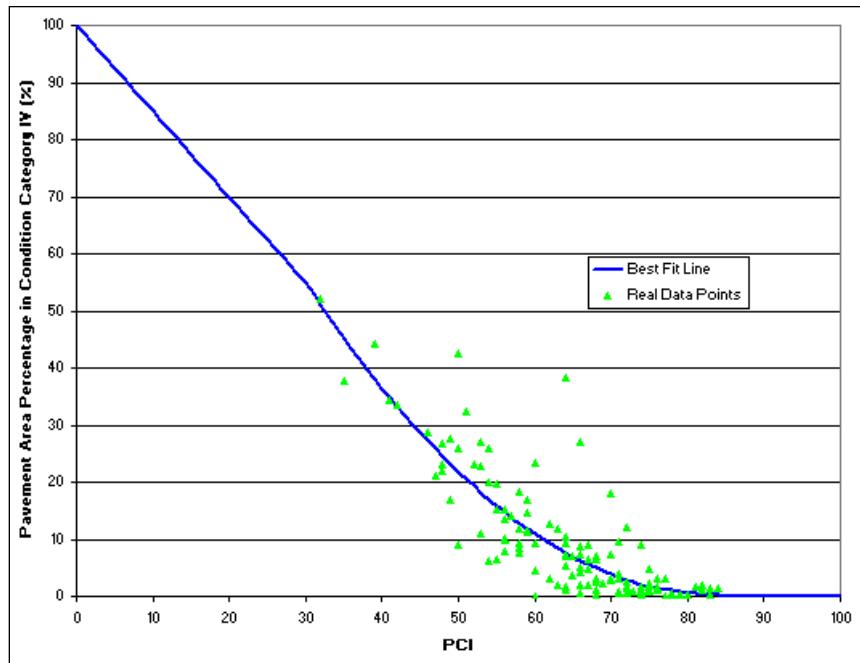


Figure B.5 Pavement Area Distribution in Condition Category IV

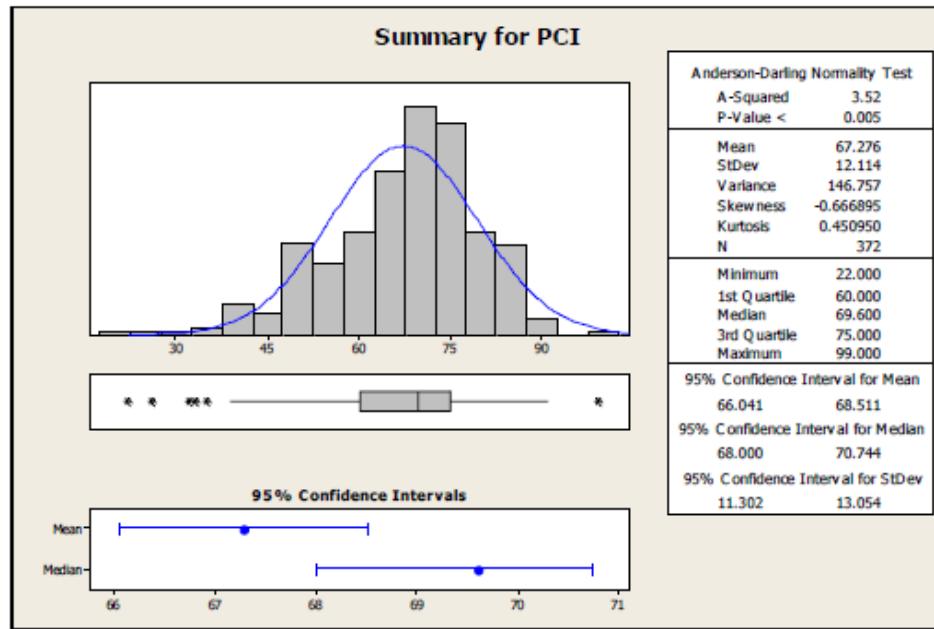


Figure B.6 PCI Distribution for California Cities & Counties

Step 2: Calculate pavement areas and pavement area factors in each of the four condition categories for majors and locals.

Using the pavement area percentages determined in Step 1, Tables B.2 (major roads) and B.3 (local roads) illustrate the pavement area factor calculations used in this example.

Table B.2 Pavement Area Factors(Major Roads)

(1)	(2)	(3)	(4)
Condition Category	Pavement Area %	Pavement Area (sq. yd.) [24,000,000 x Column (2)/100]	Pavement Area Factor [Column (3)/10,000]
I	79.0	18,960,000	1896.00
II	15.1	3,624,000	362.40
III	4.9	1,176,000	117.60
IV	1.0	240,000	24.00
Total	100	24,000,000	2,400.00

Table B.3 Pavement Area Factors (Local Roads)

(1)	(2)	(3)	(4)
Condition Category	Pavement Area %	Pavement Area (sq. yd.) [13,400,000 x Column (2)/100]	Pavement Area Factor [Column (3)/10,000]
I	69.2	9,272,800	927.28
II	18.6	2,492,400	249.24
III	9.7	1,299,800	129.98
IV	2.5	335,000	33.50
Total	100	13,400,000	1,340.00

Step 3: Look up benchmark results to determine pavement needs

In order to determine the pavement needs for all the scenarios, benchmark databases were created to determine the needs for a standard 10,000 sq. yds. of pavements. Table B.4 summarizes the eight (8) benchmark databases that were created.

Table B.4 Benchmark Databases

Database No.	Functional Class	Condition Category	PCI Range
1	Major	I	70 – 100
2	Major	II	50 – 69
3	Major	III	25 – 49
4	Major	IV	0 – 24
5	Local	I	70 – 100
6	Local	II	50 – 69
7	Local	III	25 – 49
8	Local	IV	0 – 24

MTC's StreetSaver® program was used to determine the cost to reach the (BMP) goal in 20 years.

Each benchmark databases included the maintenance and rehabilitation (M&R) decision tree and costs discussed in Chapter 3. Assigning the appropriate maintenance and rehabilitation (M&R) treatment is a critical component of the needs assessment. It is important to know both the **type** of treatment as well as **when** to apply that treatment. This is typically described as a decision tree.

Figure B.7 summarizes the types of treatments and their costs in this study. Briefly, good to excellent pavements (PCI >70) are best suited for pavement preservation techniques i.e. preventive maintenance treatments such as chip seals or slurry seals. These are usually applied at intervals of five to seven years depending on the traffic volumes.

As pavements deteriorate, treatments that address structural adequacy are required. Between a PCI of 25 to 69, asphalt concrete (AC) overlays are usually applied at varying thicknesses. Finally, when the pavement has failed (PCI<25), reconstruction is typically required. Note that if a pavement section has a PCI between 90 and 100, no treatment is applied.

The PCI thresholds shown in Figure B.7 are generally accepted industry standards.

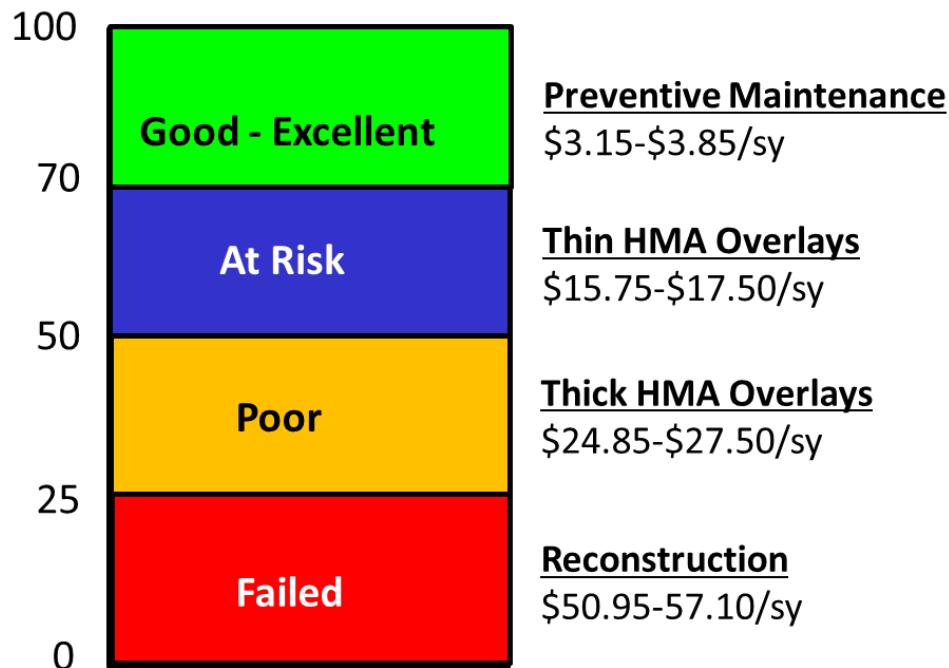


Figure B.7 Final M&R Tree and Unit Costs

Multiple treatments may occur within the analysis period. For example, if Main Street were reconstructed in 2012, typical treatments over the 25-year analysis period may include a slurry seal every 7 years in order to preserve the pavement. Therefore, an accurate needs assessment must also include the cost of these seals in addition to the cost of reconstruction.

The unit costs shown in Figure B.7 are rural counties averages. The range in costs for each treatment is for the different functional classes of pavements i.e. majors have a higher cost than locals.

Table B.5 contains the pavement needs and backlog results. Each column is further described below:

- Year: 1 to 20. The analysis period is 20 years.
- Major Roads/Local Roads: The analysis was separate for major roads and local roads and so are the results;
- Condition Category I/II/III/IV: The results are further presented under each of the four Condition Categories.
- Needs: Each year's pavement needs or required budget to meet the goal.
- Backlog: Each year's unmet pavement maintenance and rehabilitation.
- Total: The needs are summed for the 20 years.

The calculations are detailed in Tables B.6 (major roads) and B.7 (local roads). For each condition category:

From Table B.6, the total pavement needs of County X's major roads are:

$$\$368,089,440 + \$165,500,832 + \$65,289,168 + \$14,812,800 = \underline{\$613,692,240}$$

From Table B.7, the total pavement needs of County X's local roads are:

$$\$121,418,043 + \$87,468,586 + \$61,472,741 + \$17,870,240 = \underline{\$288,229,310}$$

Step 4: Calculate needs for unpaved roads

It is estimated that unpaved road needs is \$9,800 per centerline mile per year. This is the average unpaved road needs from the statewide online survey. Since there are 100 centerline miles of unpaved roads in County X:

$$\text{Unpaved road needs} = \$9,800/\text{yr}/\text{mile} \times 20 \text{ years} \times 100 \text{ miles} = \underline{\$19,600,000}$$

Step 5: Sum up paved and unpaved roads

Paved needs for major roads:	\$613,692,240
Paved needs for local roads:	\$288,229,310
<u>Unpaved road needs:</u>	<u>\$ 19,600,000</u>
TOTAL	<u>\$921,521,550</u>

From above calculations, in order to reach the BMP goal in twenty years, approximately \$46 million is needed per year for the next twenty years.

Table B.5 Benchmark Analysis Results: Reach the Best Management Practice (BMP) goal in 20 years

Year	Major Roads								Local Roads							
	Condition Category I		Condition Category II		Condition Category III		Condition Category IV		Condition Category I		Condition Category II		Condition Category III		Condition Category IV	
	Needs	Backlog	Needs	Backlog	Needs	Backlog	Needs	Backlog	Needs	Backlog	Needs	Backlog	Needs	Backlog	Needs	Backlog
1	9,707	0	22,834	152,166	27,759	247,241	30,860	528,300	6,547	0	17,547	139,953	23,647	224,853	26,672	472,388
2	9,707	0	22,834	139,332	27,759	255,002	30,860	509,280	6,547	0	17,547	131,507	23,647	232,526	26,672	456,156
3	9,707	0	22,834	131,498	27,759	274,603	30,860	478,420	6,547	0	17,547	123,060	23,647	229,759	26,672	429,484
4	9,707	0	22,834	123,664	27,759	294,204	30,860	447,560	6,547	0	17,547	114,614	23,647	237,432	26,672	402,812
5	9,707	0	22,834	115,831	27,759	301,965	30,860	416,699	6,547	0	17,547	106,167	23,647	245,105	26,672	376,140
6	9,707	0	22,834	97,997	27,759	301,766	30,860	387,379	6,547	0	17,547	97,721	23,647	252,778	26,672	349,468
7	9,707	0	22,834	87,588	27,759	279,827	30,860	358,059	6,547	0	17,547	84,725	23,647	239,571	26,672	322,796
8	9,707	0	22,834	72,180	27,759	267,788	30,860	328,739	6,547	0	17,547	74,028	23,647	238,644	26,672	297,384
9	9,707	0	22,834	91,371	27,759	243,509	30,860	299,419	6,547	0	17,547	58,782	23,647	227,277	26,672	271,972
10	9,707	0	22,834	100,563	27,759	217,290	30,860	270,099	6,547	0	17,547	48,086	23,647	207,310	26,672	246,560
11	9,707	0	22,834	97,379	27,759	191,071	30,860	242,319	6,547	0	17,547	50,440	23,647	187,343	26,672	221,148
12	9,707	0	22,834	94,195	27,759	174,552	30,860	214,539	6,547	0	17,547	61,294	23,647	166,796	26,672	195,736
13	9,707	0	22,834	91,011	27,759	152,213	30,860	186,759	6,547	0	17,547	59,097	23,647	144,409	26,672	170,324
14	9,707	0	22,834	87,827	27,759	129,474	30,860	158,979	6,547	0	17,547	56,901	23,647	122,021	26,672	144,912
15	9,707	0	22,834	72,269	27,759	104,795	30,860	131,199	6,547	0	17,547	54,705	23,647	101,475	26,672	120,759
16	9,707	0	22,834	64,235	27,759	78,576	30,860	104,959	6,547	0	17,547	52,508	23,647	80,927	26,672	96,608
17	9,707	0	22,834	48,176	27,759	63,597	30,860	78,720	6,547	0	17,547	39,563	23,647	62,221	26,672	72,456
18	9,707	0	22,834	29,692	27,759	40,858	30,860	52,480	6,547	0	17,547	26,617	23,647	41,674	26,672	48,304
19	9,707	0	22,834	13,633	27,759	21,599	30,860	26,240	6,547	0	17,547	15,971	23,647	22,387	26,672	24,152
20	9,707	0	22,834	0	27,759	0	30,860	0	6,547	0	17,547	0	23,647	0	26,672	0
Total	\$194,140		\$456,680		\$555,180		\$617,200		\$130,940		\$350,940		\$472,940		\$533,440	

Table B.6 Needs Calculation for County X (Major Roads)

Year	Condition Category I				Condition Category II					
	from Benchmark Results		Area Factor	Actual (benchmark results x area factor)		from Benchmark Results		Area Factor	Actual (benchmark results x area factor)	
	Needs	Backlog		Needs	Backlog	Needs	Backlog		Needs	Backlog
1	9,707	0	1896.00	18,404,472	0	22,834	152,166	362.40	8,275,042	55,144,958
2	9,707	0	1896.00	18,404,472	0	22,834	139,332	362.40	8,275,042	50,493,917
3	9,707	0	1896.00	18,404,472	0	22,834	131,498	362.40	8,275,042	47,654,875
4	9,707	0	1896.00	18,404,472	0	22,834	123,664	362.40	8,275,042	44,815,834
5	9,707	0	1896.00	18,404,472	0	22,834	115,831	362.40	8,275,042	41,977,154
6	9,707	0	1896.00	18,404,472	0	22,834	97,997	362.40	8,275,042	35,514,113
7	9,707	0	1896.00	18,404,472	0	22,834	87,588	362.40	8,275,042	31,741,891
8	9,707	0	1896.00	18,404,472	0	22,834	72,180	362.40	8,275,042	26,158,032
9	9,707	0	1896.00	18,404,472	0	22,834	91,371	362.40	8,275,042	33,112,850
10	9,707	0	1896.00	18,404,472	0	22,834	100,563	362.40	8,275,042	36,444,031
11	9,707	0	1896.00	18,404,472	0	22,834	97,379	362.40	8,275,042	35,290,150
12	9,707	0	1896.00	18,404,472	0	22,834	94,195	362.40	8,275,042	34,136,268
13	9,707	0	1896.00	18,404,472	0	22,834	91,011	362.40	8,275,042	32,982,386
14	9,707	0	1896.00	18,404,472	0	22,834	87,827	362.40	8,275,042	31,828,505
15	9,707	0	1896.00	18,404,472	0	22,834	72,269	362.40	8,275,042	26,190,286
16	9,707	0	1896.00	18,404,472	0	22,834	64,235	362.40	8,275,042	23,278,764
17	9,707	0	1896.00	18,404,472	0	22,834	48,176	362.40	8,275,042	17,458,982
18	9,707	0	1896.00	18,404,472	0	22,834	29,692	362.40	8,275,042	10,760,381
19	9,707	0	1896.00	18,404,472	0	22,834	13,633	362.40	8,275,042	4,940,599
20	9,707	0	1896.00	18,404,472	0	22,834	0	362.40	8,275,042	0
Total		\$368,089,440				\$165,500,832				

Table B.6 Needs Calculation for County X (Major Roads) (Continued)

Year	Condition Category III				Condition Category IV					
	from Benchmark Results		Area Factor	Actual (benchmark results x area factor)		from Benchmark Results		Area Factor	Actual (benchmark results x area factor)	
	Needs	Backlog		Needs	Backlog	Needs	Backlog		Needs	Backlog
1	27,759	247,241	117.60	3,264,458	29,075,542	30,860	528,300	24.00	740,640	12,679,200
2	27,759	255,002	117.60	3,264,458	29,988,235	30,860	509,280	24.00	740,640	12,222,720
3	27,759	274,603	117.60	3,264,458	32,293,313	30,860	478,420	24.00	740,640	11,482,080
4	27,759	294,204	117.60	3,264,458	34,598,390	30,860	447,560	24.00	740,640	10,741,440
5	27,759	301,965	117.60	3,264,458	35,511,084	30,860	416,699	24.00	740,640	10,000,776
6	27,759	301,766	117.60	3,264,458	35,487,682	30,860	387,379	24.00	740,640	9,297,096
7	27,759	279,827	117.60	3,264,458	32,907,655	30,860	358,059	24.00	740,640	8,593,416
8	27,759	267,788	117.60	3,264,458	31,491,869	30,860	328,739	24.00	740,640	7,889,736
9	27,759	243,509	117.60	3,264,458	28,636,658	30,860	299,419	24.00	740,640	7,186,056
10	27,759	217,290	117.60	3,264,458	25,553,304	30,860	270,099	24.00	740,640	6,482,376
11	27,759	191,071	117.60	3,264,458	22,469,950	30,860	242,319	24.00	740,640	5,815,656
12	27,759	174,552	117.60	3,264,458	20,527,315	30,860	214,539	24.00	740,640	5,148,936
13	27,759	152,213	117.60	3,264,458	17,900,249	30,860	186,759	24.00	740,640	4,482,216
14	27,759	129,474	117.60	3,264,458	15,226,142	30,860	158,979	24.00	740,640	3,815,496
15	27,759	104,795	117.60	3,264,458	12,323,892	30,860	131,199	24.00	740,640	3,148,776
16	27,759	78,576	117.60	3,264,458	9,240,538	30,860	104,959	24.00	740,640	2,519,016
17	27,759	63,597	117.60	3,264,458	7,479,007	30,860	78,720	24.00	740,640	1,889,280
18	27,759	40,858	117.60	3,264,458	4,804,901	30,860	52,480	24.00	740,640	1,259,520
19	27,759	21,599	117.60	3,264,458	2,540,042	30,860	26,240	24.00	740,640	629,760
20	27,759	0	117.60	3,264,458	0	30,860	0	24.00	740,640	0
Total		\$65,289,168				\$14,812,800				

Table B.7 Needs Calculation for County X (Local Roads)

Year	Condition Category I				Condition Category II					
	from Benchmark Results		Area Factor	Actual (benchmark results x area factor)		from Benchmark Results		Area Factor	Actual (benchmark results x area factor)	
	Needs	Backlog		Needs	Backlog	Needs	Backlog		Needs	Backlog
1	6,547	0	927.28	6,070,902	0	17,547	139,953	249.24	4,373,414	34,881,886
2	6,547	0	927.28	6,070,902	0	17,547	131,507	249.24	4,373,414	32,776,805
3	6,547	0	927.28	6,070,902	0	17,547	123,060	249.24	4,373,414	30,671,474
4	6,547	0	927.28	6,070,902	0	17,547	114,614	249.24	4,373,414	28,566,393
5	6,547	0	927.28	6,070,902	0	17,547	106,167	249.24	4,373,414	26,461,063
6	6,547	0	927.28	6,070,902	0	17,547	97,721	249.24	4,373,414	24,355,982
7	6,547	0	927.28	6,070,902	0	17,547	84,725	249.24	4,373,414	21,116,859
8	6,547	0	927.28	6,070,902	0	17,547	74,028	249.24	4,373,414	18,450,739
9	6,547	0	927.28	6,070,902	0	17,547	58,782	249.24	4,373,414	14,650,826
10	6,547	0	927.28	6,070,902	0	17,547	48,086	249.24	4,373,414	11,984,955
11	6,547	0	927.28	6,070,902	0	17,547	50,440	249.24	4,373,414	12,571,666
12	6,547	0	927.28	6,070,902	0	17,547	61,294	249.24	4,373,414	15,276,917
13	6,547	0	927.28	6,070,902	0	17,547	59,097	249.24	4,373,414	14,729,336
14	6,547	0	927.28	6,070,902	0	17,547	56,901	249.24	4,373,414	14,182,005
15	6,547	0	927.28	6,070,902	0	17,547	54,705	249.24	4,373,414	13,634,674
16	6,547	0	927.28	6,070,902	0	17,547	52,508	249.24	4,373,414	13,087,094
17	6,547	0	927.28	6,070,902	0	17,547	39,563	249.24	4,373,414	9,860,682
18	6,547	0	927.28	6,070,902	0	17,547	26,617	249.24	4,373,414	6,634,021
19	6,547	0	927.28	6,070,902	0	17,547	15,971	249.24	4,373,414	3,980,612
20	6,547	0	927.28	6,070,902	0	17,547	0	249.24	4,373,414	0
Total				\$121,418,043					\$87,468,286	

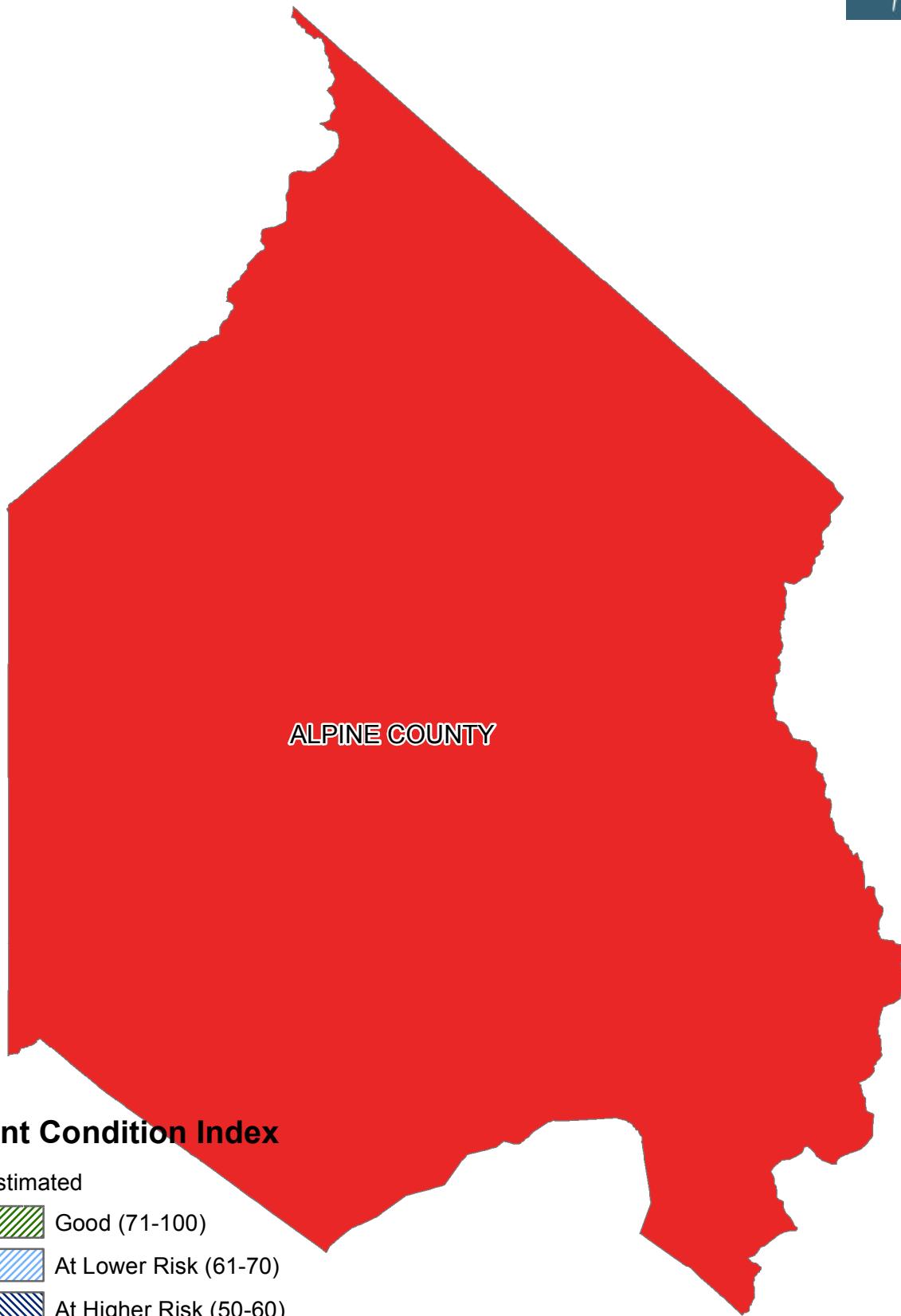
Table B.7 Needs Calculation for County X (Local Roads) (Continued)

Year	Condition Category III				Condition Category IV					
	from Benchmark Results		Area Factor	Actual (benchmark results x area factor)		from Benchmark Results		Area Factor	Actual (benchmark results x area factor)	
	Needs	Backlog		Needs	Backlog	Needs	Backlog		Needs	Backlog
1	23,647	224,853	129.98	3,073,637	29,226,393	26,672	472,388	33.50	893,512	15,824,998
2	23,647	232,526	129.98	3,073,637	30,223,729	26,672	456,156	33.50	893,512	15,281,226
3	23,647	229,759	129.98	3,073,637	29,864,075	26,672	429,484	33.50	893,512	14,387,714
4	23,647	237,432	129.98	3,073,637	30,861,411	26,672	402,812	33.50	893,512	13,494,202
5	23,647	245,105	129.98	3,073,637	31,858,748	26,672	376,140	33.50	893,512	12,600,690
6	23,647	252,778	129.98	3,073,637	32,856,084	26,672	349,468	33.50	893,512	11,707,178
7	23,647	239,571	129.98	3,073,637	31,139,439	26,672	322,796	33.50	893,512	10,813,666
8	23,647	238,644	129.98	3,073,637	31,018,947	26,672	297,384	33.50	893,512	9,962,364
9	23,647	227,277	129.98	3,073,637	29,541,464	26,672	271,972	33.50	893,512	9,111,062
10	23,647	207,310	129.98	3,073,637	26,946,154	26,672	246,560	33.50	893,512	8,259,760
11	23,647	187,343	129.98	3,073,637	24,350,843	26,672	221,148	33.50	893,512	7,408,458
12	23,647	166,796	129.98	3,073,637	21,680,144	26,672	195,736	33.50	893,512	6,557,156
13	23,647	144,409	129.98	3,073,637	18,770,282	26,672	170,324	33.50	893,512	5,705,854
14	23,647	122,021	129.98	3,073,637	15,860,290	26,672	144,912	33.50	893,512	4,854,552
15	23,647	101,475	129.98	3,073,637	13,189,721	26,672	120,759	33.50	893,512	4,045,427
16	23,647	80,927	129.98	3,073,637	10,518,891	26,672	96,608	33.50	893,512	3,236,368
17	23,647	62,221	129.98	3,073,637	8,087,486	26,672	72,456	33.50	893,512	2,427,276
18	23,647	41,674	129.98	3,073,637	5,416,787	26,672	48,304	33.50	893,512	1,618,184
19	23,647	22,387	129.98	3,073,637	2,909,862	26,672	24,152	33.50	893,512	809,092
20	23,647	0	129.98	3,073,637	0	26,672	0	33.50	893,512	0
Total		\$61,472,741				\$17,870,240				

Appendix C

PCI Maps by County

Alpine County



Pavement Condition Index

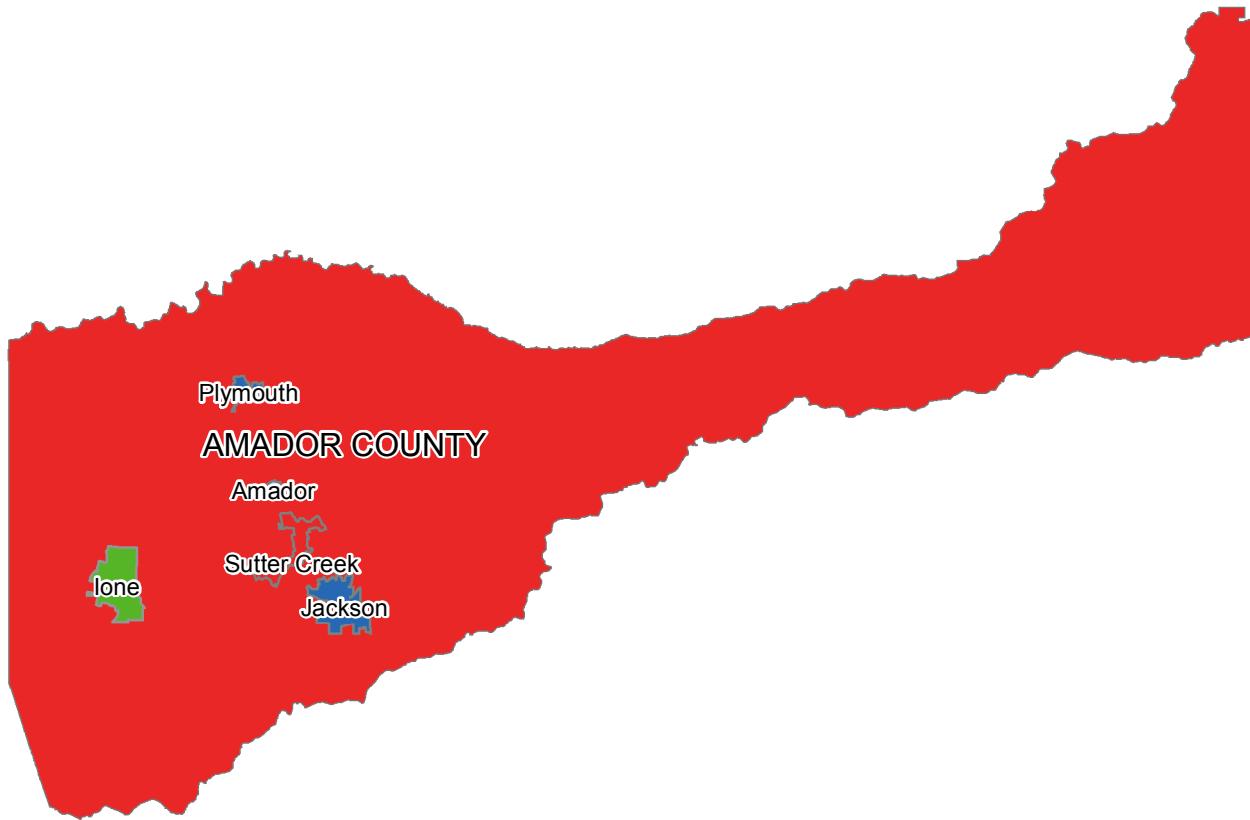
Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Amador County



Pavement Condition Index

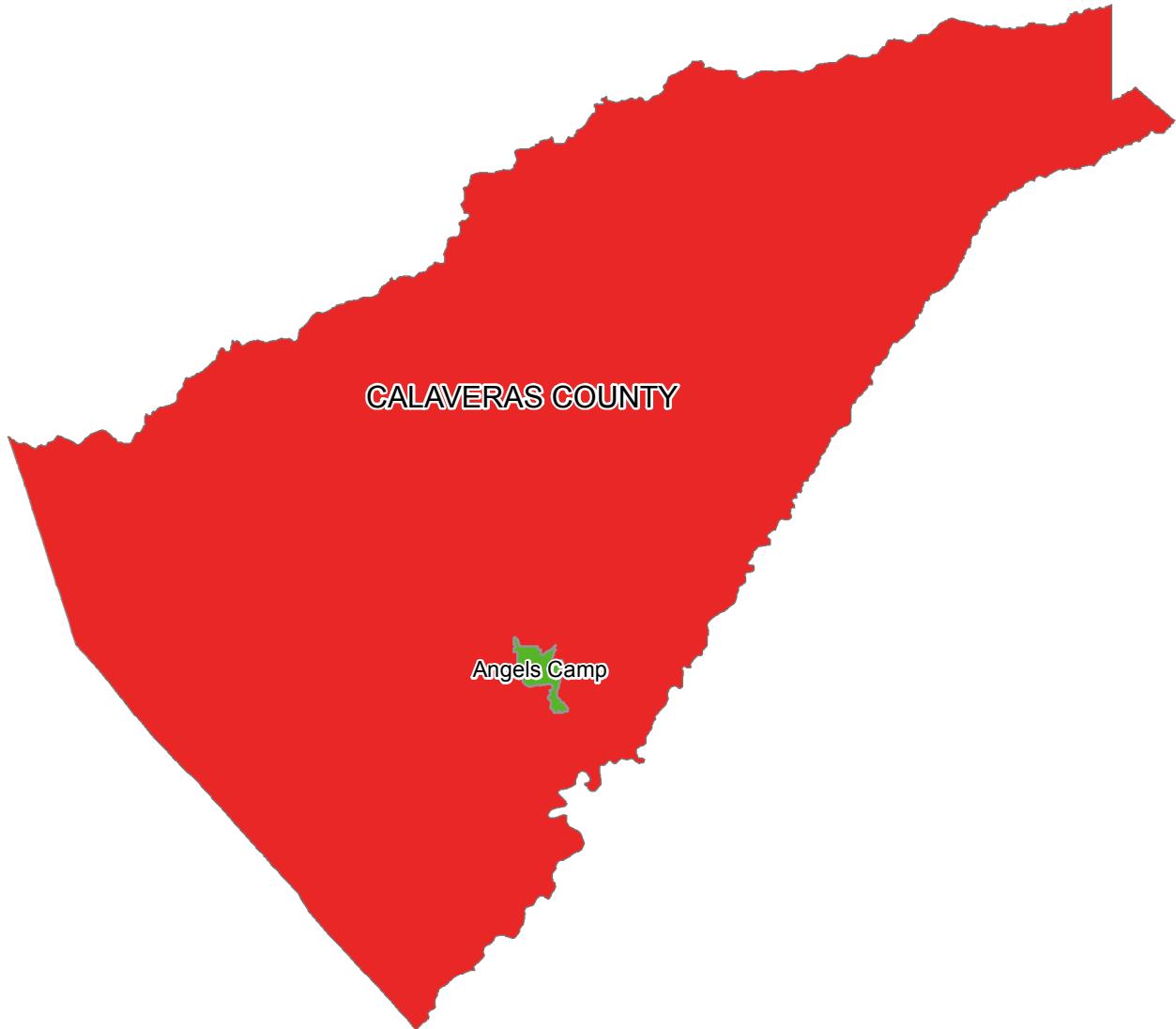
Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Calaveras County



Pavement Condition Index

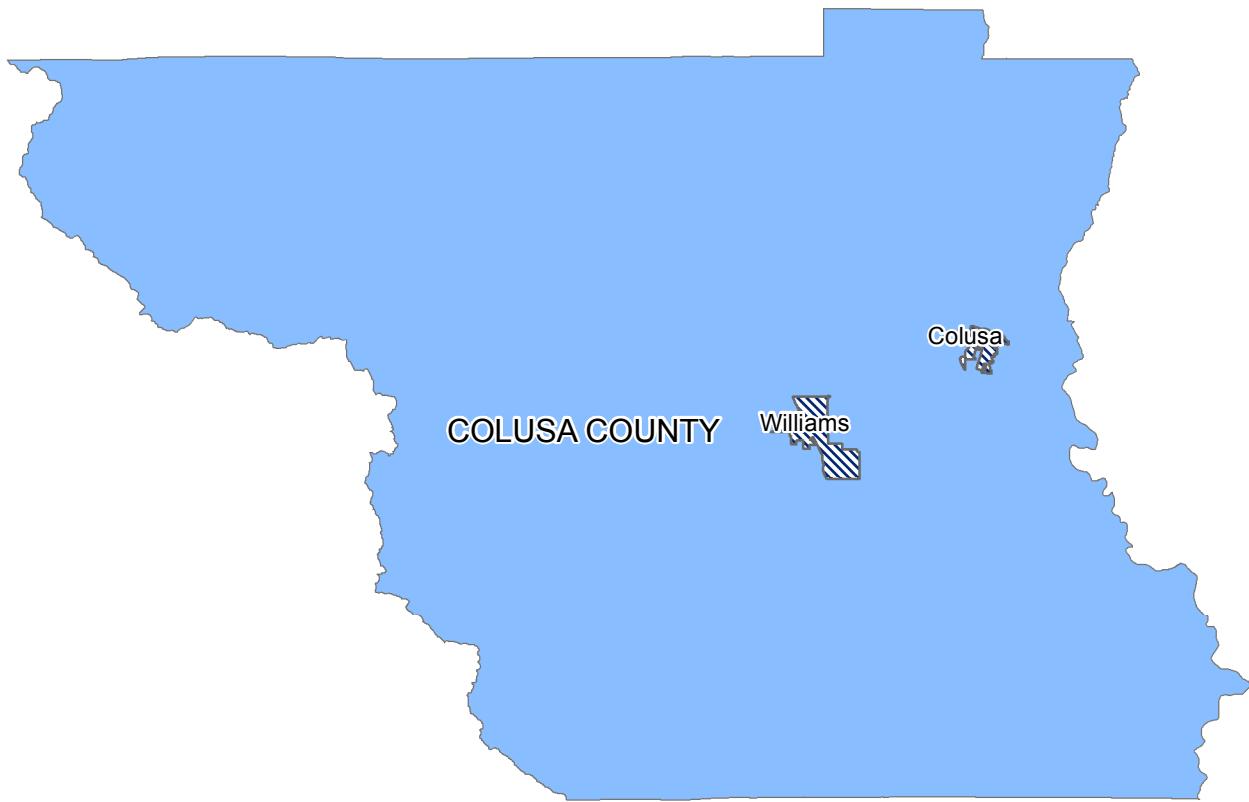
Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Colusa County



Pavement Condition Index

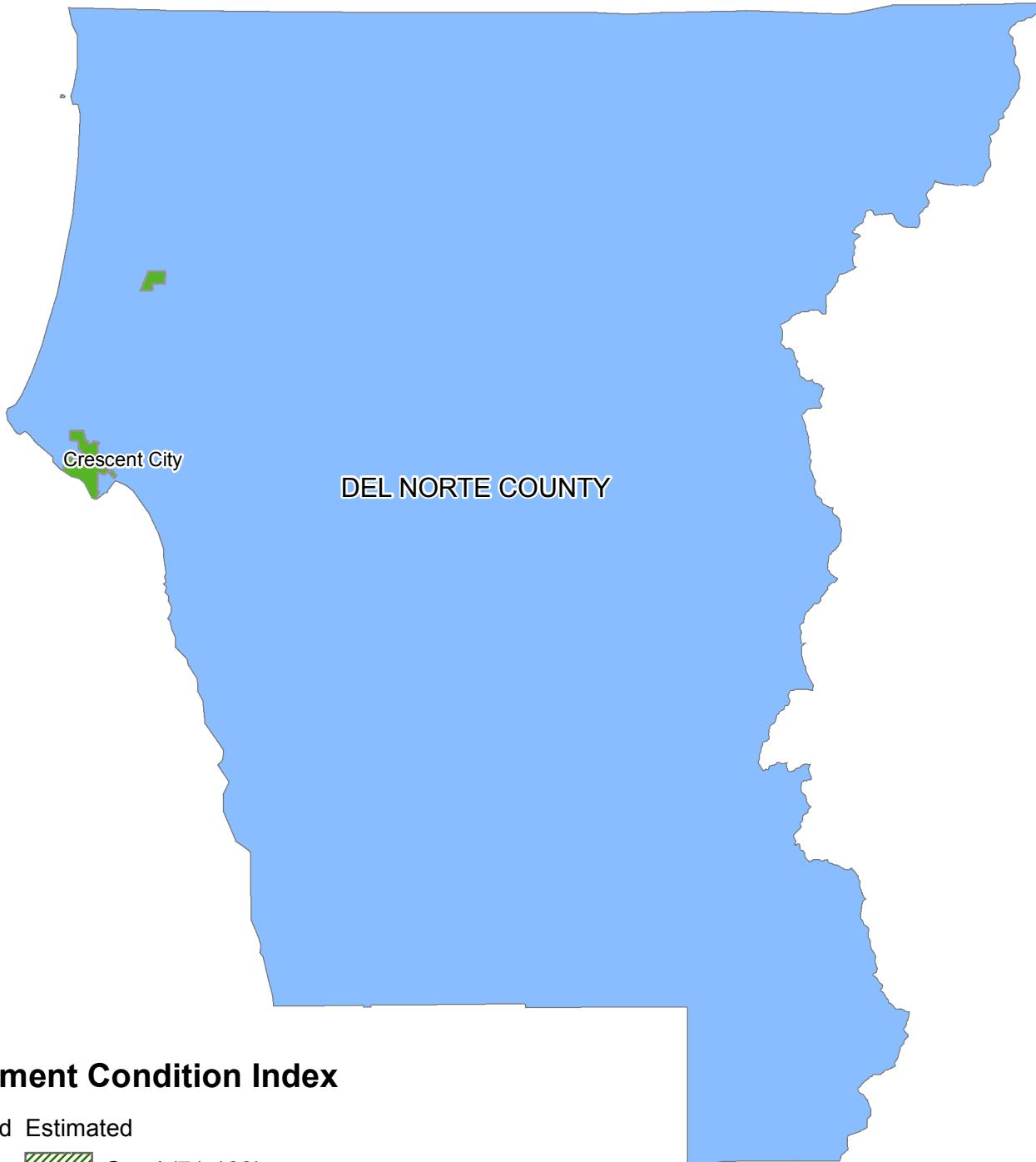
Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Del Norte County



Pavement Condition Index

Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

El Dorado County



Pavement Condition Index

Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Glenn County



Pavement Condition Index

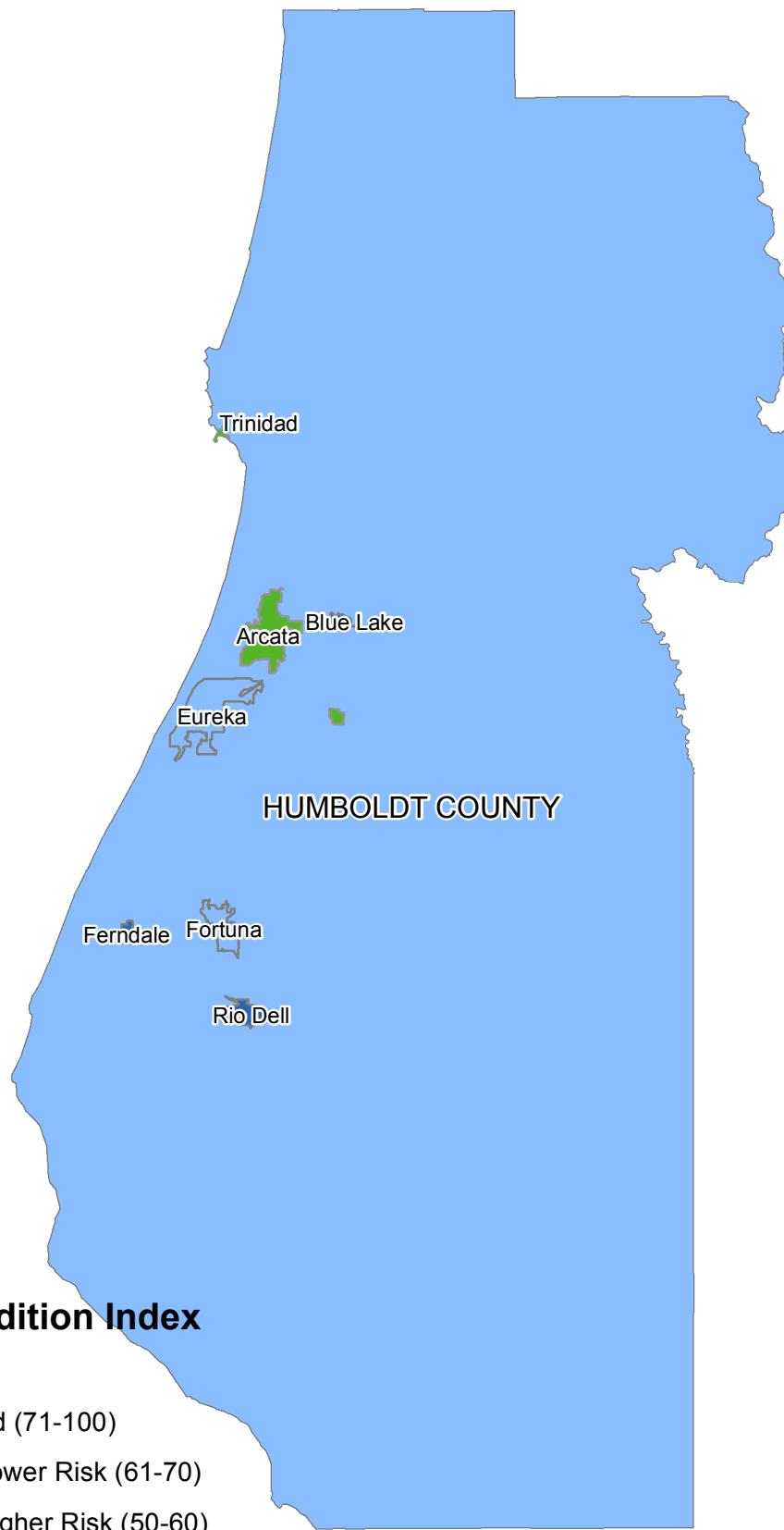
Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Humboldt County



Pavement Condition Index

Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Inyo County



Pavement Condition Index

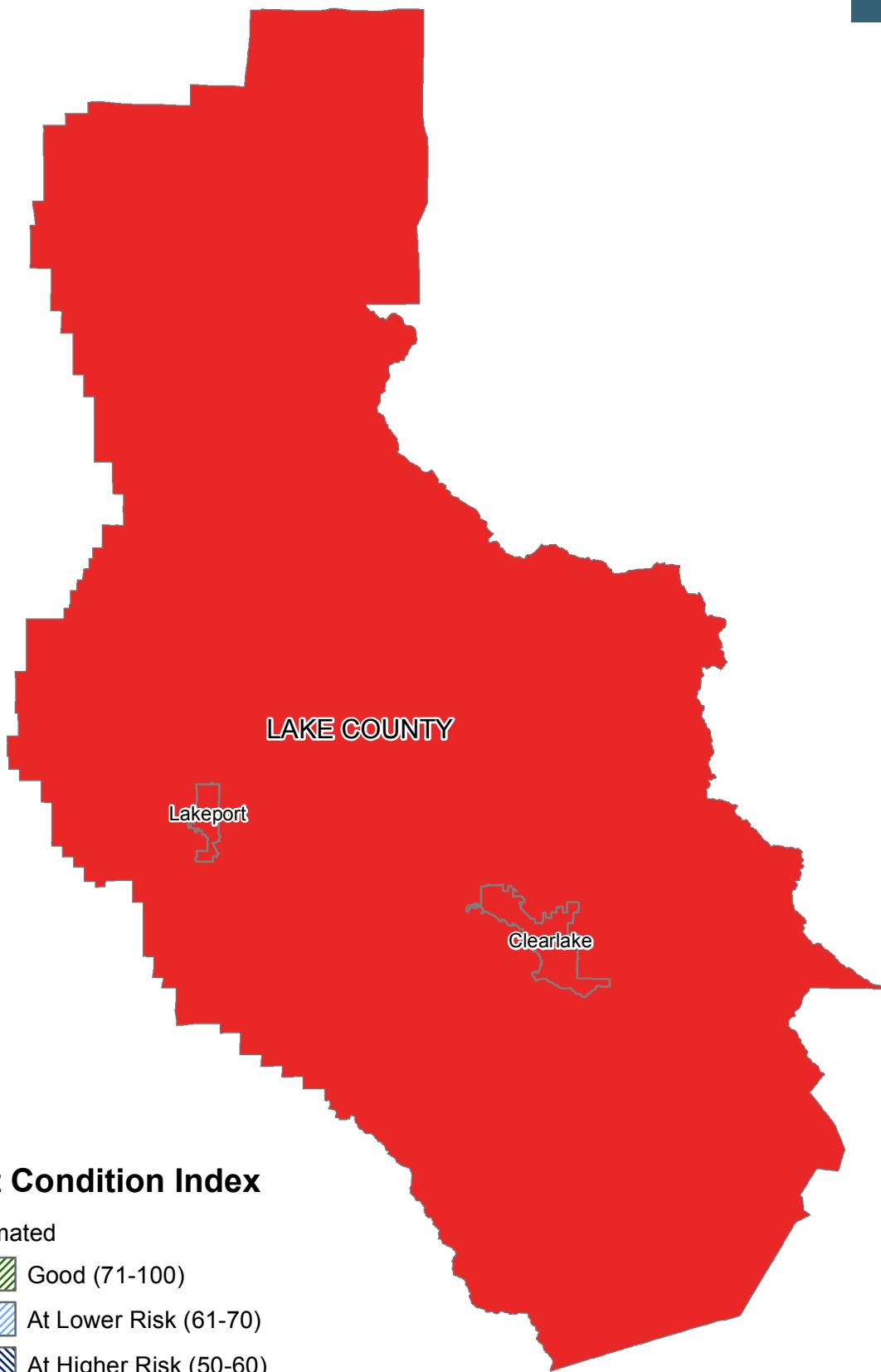
Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)

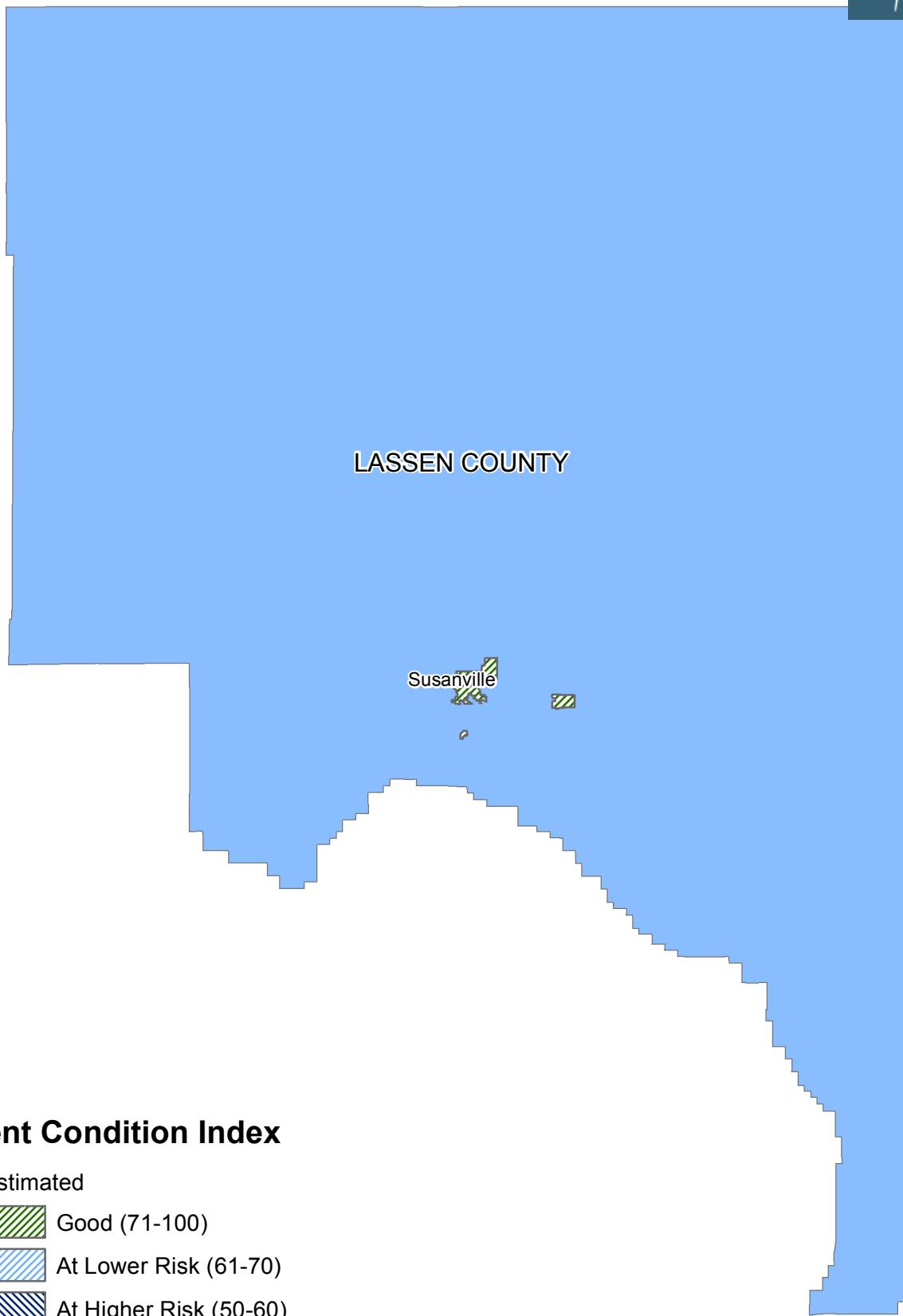


(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Lake County

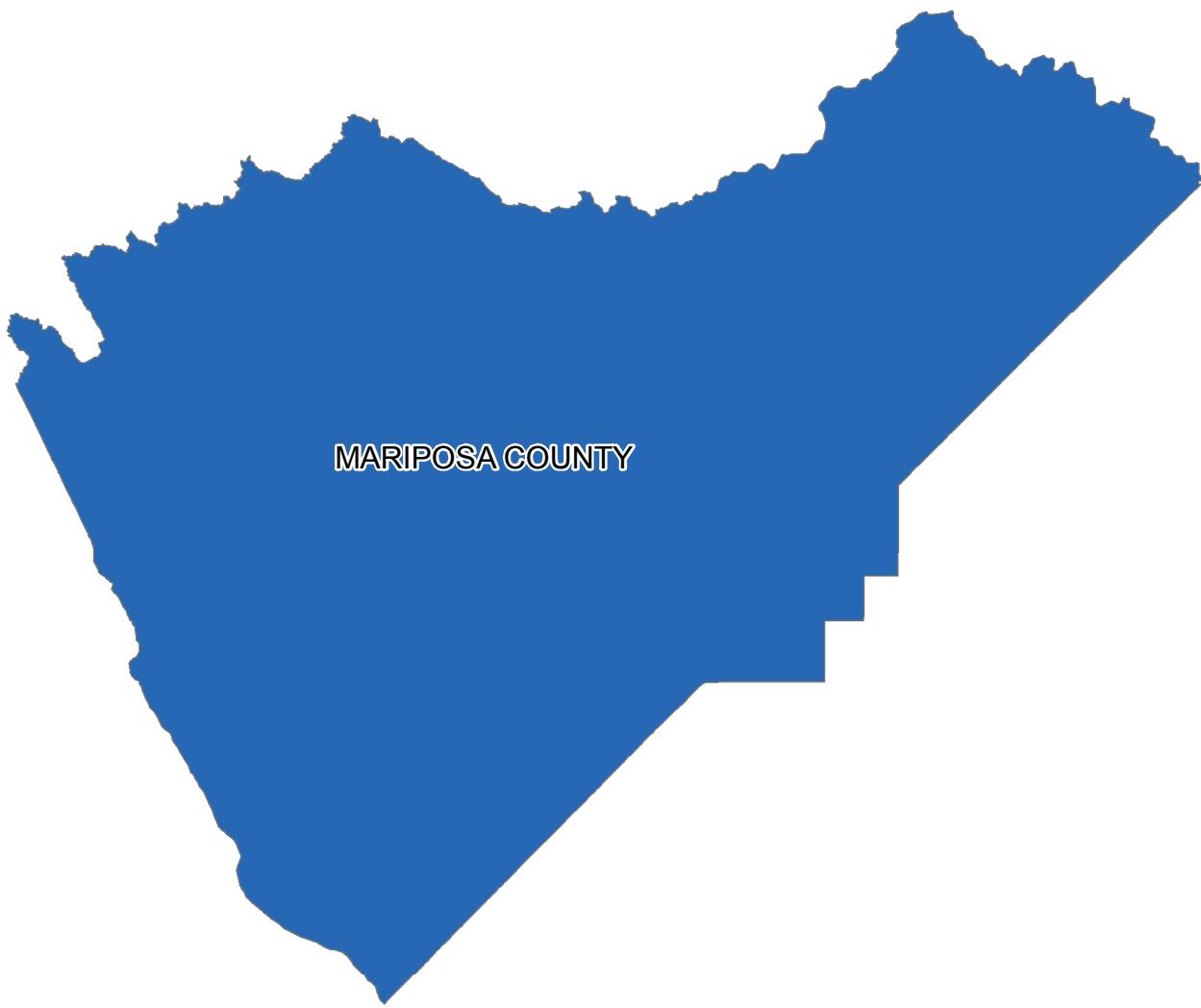


Lassen County



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Mariposa County



Pavement Condition Index

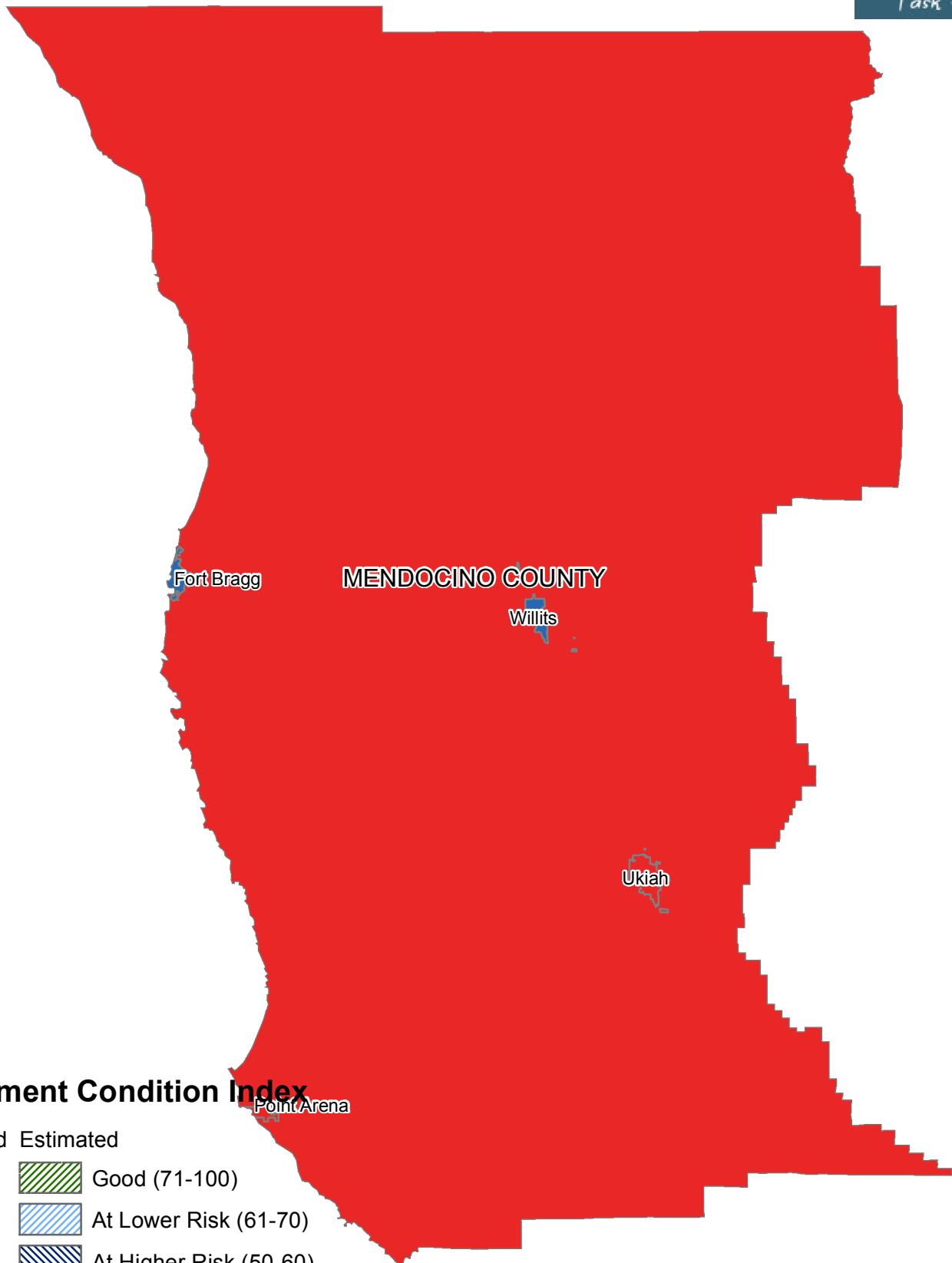
Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



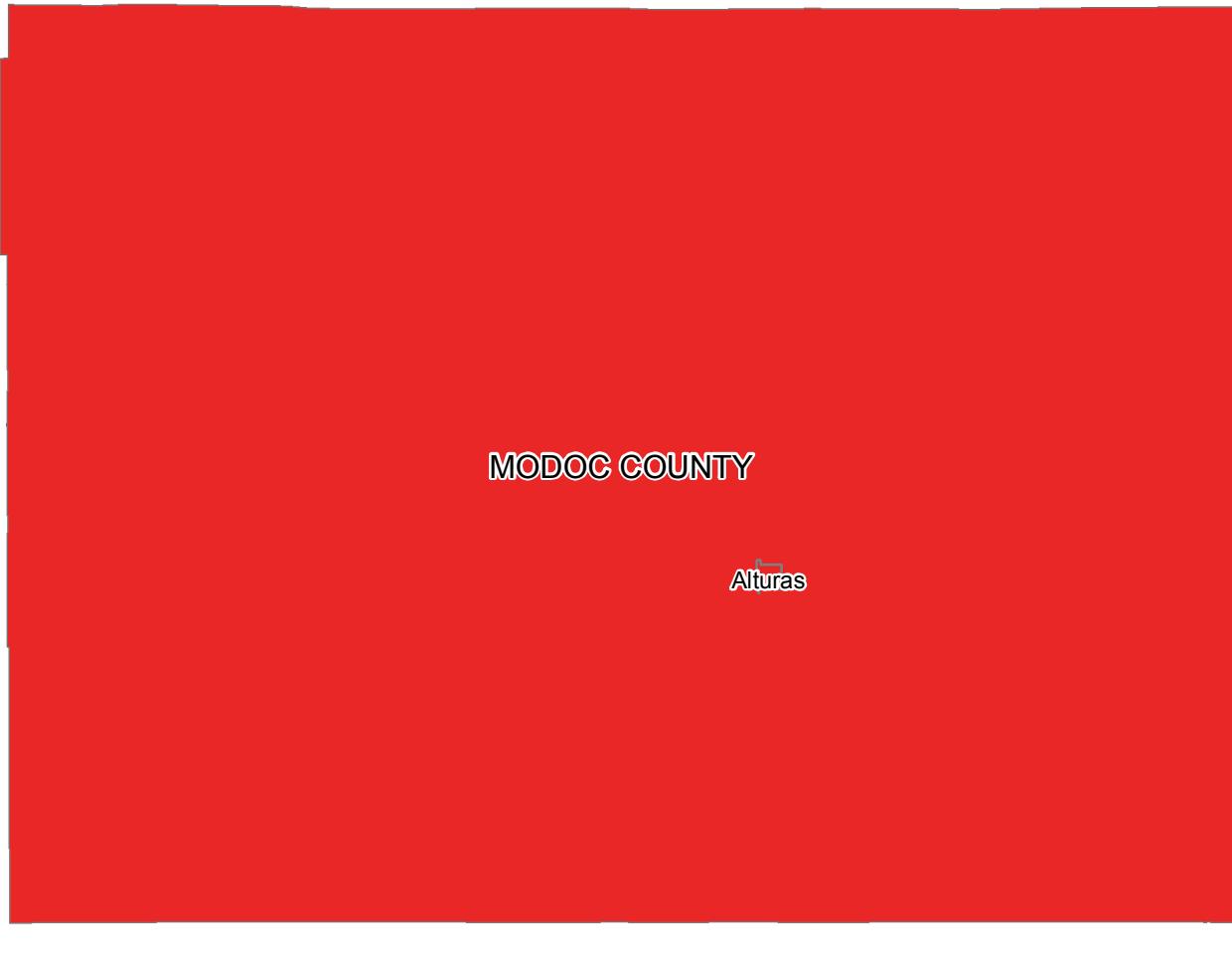
(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Mendocino County



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Modoc County



Pavement Condition Index

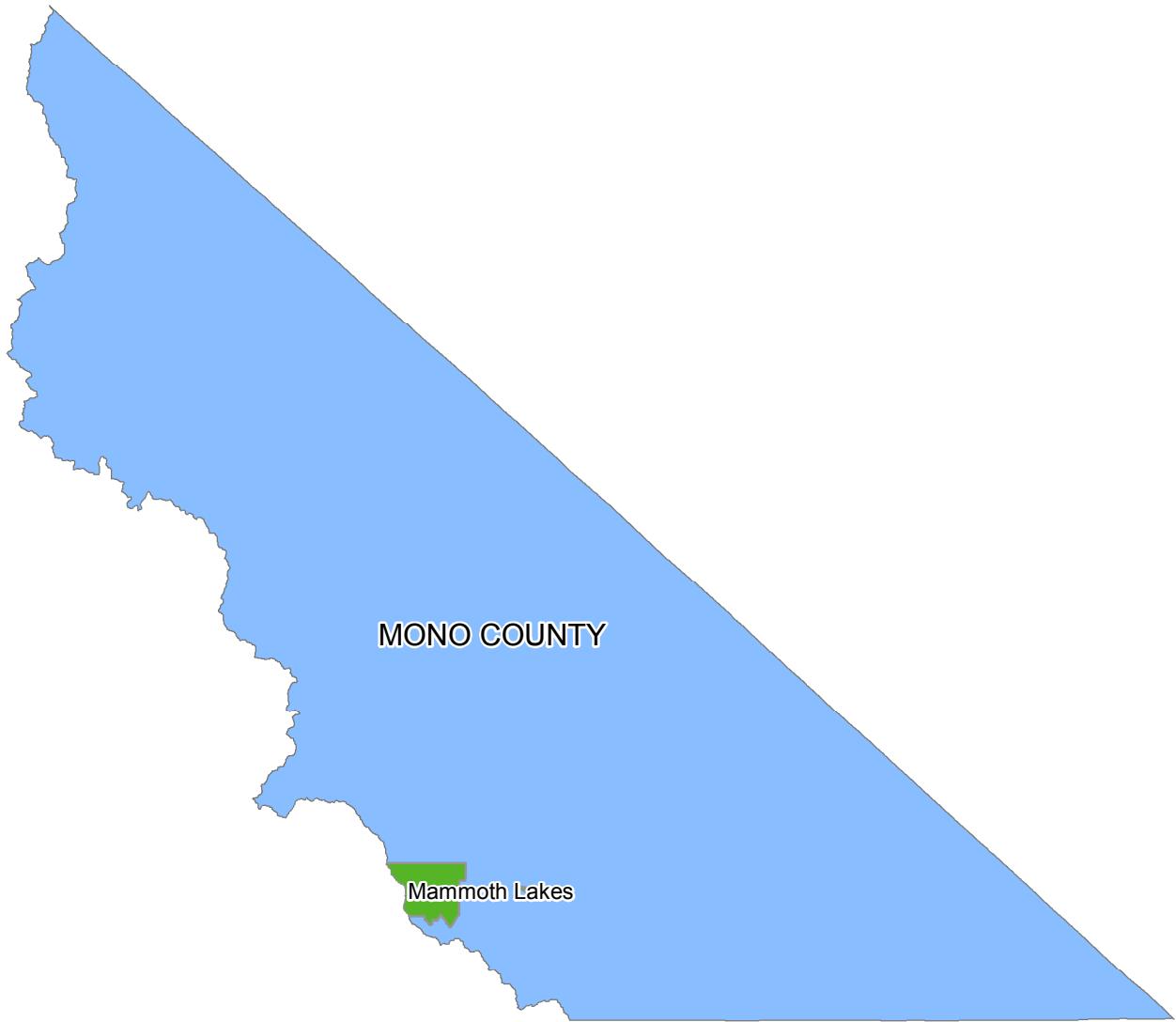
Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Mono County



Pavement Condition Index

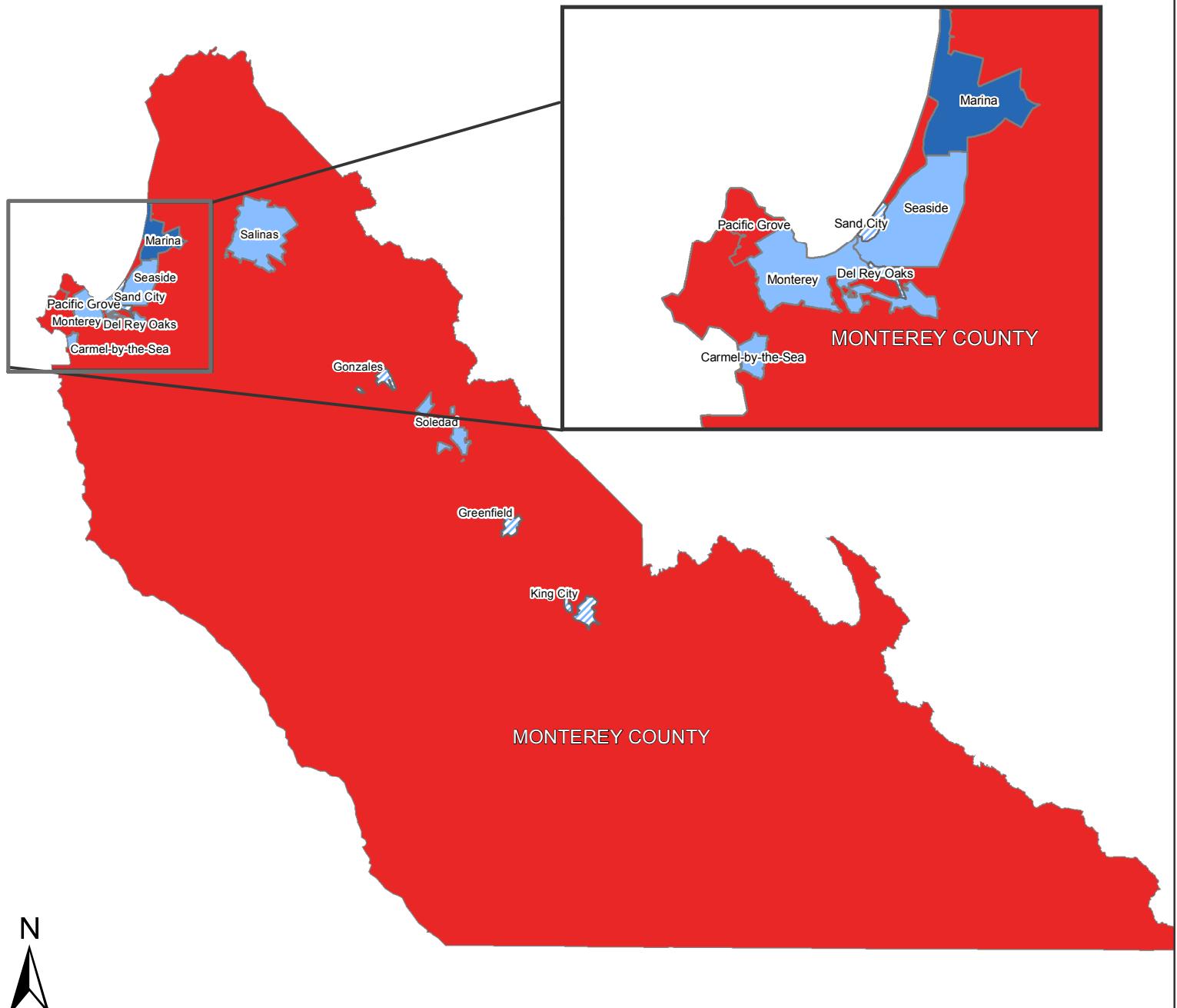
Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Monterey County



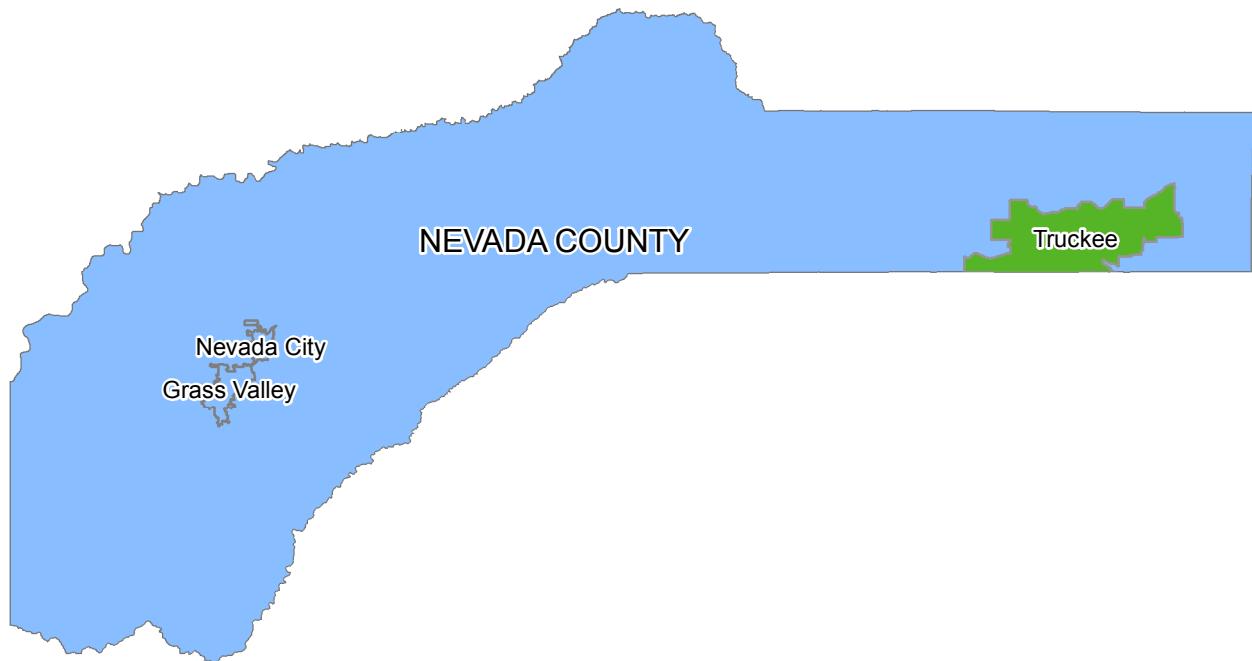
Pavement Condition Index

Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



Nevada County



Pavement Condition Index

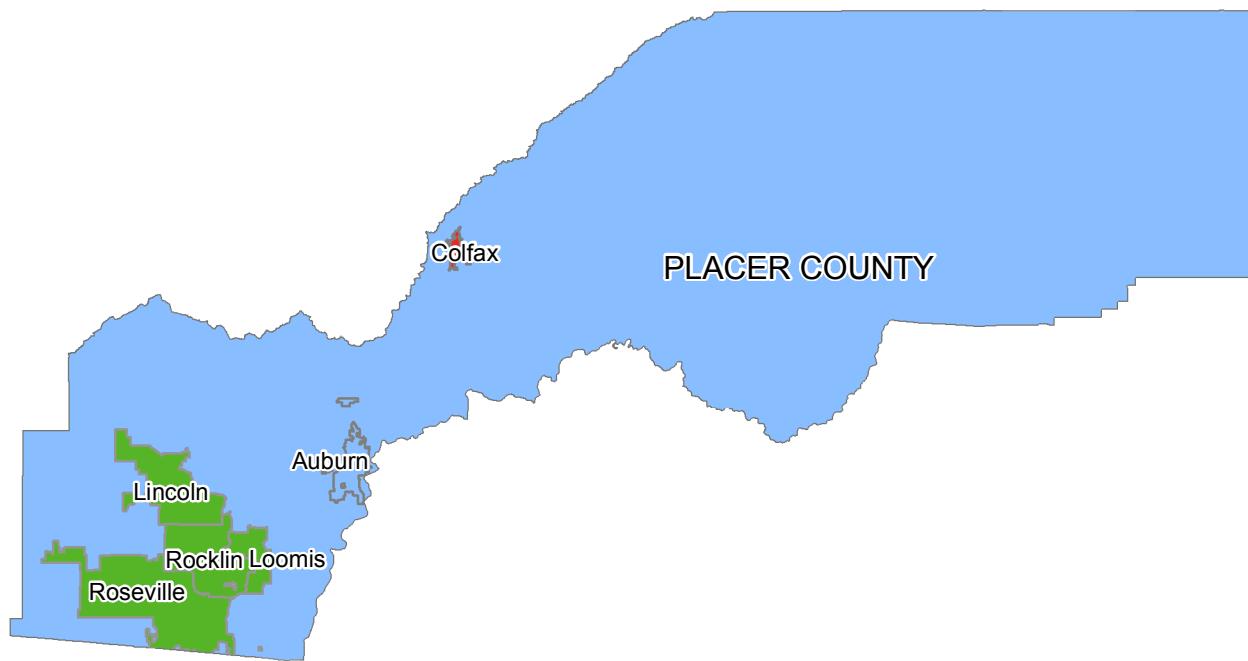
Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Placer County



Pavement Condition Index

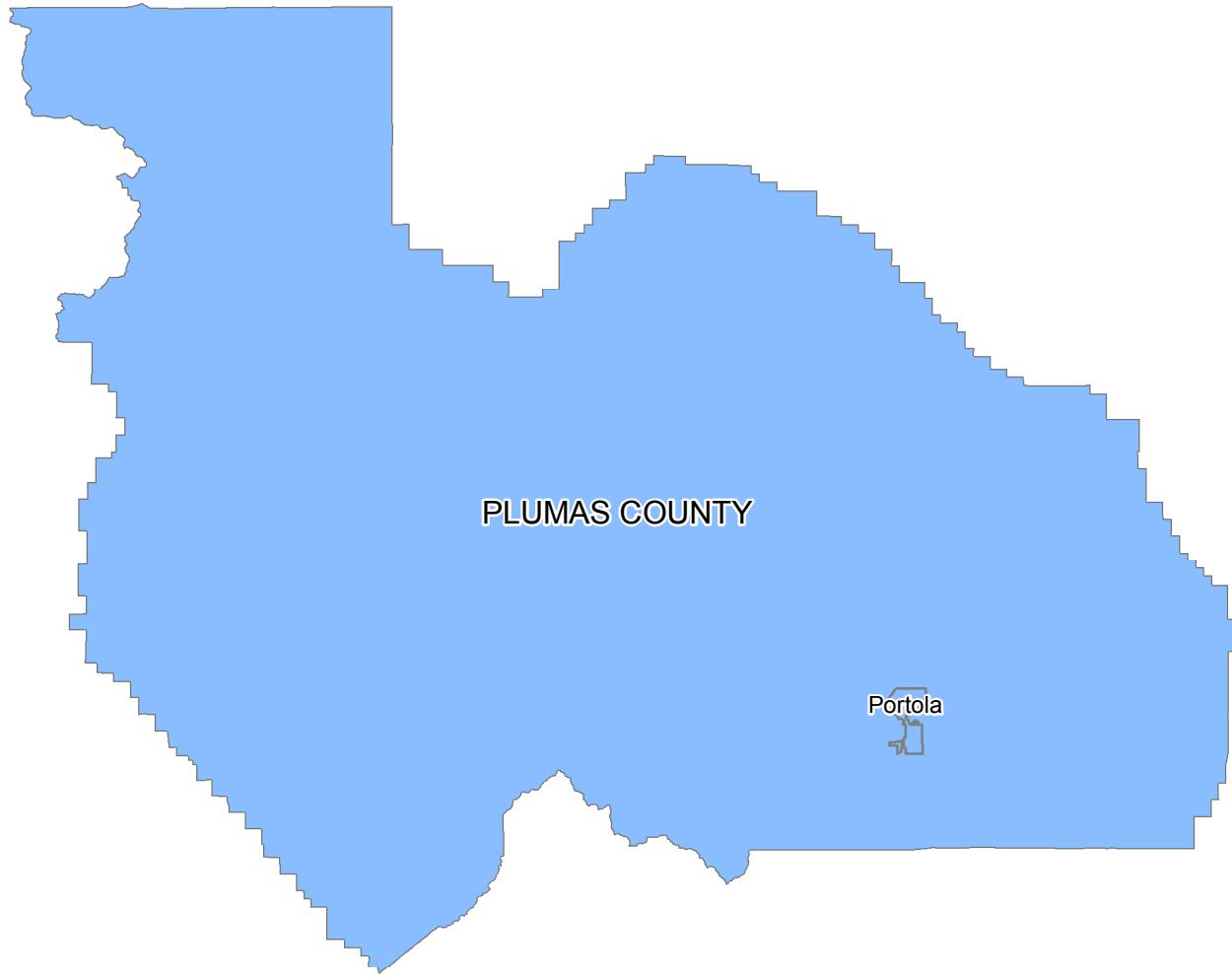
Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Plumas County



Pavement Condition Index

Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

San Benito County



Pavement Condition Index

Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Santa Cruz County



Pavement Condition Index

Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Sierra County



Pavement Condition Index

Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Siskiyou County



Pavement Condition Index

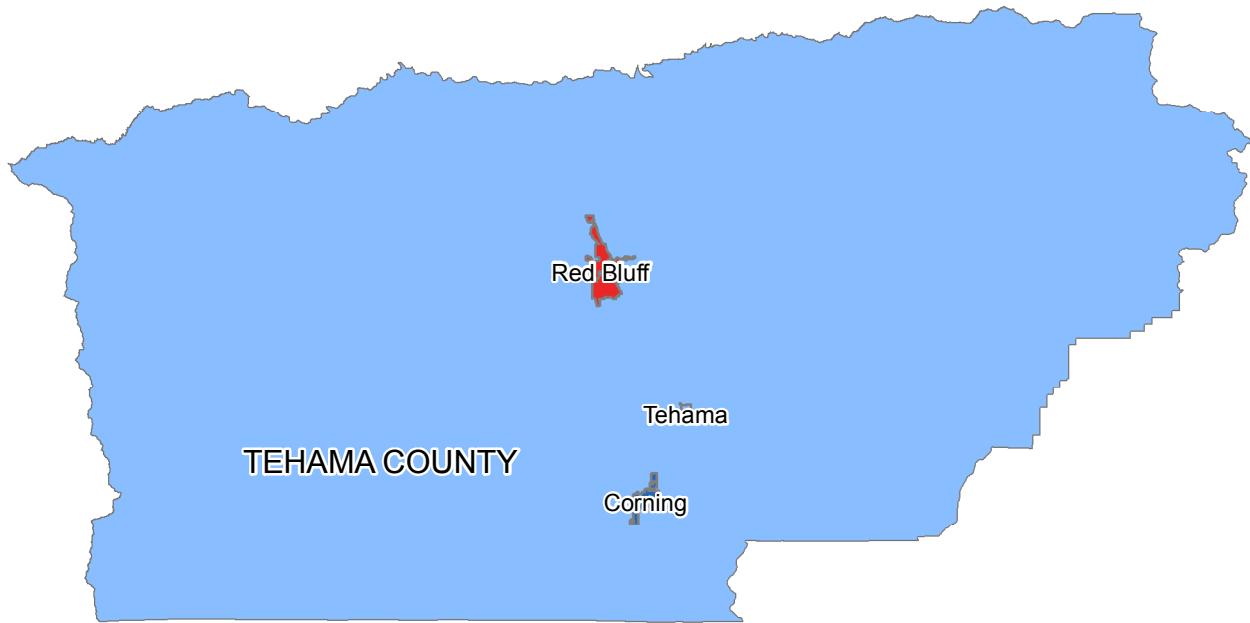
Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Tehama County



Pavement Condition Index

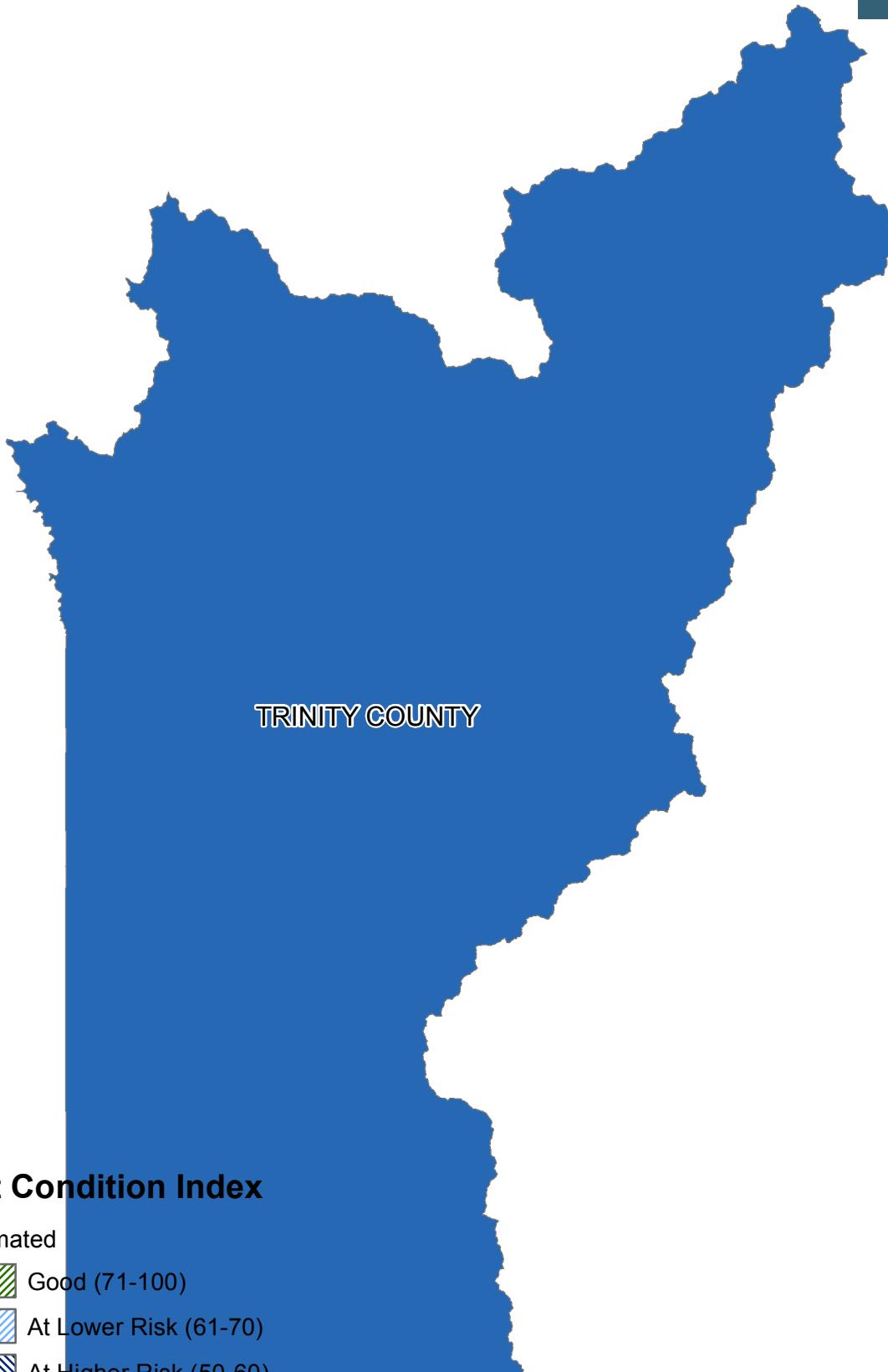
Reported Estimated

		Good (71-100)
		At Lower Risk (61-70)
		At Higher Risk (50-60)
		Poor (0-49)

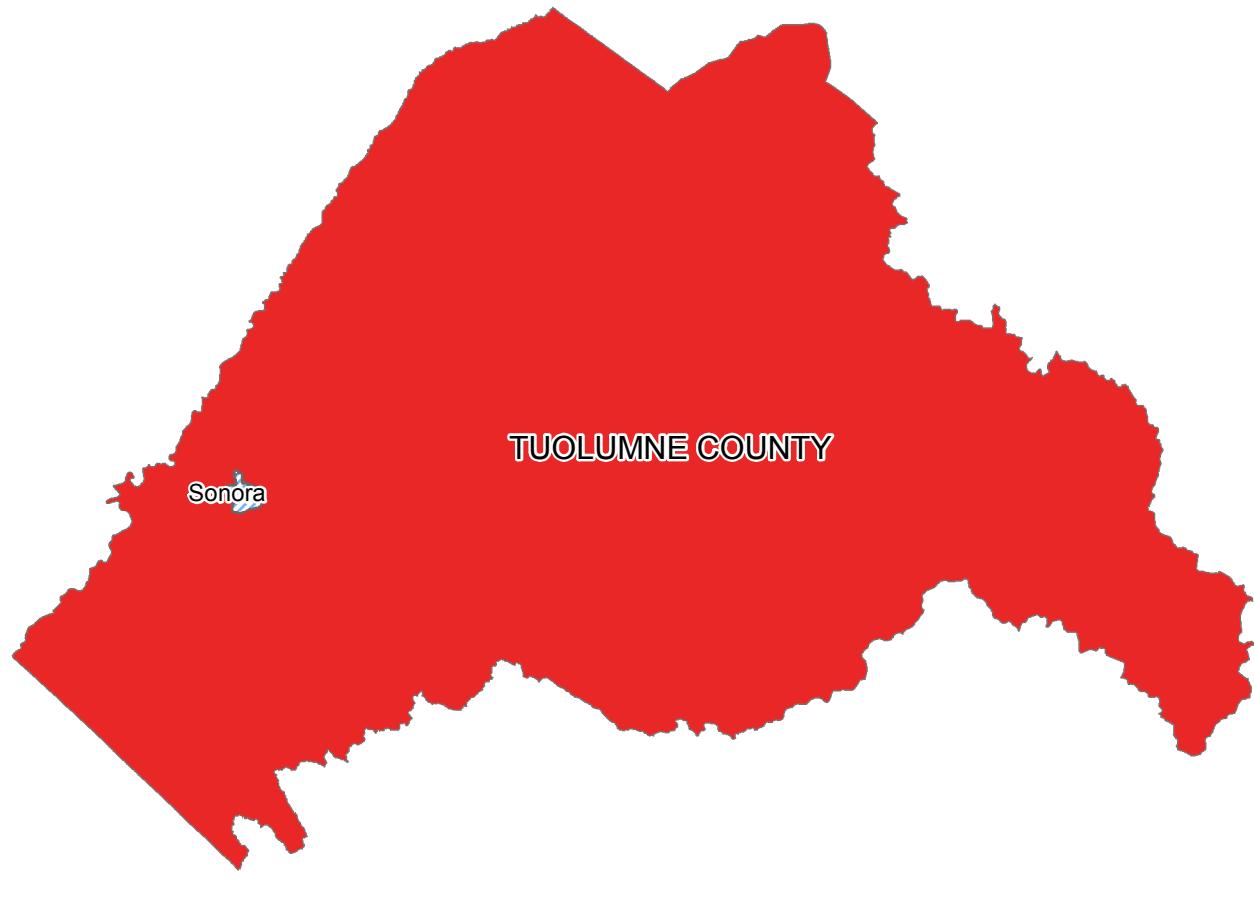


(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Trinity County



Tuolumne County



Pavement Condition Index

Reported Estimated

	Good (71-100)
	At Lower Risk (61-70)
	At Higher Risk (50-60)
	Poor (0-49)



(C) October 2014 NCE. GIS mapping data are from US Census Bureau TIGER Cartographic Boundary Shapefiles (<https://www.census.gov/geo/maps-data/data/tiger.html>), accessed October 2014. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape/area.

Appendix D

Pavement Needs by Agency

2015 RCTF Pavement Needs Calculation

Listed by Agencies

Agency	County	Total Centerline Miles	Total Lane Miles	Total Areas (Square Yard)	Overall PCI	***RCTF 20-year Needs
Alpine County	Alpine	135	270	1,900,800	44	\$47,628,413
Amador	Amador	3	6	46,340	67	Not Available
Amador County	Amador	410	820	5,366,667	28	\$258,193,134
Ione	Amador	15	32	281,673	77	\$4,974,321
Jackson	Amador	22	44	318,600	50	\$11,327,893
Plymouth	Amador	8	16	128,521	50	\$4,558,708
Sutter Creek	Amador	20	40	343,400	47	\$12,689,861
Angels Camp	Calaveras	28	56	490,154	84	\$7,234,207
Calaveras County	Calaveras	689	1,277	8,447,178	49	\$311,027,481
Colusa	Colusa	28	64	576,500	57*	\$18,440,470
Colusa County	Colusa	944	1,425	11,611,400	63	\$288,344,421
Williams	Colusa	15	35	315,404	57*	Not Available
Crescent City	Del Norte	23	46	485,760	71	\$10,675,756
Del Norte County	Del Norte	301	598	4,848,935	62	\$119,457,713
El Dorado County	El Dorado	1,076	2,158	18,698,000	63	\$477,175,868
Placerville	El Dorado	47	93	681,449	65	\$17,596,323
South Lake Tahoe	El Dorado	130	257	2,292,224	56	Not Available
Glenn County	Glenn	840	1,679	12,074,300	69	\$295,279,878
Orland	Glenn	40	80	1,056,000	67	Not Available
Willows	Glenn	31	63	787,326	53	\$26,154,915
Arcata	Humboldt	69	137	1,374,267	74	\$29,619,495
Blue Lake	Humboldt	7	14	128,046	57	\$3,904,601
Eureka	Humboldt	114	231	2,694,442	69	\$61,718,911
Ferndale	Humboldt	9	19	163,165	58	\$4,961,052
Fortuna	Humboldt	47	97	952,597	69	\$22,470,038
Humboldt County	Humboldt	1,207	2,400	18,605,552	62	\$483,183,730
Rio Dell	Humboldt	14	29	256,654	58	\$7,765,260
Trinidad	Humboldt	3	7	60,141	75	\$1,210,058
Bishop	Inyo	18	33	300,080	56	\$10,029,834
Inyo County	Inyo	1,117	1,770	13,400,919	62	\$334,019,675
Clearlake	Lake	112	219	1,739,173	40	\$57,644,107
Lake County	Lake	611	1,219	7,749,400	41	\$291,058,845
Lakeport	Lake	29	56	508,772	36	\$22,981,533
Lassen County	Lassen	379	759	5,195,872	65	\$148,681,813
Susanville	Lassen	52	120	1,086,452	73*	Not Available
Mariposa County	Mariposa	1,122	561	3,949,440	53**	\$195,197,039
Fort Bragg	Mendocino	26	52	484,664	58	\$14,088,517
Mendocino County	Mendocino	1,023	2,045	14,020,000	32	\$488,289,742
Point Arena	Mendocino	3	7	61,213	47	\$2,310,540
Ukiah	Mendocino	53	113	1,106,925	46	\$42,006,811
Willits	Mendocino	20	39	331,232	56	\$10,698,004
Alturas	Modoc	18	35	250,800	23	\$11,883,026
Modoc County	Modoc	1,474	2,948	17,294,734	46	\$529,305,525
Mammoth Lakes	Mono	52	104	942,322	79	\$16,563,522
Mono County	Mono	675	1,349	9,129,047	62	\$172,417,982
Carmel-By-The-Sea	Monterey	27	55	499,042	64	\$13,276,778
Del Rey Oaks	Monterey	10	22	200,522	64*	Not Available
Gonzales	Monterey	9	22	196,010	64*	Not Available
Greenfield	Monterey	22	51	461,994	64*	Not Available
King City	Monterey	27	62	563,132	64*	Not Available

* extrapolated/filled in data

** Mariposa County use real Database with 2014 inspection updated

*** Needs calculation is not available for agencies who did not respond to 2014 statewide survey

2015 RCTF Pavement Needs Calculation

Listed by Agencies

Agency	County	Total Centerline Miles	Total Lane Miles	Total Areas (Square Yard)	Overall PCI	***RCTF 20-year Needs
Marina	Monterey	71	158	1,110,822	59	Not Available
Monterey	Monterey	102	203	1,822,925	67	Not Available
Monterey County	Monterey	1,080	2,277	19,812,305	42	\$803,036,157
Pacific Grove	Monterey	56	114	1,010,592	42	Not Available
Salinas	Monterey	255	560	5,890,000	66	Not Available
Sand City	Monterey	5	11	102,663	64*	Not Available
Seaside	Monterey	68	132	1,410,271	63	\$38,013,678
Soledad	Monterey	47	59	519,083	66	\$12,934,769
Grass Valley	Nevada	50	113	866,000	65	\$23,092,912
Nevada City	Nevada	19	38	480,034	67	\$12,642,993
Nevada County	Nevada	579	1,157	6,721,598	63	\$171,159,322
Truckee	Nevada	154	308	2,303,236	89	\$33,148,173
Auburn	Placer	68	142	1,288,980	70	\$30,051,795
Colfax	Placer	12	24	218,240	40	\$8,958,883
Lincoln	Placer	211	450	3,179,000	85	\$42,263,056
Loomis	Placer	29	62	550,000	71	\$13,038,318
Placer County	Placer	1,028	2,077	15,423,072	62	\$389,286,444
Rocklin	Placer	200	424	3,818,772	72	\$82,264,130
Roseville	Placer	438	1,016	9,704,616	73	\$200,495,879
Plumas County	Plumas	679	1,359	11,055,555	64	\$221,419,731
Portola	Plumas	25	50	354,347	62	Not Available
Hollister	San Benito	28	64	580,427	59*	\$17,811,308
San Benito County	San Benito	415	829	5,164,390	46	\$192,145,555
San Juan Bautista	San Benito	10	23	206,997	59*	\$6,352,027
Capitola	Santa Cruz	26	53	340,853	61	\$10,222,769
Santa Cruz	Santa Cruz	135	274	2,801,835	63	\$76,330,934
Santa Cruz County	Santa Cruz	596	1,212	8,667,013	55	\$264,480,179
Scotts Valley	Santa Cruz	33	77	699,528	52*	\$24,636,772
Watsonville	Santa Cruz	83	174	1,680,978	54	\$55,665,339
Loyalton	Sierra	7	17	150,797	65*	\$4,034,282
Sierra County	Sierra	391	782	3,518,968	43	\$120,261,511
Dorris	Siskiyou	8	17	140,500	53	Not Available
Dunsmuir	Siskiyou	10	16	116,248	87	\$1,525,825
Etna	Siskiyou	7	13	108,486	62	Not Available
Fort Jones	Siskiyou	5	9	86,580	87	\$1,160,909
Montague	Siskiyou	11	22	168,688	62	\$4,734,094
Mount Shasta	Siskiyou	27	63	550,164	53*	Not Available
Siskiyou County	Siskiyou	1,353	2,706	17,307,840	58	\$486,718,930
Tulelake	Siskiyou	40	88	594,000	57	\$17,956,615
Weed	Siskiyou	11	23	399,359	60	\$11,694,589
Yreka	Siskiyou	46	93	1,047,759	52	\$36,259,503
Corning	Tehama	40	81	1,235,600	56	\$38,217,469
Red Bluff	Tehama	62	130	1,500,000	45	Not Available
Tehama	Tehama	6	11	80,256	62	\$2,218,213
Tehama County	Tehama	1,089	2,179	13,018,287	65	\$332,556,048
Trinity County	Trinity	693	1,114	11,757,354	60	\$331,354,877
Sonora	Tuolumne	28	60	538,648	67*	Not Available
Tuolumne County	Tuolumne	525	1,056	7,662,054	45	\$294,765,926

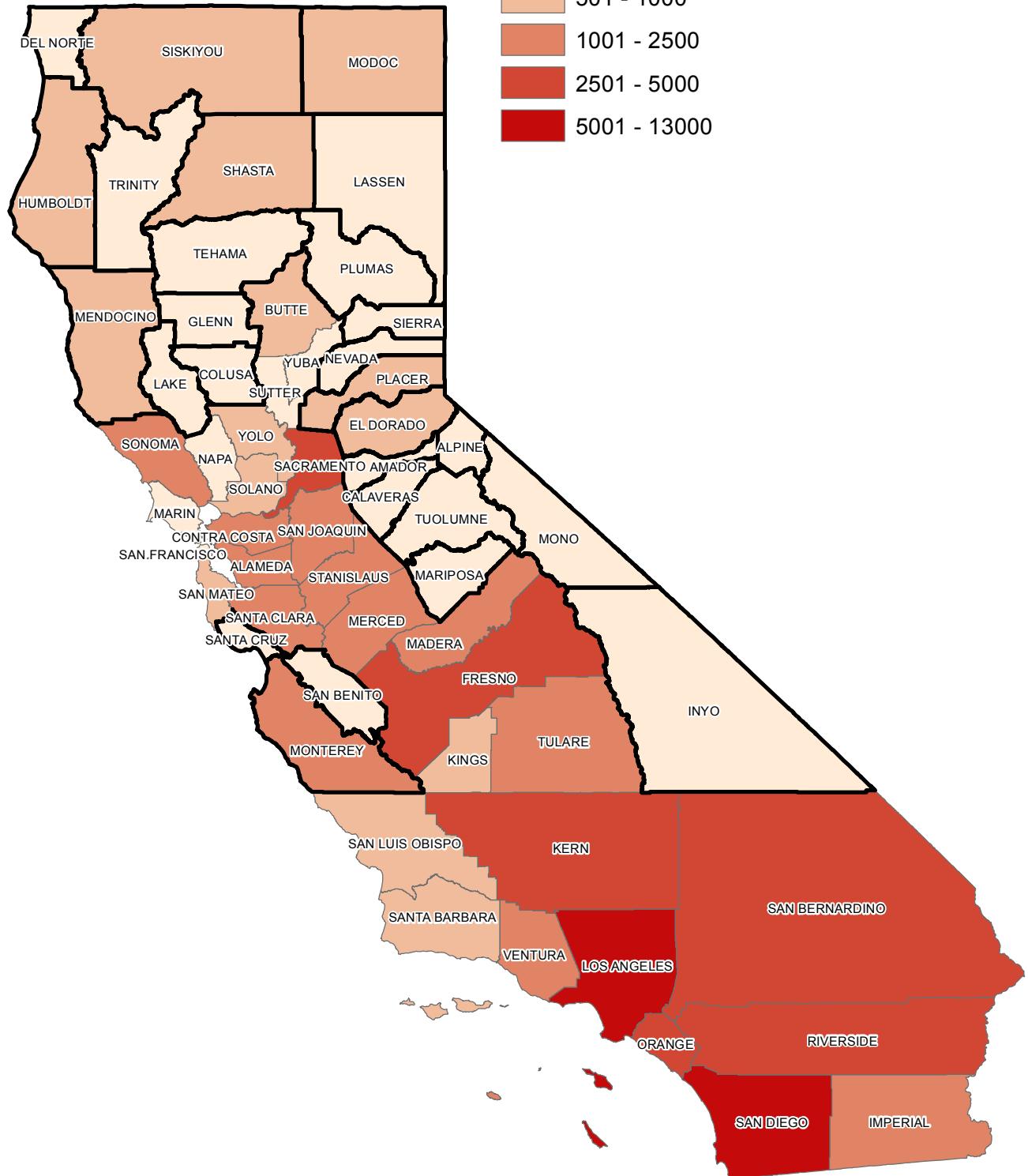
Total \$9,847,371,615

* extrapolated/filled in data

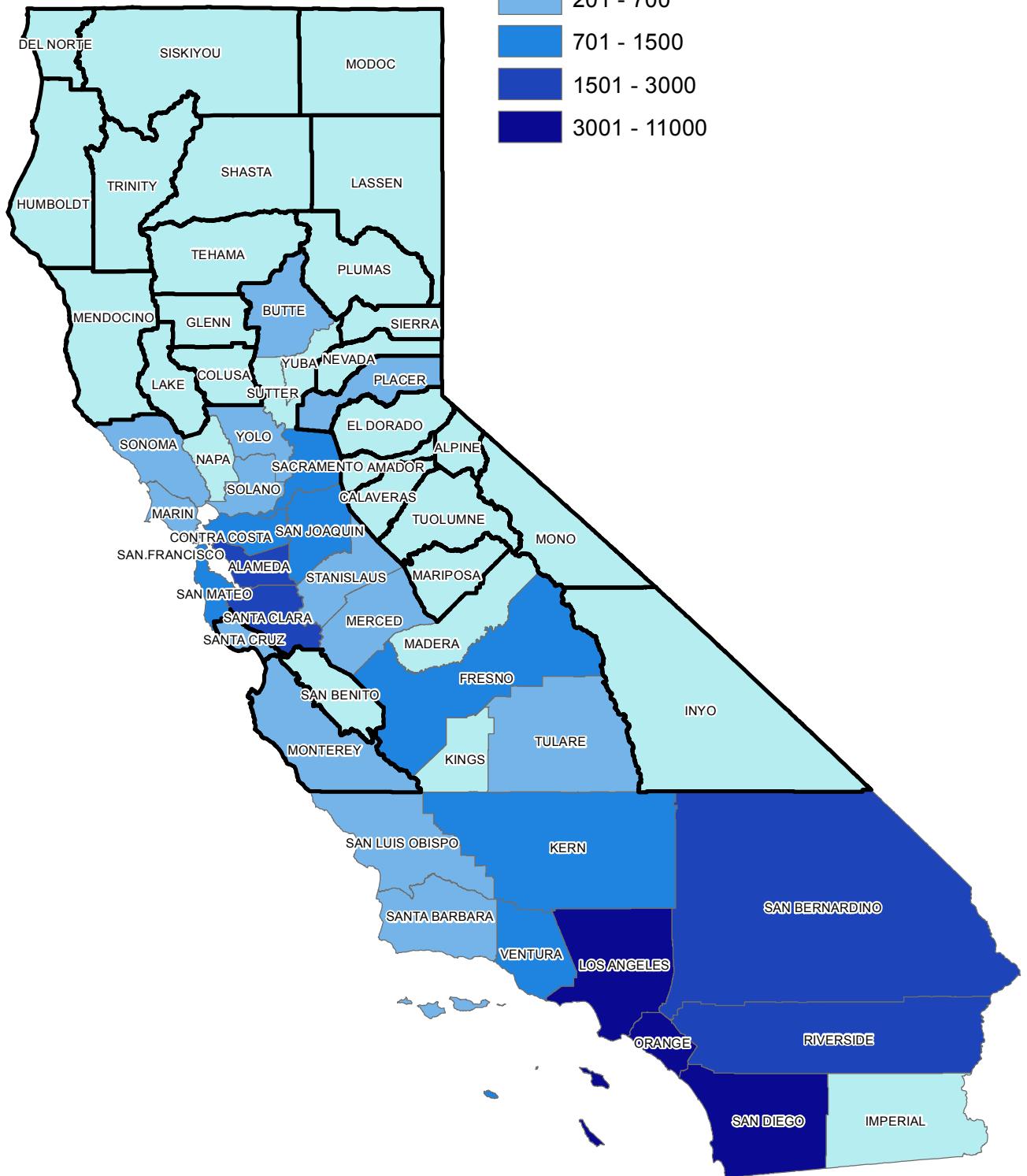
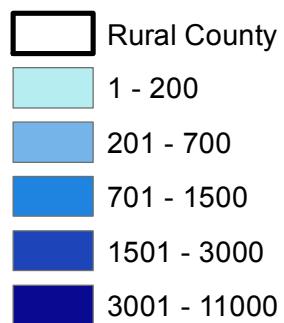
** Mariposa County use real Database with 2014 inspection updated

*** Needs calculation is not available for agencies who did not respond to 2014 statewide survey

10-Year Pavement Needs by County (\$M)

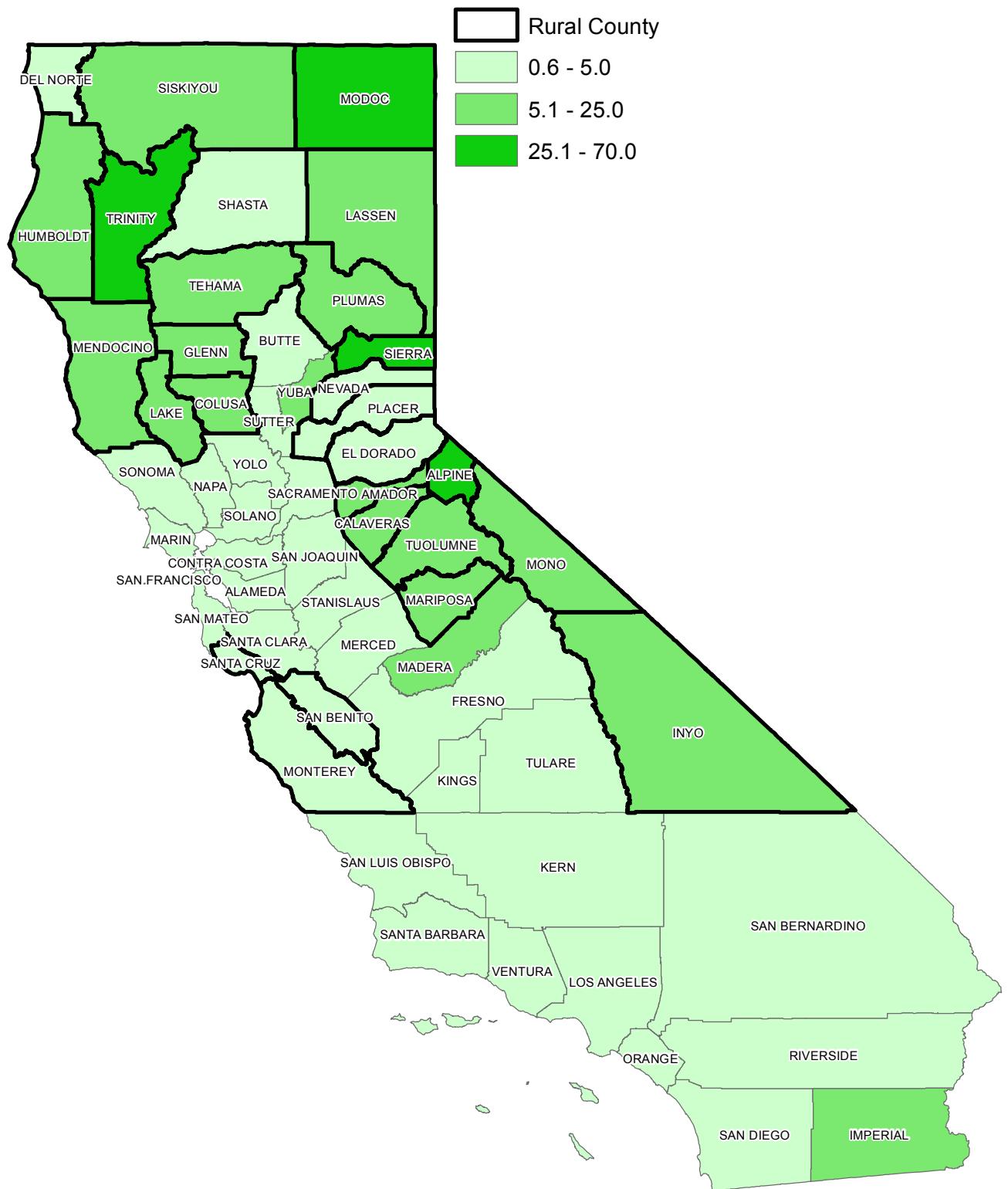


Population by County (1000 capita)



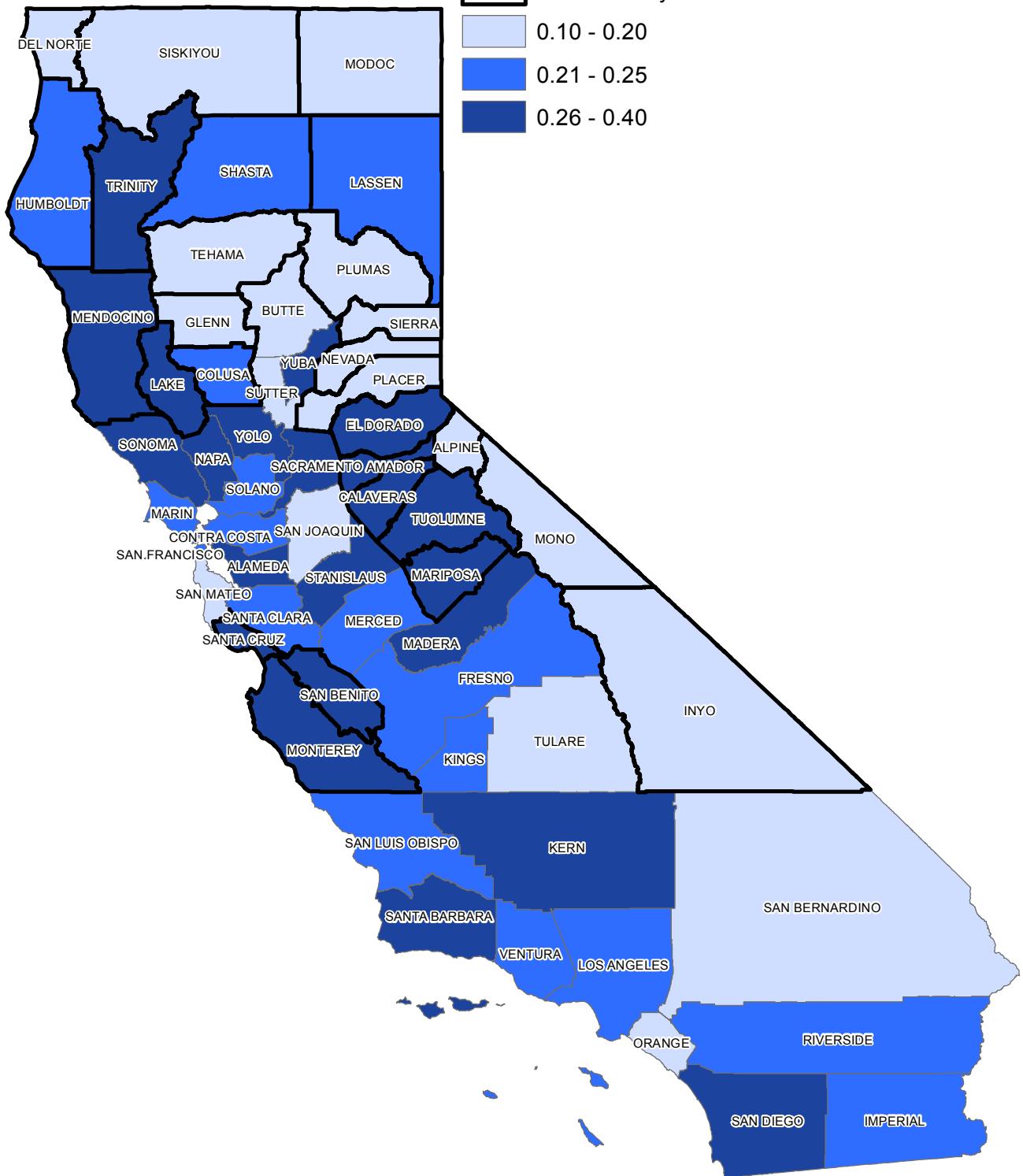
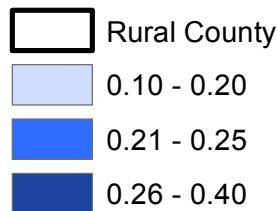


Pavement Needs/Population by County (\$M per 1000 capita)





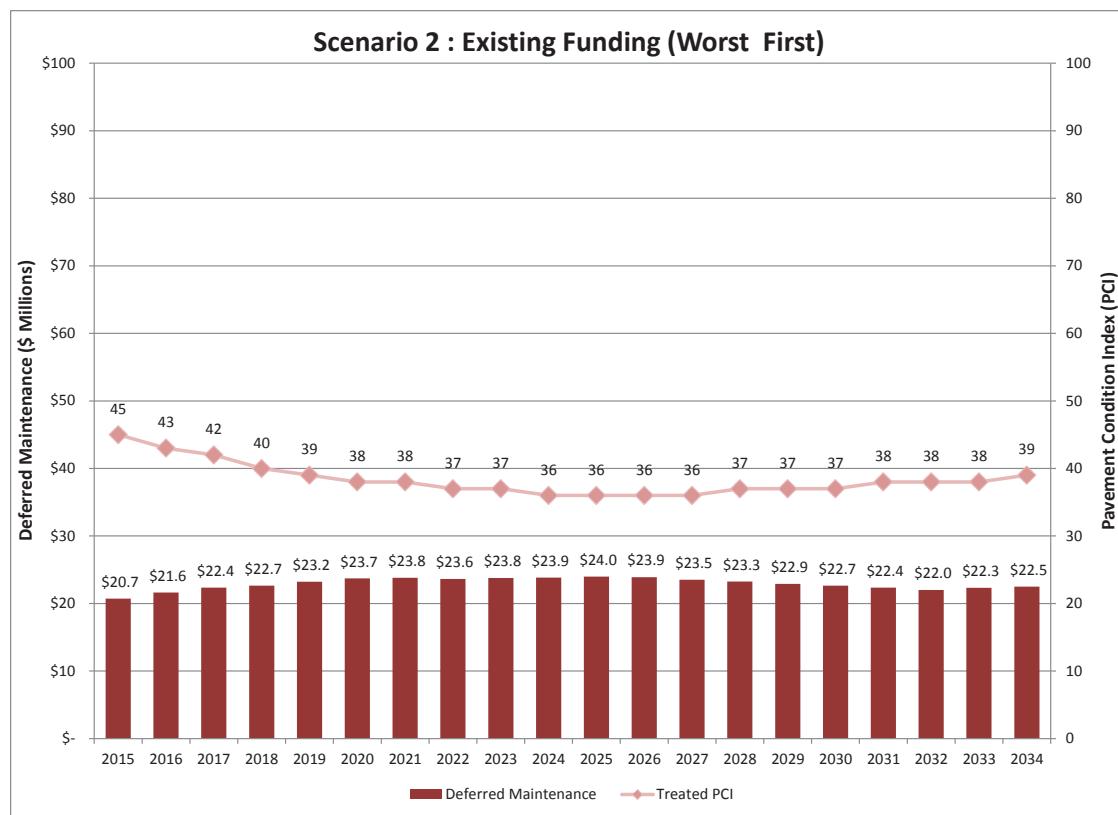
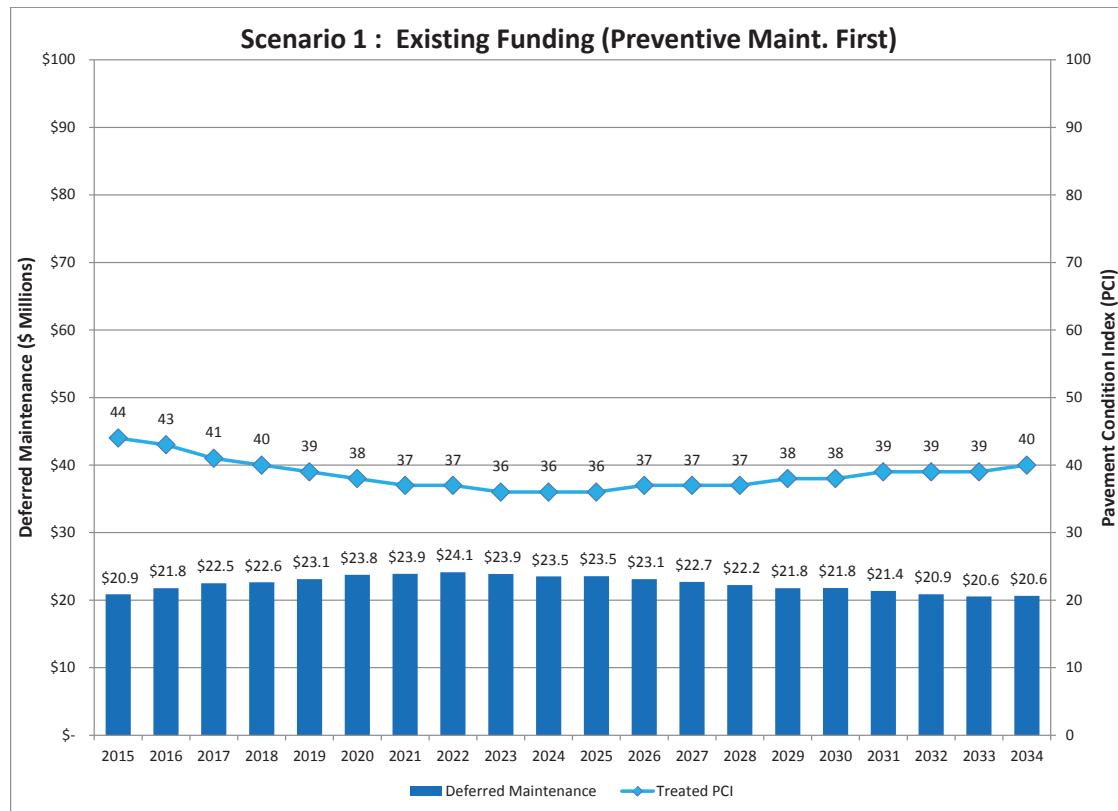
Pavement Needs/Centerline Mile by County (\$M/Mile)

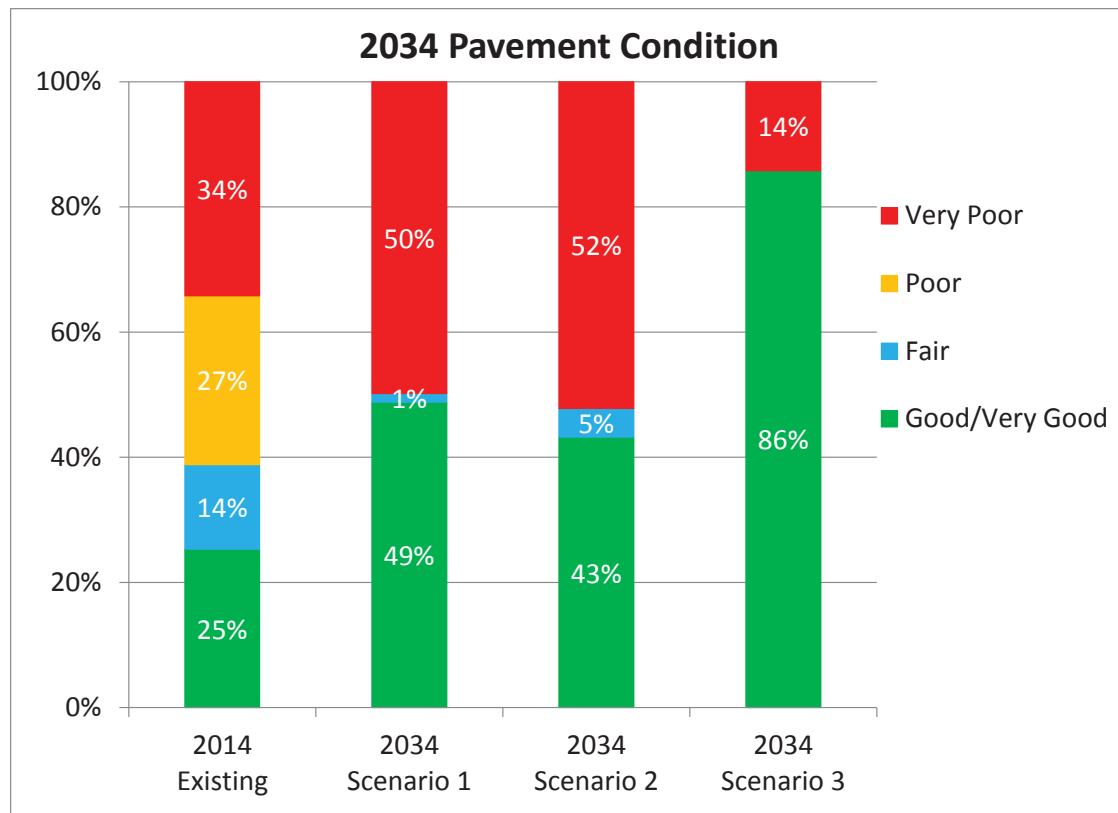
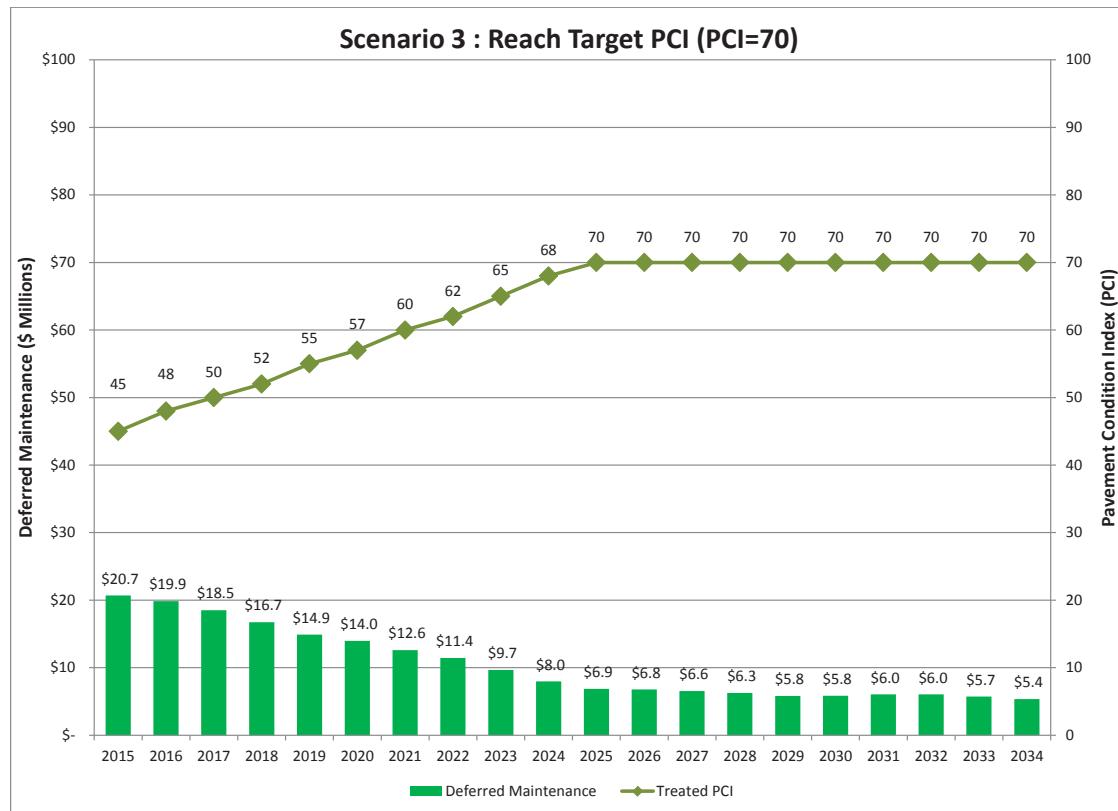


Appendix E

Funding Scenario Results by County

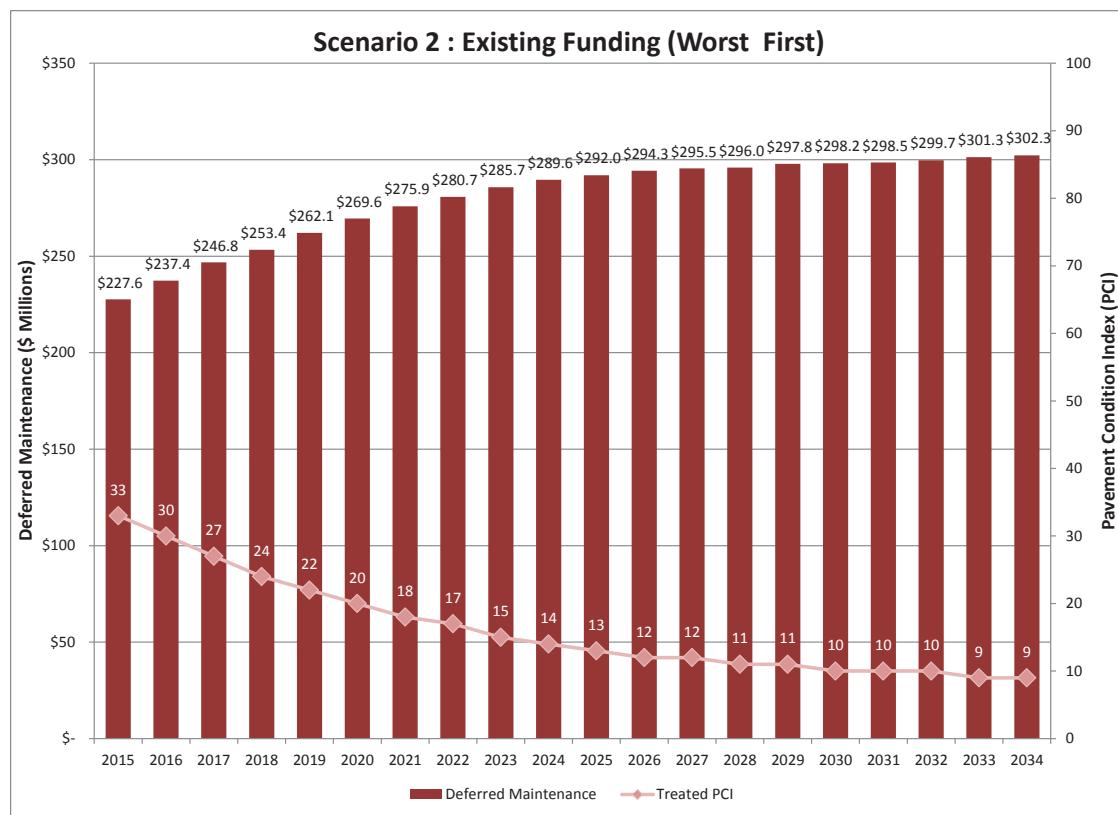
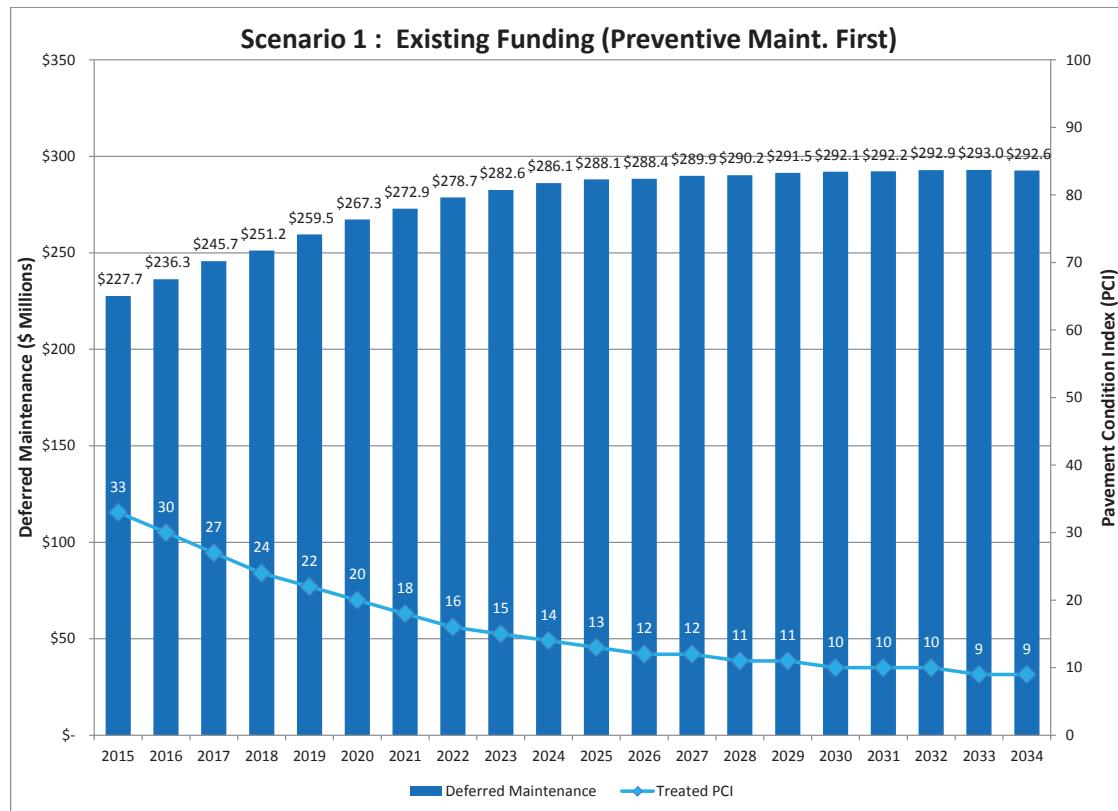
Alpine County

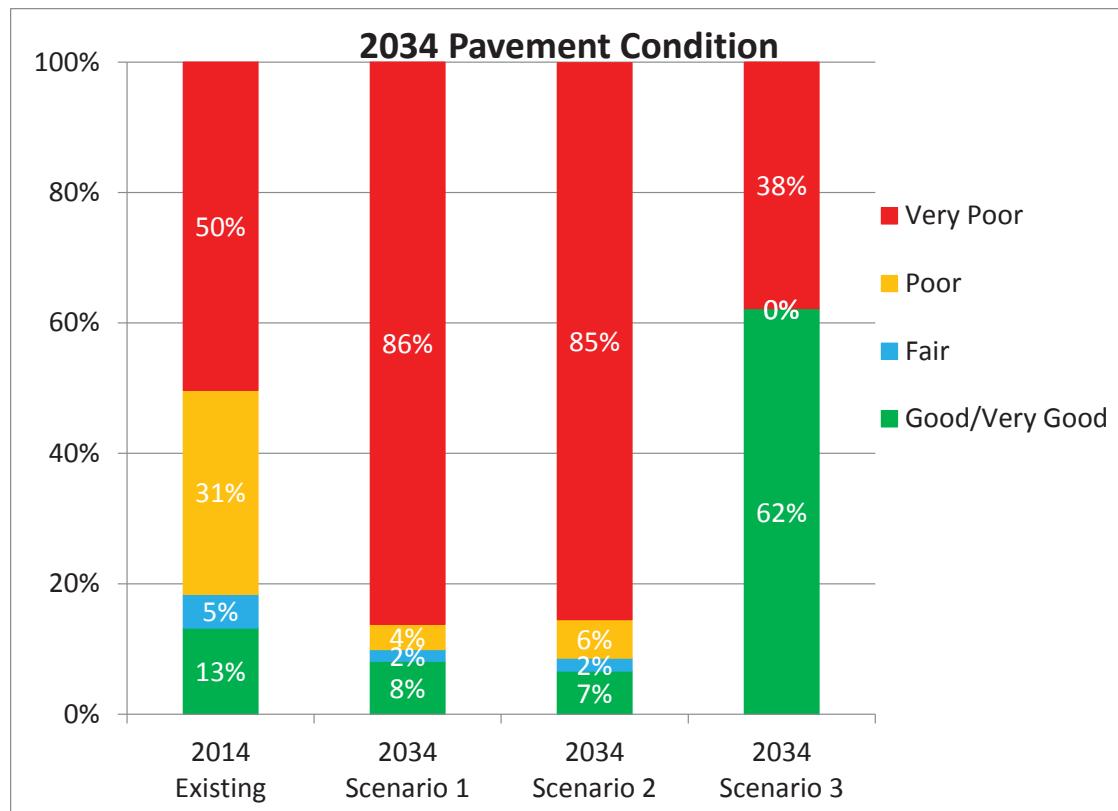
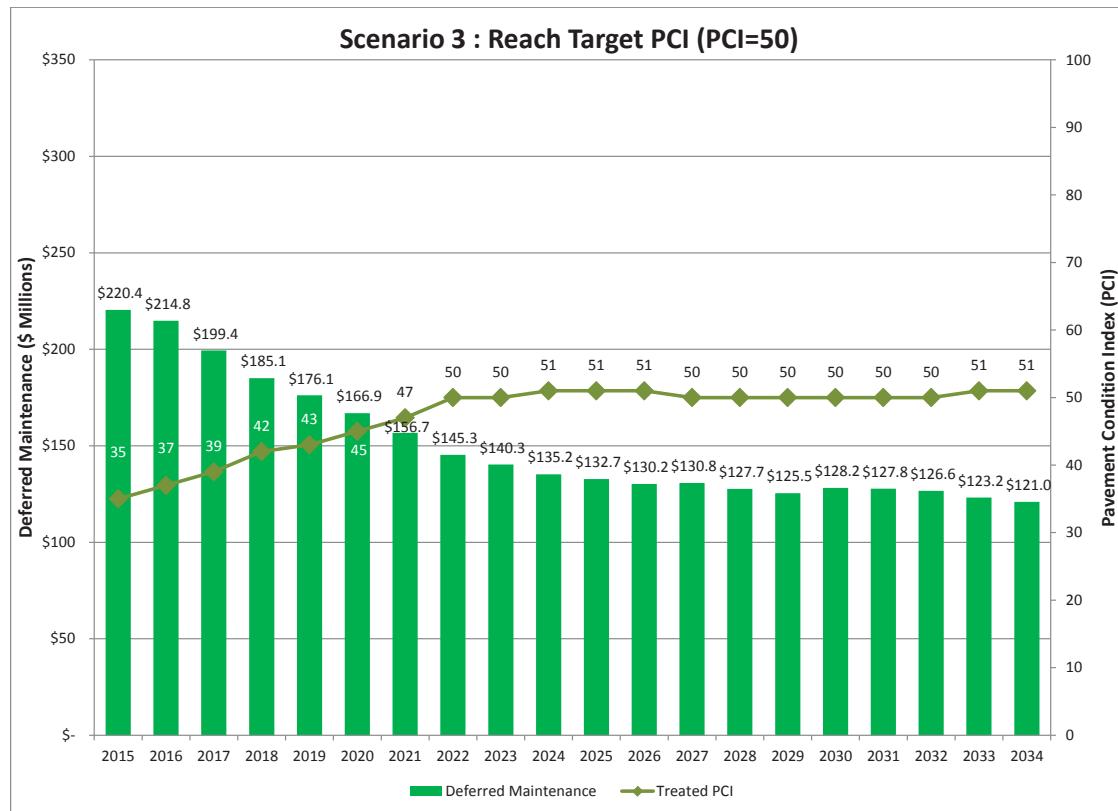




Amador County

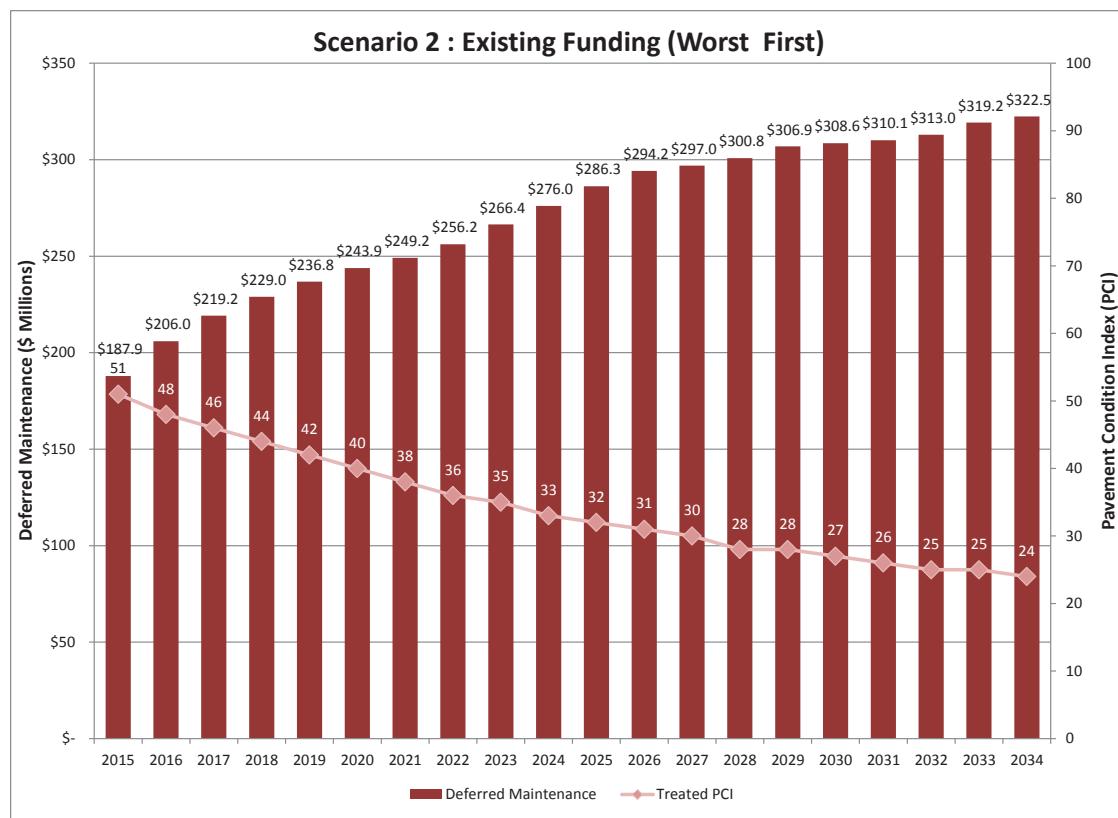
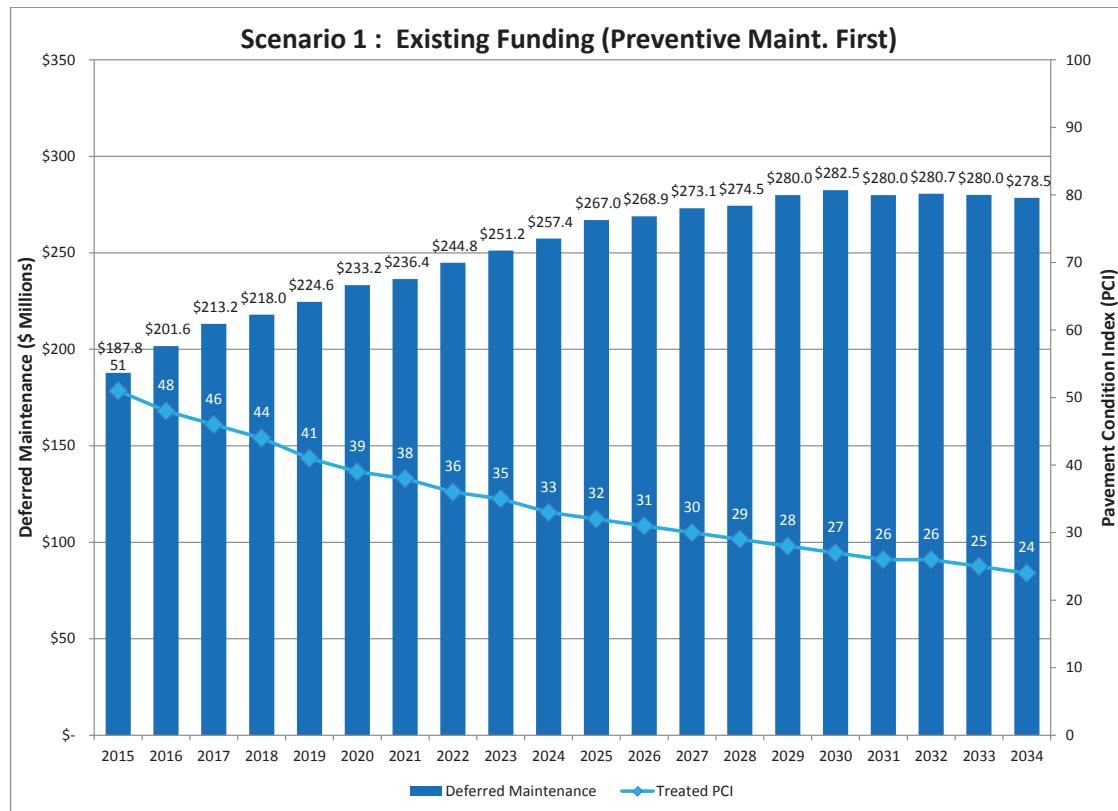
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
PCI Untreated	33	33	29	26	24	21	19	17	15	14	13	11	10	10	9	8	8	7	6	6	6	
Scenario 1	Deferred Maintenance (\$-Millions)	227.7	236.3	245.7	251.2	259.5	267.3	272.9	278.7	282.6	286.1	288.1	288.4	289.9	290.2	291.5	292.1	292.2	292.9	293.0	292.6	
	Budget (\$-Millions)	0.4	0.4	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	8.8
	Rehab (\$-Millions)	0.0	0.1	0.3	0.4	0.3	0.0	0.2	0.0	0.3	0.1	0.0	0.2	0.0	0.5	0.2	0.3	0.0	0.0	0.3	0.3	
	Preventive Maintenance (\$-Millions)	0.4	0.3	0.2	0.0	0.0	0.4	0.2	0.5	0.2	0.3	0.4	0.2	0.4	0.0	0.2	0.2	0.5	0.5	0.2	0.1	
	PCI Treated	33	30	27	24	22	20	18	16	15	14	13	12	12	11	11	10	10	10	9	9	
Scenario 2	Deferred Maintenance (\$-Millions)	227.6	237.4	246.8	253.4	262.1	269.6	275.9	280.7	285.7	289.6	292.0	294.3	295.5	296.0	297.8	298.2	298.5	299.7	301.3	302.3	
	Budget (\$-Millions)	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	8.8
	Rehab (\$-Millions)	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	
	Preventive Maintenance (\$-Millions)	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	
	PCI Treated	33	30	27	24	22	20	18	17	15	14	13	12	12	11	11	10	10	10	9	9	
Scenario 3	Deferred Maintenance (\$-Millions)	220.4	214.8	199.4	185.1	176.1	166.9	156.7	145.3	140.3	135.2	132.7	130.2	130.8	127.7	125.5	128.2	127.8	126.6	123.2	121.0	
	Budget (\$-Millions)	7.7	15.7	25.3	20.6	17.3	14.7	14.2	15.2	8.5	6.6	5.4	5.1	2.5	4.9	4.6	2.6	4.0	3.7	6.0	3.8	188.4
	Rehab (\$-Millions)	6.6	15.0	24.7	20.6	17.3	12.7	12.6	12.6	5.0	5.0	2.5	2.5	0.0	2.5	2.7	0.0	0.5	0.5	2.2	2.2	
	Preventive Maintenance (\$-Millions)	1.2	0.7	0.7	0.0	0.0	2.0	1.6	2.7	3.4	1.6	2.9	2.5	2.5	2.3	2.0	2.6	3.4	3.1	3.7	1.5	
	PCI Treated	35	37	39	42	43	45	47	50	50	51	51	51	50	50	50	50	50	50	51	51	

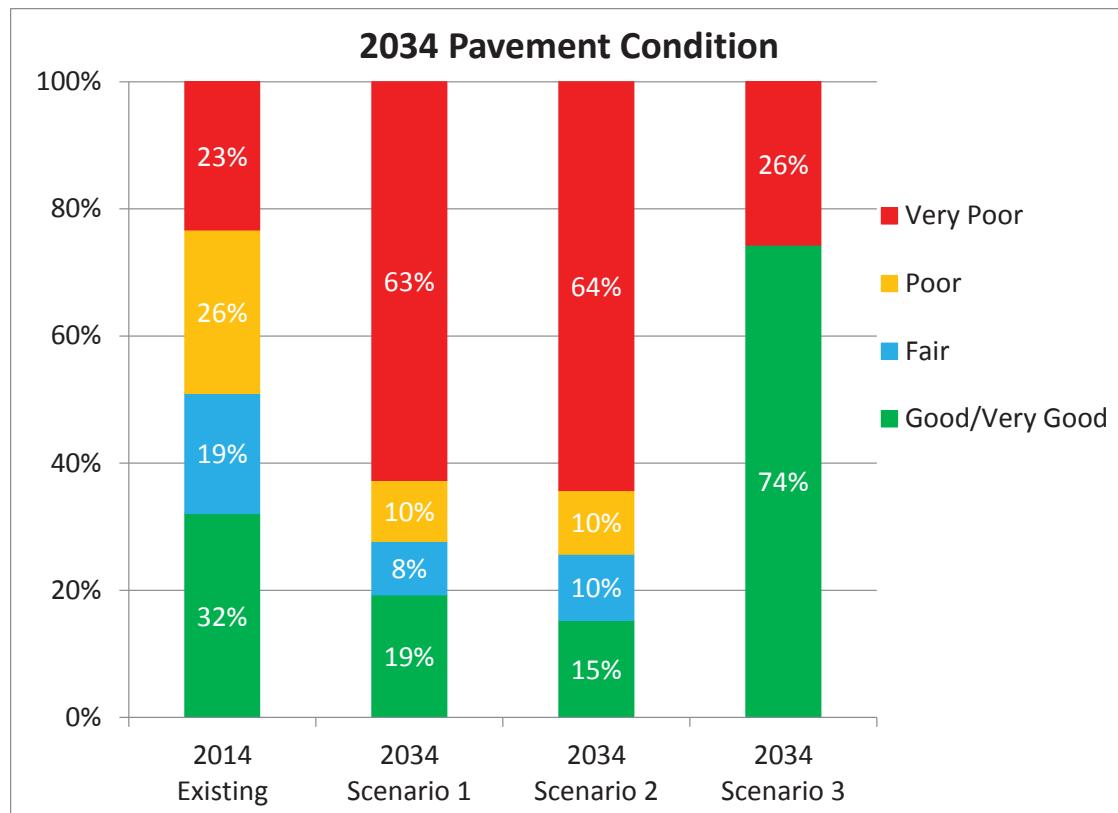
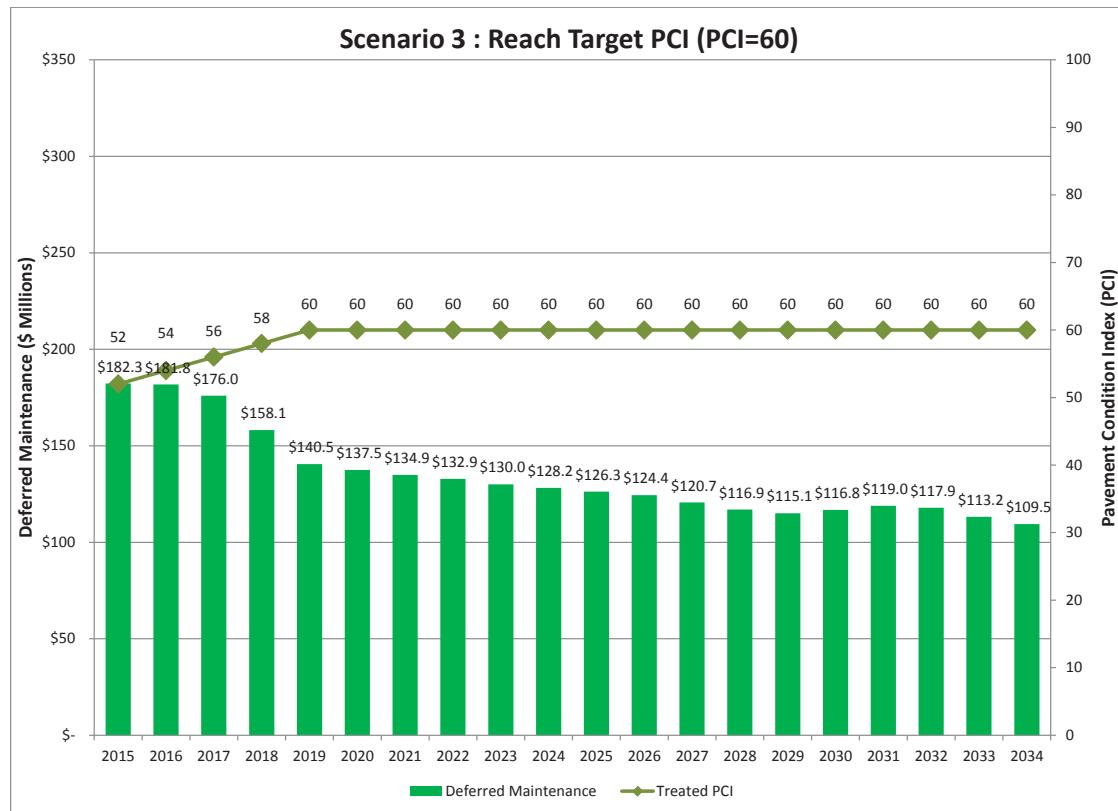




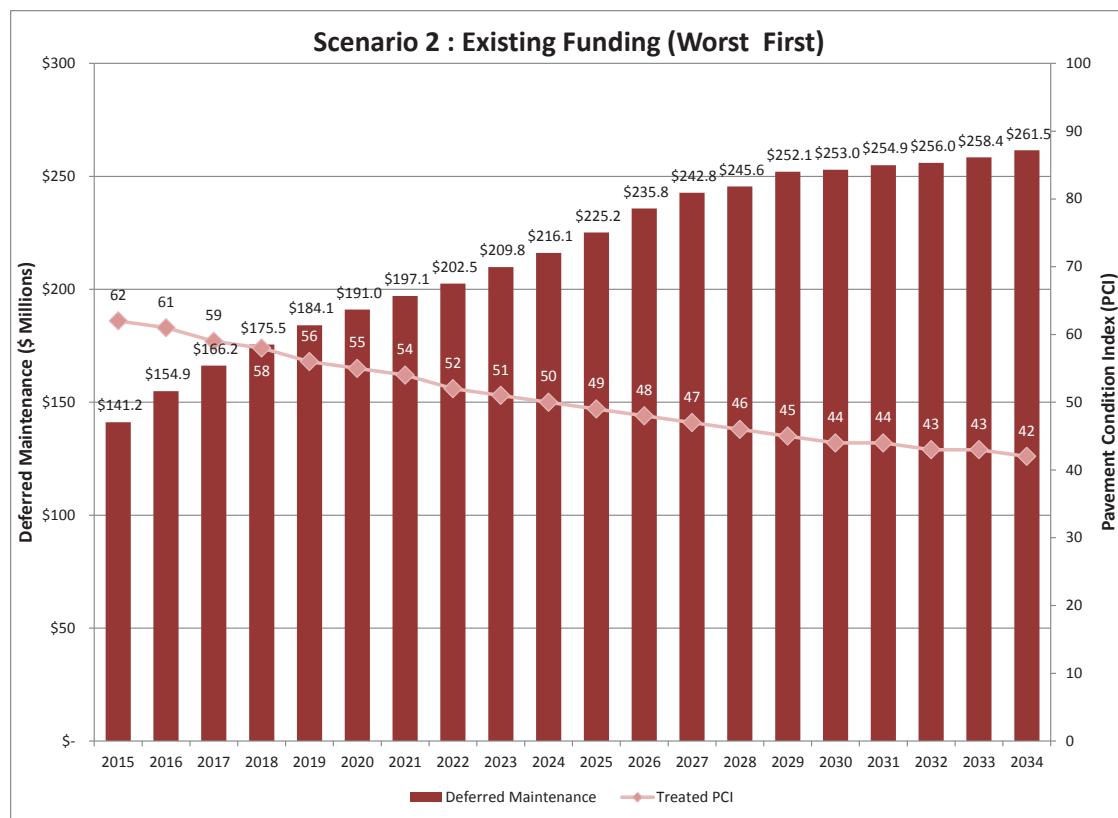
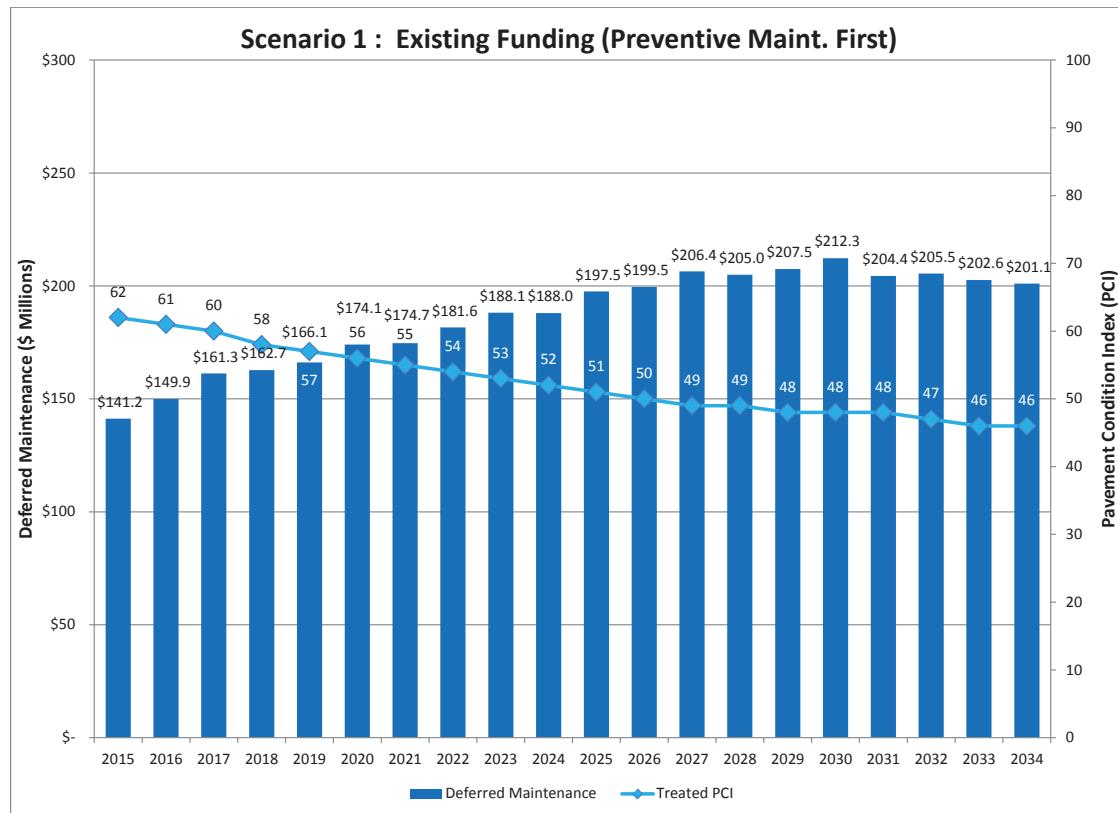
Calaveras County

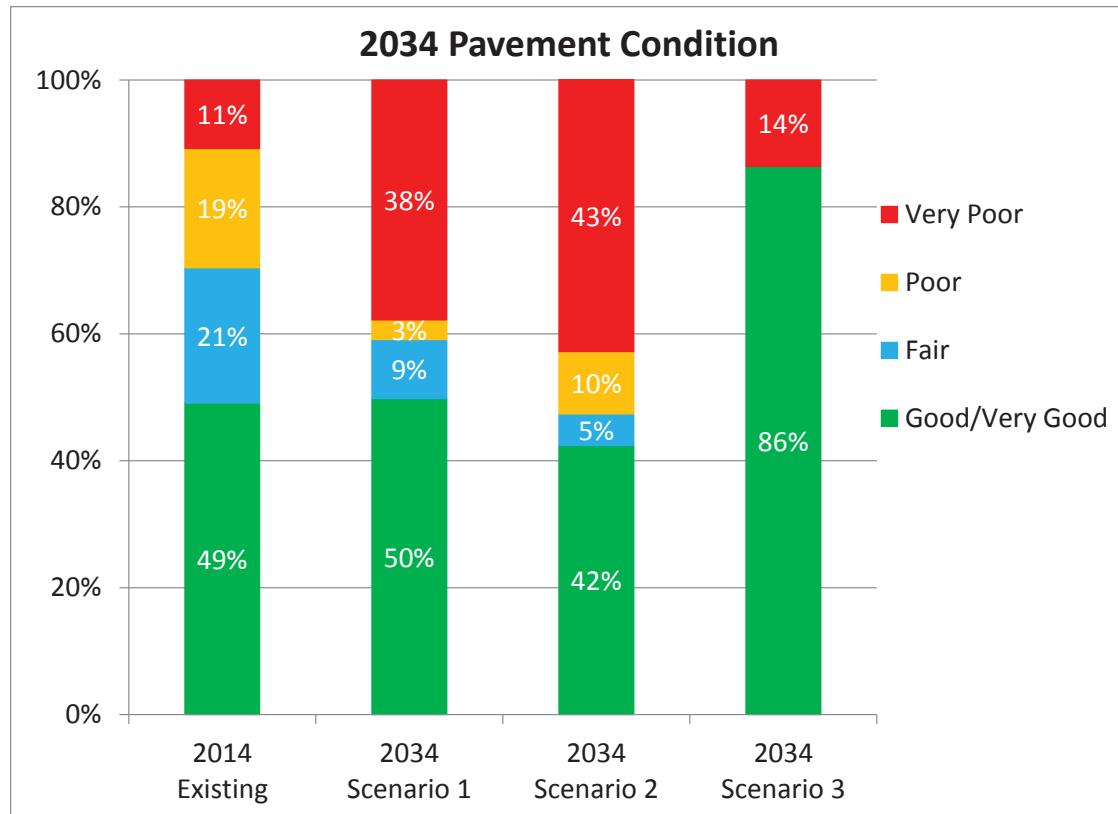
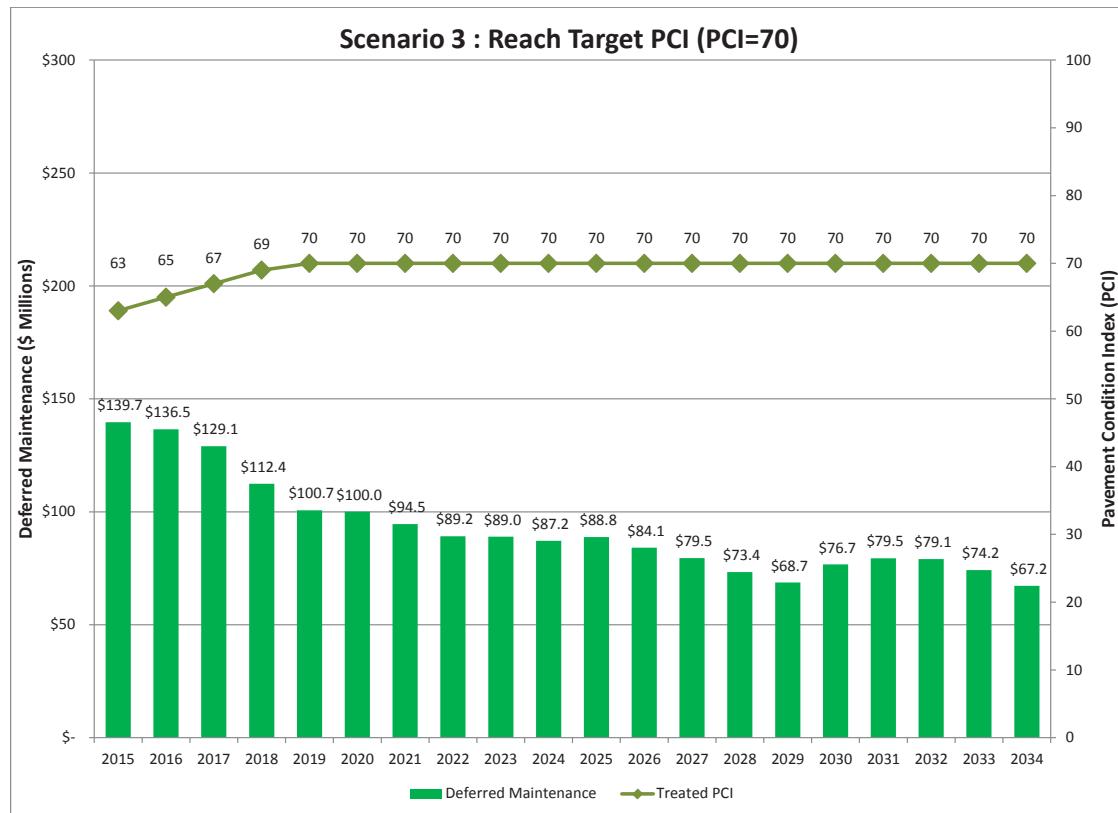
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
PCI Untreated	51	50	47	45	42	40	37	35	33	31	29	27	25	23	22	20	19	17	16	15	13	
Scenario 1	Deferred Maintenance (\$-Millions)	187.8	201.6	213.2	218.0	224.6	233.2	236.4	244.8	251.2	257.4	267.0	268.9	273.1	274.5	280.0	282.5	280.0	280.7	280.0	278.5	33.9
	Budget (\$-Millions)	1.8	1.7	1.7	1.7	1.4	1.8	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	
	Rehab (\$-Millions)	0.0	1.7	1.7	1.7	1.4	0.0	0.8	0.0	0.9	0.8	0.0	0.8	0.0	1.6	0.5	1.7	0.0	0.0	1.7	1.7	
	Preventive Maintenance (\$-Millions)	1.8	0.0	0.0	0.0	0.0	1.8	0.9	1.7	0.8	0.9	1.8	0.9	1.7	0.2	1.2	0.0	1.7	1.7	0.0	0.0	
	PCI Treated	51	48	46	44	41	39	38	36	35	33	32	31	30	29	28	27	26	26	25	24	
Scenario 2	Deferred Maintenance (\$-Millions)	187.9	206.0	219.2	229.0	236.8	243.9	249.2	256.2	266.4	276.0	286.3	294.2	297.0	300.8	306.9	308.6	310.1	313.0	319.2	322.5	33.9
	Budget (\$-Millions)	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	
	Rehab (\$-Millions)	1.7	1.7	1.1	1.1	1.7	1.7	1.1	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.3	1.3	1.3	
	Preventive Maintenance (\$-Millions)	0.0	0.0	0.6	0.5	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	
	PCI Treated	51	48	46	44	42	40	38	36	35	33	32	31	30	28	28	27	26	25	25	24	
Scenario 3	Deferred Maintenance (\$-Millions)	182.3	181.8	176.0	158.1	140.5	137.5	134.9	132.9	130.0	128.2	126.3	124.4	120.7	116.9	115.1	116.8	119.0	117.9	113.2	109.5	205.9
	Budget (\$-Millions)	7.3	20.3	20.8	26.3	25.0	12.5	9.0	7.3	7.2	7.0	7.1	6.9	6.8	6.0	5.9	5.6	6.1	5.4	7.4	6.0	
	Rehab (\$-Millions)	4.0	18.1	18.8	25.6	25.0	9.1	4.6	3.7	3.7	1.9	1.9	1.9	3.7	3.7	3.4	1.1	0.6	0.6	1.9	3.7	
	Preventive Maintenance (\$-Millions)	3.3	2.2	2.0	0.7	0.0	3.4	4.4	3.6	3.4	5.1	5.2	5.0	3.1	2.3	2.5	4.4	5.5	4.8	5.6	2.2	
	PCI Treated	52	54	56	58	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	



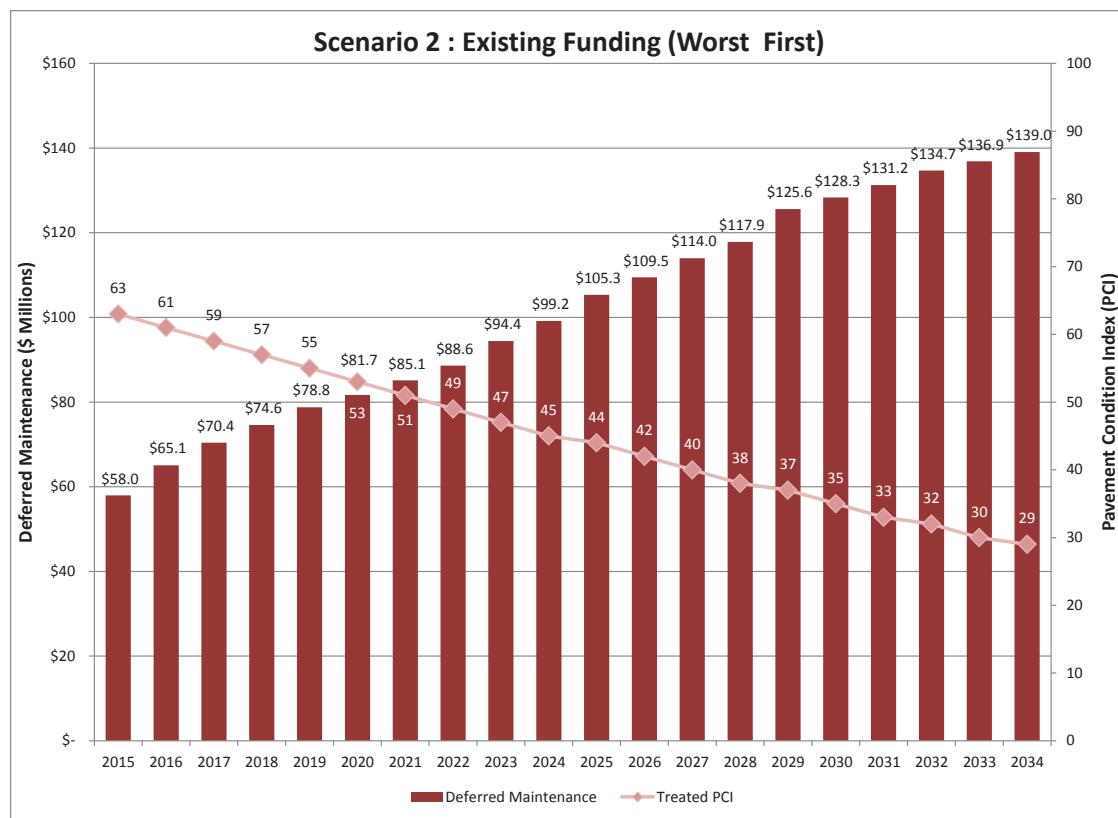
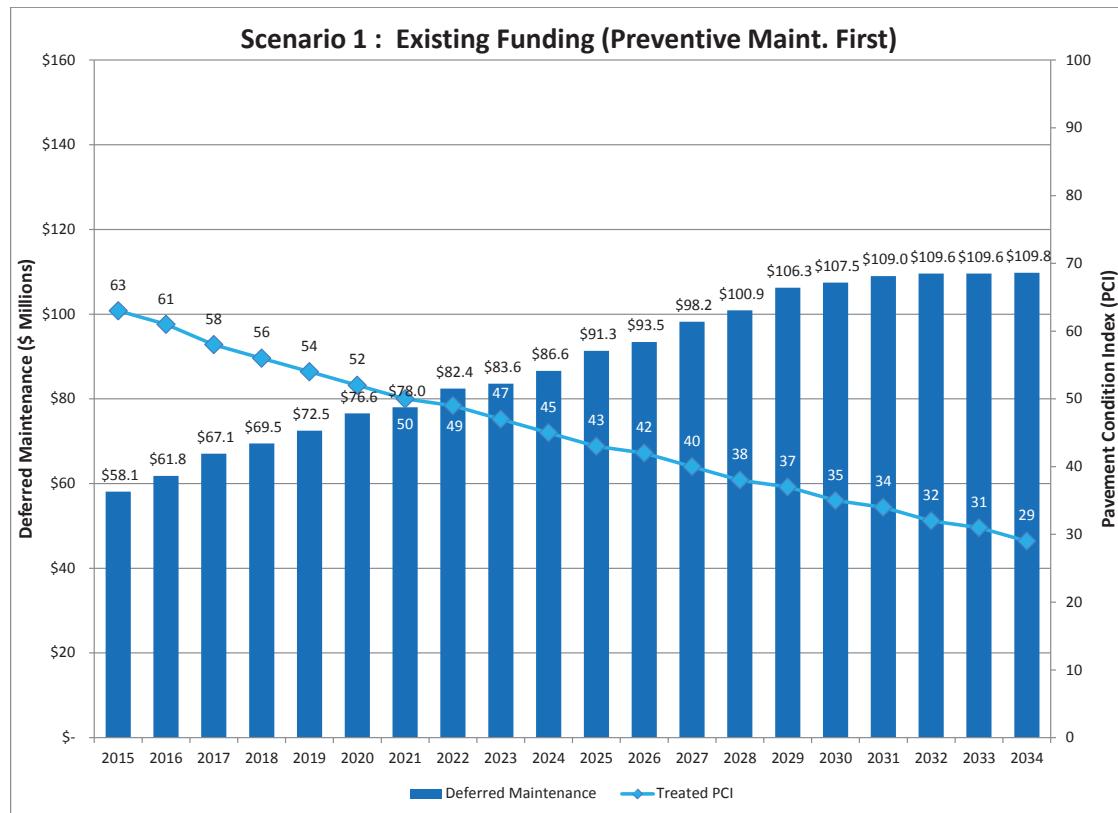


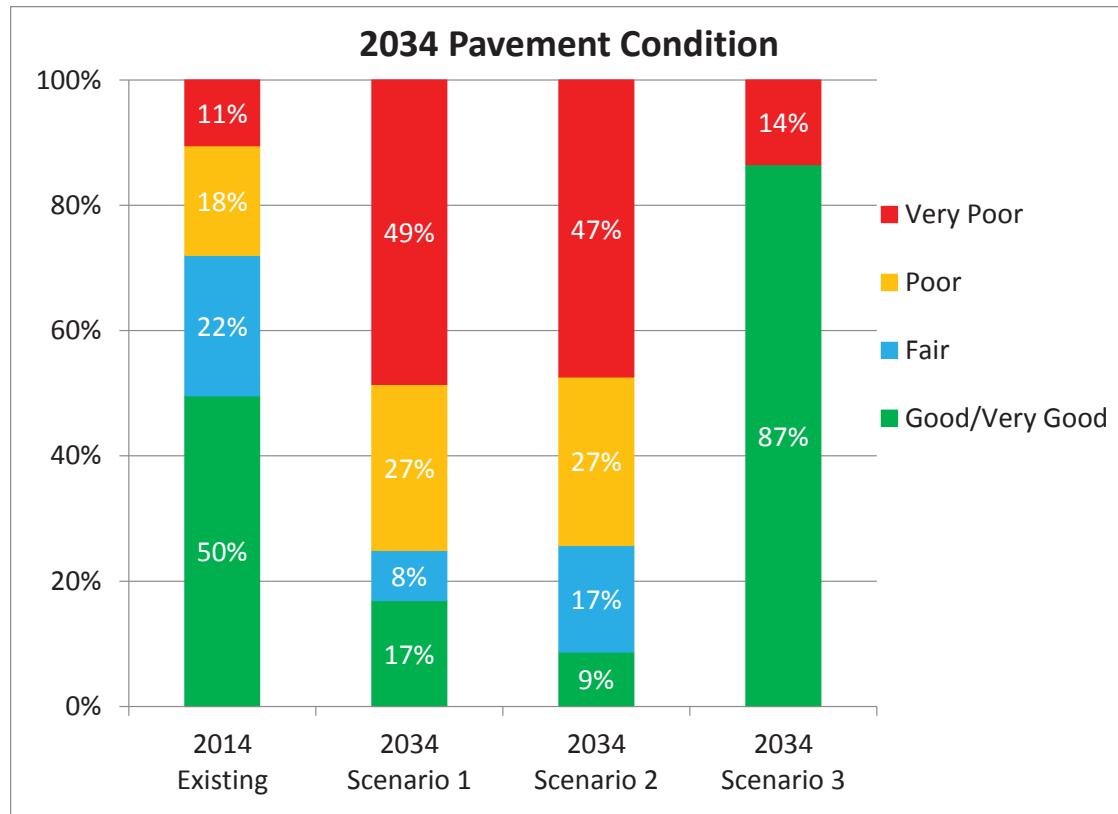
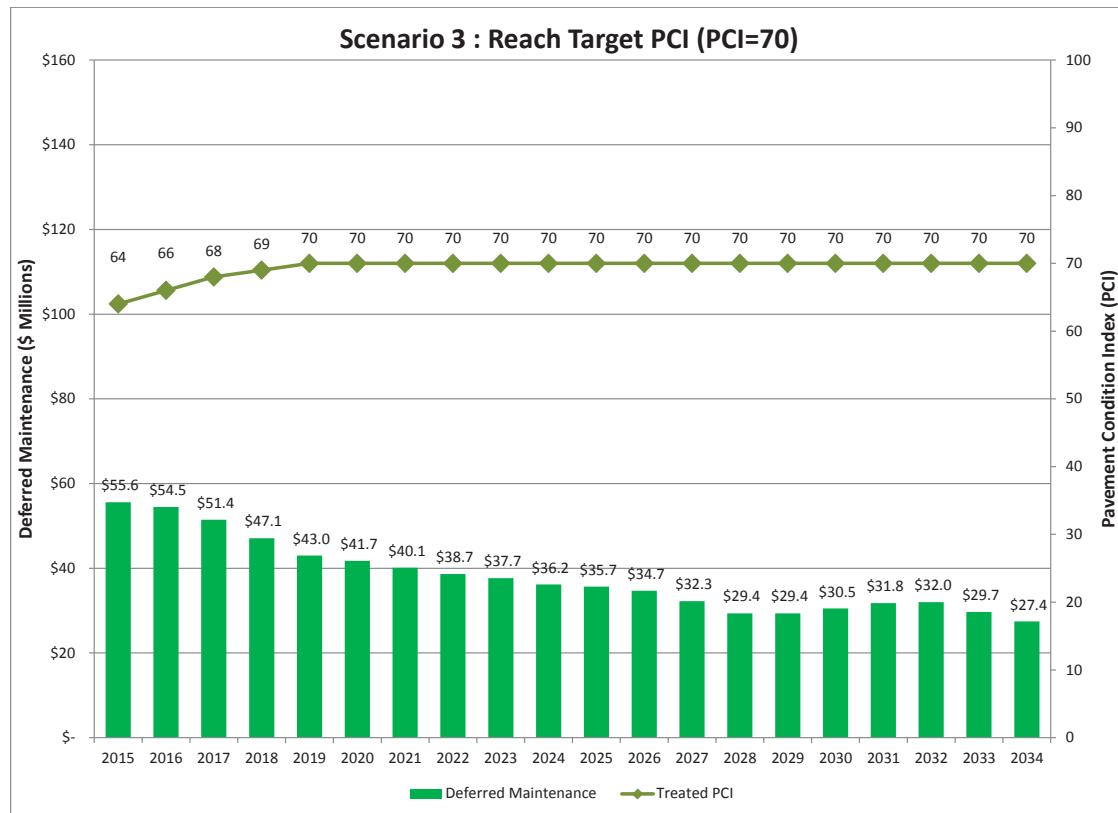
Colusa County



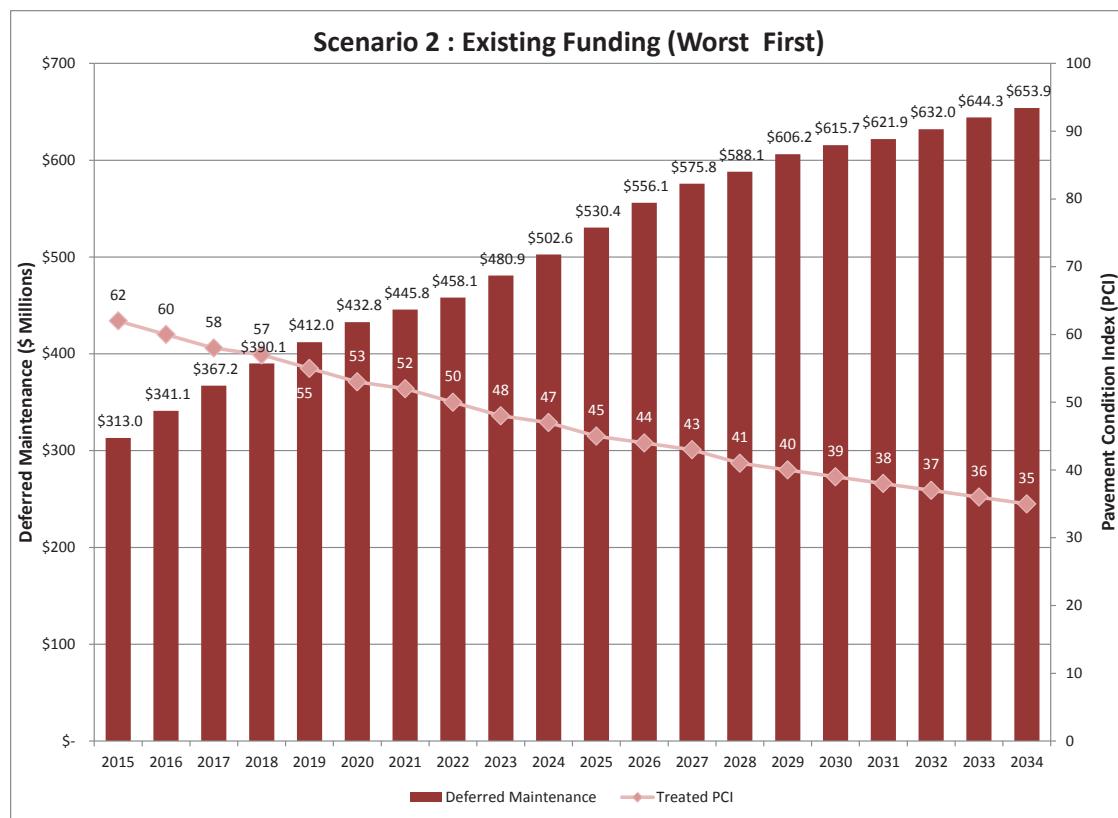
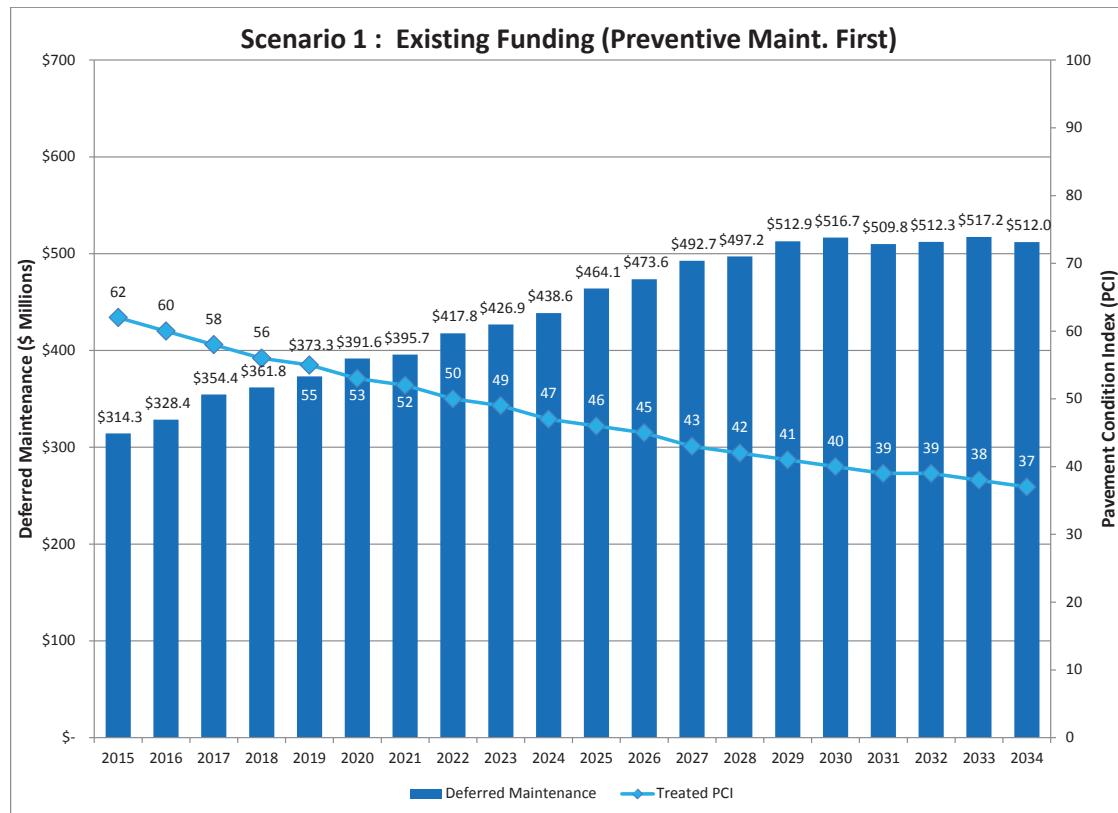


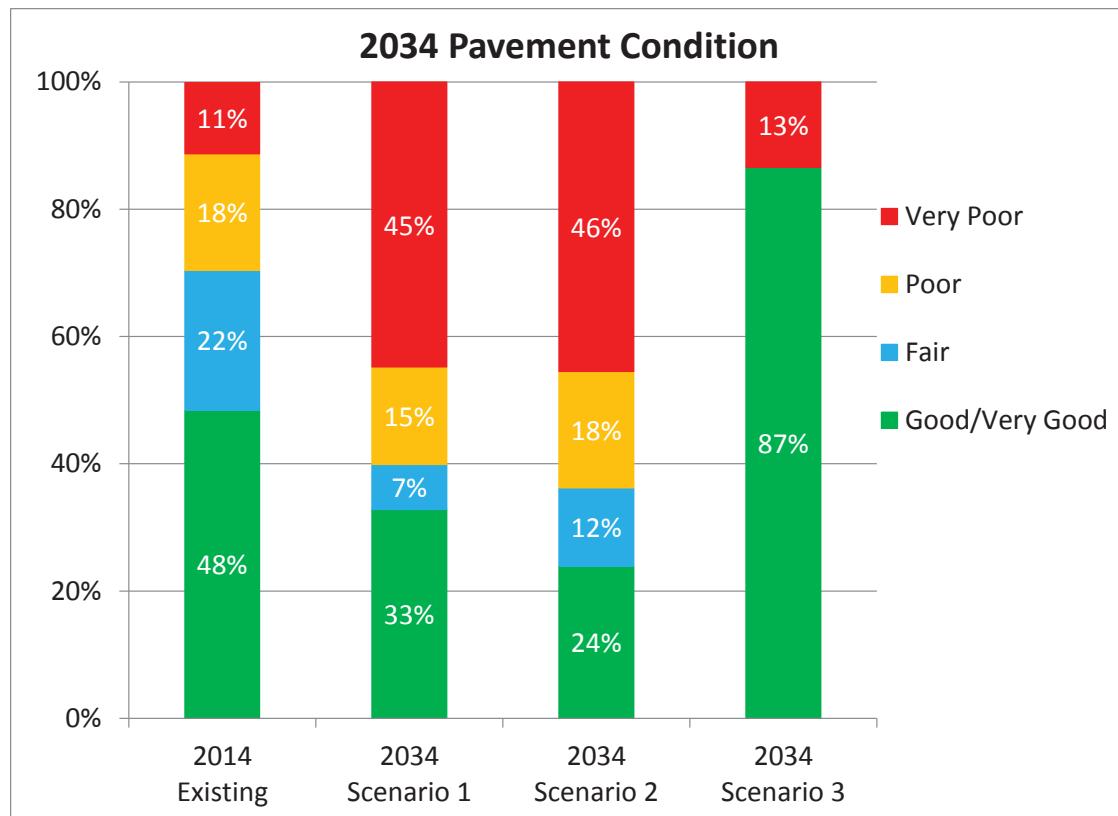
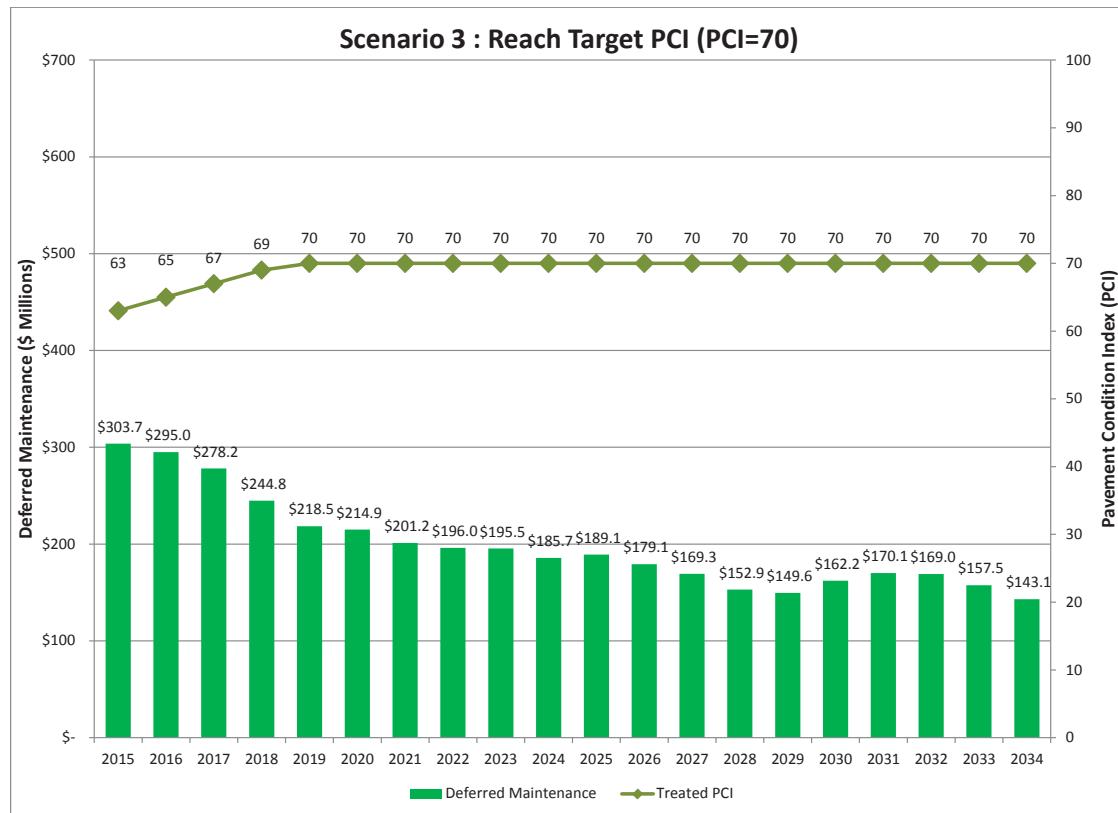
Del Norte County



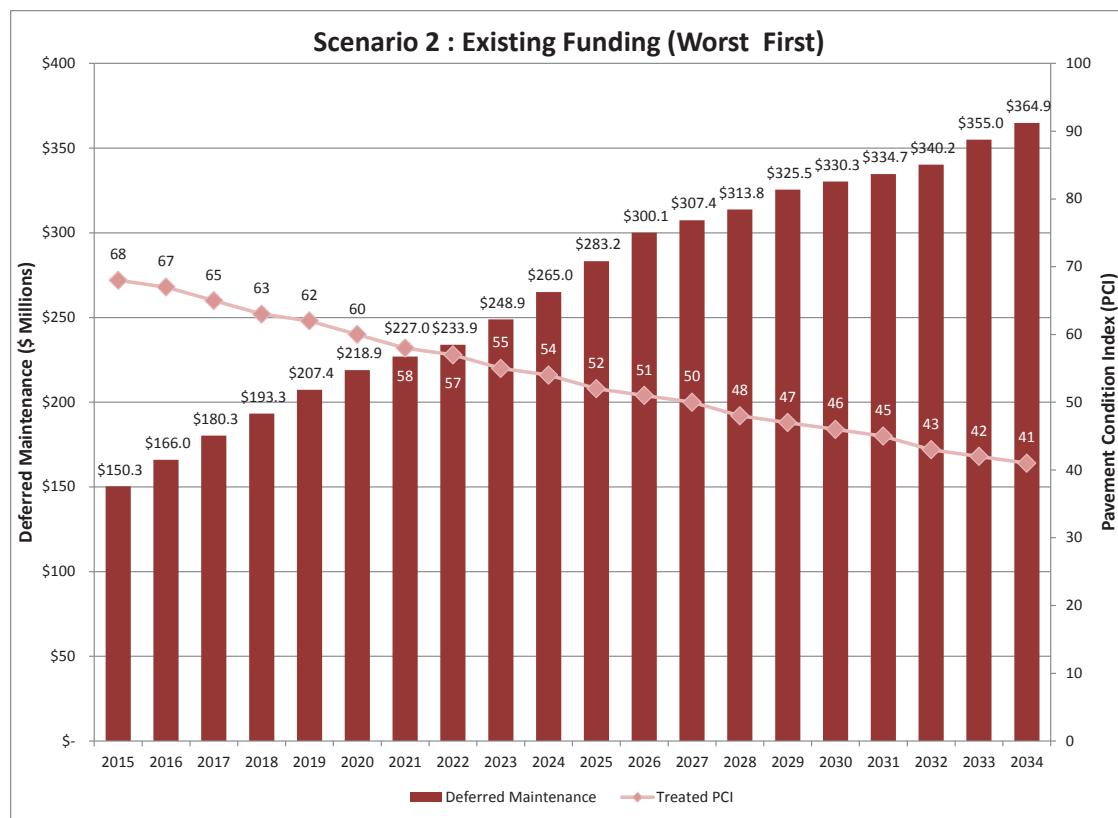
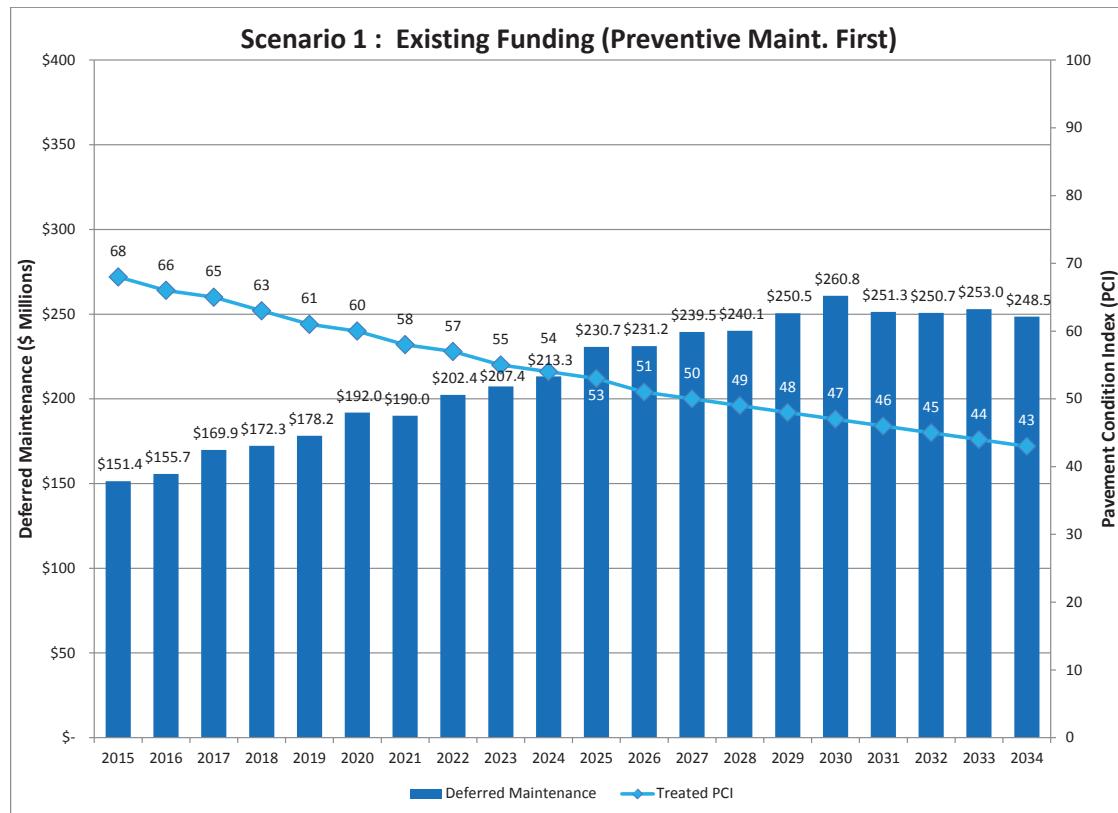


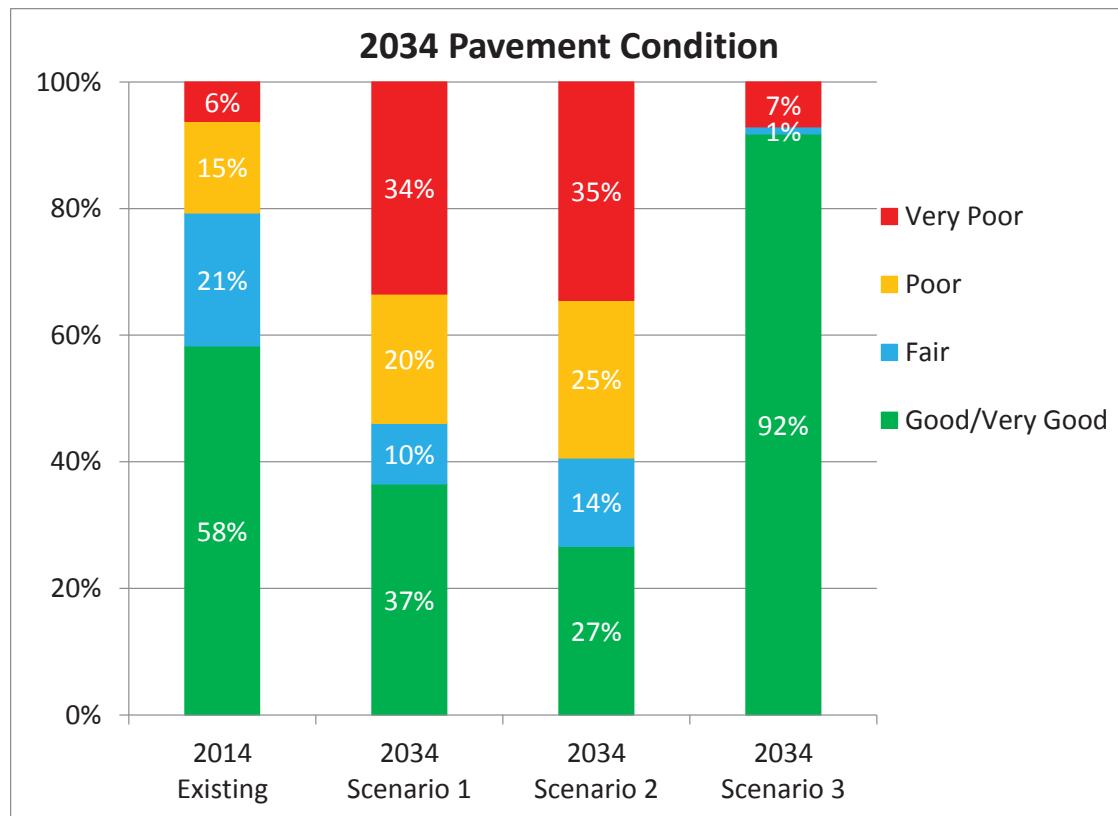
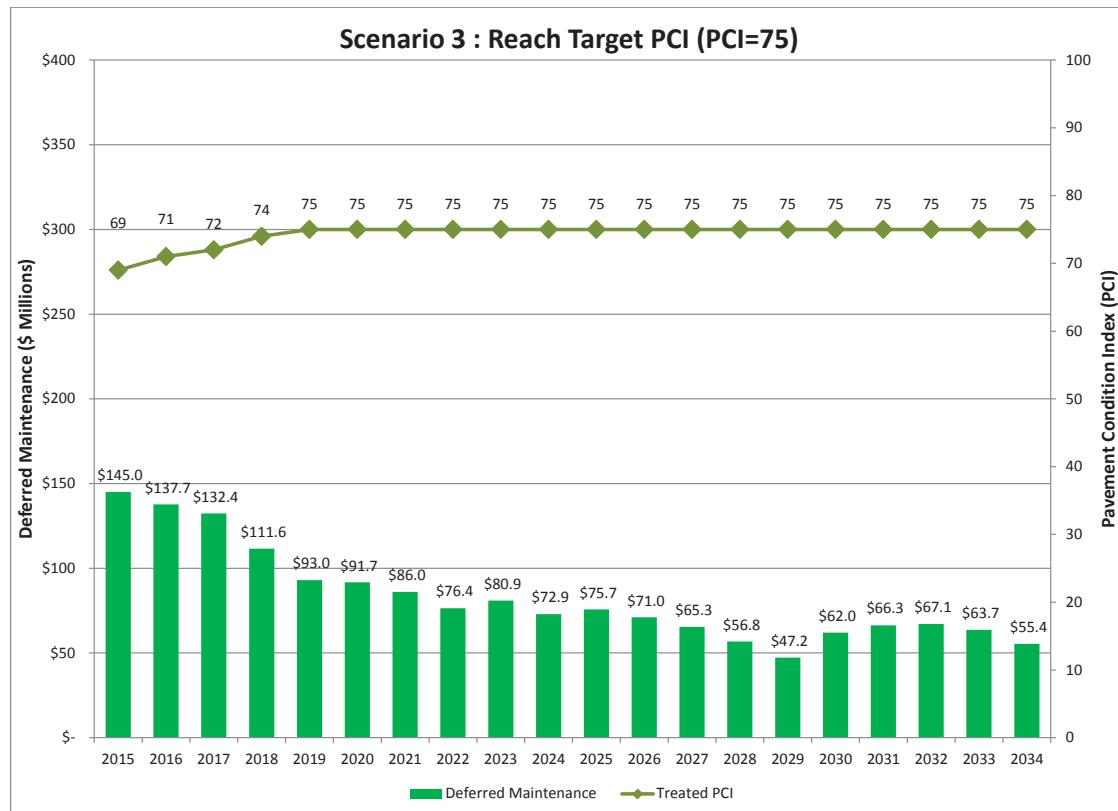
El Dorado County



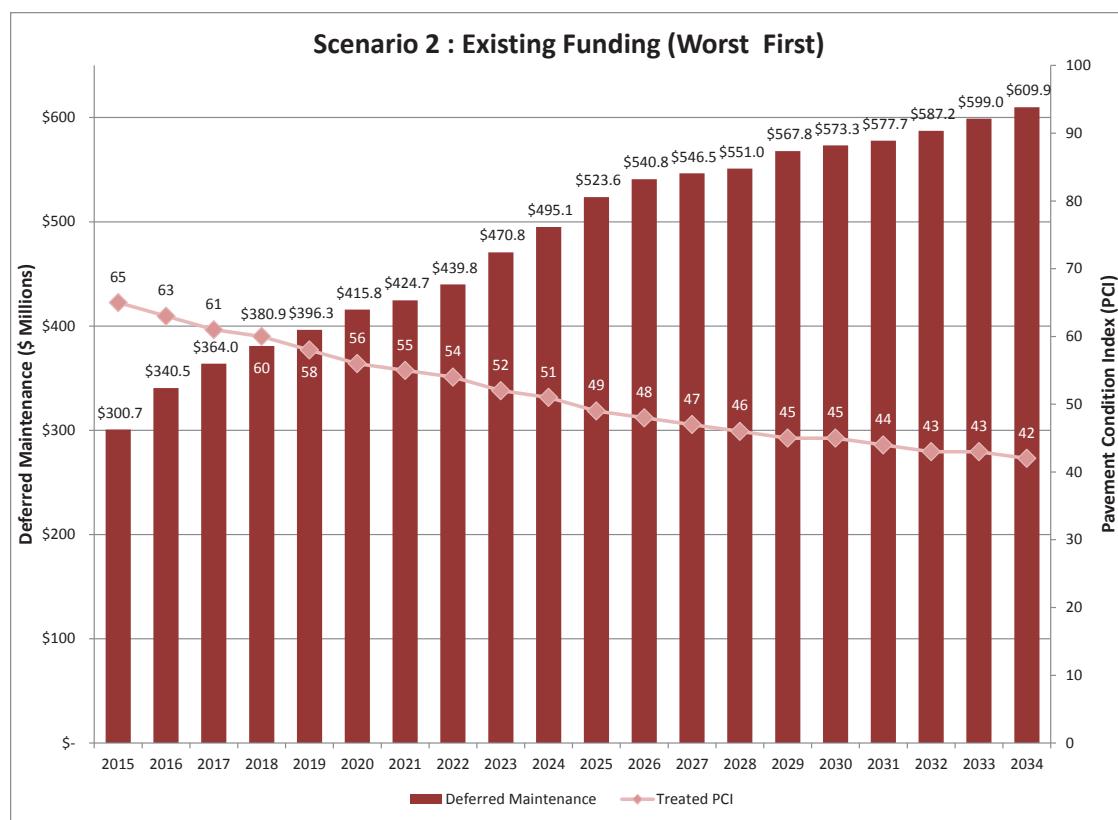
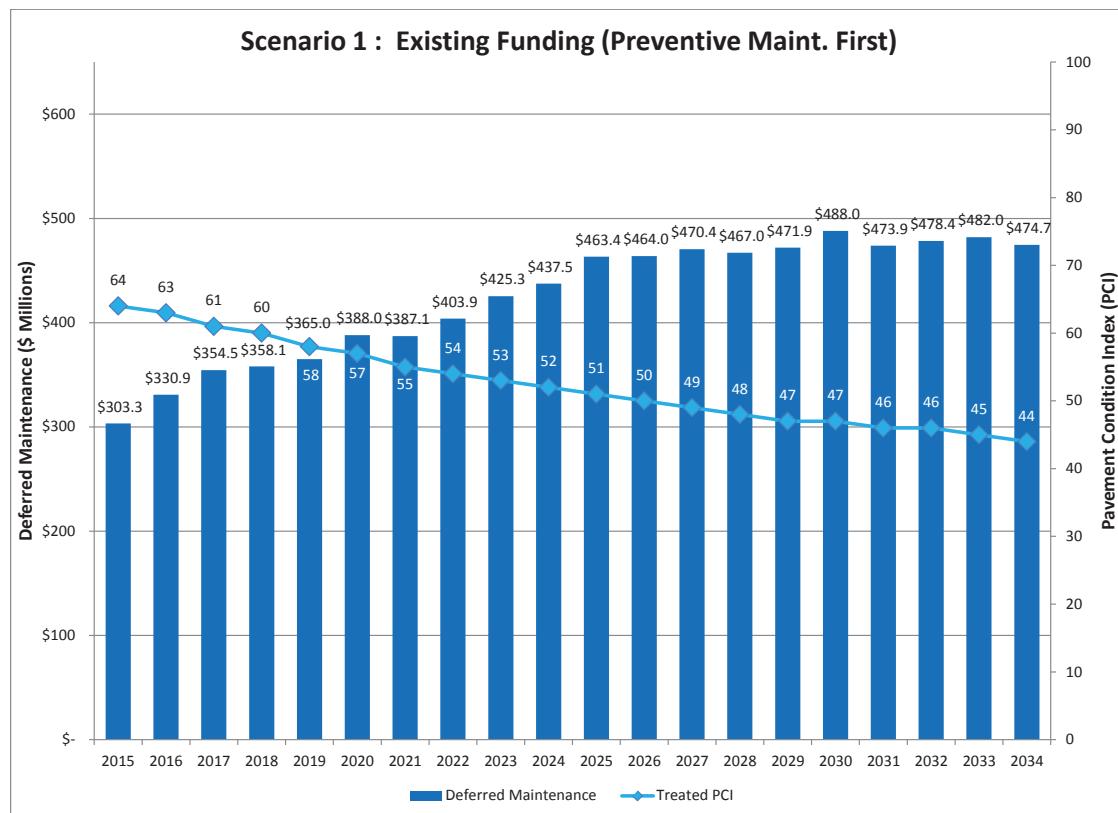


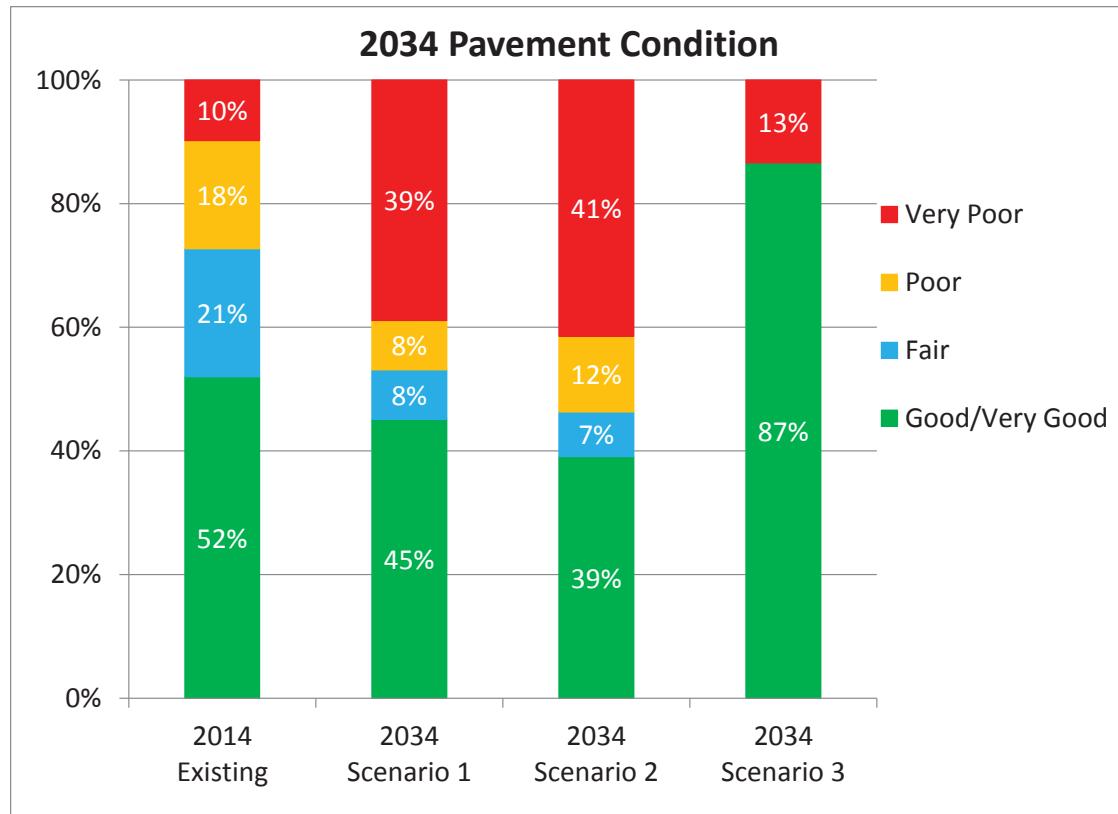
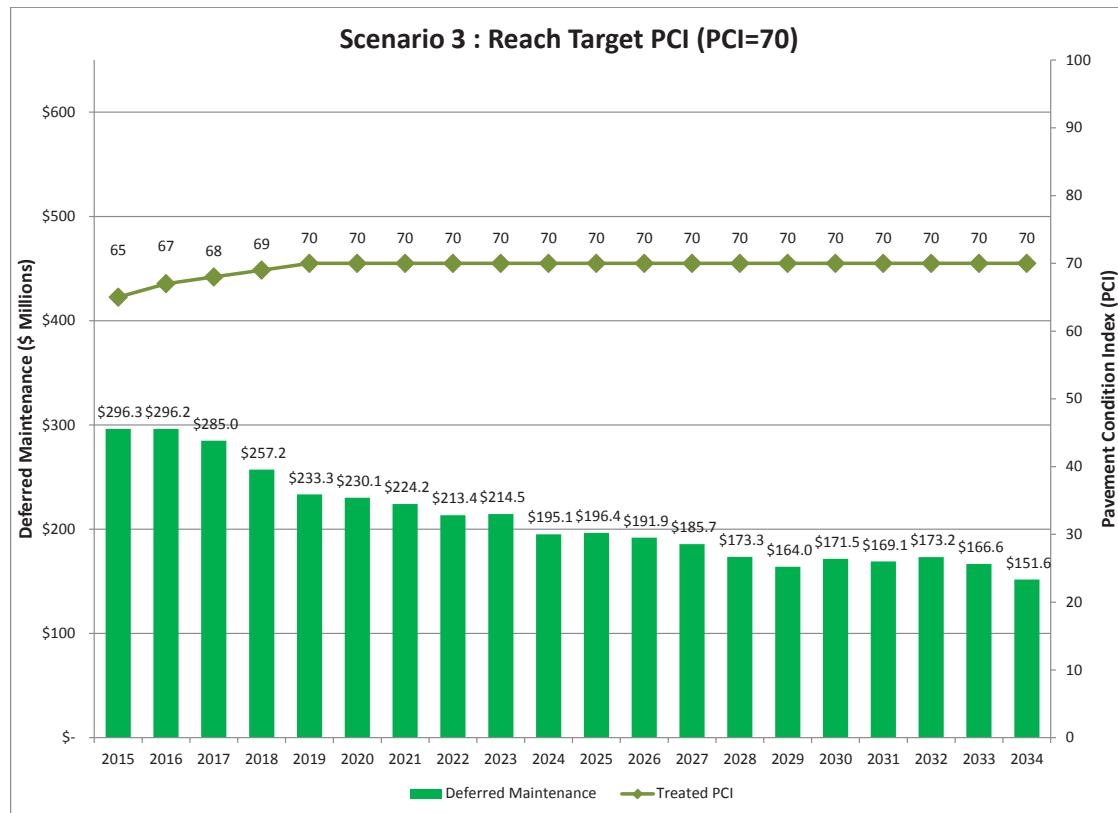
Glenn County



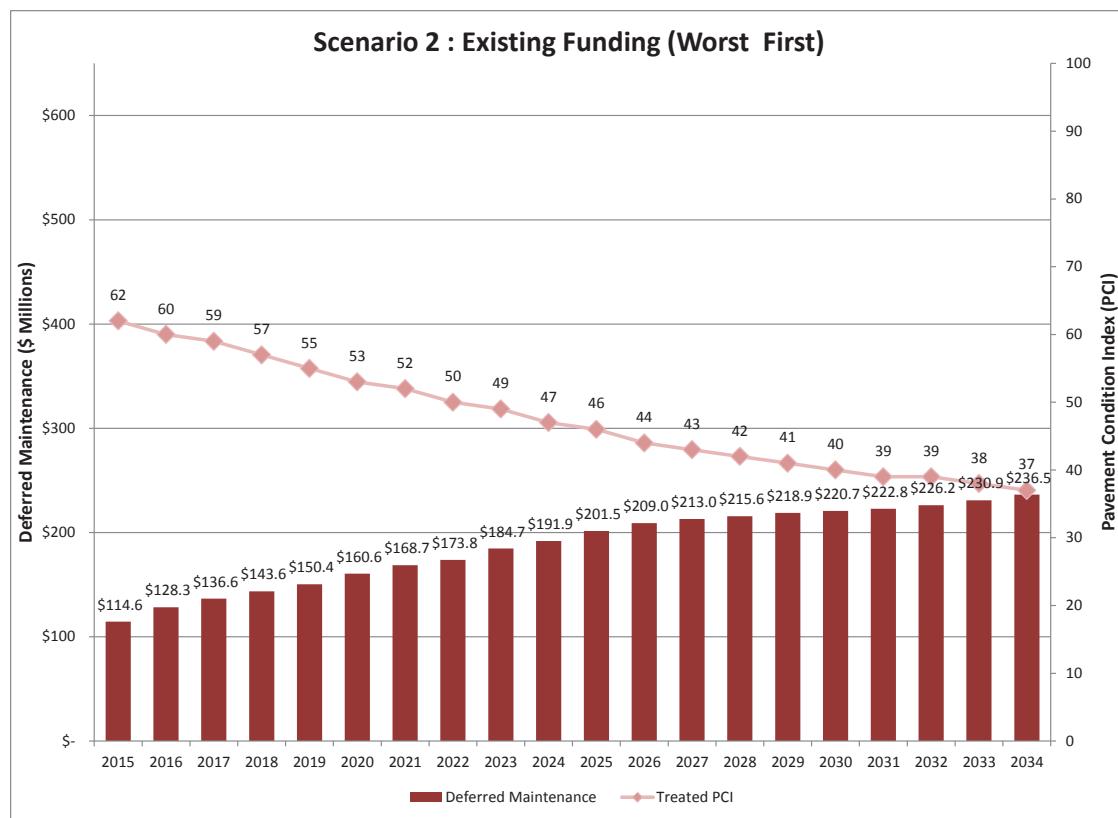
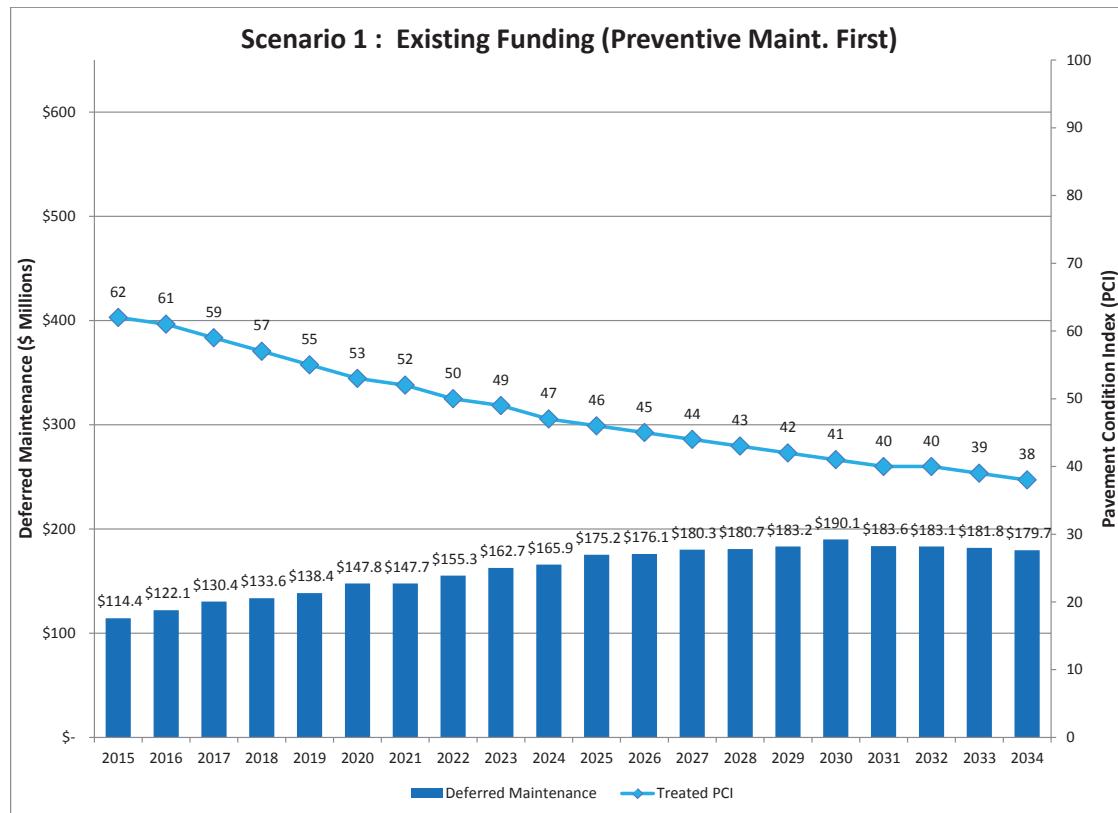


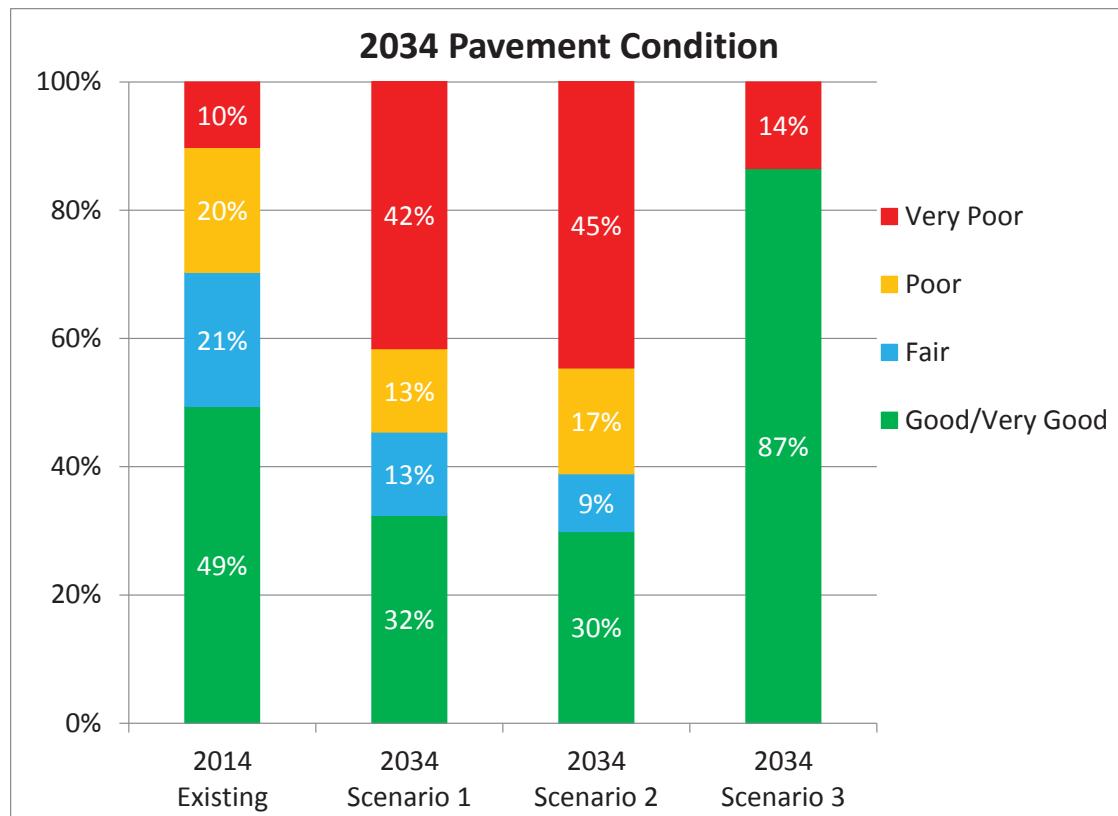
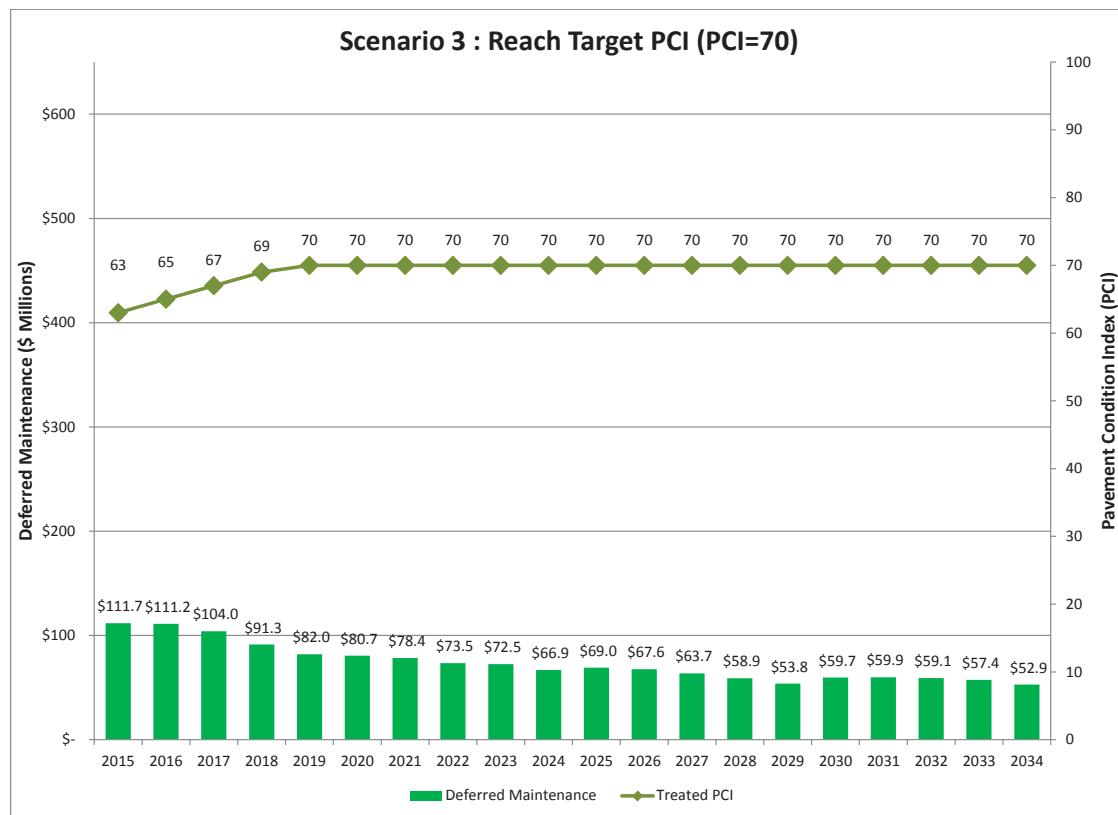
Humboldt County



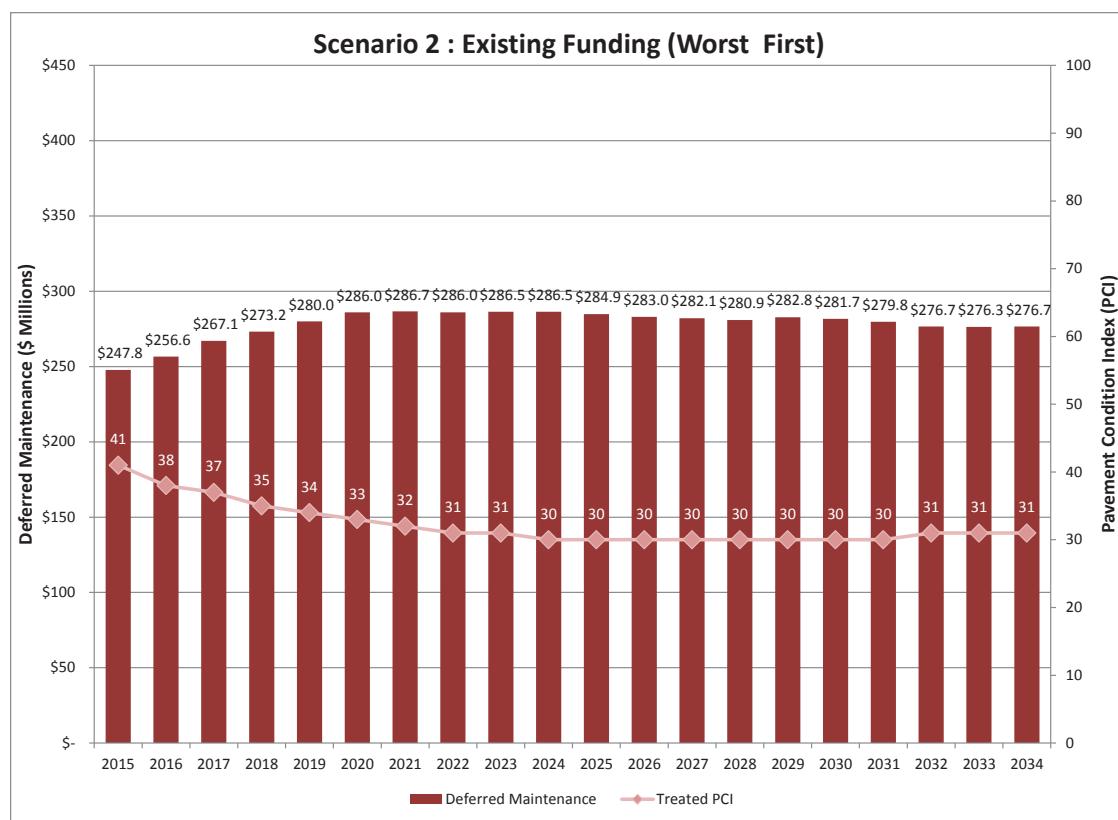
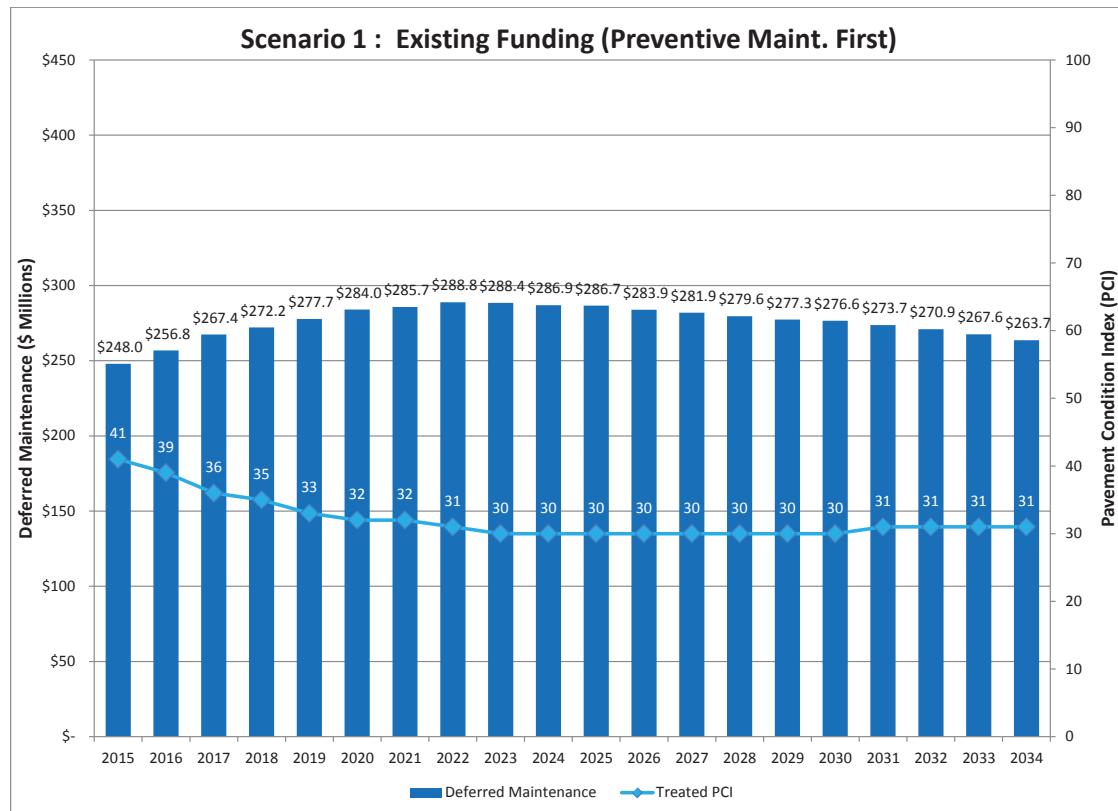


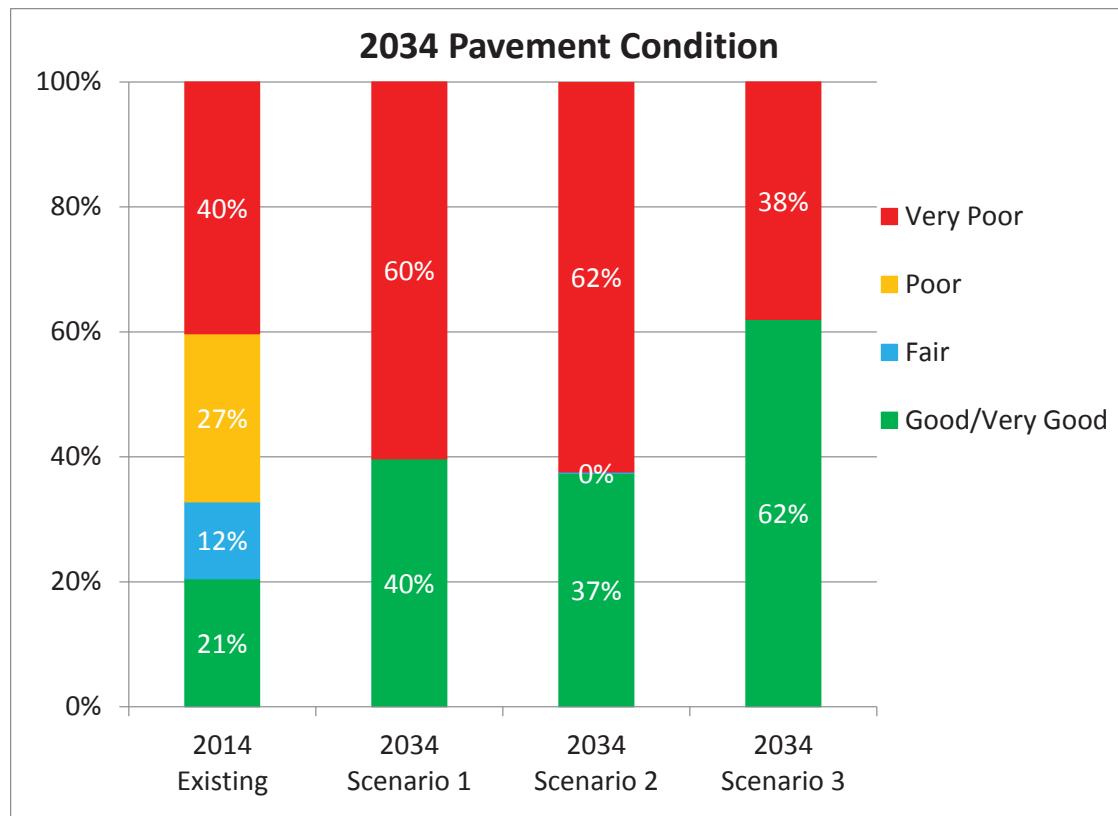
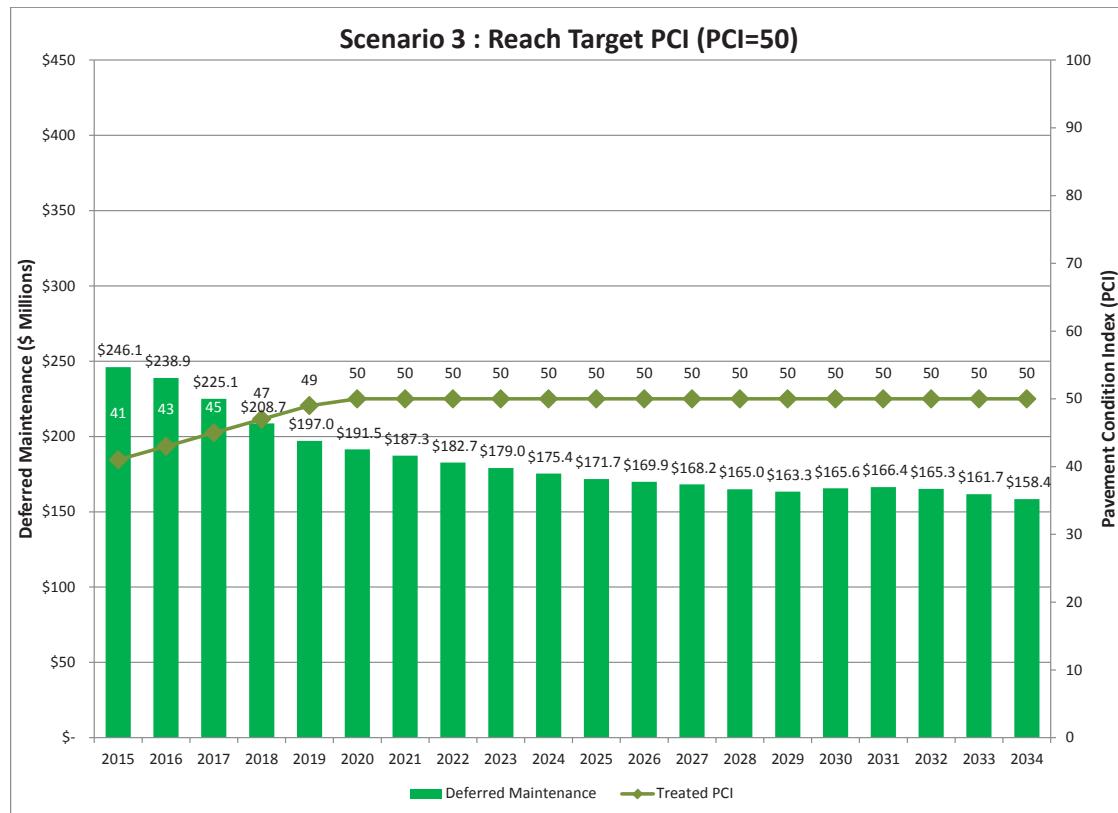
Inyo County



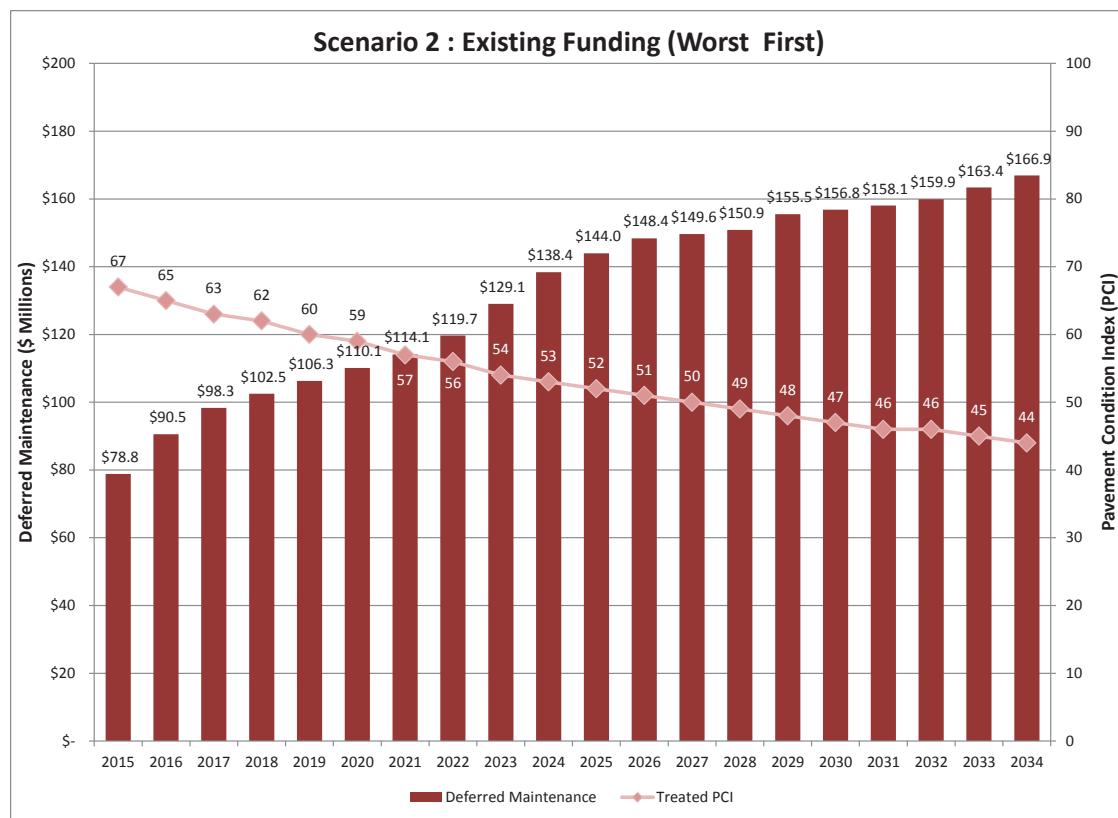
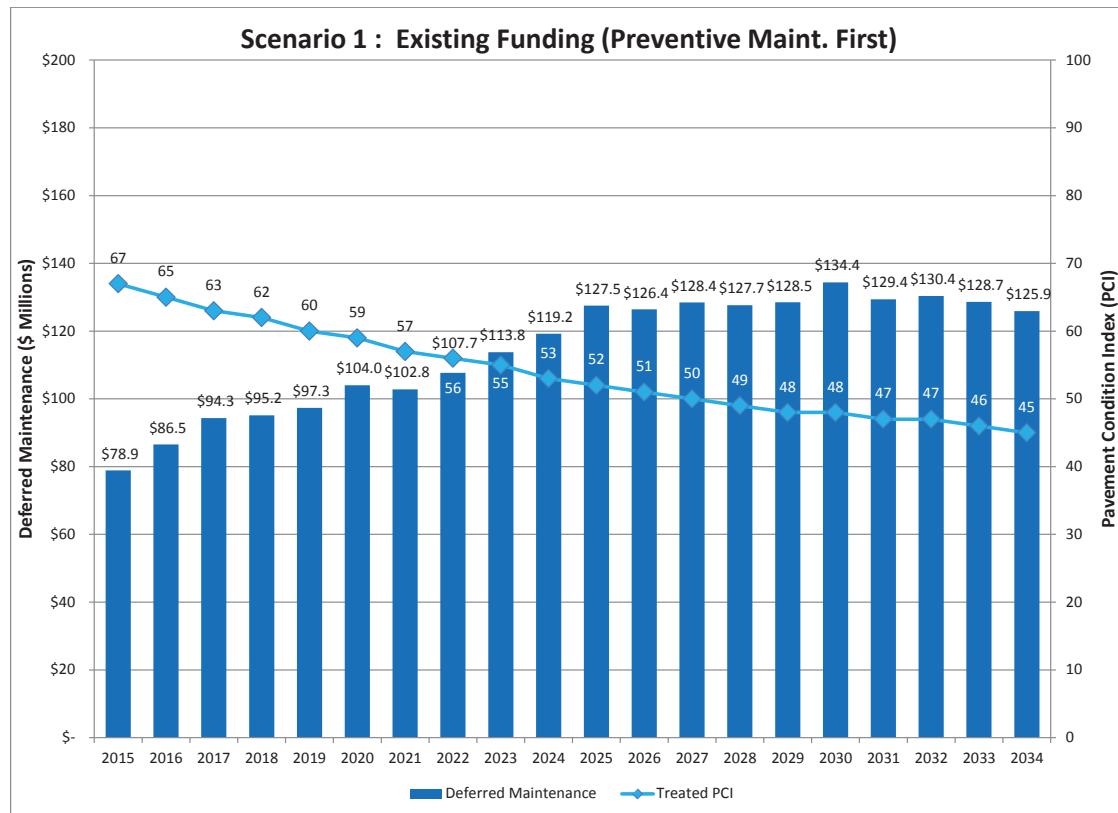


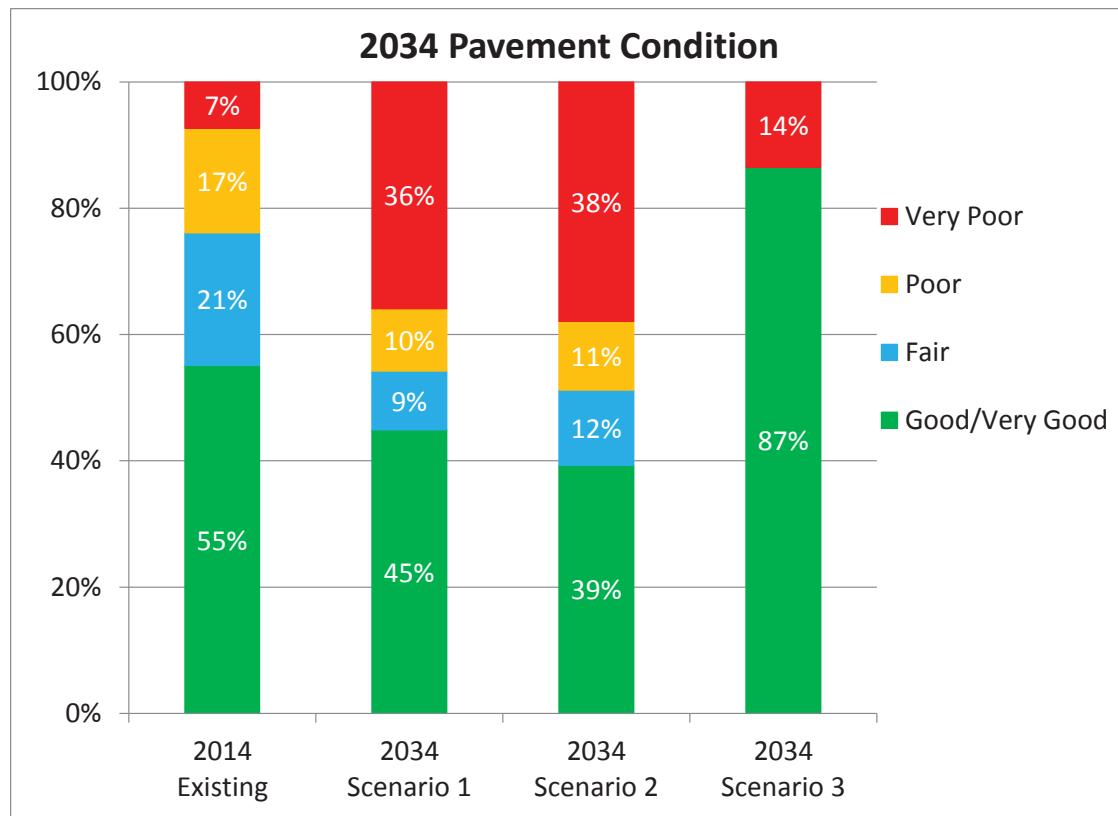
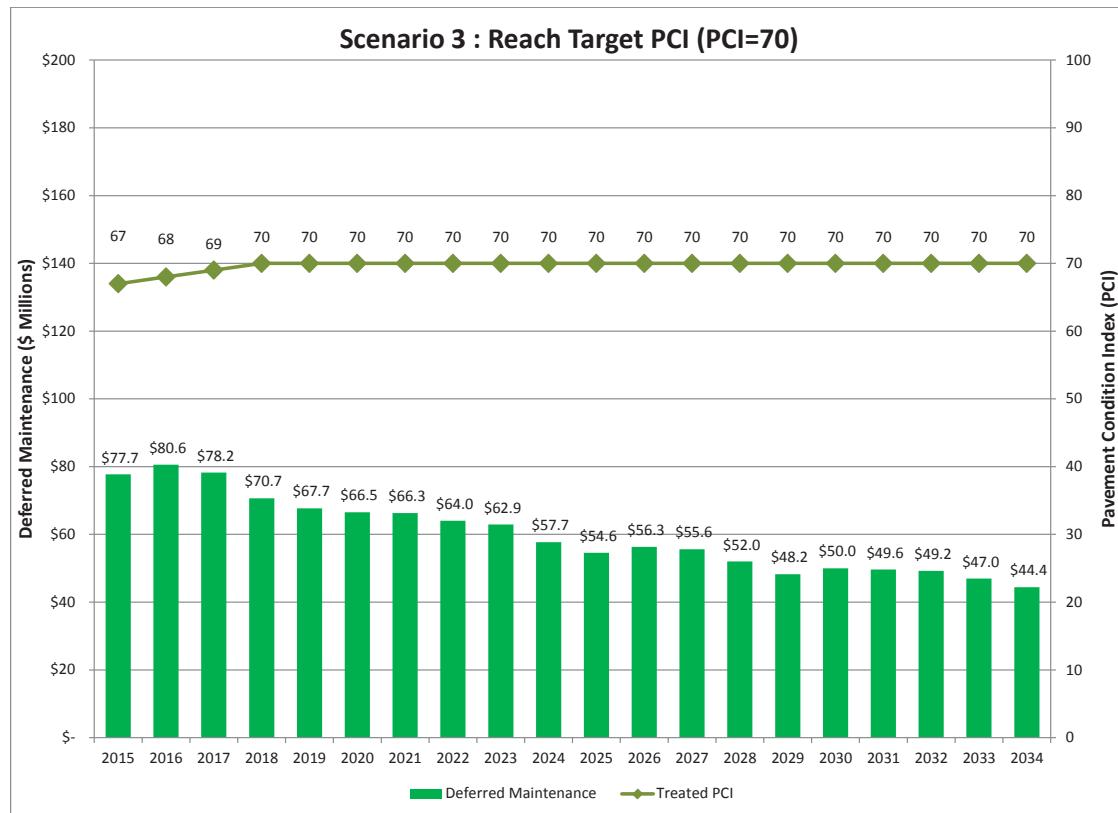
Lake County



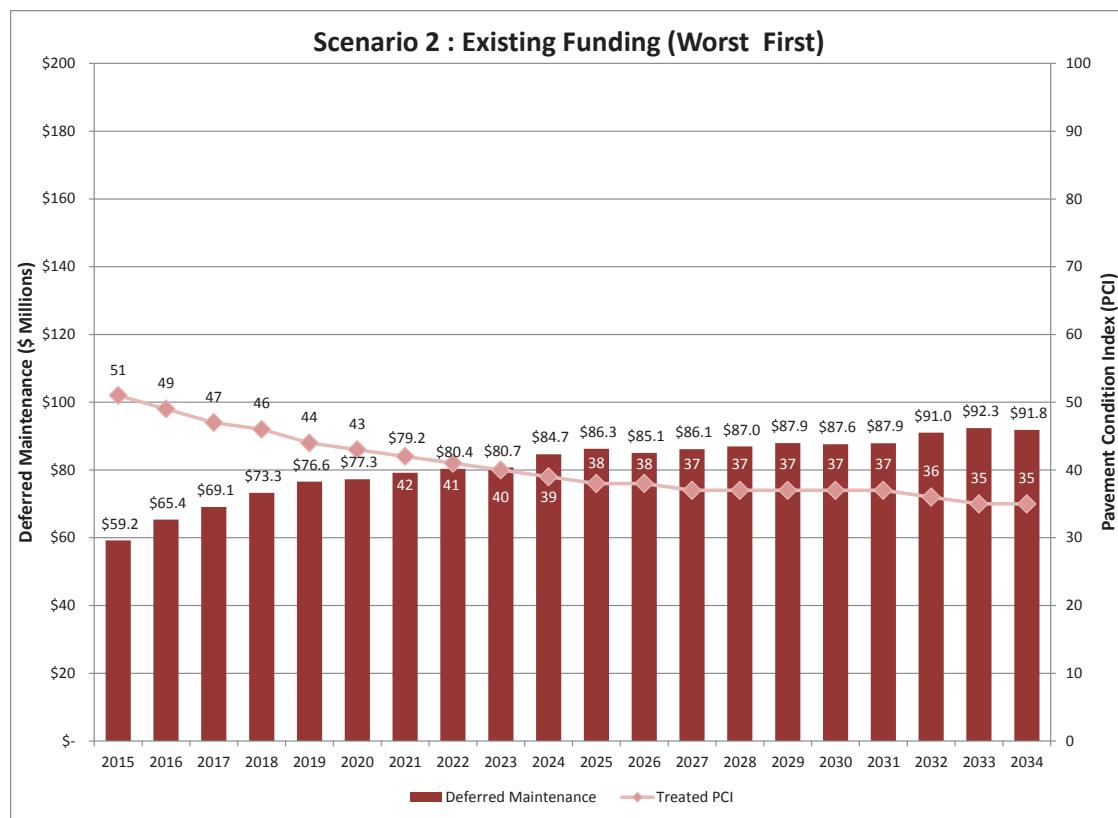
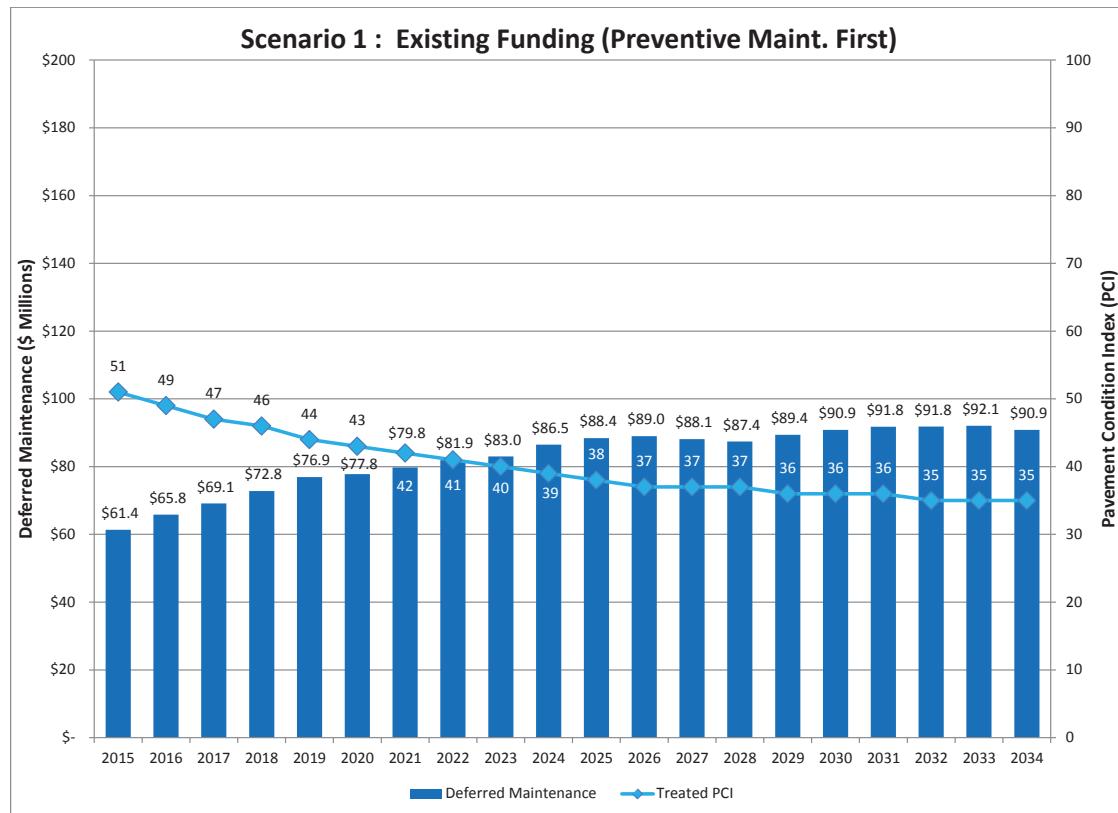


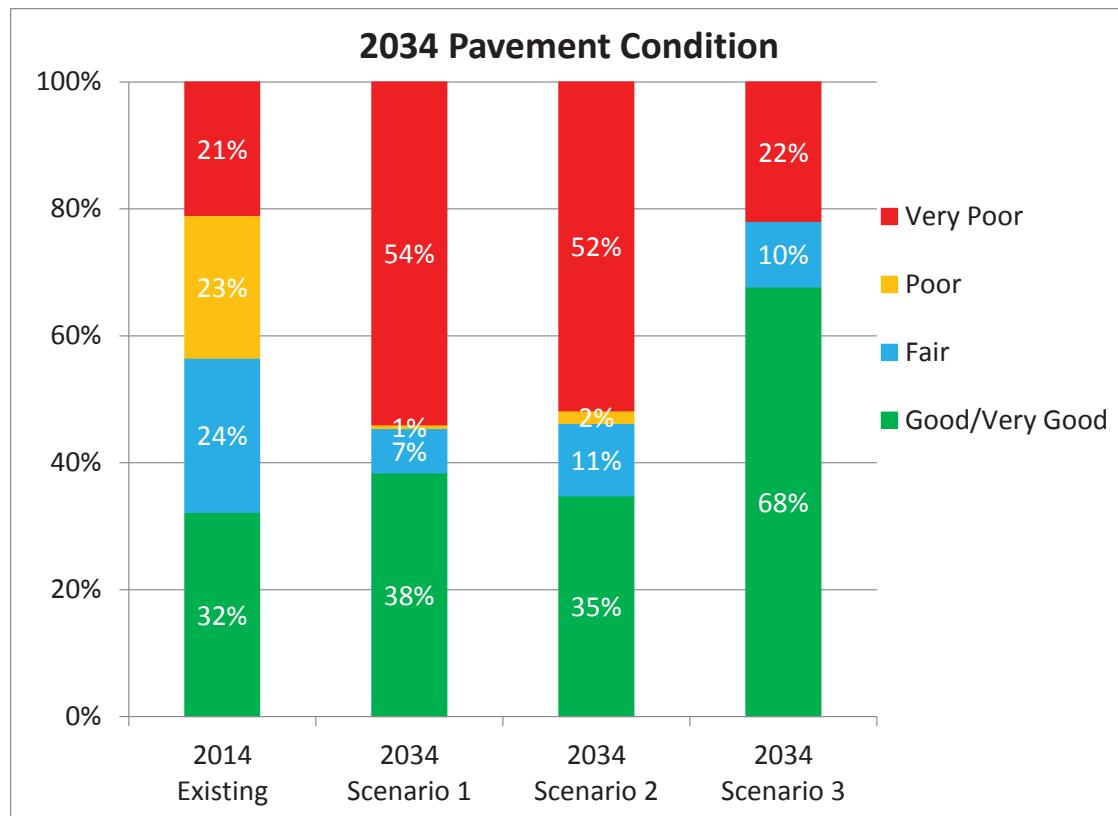
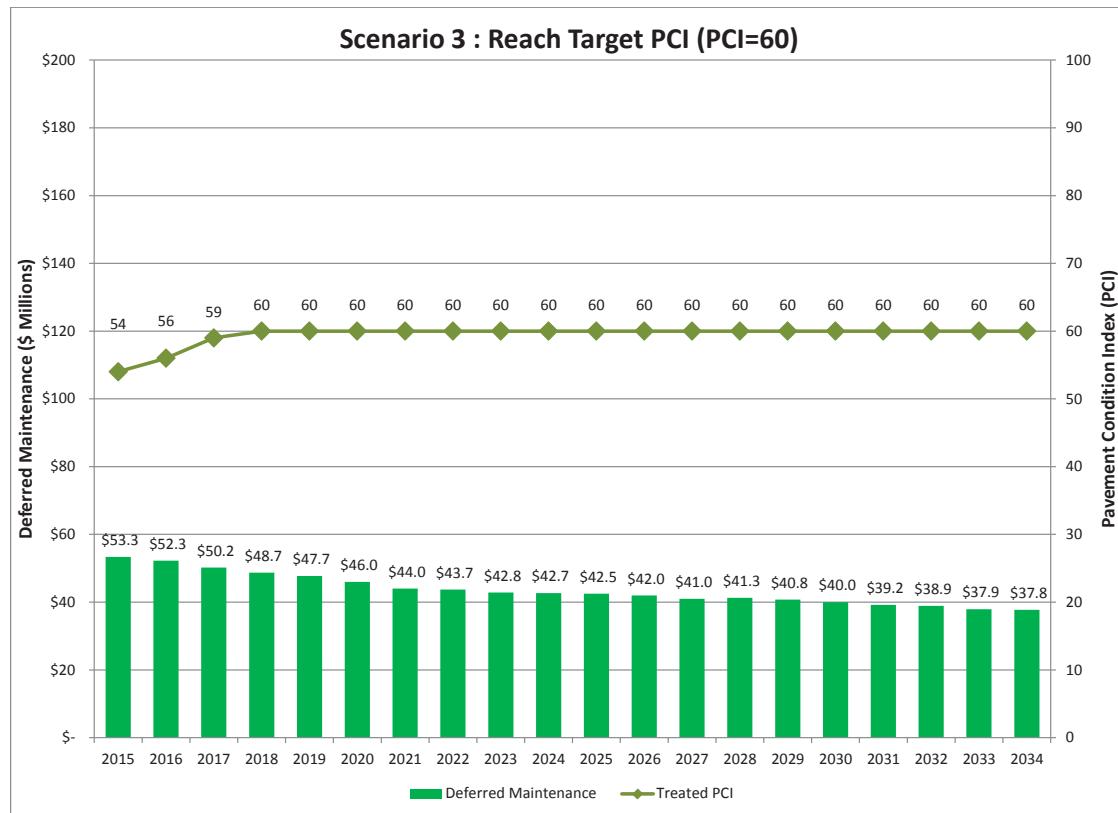
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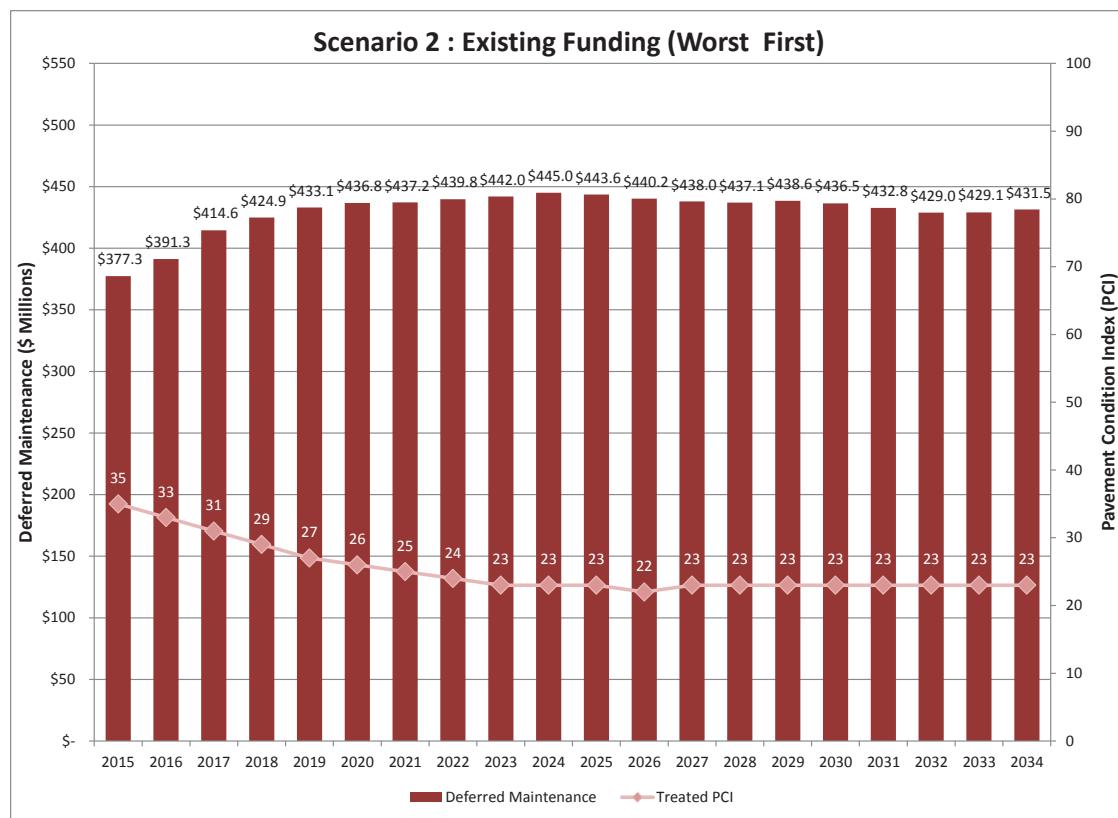
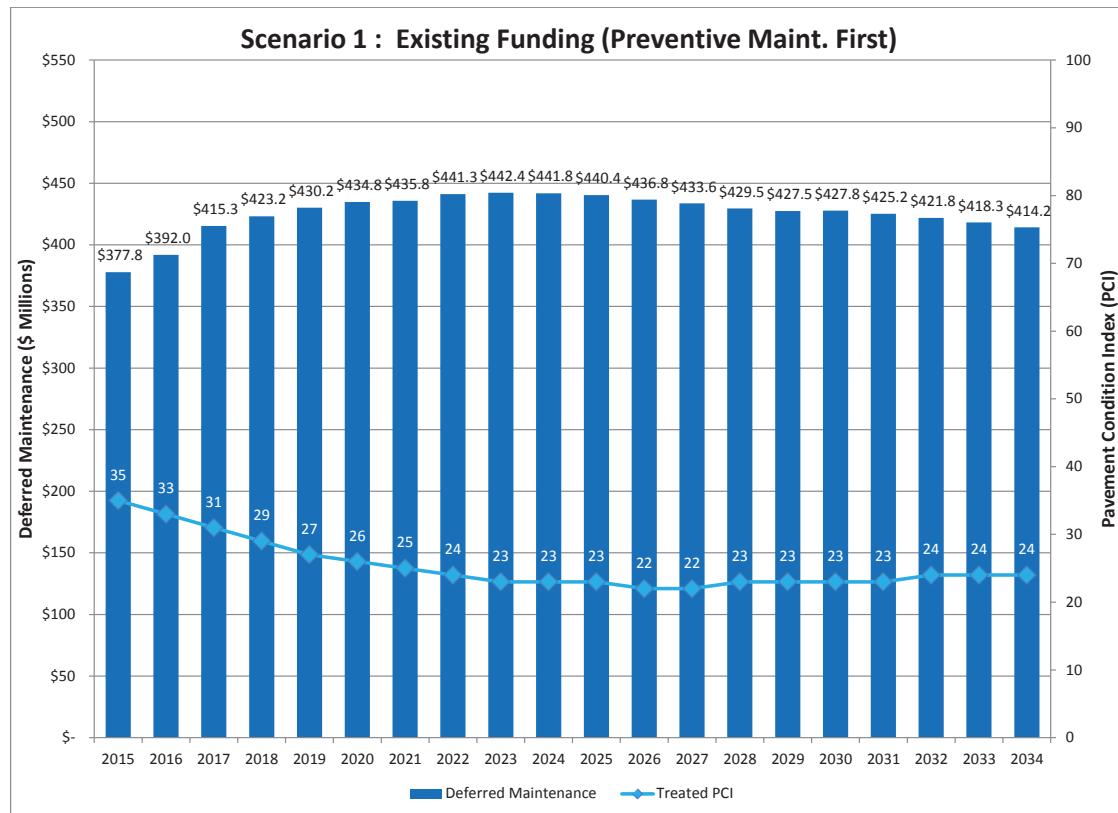


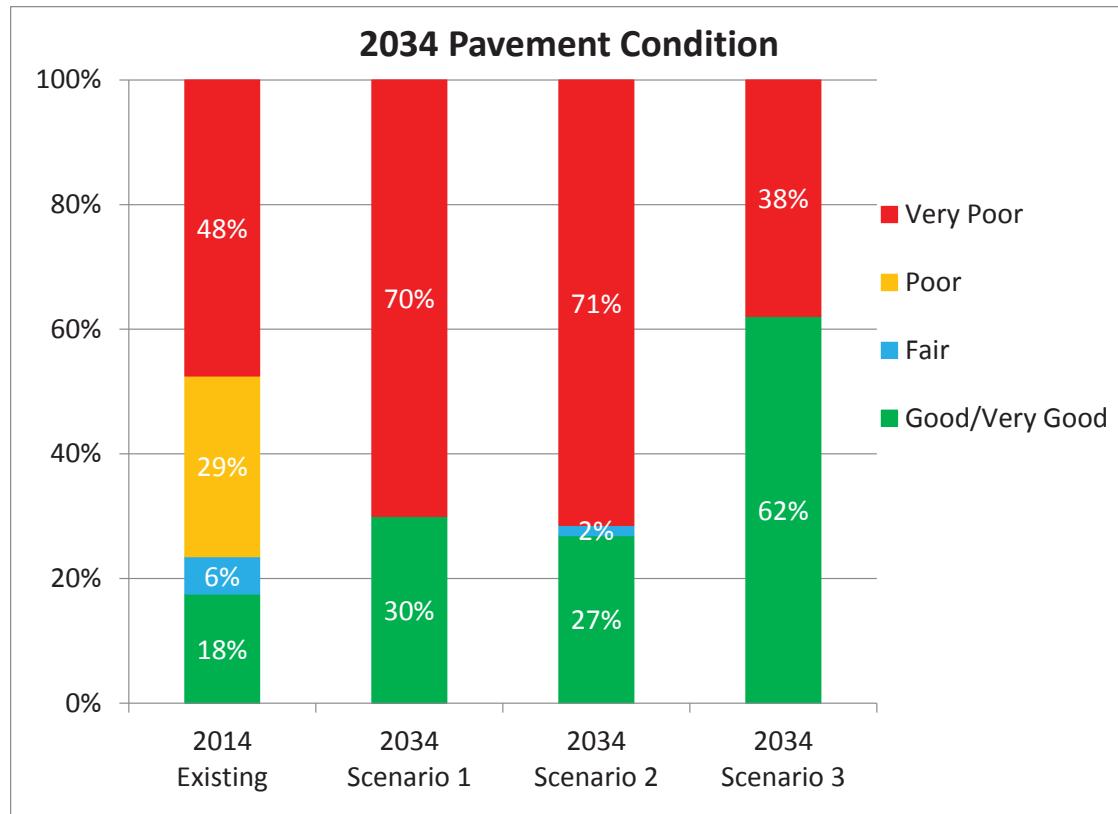
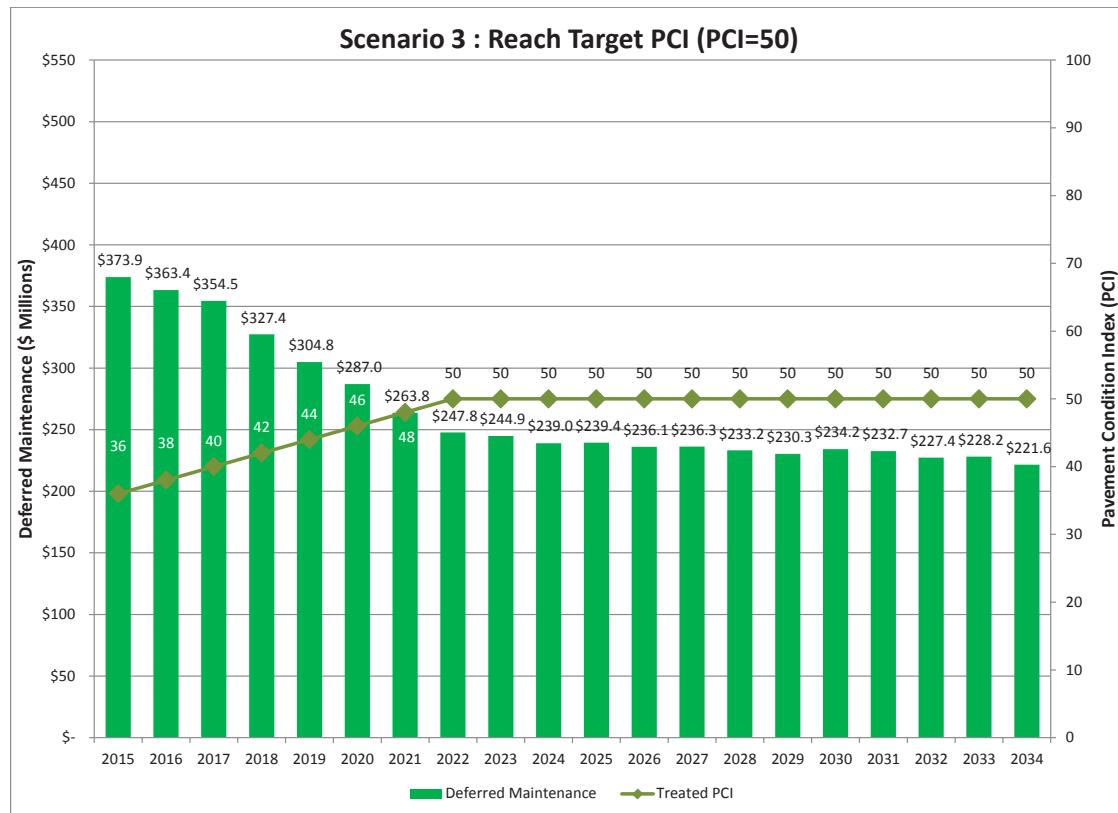
Mariposa County



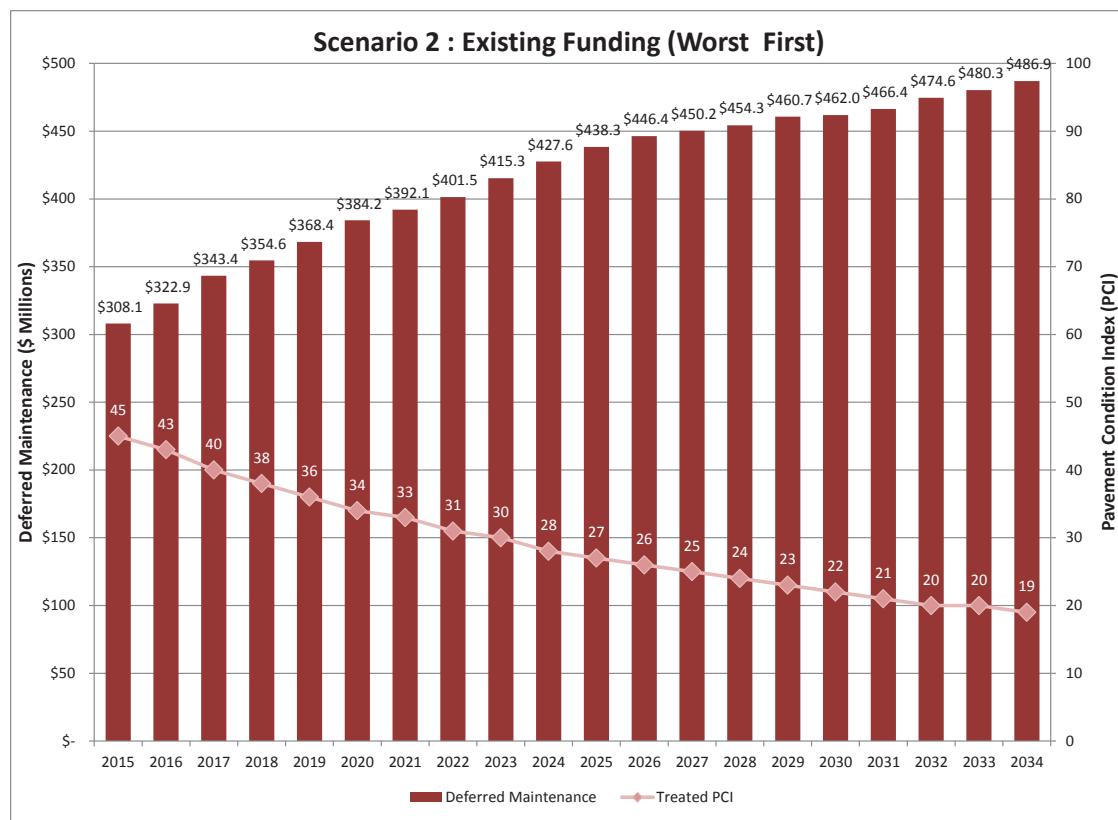
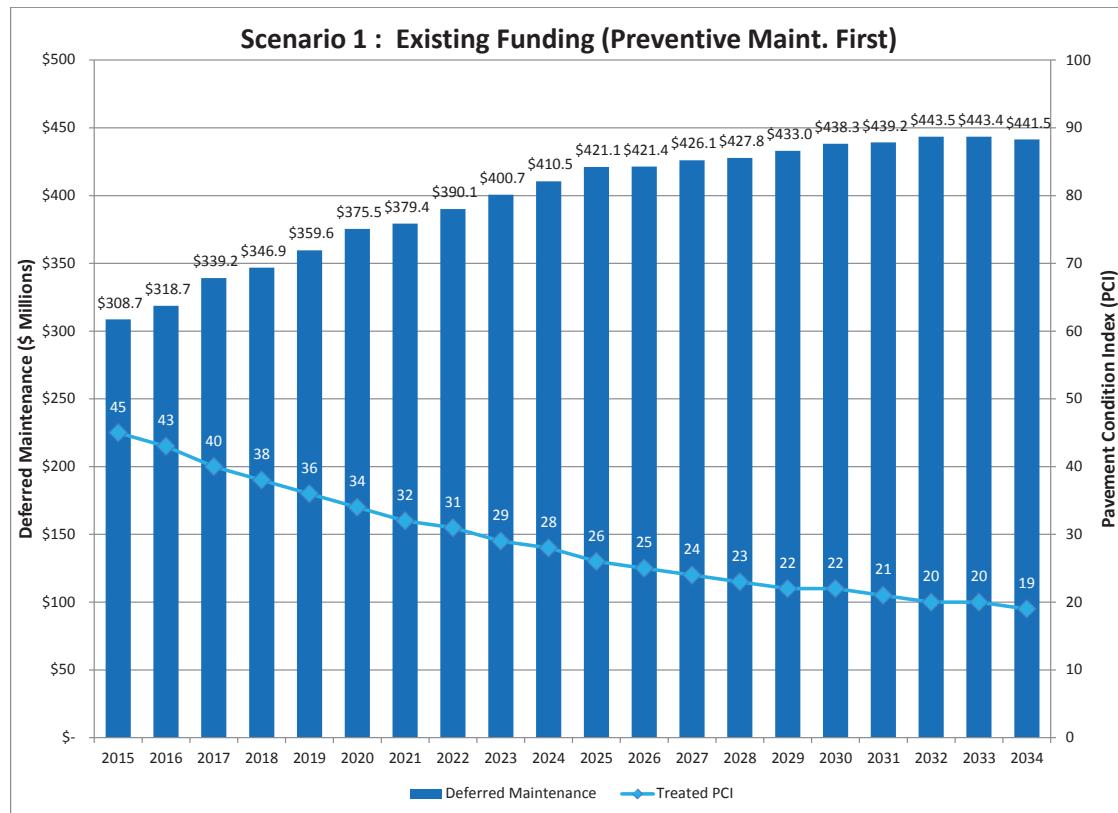


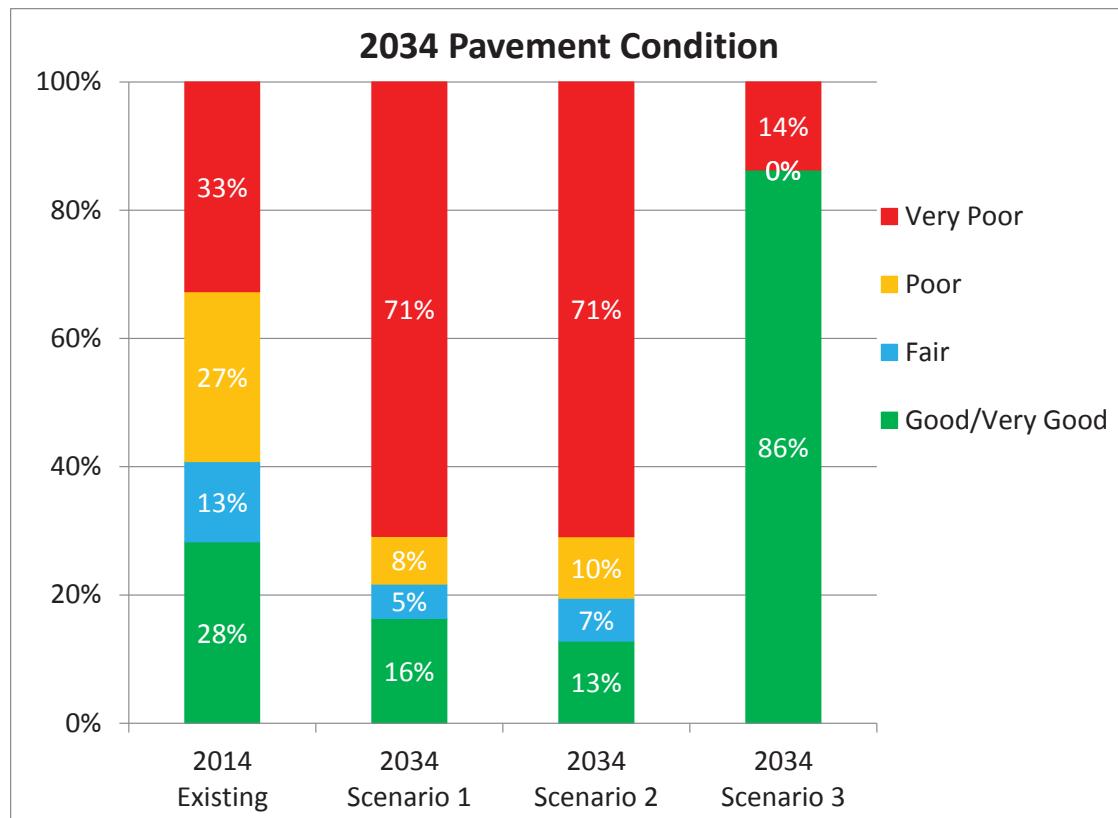
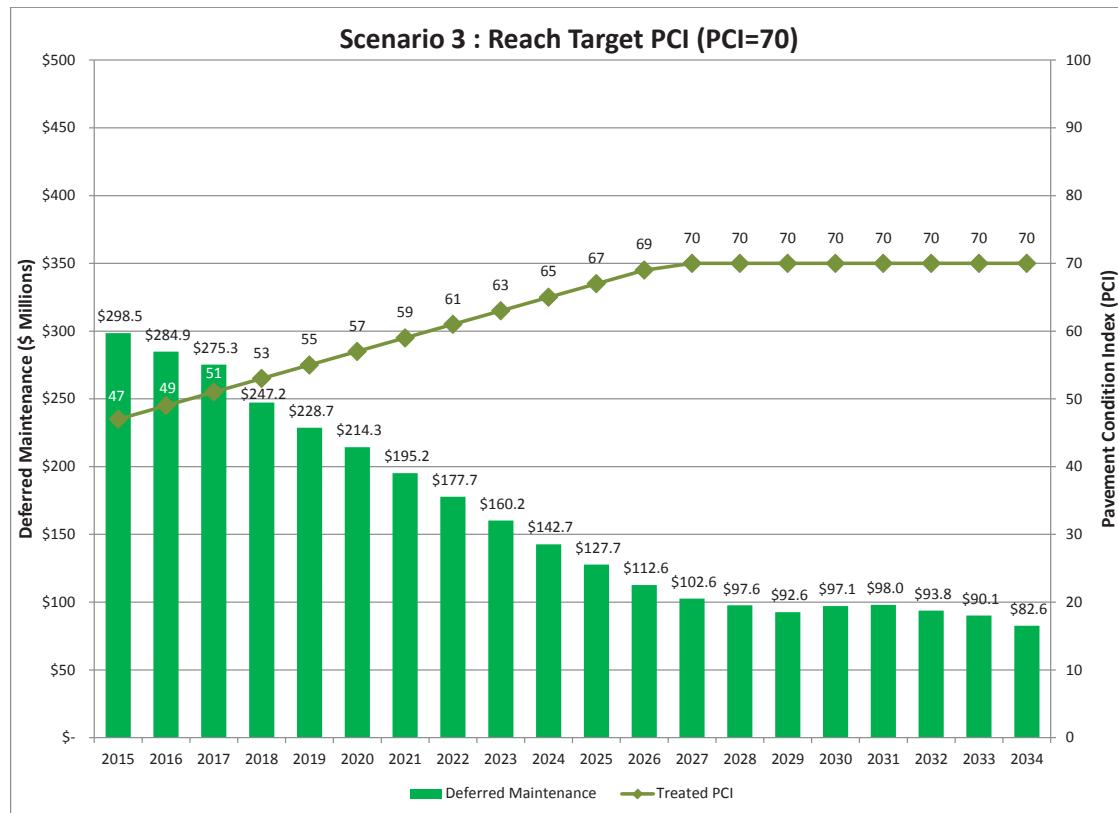
Mendocino County



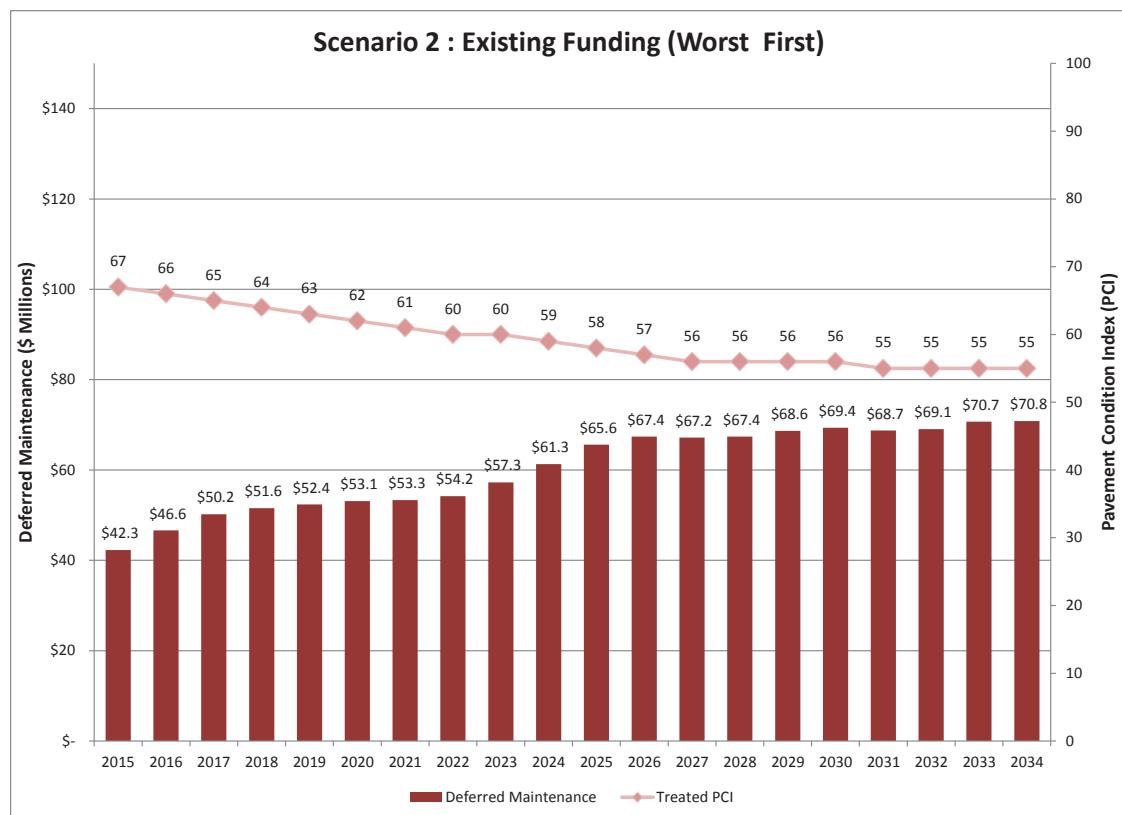
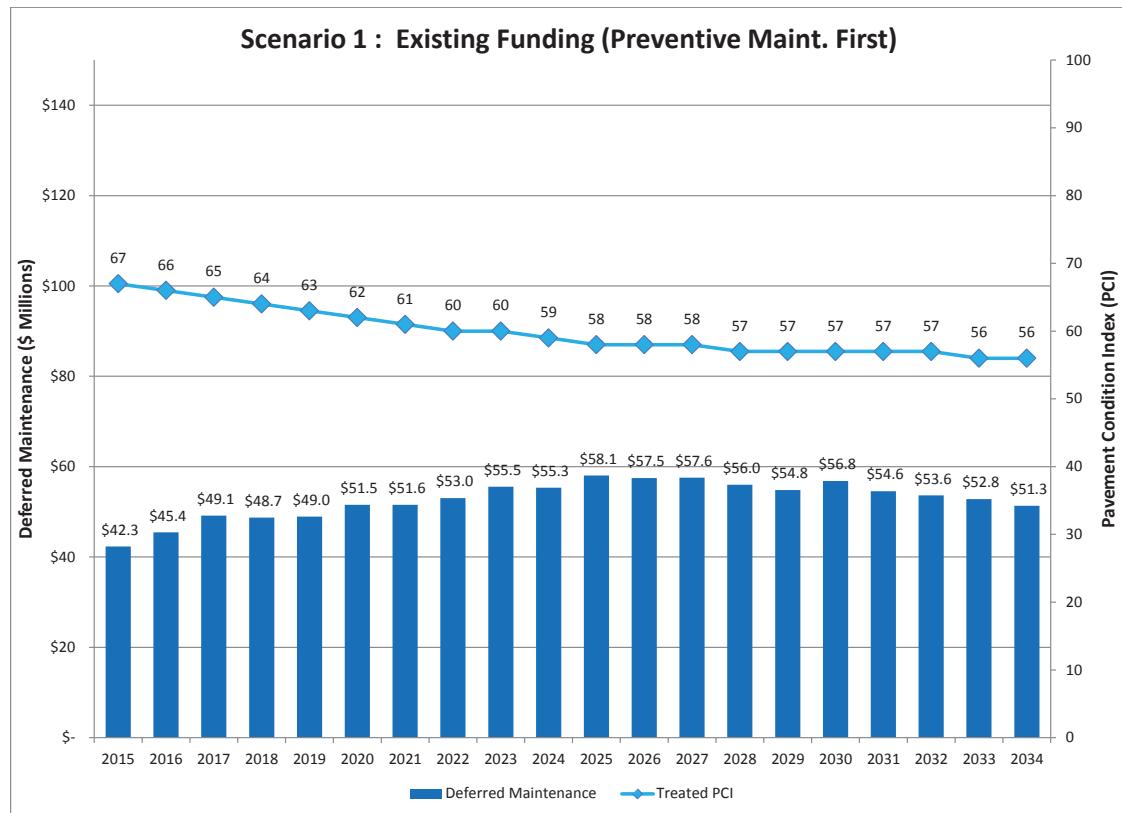


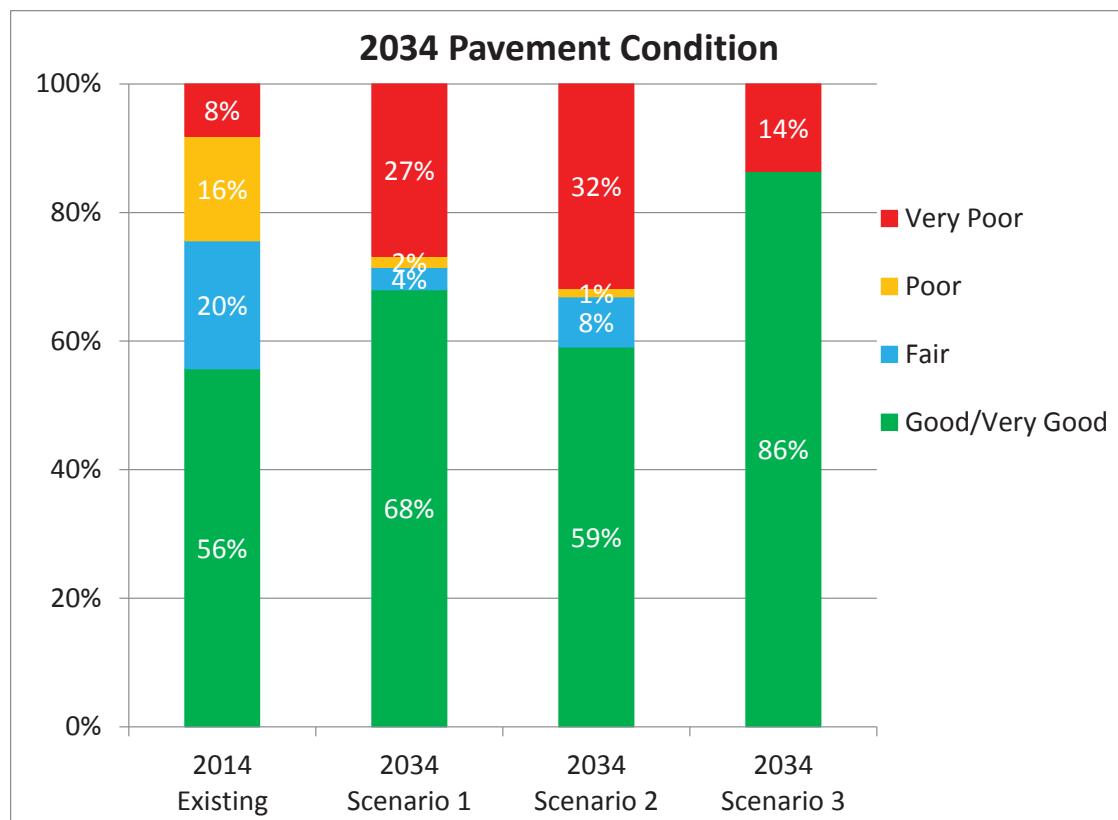
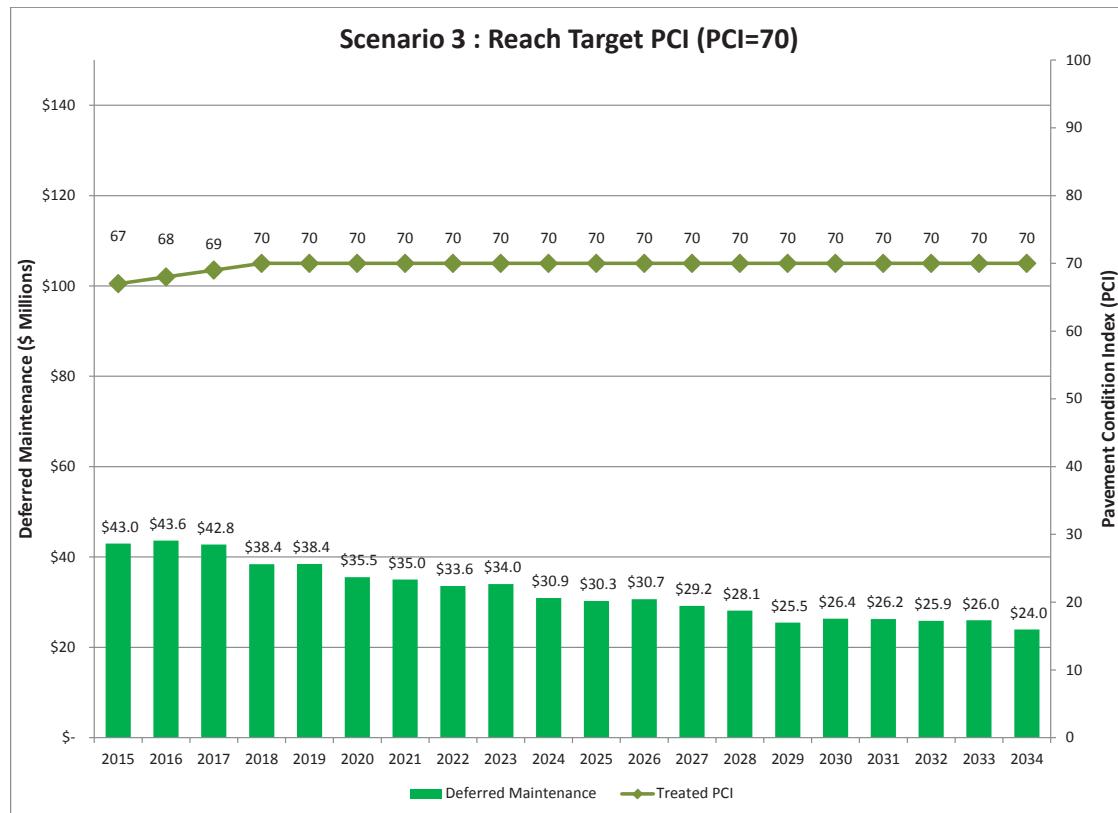
Modoc County



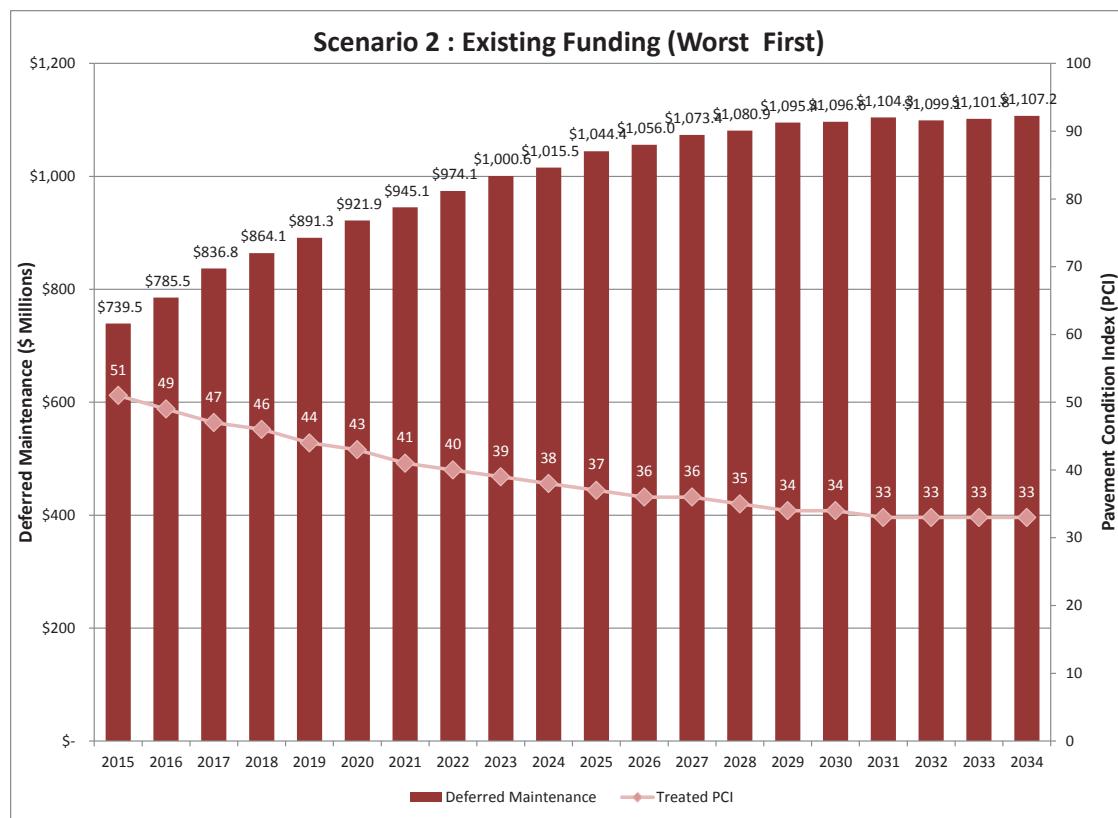
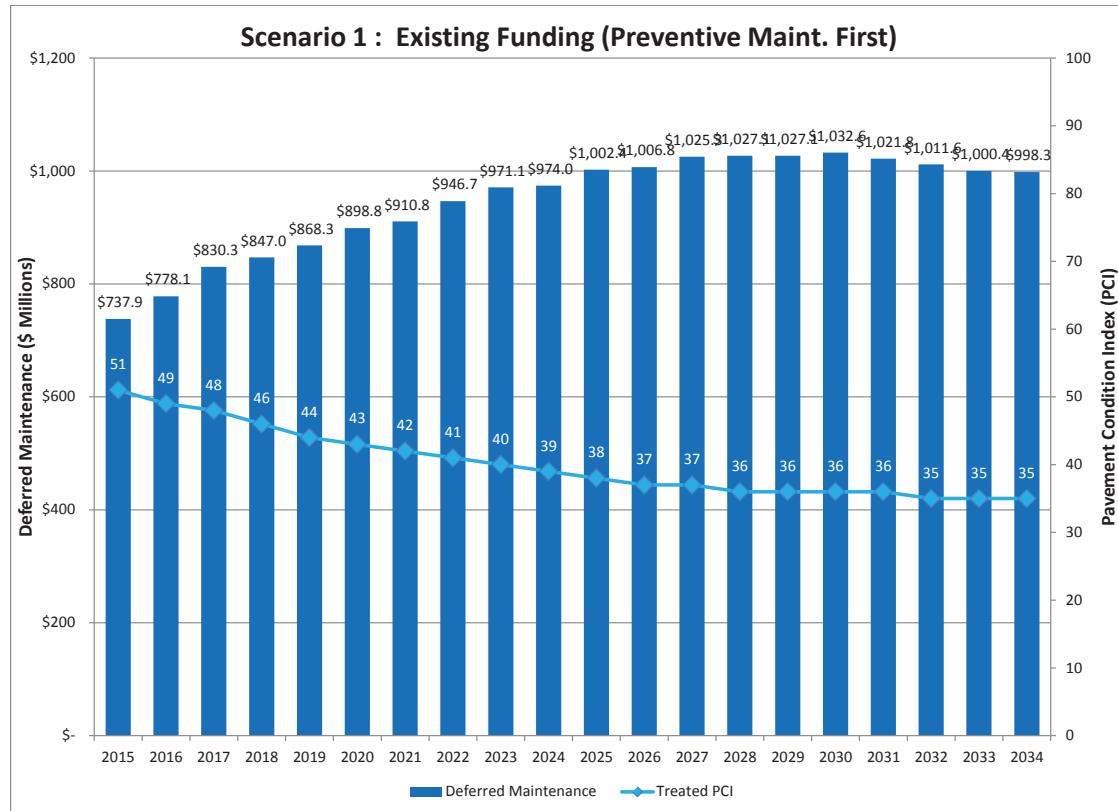


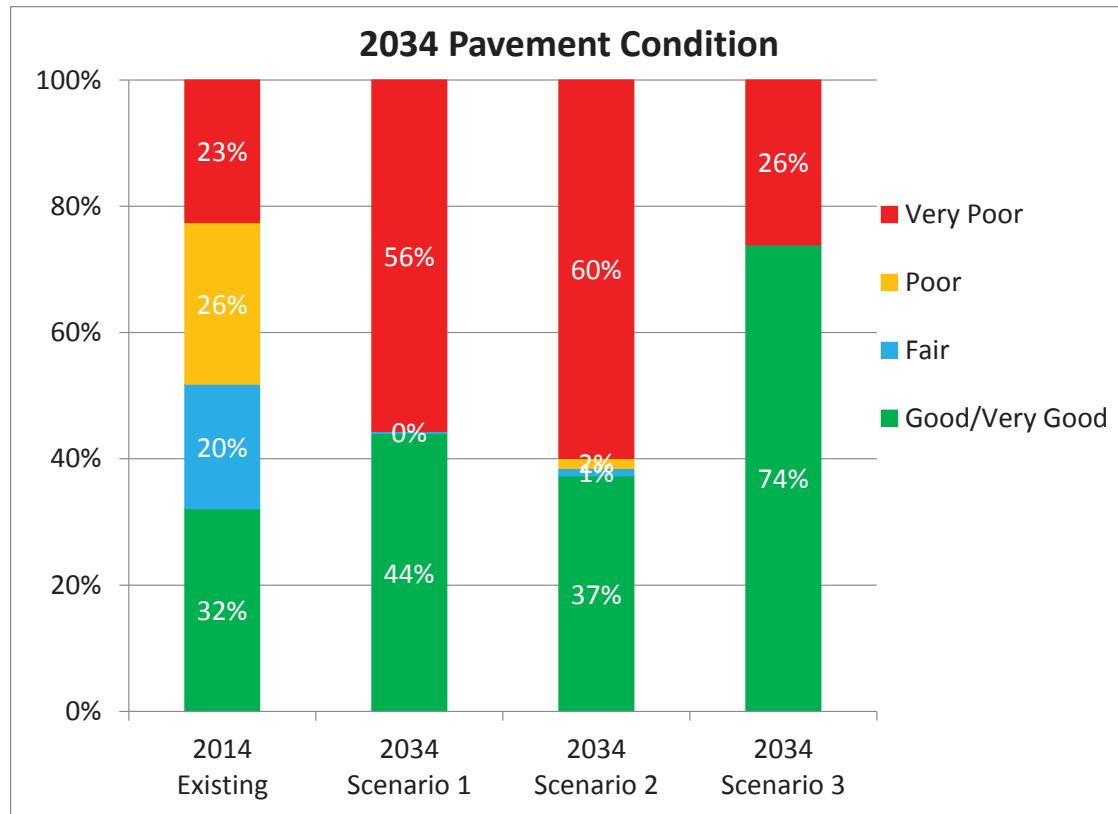
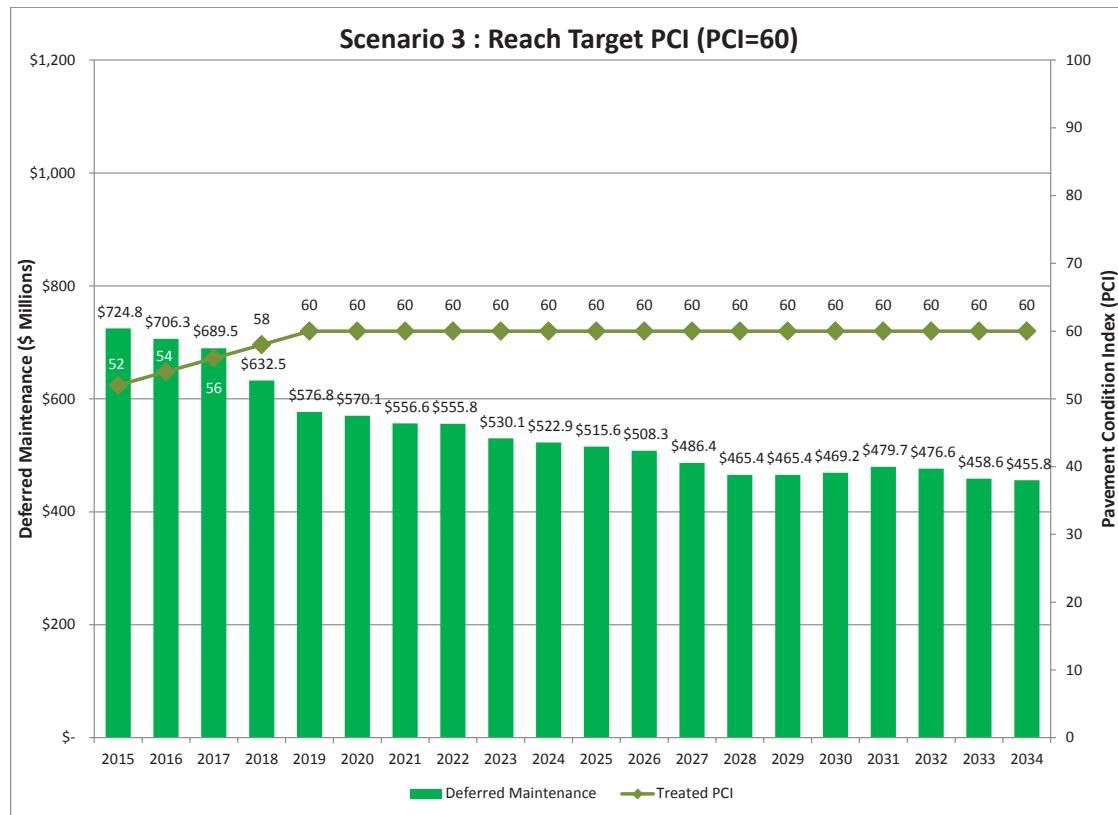
Mono County



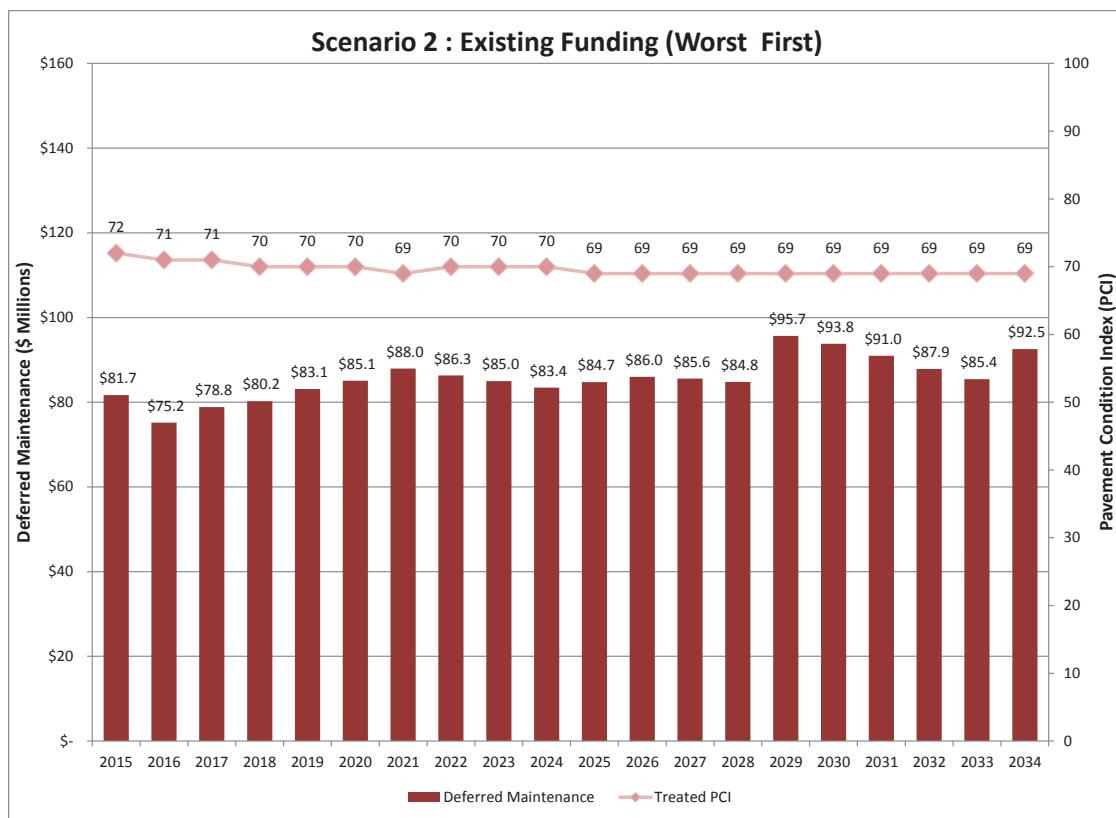
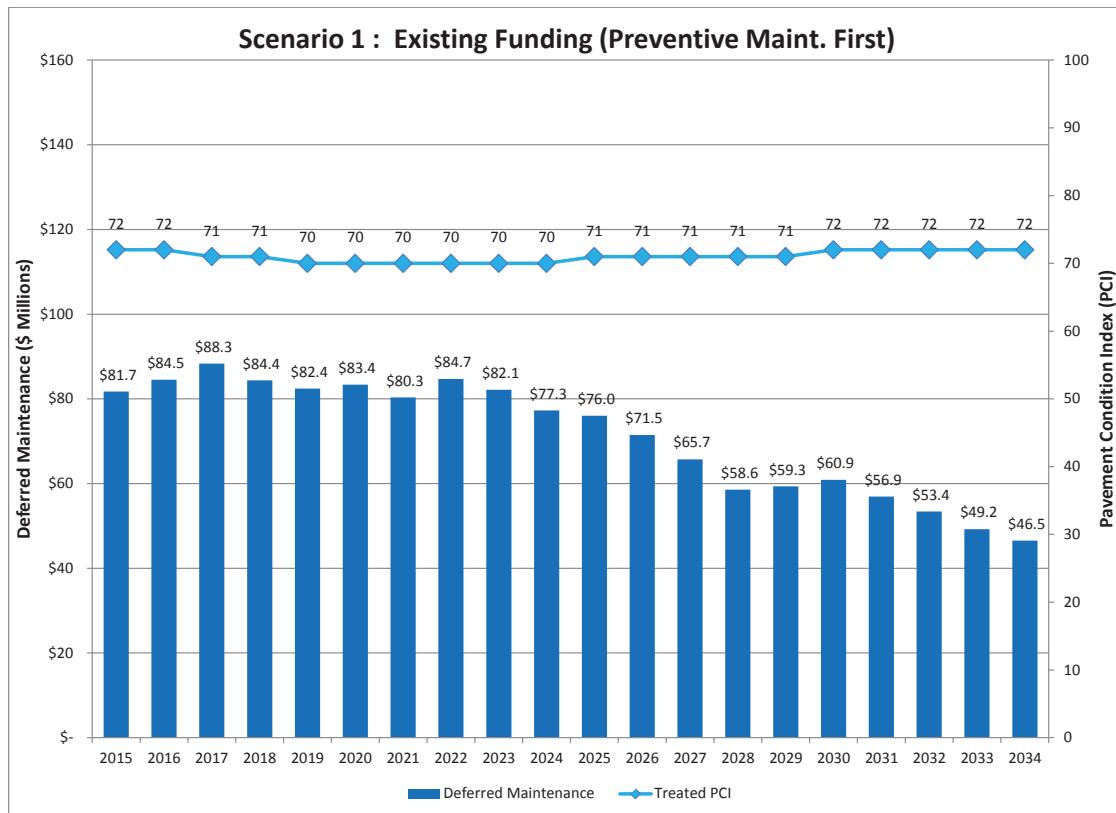


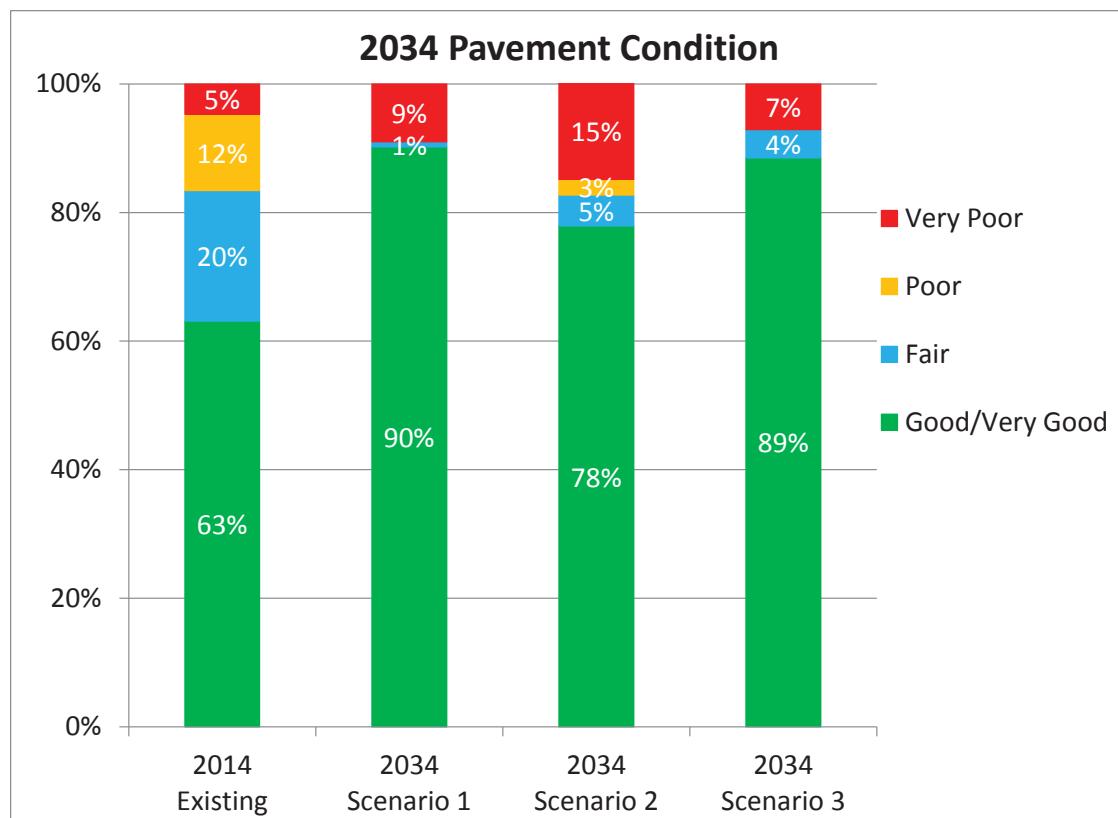
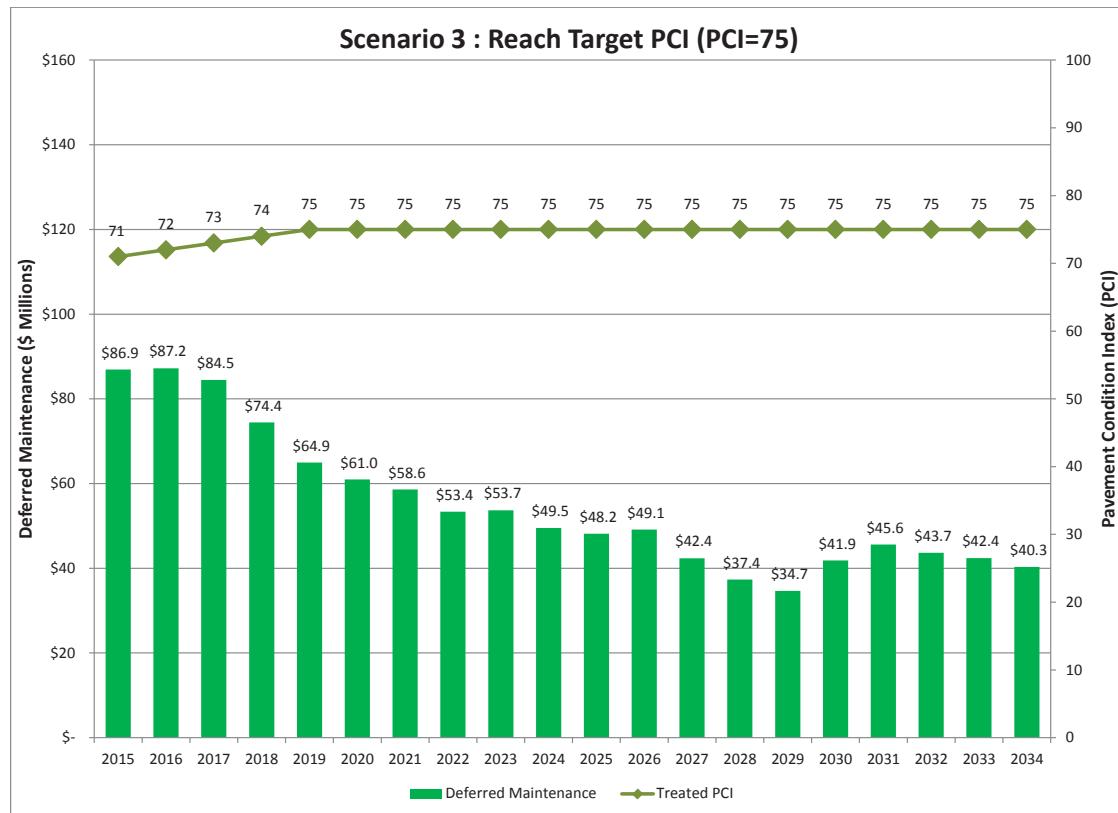
Monterey County



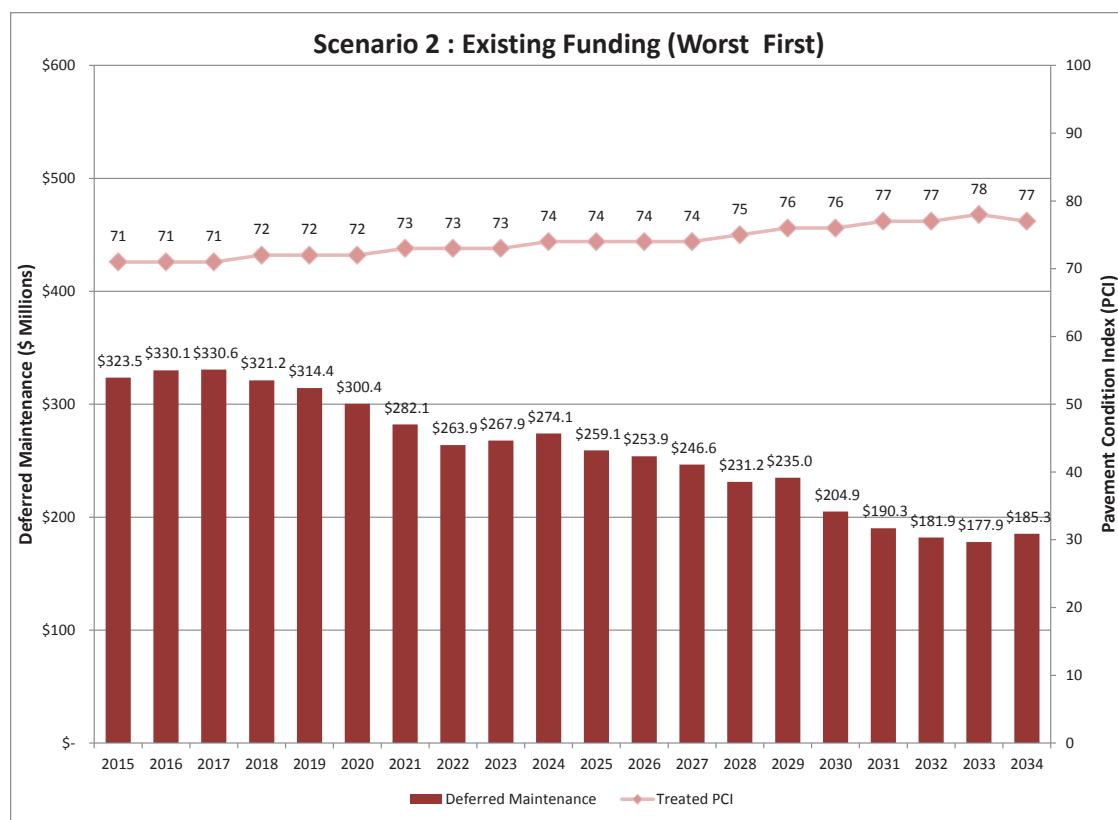
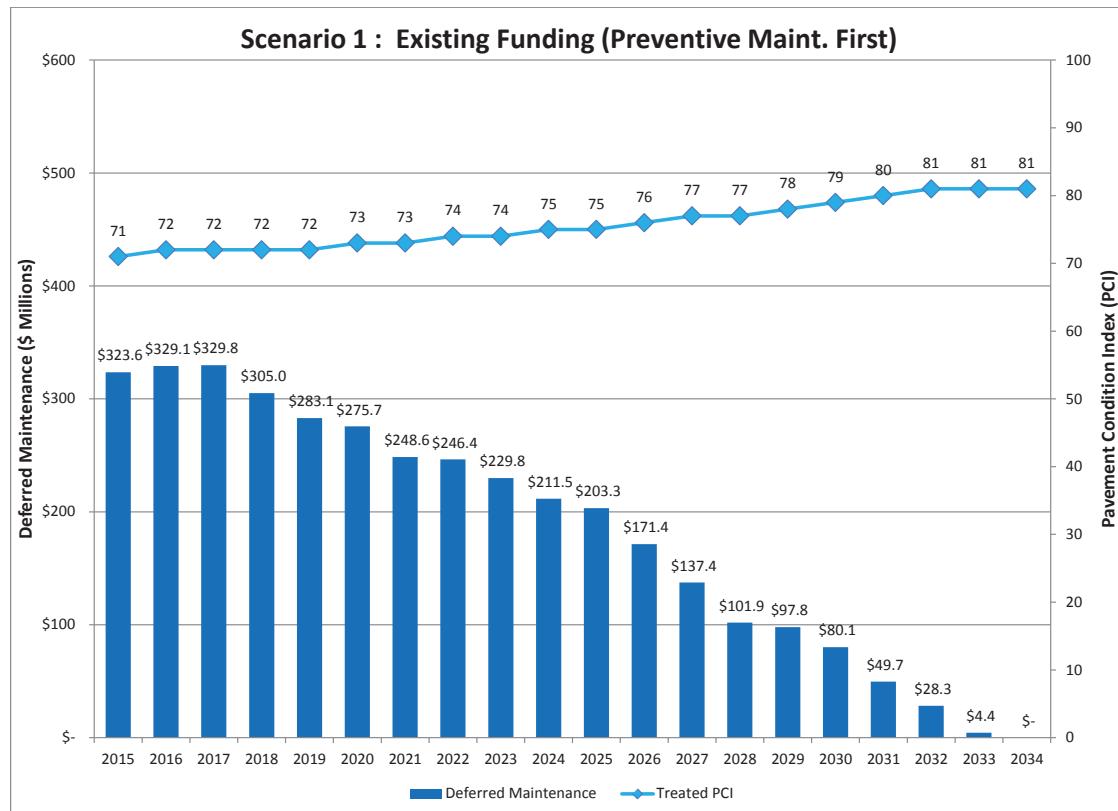


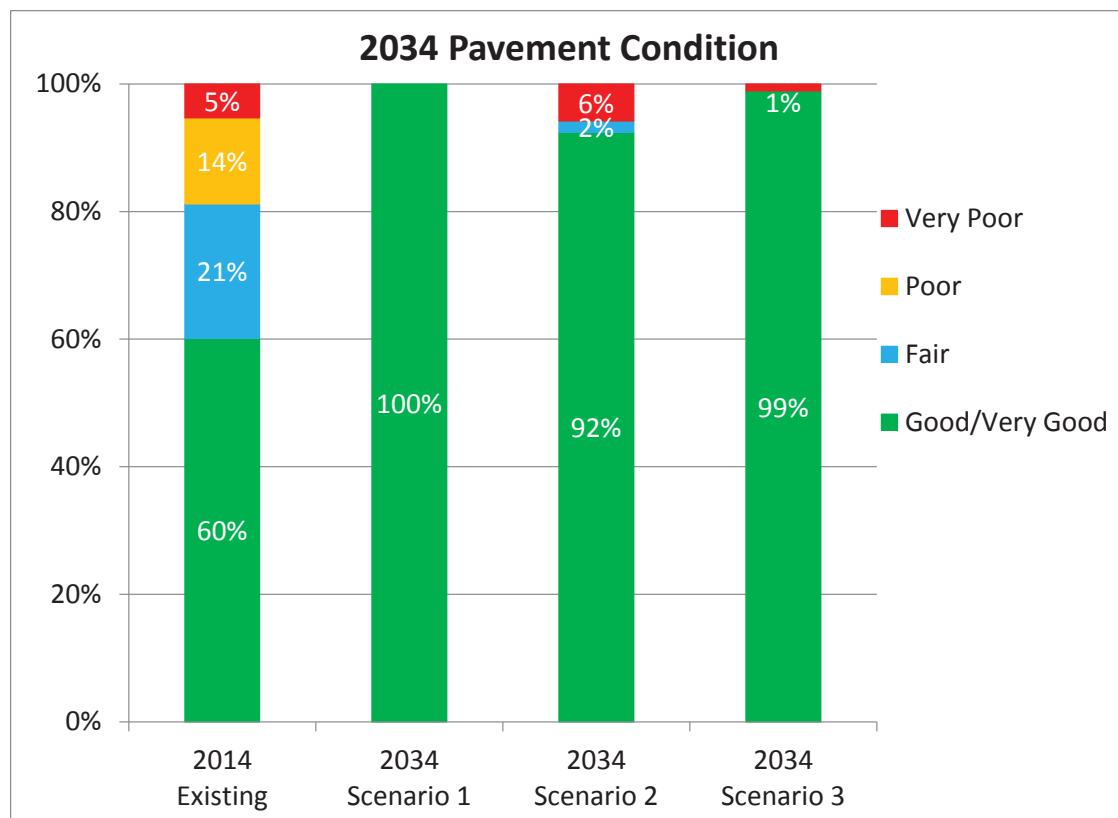
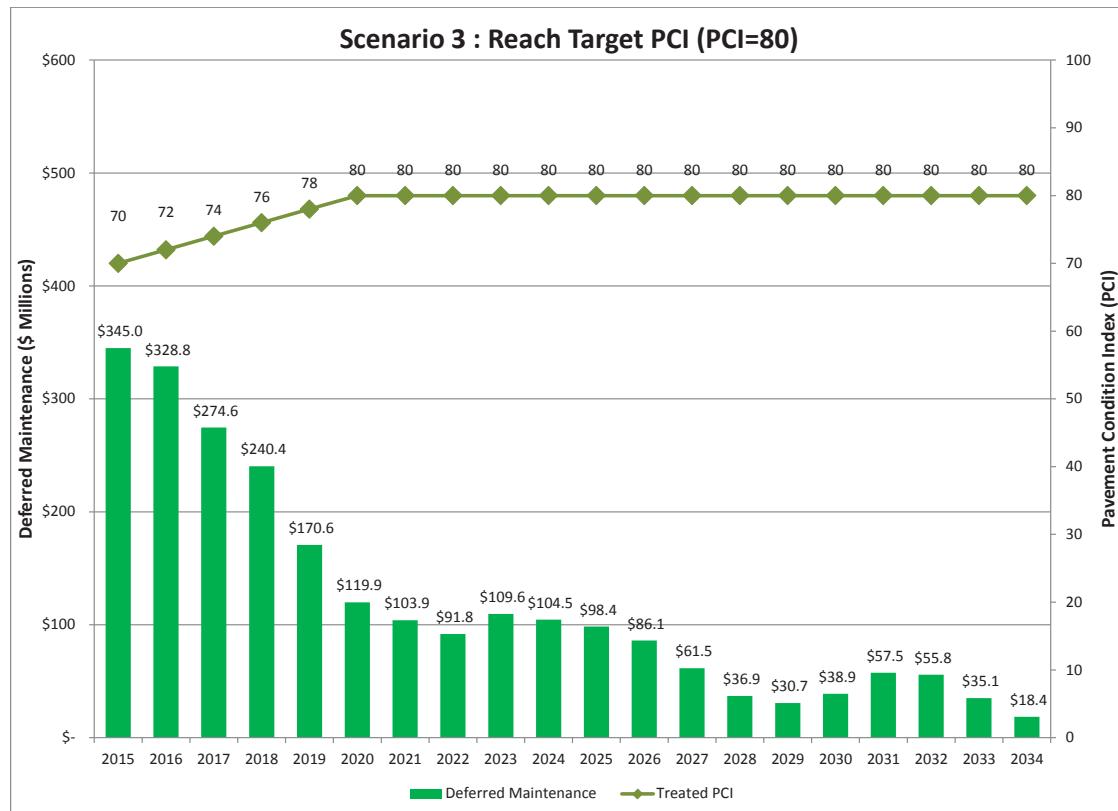
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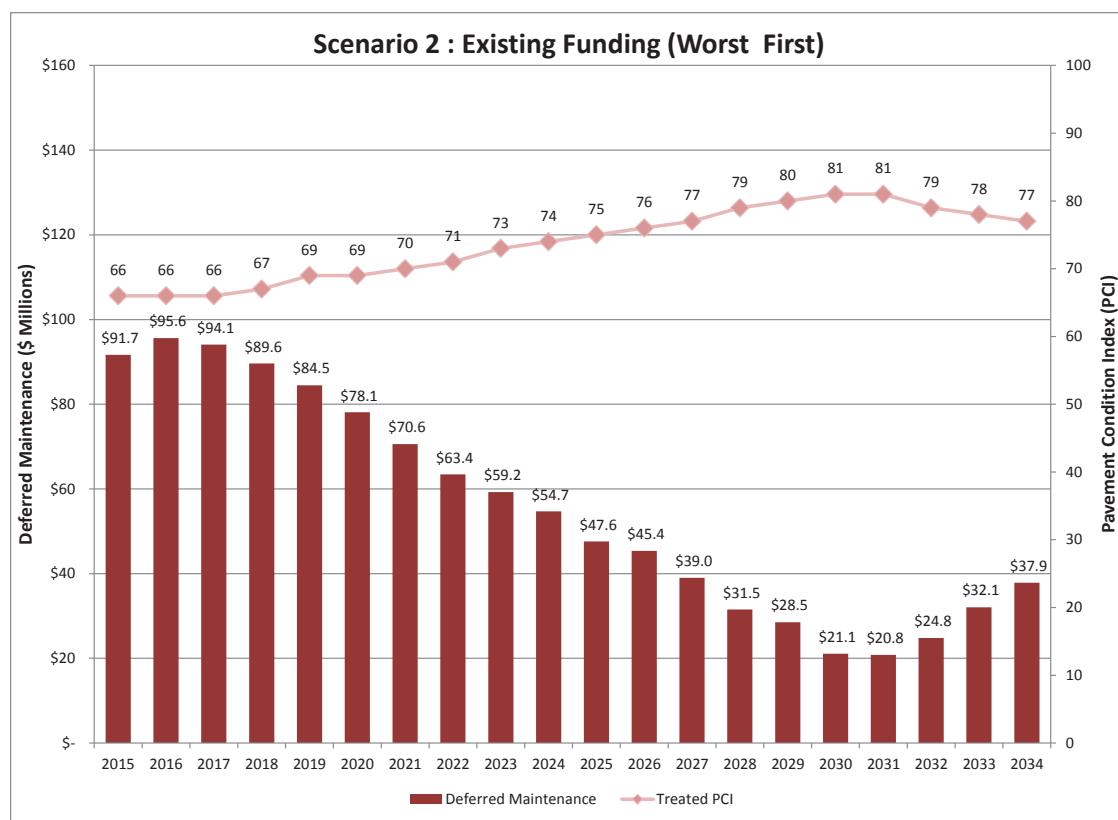
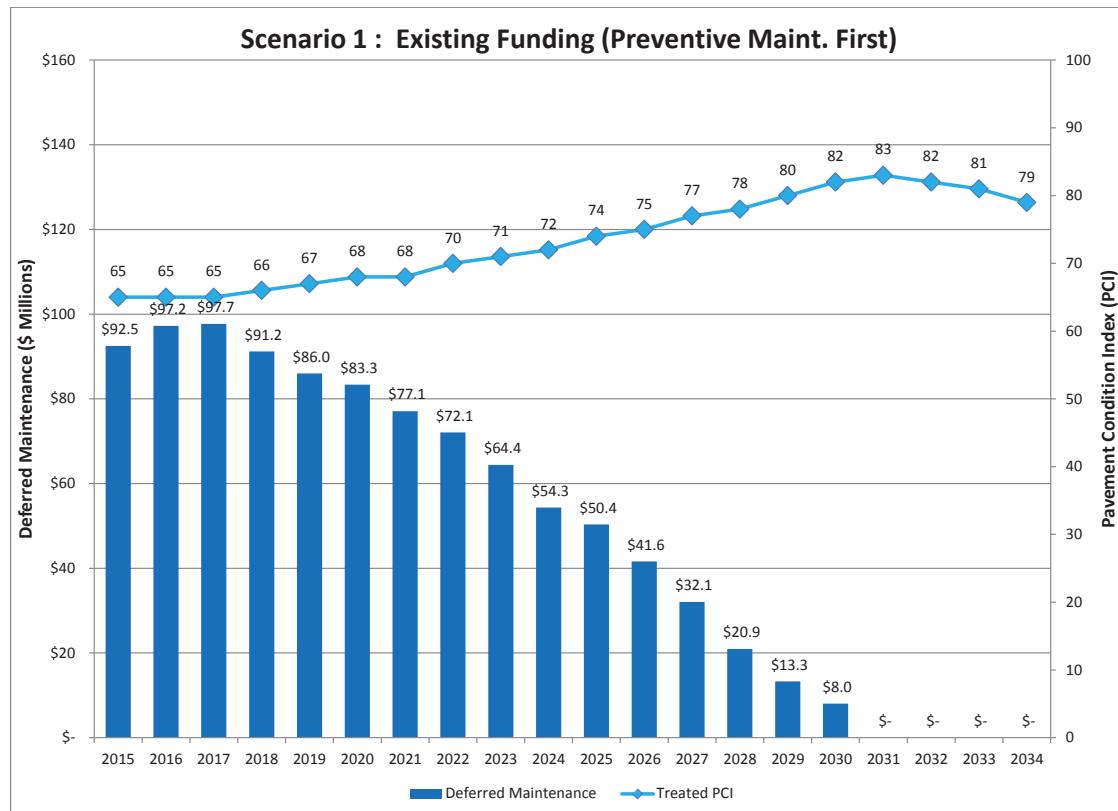


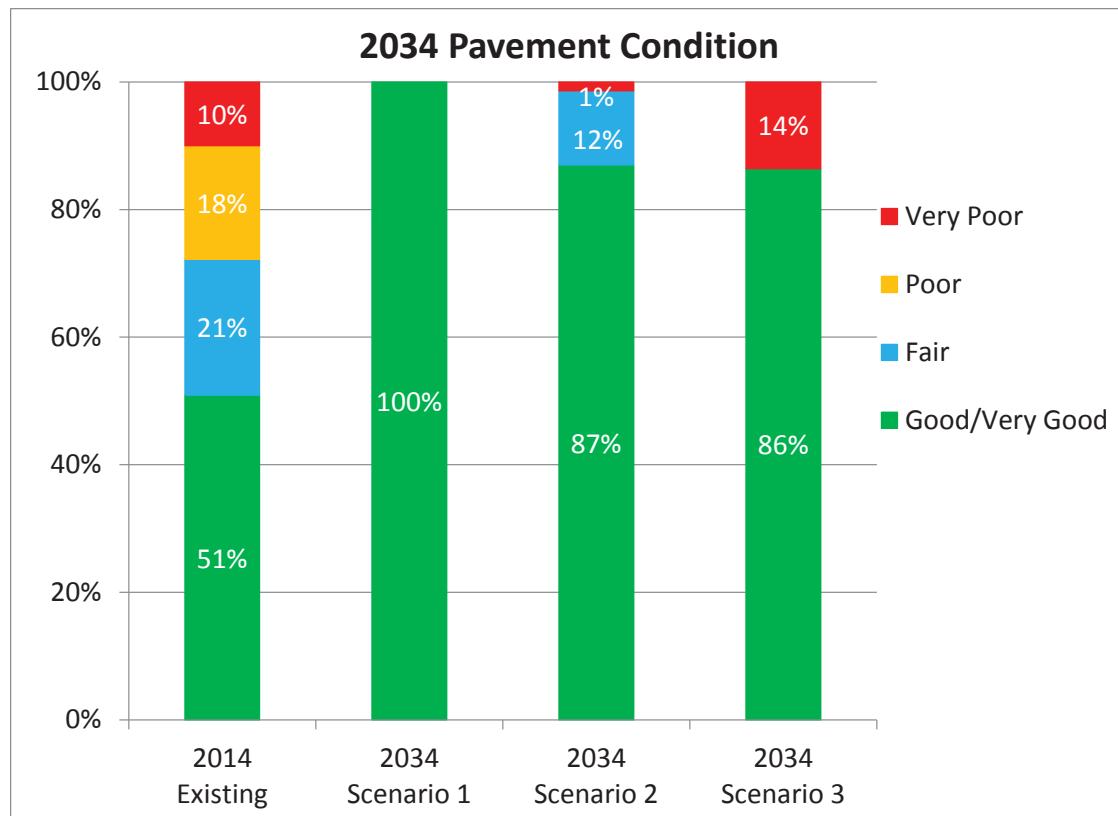
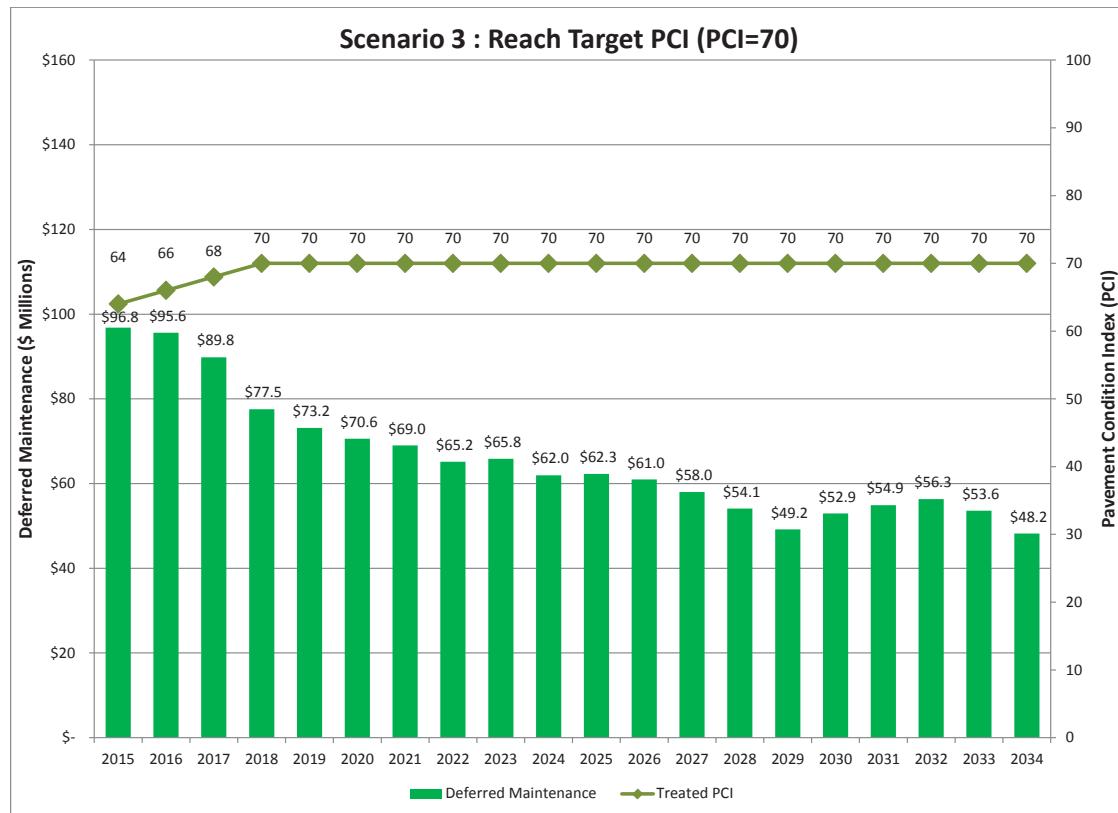
Placer County



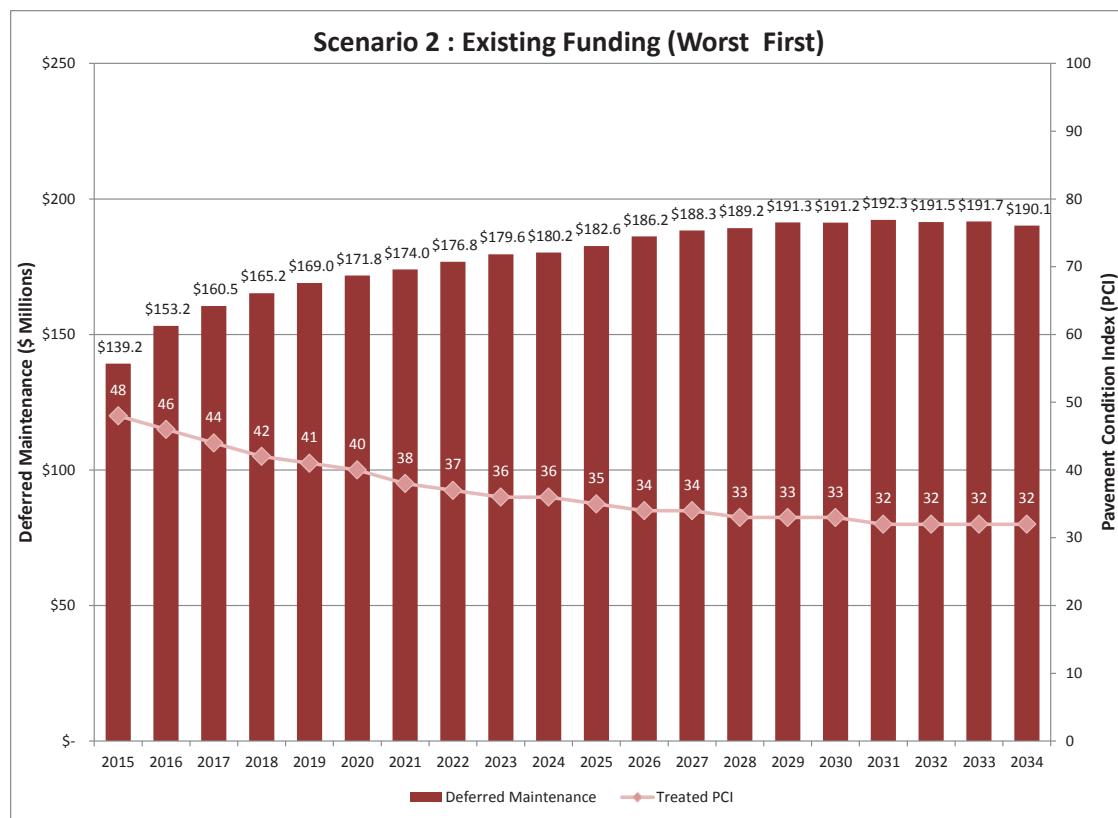
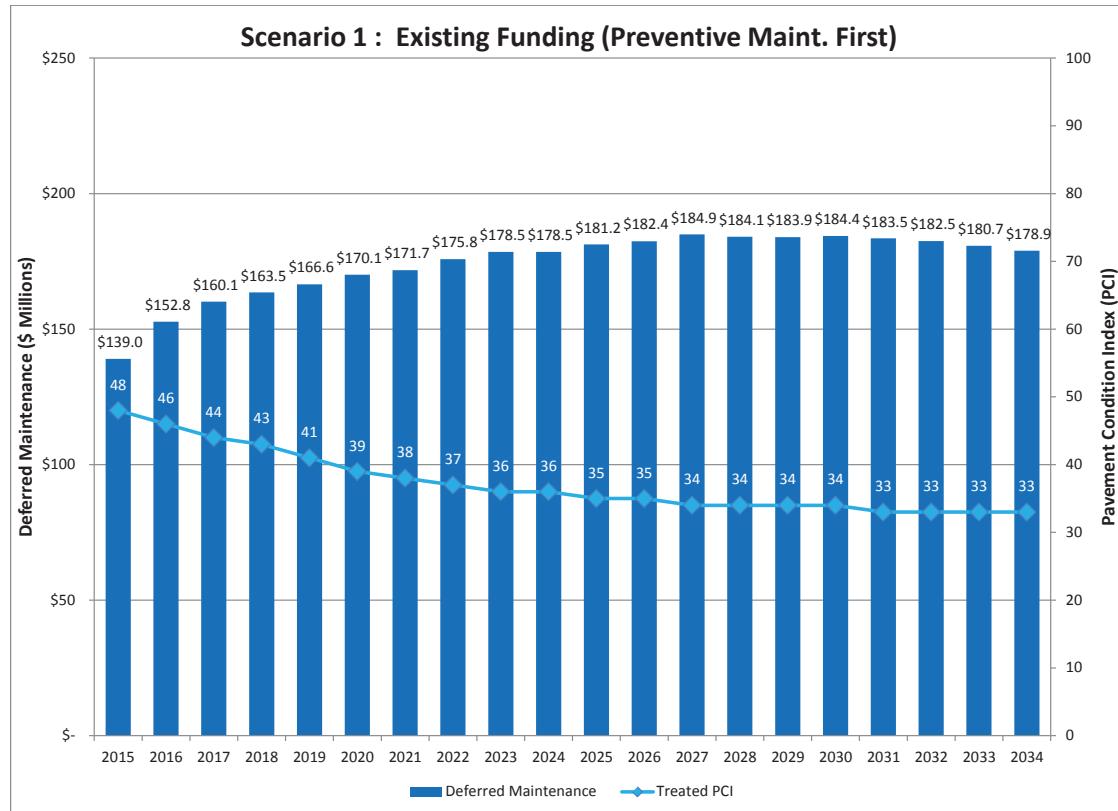


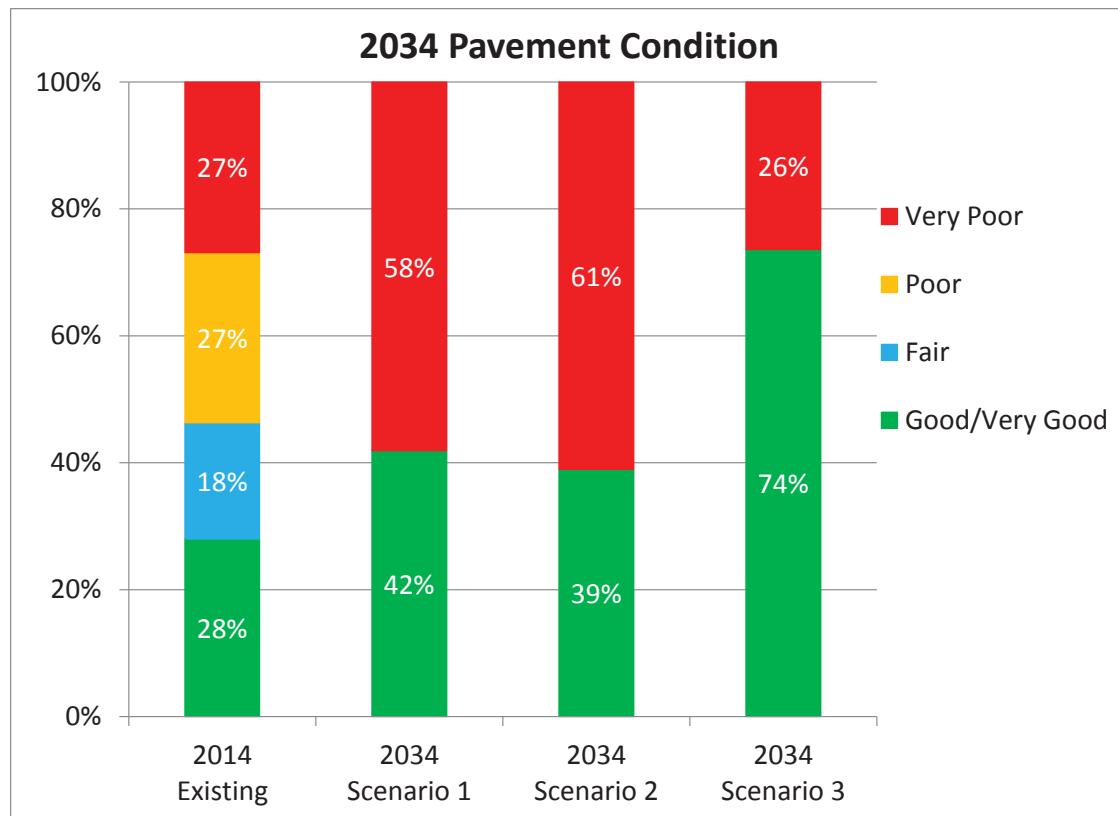
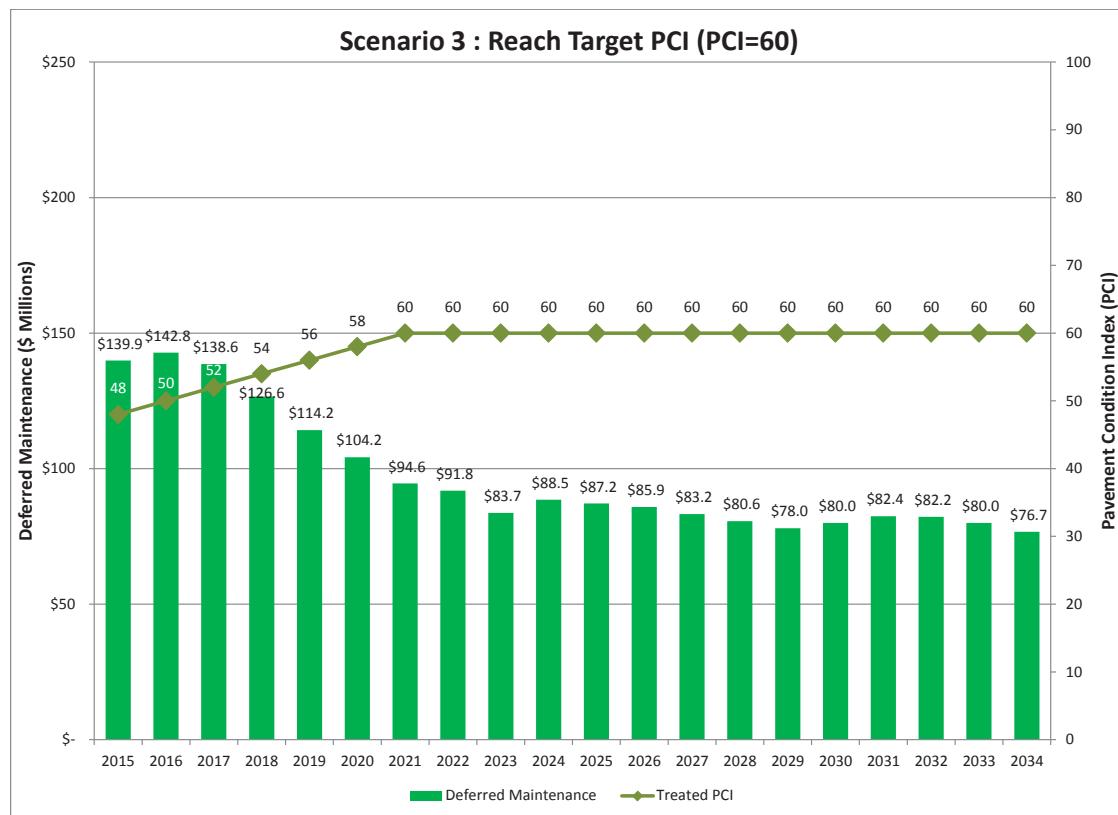
Plumas County



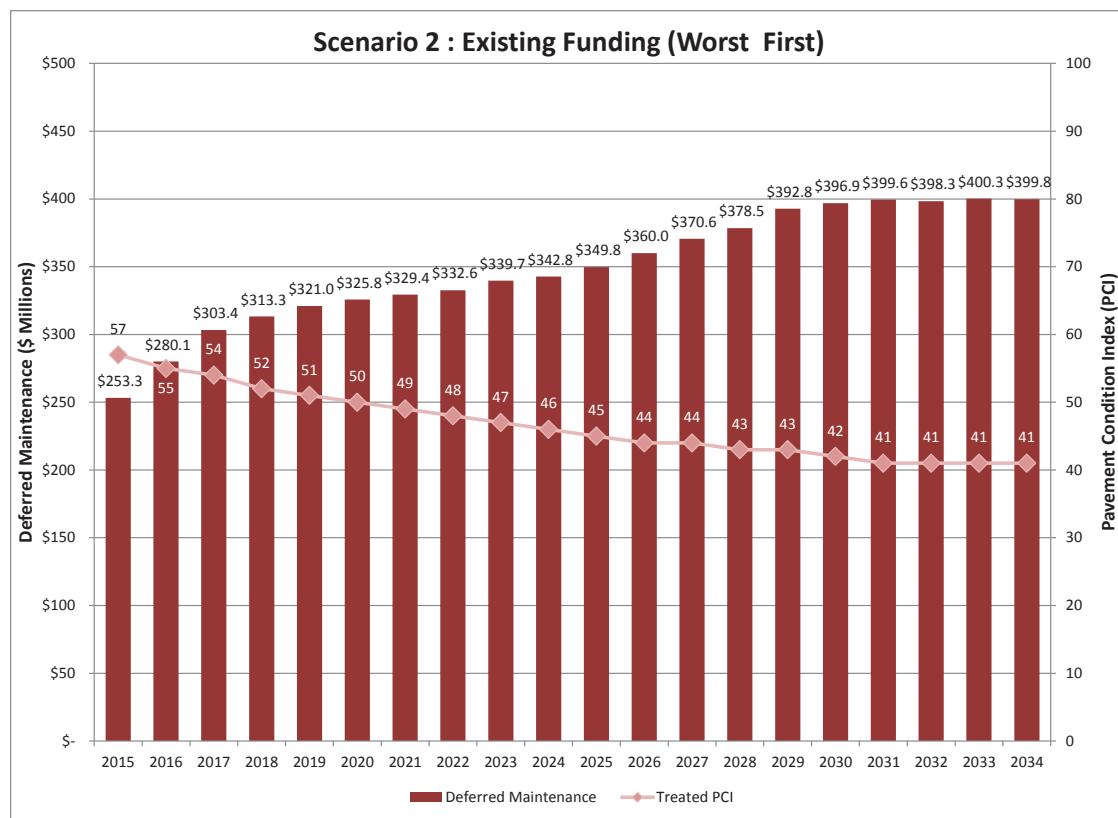
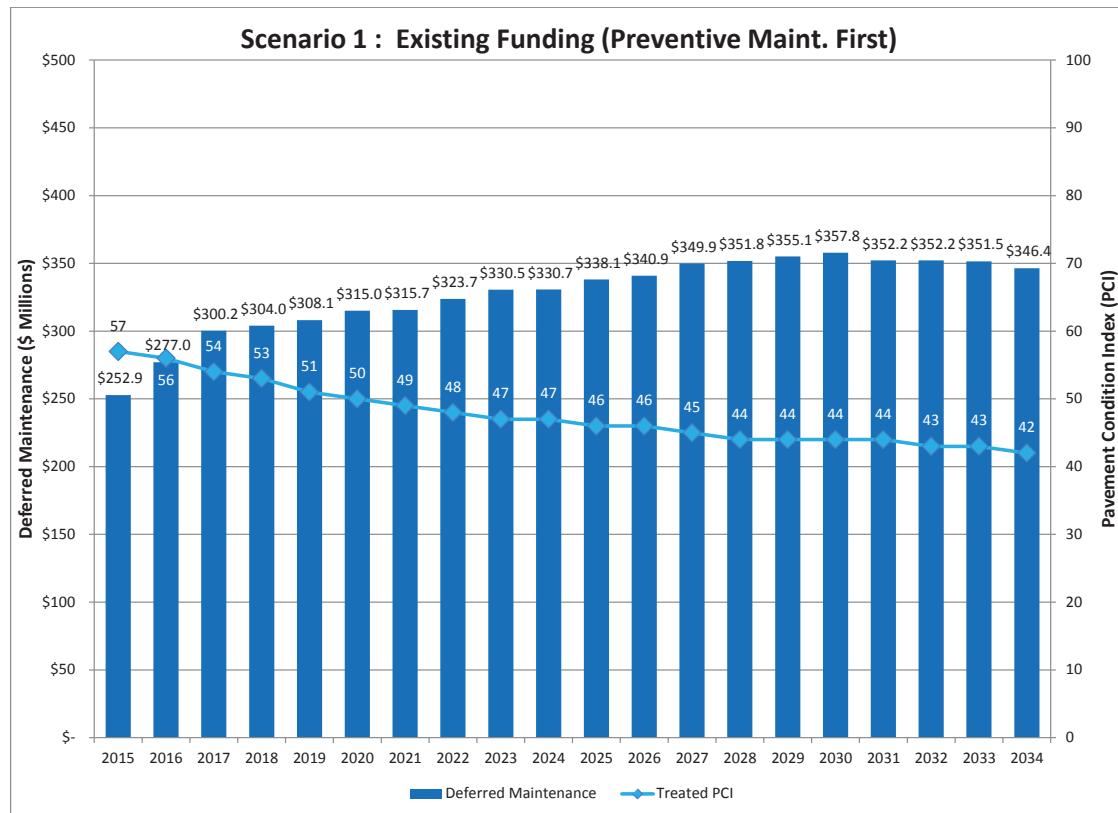


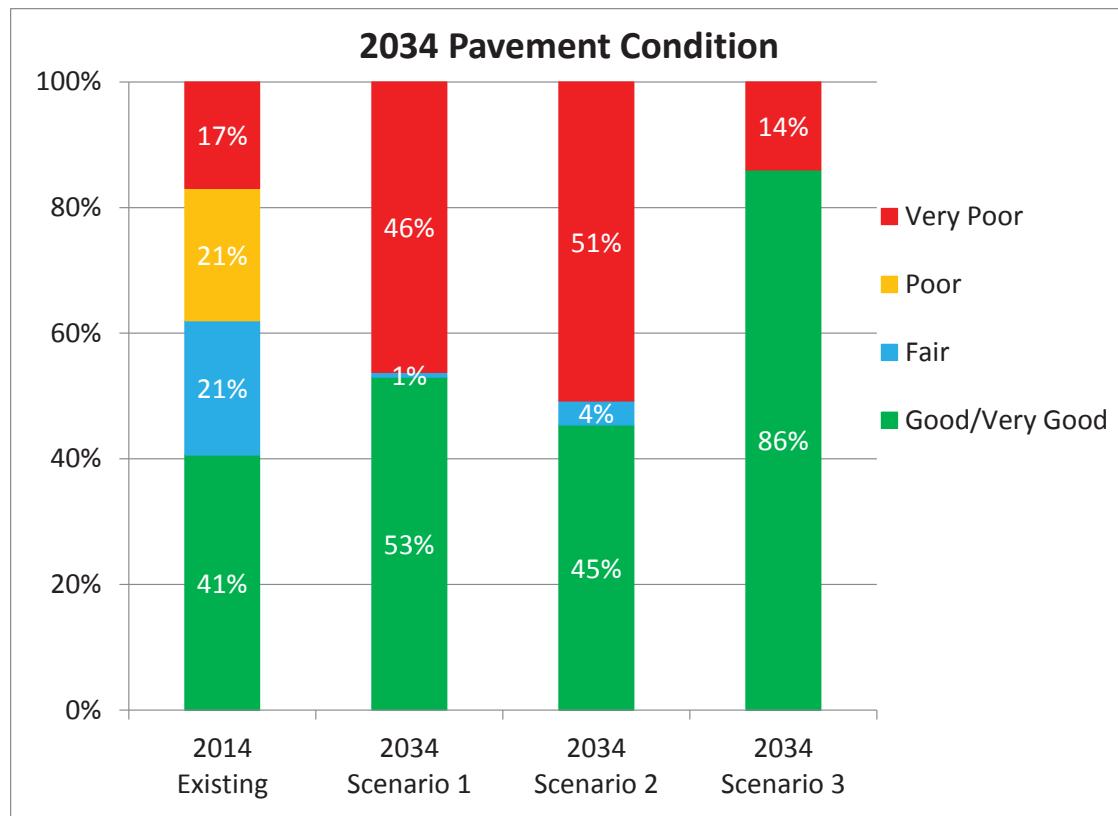
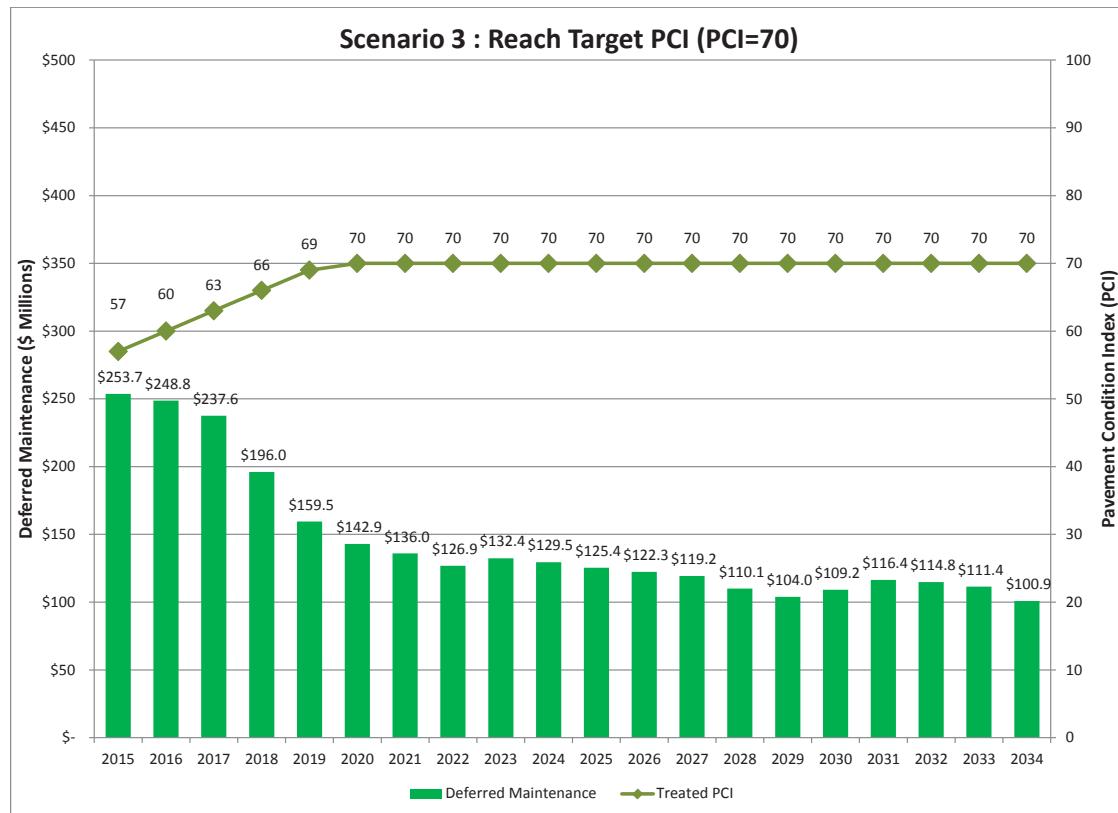
San Benito County



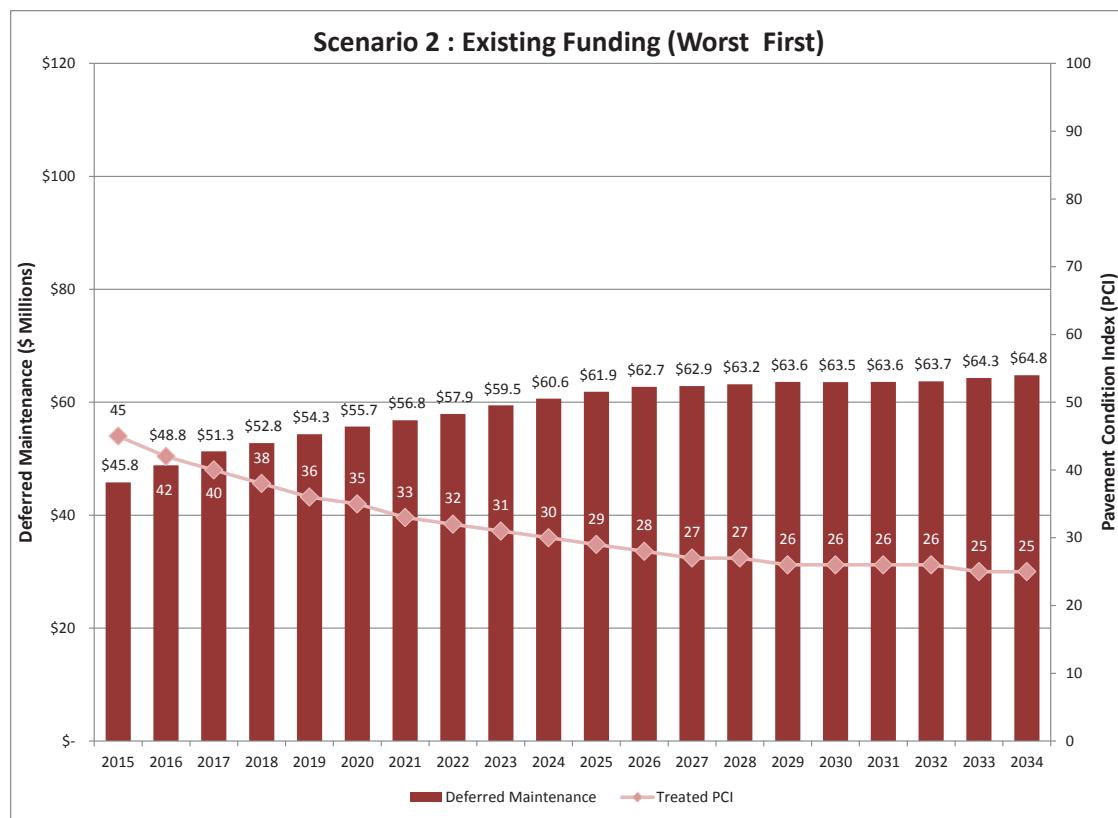
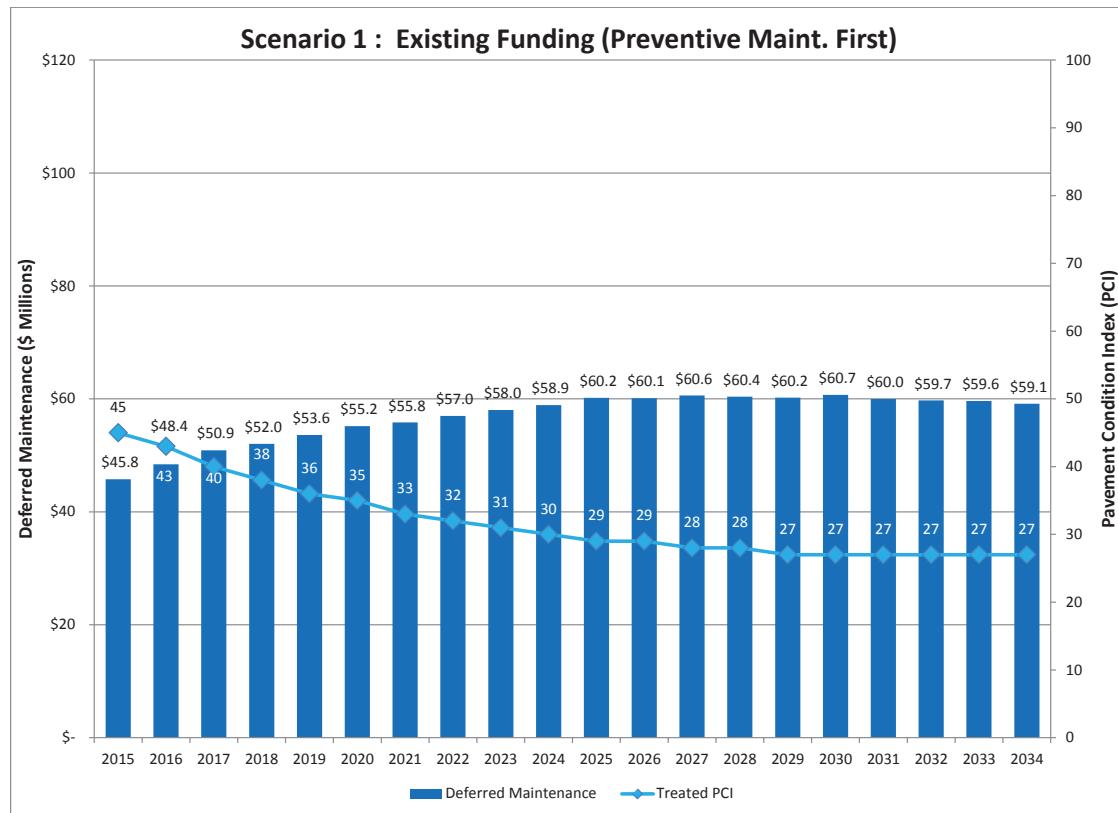


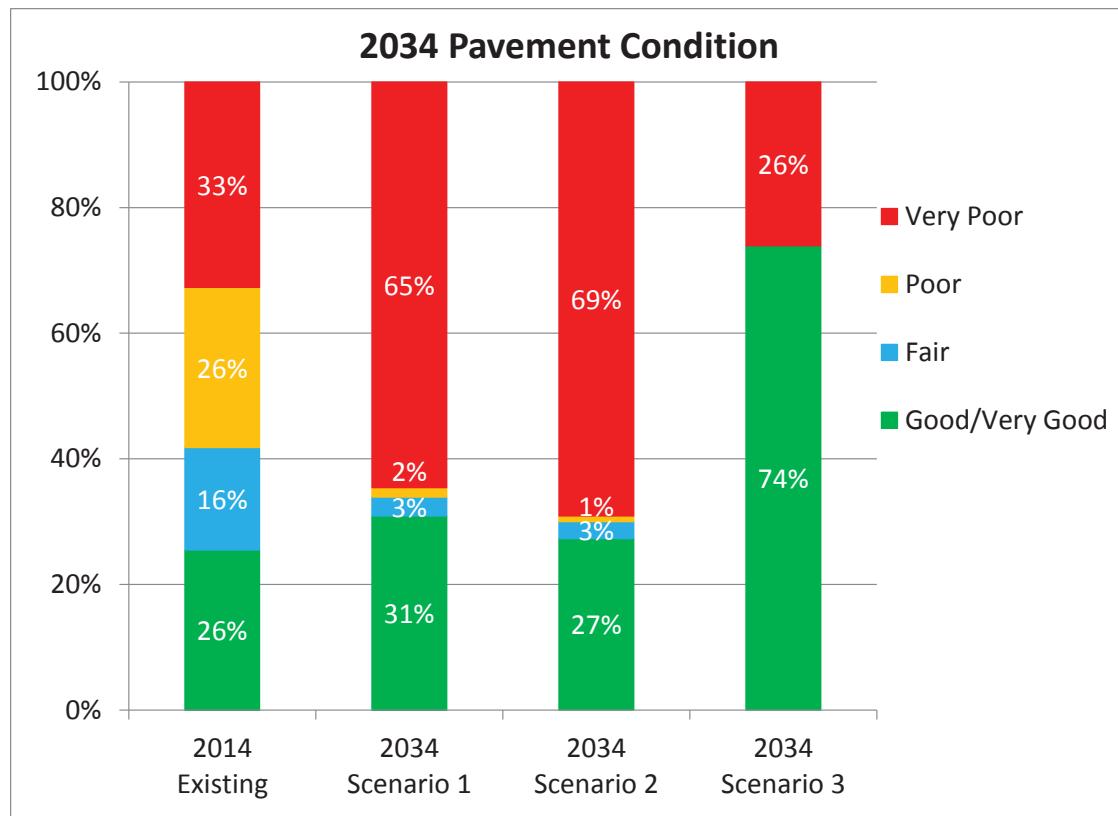
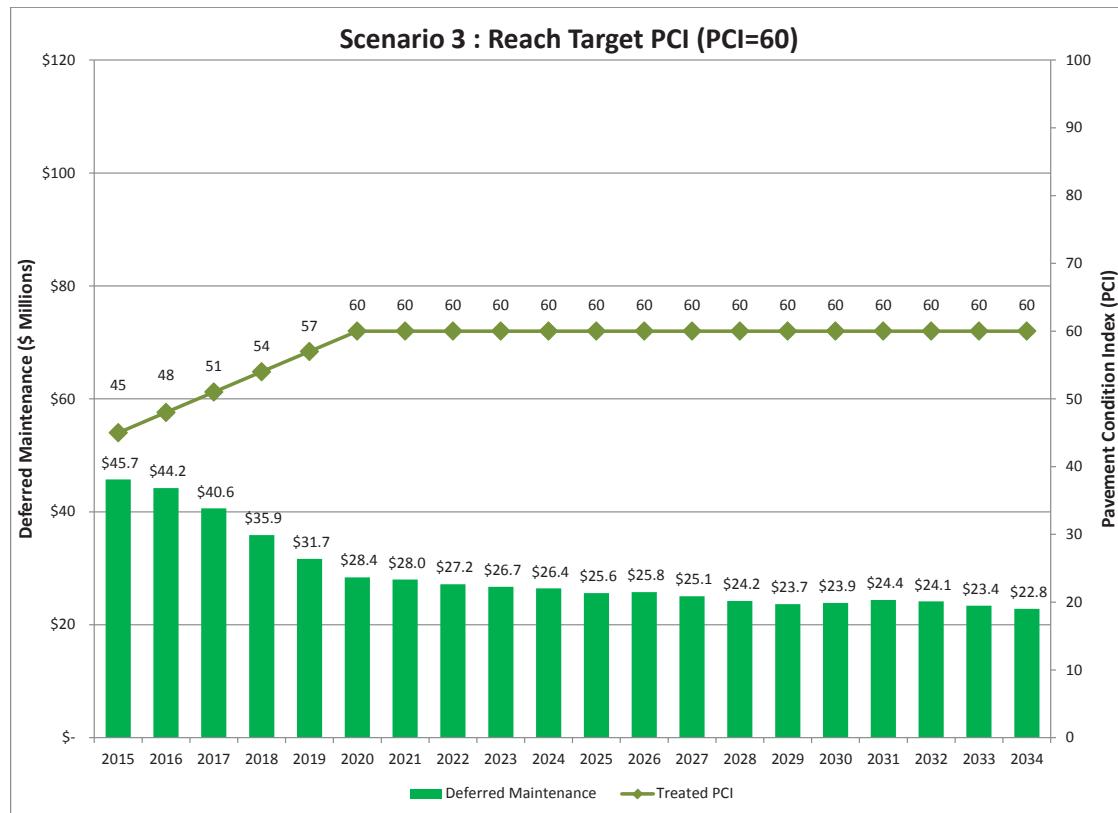
Santa Cruz County



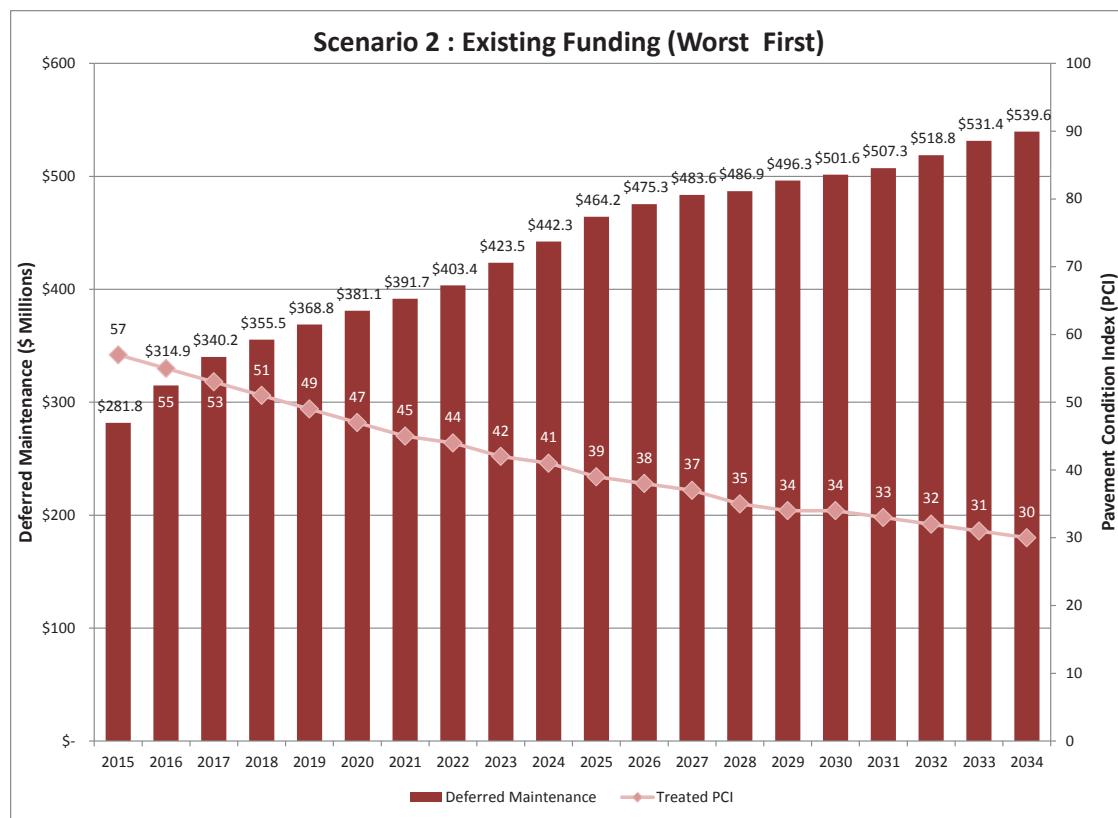
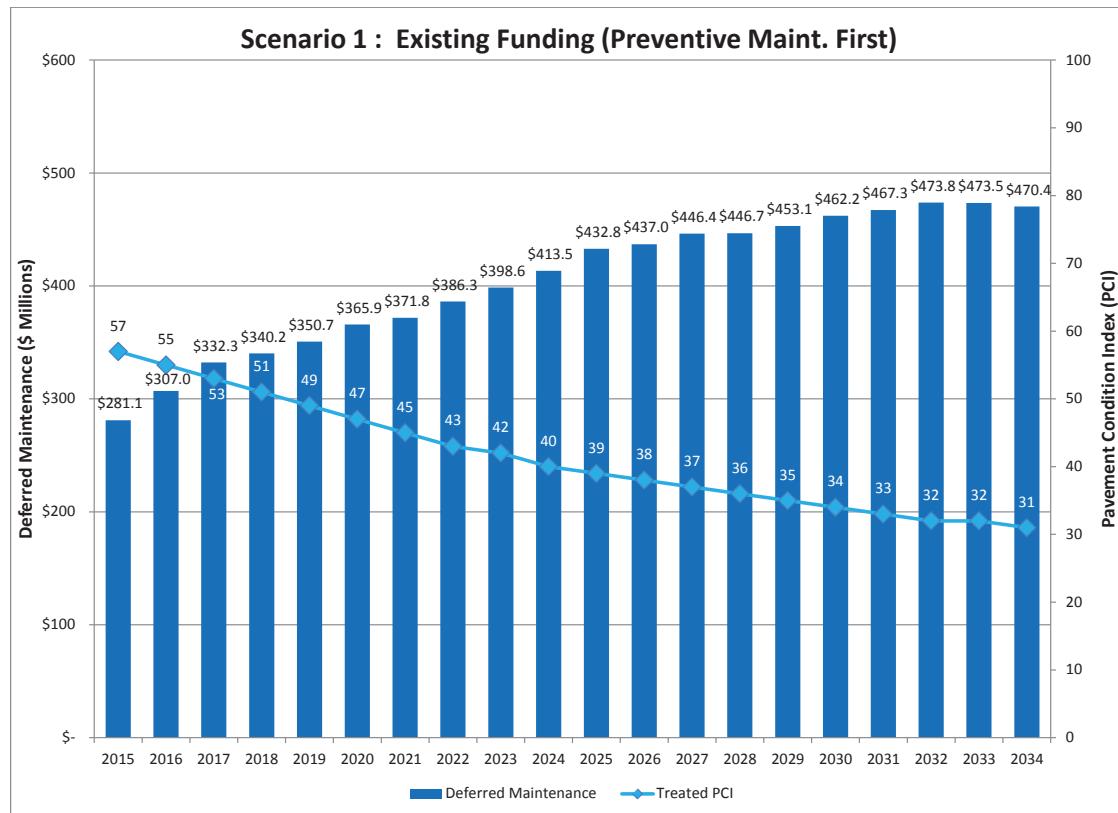


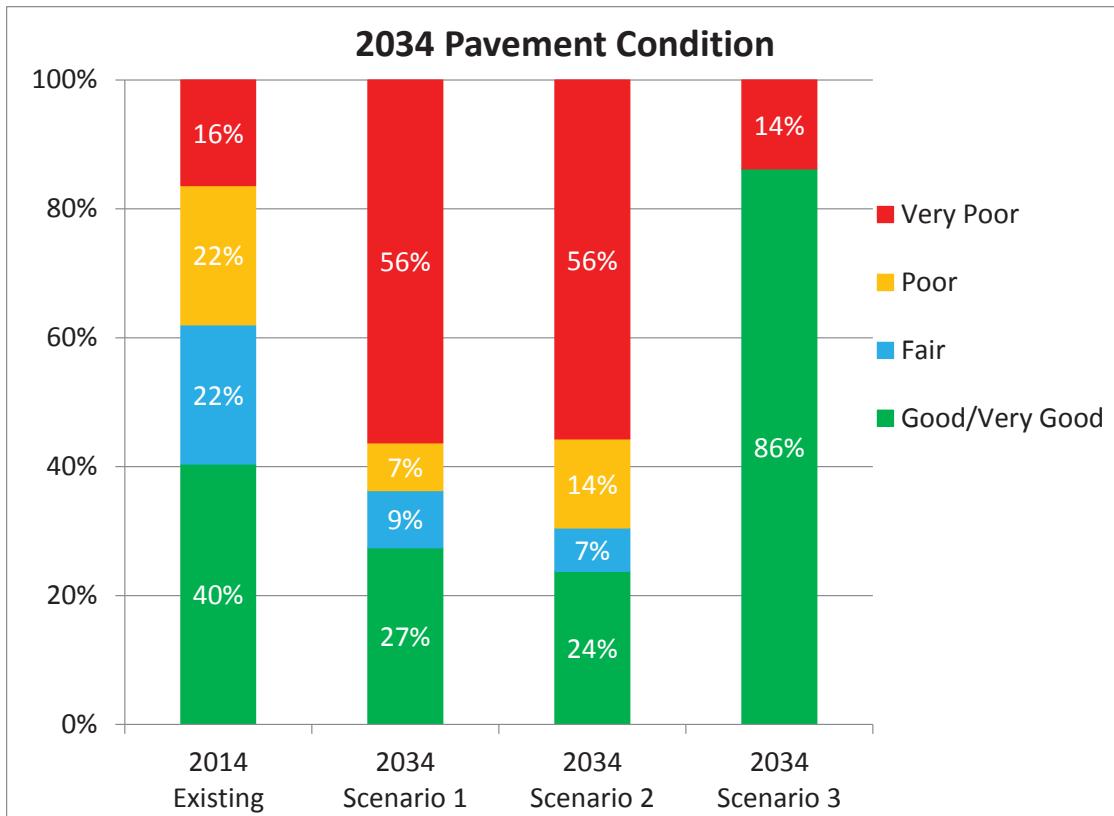
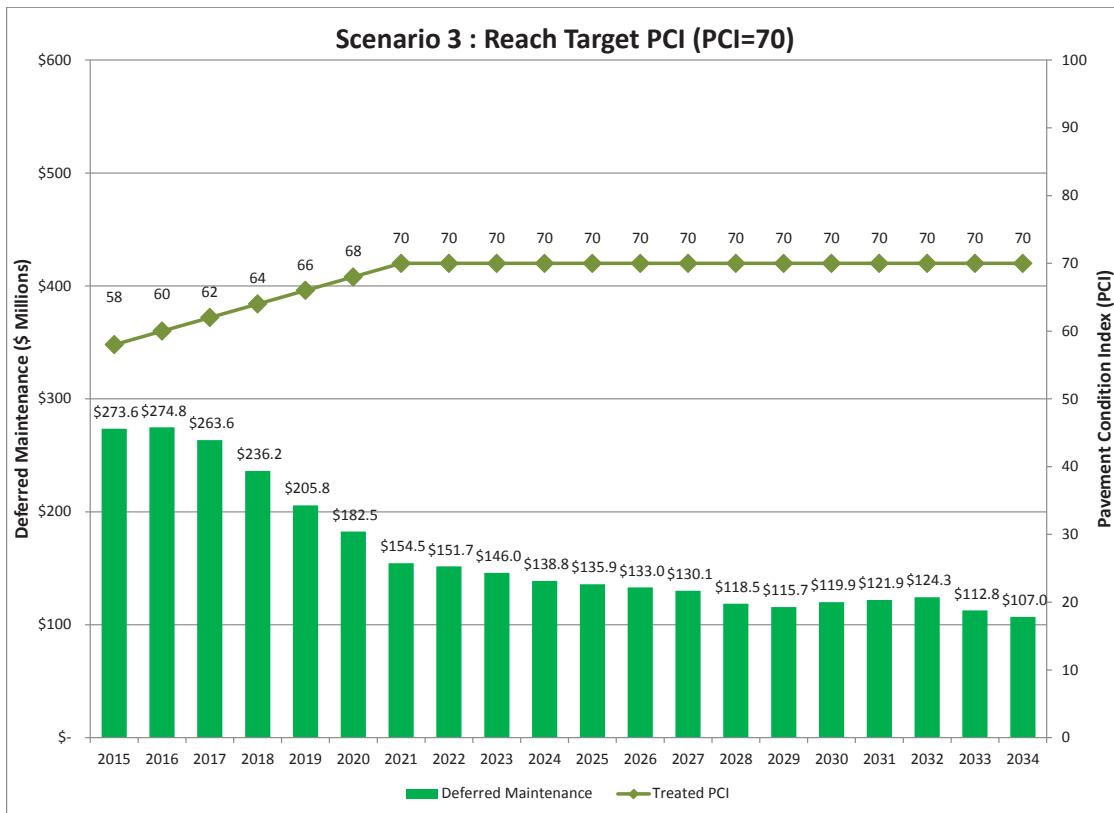
Sierra County



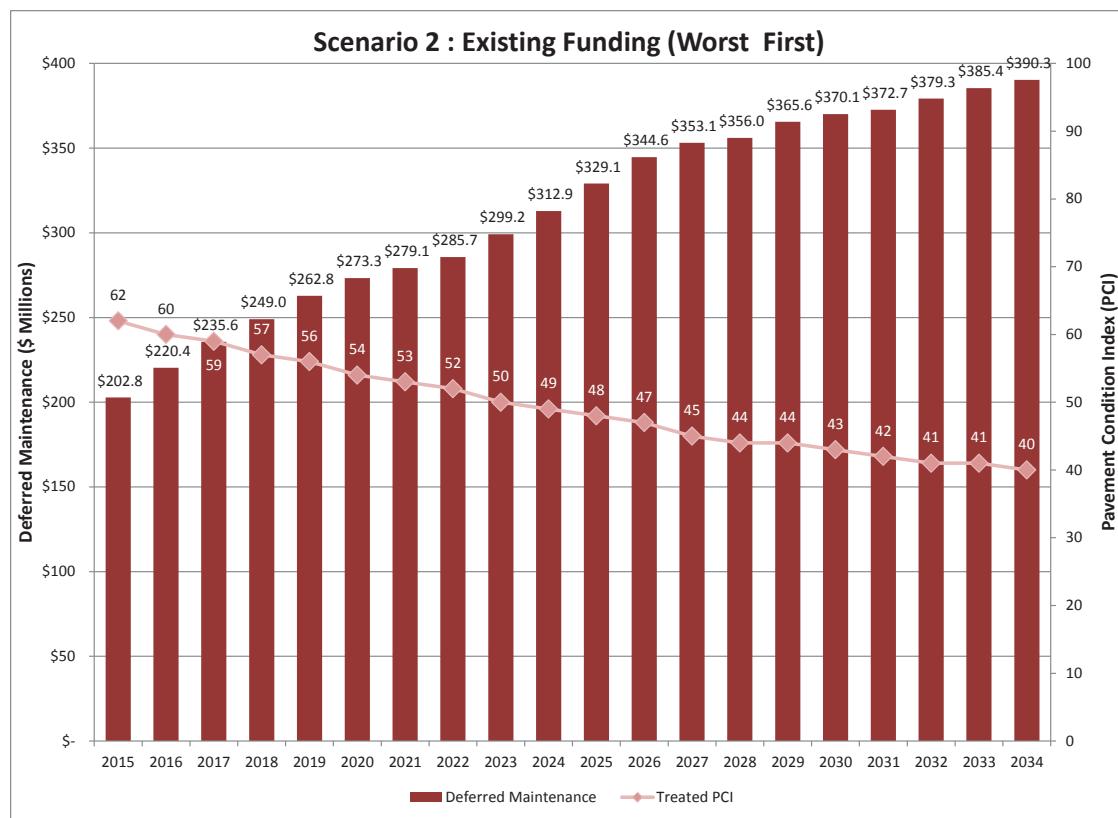
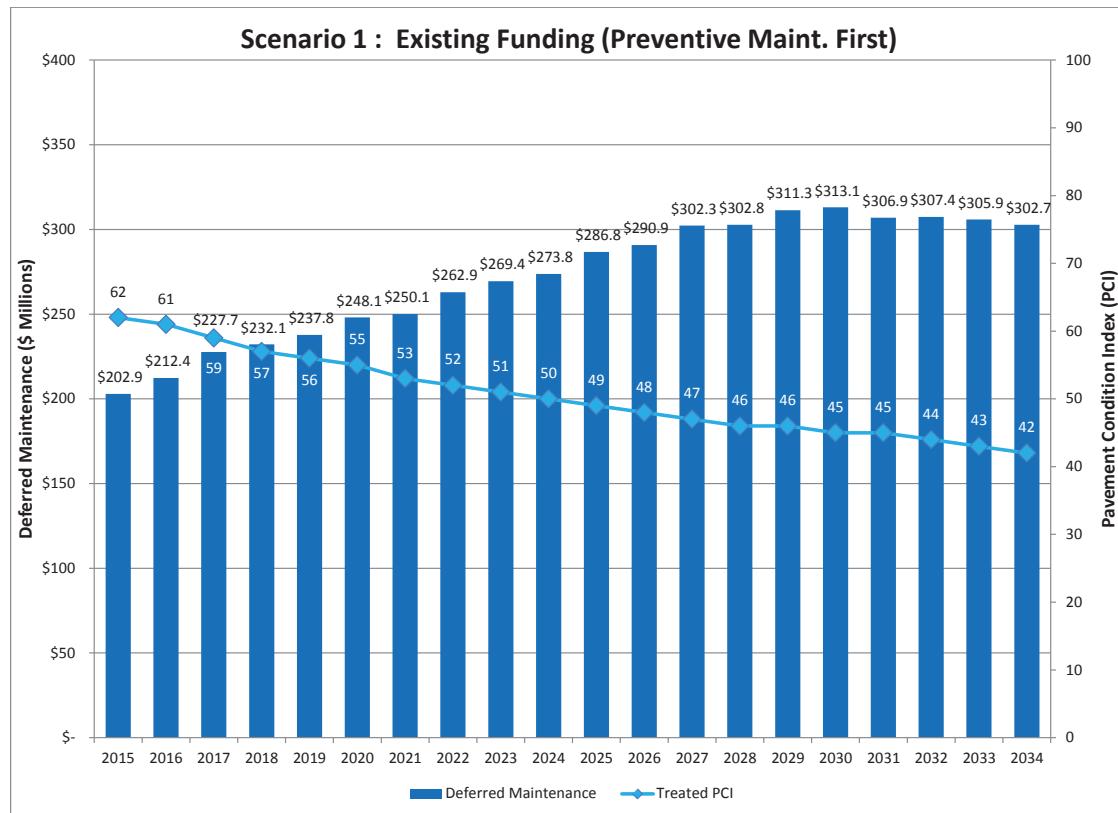


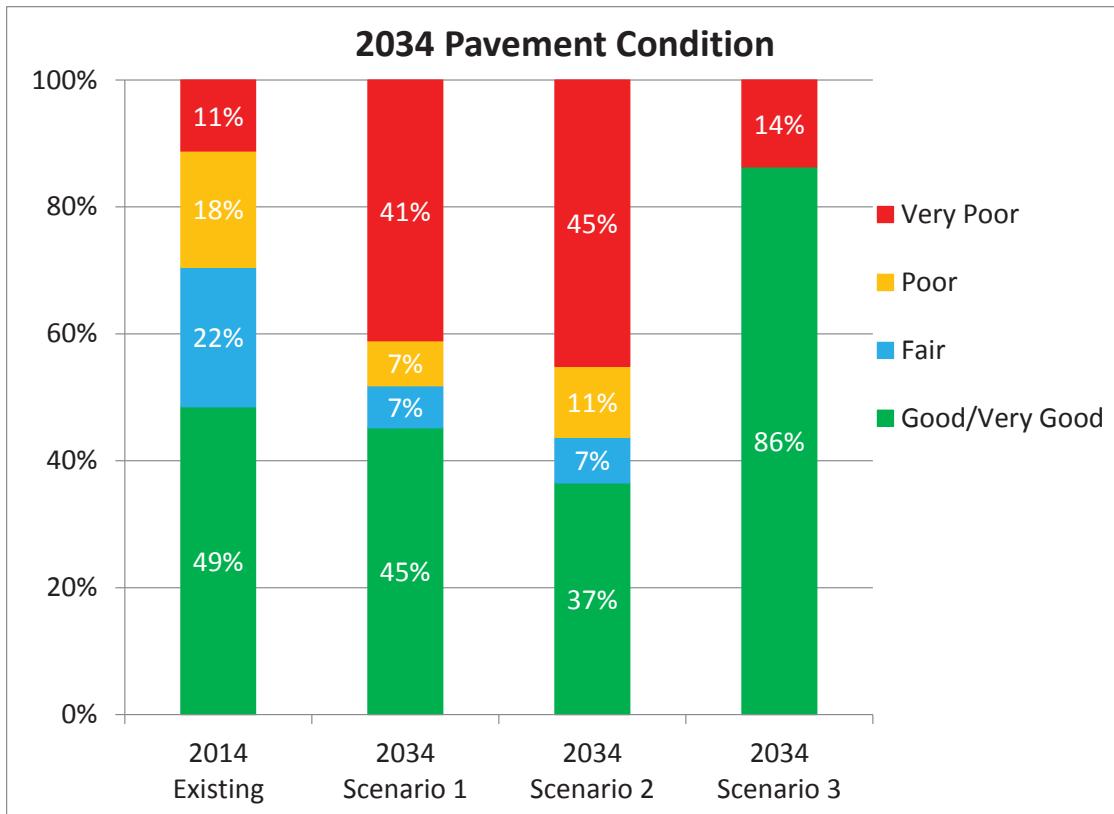
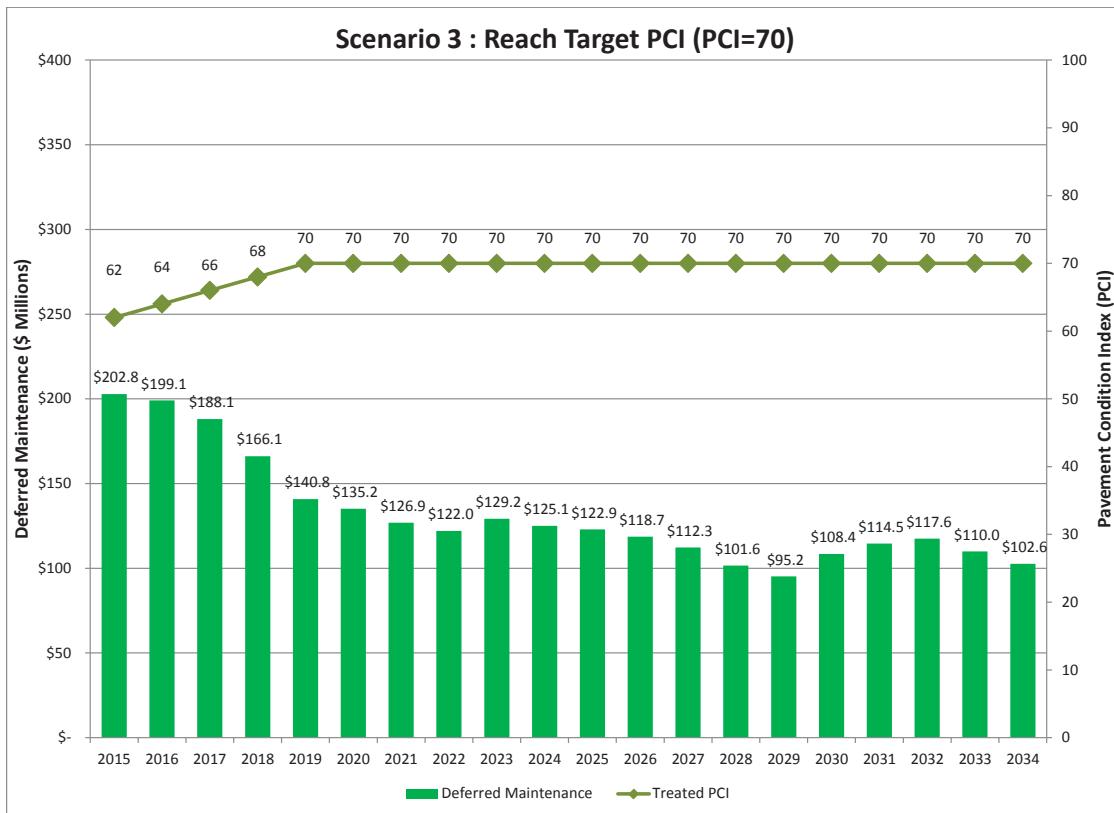
Siskiyou County



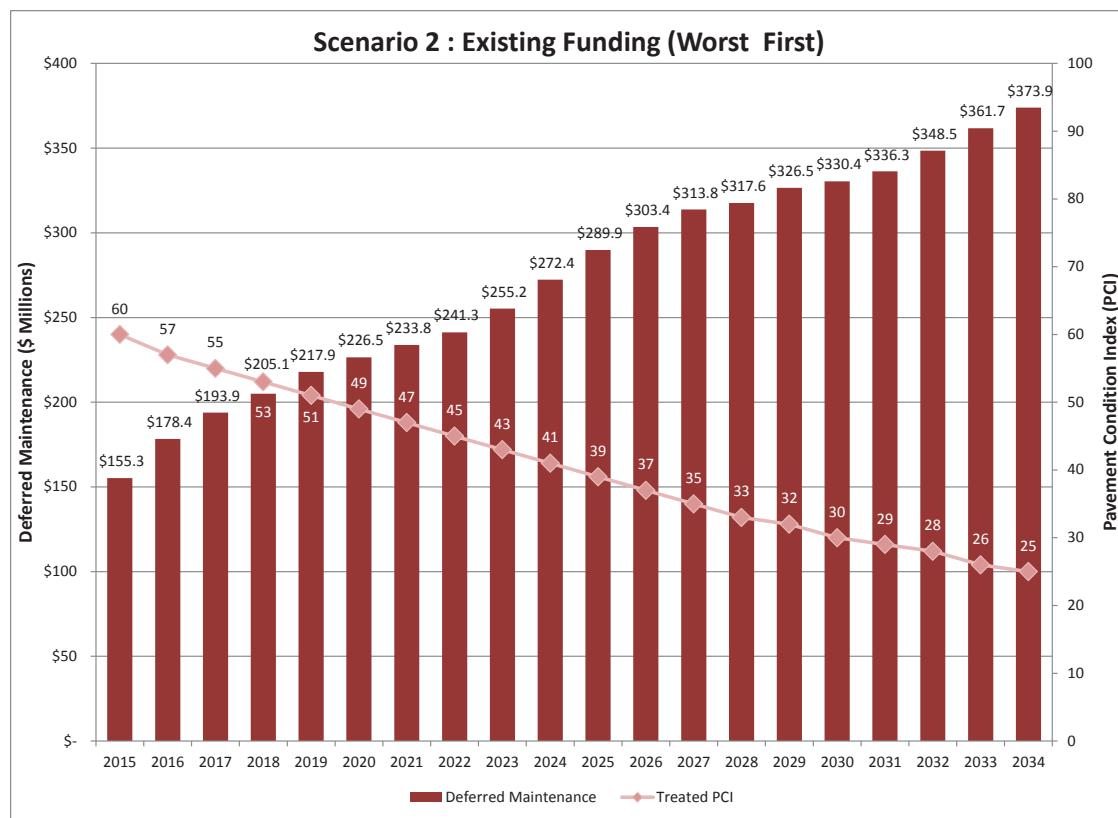
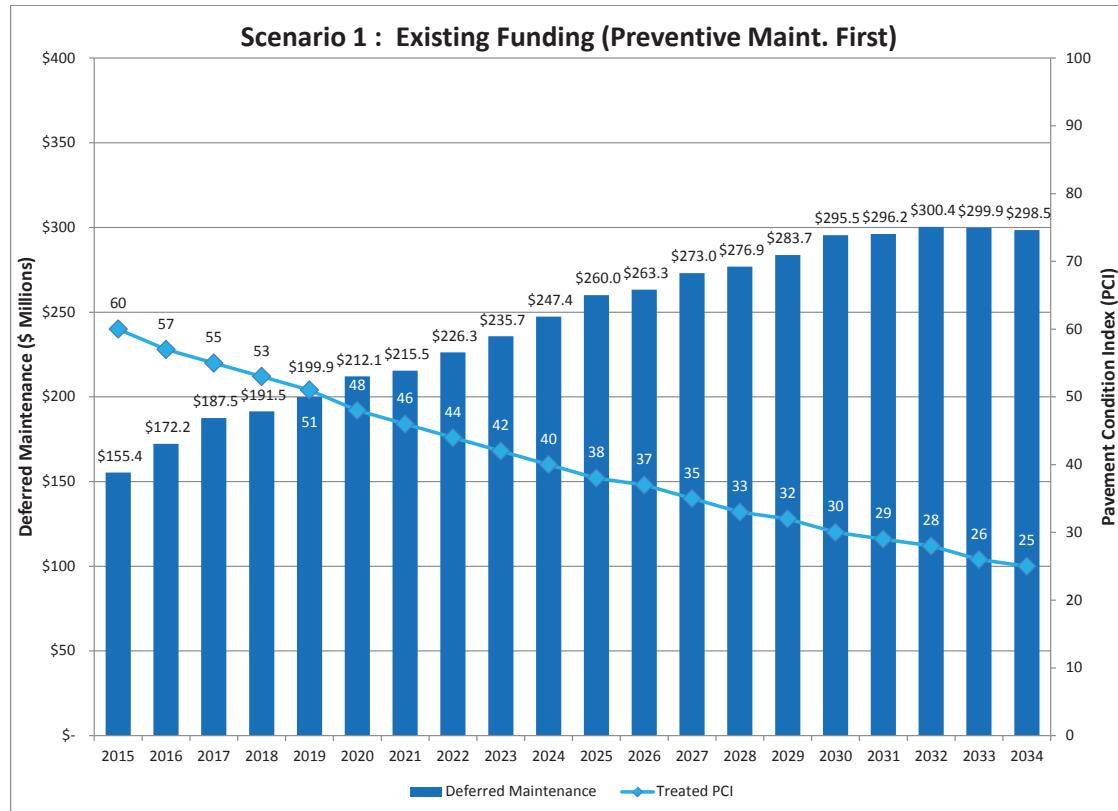


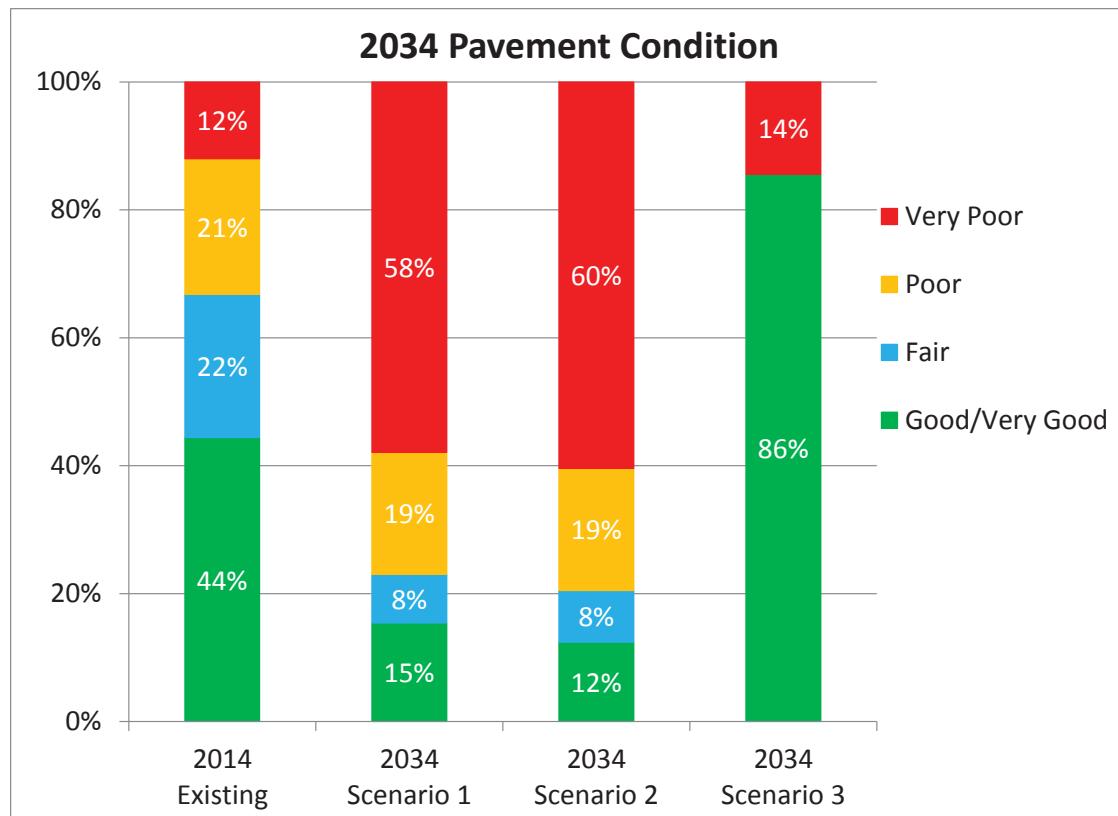
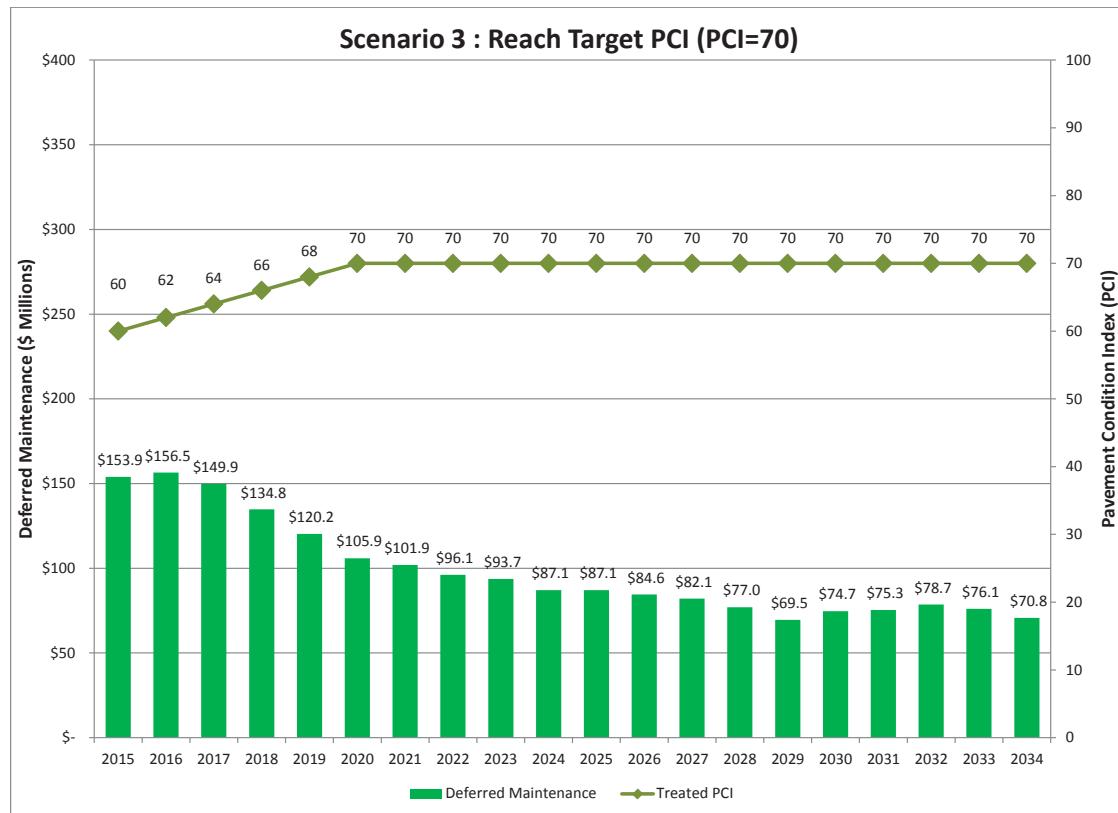
Tehama County





Trinity County





Tuolumne County

