California Statewide Local Streets and Roads Needs Assessment

Final Report
August 2021

Prepared by

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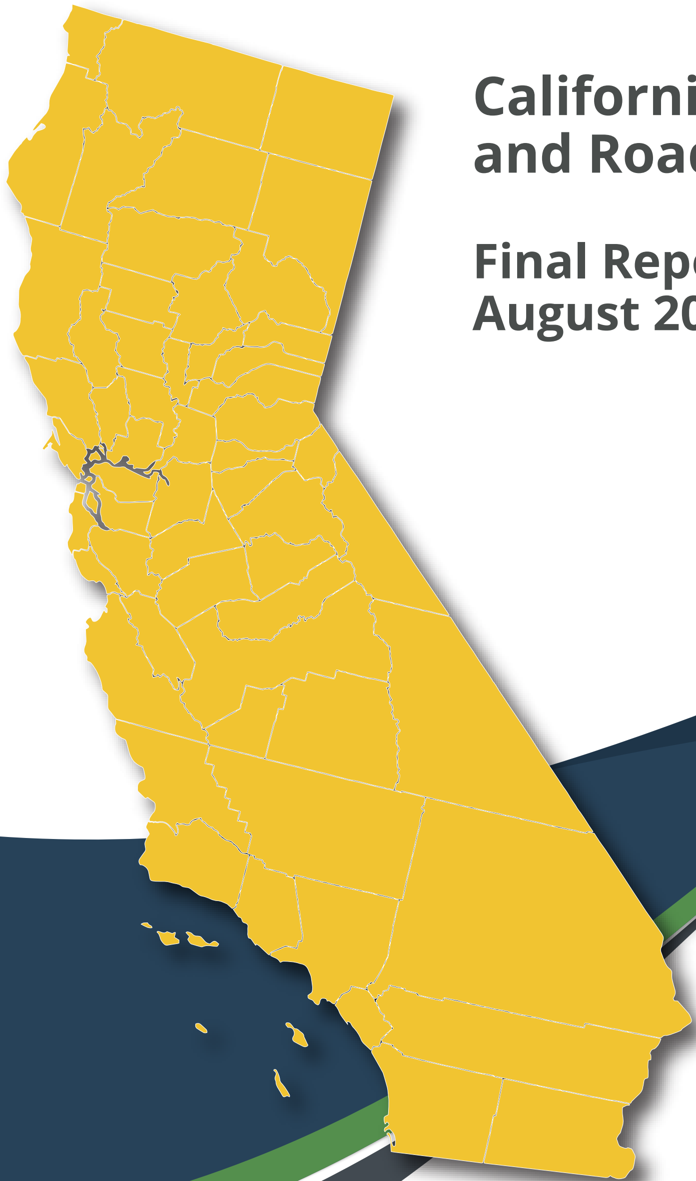
Sponsored by

CSAC

LEAGUE OF CALIFORNIA CITIES

Rural Counties Task Force
Regional Transportation Planning Agencies



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Executive Summary

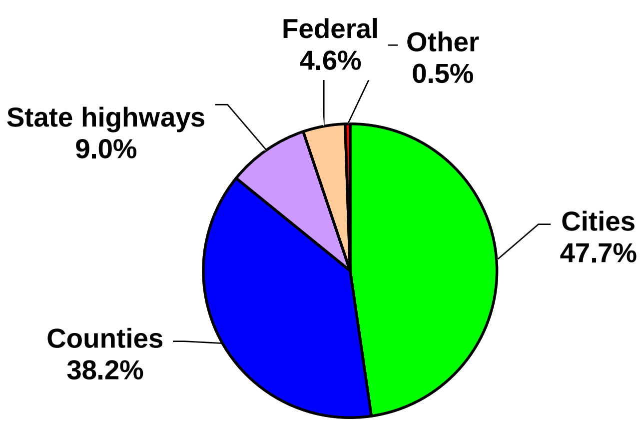
The importance of the local transportation system cannot be over-emphasized. Nearly every trip begins on a city street or county road. Whether traveling by bicycle, bus, rail, truck or family automobile, Californians need a reliable and well-maintained local street and road system.

Every component of California's transportation system is critical to providing a seamless, interconnected system that supports the traveling public and economic vitality throughout the state. There is a significant focus on building sustainable communities, which cannot function without a well-maintained local street and road system that provides access for transit and active modes of transportation like bicycling and walking.

The first comprehensive statewide study of California's local street and road system in 2008 provided critical analysis and information on the local transportation network's condition and funding needs. Each subsequent report has monitored the changes biennially.

This study sought answers to important questions: What are the current pavement conditions of local streets and roads? What will it cost to repair all streets and roads? What are the safety needs for a functioning system? What is the impact of the additional funding available from the Road Repair and Accountability Act of 2017 (SB 1) on the condition of local streets and roads, bridges, and essential components?

Responsible for over 85 percent of California's roads, cities and counties find this study to be of critical importance for several reasons. The goal is to use the results to continue to educate policymakers at all levels of government and the public about the infrastructure investments needed to provide California with a seamless, multi-modal transportation system. The findings provide a credible and defensible analysis to support a dedicated, stable funding source for maintaining the local system. It also provides the rationale for the most effective and efficient investment of public funds, potentially saving taxpayers from paying significantly more to fix local streets and roads into the future.



Road Centerline Miles by Agency

Executive Summary

Previous editions of this report cautioned that without an influx of new revenues, the local street and road system would continue to deteriorate and cost taxpayers increasingly more to repair this vital local infrastructure.

After years of careful consideration and study, the Legislature passed and Governor Jerry Brown signed SB 1 in 2017. The bill provides over $5 billion annually for transportation. Of this, approximately $1.5 billion is allocated to the local street and road system owned and maintained by 539 cities and counties. The passage of SB 1 was a significant success for municipal governments statewide and injected a long-awaited substantial infusion of funding to maintain the local street and road system.

Despite the passage of SB 1 in 2017, there continues to be significant uncertainty surrounding local transportation funding in California. While an effort to repeal SB 1 via a ballot measure in November 2018 was unsuccessful, the COVID-19 pandemic arrived soon after in early 2020. The pandemic resulted in significant revenue reductions and created uncertainty for the 2020 construction season. While this report aims to analyze the impacts of the first two years of SB 1 funding on local transportation infrastructure, the timing of the survey in spring 2020 combined with the uncertainty related to the prior SB 1 repeal effort undoubtedly had impacts on local government transportation project delivery during this period.

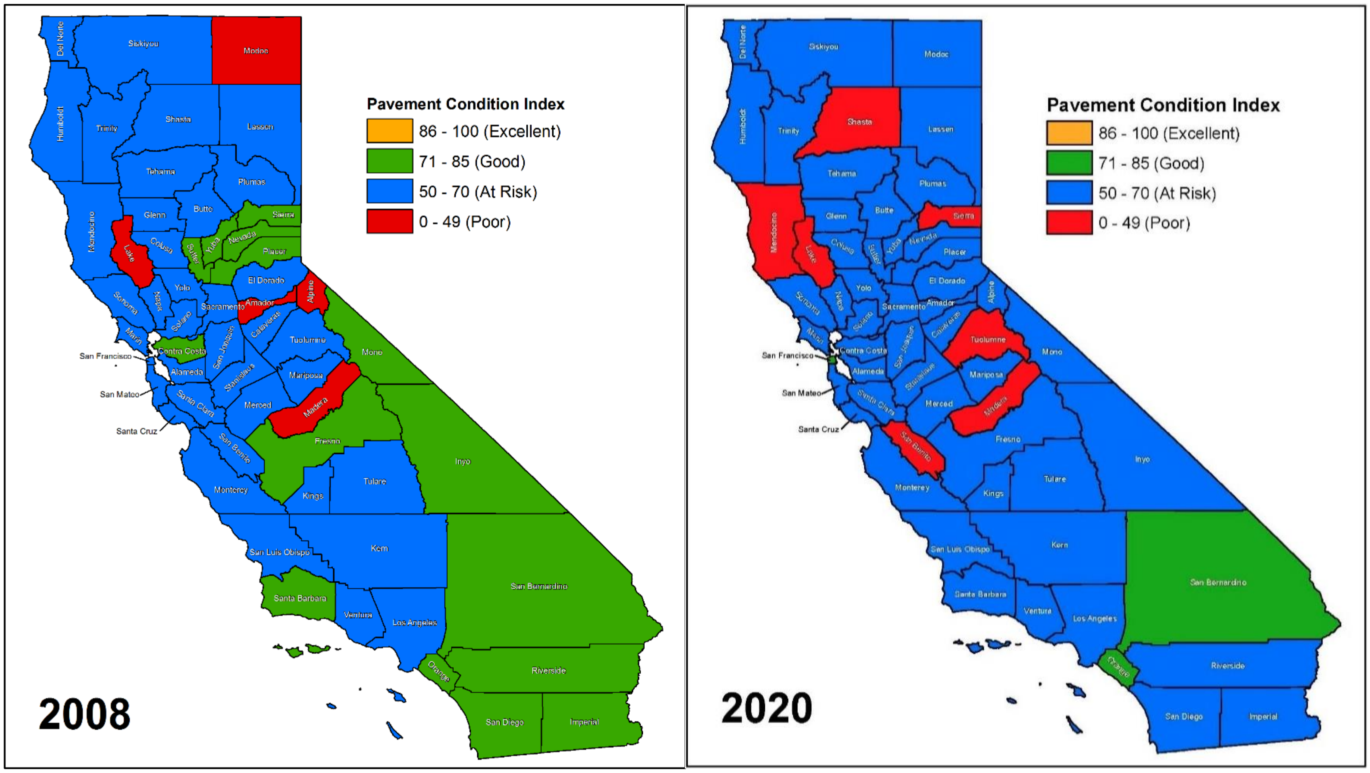
As with previous studies, this update surveyed all of California's 539 cities and counties. Almost 80 percent of the agencies responded – a level of participation that makes clear the local interest in addressing the growing problems of crumbling streets and roads despite the pandemic.

Pavements

The condition of California's local streets and roads has improved 1 point since 2018. On a scale of zero (failed) to 100 (excellent), the statewide average Pavement Condition Index (PCI) is now 66 (still in the "At Risk" category). However, 55 of 58 counties are either at risk or have poor pavements (the maps on the next page illustrate the changes in condition since 2008).

To use taxpayer money wisely, it makes more sense to preserve and maintain roads in good condition than to wait and repair or replace them when they deteriorate or fail. The costs developed in this study are based on achieving a roadway pavement condition called best management practices (BMPs). At this condition level, preventive maintenance treatments (i.e., slurry seals, chip seals, thin overlays) are most cost-effective. In addition to costing less, preventive maintenance interferes less with commerce and the public's mobility and is more environmentally friendly than rehabilitation or reconstruction.

The importance of this approach is significant. As roadway pavement conditions deteriorate, the cost to repair them increases exponentially. For example, it costs as much as 14 times more to reconstruct a pavement than to preserve it when it is in good condition. Even modest resurfacing is four times more expensive than maintaining pavement in the BMP condition. To put it another way, 14 miles of roadway can be maintained in a BMP condition for the same cost as reconstructing one mile of failed pavement. By bringing the local roadway system to BMP conditions, cities and counties will be able to maintain streets and roads at the most cost-effective level. This goal is not only optimal, it is necessary.



Technological Cost Savings

This report also includes the impact of using sustainable technologies (e.g., cold-in-place recycling) that result in significant cost savings. Since 2012, the number of agencies that employ some form of recycling has more than doubled. This trend is expected to continue, and the cost savings are therefore included in the funding scenarios. The savings range, on average, from 28 to 42 percent over conventional treatments and result in a reduction of the 10-year paving needs. This is one example of how cities and counties have continued to stretch the proverbial dollar.

Funding Scenarios (in constant 2020 dollars)

Three funding scenarios were analyzed:

1) **Existing funding levels ($2.43 billion/year)** – This is the current funding level and includes SB 1 together with cost savings from paving technologies. For the first time in 10 years, cities and counties will see an initial 1-point increase. However, due to higher construction costs, the PCI will drop to 59 by 2030 and the percent of good pavements will decrease to 48.7 percent (see table).

2) **Maintain PCI at 66 ($3.84 billion/year)** – To maintain the existing PCI at 66, additional funding ($3.84 billion/year) is needed. The percent of good pavements would increase to three-quarters of the network.

3) **Funding required to reach BMP ($7.89 billion/year)** – The optimal scenario is to bring all pavements into a state of good repair so that BMPs can prevail. To reach BMP levels (PCI in high

80s), $78.9 billion would be needed over the next 10 years. ***After that, it would only require $3 billion a year to maintain the pavements at that level.***

The table below summarizes the results of each scenario.

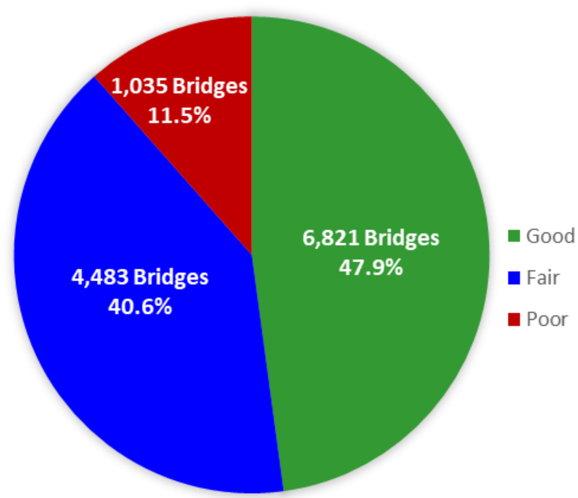
Scenarios	Annual Budget ($B)	PCI in 2030	Condition Category	% Pavements in Poor/Failed Condition	% Pavements in Good Condition
Current Condition (2020)	-	66	At Risk	23.2	55.0
1. Existing Funding	$2.43	59	At Risk	31.1	48.7
2. Maintain PCI at 66	$3.84	66	At Risk	20.7	74.7
3. Best Management Practice	$7.89	87	Excellent	0.0	100.0

Essential Components

The transportation network also includes essential safety and traffic components such as curb ramps, sidewalks, storm drains, streetlights, and signals. These components will require $35.5 billion to maintain over the next 10 years, and there is an estimated funding shortfall of $22.1 billion.

Bridges

Local bridges are also an integral part of the local street and road infrastructure. There are 12,339 local bridges (approximately 48 percent of the total number of bridges) in California. The average age is over 50 years, 10 years more than the national average. In addition, more than half (52.1 percent by deck area) are in fair or poor condition.



It will require $7.2 billion to make safety, strengthening and widening improvements to keep pace with California's modern mobility needs. Just to maintain the current condition will require $800 million annually, but only $290 million is available. There is an estimated shortfall of $4.3 billion to maintain the safety and integrity of the bridge infrastructure.

Total Funding Shortfall

The table on the next page shows the total funding shortfall of $64 billion (2020 dollars) over the next 10 years. For comparison, the needs from the previous updates are also included. Note that the pavement and bridge needs in 2020 have markedly increased due to higher construction costs.

Transportation Asset	Needs ($B)							2020 ($B)		
	2008	2010	2012	2014	2016	2018		Needs	Funding	Shortfall
Pavement	$67.6	$70.5	$72.4	$72.7	$70.0	$61.7		$76.0	$38.4	$(37.6)
Essential Components	$32.1	$29.0	$30.5	$31.0	$32.1	$34.1		$35.5	$13.4	$(22.1)
Bridges		$3.3	$4.3	$4.3	$4.6	$5.5		$7.2	$2.9	$(4.3)
Totals	**$99.7**	**$102.8**	**$107.2**	**$108.0**	**$106.7**	**$101.3**		**$118.7**	**$54.7**	**$(64.0)**

Conclusions

SB 1 is a critical funding source that has resulted in cities and counties improving the pavement condition from 65 to 66 in the first 2 years. However, it is still premature to conclude that it will succeed in its goal of stabilizing the deterioration observed in the previous 10 years. The first 2 years included an effort to rescind the new revenues from SB 1, which resulted in a hesitant industry response to expanding construction capacity. This was coupled with agencies' concerns about over-committing on future project delivery. The lack of construction capacity had an unintended consequence; bid prices for street and bridge maintenance and repairs were as much as 23 percent higher than 2018. In addition, the needs of other infrastructure components continue to grow, which reduces the funding available for pavements. We expect that the next 2 years should see a "dust-settling" effect allowing local agencies to measure the longer-term impacts of SB 1.

1 Introduction

California's 58 counties and 482 cities[1] own and maintain over 144,000 centerline miles of local streets and roads[2]. This is an impressive 85.9 percent of the state's total publicly maintained centerline miles (see Figure 1.1 below). Conservatively, this network is valued at over $220 billion.

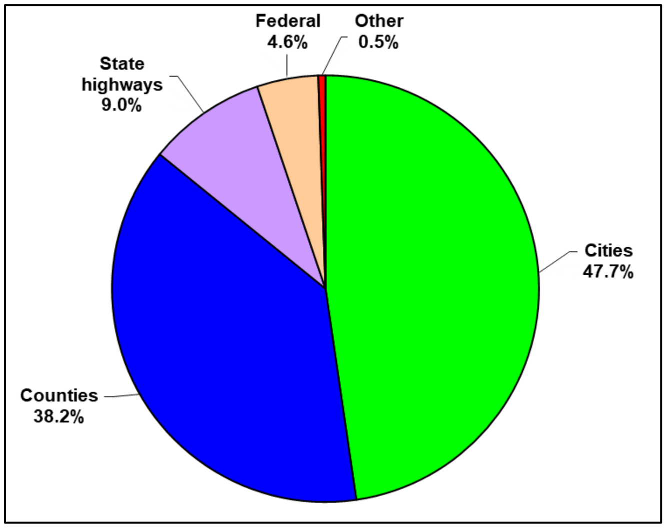


Figure 1.1 Breakdown of Maintained Road Centerline Miles by Agency[2]

Because lane-miles are more commonly used in pavement management analyses (the costs derived are based on areas, and lane-miles are a more accurate indicator of pavement areas), Table 1.1 shows the breakdown of lane-miles for local streets and roads by functional classification, as well as for unpaved roads. Major streets or roads are those that are classified as arterials or collectors, and local streets or roads are those that are classified as residentials and alleys. Unpaved roads are defined as those that have either dirt or gravel surfaces.

In addition, streets and roads are separated into urban and rural classifications. The distinction between urban and rural roads is defined by the U.S. Census Bureau: rural areas have population centers less than 5,000 or have a population density below 1,000 persons per square mile. Urban areas have population centers with more than 5,000 people. However, an urbanized or rural area may or may not contain an incorporated city and the urban boundary does not necessarily follow city corporation lines. Ultimately, however, the decision to determine the miles in either category was left to the individual city or county.

[1] Four new cities (Wildomar, Menifee, Eastvale, and Jurupa Valley) were incorporated after the original 2008 study. Note that San Francisco is traditionally counted as both a city and a county, but for purposes of this analysis, their data have been included as a city only. Therefore, a total of 539 cities and counties were used in this study.

[2] California Department of Transportation (Caltrans), Division of Transportation System Information. *2019 California Public Road Data – Statistical Information Derived from the Highway Performance Monitoring System* (HPMS). December 2020. The total miles come from a combination of this reference and survey results. Note that the HPMS reports that there are a total of 151,818 miles belonging to cities and counties; this is a significant difference from that reported on the online survey. For this study, the online survey results were used.

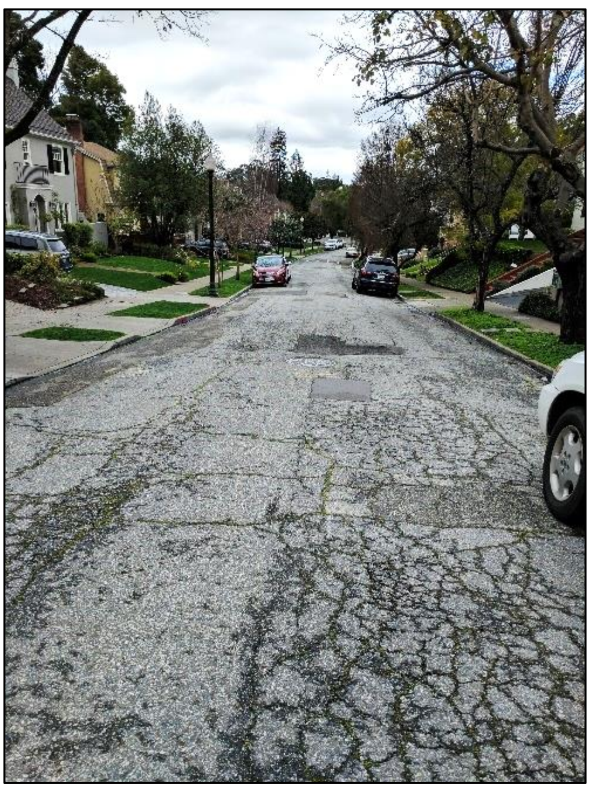
Table 1.1 Breakdowns of Functional Classification and Unpaved Roads

	Lane Miles by Functional Class				Unpaved	Total
	Urban		Rural			
	Major	Local	Major	Local		
Cities	78,715	107,437	1,868	3,647	1,240	192,908
Counties	13,732	23,212	32,790	42,409	15,832	127,975
Totals	**92,447**	**130,649**	**34,659**	**46,056**	**17,072**	**320,882**

More than 73 percent of the total paved lane-miles are in urban areas (Table 1.1). It should also come as no surprise that more than 93 percent of rural roads belong to the counties, and 83 percent of urban roads belong to the cities. Finally, unpaved roads comprise approximately 5.3 percent of the total network, and counties own almost 93 percent of these unpaved roads.

1.1 Study Objectives

In 2008, the first study was conducted to assess the statewide needs for the local streets and roads network[3]. The intent of the 2008 study was to determine the funding required to maintain the local streets and roads system for the subsequent 10 years, so that the information could be reported to the Governor, the State Legislature, the California Transportation Commission, and Caltrans, as well as other stakeholders.



The specific objectives of the 2008 study were summarized as a series of questions:

- What are the conditions of local streets and roads?
- What will it cost to bring them up to an acceptable condition?
- How much will it cost to maintain them in an acceptable condition for the next 10 years?
- Similarly, what are the needs for other essential components, such as safety, traffic, and regulatory items?
- Is there a funding shortfall? If so, how much is it?
- What are the impacts of different funding scenarios?

Since then, updates have been performed every 2 years, and the objectives have been essentially the same. Bridges were added to the scope in 2014, and in 2020, a companion report on bridges is also available. Previous reports may be downloaded from the archives at

[3] Nichols Consulting Engineers, Chtd. *California Statewide Local Streets & Roads Needs Assessment*. October 2009.

www.SaveCaliforniaStreets.org. The data used for this study were collected using an online survey sent to all California cities and counties.

In April 2017, Governor Jerry Brown signed the Road Repair and Accountability Act of 2017 (also known as SB 1) which provided approximately $1.5 billion to the local street and road system. The successful passage of SB 1 was significant for municipal governments statewide due to the substantial infusion of funding for maintaining and improving the local transportation system.

This report examines the impacts of SB 1 over the first two full fiscal years of new funding for both policymakers and the public.

1.2 Study Assumptions

As in the previous studies, some important assumptions were made during the analyses of the data received from cities and counties. Most are consistent with those used in the Caltrans 2020 State Highway Operation and Protection Program (SHOPP)[4]. The assumptions include (see Table 1.2):

- The analysis period used in this study is 10 years.
- All costs reported in this study are in constant 2020 dollars.
- The goal is to reach a pavement condition where best management practices (BMPs) can occur. This translates to a Pavement Condition Index (PCI) in the 80s (on a scale of 0 to 100, where zero is failed and 100 is excellent) and with no failed pavements. Caltrans SHOPP defines performance goals quite differently; e.g., achieve a pavement pothole and cracking Level of Service of 90 percent or greater by 2027, or not less than 98.5 percent of bridge area to be in good or fair condition by 2027.
- It is assumed that no new streets or roads are added within the analysis period. In addition, capital improvement or expansion projects are not included; e.g., realignments, widenings, grade separations.
- The inclusion of essential components (safety, traffic and regulatory) of the roadway system, such as sidewalks, curb ramps, and storm drains, is consistent with the SHOPP. Bicycle and pedestrian facilities are also included.
- The bridge needs assessment was updated, including the needs and the results of various funding scenarios. A companion report is available for 2020.

[4] Caltrans. *2020 SHOPP – State Highway Operation and Protection Program (SHOPP Plan)*. May 2020.

Table 1.2 Summary of Assumptions Used in 2020 Statewide Study and SHOPP

Assumptions	2020 Statewide Study	Caltrans SHOPP
Analysis Period	10 years	10 years
Cost Basis	2020 dollars	2020 dollars
Goals	Best management practice (PCI at mid-80s & no failed pavements)	Achieve a pavement pothole and cracking Level of Service of 90 percent or higher by 2027
Total Scenarios Evaluated	3	1
Capital Improvement Projects	No	Only related to operational improvement
Essential Components	Yes	Yes
Bridges	Yes	Yes

1.3 Study Sponsors

This study was sponsored by the cities and counties of California and has been managed by a coalition of cities, counties, and Regional Transportation Planning Agencies (RTPAs). The Oversight Committee is composed of representatives from the following:

- League of California Cities (Cal Cities)
- California State Association of Counties (CSAC)
- County Engineers Association of California (CEAC)
- Regional Transportation Planning Agencies (RTPA)
- Rural Counties Task Force (RCTF)

The Oversight Committee members include:

- David Leamon, Stanislaus County (Project Manager)
- Keith Cooke, City of San Leandro
- Brad Eggleston, City of Palo Alto
- Charles Herbertson, City of Culver City
- Gabriel Gutierrez, Tulare County Association of Governments
- Panos Kokkas, Yolo County
- Damon Letz, City of Santa Clarita
- Dave MacGregor, Los Angeles County
- Matt Randall, Placer County (representing Highway Bridge Program)
- William Ridder, Los Angeles County Metropolitan Transportation Authority
- Theresa Romell, Metropolitan Transportation Commission
- Jennifer Soliz, Fresno Council of Governments (alternate)

- Ron Vicari, Sacramento County
- Mike Woodman, Nevada County Transportation Commission (representing the Rural Counties Task Force)

Staff members include:

- Meghan McKelvey, Cal Cities
- Caroline Cirrincione, Cal Cities
- Chris Lee, CSAC
- Marina Espinoza, CSAC
- Merrin Gerety, CEAC

Appendix A includes a list of all the agencies that made a financial contribution to this study.

2 Pavement Needs Assessment

This chapter discusses the methodology and assumptions used for the pavement needs assessment and presents the results of the analysis. The data collection efforts are described in more detail in Appendix B, but, briefly, an online survey was made available on the www.SaveCaliforniaStreets.org website between mid-February to April 2020. All cities and counties were contacted and asked to participate in the survey. A total of 426 agencies responded to the survey and either updated or confirmed the data that were provided in previous surveys. This response rate (almost 80 percent) was a decrease from 2018 but was respectable considering that shelter-in-place directives were announced in mid-March 2020. These directives resulted in most agency staff shifting to a home-based working situation in the middle of the survey.

2.1 Methodology and Assumptions

Because not all 539 cities and counties responded to the survey, a methodology was developed to estimate the pavement needs of the missing agencies. The following paragraphs describe this methodology, which is consistent with previous updates.

2.1.1 Filling in the Gaps

Inventory Data

To estimate an agency's pavement needs, it was crucial to determine the total miles (both centerline and lane-miles) and pavement areas in the jurisdiction. Missing inventory data were populated based on the following rules:

- If no updated inventory data were provided, then previous survey data were used.
- If the inventory data provided were incomplete, Table 2.1 was used to populate the missing information. The average number of lanes and average lane width were calculated from agencies who submitted complete inventory data in the previous surveys.

Table 2.1 Assumptions for Populating Missing Inventory Data

Functional Class	Average Number of Lanes	Average Lane Width (feet)
Urban Major Roads	2.93	15.2
Urban Residential/Local Roads	2.11	15.5
Rural Major Roads	2.00	14.4
Rural Residential/Local Roads	1.95	11.4
Unpaved Roads	1.78	14.2

Pavement Condition Data

To assist those agencies that had no pavement condition data, the online survey provided a table with the average PCIs collected in the 2020 study. The agencies were encouraged to look at the data from neighboring cities or counties to make their best estimate of the pavement condition in their jurisdiction. For those agencies that had never provided any condition data, the average condition of the associated county was used.

The surveys also asked for condition data for different functional classifications, and additional rules were developed to populate the missing data:

- If the PCI was provided for one but not the other functional classes, the same PCI was used for all functional classes.
- If no pavement condition data were provided in 2020, the last PCI provided was used, but the number was extrapolated based on the statewide PCI trend; i.e., if the statewide average deteriorated 1 point, then the jurisdiction's PCI used was also assumed to have deteriorated 1 point.
- The only exception was for San Francisco Bay area agencies, where the data were provided by the Metropolitan Transportation Commission (MTC).

2.1.2 Pavement Needs Assessment Goal

The same needs assessment goal from previous studies was used in the 2020 update. To reiterate, the goal is for pavements to reach a condition where BMPs can occur, so that only the most cost-effective pavement preservation treatments are needed. Other benefits, such as fewer travel delays and reduced environmental impacts (e.g., dust, noise, energy usage) also result when roads are in good condition.

Our goal is to bring streets and roads to a condition where best management practices (BMPs) can occur.

In short, the BMP goal is to reach a PCI in the 80s and to eliminate the unfunded backlog. The deferred maintenance or "unfunded backlog" is defined as work that is needed but is not funded. To perform these analyses, MTC's StreetSaver® pavement management system program was used. This program was selected because the analytical modules were able to perform the required analyses, and the default pavement performance curves were based on data from California cities and counties. This is described in detail in Appendix B of the 2008 report, which may be downloaded at www.SaveCaliforniaStreets.org.

2.1.3 Maintenance and Rehabilitation Treatment Types and Costs

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 it. This is typically outlined in a decision tree. Pavement preservation concepts and their efficacy have been widely researched by the Federal Highway Administration[5] and the National Highway Institute has several training courses available. In addition, the National Center for Pavement Preservation[6] at Michigan State University maintains a technical library available to the public.

[5] http://www.fhwa.dot.gov/pavement/pres.cfm
[6] https://www.pavementpreservation.org/

Asphalt Pavements

Figure 2.1 summarizes the types of asphalt treatments assigned in this study. Briefly, good-to-excellent asphalt pavements (PCI>70) are best-suited for pavement preservation techniques, (e.g., preventive maintenance treatments such as chip seals or slurry seals). These are usually applied at intervals of 5-to-7 years depending on the type of road and the traffic volumes. Note that if a pavement section has a PCI between 90 and 100, no treatment is applied.

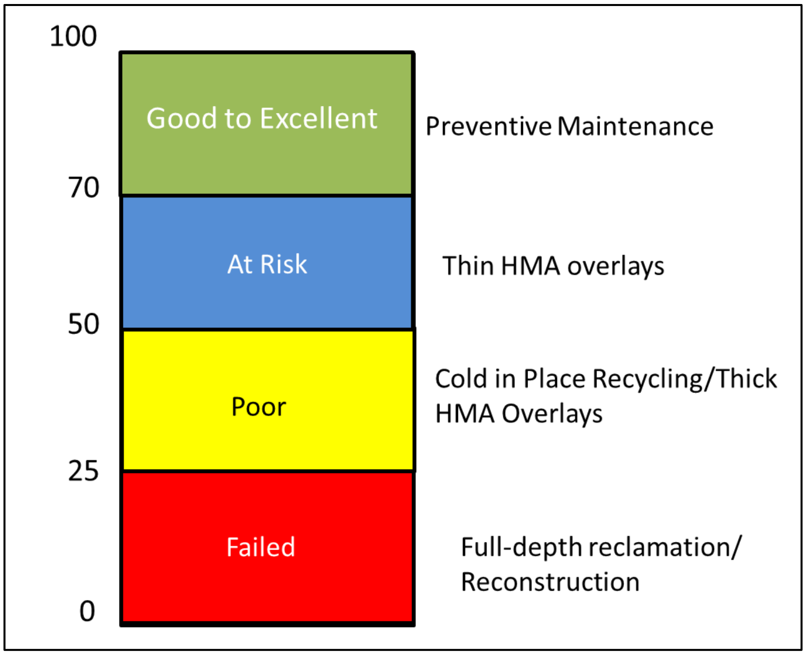


Figure 2.1 PCI Thresholds & Treatments Assigned for Asphalt Pavements

As pavements deteriorate, treatments that address structural adequacy are required. Hot mix asphalt (HMA) overlays are usually applied at varying thicknesses to pavements with PCIs between 25 and 69. This may be combined with milling or recycling techniques.

Finally, when the pavement has failed (PCI<25), reconstruction is typically required. The descriptions used for each category are typical of most agencies, although there are many variations on this theme. For example, it is not unusual for local streets to have slightly lower thresholds, indicating that they are held to lower standards. The PCI thresholds shown in Figure 2.1 are generally accepted industry standards.

Concrete Pavements

Similarly, numerous strategies are available to manage concrete pavements. Good-to-excellent concrete pavements (PCI>70) are also best-suited for preventive maintenance, such as diamond grinding to remove a thin surface layer of concrete. This approach improves friction, smooths the pavement, and reduces noise. Partial- and full-depth slab repairs are also used as preventive maintenance to restore isolated panels that have cracked or failed.

Concrete overlays have two different options that cover a wide range of pavement repair conditions. Bonded concrete overlays of asphalt are applied on roadways in good condition (PCI>70) to add structure or provide a more permanent maintenance solution to the road. Unbonded concrete overlays of asphalt are typically applied on roadways in fair to significantly deteriorated condition (PCI of 25 to 70) and will restore structural capacity while treating the existing roadway as a structural base layer.

When the pavement has failed (PCI<25), reconstruction with concrete pavement is an alternative. This may be accompanied by recycling techniques. Concrete pavements typically last 20 to 25 years prior to needing their first preventive maintenance treatment.

Cost Comparison

Unit cost data for asphalt treatments from over 173 agencies were summarized and averaged for the analysis (see Table 2.2). There was a large range in costs, but for purposes of this analysis, the average was used. The costs for each treatment were separated by functional class; i.e., major roads had a higher cost than local roads. There were increases in the unit costs (square yards [sy] for all categories from 2018; seals increased by 21 to 23 percent, overlays by 15 to 17 percent and reconstruction by 21 to 24 percent.

Table 2.2 Unit Costs Used for Different Treatments and Road Classifications

Classification	Unit Costs ($/sy)			
	Preventive Maintenance	Thin HMA Overlays	Thick HMA Overlays	Reconstruction
Major Roads	$6.60	$26.06	$41.07	$92.96
Local Roads	$6.06	$24.92	$38.42	$78.22

It should be noted that the costs for preventive maintenance treatments (e.g., seals) have increased significantly since 2016. Increases for overlays and reconstructions since 2016 were also noted, and for the first time, reconstruction costs are now higher than 2008 levels, despite the greater use of recycling technologies such as full-depth reclamation. Figures 2.2 to 2.5 illustrate the trends in the unit costs for different maintenance strategies, respectively.

Finally, it should be noted that only asphalt concrete roads were considered in this analysis. The percentage of Portland cement concrete pavements was so small (approximately 1.4 percent of the total network) that it was deemed not significant for the funding analysis.

Technological Cost Savings

This report also includes the impact of sustainable paving technologies such as cold-in-place recycling that have cost savings of 28 percent compared to conventional treatments (see Section 2.3) and as much as 42 percent for full-depth reclamation. Since 2012, the number of agencies that employ some form of recycling has more than doubled. This trend is expected to continue, and the cost savings were therefore included in the pavement needs analysis and funding scenarios. This is one example of how cities and counties have stretched the proverbial dollar.

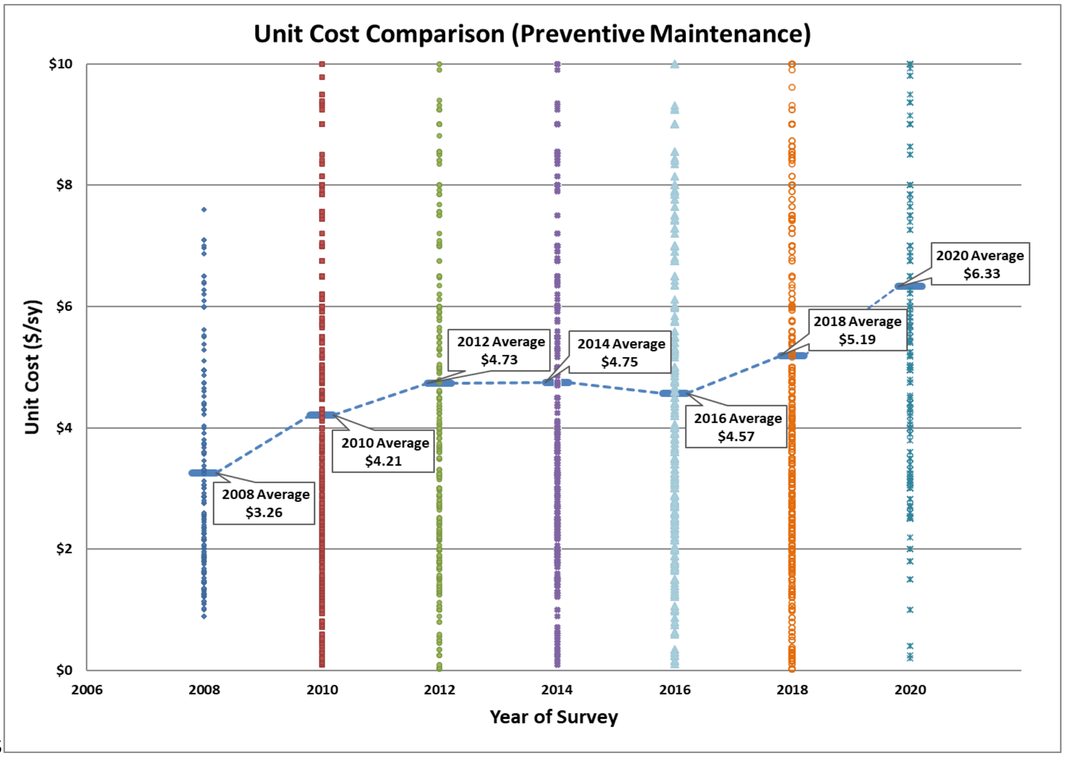


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Figure 2.2 Unit Price Trends for Preventive Maintenance Treatments

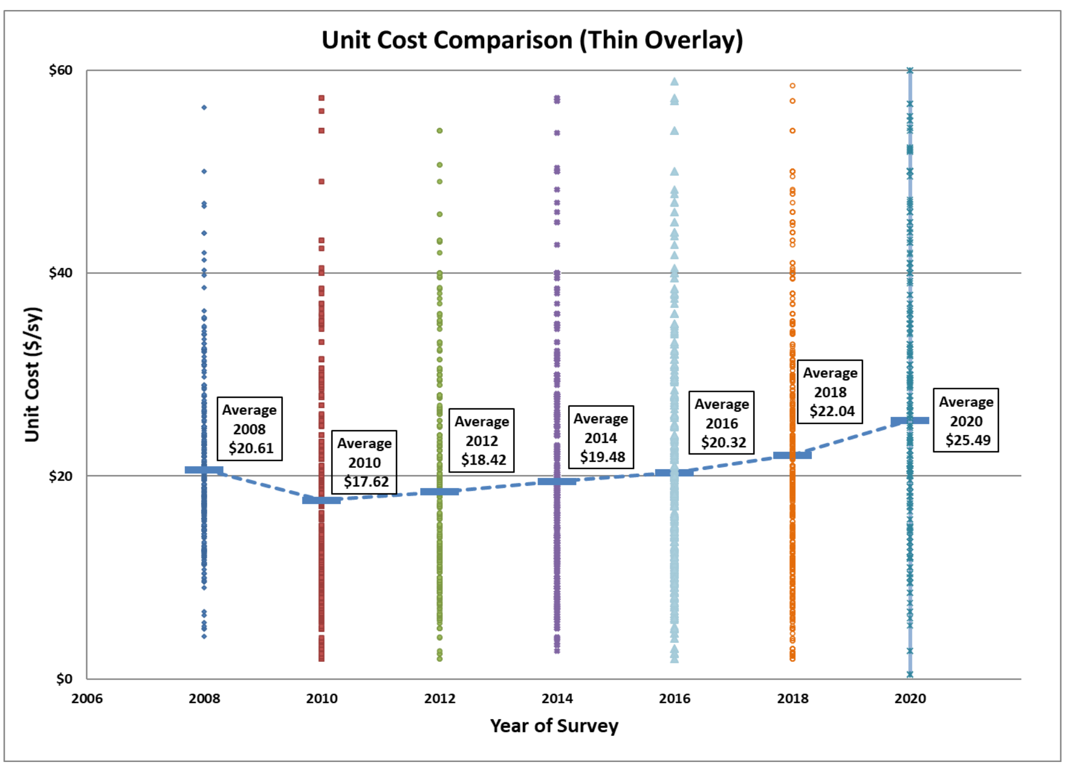


Figure 2.3 Unit Price Trends for Thin HMA Overlays

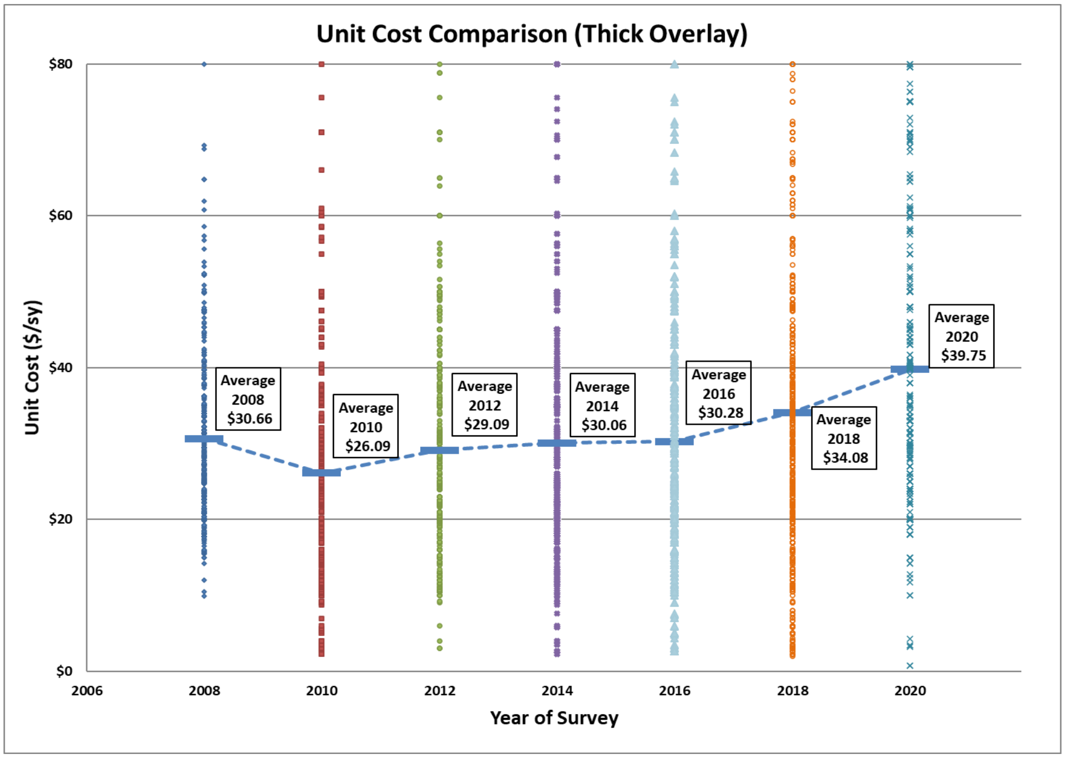


Figure 2.4 Unit Price Trends for Thick HMA Overlays

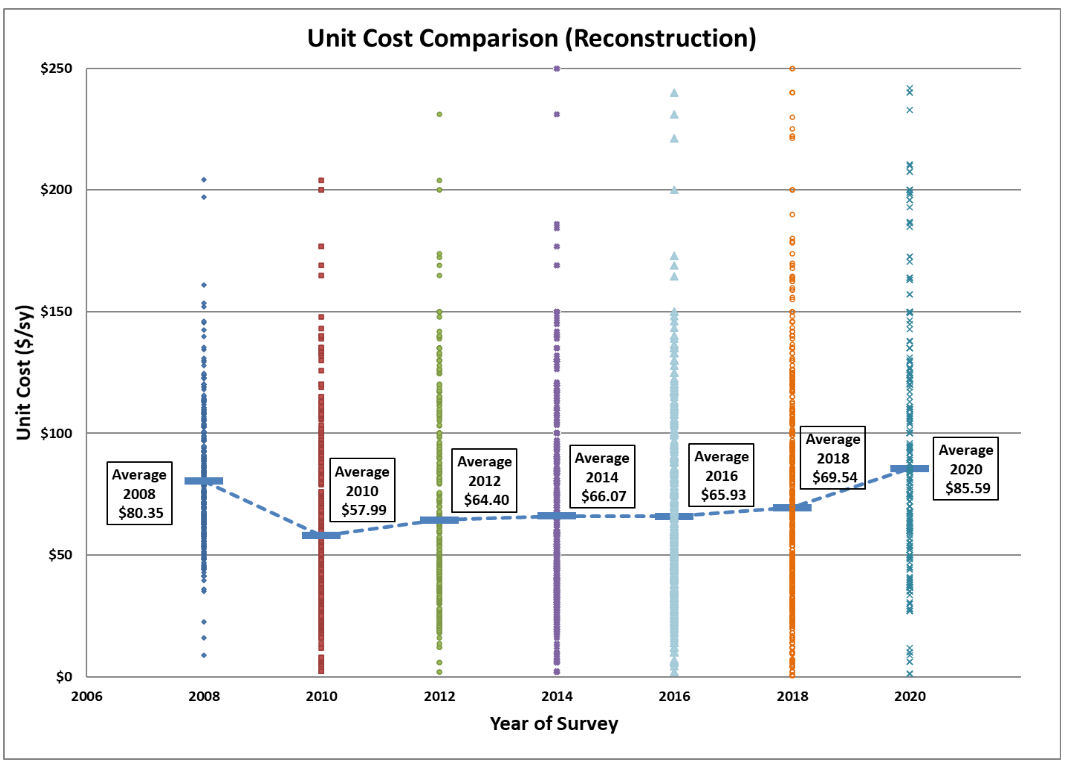


Figure 2.5 Unit Price Trends for Reconstruction

2.1.4 Escalation Factors

As with the previous studies, no escalation factors were used in this analysis. All numbers are in constant 2020 dollars, and this is consistent with the SHOPP as well as many Regional Transportation Plans (RTPs).

2.2 Average Network Condition

Based on the results of the surveys, the 2020 pavement condition statewide is 66, a 1-point increase from 2018 (64.7 to 65.58). This is the first time an increase, albeit small, has been reported. Since 2008, when the statewide PCI was estimated to be 68, there was a slow decrease to 65 in 2018.

The 2020 average PCI was 68.2 for cities and 61.3 for counties. Table 2.3 indicates that major streets or roads continued to be in better condition than local roads. In fact, rural local roads had the lowest PCI of any category.

Table 2.3 Average 2020 PCI by Type of Road

Type	Average 2020 PCI	
	Major	Local
Urban Streets	69	67
Rural Roads	62	55

Table 2.4 includes the 2020 PCI for each county (including cities within the county) based on a scale of 0 (failed) to 100 (excellent). This is weighted by the pavement area; i.e., long roads have more weight than short roads when calculating the average PCI.

It needs to be emphasized that the PCI reported is only the ***weighted average*** for each county and ***includes*** the cities within the county. For example, this means that Amador County and the cities within the county may well have pavement sections that have a PCI of 100, although the average is 51.

The average PCI trend between 2008 to 2018 was slightly downward; some counties reported improvements attributed to better data collection (more agencies are updating their pavement data), better use of pavement preservation treatments, or the increased availability of additional funds such as local sales taxes or bonds.

From Table 2.4, we can see that the statewide ***weighted average*** PCI for all local streets and roads is 66 based on the 2020 data. Orange County maintains its position with the best pavements, at an average PCI of 79. Unfortunately, Tuolumne and Mendocino Counties are now the lowest-ranked counties, with an average PCI of 28 and 36, respectively. Appendix C includes maps that illustrate the average PCI for each city and county.

The average pavement condition index for streets and roads statewide is 66. This is a 1-point increase from 2018 and is still considered to be in the "at risk" category.

Table 2.4 Summary of PCI Data by County (includes Cities) for 2008-2020

County (Cities Included)	Centerline Miles	Lane-miles	Area (sy)	Average Weighted PCI*						
				2008	2010	2012	2014	2016	2018	2020
Alameda	3,592	8,140	78,210,590	66	67	68	66	68	68	68
Alpine	151	302	2,139,517	40	45	45	44	44	41	58
Amador	477	945	3,598,703	31	34	33	33	56	51	51
Butte	1,831	3,673	29,865,832	70	67	65	66	65	60	60
Calaveras	831	1,340	8,201,768	55	53	51	51	51	50	52
Colusa	761	1,247	13,240,593	61	60	60	62	63	60	61
Contra Costa	3,412	7,134	66,747,390	72	70	71	68	69	71	70
Del Norte	323	646	4,415,355	70	68	64	63	63	60	60
El Dorado	1,399	2,684	21,458,907	62	58	63	63	62	63	63
Fresno	6,214	12,595	108,361,263	74	70	69	69	64	61	60
Glenn	910	1,822	13,917,626	68	68	68	68	68	68	62
Humboldt	1,464	2,921	24,247,391	61	56	64	64	63	56	57
Imperial	3,024	6,103	76,823,230	74	72	57	57	58	55	58
Inyo	1,133	1,832	13,681,682	75	57	60	62	62	61	62
Kern	5,725	12,615	117,170,333	66	63	64	64	63	63	65
Kings	1,324	2,710	21,044,749	63	62	62	62	59	60	61
Lake	640	1,271	8,822,689	33	31	40	40	40	38	37
Lassen	431	879	6,282,324	55	69	66	66	63	60	61
Los Angeles	21,130	57,167	457,415,797	68	67	66	66	67	67	68
Madera	1,754	3,507	24,879,499	48	48	47	47	46	44	44
Marin	1,028	2,065	17,202,637	61	61	61	63	64	67	65
Mariposa	362	719	5,334,893	53	44	44	53	65	65	66
Mendocino	1,125	2,256	16,135,923	51	49	37	35	35	32	36
Merced	2,349	4,975	39,594,831	57	58	58	58	56	56	57
Modoc	1,507	3,014	16,895,856	42	40	56	46	59	59	63
Mono	737	1,473	9,613,552	71	68	66	67	64	65	66
Monterey	2,011	3,940	31,471,030	63	45	50	50	50	49	52
Napa	740	1,513	13,048,684	53	60	59	59	59	59	56
Nevada	806	1,625	10,348,493	72	71	72	71	70	68	67
Orange	6,603	16,326	153,443,823	78	76	77	77	79	79	79
Placer	2,063	4,322	37,360,569	79	77	71	69	68	64	67
Plumas**	706	1,412	9,070,195	71	66	66	64	72	73	71
Riverside	7,899	17,774	161,794,983	71	72	70	70	71	68	68
Sacramento	5,028	10,961	95,785,803	68	66	64	62	62	60	58
San Benito	492	761	5,156,435	68	66	66	48	46	37	37
San Bernardino	8,905	22,601	181,506,462	72	70	70	71	71	70	74
San Diego	7,759	18,760	174,285,803	74	69	67	66	65	69	70
San Francisco	943	2,142	21,249,793	62	63	65	66	68	74	74
San Joaquin	3,237	6,779	60,307,486	70	70	67	73	70	70	67
San Luis Obispo	1,980	3,569	37,159,695	64	64	63	64	63	65	59
San Mateo	1,884	3,942	34,071,528	69	70	71	70	71	72	68
Santa Barbara	1,607	3,352	29,854,633	72	70	67	66	63	61	61
Santa Clara	4,510	10,039	97,993,485	70	69	73	68	67	70	69

Table 2.4 Summary of PCI Data by County (includes Cities) for 2008-2020

County (Cities Included)	Centerline Miles	Lane-miles	Area (sy)	Average Weighted PCI*						
				2008	2010	2012	2014	2016	2018	2020
Santa Cruz	873	1,757	14,104,814	52	48	48	57	50	55	55
Shasta	1,579	3,100	24,430,506	64	67	57	60	57	58	49
Sierra	399	800	5,566,517	73	71	71	45	44	44	45
Siskiyou	1,488	2,985	20,233,539	57	57	57	57	58	56	62
Solano	1,745	3,766	33,387,951	66	66	67	65	68	67	65
Sonoma	2,390	4,991	40,203,089	53	50	50	52	55	54	58
Stanislaus	2,908	5,981	52,101,939	60	51	52	55	55	63	61
Sutter	1,032	2,079	16,016,764	73	56	56	65	70	69	59
Tehama	1,202	2,408	17,509,230	69	65	65	62	53	54	50
Trinity	592	1,112	7,477,638	52	50	50	60	62	59	54
Tulare	3,570	7,192	58,952,533	66	68	68	68	60	62	62
Tuolumne	547	1,083	7,109,056	62	62	62	47	41	41	28
Ventura	2,535	5,577	56,220,129	64	66	69	70	71	69	68
Yolo	1,344	2,696	23,500,992	69	67	63	60	55	58	57
Yuba	1,066	1,504	19,557,588	74	56	56	60	60	66	67
TOTALS	**144,077**	**320,882**	**2,755,584,114**	**68**	**66**	**66**	**66**	**65**	**65**	**66**

* PCI is weighted by area.
** Plumas County average PCI is 70.8.

An average pavement condition of 66, while an improvement and an indicator of the impacts of new funding (see Chapter 4), is nonetheless still cause for caution. Although it is just a few points shy of the “good/excellent” category, it has significant implications for the future. Figure 2.6 illustrates the rapid pavement deterioration at this point in the pavement life cycle; if repairs are delayed by just a few years, the costs of the proper treatment may increase significantly, as much as ten times.

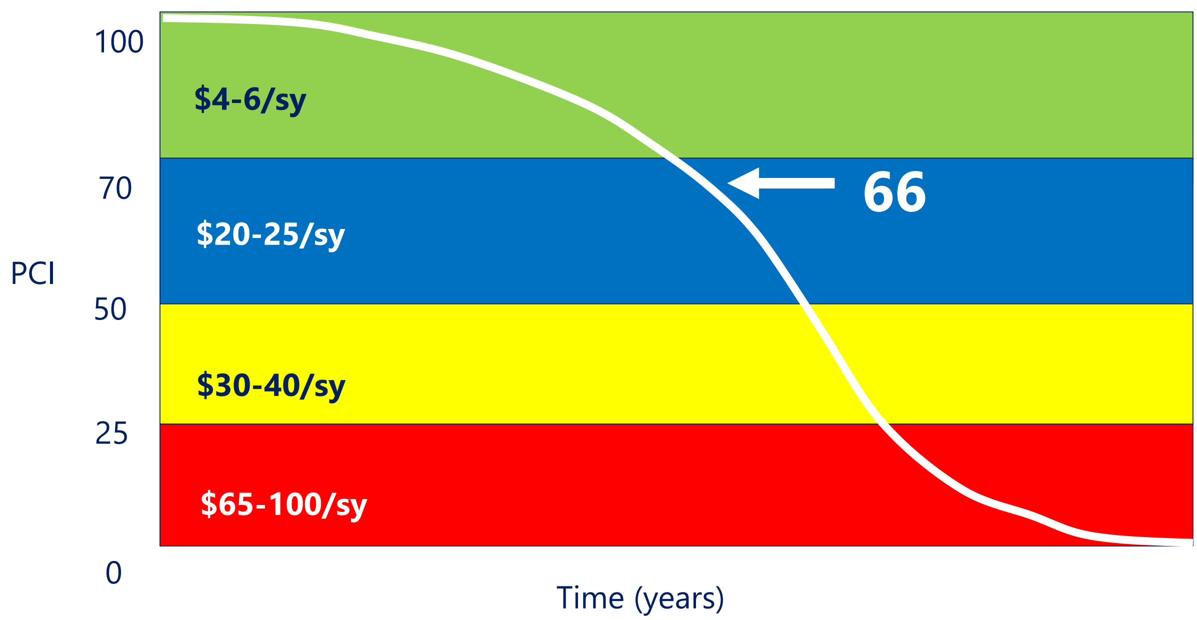


Figure 2.6 Generalized Pavement Life Cycle Curve

The financial advantages of maintaining pavements in good condition are many, including saving the taxpayers' dollars with less disruption to the traveling public, as well as environmental benefits.

Many factors contribute to rapid deterioration in pavement conditions, including:

- More traffic and heavier vehicles;
- More transit and more frequent bus trips, including heavier buses;
- Heavier and more garbage collection trucks (recycling and green waste trucks are new weekly additions to the traditional weekly garbage truck);
- More street sweeping for National Pollutant Discharge Elimination System (NPDES) requirements; and
- More freight and delivery trucks when the economy is thriving.

Therefore, a PCI of 66 should be viewed with caution – it indicates that the condition of our local streets and roads is still, as it were, poised on the edge of a cliff. Figure 2.7 is an example of a local street with an average condition of 66.

Figure 2.7 Example of Local Street with PCI of 66

Figure 2.8 shows the distribution of pavement conditions by county for both 2008 and 2020. Most of the counties in the state have pavement conditions that are either "At Risk" (blue) or in "Poor" (red) condition. There has been an increase in the "blue" and "red" counties since 2008. Of the 58 counties, all but three (Orange, San Bernardino, and San Francisco) are in either "At Risk" or in "Poor" condition.

Only 55% of California's local streets and roads are in good condition.

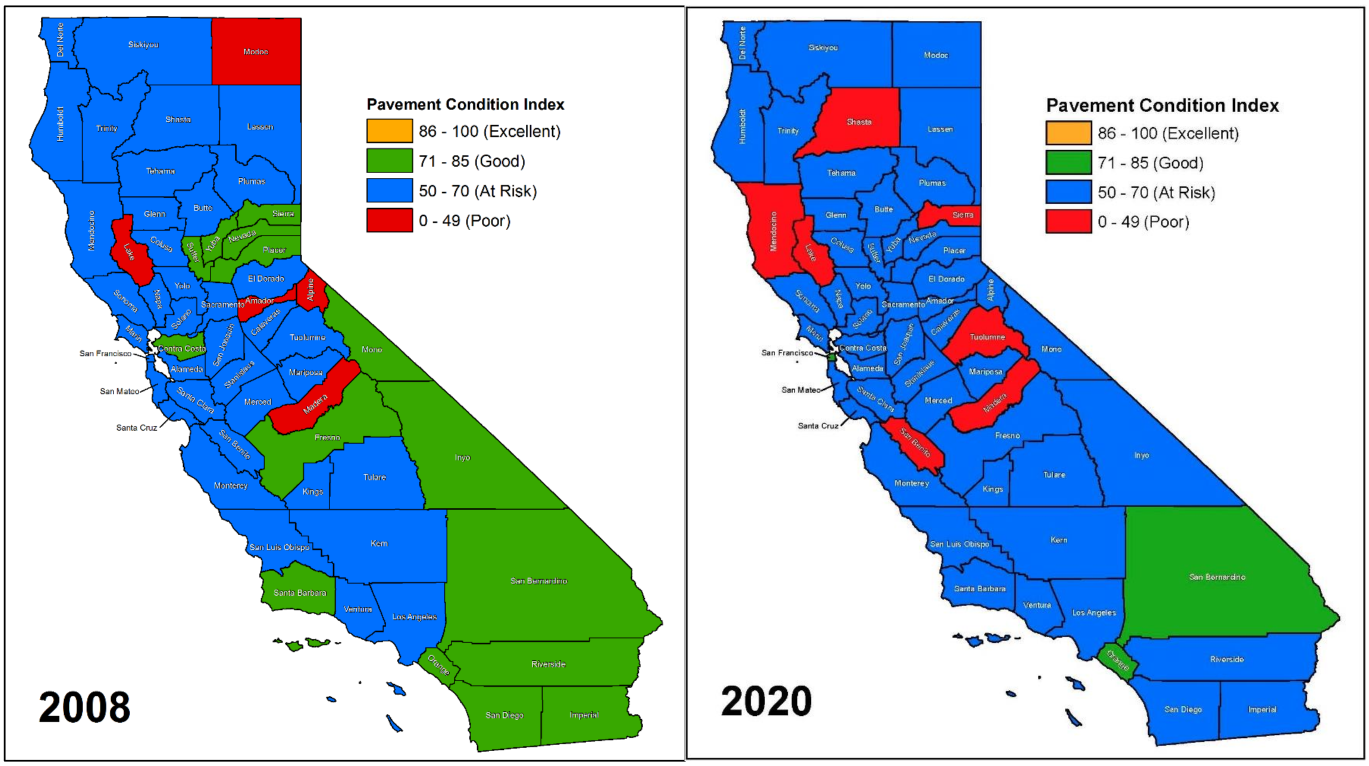


Figure 2.8 Average PCI by County for 2008 and 2020

2.3 Sustainable Pavement Practices

Sustainability continues to be a growing consideration for many local agencies, particularly if it saves costs. Cities and counties were asked for information on any sustainable pavement practices employed and the estimated cost savings, if any. The types of sustainable practices that were mentioned included:

- Cold central plant recycling
- Cold-in-place recycling (CIR)
- Full depth reclamation (FDR)
- Hot-in-place recycling (HIR)
- Pavement preservation strategies
- Permeable/pervious pavements

Some sustainable pavement strategies may save up to 40 percent.

- Reclaimed asphalt pavement (RAP)
- Rubberized hot mix asphalt (RHMA)
- Warm mix asphalt (WMA)

In general, the trends continue to be in the positive direction: 412 agencies responded with some information on the types of sustainable practices used. Table 2.5 summarizes the pavement strategy, the number of agencies that listed that strategy, the number of agencies that reported either a savings or additional cost for a specific strategy, and the average percent savings or cost over conventional pavement practices.

Table 2.5 Summary of Responses on Sustainable Pavement Strategies

Sustainable Pavement Strategies	No. of Agencies			Average % Savings	Average % Additional Costs
	No. of Responses	Savings	Add'l Costs		
Reclaimed AC Pavement	177	52	6	12	19
Cold-in-place Recycling	100	43	7	28	62
Hot-in-place Recycling	13	2	-	50	-
Cold Central Plant Recycling	25	9	2	32	35
Warm Mix AC	66	6	10	10	32
Permeable/Pervious	34	1	7	14	95
Full-depth Reclamation	177	41	21	42	53
Subgrade Stabilization	77	8	10	34	10
Rubberized AC	199	12	87	24	22
Pavement Preservation	343	92	33	41	38

Recycling and pavement preservation strategies were reported to have the highest cost savings when compared with conventional treatments. Other sustainable treatments incurred additional costs, particularly rubber hot mix asphalt (RHMA), which had 22 percent higher costs. The responses for warm mix asphalt and porous/pervious pavements were insufficient to draw any conclusions. As a side note, the additional cost of porous/pervious pavements may be offset by savings in stormwater costs.

The most common reasons cited for using sustainable practices were:

- Cost savings or cost-effectiveness;
- Environmental benefits (e.g., produces fewer greenhouse gas emissions, reduces energy consumption, uses fewer natural resources, reduces waste sent to landfills, reuses existing pavement materials, recycles tires, etc.)[7,8];
- Reduced excavation depth;

Every lane-mile that is recycled in-place is equivalent to taking 11 cars off the road for a year.

[7] *Sustainable Development: The Environmental Road of the Future*; Bilal, Julian; Chappat, Michael; COLAS Group; 2003.

[8] www.epa.gov/otaq/climate/420f05004.htm

- Extended pavement life;
- City Council policies that support or require sustainable pavements;
- Bigger projects and lower unit prices from partnering with other agencies; and
- Lower traffic impact (less construction traffic).

The most common reasons cited for not using sustainable practices were:

- Higher construction costs (mostly related to RHMA) or higher up-front costs;
- Not enough technical information available – design, specifications, etc.;
- Lack of performance data;
- Poor performance from previous projects;
- Lack of experienced contractors to bid on projects; and
- Not all streets are good candidates for these treatments; e.g., limited right of way.

The fact that 76 percent of the cities and counties in California reported using some form of sustainable pavement practices was very encouraging, particularly when one considers the potential cost savings involved. This is clearly evidence of local agencies using newer technologies to "stretch the dollar." The overwhelming majority also indicated that they would continue to use some form of sustainable strategy in the future.

2.4 Complete Streets

A complete streets policy ensures that transportation planners and engineers consistently design and operate the entire roadway with all users in mind – including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities. California state law (adopted in 2008 and effective 2011)[9] requires that cities and counties *"… plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan."*

For purposes of this study, the focus was on bicycle and pedestrian facilities. Figure 2.9 shows an example of a complete street that considers alternative modes of transportation (i.e., pedestrians, bicyclists, buses, and drivers, as well as curb ramps that comply with the Americans with Disabilities Act (ADA).

The 2020 survey garnered 405 responses, significantly more than in previous surveys. Of these, 228 indicated that they had a complete streets policy, triple the number reported in 2012. Of the 177 who did not have a policy, 50 indicated that they had elements of a complete streets policy in place. Table 2.6 shows the different elements utilized by agencies.

[9] ftp://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_1351-1400/ab_1358_bill_20080930_chaptered.pdf

Figure 2.9 Elements of a Complete Street (Napa, Napa County)

Table 2.6 Elements of Complete Streets Policy

Element	No. of Agencies
Bicycle Facilities	276
Pedestrian Facilities	276
Curb Ramps	262
Signs	246
Green Infrastructure	94
Traffic Calming (e.g., reduced lane widths)	233
Medians	212
Lighting	209
Transit Elements	167
Roundabouts	145

Figure 2.10 illustrates the number of agencies (195) who have recently completed a complete streets project; they have been constructed across all agency sizes (i.e., small, medium, and large agencies).

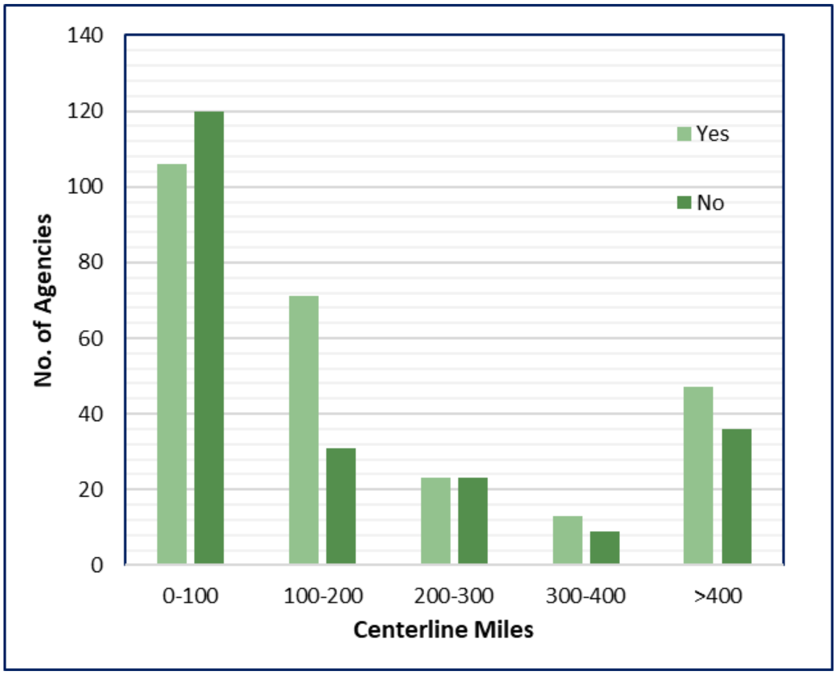


Figure 2.10 Number of Agencies with Complete Streets Projects

On average, the respondents also indicated that 32 percent of their street networks were eligible for including some of the above elements, and that the average additional costs were $117 per square yard (sy). However, there was a large range in the cost data provided, from less than $1/sy to over $5,000/sy. This is largely due to the wide range of elements that can be considered part of a complete streets policy. For example, restriping a road to add bicycle lanes is relatively inexpensive, but purchasing right-of-way for widening projects to include pedestrians/bicyclists/transit is much more expensive.

The examples shown in Figure 2.11 illustrate the range and type of complete streets projects possible, and their incremental costs, which ranged from $18/sy to $726/sy. It continues to be difficult to assume one average unit cost for a complete streets project.

There are challenges to implementing a complete streets policy, and the most common ones cited were (in order of frequency of responses):

1) Insufficient funding,
2) Insufficient right-of-way,
3) Existing structures, and
4) Trees or environmental features.

City of Santa Ana

Population: 332,725

Street Network: 424 miles

Complete street elements:
- Bike lanes
- Landscaped buffer
- Street lights
- Sidewalk widening

Incremental Cost: $18/sy

City of Emeryville

Population: 12,104

Street Network: 20 miles

Complete street elements:
- Street widening
- Bike/bus movement innovation
- In-lane transit island stop

Incremental Cost: $50/sy

City of San Clemente

Population: 64,857

Street Network: 134 miles

Complete street elements:
- Street widening
- Class II bicycle lanes

Incremental Cost: $135/sy

City of Mill Valley

Population: 14,295

Street Network: 60 miles

Complete street elements:
- Median replacement
- Bike lane
- Sidewalk widening
- Ramp

Incremental Cost: $726/sy

Figure 2.11 Examples of Complete Streets Projects

Finally, complete streets may have very different applications on a rural road as compared to an urban street. Many rural roads are long, located in remote areas, and may have as few as 50 vehicles a day with little or no pedestrians or bicyclists. Obviously, these will not be candidates for the type of complete streets approach that is applicable to more dense urban areas. Typical examples tend to be focused on urban roads, where the population supports multiple modes of transportation.

2.5 Additional Regulatory Requirements

All jurisdictions must comply with a variety of pavement and safety policies. In addition, cities and counties must comply with many additional regulatory requirements, including:

1) Americans with Disabilities Act of 1990 (ADA),
2) National Pollutant Discharge Elimination System (NPDES),
3) Traffic sign retroreflectivity requirements,
4) Complete streets, and
5) Others (e.g., Endangered Species Act, air emissions, sanitary/wastewater management plans).

As in previous surveys, participants listed the first three categories most often, with 87 responses on ADA, 60 on NPDES and 59 on traffic sign retroreflectivity. This reflects an overall drop in responses for the 2020 survey. However, when combined with data from previous years, the survey data were more robust; there were a total of 302 responses for ADA, 242 for NPDES and 231 for retroreflectivity.

Finally, the respondents identified $9.7 billion in needs to comply with these requirements, and only $6.7 billion in funding, resulting in a shortfall of almost $3 billion (see Table 2.7).

Table 2.7 Additional Regulatory Requirements (10-Year Needs and Funding)

Regulatory Requirements	Needs ($M)	Funding ($M)	Shortfall ($M)
ADA	$2,444	$1,120	$(1,324)
NPDES	$6,340	$5,369	$(971)
Traffic Signs	$286	$152	$(134)
Complete Streets	$501	$16	$(485)
Other	$87	$34	$(53)
Total	**$9,658**	**$6,691**	**$(2,967)**

2.6 Unpaved Roads

Unpaved roads (gravel or dirt surface) are not a large component of the local transportation network statewide, and only comprise 5.1 percent of the total area. Nonetheless, they are important in many rural counties. For example, in Mono County, unpaved roads comprise more than 60 percent of the road system.

Unpaved roads need $1.63 billion over the next 10 years.

The needs assessment for unpaved roads is not complicated – 103 agencies reported a total unpaved road network of 9,592 centerline miles. The maintenance cost is approximately $17,000 per centerline mile per year, almost double the original costs from 2008. Since pavement management software like StreetSaver® only analyzes paved roads, this average cost was applied to only the unpaved roads. This results in a total 10-year need of $1.63 billion.

Figure 2.12 Examples of Unpaved Roads

2.7 Pavement Needs

The methodology to determine the pavement needs and unfunded backlog was described in detail in Appendix B of the 2008 report and is therefore not duplicated here. To briefly summarize, the analysis requires four main elements:

- Existing condition (i.e., PCI),
- Appropriate treatment(s) to be applied from decision tree and unit costs,
- Performance models, and
- Funding available during analysis period.

Pavement needs are estimated to be $76 billion over the next 10 years.

The calculation of the pavement needs is conceptually quite simple. Once the PCI of a pavement section is known, a treatment and unit cost can be applied. This is performed for all sections within the 10-year analysis period. A section may receive multiple treatments within this timeframe; e.g., Walnut Avenue may be overlaid in Year 1, and then sealed in Year 5 and again in Year 10.

As before, the deferred maintenance or "unfunded backlog" is defined as work that is needed but is not funded. It is theoretically possible to fully fund ***all*** the needs in the first year, thereby reducing the backlog to zero, but unachievable on a practical basis given resource limitations. Therefore, the funding constraint for the scenario is to achieve the BMP goal within 10 years. Assuming a constant annual funding level, the backlog will gradually decrease to zero by the end of the analysis period.

The results are summarized in Table 2.8 and indicate that $76 billion is required to achieve the BMP goal in 10 years. Again, this is in constant 2020 dollars and includes the impact of sustainable technologies. The savings range, on average, from 28 to 42 percent over conventional treatments and result in a reduction of the 10-year paving needs when compared to 2018 (pavement needs were $70 billion in 2018). Detailed results by county are included in Appendix C.

Table 2.8 Cumulative Pavement Needs

Cumulative Needs 2020 dollars)		
Year No.	Year	Reach BMP Goal in 10 Years ($ Billion)
1	2021	$7.6
2	2022	$15.2
3	2023	$22.8
4	2024	$30.4
5	2025	$38.0
6	2026	$45.6
7	2027	$53.2
8	2028	$60.8
9	2029	$68.4
10	2030	$76.0

In 2018, the total 10-year need was $70 billion, so this is an increase of $6 billion. This is due to the significant increases in paving costs described in Section 2.1.3.

Finally, Figure 2.13 illustrates a map of California with the 10-year pavement needs by county. From this, we can see that the preponderance of needs is in Southern California, the San Francisco Bay Area, and portions of the Central Valley.

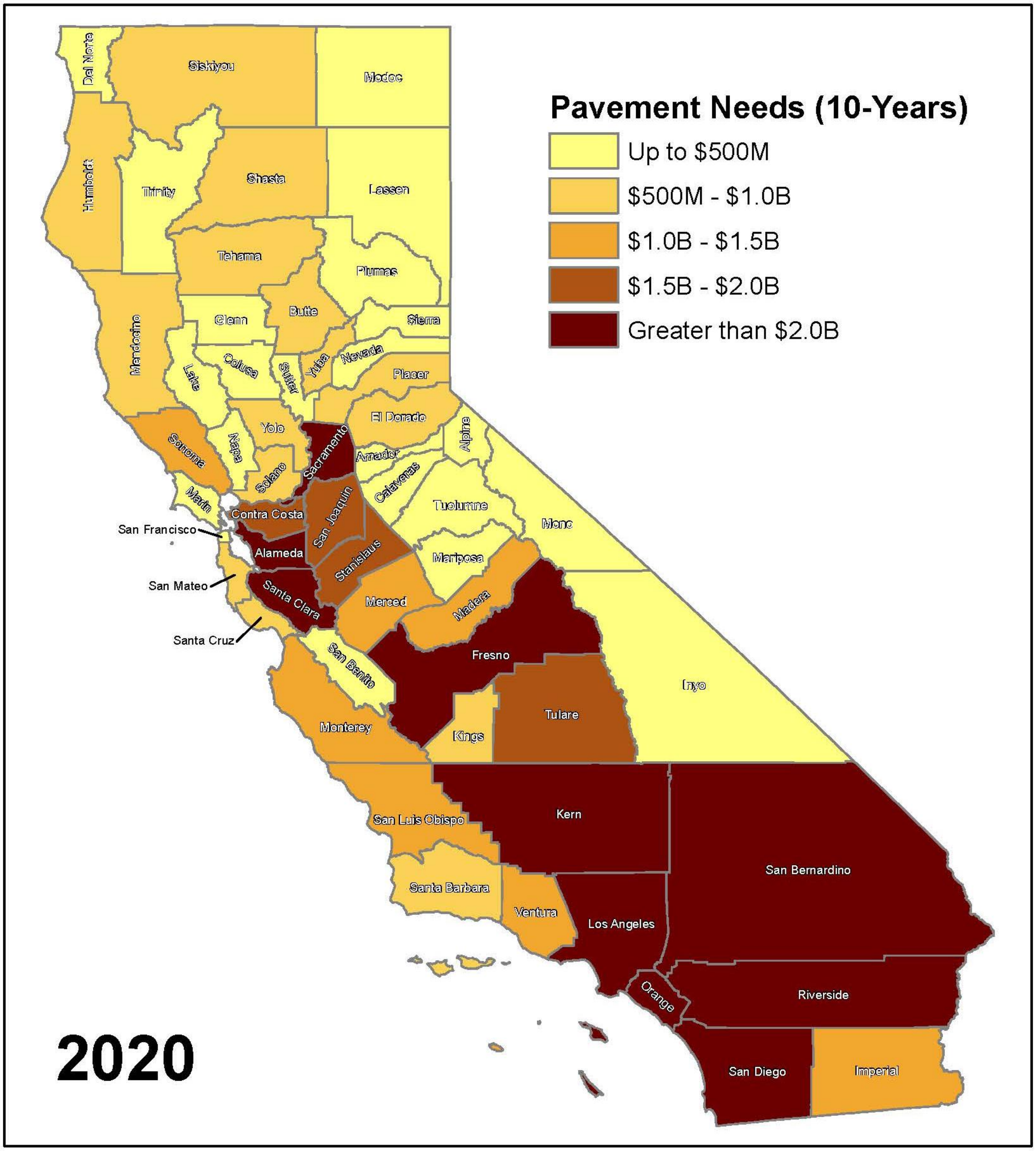
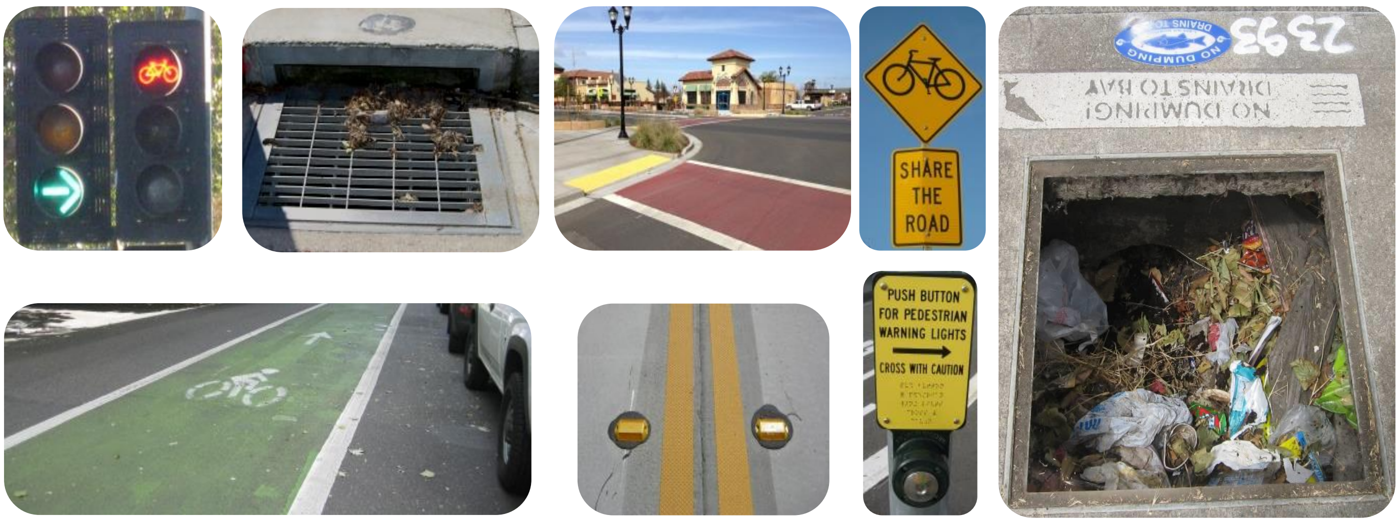


Figure 2.13 Pavement Needs (10 Years) by County

3 Essential Components Needs Assessment

The transportation system includes other essential components (i.e., safety, traffic, and regulatory elements) in addition to pavements and bridges. The safety of the traveling public is the highest priority for local agencies, so components such as traffic signals, streetlights, and signs, while not the most expensive, are critical. Since the transportation system is intended to serve all modes of travel (pedestrians, bicyclists, buses, people with disabilities, etc.) and not just vehicles, local streets and roads must consider their needs as well.



Storm drains, which are mostly invisible since they tend to be underground, are also needed to remove excess water from the surface to facilitate both pavement structural integrity and safety. In removing water, trash and other pollutants inevitably drain into creeks, rivers, lakes, bays, and the ocean, bringing environmental considerations into play. Cities and counties have the responsibility of removing these pollutants as part of the maintenance costs of the transportation system.

Underground pipes, since they are often invisible, are often overlooked when establishing priorities, yet their failure can have disastrous consequences. Other components of the infrastructure, although not part of the local streets and roads system (such as water mains) can have adverse impacts if not properly maintained. This was made evident by the failure of a 90-year-old water main near the University of California Los Angeles (UCLA) in July 2014, which caused considerable damage to the roadway system and nearby facilities on the UCLA campus (see Figure 3.1).

Figure 3.1 Water Main Break on Sunset Blvd, Los Angeles – 2014 (Courtesy LA Times)

3.1 Data Collection

As with past surveys, agencies were asked to provide specific information on the inventory and replacement costs for the following 12 asset categories:

Asset Category	Essential Components
1	Storm drains – pipelines
2	Curb and gutter
3	Sidewalk (public)
4	Curb ramps
5	Traffic signals
6	Streetlights
7	Sound walls/retaining walls
8	Traffic signs
9	Other storm drain elements (e.g., manholes, inlets, culverts, pump stations)
10	NPDES
11	Other ADA compliance needs
12	Other physical assets or expenditures

Unfortunately, only 121 survey responses were received in 2020, compared to 239 in 2018. But data from the previous surveys were also included in the analysis, which resulted in data points from 404 agencies. Table 3.1 illustrates the reliability of the data collected from the 2020 survey as determined by the city or county. For example, in the case of **streetlights**, the survey responses indicated that:

- 23.6 percent of agencies had accurate replacement costs.
- 45.1 percent of agencies estimated the replacement costs.
- 31.3 percent did not respond.

Overall, a little over 36 percent of the agencies indicated that they either had accurate data or were able to provide estimates of the replacement costs for these asset categories. In Table 3.1, three major essential components (storm drains, curb and gutters, and sidewalks) have reasonably "good" data (i.e., approximately 70 percent of the agencies have some data on their replacement costs), which is a key factor in estimating the needs.

Table 3.1 Percentage of Agencies Responding with Data on Essential Components

Category	Percentage of Agencies		
	Accurate & Informed Estimate	Guess	No Response
Storm Drains - pipelines	23.7%	44.9%	31.4%
Other storm drain elements e.g. manholes, inlets, culverts, pump stations, etc.	19.5%	43.2%	37.3%
Curb and gutter	20.2%	49.2%	30.6%
Pedestrian facilities: Sidewalk (public)	20.0%	49.4%	30.6%
Other pedestrian facilities, e.g. over-crossings	13.0%	10.9%	76.1%
Bicycle facilities: Class I bicycle path	13.7%	25.0%	61.2%
Bicycle facilities: Class II bicycle lane	4.6%	9.3%	86.1%
Bicycle facilities: Class III bicycle routes/sharrow	3.9%	7.2%	88.9%
Bicycle facilities: Class IV protected bike lanes	1.9%	2.8%	95.4%
Other bicycle facilities, e.g. bike shelters/lockers, etc.	11.9%	8.5%	79.6%
Curb ramps	21.5%	40.3%	38.2%
Traffic signals	30.8%	40.8%	28.4%
Street Lights	23.6%	45.1%	31.4%
Sound Walls/Retaining walls	21.3%	19.3%	59.4%
Traffic signs	21.5%	43.0%	35.4%
Multi-use paths	3.0%	3.5%	93.5%
Pedestrian paths	1.7%	2.8%	95.5%
Crossing Improvements e.g. high visibility crossings, rapid flashing beacons, roundabouts, scrambles, bulbouts, pedestrian refuge islands, etc.	3.9%	6.1%	90.0%
Transit amenities e.g. benches, shelters, real-time arrival signage, wayfinding signage	1.3%	5.0%	93.7%
Other physical assets or expenditures that constitute >5% of total non-pavement asset costs e.g. heavy equipment, corporation yards etc. Note: Do NOT include bridges (handled separately)	16.9%	18.9%	64.2%

The 2020 survey also included new survey questions (highlighted in green); these were requested for inclusion by the Los Angeles County Metropolitan Transportation Authority. However, as can be seen in Table 3.1, very few agencies responded to these questions.

Data on essential components are especially challenging to obtain, mostly because very few agencies have the resources to implement and maintain an asset inventory or management system. For example, unincorporated Orange County, with a road network of 320 miles, has over 18,000 signs, over 6,200 drainage inlets and 2,500 miles of storm drains, over 2,400 traffic signals, almost 10,000 miles of curbs, and more than 10,000 miles of paint striping. The cost of inventorying these components can be very high and is not financially possible for many agencies.

3.2 Needs Methodology

In 2016, a new analysis approach was adopted for the essential using a new model based on geography (Geographically Weighted Regression or GWR). Appendix E of the 2016 report provides a detailed discussion of this method; key points are provided in this section. While previous models were reasonably accurate in the aggregate, large variations exist for individual agencies.

There are many factors that affect the replacement costs of these elements, most of which are caused by geography. For instance, most would agree that it is much more expensive to install a curb ramp in San Francisco than it is in Ceres, and the number of signs that exist in an urban city environment is significantly higher than in a rural county. The reasons that measured relationships vary spatially can also be attributed to sampling variation, relationships intrinsically different across space (for instance, different administrative policies produce different responses), traffic patterns, road network attributes, or sociodemographic characteristics.

The 2016 model accounts for this variability and is reproduced here:

$$Ln\ Cost = C_{tm3} \times tm^{1/3} + C_{tm} \times tm + C_{isrural} \times isrural + C_{iscounty} \times iscounty + Intercept$$

Where:

Cost = total replacement cost, dollars;

Total miles (tm) = total centerline miles of roads or streets;

isrural = indicator variable and is equal to 1 if agency is rural, 0 otherwise; and

iscounty = indicator variable and is equal to 1 if agency is county, 0 otherwise

Typically, the model was used only for those agencies that did not provide any replacement costs. However, some agencies reported extremely low costs that were considered anomalies; in these cases, the model was used instead.

Table 3.2 indicates the percentage of needs predicted by the model for each county. For example, in El Dorado County, 67 percent of the agencies provided data; therefore, the model only estimated the costs for the remaining 33 percent of agencies. Overall, the model was used to estimate the replacement costs of approximately 25 percent of the agencies.

Table 3.2 Percentage of Agencies with Survey Responses

County	% Agencies With Survey Responses	County	% Agencies With Survey Responses
Alameda	93%	Orange	77%
Alpine	100%	Placer	86%
Amador	67%	Plumas	50%
Butte	67%	Riverside	86%
Calaveras	50%	Sacramento	75%
Colusa	0%	San Benito	67%
Contra Costa	100%	San Bernardino	76%
Del Norte	50%	San Diego	84%
El Dorado	67%	San Francisco	100%
Fresno	69%	San Joaquin	75%
Glenn	67%	San Luis Obispo	50%
Humboldt	50%	San Mateo	95%
Imperial	25%	Santa Barbara	78%
Inyo	100%	Santa Clara	94%
Kern	67%	Santa Cruz	60%
Kings	60%	Shasta	75%
Lake	33%	Sierra	0%
Lassen	50%	Siskiyou	50%
Los Angeles	74%	Solano	100%
Madera	67%	Sonoma	80%
Marin	92%	Stanislaus	50%
Mariposa	100%	Sutter	100%
Mendocino	60%	Tehama	100%
Merced	71%	Trinity	100%
Modoc	100%	Tulare	67%
Mono	50%	Tuolumne	50%
Monterey	46%	Ventura	82%
Napa	100%	Yolo	100%
Nevada	50%	Yuba	67%
		Total	**75%**

3.3 Determination of Essential Components' Needs

Like previous models, the 2016 regression model estimates the total replacement cost for only the first eight asset categories listed in Section 3.1. To estimate the needs, this cost needs to be converted to an annual amount based on the estimated service life of the different assets. The costs of the remaining four categories (other storm drain elements, NPDES, ADA and other physical assets) are then added. This procedure was described in detail in Appendix E of the 2008 report and has not been duplicated here.

The funding needs for essential components is $35.5 billion.

The 10-year needs figure was estimated to be $35.5 billion, which is a 4 percent increase from the $34.1 billion reported in 2018. Figure 3.2 is a map illustrating the distribution of needs by county. It should not be any surprise that the bulk of the needs are in the urban regions of the state. Appendix D summarizes the essential components' needs for each county. A map to show the percent of needs met with existing funding is also included.

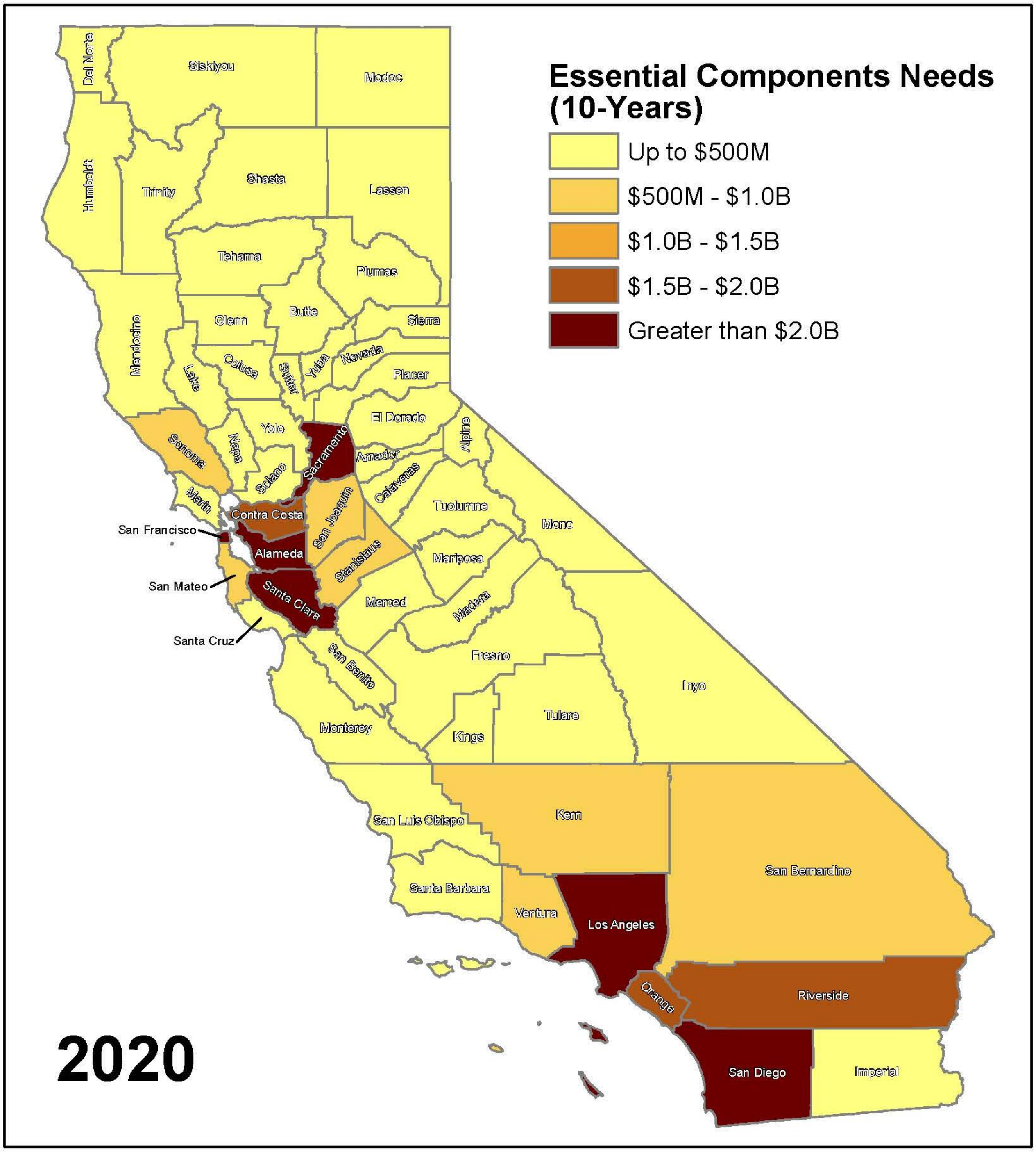


Figure 3.2 Essential Components' Needs by County

4 Funding Analyses

4.1 Pavement Revenue Sources

The online survey asked agencies to provide both their revenue sources and pavement expenditures for 2018/19, 2019/20, as well as estimating an annual average for future years. A total of 338 agencies responded with financial data.

As before, cities and counties identified a myriad of sources of funds for their pavement expenditures, broadly categorized into federal, state, or local. For local funds alone, more than a hundred different sources were identified. They included the following examples (this is by no means an exhaustive list and some funding sources have changed with the advent of the Fixing America's Surface Transportation (FAST) Act[10].

Federal Funding Sources

- Regional Surface Transportation Program (RSTP)
- Surface Transportation Program (STP)
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- Community Development Block Grant (CDBG)
- Highway Safety Improvement Program (HSIP)
- Federal Emergency Management Agency (FEMA)
- Forest Reserve
- Transportation Enhancement Activities (TEA)

State Funding Sources

- Gas taxes (Highway User Tax Account or HUTA)
- Transportation Development Act (TDA)
- State Transportation Improvement Program (STIP)
- Active Transportation Program (ATP) which now includes the Bicycle Transportation Account (BTA) and Safe Routes to Schools (SR2S)
- Vehicle License Fees (VLF)
- Transportation Improvement Fee
- Local Transportation Fund (LTF)
- Safe Routes to School
- Traffic Congestion Relief Fund (TCRP)
- CalRecycle grants

[10] http://www.fhwa.dot.gov/fastact/

Local Funding Sources

- Local sales taxes
- Development impact fees
- General funds
- Various assessment districts – lighting, maintenance, flood control, special assessments, community facility districts
- Traffic impact fees
- Traffic safety/circulation fees
- Utilities; e.g., stormwater, water, wastewater enterprise funds
- Transportation mitigation fees
- Parking and various permit fees
- Flood Control Districts
- Enterprise Funds (solid waste and water)
- Investment earnings
- Parcel/property taxes
- Indian reservation roads
- Indian gaming funds
- Vehicle registration fees
- Vehicle code fines
- Underground impact fees
- Transient Occupancy Taxes (TOT)
- Capital Improvement Program (CIP) Reserves/Capital Funds

The funding data were first reviewed to ensure that the description matched the funding source (i.e., federal, state, or local). In cases where the source did not match the description, the source was re-categorized as appropriate. Funds were also further categorized as gas tax, sales tax, general fund or other, based on the description. Funds and expenditures were then summed by agency and year. Agencies that reported funding or expenditures for some years, but not others, were further reviewed; data for reported years was then used to estimate the data for unreported years.

Funds and expenditures for each agency were then divided by the number of lane-miles of roadway in that agency. The funding and expenditures data per lane-mile results were then reviewed for outliers. With the outliers removed, funding and expenditure data per lane-mile were then averaged for urban counties, rural counties, urban cities, and rural cities. These averages were used to determine the estimated total funds and expenditures for all cities and counties. Then the total expenditures and funds for these categories were summed to determine the statewide total values.

Table 4.1 and Figure 4.1 summarize the total pavement funding available as well as the percentage of the funding that comes from various sources. Overall, funding stabilized at $2 billion a year between 2014/15 to 2016/17. SB 1 had an immediate impact in 2017/18 and is expected to contribute 22 percent of total funding from 2020/21 forward – this is approximately $536 million a year.

Table 4.1 Funding Sources for Pavements

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future
Pavement Funding ($M)	$1,453	$1,571	$1,557	$1,530	$1,691	$1,836	$1,938	$1,967	$1,999	$2,378	$2,156	$2,420	$2,435
Federal	10%	23%	18%	17%	10%	12%	9%	9%	8%	11%	7%	10%	6%
State	62%	50%	53%	53%	52%	50%	44%	41%	43%	37%	35%	35%	36%
Local	28%	27%	29%	30%	38%	38%	47%	50%	49%	43%	40%	38%	36%
SB1										10%	18%	17%	22%

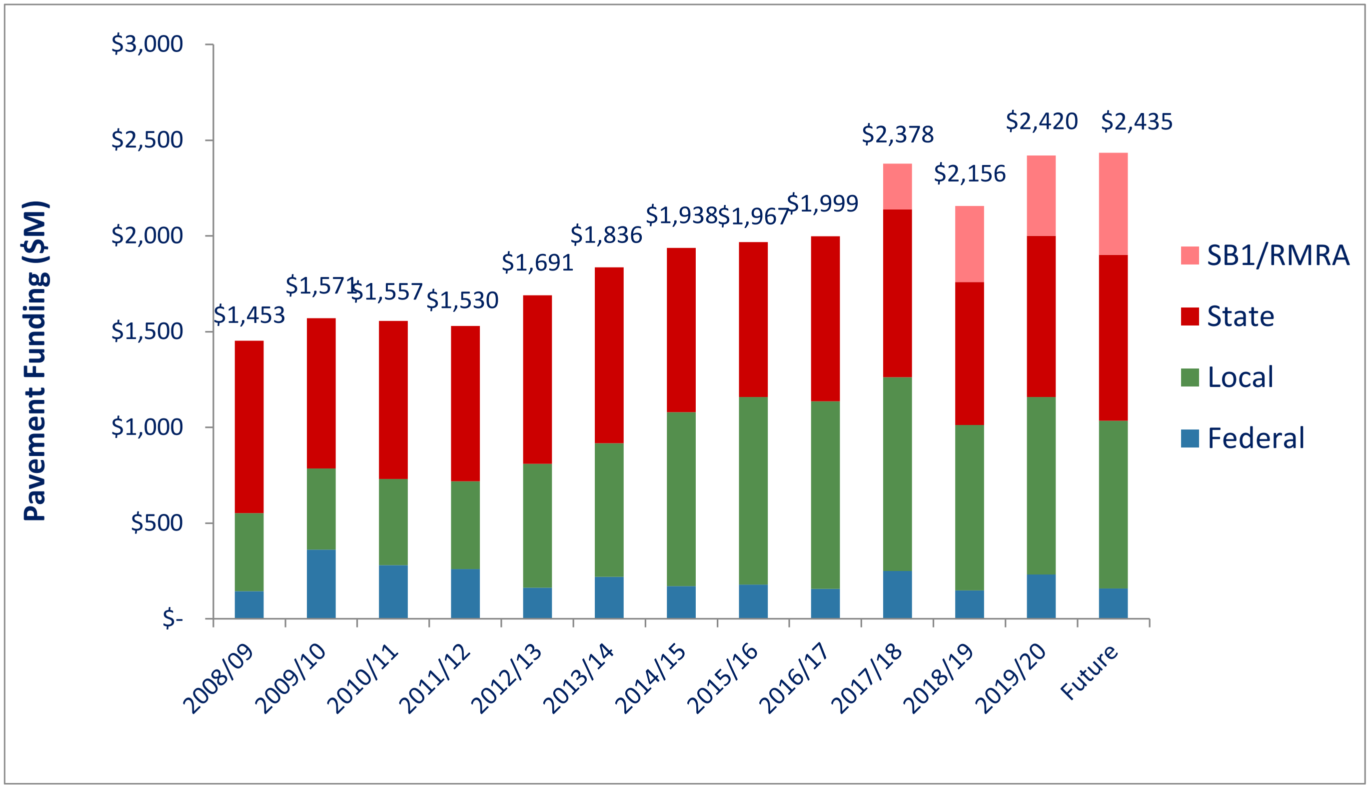


Figure 4.1 Pavement Funding by Source

Prior to SB 1, the trend indicated that local agencies were relying more on local sources and less on state funding; with the advent of SB 1, the percentage of state funding sources is back to 2008/09 levels.

Note that federal funding was a significant component in 2009/10 and 2010/11, reflecting the influx of American Recovery and Reinvestment Act, which occurred during the recession. Since then, the percentage of federal funds has fluctuated around 10 percent and is projected to decrease to 7 percent. This is an important item to note since it indicates that cities and counties, in general, do not rely heavily on federal funds.

The gas tax is the single largest funding source for cities and counties.

The Highway User Tax Account (HUTA), more commonly known as the state gas tax, is still the single largest funding source for cities and counties. Table 4.2 shows that this revenue source had been declining. The reason for the decline was partly due to declining gas consumption, and partly due to the additional responsibilities for cities and counties tied to that funding source (e.g., compliance with ADA, which reduces the amount of funding available for pavements). However, this revenue decline changed with the passage of SB 1. Table 4.2 shows the amount of funding provided to cities and counties from the gas tax, as well as the percent of State-provided pavement funding and total pavement funding that came from gas tax proceeds. The table indicates that gas tax funds are projected to increase to $2 billion a year.

Traditionally, cities and some counties have been able to rely on the General Fund for pavement funding. However, as Table 4.3 illustrates, the number of agencies that receive General Funds has decreased in the last 2 years and that trend is expected to continue in the future.

Of final interest is the trend in local sales tax measures (Table 4.4). Prior to SB 1, the trends indicated an increasing reliance from this revenue source. However, with SB 1, local sales taxes are expected to provide just 12 to 15 percent of the total pavement funding.

Table 4.2 Gas Tax Trends for Pavements

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future
Gas Tax ($M)	$ 1,115	$ 911	$ 861	$ 907	$1,096	$1,137	$891	$904	$843	$1,200	$1,652	$1,742	$2,037
% of State funding	66%	69%	75%	78%	93%	91%	86%	88%	91%	92%	93%	89%	93%
% of total funding	41%	34%	40%	41%	48%	46%	38%	36%	39%	43%	49%	47%	54%

Table 4.3 General Funds for Pavement Funding

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future
General Fund ($M)	$ 201	$ 120	$ 175	$ 168	$166	$232	$322	$406	$316	$303	$281	$283	$274
# of agencies	132	62	77	72	88	94	104	104	128	132	70	72	64
% of local funding	27%	16%	28%	25%	19%	24%	29%	33%	30%	25%	21%	20%	20%
% of total funding	7%	4%	8%	8%	7%	9%	14%	16%	15%	11%	8%	8%	7%

Table 4.4 Local Sales Tax Trends

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future
Sales Tax ($M)	$ 285	$ 258	$ 256	$ 279	$374	$455	$364	$475	$500	$663	$420	$550	$511
% of local funding	38%	35%	41%	42%	43%	48%	32%	39%	47%	55%	31%	38%	38%
% of total funding	10%	10%	12%	13%	17%	18%	16%	19%	23%	24%	12%	15%	13%

Table 4.5 Breakdown of Pavement Expenditures ($M)

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future
Preventive Maint.	$ 394	$ 375	$ 273	$ 273	$ 333	$ 367	$ 373	$ 378	$ 479	$ 551	$ 514	$ 561	$ 631
Rehabilitation & Reconst.	$ 1,224	$ 1,400	$ 817	$ 794	$ 1,132	$ 1,208	$ 1,178	$ 1,194	$ 1,154	$ 1,429	$ 1,238	$ 1,456	$ 1,509
Other	$ 200	$ 172	$ 84	$ 82	$ 104	$ 109	$ 194	$ 167	$ 293	$ 332	$ 315	$ 339	$ 276
Operations & Maint.	$ 573	$ 543	$ 383	$ 381	$ 578	$ 615	$ 619	$ 631	$ 527	$ 563	$ 566	$ 574	$ 529
Totals	**$ 2,391**	**$ 2,489**	**$ 1,557**	**$ 1,530**	**$ 2,147**	**$ 2,298**	**$ 2,365**	**$ 2,370**	**$ 2,454**	**$ 2,874**	**$ 2,632**	**$ 2,929**	**$ 2,945**

4.2 Pavement Expenditures

The survey also asked for a breakdown of pavement expenditures in four categories:

- Preventive maintenance, such as slurry seals;
- Rehabilitation and reconstruction, such as overlays;
- Other pavement-related activities such as curbs and gutters; and
- Operations and maintenance, such as filling potholes, sealing cracks and street sweeping.

Table 4.5 (on previous page)shows the breakdown in extrapolated pavement expenditures for cities, counties and cities/counties combined. There was a drop in expenditures reported in 2010/2011, reflecting the recession. However, since 2012/13, expenditures have gradually increased and now exceed 2008 levels.

Figure 4.2 illustrates the trends for all pavement expenditures graphically. Preventive maintenance continues to be a robust category and has grown to 20 percent. This indicates that many agencies continue to be cognizant of the need to preserve pavements. Rehabilitation and reconstruction are relatively stable at 50 percent. Operations and maintenance have dropped to a little under 20 percent.

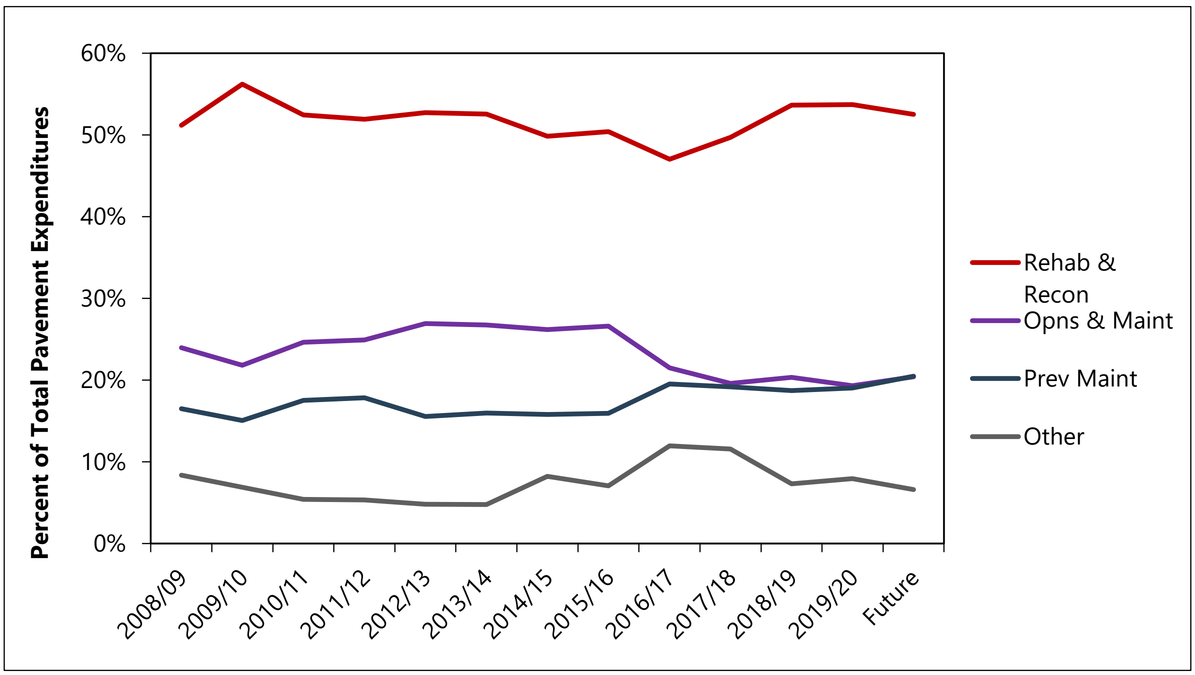


Figure 4.2 Trends in Pavement Expenditures

Finally, projected pavement expenditures for the next 10 years are shown in Table 4.6. As expected, rural counties indicate lower projected expenditures than cities and urban counties; similarly, rural agencies project lower expenditures when compared to urban agencies. However, all categories show decreases in pavement expenditures compared to 2018.

Table 4.6 Projected Pavement Expenditures Per Lane-Mile

	Pavement Expenditures ($/lane-mile)	
	Rural	Urban
County	$4,657	$12,582
City	$8,491	$10,666

The resulting total pavement expenditures for all 539 cities and counties were therefore estimated to be $2.43 billion annually. To put this funding level in perspective, $2.43 billion/year is approximately 1.1 percent of the total investment in the pavement network, the value of which is estimated at $220 billion.

However, our observations on the predicted versus actual expenditures revealed an interesting trend, as illustrated in Figure 4.3. Generally, local agencies were spending 10 to 20 percent more (blue line) than estimated (orange line) prior to SB 1. From discussions with some respondents, it appeared that the estimated expenditures were conservative and reflected a reluctance to rely on federal and state grants/sources in the future as well as the inability to predict how the economy will perform (sales tax is a key funding source as noted previously.)

However, in 2018 the trend changed. In 2018 and 2019, actual expenditures were LESS than estimated. For 2018, this may be attributable to the uncertainly over the potential repeal of SB 1 which may have led to more conservative expenditures. Moreover, it took several months for SB 1 funding to fully phase-in, with the first allocation made halfway through the 2017-18 fiscal year on January 31, 2018. In 2019, actual pavement expenditures were $2.42 billion, still less than expected.

We did note that expenditures on essential components increased from $1.1 billion to $1.8 billion/year from 2016 to 2020. Combined, the increase in funding for both pavements and essential components is $1.16 billion MORE than pre-SB 1 levels. So, although agencies are receiving significantly more funding from SB 1, not all of it is spent on pavements; some is spent on other essential components.

Cities and counties are estimated to spend $2.43 billion annually on pavements.

The survey results indicated that future expenditures were estimated to be $2.43 billion from 2020 onwards and we have used this funding level in Section 4.6. This is despite the pandemic in 2019/20, which did initially result in a drop of approximately 10 percent in gas-tax-related revenues. Since late 2020, the projections for gas taxes and SB 1 indicate that they have “bounced” back.

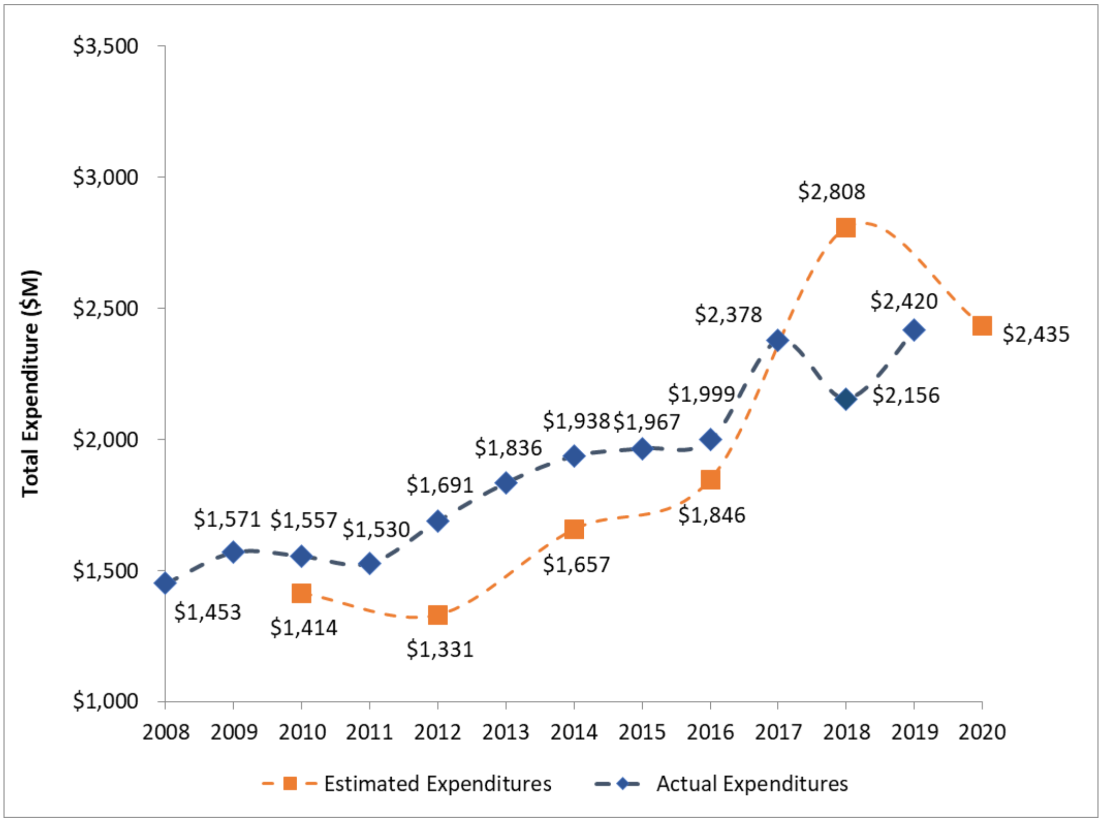


Figure 4.3 Differences Between Predicted and Actual Expenditures

4.3 Essential Components Revenue Sources

The revenue sources for essential components are shown in Table 4.7. Again, federal funds currently make only a small contribution to the cities and counties, in the order of 11 to 14 percent. However, unlike pavements, local sources are expected to account for almost half of total funding, with state sources accounting for 29 percent. In addition, there is no one single funding source like the gas tax.

Since local revenues form much of the funding, Table 4.8 explores the five main funding sources: general funds, local sales taxes, lighting district funds, development impact fees, and other. The last category includes stormwater, sanitary sewer, and NPDES-related sources. Future funding projections indicate a decrease in funding compared to the peak in 2016/17 and 2017/18 and closer to 2013/14 levels.

4.4 Essential Components Expenditures

Table 4.9 details the expenditures by category. Storm drains and traffic signals continue to be the largest components.

On average, anticipated expenditures for essential components over the next 10 years are shown in Table 4.10. As before, rural counties and cities are expected to have lower expenditures than their urban counterparts. The resulting total expenditures for all 539 cities and counties were estimated to be over $1.3 billion annually.

Table 4.7 Funding Sources for Essential Components ($M)

Funding type	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future
Funding Available ($M)	$885	$903	$1,204	$1,332	$1,111	$1,184	$1,459	$1,603	$1,597	$1,888	$1,811
Federal	16%	16%	12%	13%	11%	17%	9%	12%	11%	15%	14%
State	31%	31%	28%	23%	18%	17%	17%	18%	26%	27%	29%
Local	53%	53%	60%	65%	70%	66%	74%	70%	55%	51%	48%
SB1/RMRA							0%	0%	8%	7%	9%

Table 4.8 Local Revenue Sources for Essential Components ($M)

Funding type	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future
General Fund	$104	$124	$83	$93	$398	$420	$789	$821	$431	$560	$475
Sales Tax	$112	$114	$129	$148	$98	$132	$115	$114	$337	$286	$275
Lighting District Funds	-	-	-	-	$39	$40	$34	$35	$6	$5	$5
Development Impact Fees	$34	$37	$24	$32	$27	$23	$31	$46	$38	$52	$42
Other	$249	$255	$460	$556	$219	$163	$115	$114	$69	$67	$67
Totals	**$ 498**	**$ 530**	**$ 696**	**$ 830**	**$ 781**	**$ 779**	**$ 1,083**	**$ 1,129**	**$ 881**	**$ 970**	**$ 864**

Table 4.9 Breakdown of Expenditures for Essential Components

Essential Components	Annual Expenditures ($M)							% of total
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Future	
Storm Drains	$147	$131	$215	$233	$160	$162	$183	14%
*Manholes, Inlets, Culverts, Pump Stations	$37	$46	$43	$50	$59	$62	$61	5%
Curb and Gutter	$55	$67	$38	$50	$60	$64	$62	5%
Sidewalk (public)	$110	$129	$101	$158	$106	$187	$157	12%
Other Pedestrian Facilities	$5	$22	$18	$27	$27	$27	$20	2%
Class 1 Bicycle Path	$24	$40	$29	$56	$30	$32	$22	2%
Other Bicycle Facilities	$4	$6	$17	$29	$7	$56	$18	1%
Curb Ramps	$47	$54	$50	$67	$56	$60	$70	5%
Traffic Signals	$210	$258	$223	$247	$218	$283	$248	18%
Street Lights	$122	$121	$188	$224	$72	$107	$102	8%
Sound/Retaining Walls	$4	$7	$10	$8	$11	$17	$22	2%
Traffic Signs	$61	$68	$54	$55	$53	$52	$54	4%
Tunnels	$0	$0	$4	$4	$8	$0	$0	0%
Other physical assets or expenditures	$122	$102	$88	$90	$179	$237	$230	17%
*Bicycle facilities: Class II bicycle lane					$21	$20	$24	2%
*Bicycle facilities: Class III bicycle routes/sharrow					$4	$7	$7	1%
*Bicycle facilities: Class IV protected bike lanes					$3	$6	$10	1%
*Pedestrian paths					$3	$3	$3	0%
*Multi-use paths					$8	$20	$17	1%
*Crossing Improvements					$20	$23	$27	2%
*Transit amenities					$4	$13	$3	0%
Totals	**$949**	**$1,052**	**$1,078**	**$1,300**	**$1,108**	**$1,437**	**$1,339**	**100%**

*New items in 2020 survey

Table 4.10 Breakdown of Expenditures by Agency

	Expenditures on Essential Components	
	Rural	Urban
County	$2,188	$10,977
City	$5,241	$5,513

4.5 Funding Shortfalls

One of the primary objectives of this study was to determine whether a funding shortfall exists for the next 10 years, and if so, the amount of that shortfall. Chapters 2 and 3 described the analysis to determine the funding needs for both the pavement and essential components, respectively. The preceding sections analyzed the revenues and expenditures as well.

Table 4.11 summarizes the results of all the preceding analyses and determines the funding shortfall to be $59.7 billion for pavements and essential components. An additional shortfall of $3 billion was estimated for additional regulatory requirements (e.g., NPDES, ADA and sign retroreflectivity; see Table 2.7). However, those numbers were not included in Table 4.11 because only half of the agencies had data, and only half of those indicated that they were “informed estimates” or “guesses” at best.

Table 4.11 Summary of 10-Year Needs & Shortfall (2020 $ Billion)

Transportation Asset	Needs ($B)						2020		
	2008	2010	2012	2014	2016	2018	Needs	Funding	Shortfall
Pavement	$67.6	$70.5	$72.4	$72.7	$70.0	$61.7	$76.0	$38.4	$(37.6)
Essential Components	$32.1	$29.0	$30.5	$31.0	$32.1	$34.1	$35.5	$13.4	$(22.1)
Totals	**$99.7**	**$99.5**	**$102.9**	**$103.7**	**$102.1**	**$95.8**	**$111.5**	**$51.8**	**$(59.7)**

In the 2018 study, the funding shortfall identified was $52 billion, so this is an increase of $7.7 billion. The increase in needs is due to the increases in paving costs as described in Section 2.1.3; the higher costs may be partly due to an unanticipated consequence of SB 1. In essence, SB 1 added $5 billion to construction funding; however, this was not necessarily matched with increases in contractor capacity. The potential repeal in 2018 also did not encourage contractors to add more capacity. However, as the market adjusts, we anticipate a more stable cost structure in the future.

4.6 Pavement Funding Scenarios

California, together with the rest of the nation, faced severe economic challenges during the recession that began in 2008, with reductions in revenues, multi-billion-dollar deficits and a high unemployment rate. While economic growth and tax increases have helped stabilize state and local revenues for many programs, transportation funding levels lagged for many years.

However, after 10 years of working with policymakers, and providing the results of the statewide needs studies, the Governor signed SB 1 into law in 2017. More than $5 billion a year was made available for transportation. Of that, cities and counties receive approximately $1.5

The shortfall for local streets and roads is $59.7 billion.

billion annually for streets and roads. This was a much needed infusion, and the funding scenarios illustrate the beneficial consequences of this additional funding.

In addition, cities and counties have continued to stretch every existing dollar. One new factor in the 2018 analysis was the inclusion of sustainable technologies such as cold-in-place recycling and full-depth reclamation. These had cost savings of over 25 percent when compared to conventional treatments and have been included in all the scenarios for 2020.

Once the backlog has been eliminated, $3 billion/year is required to maintain the network at BMP levels.

The funding scenarios analyzed were:

1) Existing funding with SB 1, estimated at $2.43 billion/year;
2) Existing funding to maintain current pavement condition at PCI=66; and
3) Funding to achieve best management practices (BMP) in 10 years.

Note that approximately $536 million of SB 1 is estimated to be spent on paving, with the remainder allocated to essential components as well as operations and maintenance.

As noted in Chapter 1, an analysis period of 10 years was selected, not just for consistency with the SHOPP, but also because this was a reasonable timeframe to accomplish the BMP goal. Even if local agencies received $37.6 billion to erase the 10-year pavement shortfall today, it would not be possible to build or construct this large number of projects in one year, or two or even five. Few, if any, agencies have the resources to design, manage, or inspect this quantity of work in such a short time frame, and the contracting community is also unlikely to have the resources to construct them. In discussions with the Oversight Committee, a 10-year timeframe was deemed to be reasonable and practical.

Scenario 1: Existing Funding with SB 1 ($2.43 billion/year)

In this scenario, the most cost-effective treatments would be funded first; these are typically preventive maintenance or preservation strategies, such as seals. This approach generally treats a larger percentage of the pavement network, thus optimizing the use of limited funds. At the existing funding level of $2.43 billion/year, this would result in a slow decrease in the pavement condition to 59 and an increase in the unfunded backlog to $55 billion. Figure 4.4 graphically illustrates these two trends.

Scenario 3: Reach Best Management Practices ($7.89 billion/year)

One of the objectives of this study was to determine what funding level would be required to reach a pavement condition where BMPs can be applied. This goal would be met when the PCI reaches an optimal level in the mid-80s, and the unfunded backlog is eliminated by the end of the 10-year period.

For this scenario, $7.89 billion/year would be required (see Figure 4.6). The PCI would reach 87 and the unfunded backlog would be eliminated by 2030. **Once eliminated, the cost of ongoing maintenance would become significantly lower, requiring $3 billion a year.**

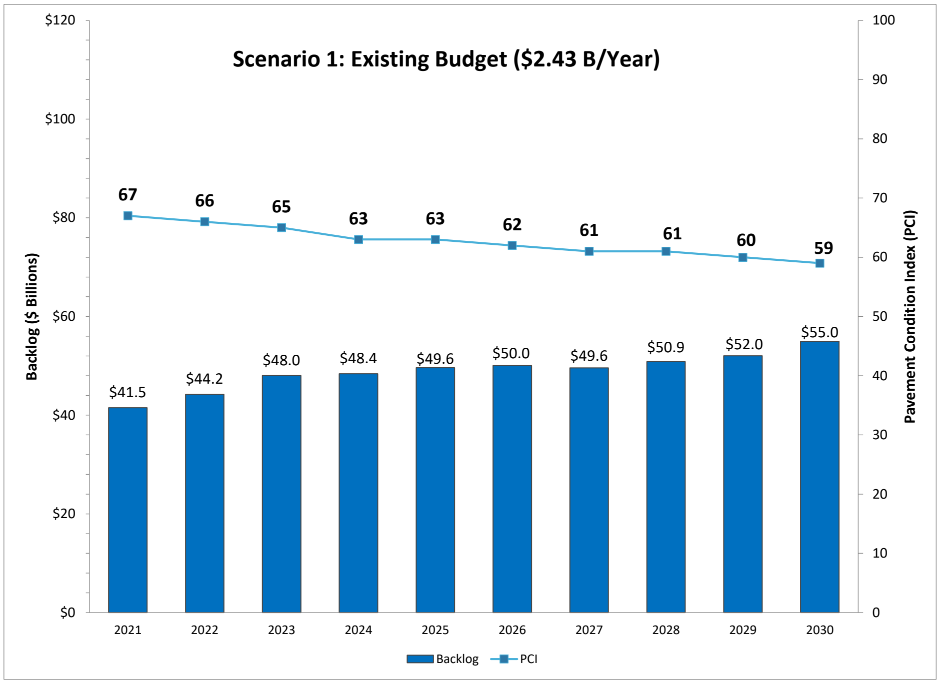


Figure 4.4 Results of Scenario 1: Existing Budget

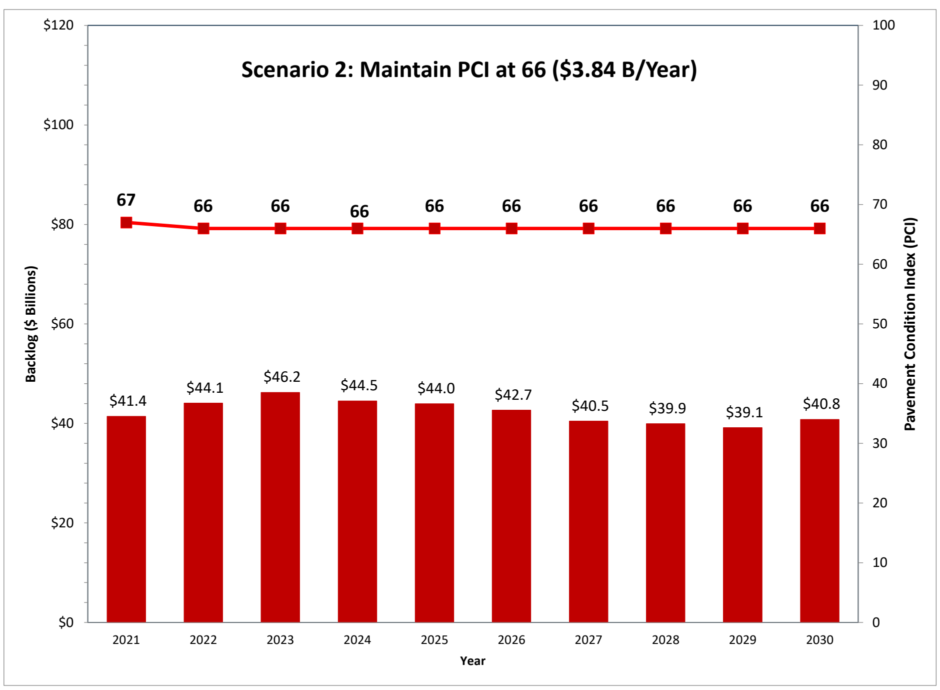


Figure 4.5 Results of Scenario 2: Maintain PCI at 66

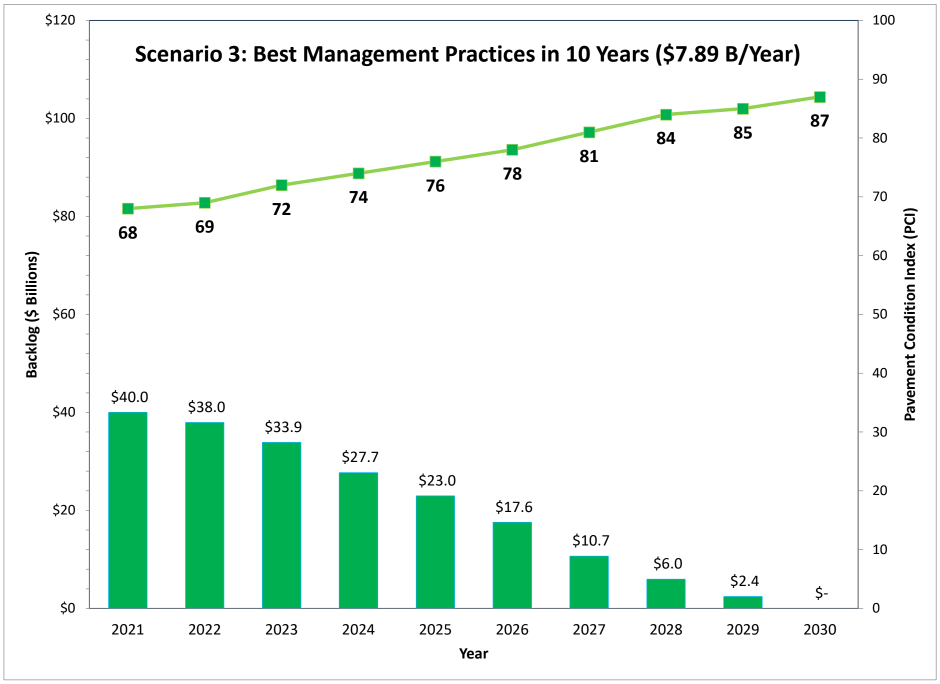


Figure 4.6 Results of Scenario 3: BMP in 10 years = $7.89 billion/year

4.7 Other Performance Measures

Although both PCI and the unfunded backlog are common performance measures for cities and counties, there are others that may be used. One such measure is the percentage of pavement area in different condition categories. Table 4.12 illustrates the breakdown in pavement area for each funding scenario.

The biggest factor that jumps out is that, with the existing budget, the percentage of pavements in good condition will drop slightly to 48.7 percent, and pavements in "poor" condition will increase to 31.1 percent. Figure 4.7 shows examples of "poor" local streets.

Table 4.12 Breakdown of Pavements by Condition Category for Each Scenario (2030)

Condition Category	Current Breakdown (2020)	Scenario 1 Existing Budget ($2.43 B/yr)	Scenario 2 Maintain PCI ($3.84 B/yr)	Scenario 3 BMP in 10 Years ($7.89 B/yr)
PCI 70-100 (Good to Excellent)	55.0%	48.7%	74.7%	100.0%
PCI 50-69 (Fair/At Risk)	21.8%	20.2%	4.6%	0.0%
PCI 0-49 (Poor)	23.2%	31.1%	20.7%	0.0%
Totals	100.0%	100.0%	100.0%	100.0%

Figure 4.7 Examples of Poor Streets

4.8 How Did We Get Here?

For those who do not work with transportation issues every day, it can be difficult to understand how California's cities and counties have reached this situation. Yet the factors that have led us here can be quickly summarized:

- The population of California was approximately 30 million in 1990; it is now almost 40 million, an increase of 33 percent. Attendant with that increase in population are increases in traffic, housing, and new roads.
- There are many new regulations that have increased the responsibilities of cities and counties, such as ADA, NPDES, and new traffic sign retroreflectivity standards.
- California has statewide goals to reduce reliance on driving and increase opportunities for active transportation. Communities value complete streets and active transportation policies, but these improvements can significantly increase construction costs.
- Cities and counties need to consider, build, and maintain a transportation system that has multiple transportation modes; e.g., bicycles, pedestrians, trucks, and buses.
- The cost of road repairs and construction has steadily increased, at rates that are significantly higher than that of inflation. In the last 15 years, paving costs have increased much more than revenues. These increases can be attributed to rising costs of petroleum products (directly correlated to asphalt costs), labor and equipment.
- The State gasoline excise tax did not increase for more than 20 years, yet it is the single most important funding source for transportation. Cities and counties have relied on a diminishing revenue source for a transportation system that is aging and deteriorating rapidly – SB 1 provides the first significant infusion of new funding in many years.
- The increased fuel economy of vehicles as well as the popularity of hybrid and electric vehicles leads to decreasing gas consumption, and, in turn, to a reduction in gas taxes. Hence the need for a long-term sustainable revenue source.

4.9 Summary

From the results of the surveys as well as the funding scenarios, it is apparent that:

- Total funding for pavements is projected at $2.43 billion annually over the next 10 years. Of this, 57 percent are expected to come from state funds (almost all gas tax and SB 1), 7 percent from federal sources, and the remainder from local sources (mostly sales taxes).
- Total expenditures for essential components are projected to grow to $1.3 billion annually. Most of the funding is expected to come from local sources (48 percent) with the state contributing approximately 29 percent.
- With SB 1, the total funding shortfall for pavements and essential components is expected to be $59.7 billion over the next 10 years.
- Under the existing funding for pavements ($2.43 billion/year), the PCI will decrease from 66 to 59 and the unfunded backlog will increase to $55 billion. In addition, approximately one-third of the pavement network will be in "failed" condition by 2030.
- To maintain the existing pavement condition (Scenario 2), a funding level of $3.84 billion/year would be required. This would dramatically improve the percent of pavements in the "good to excellent" category from 55 percent to 75 percent.
- The BMP scenario would require approximately $7.89 billion annually to eliminate the backlog of work and raise the statewide average PCI to the mid-80s. Once the BMP goal has been reached, it would require only $3 billion/year to maintain the condition of the pavement network.

5 Bridge Needs & Funding Analysis

Bridges are an integral part of the transportation system, and therefore this study would be incomplete without a discussion of their needs. The catastrophic nature of a bridge failure is exemplified by the collapse of the I-35W bridge in Minneapolis during rush hour in August 2007. Thirteen people were killed and 145 injured. Failures in local bridges can also have significant consequences. Many rural bridges provide the only access to homes and communities, and, if a bridge collapses, access to help is limited or not available. In other cases, detours of more than 4 hours may be necessary.

Addressing bridge investment needs is both a local and national challenge. In its report *Bridging the Gap*, the American Association of State Highway and Transportation Officials (AASHTO) describes age and deterioration as the first of five top problems facing the nation's bridge population[11]. Other problems include congestion, increased construction costs, maintaining bridge safety, and addressing new bridge needs. The Federal Highway Administration (FHWA) estimated that the national backlog of needed bridge investment was $121 billion in 2012, with a national investment level of $11.9 billion needed to keep the backlog from rising. This figure does not include addressing congestion or other new bridge needs[12]. California's bridge population is one of the largest in the country, and California bridge conditions have a significant bearing on any national-level analyses.

Although a compelling case can be made for making needed investments in California's local bridges, the simple truth is that local budgets are tightly constrained, there is significant uncertainty about future funding, and there are many different competing needs for available funds. Thus, bridge owners, taxpayers, and legislators need the most accurate information available to make the best decisions about how to allocate scarce resources.

For the 2020 update, a companion report was prepared by Quincy Engineering and Spy Pond Partners to analyze both the bridge needs and funding scenarios. This chapter summarizes their findings.

As with previous studies, two bridge inventory data sets were used for this study. First is the 2019 National Bridge Inventory (NBI) database; Caltrans collects data on behalf of local agencies on a biennial basis and provides this California data to the FHWA to be included in the NBI database. Second, local agency bridge inventory data are gathered from the Statewide survey on short (less than 20 feet in length) and non-vehicular bridges, which are excluded from the NBI database.

[11] AASHTO. *Bridging the Gap: Restoring and Rebuilding the Nation's Bridges.* 2008.

[12] FHWA *2013 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*. Report to the United States Congress. http://www.fhwa.dot.gov/policy/2013cpr/pdfs.cfm.

A total of 12,339 bridges are owned, maintained, and operated by cities, counties, and other municipalities; they comprise approximately 48 percent of the total of 25,499 vehicular bridges in California. Bridges owned by others (e.g., State, Bay Area Rapid Transit, private, railroad, and federal bridges) are not considered as local agency bridges and were not included in this study.

Figure 5.1 represents a breakdown of local bridge count by county. Most counties (including city bridges within the county) have a few hundred bridges, averaging about 200 bridges per county. In general, the counties with larger populations have a significantly higher number of bridges than those with lower populations. Los Angeles County has the most locally owned bridges, with over 1,400.

There are 12,339 local bridges in California, which represents 48 percent of the total.

Figure 5.2 illustrates the age distribution of all the statewide local bridges. Even with routine investment, every bridge eventually reaches the end of its useful structural lifespan. Modern bridges are designed with a 75-year service life in mind. A life expectancy of 75 to 100 years is reasonable for a typical, local-agency bridge.

California's local bridges have an average age of 53.4 years, while the national average is only 44 years of in-service use. More important is the distribution of age within the local bridge population. There are 2,332 local bridges that are at least 80 years old. This represents almost one-fifth (18.8 percent) of California's local bridge population. Nearly half of the state's local bridges (46 percent) were constructed during a 30-year period from the mid-1950s to the mid-1970s and are currently between 40 to 70 years old. During this building boom period, an average of 230 local bridges were being constructed every year. Through the past decade, the number of major local bridge projects completed in any given year has been less than 50.

At current funding levels, local bridges will need to be in service for more than 200 years, or 3 times their intended lifespan.

To keep the local bridge inventory from further advancing in age would require a replacement rate greater than 6 times the current rate, or approximately 250 bridges per year. At the current replacement rate, California's local bridges will need to be in service more than 200 years, or nearly 3 times the current intended lifespan, to replace the wave of aging local bridges constructed during the Interstate Highway construction era.

The largest age group represents bridges between 40 to 69 years or older. As bridges age, the need for rehabilitation or replacement becomes greater. As with streets and roads, it is more cost-effective to maintain bridges in good condition than it is to allow those bridges to deteriorate at a faster rate and require replacement sooner. Figure 5.2 also shows that there are more than 2,000 bridges that are over 80 years old.

The average age is more than 53 years old, and more than half are in fair to poor condition.

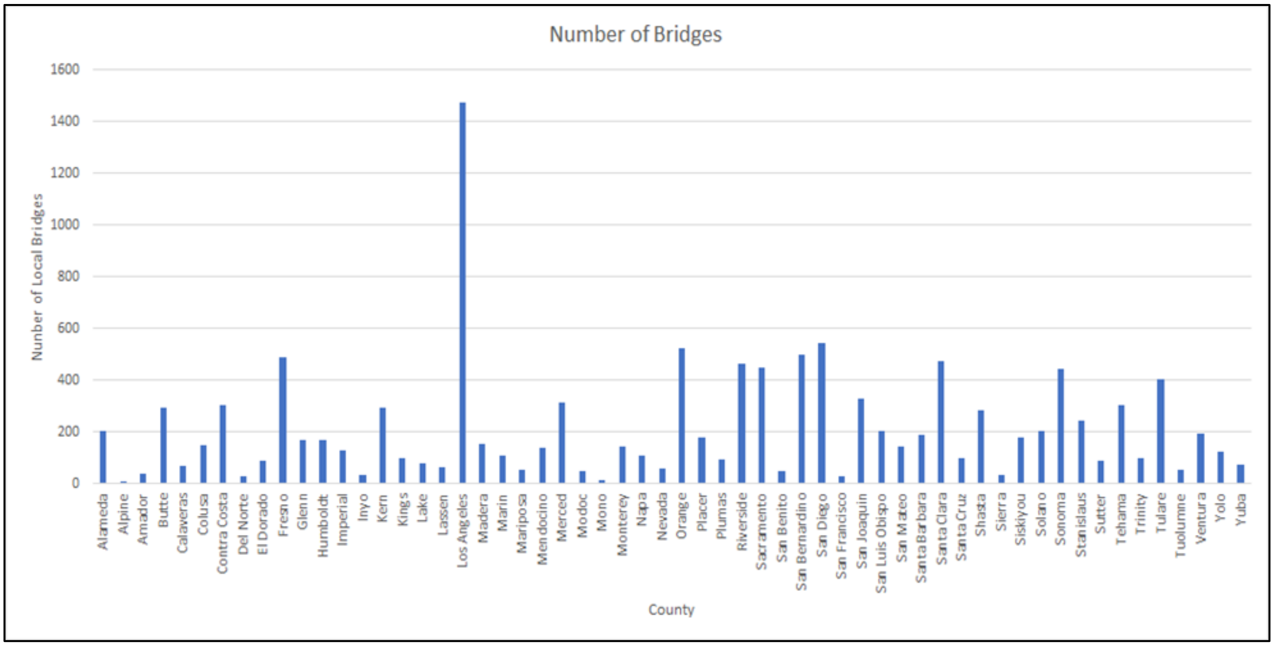


Figure 5.1 Number of Local Bridges by County (includes Cities within County)

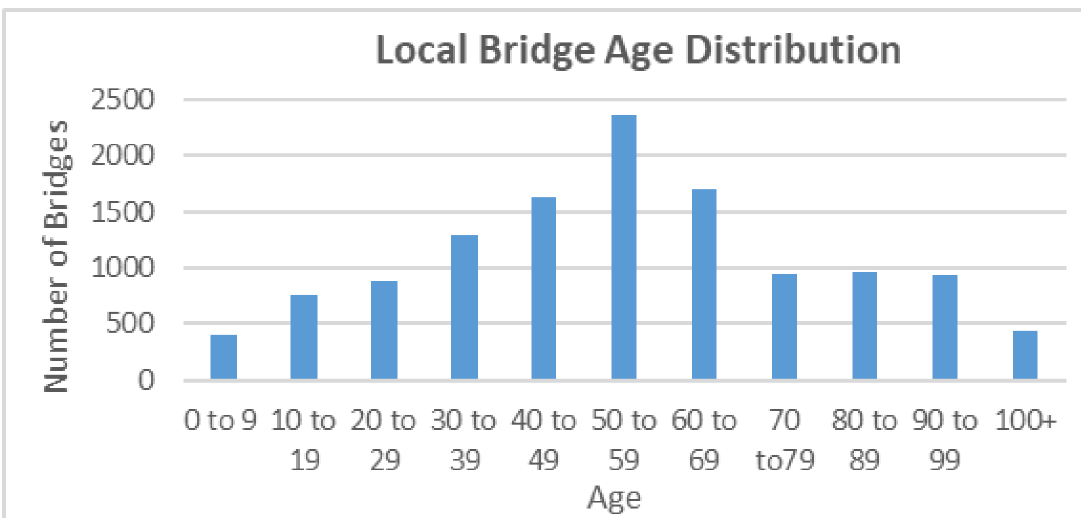


Figure 5.2 Local Bridge Age Distribution

The total needs for work activities such as bridge replacement, major rehabilitation, scour mitigation, seismic retrofit, and structure widening were estimated for the entire local bridge inventory of 12,339 structures. This estimate established the current needs within the system based on inspected bridge conditions, calculated load ratings, traffic volumes and width capacities, scour vulnerabilities, and seismic retrofit status. **The value of the 2020 bridge needs is estimated to represent $7.2 billion of improvement activities** (Figure 5.3), not including the cost of future maintenance and replacement of structures that are currently in sufficient condition. Completing this magnitude of work at the current investment levels would take over 25 years, with no other additional projects considered during that timeline.

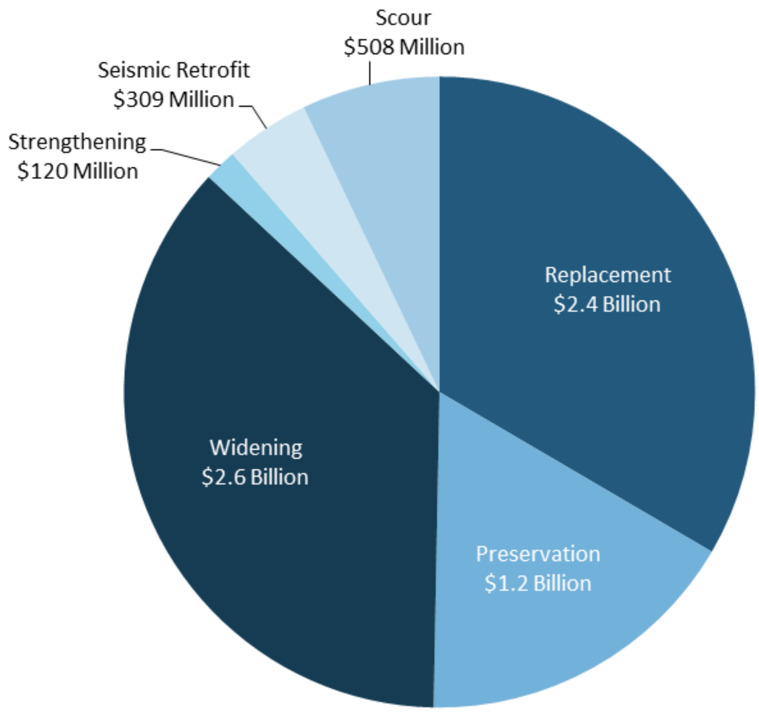


Figure 5.3 Local Bridge Needs Summary (2020)

Federal funding, administered by Caltrans through the Highway Bridge Program, has traditionally provided the primary funding source for local bridges. This federal funding has been stagnant at approximately $290 million annually over the past 10 years. At this investment level, the percentage of poor bridges will increase to more than 50 percent within the next 20 years. An annual funding amount between $700 to $800 million is expected to be required over the next 10 years to simply prevent an increase in the percentage of poor bridges from current levels (see Figure 5.4).

In summary, the needs of California's local bridge population are currently significant and increasing with time as the inventory ages. The cost of performing bridge projects has increased over time, beyond typical inflation escalation, due to an increase in project complexity based on design features, traffic widths, modern traffic loads, environmental regulations and permitting, and other project requirements. The result is that bridge construction projects cost considerably more today than they did at the time of original construction and the rate of bridge replacement and major rehabilitation projects is not keeping up with bridges that are reaching the end of their expected service lives. At the same time, maintenance needs within the aging population are also increasing. At a minimum, it is

Local bridge needs are $7.2 billion but funding is only $2.9 billion.

An annual funding level of $800 million is needed just to maintain current conditions.

estimated that the current level of investment in local bridges, traditionally from federal funding sources, needs to double simply to maintain the condition of California's local bridge inventory. Significantly more investment is required to improve the general condition of the population and address a wave of aging bridges originally constructed during the highway building boom period.

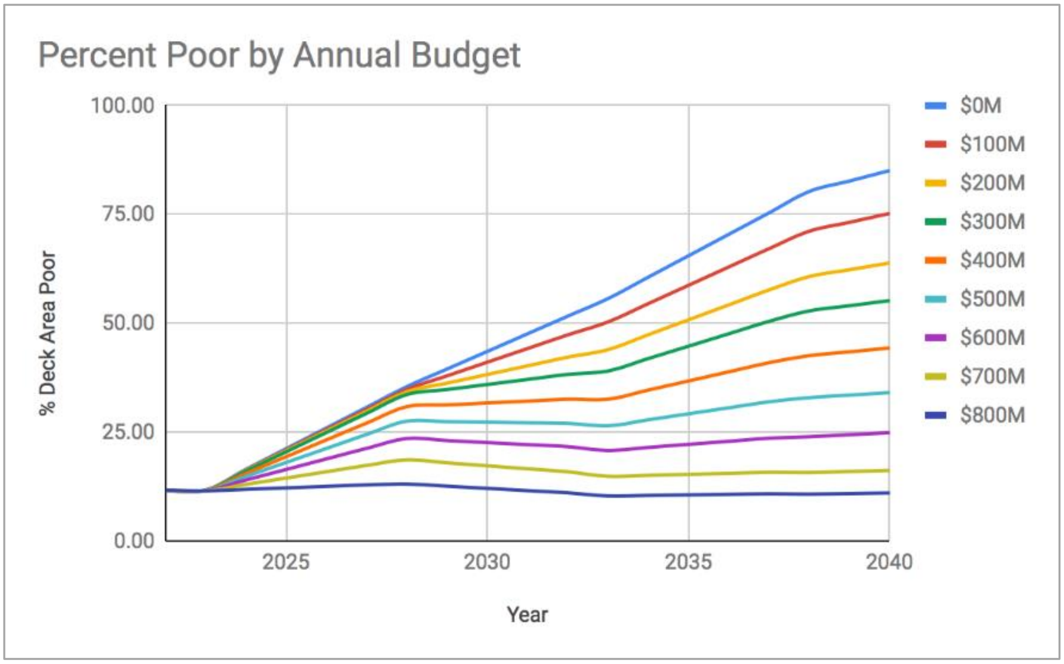


Figure 5.4 Percent of Bridges in Poor Condition by Annual Budget

6 Summary and Conclusions

SB 1 funding made a difference and was able to achieve its intended goal of not just stabilizing but improving the local street and road network by 1 point since 2018. However, it is premature to conclude that the deterioration of the last 12 years has been arrested permanently.

As this report shows, while pavement conditions did improve slightly, other factors have come into play. The key ones are:

1. The 2018 study assumed that $3.083 billion/year would be spent on pavements. However, data from 2018/19 and 2019/20 indicated that this was not the case; instead, average annual expenditures were $2.2 billion. For 2018/19, the potential repeal of SB 1 could have played a role in many agencies hesitating to commit all their SB 1 funding to paving when it was potentially at risk. For 2019/20, the expenditure levels significantly increased but not to the expected levels.

   Overall, total expenditures for pavements averaged $502 million less than predicted within those 2 years. However, the funding for essential components increased substantially by an average of $390 million in the same 2 years.

   We can conclude that more SB 1 funding was spent on essential components than originally estimated. The 2018 survey indicated that SB 1 funding would only account for 1 percent of total funding, it was actually 7 to 8 percent. This resulted in less funding available for pavements.

2. The projected expenditures for the next 10 years for pavements were lower than expected. The survey responses projected an annual funding of $2.43 billion when the 2018 estimate was $3.018 billion. It is unknown if the pandemic resulted in more conservative estimates of funding (the survey was extended through April 2020, when there were estimated reductions in the gas tax/SB 1 of 10 to 20 percent, and reductions of as much as 30 percent in sales tax revenues).

   However, the funding for essential components was estimated to increase substantially by $391 million annually. While the data are not complete, it can be surmised that a larger percentage of SB 1 funds were spent on essential components.

3. Finally, construction costs for paving were significantly higher than just 2 years ago, ranging from 16 to 23 percent increases. This was partly because the contracting industry did not have the capacity to handle a large infusion to the streets and highways construction market almost overnight, thus leading to higher bid prices. The potential repeal in of SB 1 in 2018 did not encourage contractors to expand capacity until after the November 2018 elections, thus delaying any market corrections for almost 2 years.

Table 6.1 summarizes the results for pavements, essential components, and bridges. The total funding needs over the next 10 years is $118.7 billion, and the resulting shortfall is $37.6 billion for pavements, $22.1 billion for essential components, and $4.3 billion for bridges. The total shortfall is $64 billion over the next 10 years.

Table 6.1 Summary of 10-Year Needs and Shortfall Calculations (2020$ Billion)

Transportation Asset	Needs ($B)						2020 ($B)		
	2008	2010	2012	2014	2016	2018	Needs	Funding	Shortfall
Pavement	$ 67.6	$ 70.5	$ 72.4	$ 72.7	$ 70.0	$ 61.7	$ 76.0	$ 38.4	$ (37.6)
Essential Components	$ 32.1	$ 29.0	$ 30.5	$ 31.0	$ 32.1	$ 34.1	$ 35.5	$ 13.4	$ (22.1)
Bridges		$ 3.3	$ 4.3	$ 4.3	$ 4.6	$ 5.5	$ 7.2	$ 2.9	$ (4.3)
Totals	$ 99.7	$ 102.8	$ 107.2	$ 108.0	$ 106.7	$ 101.3	$ 118.7	$ 54.7	$ (64.0)

For the pavements, the annual funding of $2.43 billion a year, coupled with cost savings from sustainable strategies, will result in an initial increase of the PCI to 67 but will eventually deteriorate to 59 and a backlog of $55 billion by 2030. In addition, almost half of the network will be in good condition, and streets in poor/failed condition will increase slightly to 31.1 percent (Table 6.2).

Table 6.2 Summary of Funding Analysis

Scenarios	Annual Budget ($B)	PCI in 2030	Condition Category	% Pavements in Poor/Failed Condition	% Pavements in Good Condition
Current Condition (2020)	-	66	At Risk	23.2%	55.0%
1. Existing Funding	$2.43	59	At Risk	31.1%	48.7%
2. Maintain PCI at 66	$3.84	66	At Risk	20.7%	74.7%
3. Best Management Practice	$7.89	87	Excellent	0.0%	100.0%

*2020 Update

To bring the transportation network to a level where BMPs can occur would require more than twice the existing level of funding. For pavements, that would require $7.89 billion a year. However, once this has been achieved, it would only require $3 billion annually to maintain the pavement network.

Finally, to reiterate, essential components will require an additional $22.1 billion to address the 10-year needs, and for bridges, it will require an additional $4.3 billion for a total of $64 billion.

Appendix A

List of Fiscal Sponsors

FISCAL SPONSORS COUNTIES	
Alameda	Placer
Alpine	Plumas
Amador	Riverside
Butte	Sacramento
Calaveras	San Benito
Colusa	San Bernardino
Contra Costa	San Diego
Del Norte	San Francisco
El Dorado	San Joaquin
Fresno	San Luis Obispo
Glenn	San Mateo
Humboldt	Santa Barbara
Imperial	Santa Clara
Inyo	Santa Cruz
Kern	Shasta
Kings	Sierra
Lake	Siskiyou
Los Angeles	Solano
Madera	Sonoma
Marin	Stanislaus
Mariposa	Sutter
Mendocino	Tehama
Merced	Trinity
Modoc	Tulare
Mono	Tuolumne
Monterey	Ventura
Napa	Yolo
Nevada	Yuba
Orange	

FISCAL SPONSORS CITIES		
Agoura Hills	Calabasas	Davis
Alameda	Calexico	Del Mar
Albany	Calipatria	Del Rey Oaks
Alhambra	Calistoga	Delano
Aliso Viejo	Canyon Lake	Dinuba
Anderson	Capitola	Dorris
Antioch	Carlsbad	Downey
Arcadia	Carmel-by-the-Sea	Dublin
Arroyo Grande	Carson	Dunsmuir
Atascadero	Chico	El Centro
Atwater	Chino	El Cerrito
Auburn	Chino Hills	El Segundo
Avenal	Chowchilla	Elk Grove
Azusa	Citrus Heights	Escalon
Bakersfield	Clearlake	Eureka
Baldwin Park	Clovis	Fairfax
Banning	Coachella	Fairfield
Beaumont	Coalinga	Farmersville
Bell	Colfax	Fillmore
Bell Gardens	Colma	Folsom
Bellflower	Colton	Fontana
Belmont	Colusa	Fort Bragg
Belvedere	Commerce	Fountain Valley
Benicia	Compton	Fremont
Berkeley	Concord	Fresno
Beverly Hills	Corcoran	Galt
Big Bear Lake	Corning	Garden Grove
Bishop	Corona	Gardena
Blue Lake	Coronado	Gilroy
Blythe	Corte Madera	Glendale
Brea	Costa Mesa	Glendora
Brentwood	Cotati	Goleta
Brisbane	Covina	Gonzales
Buena Park	Culver City	Greenfield
Burbank	Dana Point	Gustine
Burlingame	Danville	Hanford

FISCAL SPONSORS CITIES		
Hayward	Larkspur	Morgan Hill
Healdsburg	Lathrop	Morro Bay
Hercules	Lemon Grove	Mountain View
Hermosa Beach	Lincoln	Mt. Shasta
Hesperia	Lindsay	Napa
Hidden Hills	Live Oak	National City
Highland	Livingston	Needles
Hillsborough	Lodi	Newark
Hollister	Lompoc	Newport Beach
Huntington Beach	Long Beach	Norwalk
Huntington Park	Loomis	Oakdale
Huron	Los Altos	Oakley
Imperial	Los Altos Hills	Ojai
Indian Wells	Los Banos	Ontario
Indio	Los Gatos	Orange Cove
Industry	Madera	Orinda
Inglewood	Manhattan Beach	Orland
Ione	Manteca	Oxnard
Irvine	Maricopa	Pacific Grove
Jackson	Marina	Pacifica
Kerman	Martinez	Palm Desert
King City	Maywood	Palm Springs
La Canada Flintridge	McFarland	Palmdale
La Mirada	Mendota	Palo Alto
La Palma	Menifee	Palos Verdes Estates
La Puente	Menlo Park	Patterson
La Quinta	Mill Valley	Perris
La Verne	Mission Viejo	Petaluma
Lafayette	Modesto	Piedmont
Laguna Beach	Montclair	Pinole
Laguna Hills	Monte Sereno	Pismo Beach
Lake Elsinore	Montebello	Pittsburg
Lake Forest	Monterey	Placerville
Lakeport	Moorpark	Pleasant Hill
Lakewood	Moraga	Plymouth
Lancaster	Moreno Valley	Pomona

FISCAL SPONSORS CITIES		
Port Hueneme	Sanger	Trinidad
Portola	Santa Ana	Truckee
Portola Valley	Santa Barbara	Tulare
Rancho Cordova	Santa Clarita	Tustin
Rancho Cucamonga	Santa Cruz	Twentynine Palms
Rancho Mirage	Santa Monica	Ukiah
Redding	Santa Rosa	Upland
Redondo Beach	Saratoga	Vacaville
Redwood City	Sausalito	Ventura
Richmond	Seal Beach	Victorville
Rio Dell	Seaside	Villa Park
Rio Vista	Selma	Visalia
Ripon	Shafter	Walnut
Riverside	Signal Hill	Walnut Creek
Rocklin	Simi Valley	Wasco
Rohnert Park	Solana Beach	Waterford
Rosemead	Soledad	Watsonville
Ross	Solvang	Weed
Sacramento	Sonoma	West Covina
Salinas	South Lake Tahoe	West Hollywood
San Anselmo	South Pasadena	West Sacramento
San Bruno	South San Francisco	Westlake Village
San Carlos	St. Helena	Westminster
San Dimas	Stockton	Wheatland
San Gabriel	Suisun City	Whittier
San Jacinto	Sunnyvale	Wildomar
San Juan Bautista	Susanville	Williams
San Juan Capistrano	Taft	Willows
San Leandro	Tehachapi	Winters
San Marcos	Temecula	Woodland
San Mateo	Temple City	Yountville
San Pablo	Thousand Oaks	Yuba City
San Rafael	Tiburon	Yucaipa
San Ramon	Torrance	Yucca Valley
Sand City	Tracy	

FISCAL SPONSORS REGIONAL TRANSPORTATION PLANNING AGENCIES (RTPA)	
Calaveras Council of Governments	Nevada Co. Transportation Commission
Council of San Benito Co. Governments	Placer Co. Transportation Planning Agency
Del Norte Local Transportation Commission	Plumas Co. Transportation Commission
El Dorado Co. Transportation Commission	Riverside Co. Transportation Commission
Fresno Council of Governments	Sacramento Area Council of Governments
Glenn Co. Transportation Commission	San Bernardino Associated Governments
Humboldt Co. Association of Governments	San Diego Association of Governments
Imperial Co. Transportation Commission	San Joaquin Council of Governments
Inyo Co. Local Transportation Commission	Santa Barbara Co. Association of Governments
Kern Council of Governments	Santa Cruz Co. Regional Transportation Commission
Kings Co. Association of Governments	Shasta Regional Transportation Agency
Lake Co./City Area Planning Council	Sierra Co. Transportation Commission
Los Angeles Co. Metropolitan Transportation Authority	Stanislaus Council of Governments
Madera Co. Transportation Commission	Tahoe Regional Planning Agency
Mendocino Council of Governments	Transportation Agency for Monterey Co.
Merced Co. Association of Governments	Trinity Co. Transportation Commission
Metropolitan Transportation Commission	Tulare Co. Association of Governments
Modoc Co. Transportation Commission	Tuolumne Co. Transportation Council
	Ventura Co. Transportation Commission

Appendix B

Data Collection

This appendix describes the data collection efforts for this update. The goal was to ensure participation by all 58 Counties and 481 Cities.

B.1 Outreach Efforts

As with the previous studies, significant efforts were made to reach all 539 agencies in February – April 2020. This included letters sent out by NCE on behalf of Cal Cities and CEAC/CSAC. The contact database had over 2,500 contacts for all the cities and counties. This was compiled from a variety of sources including contacts from the previous surveys in 2018, the memberships of both CSAC and Cal Cities the email listserv for the Regional Transportation Agencies (RTPA) and NCE's client 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 2,500 contact letters were mailed out in mid-February 2020 (see Exhibit B-1) with instructions on how to access the online survey and a fact sheet explaining the project. The deadline for responding to the survey was April 17th, 2021, but this was extended to early May as there were numerous requests from agencies for more time to respond, mostly due to COVID-19.

B.2 Project Website

The website at www.SaveCaliforniaStreets.org (see Figure B.1) was originally designed and developed for the 2008 study. This was subsequently modified to accommodate the 2020 survey. The intent of this website was to act as both an information resource 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 B.3. CSAC currently hosts the website.

B.3 Online Survey Questionnaire

A survey questionnaire was prepared and finalized in early February 2020, and a blank example is included in Exhibit B-1. Briefly, it included a request for the following information:

1) Contact name and information for both pavements and financial data
2) Streets and pavements data (including sustainable pavements and complete streets)
3) Bridge date
4) Essential components (safety, traffic, and regulatory) data
5) Regulatory requirements
6) Funding and expenditure data

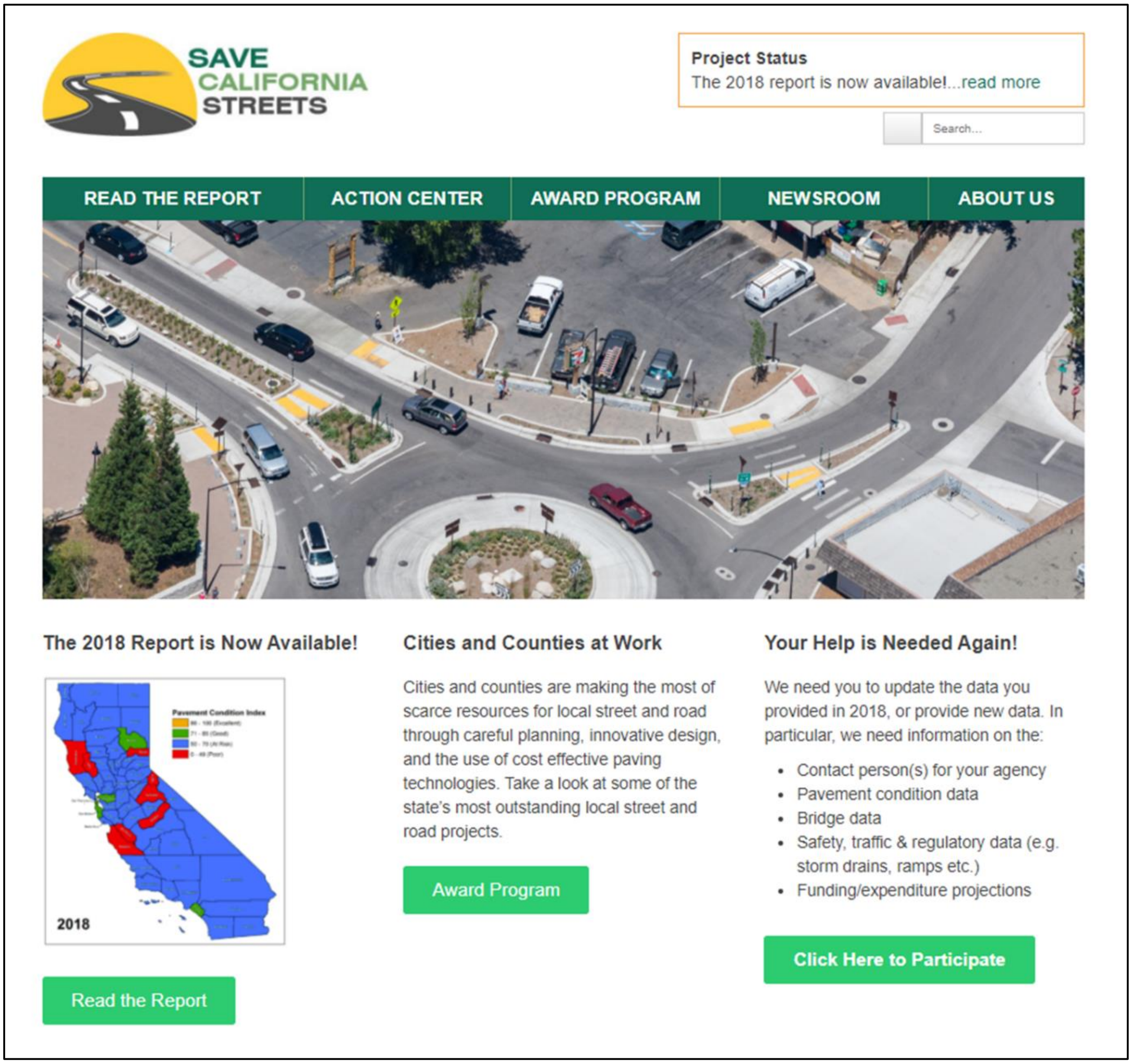


Figure B.1 Home Page of www.SaveCaliforniaStreets.org Website

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 was updated for 2020.

Data from 99.9% of the state's local streets and roads are included in this study.

B.4 Results of Data Collection

A total of 426 agencies (79 percent) responded to the survey, which was a decrease from 484 agencies in 2018. This is still a respectable response considering that shelter-in-place directives were announced in mid-March 2020; which resulted in a majority of agency staff working from home right in the middle of the survey. However, despite the lower response rate, when these were added to the agencies who responded in previous surveys, they represented 99.9 percent of the total centerline miles of local streets and roads in the state (see Figure B.2).

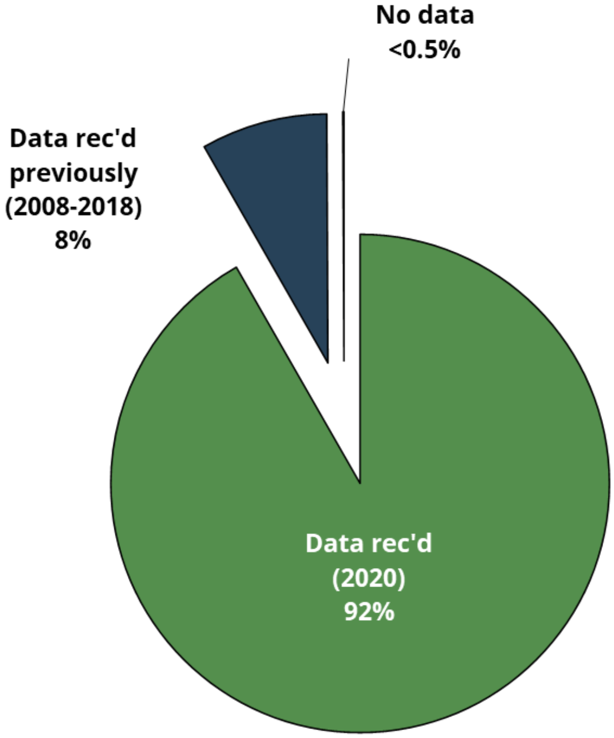


Figure B.2 Responses to Survey (% centerline miles)

Only five[1] agencies have not responded to this or any previous survey; all have less than 100 centerline miles, and all have populations less than 50,000.

[1] Cities of Orange Cove, Calipatria, Escalon and Sonora. The City of Rolling Hills is not included since they do have any publicly owned streets.

Table B.1 illustrates the survey responses by type of data. The pavement data continues to have the most responses (426), and overall, there is a decrease in response from 2018. Note that the cells with blanks indicated that those data elements were not requested during the applicable survey years.

Table B.1 Number of Agencies Responding by Data Type

Data Type	2008	2010	2012	2014	2016	2018	2020
Pavement data	314	344	273	371	454	484	426
Unit costs	50	260	211	177	187	225	173
Sustainable practices	-	-	280	269	428	472	412
Complete streets	-	-	269	250	421	469	405
Safety, Traffic & Regulatory	188	296	159	152	197	239	121
Bridges	-	-	177	-	400	-	352
Additional Regulatory Requirements	-	-	220	199	382	427	355
Financial	137	300	238	276	340	415	338

B.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 B.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 B.3 shows all the agencies who responded in 2020 (green), those who responded in previous surveys (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 256 responses in this category, so our confidence in the responses were validated.

An important point to note is that small agencies account for a very small percentage of the state's pavement network. There are 260 cities with less than 100 centerline miles of streets, and 162 cities with less than 50 centerline miles of streets. However, they comprise only 8.1 percent and 3.0 percent of the total miles in the state, respectively. Their impact on the statewide needs is consequently minimal.

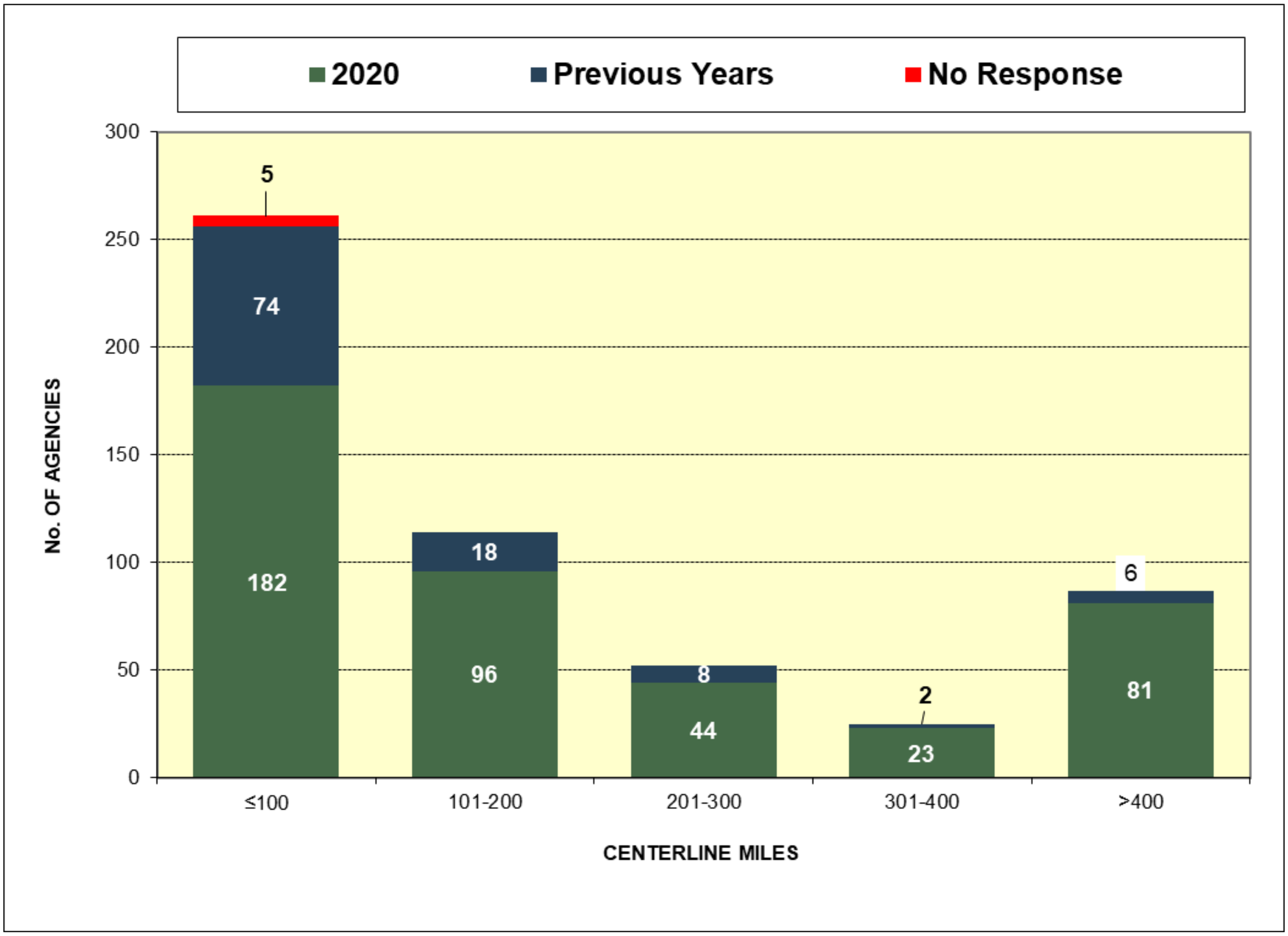


Figure B.3 Distribution of Agency Responses by Network Size (centerline miles)

B.4.2 PMS Software

The survey responses also indicated that 88 percent of the responding agencies had a pavement management system (PMS) in place (see Figure B.4). The StreetSaver® (57 percent) and PAVER (17 percent) software were the two main ones in the state. StreetSaver® was developed and supported by the Metropolitan Transportation Commission (MTC) and PAVER is 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.

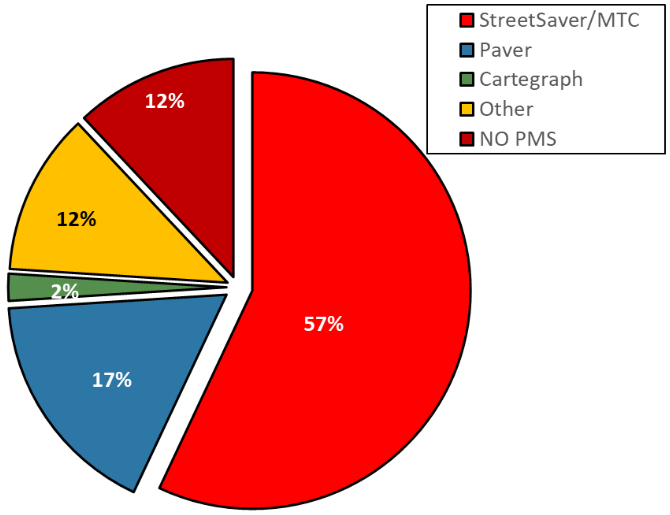


Figure B.4 PMS Software Used By Cities And Counties

What is more important is that approximately 98 percent of the total miles owned by cities and counties are included in a pavement management system, which lead to a high confidence in the data submitted.

B.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 more than 98 percent of the state's local streets and roads network was a remarkable achievement. That agencies with a 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 the study.

Exhibit B-1

Contact Letter, Instructions for Online Survey, Fact Sheet & Survey

Questionnaire

February 17, 2020

TO CALIFORNIA CITIES & COUNTIES

SUBJECT: 2020 CALIFORNIA STATEWIDE LOCAL STREETS AND ROADS NEEDS ASSESSMENT

Dear Madam/Sir:

Your help in responding to our survey in 2018 made a difference! In large part due to your efforts to provide timely and accurate data on the condition of California Local Streets and Roads, we were able to better educate the public about the impacts of eliminating much needed local transportation funding.

Since 2008, the California Statewide Local Streets and Roads Needs Assessment Report has been invaluable to the California State Association of Counties (CSAC) and the League of California Cities (League) on numerous transportation efforts at both the state and federal level. We have used the findings to educate elected officials, policy- and decision-makers, and the public about the condition of the local transportation network and the funding needed to bring the system into a state of good repair. The findings have helped prevent transportation funding cuts while also helping advance new funding for local streets and roads. The 2018 report is available at www.SaveCaliforniaStreets.org.

In 2020, there are two main objectives; the first is to educate the public about the short and long-term impacts of SB1 and how cities and counties are using that the money cost-effectively for maintenance of our local streets and roads. The second is to begin to focus attention on local bridges, a critical component of the transportation system. This update will look more closely at the bridge needs and identify reasons for the shortfall indicated in previous reports. This analysis will be helpful in educating policymakers on the need for additional dedicated local bridge funding.

As in the past, this project is being funded through contributions from stakeholders. Cities and counties will share equally in funding two-thirds of the cost for the streets and roads analysis, with the remaining one-third provided by Regional Transportation Planning Agencies. Additional funding for an enhanced bridge analysis will be provided via the Highway Bridge Program. It is essential that each agency contribute toward this study in order to demonstrate how critical this issue is to sustaining our state's transportation infrastructure.

An ongoing effort is needed to update the local streets and roads needs on a regular, consistent basis, much like the State does in preparing the State Highway Operation and Protection Program (SHOPP). NCE will assist us in performing the 2020 update of the Statewide Needs Assessment.

YOU CAN CONTINUE TO MAKE A DIFFERENCE!

We need your immediate assistance on the following items:

1. To ensure a widespread dissemination of this request, this letter has been sent to the City Manager/County Administrative Officer, Public Works Director, City/County Engineer, and Finance Director. We recognize that the data may come from multiple sources, so we ask your agency to coordinate among yourselves to ensure that the most recent and accurate information is entered. Please provide NCE with your agency's contact information if you are

not the appropriate contact. This person(s) should be able to provide all the information requested in the survey. We need information on two main areas:

a. Technical – pavement, bridge, safety, regulatory and traffic needs.
b. Financial – projected funding revenues/expenditures.

2. Fill out the online survey at www.SaveCaliforniaStreets.org. Instructions for filling out the survey are enclosed. Your agency's login and password are on the label below.

It is essential that we have this data no later than **April 17th, 2020 in order to complete the 2020 Local Streets and Roads Needs Assessment on time**. Should you have any questions, please do not hesitate to contact:

Ms. Margot Yapp, P.E.
President/Project Manager
NCE
501 Canal Blvd, Suite I
Pt. Richmond, CA 94804
(510) 215-3620
myapp@ncenet.com

Your agency's login and password is shown below:

(NCE will insert unique login & password for each agency)

We appreciate your help in providing this information.

Sincerely,

Gordon MacKay
President, Public Works Officers Department
League of California Cities
Director of Public Works
City of Stockton

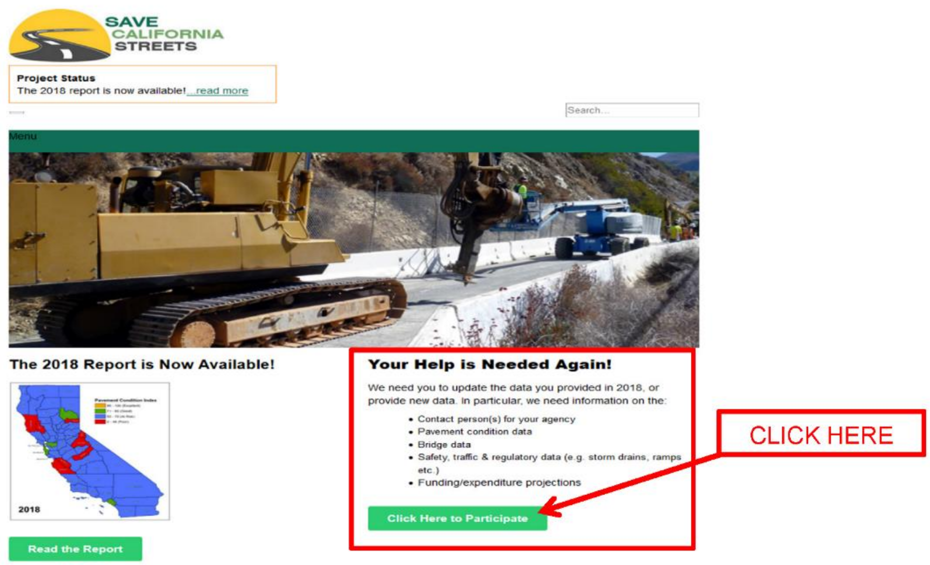
Rick Tippett, President
County Engineers Association of California
Department of Transportation, Director
County of Trinity

Enclosures: Fact Sheet
Instructions for Online Survey

Collaboration. Commitment. Confidence.℠

Instructions for Online Survey

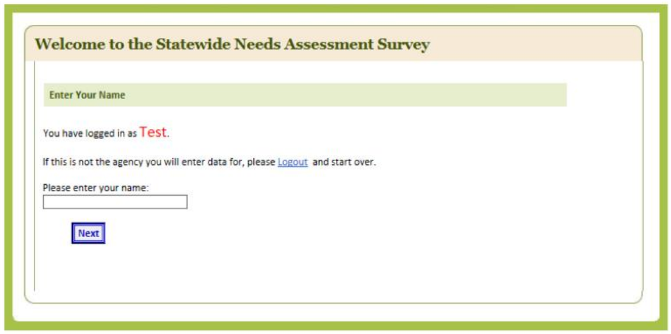
Step 1. Go to http://www.savecaliforniastreets.org. Click on the button that says "Click here to participate".



Step 2. On the login page, select the name of your agency from the dropdown list. If you responded to the 2018 or earlier surveys, the information you previously entered will be shown so that you can update it. You will need your agency's login and password, which was mailed to you. If you do not have this information, please contact Lydia Alderete at (510) 215-3620 or at lalderete@ncenet.com.

Collaboration. Commitment. Confidence.SM

Step 3. Enter your name, then click "Next" to the main survey page.



Step 4. There are seven (7) parts in this survey (see image below). Click on each button to enter the relevant information. <u>If you do not have all the information requested, skip to the next section.</u>

Step 5. Once data entry is complete, you can view and print your entry by clicking on the "Print a copy for your records" button. If there are no more changes, select "Yes" on the "Are you ready to submit the survey as final?" question.

Step 6. Click "Logout" button when done.

THANK YOU FOR YOUR PARTICIPATION!

FACT SHEET

Why are we updating the 2018 study?

We need to demonstrate the immediate and long-term impacts of SB1 (Beall, Chapter 5, Statutes of 2017) on local streets, roads, and bridges in California. The 2018 statewide needs study indicated that SB1 would have a positive impact and stabilize the conditions of local streets and roads (the final report is available at www.SaveCaliforniaStreets.org). This report helped provide the qualitative and quantitative data to analyze various funding scenarios over a 10-year forecast, including the potential impact the repeal of SB1 would have had on the local transportation network.

For 2020, this study will revise the 10-year funding forecast from the 2018 study, look at the early impacts of SB1 on the local transportation network, and help inform the public and decision makers. In addition, the update will be taking a closer look at the funding shortfall for local bridges.

Why is this update important?

This update highlights the importance of maintaining sufficient transportation funding for local bridges, streets, and roads. Additionally, it documents the detrimental consequences for deferring or reducing local street and road funds. This is the only comprehensive and systematic statewide report that quantifies the funding needs for California's local bridges, streets, and roads.

What has this study achieved?

Since 2008, the findings from these assessments have been used to:

- Educate decision makers on the condition of the local streets and roads system and the need for additional investment, culminating in $1.5 billion of new funding for local streets and roads via SB1.
- Provide reliable and credible local road-condition analysis for the media and other reports.
- Inform the public about the impacts of potential funding cuts.
- Identify funding needs to enhance active transportation opportunities, promote sustainable pavement practices, and comply with new regulatory mandates on the local street and road system.

How can Cities and Counties help?

Your help in 2018 made a difference and we need your input again!

Please go to www.SaveCaliforniaStreets.org and login to our online survey to provide updates in the following categories:

- Contact person from your Agency
- Pavement condition data
- Bridge data
- Safety, traffic, and regulatory data
- Funding/expenditure projections

FACT SHEET

We are anxious to begin the study, so please provide us with the contact person who is responsible for both the technical and funding information in your agency (see our contact information below). The deadline for responding to this survey is **April 17, 2020**.

Who is sponsoring this project?

Many cities and counties contributed funding to this study. The agencies listed below have accepted the leadership responsibility for completing this study on behalf of the cities and counties in California.

- California State Association of Counties (CSAC)
- League of California Cities
- County Engineers Association of California
- County of Stanislaus
- California Regional Transportation Planning Agencies
- California Rural Counties Task Force

The Oversight Committee is comprised of representatives from each organization, with the County of Stanislaus (representing CSAC) acting as the Project Manager. NCE is the consulting firm who will perform the update. Oversight Committee members include:

David Leamon, Stanislaus County (Project Manager)
Keith Cooke, City of San Leandro
Brad Eggleston, City of Palo Alto
Charles Herbertson, City of Culver City
Greg Kelley, Los Angeles County
Panos Kokkas, Yolo County
Damon Letz, City of Santa Clarita
David MacGregor, Los Angeles County
Matt Randall, Placer County
William Ridder, LA Metro
Theresa Romell, Metropolitan Trans. Commission
Jennifer Soliz, Fresno Council of Governments
Dawn Vettese, San Diego Association of Governments
Ron Vicari, Sacramento County
Mike Woodman, Nevada County Trans. Commission

Staff

Rony Berdugo, League of California Cities
Brandon Black, League of California Cities
Caroline Cirrincione, League of California Cities
Merrin Gerety, County Engineers Association of California
Chris Lee, California State Association of Counties
Marina Espinoza, California State Association of Counties

Who should I contact for more information?

Margot Yapp, President
NCE
501 Canal Blvd., Suite I
Pt. Richmond, CA 94804
Tel: (510) 215-3620

David Leamon, Project Manager
Director of Public Works
County of Stanislaus
1716 Morgan Rd.
Modesto, CA 95358-5805
Tel: (209) 525-4151

Statewide Needs Assessment Online Survey Report (2020)

Agency Name: Test

1. CONTACT INFORMATION

Contact Type	Salutation	Name	Title	Department	Address Line 1	Address Line 2	City	Zip Code	Email	Phone
Main Contact Person										
Alternative Contact Person										
Contact Person for Financial Data										
Alternative Contact Person for Financial Data										

2. STREETS AND PAVEMENTS

2.1 Pavement Management System and Pavement Distress Survey Procedures

1. Does your agency use Pavement Management System (PMS) software?

(Go to Question 1a if "Yes"; Go to Question 1b if "No".)

1a. Select your agency's PMS software:

Enter your agency's PMS software name (if "Other" is selected above):

1b. Select the reason your agency does not use a PMS:

Enter the reason your agency does not use a PMS (if "Other" is selected above):

2. What pavement distresses do you collect for Asphalt Concrete (AC)? If you collect distresses that are not listed below, please enter in the "Other AC Distresses" box.

1) Alligator Cracking	No
2) Block Cracking	No
3) Distortions	No
4) Long. & Trans. Cracking	No
5) Patch & Util. Cut Patch	No
6) Rutting/Depression	No
7) Weathering & Raveling	No

Other AC distresses your agency collects, if any:

3. Does your agency have Portland Cement Concrete (PCC) pavements?

If yes, what pavement distresses do you collect for PCC? If you collect distresses that are not listed below, please enter in the "Other PCC Distresses" box.

1) Corner Break	No
2) Divided Slab	No
3) Faulting	No
4) Linear Cracking	No
5) Patching & Utility Cuts	No
6) Scaling/Map Cracking/Crazing	No
7) Spalling	No

Other PCC distresses your agency collects, if any:

4. What other condition data do you collect?

Deflection	N/A
Ride Quality e.g. International Roughness Index (IRI)	N/A
Friction	N/A
Drainage	N/A
Structure/Core	N/A
Complaints	N/A
Pavement Age	N/A

Other condition data your agency collects, if any:

5. What is the scale of the pavement condition index/rating used (e.g. 0-100, A-F)?
Lowest possible rating(e.g. 0)

Highest possible rating(e.g. 100)

6. How much will you require annually to maintain existing conditions (e.g. if your current PCI is 70, indicate the annual funding required to maintain the pavement network at 70.)

$

7. Any notes you would like to add regarding your pavement distress survey procedures (e.g. collected by consultant, in-house, frequency of collection, etc.), or any comments/notes you have regarding any portion of this survey/your data:

8. Are larger/heavier vehicles (e.g. buses, refuse/recycling trucks, snow removal vehicles, etc) impacting pavement performance or your maintenance practices? If so, please explain the type of vehicles and how they impact performance:

2.2 Sustainable Pavement Practices

1. What sustainable pavement practices does your agency utilize?

Sustainable Pavement Practice	Does your agency utilize?	Unit Cost ($/sy)	Additional Costs or Savings	Percentage of Additional Costs or Savings
Use of Reclaimed Asphalt Pavement (RAP) in pavements				%
Cold In-place Recycling (CIR)				%
Hot In-place Recycling (HIPR)				%
Cold Central Plant Recycling				%
Warm Mix Asphalt				%
Permeable/Porous Pavements				%
Full Depth Reclamation (FDR)				%
Subgrade Stabilization				%
Rubberized Asphalt Concrete (RAC)				%
Pavement Preservation Strategies e.g. chip seals, fog seals, microsurfacing, cape seals				%
Other (please explain below)				%

if "Other" is used in the above table, please describe below:

2. Will you continue applying sustainable pavement practices?

3. If you do not employ sustainable practices, please indicate the reason(s) why (check all that apply):
   1) High construction cost No
   2) Lack of knowledge No
   3) No local contractors No
   4) No street/road candidates No
   5) Other (please explain below) No

4. Other comments regarding sustainable pavement practices:

2.3 Inventory and condition Information

Functional Class/Road Type	Year of Last Inspection	Pavement Condition Rating (Weighted Average)	Center Line Miles	Lane Miles	Area(sq. yd.)	PCC (as % of the area)
Urban Major Roads						
Urban Residential/Local Roads						
Rural Major Roads						
Rural Residential/Local Roads						
Unpaved Roads						

2.4 Pavement Treatment Policy and Unit Costs

Urban Major Roads:

Pavement Treatment	**PCI Range**	**Unit Cost ($/sq. yd.)**
Do Nothing	90 - 100	
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	70 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 69	
Thick overlay (e.g. more than 2 inches)	25 - 49	
Reconstruction (e.g. remove & replace)	0 - 24	

Urban Residential/Local Roads:

Pavement Treatment	**PCI Range**	**Unit Cost ($/sq. yd.)**
Do Nothing	90 - 100	
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	70 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 69	
Thick overlay (e.g. more than 2 inches)	25 - 49	
Reconstruction (e.g. remove & replace)	0 - 24	

Rural Major Roads:

Pavement Treatment	**PCI Range**	**Unit Cost ($/sq. yd.)**
Do Nothing	90 - 100	
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	70 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 69	
Thick overlay (e.g. more than 2 inches)	25 - 49	
Reconstruction (e.g. remove & replace)	0 - 24	

Rural Residential/Local Roads:

Pavement Treatment	**PCI Range**	**Unit Cost ($/sq. yd.)**
Do Nothing	90 - 100	
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	70 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 69	
Thick overlay (e.g. more than 2 inches)	25 - 49	
Reconstruction (e.g. remove & replace)	0 - 24	

2.5 Complete Streets Policy

1. Has your agency adopted a "Complete Streets Policy"?

If your answer is "No" or "Don't know", skip this section. Please explain below why not if known.

2. What complete streets elements are included or assumed in the policy? Check all that apply.

- Bicycle facilities ☐
- Pedestrian facilities ☐
- Green infrastructure e.g. bioswales, planters, pervious strip ☐
- Medians ☐
- Lighting ☐
- Roundabouts ☐
- Traffic Calming e.g. reducing lane widths ☐
- Signs ☐
- Curb Ramps ☐
- Transit elements ☐

Comments/Additional items:

3. Do you have other plans that incorporate these elements even if you do not have a Complete Streets policy?

4. What percentage of roads will have Complete Streets elements? (e.g. enter 10 for 10%)

%

5. What is the estimated average <u>incremental</u> costs to provide Complete Street enhancements ($/sq. yd) i.e. in addition to conventional costs?

$ /sq. yd

6. Do you have a representative project that included Complete Streeets elements that was recently constructed? If yes, please provide a brief description.

7. Do you anticipate more of these projects in the future? If so, approximately how many?

8. What are the major challenges you face in implementing a Complete Streets Policy? Check all that apply.

- Insufficient right-of-way ☐
- Trees/environmental features ☐
- Existing structures ☐
- Insufficient funding ☐
- Other (please explain) ☐

If "Other" is checked, please describe below:

9. Other comments or notes you would like to add regarding Complete Streets:

2.6 SB1 (RMRA)

1. How is your agency spending SB1 funds?

Road preventive maintenance e.g. seals	%
Road rehabilitation e.g. overlays	%
Safety projects	%
Railroad grade separations	%
Complete street components	%
Traffic control devices	%
Match for state/federal funds for eligible projects	%

Other [ ] %

2. Is SB1 funding sufficient to maintain or improve pavement conditions? [ ]

If Not, please indicate annual funding shortfall $[ ] /Year

3. Has SB1 changed your approach to preventive maintenance? [ ]

Please explain [ ]

4. Do you prioritize preventive maintenace needs over rehabilitation? [ ]

Please explain [ ]

5. What factors are you using to prioritize paving projects?

- ☐ Proximity to schools
- ☐ Bicycle/ pedestrian needs
- ☐ Commercial districts
- ☐ Safety (collisions, high injury locations)
- ☐ Transit routes
- ☐ Socio-economic factors
- ☐ Other [ ]

3. ESSENTIAL COMPONENTS (as related to the road network)

Category	**Inventory (Quantity)**	**Unit**	**Total Replacement Cost**	**Accuracy**
05 - Storm Drains - pipelines		mile		
19 - Other elements e.g. manholes, inlets, culverts, pump stations etc		ea		
01 - Curb and gutter		ft		
03 -Pedestrian facilities: Sidewalk (public)		sq. ft.		
16 - Other pedestrian facilities, e.g. over-crossings		ea		
09 - Bicycle facilities: Class I bicycle path		mile		
13 - Other bicycle facilities, e.g. bike shelters/lockers, etc.		ea		
02 - Curb ramps		ea		
07 - Traffic signals		ea		
06 - Street Lights		ea		
04 - Sound Walls/Retaining walls		sq. ft.		
08 - Traffic signs		ea		
21 - Tunnels		ft		
20 - Other physical assets or expenditures that constitute >5% of total non-pavement asset costs e.g. heavy equipment, corporation yards etc. Note: Do NOT include bridges (handled separately)		ea		
10 - Bicycle facilities: Class II bicycle lane		mile		
11 - Bicycle facilities: Class III bicycle routes/sharrow		mile		

12 - Bicycle facilities: Class IV protected bike lanes		mile		
15 - Pedestrian paths		mile		
14 - Multi-use paths		mile		
17 - Crossing Improvements e.g. high visibility crossings, rapid flashing beacons, roundabouts, scrambles, bulbouts, pedestrian refuge islands, etc.		ea		
18 - Transit amenities e.g. benches, shelters, real-time arrival signage, wayfinding signage		ea		

4. BRIDGE DATA

4.1 Profile Information Section

Click here for more information on definition of bridges.

1. Does your agency have in-house capacity to routinely review the work recommendations and Structure Inventory and Appraisal report (SI&A) contained within Caltrans Bridge Inspection Reports to determine your agency's bridge needs (repairs, maintenance, rehabilitation, replacement, and other work recommended in bridge inspection reports), including prioritization of bridge projects?

2. Does your agency have field capabilities to perform routine maintenance and repair activities on your bridge inventory without external contracting? Check all that apply.

4.1 Profile Information Section

Click here for more information on definition of bridges.

1. Does your agency have in-house capacity to routinely review the work recommendations and Structure Inventory and Appraisal report (SI&A) contained within Caltrans Bridge Inspection Reports to determine your agency's bridge needs (repairs, maintenance, rehabilitation, replacement, and other work recommended in bridge inspection reports), including prioritization of bridge projects?

2. Does your agency have field capabilities to perform routine maintenance and repair activities on your bridge inventory without external contracting? Check all that apply.

3. During the past 3 years which funding sources has your agency used for bridge projects?

- ☐ Federal funding through "Highway Bridge Program"
- ☐ Other Federal sources
- ☐ SB1/RMRA
- ☐ Traffic Mitigation Fees
- ☐ Gas Tax (HUTA)
- ☐ RSTP Exchange Funds
- ☐ STIP
- ☐ Other Please describe

4.1 Profile Information Section

[Click here for more information on definition of bridges.]

1. Does your agency have in-house capacity to routinely review the work recommendations and Structure Inventory and Appraisal report (SI&A) contained within Caltrans Bridge Inspection Reports to determine your agency's bridge needs (repairs, maintenance, rehabilitation, replacement, and other work recommended in bridge inspection reports), including prioritization of bridge projects?

2. Does your agency have field capabilities to perform routine maintenance and repair activities on your bridge inventory without external contracting? Check all that apply.

3. During the past 3 years which funding sources has your agency used for bridge projects?

☐ Federal funding through "Highway Bridge Program"
☐ Other Federal sources
☐ SB1/RMRA
☐ Traffic Mitigation Fees
☐ Gas Tax (HUTA)
☐ RSTP Exchange Funds
☐ STIP
☐ Other Please describe

4. On average, using the past 3 years, what is the typical annual local funding your agency has expended on **all bridge projects** (total expenditures to replace, rehabilitate or repair, including associated project costs for engineering, environmental compliance, permitting, right-of-way, etc)?

5. What percentage of your bridge project funding comes from the federal funds administered through Caltrans under the "Highway Bridge Program"?

6. What percentage of your bridge project funding is spent on construction activities compared to non-construction project "soft costs" (such as engineering, permitting, utility coordination)?

7. For Bridge Replacement Projects, what is the average percentage of bridge width increase when replacing an old bridge?

8. After reviewing the information about the Bridge Investment Credit (BIC) program in the Local Assistance Procedures Guidelines (see the link below), does your agency plan to use the BIC program within the next 3 years?

Detailed information about the BIC program can be found on page 32 of Caltrans' Local Assistance Procedures Guidelines

9. What are the top 3 challenges faced by your agency in completing bridge work projects (major rehabilitations and replacements)?

Greatest Challenge

Second Greatest Challenge

Third Greatest Challenge

4.2 Local Agency National Bridge Inventory

Click here for more information on definition of bridges.

1. Does your agency feel that the Work Recommendations, Structures Inventory and Appraisal Report, and Bridge Inspection Reports provided by Caltrans accurately reflect the needs and conditions of your local agency's NBI bridge inventory?

Comments

2. On average, over the past 3 years, how much local funding has your agency expended on maintenance and repair activities for your NBI bridge inventory (total maintenance expenditures divided by the number of your agency's NBI bridges)?

4.3 Short Span Vehicular Bridges (SSBs)

Click here for more information on definition of bridges.

1. How many short span bridges is your agency responsible for maintaining?

☐ Don't know or unsure

2. On average, over the past 3 years, what is your agency's total annual expenditure for work completed on your short span bridges (total expenditure divided by the number of short span bridges reported in question 1)?

4.4. Non-Vehicular Bridges (NVBs)

Click here for more information on definition of bridges.

1. How many non-vehicular (pedestrian & bicycle) bridges is your agency responsible for maintaining?

☐ Don't Know

2. What is the total square footage of non-vehicular (pedestrian & bicycle) bridges your agency is responsible for maintaining?

☐ Don't Know

3. On average, over the past 3 years, what is your agency's annual expenditure for work completed on your non-vehicular (bicycle & pedestrian) bridges?

4.5 Future Agency Needs Projections - Vehicle Bridges

Click here for more information on definition of bridges

1. Based on **public safety** considerations, my bridge inventory would benefit from the completion of the following types of projects over the next 10 years for Vehicle Bridges: (Click all that apply)

- ☐ Replacement of Low Water Crossings
- ☐ Load Strengthening/Retrofit of structures in otherwise good condition
- ☐ Widening existing bridge structures
- ☐ Additional / Uncompleted Seismic Retrofits
- ☐ Typical Replacement, Rehabilitation, and Maintenance Projects
- ☐ Other
- ☐ Don't know or unsure

2. The current value of completing the **public safety** projects identified in Question #1, including all project phases (engineering, construction, permitting, ROW, construction management, etc.), is best estimated at:

3. Over the next 10 years, the largest challenge facing my bridge inventory (including NBI bridges, Short Span bridges, and Bicycle/Pedestrian bridges) is:

Other

4. Based on local needs and planning considerations (Master Plans, Bicycle and Pedestrian Plans, implementation of Complete Street concepts, Local Standards, etc.) over the next 10 years, my local agency expects the width of new and replacement bridge structures to:

5. REGULATORY REQUIREMENTSiv class="TitleC">

5. REGULATORY REQUIREMENTS

Does your agency have additional regulatory requirements such as Americans with Disabilities Act (ADA), National Pollutant Discharge Elimination System (NPDES) requirements or Traffic Sign Retroreflectivity?

If you answered "Yes" above, please fill out the table at the bottom of this page. Otherwise, skip this section.

May we contact you if we have follow-up questions?

Additional comments regarding "Additional Regulatory Requirements":

6. FUNDING AND EXPENDITURE DATA

6.1 Actual/Estimated Revenues for Pavement-Related Activities

(No data has been entered)

6.2 Actual/Estimated Revenues for Safety, Traffic & Regulatory Components

(No data has been entered)

6.3 Expenditures on Pavements

Name	Amount (FY18/19)	Amount (FY19/20)	Annual Average (FY20/21 to 29/30)
Preventive Maintenance e.g. crack seals, slurry seals etc			
Rehabilitation & reconstruction e.g. overlays			
Other (pavement related)			
Other Operations & Maintenance (non-pavement related e.g. vegetation, cleaning ditches, sweeping, markings, signs, etc.)			

Of the totals reported above, what percentages are due to "Sustainable Pavement Practices", "Complete streets Policy" and "Additional Regulatory Requirements"? Enter in table below.

Name	% of Amount (FY18/19) Total	% of Amount (FY19/20) Total	% of Annual Average (FY20/21 to 29/30) Total
Sustainable Pavement Practices			
Complete Streets Components			
Additional Regulatory Requirements			

6.4 Expenditures on Safety, Traffic & Regulatory Components

Name	Amout (FY8/19)	Amount (FY19/20)	Annual Average (FY20/21 to 29/30)
01 - Curb and gutter			
02 - Curb ramps			
03 -Pedestrian facilities: Sidewalk (public)			
04 - Sound Walls/Retaining walls			
05 - Storm Drains - pipelines			
06 - Street Lights			
07 - Traffic signals			
08 - Traffic signs			
09 - Bicycle facilities: Class I bicycle path			
10 - Bicycle facilities: Class II bicycle lane			
11 - Bicycle facilities: Class III bicycle routes/sharrow			
12 - Bicycle facilities: Class IV protected bike lanes			
13 - Other bicycle facilities, e.g. bike shelters/lockers, etc.			
14 - Multi-use paths			
15 - Pedestrian paths			
16 - Other pedestrian facilities, e.g. over-crossings			
17 - Crossing Improvements e.g. high visibility crossings, rapid flashing beacons, roundabouts, scrambles, bulbouts, pedestrian refuge islands, etc.			
18 - Transit amenities e.g. benches, shelters, real-time arrival signage, wayfinding signage			
19 - Other elements e.g. manholes, inlets, culverts, pump stations etc			
20 - Other physical assets or expenditures that constitute >5% of total non-pavement asset costs e.g. heavy equipment, corporation yards etc. Note: Do NOT include bridges (handled separately)			
21 - Tunnels			

Of the above total expenditures, what percentages are due to a "Complete Streets Policy"?

Name	% of Amount (FY18/19) Total	% of Amount (FY19/20) Total	% of Annual Average (FY20/21 to 29/30) Total
Complete Streets Components			

6.5 Financial Questions

1. What innovative methods is your agency doing to “stretch” the dollar? e. g. new technologies, use of recycling techniques, partnering with other agencies for lower bids, preventive maintenance, etc.

2. Are there new revenues sources that your agency is considering?

3. Is there a city/county wide sales tax solely for transportation?

4. Is there a city/county wide sales tax that is partially used for transportation?

5. If you answered "Yes" above, please describe how it is used.
(e.g. local match for highways, local streets & roads only, transit, etc).

7. NON-HIGHWAY NHS ROADS

1. For the roads/streets that are included in the National Highway System (NHS), do you collect the following information as per the proposed rule from FHWA? (click here for more information on NHS & new FHWA rules.)

1) International Roughness Index (IRI) ☐

2) Percent cracking (as measured by the HPMS) ☐

3) Rutting ☐

4) Faulting ☐

2. If you currently do not collect the above information, how will you plan on collecting it? e.g. in-house staff, consultant, Caltrans, etc.

3. If known, please estimate the cost for data collection for roads/streets in the NHS.

$

4. Do you allocate any money for NHS roads? ☐ If so, how much money per year do you allocate ?
($/year)

Pavement Condition* & Needs by County

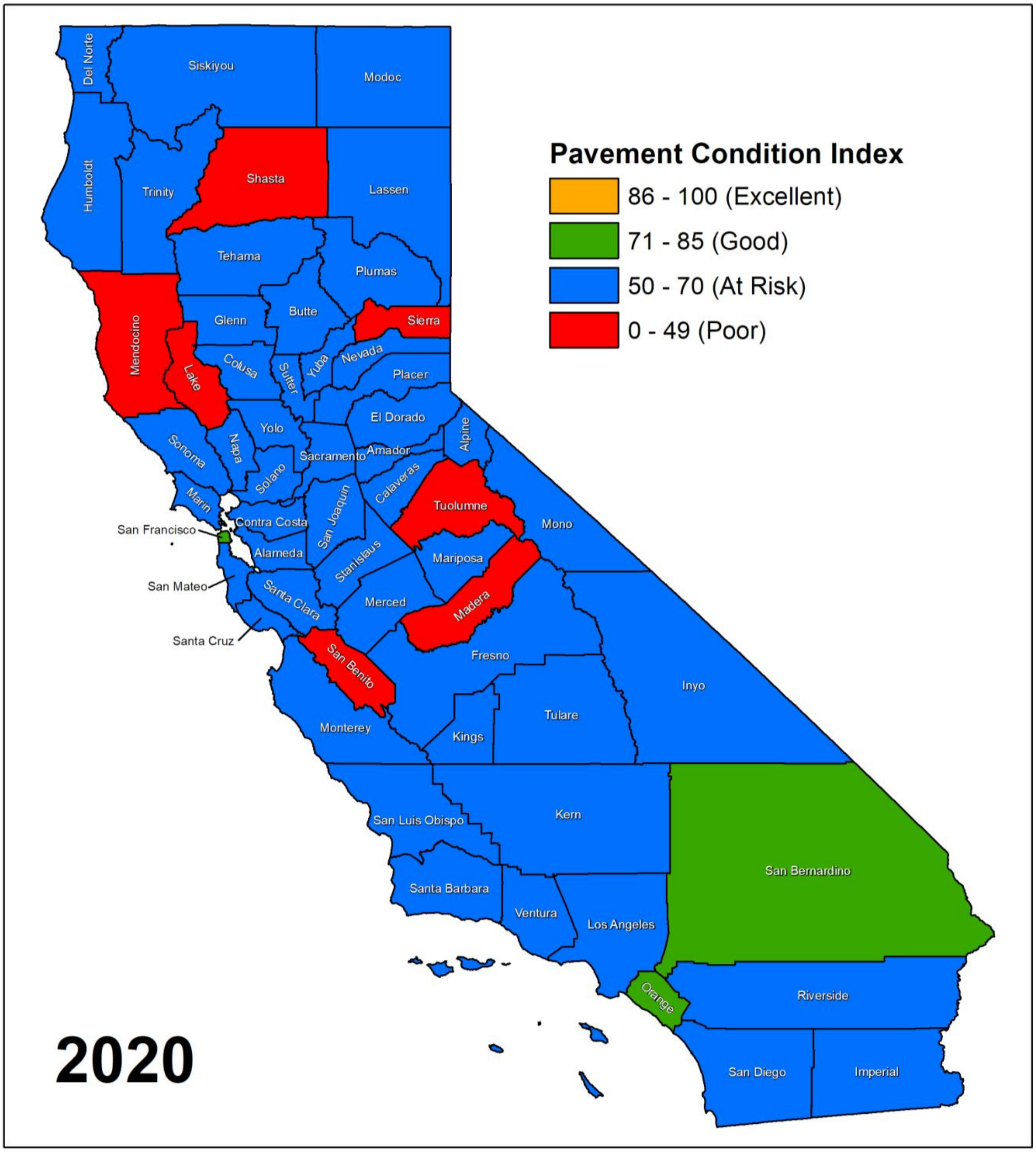
*Pavement condition data for the MTC region provided by MTC in 2020.

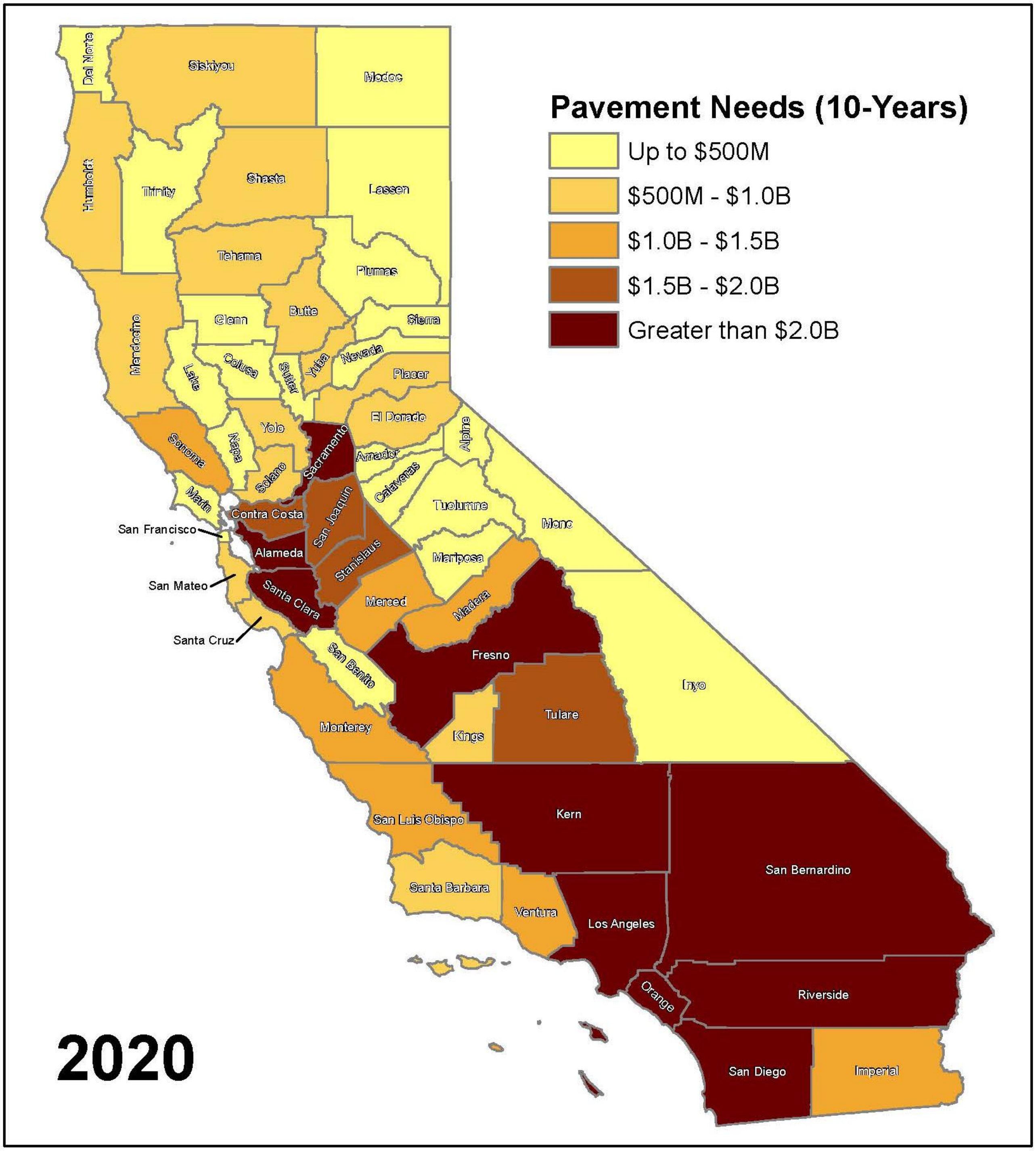
Table C.1 Pavement Needs by County* (2020 $)

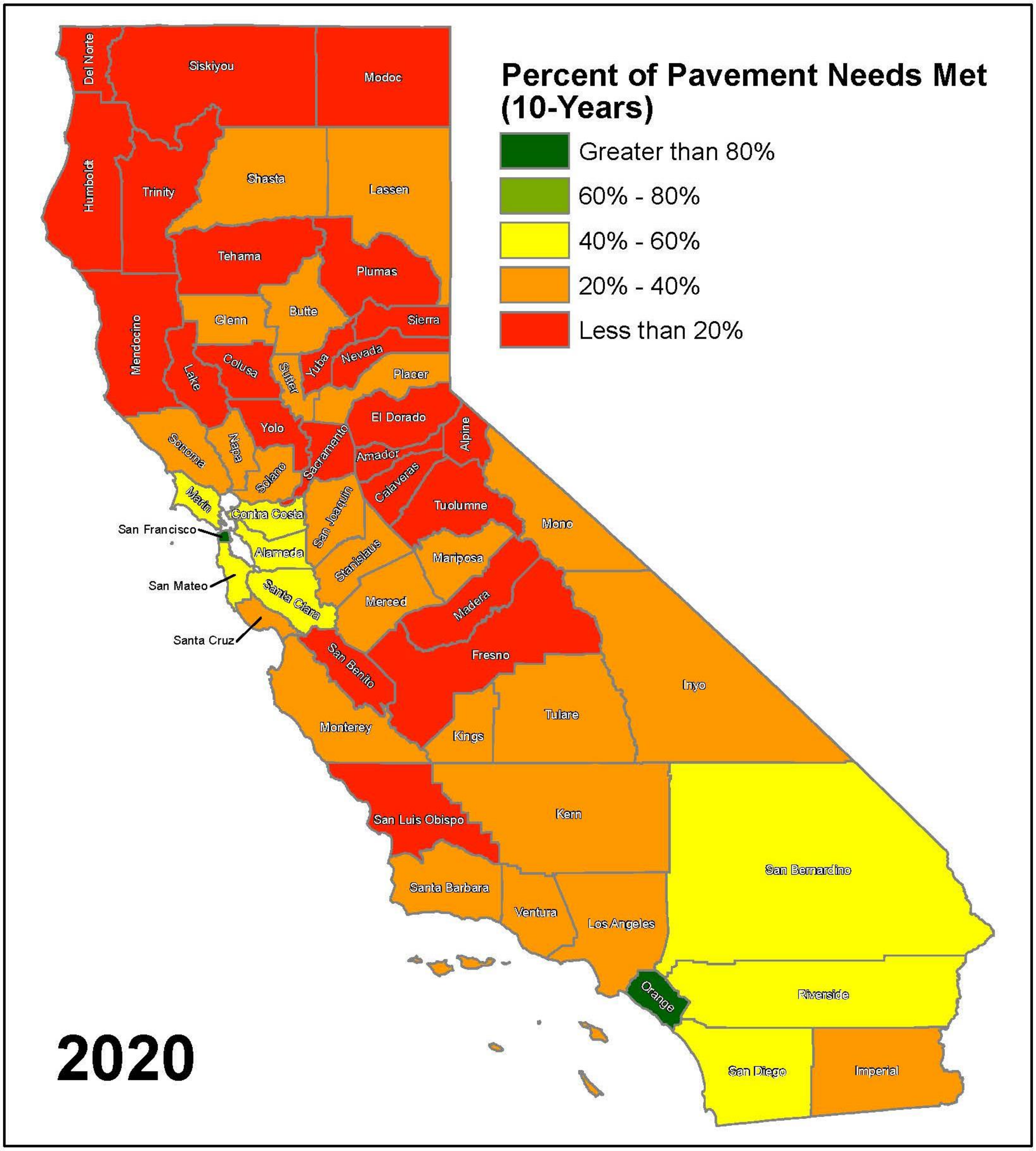
County (Cities Included)	Center Line Miles	Lane Miles	Area (sq. yd.)	2020 PCI	10 Year Needs (2020 $M)
Alameda	3,592	8,140	78,210,590	68	$ 2,054
Alpine	151	302	2,139,517	58	$ 48
Amador	477	945	3,598,703	51	$ 144
Butte	1,831	3,673	29,865,832	60	$ 914
Calaveras	831	1,340	8,201,768	52	$ 357
Colusa	761	1,247	13,240,593	61	$ 380
Contra Costa	3,412	7,134	66,747,390	70	$ 1,616
Del Norte	323	646	4,415,355	60	$ 117
El Dorado	1,399	2,684	21,458,907	63	$ 627
Fresno	6,214	12,595	108,361,263	60	$ 3,486
Glenn	910	1,822	13,917,626	62	$ 427
Humboldt	1,464	2,921	24,247,391	57	$ 847
Imperial	3,024	6,103	76,823,230	58	$ 1,219
Inyo	1,133	1,832	13,681,682	62	$ 353
Kern	5,725	12,615	117,170,333	65	$ 3,266
Kings	1,324	2,710	21,044,749	61	$ 678
Lake	640	1,271	8,822,689	37	$ 472
Lassen	431	879	6,282,324	61	$ 212
Los Angeles	21,130	57,167	457,415,797	68	$ 12,049
Madera	1,754	3,507	24,879,499	44	$ 1,244
Marin	1,028	2,065	17,202,637	65	$ 485

County (Cities Included)	Center Line Miles	Lane Miles	Area (sq. yd.)	2020 PCI	10 Year Needs (2020 $M)
Mariposa	362	719	5,334,893	66	$ 152
Mendocino	1,125	2,256	16,135,923	36	$ 698
Merced	2,349	4,975	39,594,831	57	$ 1,385
Modoc	1,507	3,014	16,895,856	63	$ 430
Mono	737	1,473	9,613,552	66	$ 189
Monterey	2,011	3,940	31,471,030	52	$ 1,275
Napa	740	1,513	13,048,684	56	$ 487
Nevada	806	1,625	10,348,493	67	$ 264
Orange	6,603	16,326	153,443,823	79	$ 2,605
Placer	2,063	4,322	37,360,569	67	$ 967
Plumas	706	1,412	9,070,195	71	$ 193
Riverside	7,899	17,774	161,794,983	68	$ 4,116
Sacramento	5,028	10,961	95,785,803	58	$ 3,348
San Benito	492	761	5,156,435	37	$ 337
San Bernardino	8,905	22,601	181,506,462	74	$ 3,895
San Diego	7,759	18,760	174,285,803	70	$ 4,425
San Francisco	943	2,142	21,249,793	74	$ 427
San Joaquin	3,237	6,779	60,307,486	67	$ 1,591
San Luis Obispo	1,980	3,569	37,159,695	59	$ 1,287
San Mateo	1,884	3,942	34,071,528	68	$ 868
Santa Barbara	1,607	3,352	29,854,633	61	$ 953

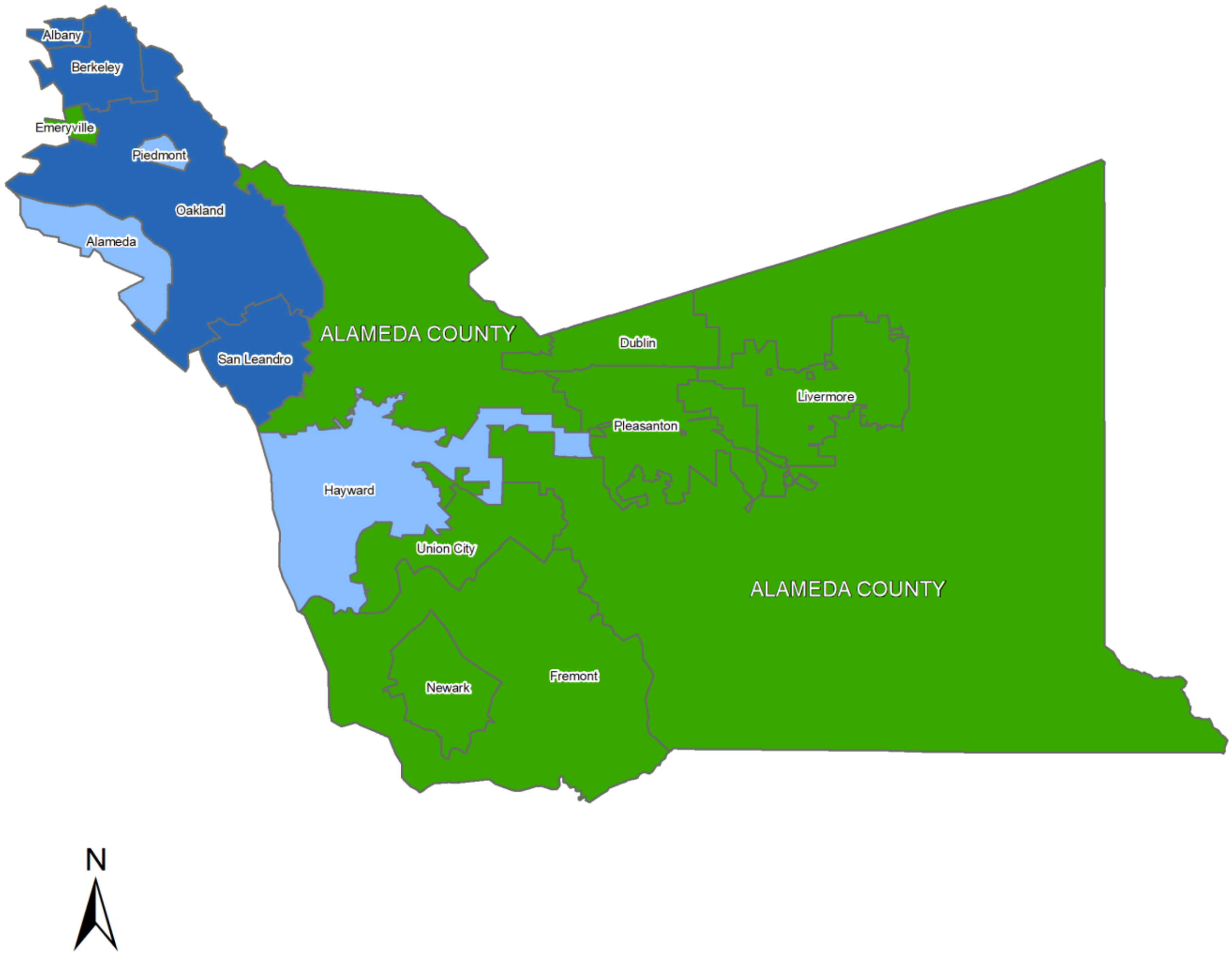
County (Cities Included)	Center Line Miles	Lane Miles	Area (sq. yd.)	2020 PCI	10 Year Needs (2020 $M)
Santa Clara	4,510	10,039	97,993,485	69	$ 2,415
Santa Cruz	873	1,757	14,104,814	55	$ 547
Shasta	1,579	3,100	24,430,506	49	$ 976
Sierra	399	800	5,566,517	45	$ 192
Siskiyou	1,488	2,985	20,233,539	62	$ 564
Solano	1,745	3,766	33,387,951	65	$ 943
Sonoma	2,390	4,991	40,203,089	58	$ 1,425
Stanislaus	2,908	5,981	52,101,939	61	$ 1,644
Sutter	1,032	2,079	16,016,764	59	$ 486
Tehama	1,202	2,408	17,509,230	50	$ 664
Trinity	592	1,112	7,477,638	54	$ 258
Tulare	3,570	7,192	58,952,533	62	$ 1,837
Tuolumne	547	1,083	7,109,056	28	$ 439
Ventura	2,535	5,577	56,220,129	68	$ 1,432
Yolo	1,344	2,696	23,500,992	57	$ 817
Yuba	1,066	1,504	19,557,588	67	$ 503
California	**144,077**	**320,882**	**2,755,584,114**	**66**	**$76,029**
* Includes Cities within County					


Pavement Condition Index
86 - 100 (Excellent)
71 - 85 (Good)
50 - 70 (At Risk)
0 - 49 (Poor)
2020
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Mendocino
Glenn
Butte
Sierra
Lake
Colusa
Sutter
Yuba
Nevada
Placer
Yolo
El Dorado
Sonoma
Napa
Sacramento
Amador
Alpine
Solano
Calaveras
Marin
Tuolumne
Mono
San Francisco
Contra Costa
San Joaquin
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
San Benito
Fresno
Inyo
Tulare
Monterey
Kings
Kern
San Luis Obispo
San Bernardino
Santa Barbara
Ventura
Los Angeles
Orange
Riverside
San Diego
Imperial


Pavement Needs (10-Years)
Up to $500M
$500M - $1.0B
$1.0B - $1.5B
$1.5B - $2.0B
Greater than $2.0B
2020
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Mendocino
Glenn
Butte
Sierra
Lake
Colusa
Sutter
Yuba
Nevada
Placer
El Dorado
Sonoma
Napa
Yolo
Solano
Sacramento
Amador
Alpine
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
Fresno
San Benito
Inyo
Tulare
Monterey
Kings
Kern
San Luis Obispo
San Bernardino
Santa Barbara
Ventura
Los Angeles
Orange
Riverside
San Diego
Imperial


Percent of Pavement Needs Met (10-Years)
Greater than 80%
60% - 80%
40% - 60%
20% - 40%
Less than 20%
2020
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Glenn
Butte
Sierra
Mendocino
Lake
Colusa
Sutter
Yuba
Nevada
Placer
El Dorado
Yolo
Sonoma
Napa
Solano
Sacramento
Amador
Alpine
Calaveras
Marin
Contra Costa
San Joaquin
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
San Benito
Fresno
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
San Bernardino
Santa Barbara
Ventura
Los Angeles
Orange
Riverside
San Diego
Imperial

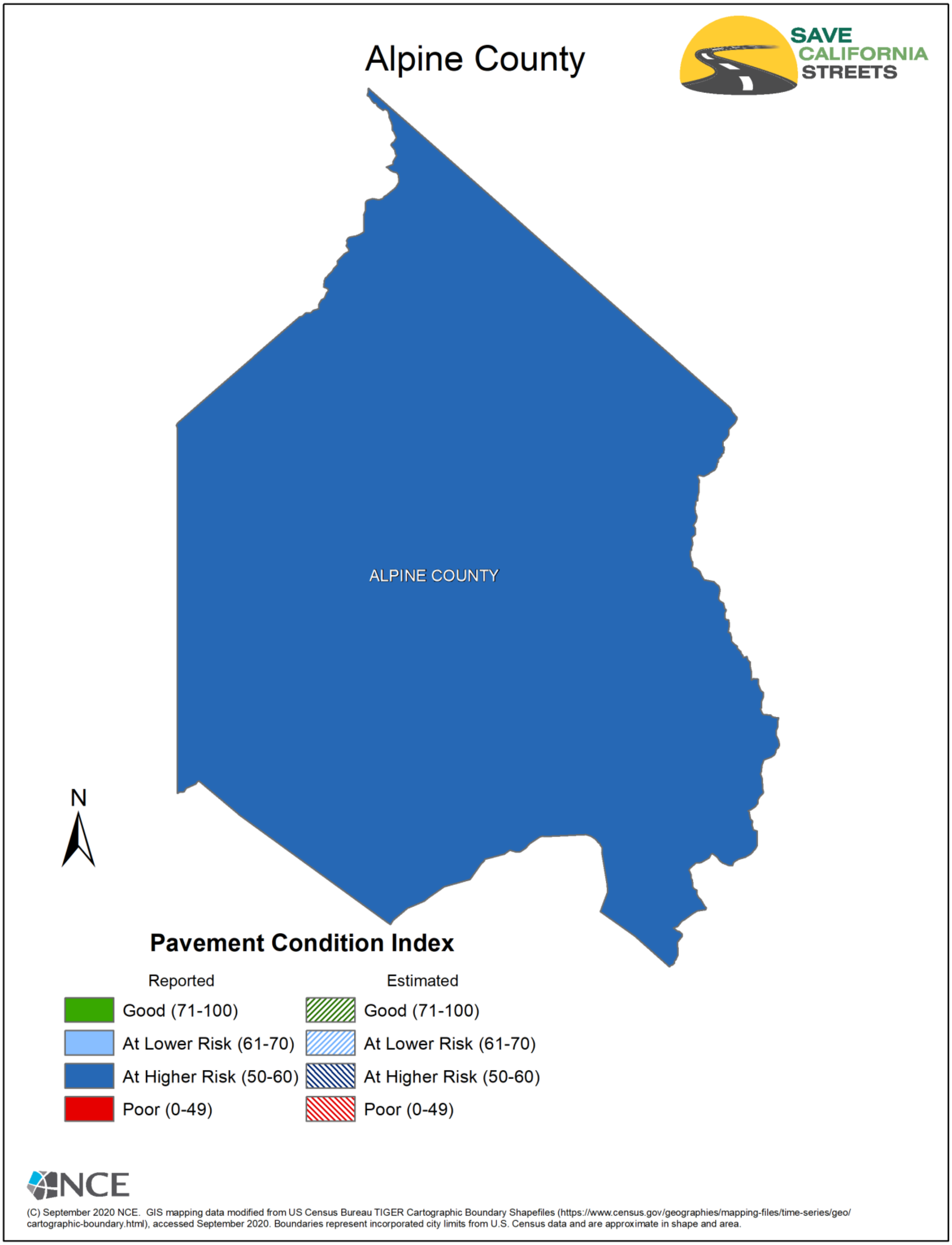
Alameda County

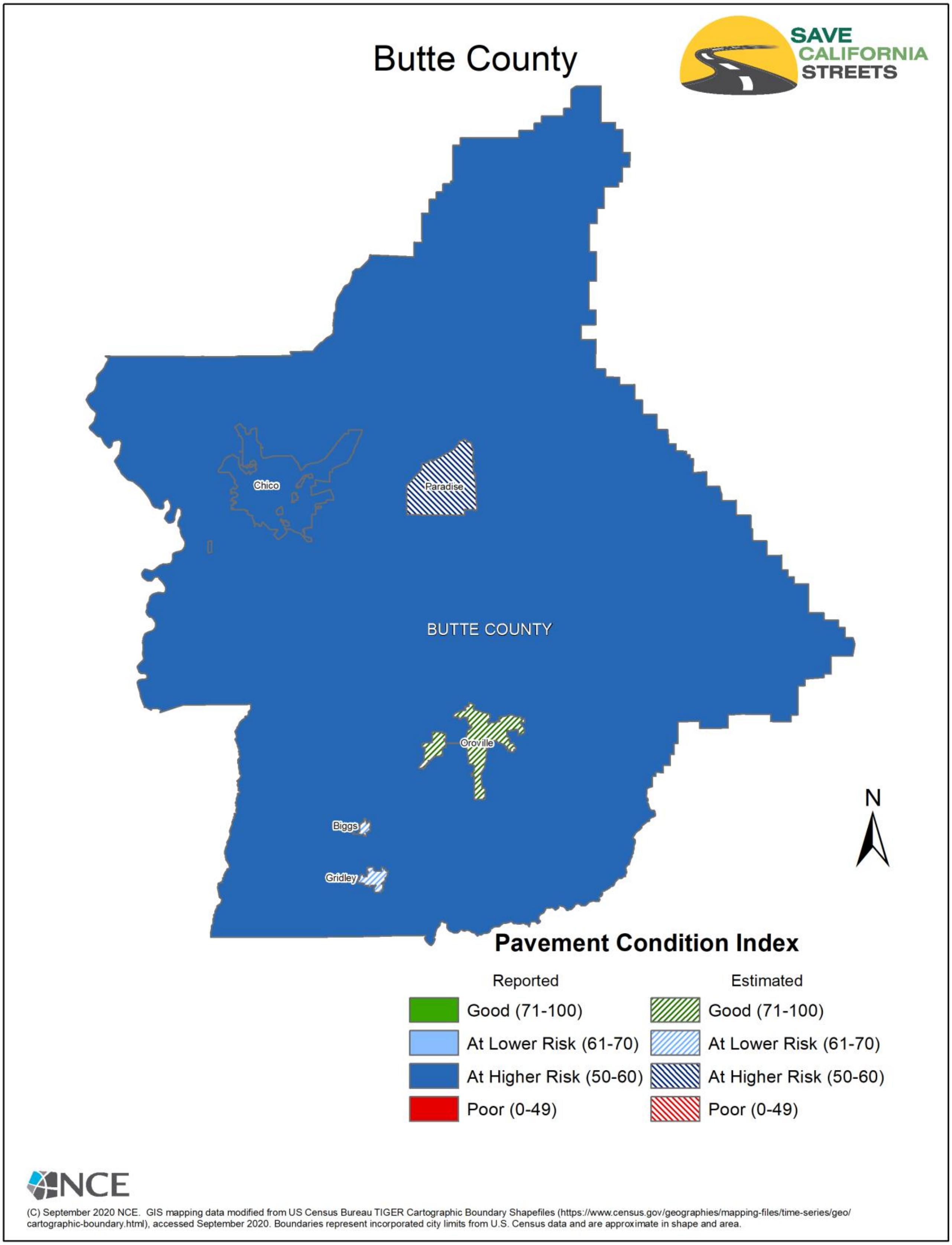


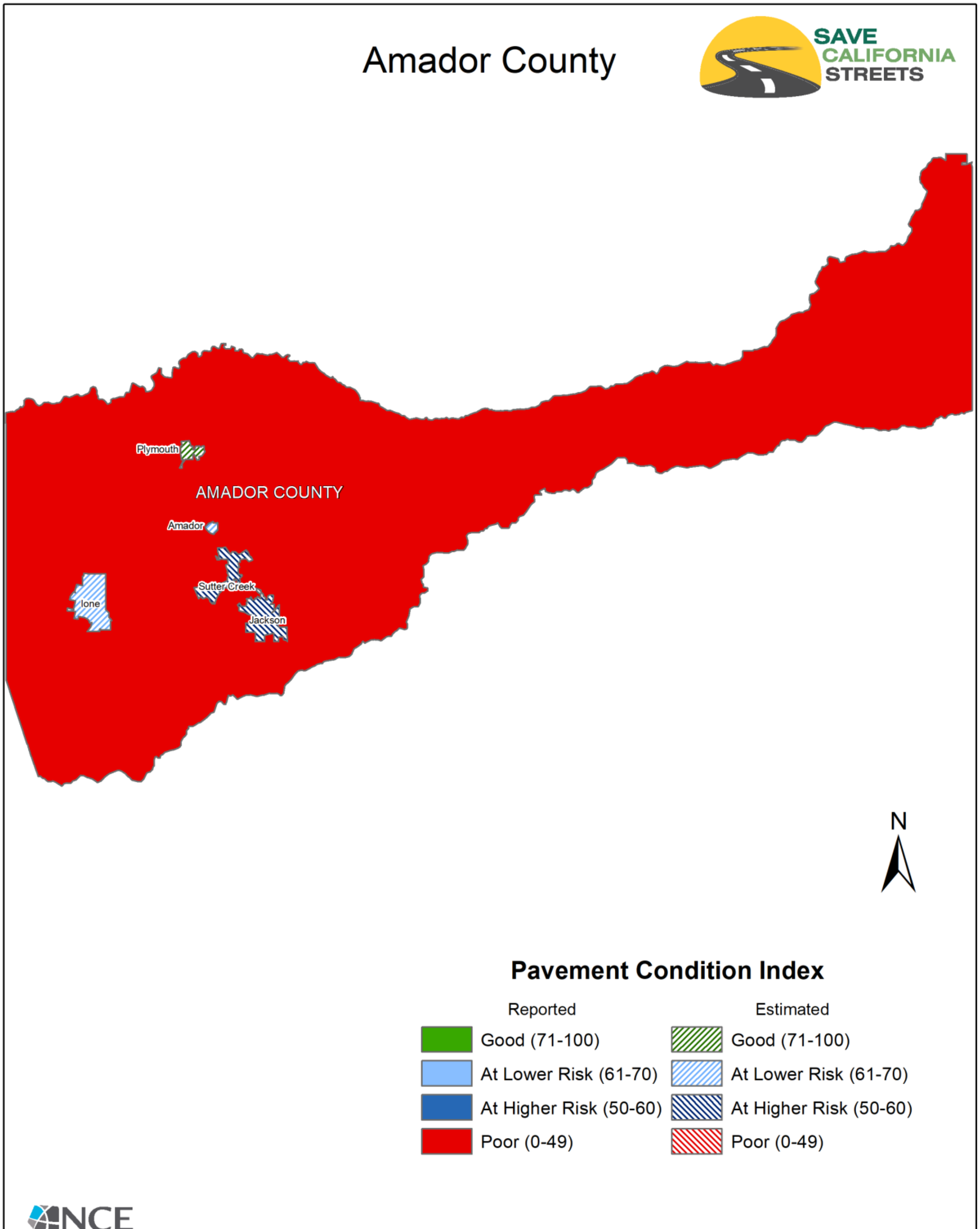
Pavement Condition Index

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

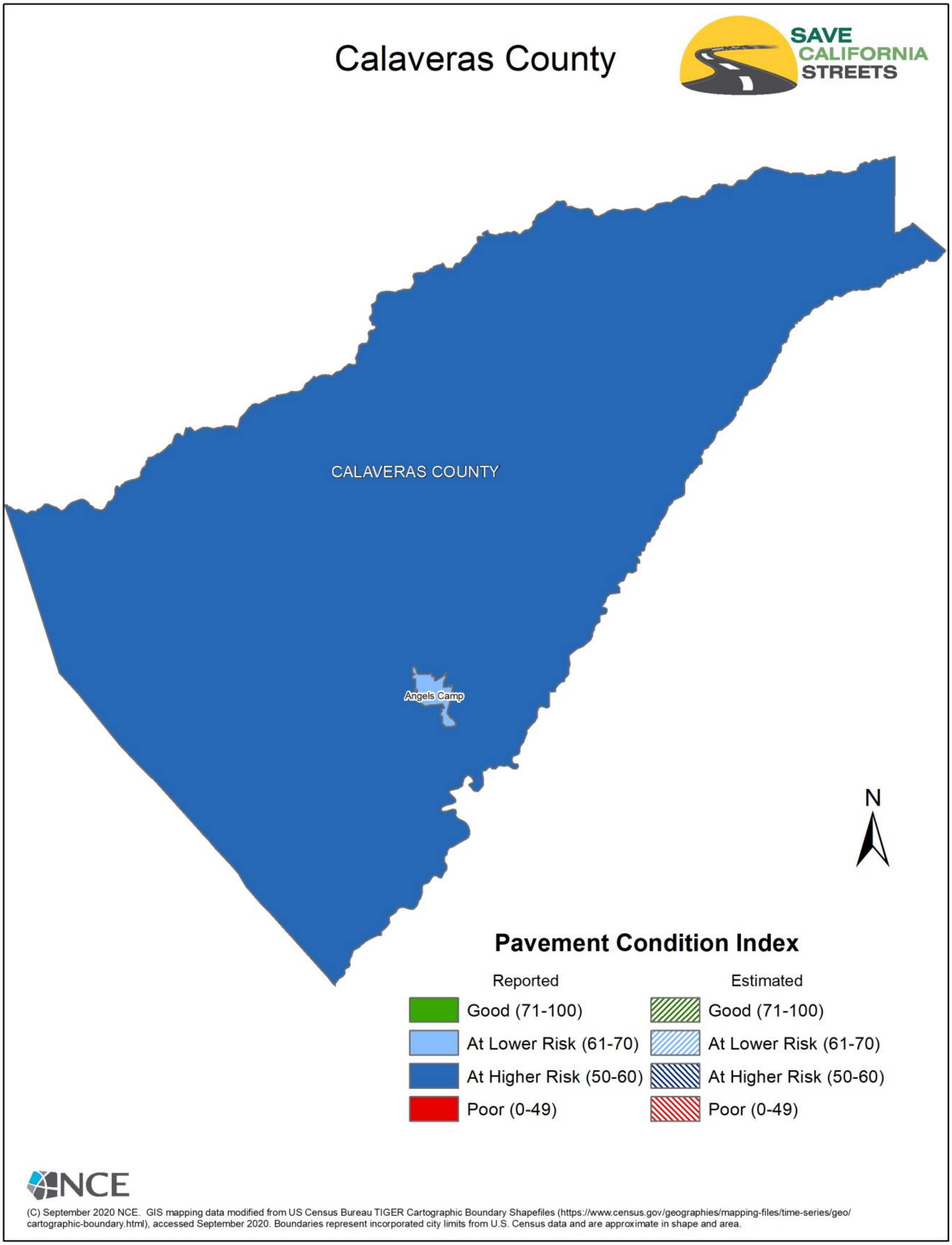
NCE

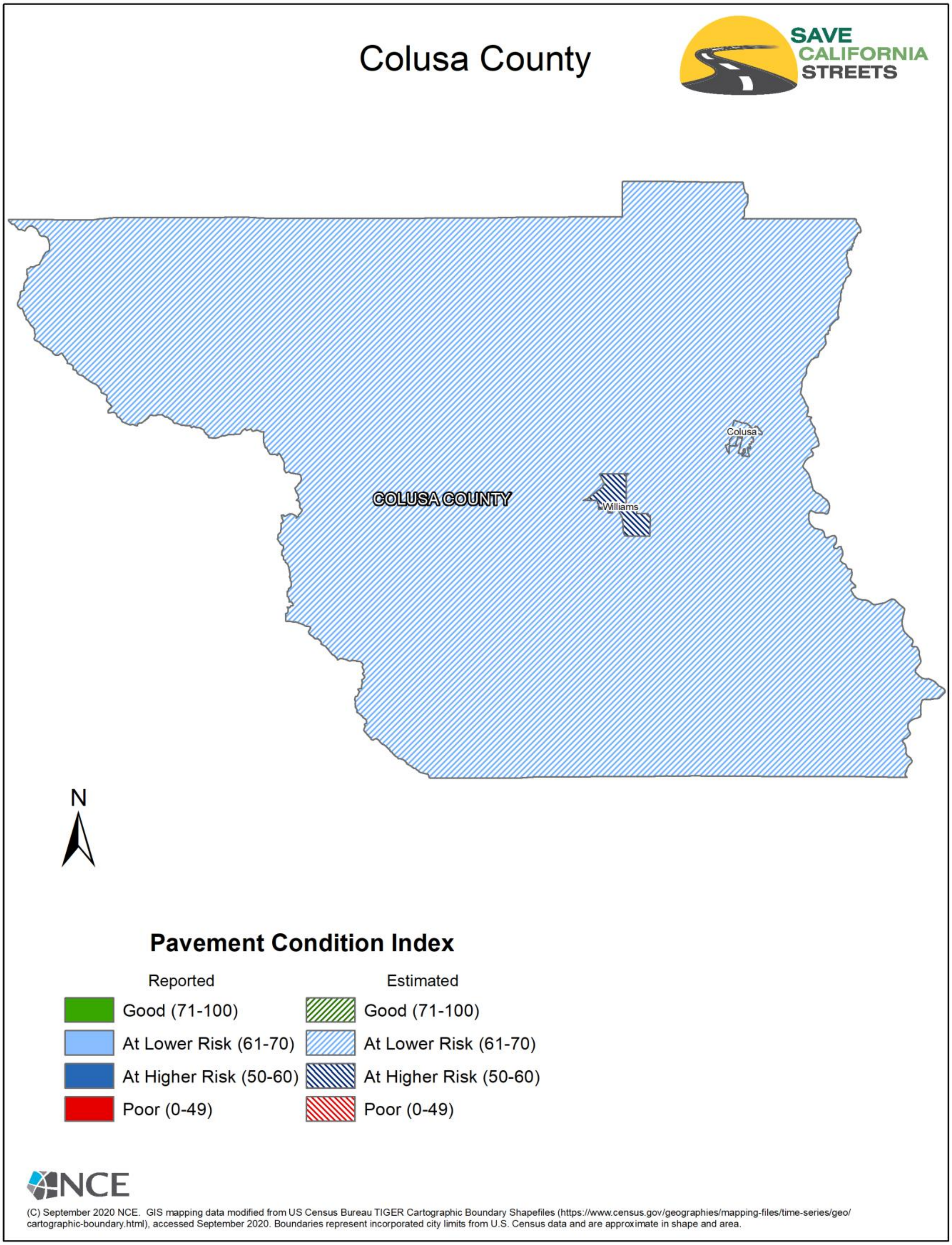

Alpine County
SAVE
CALIFORNIA
STREETS
ALPINE COUNTY
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

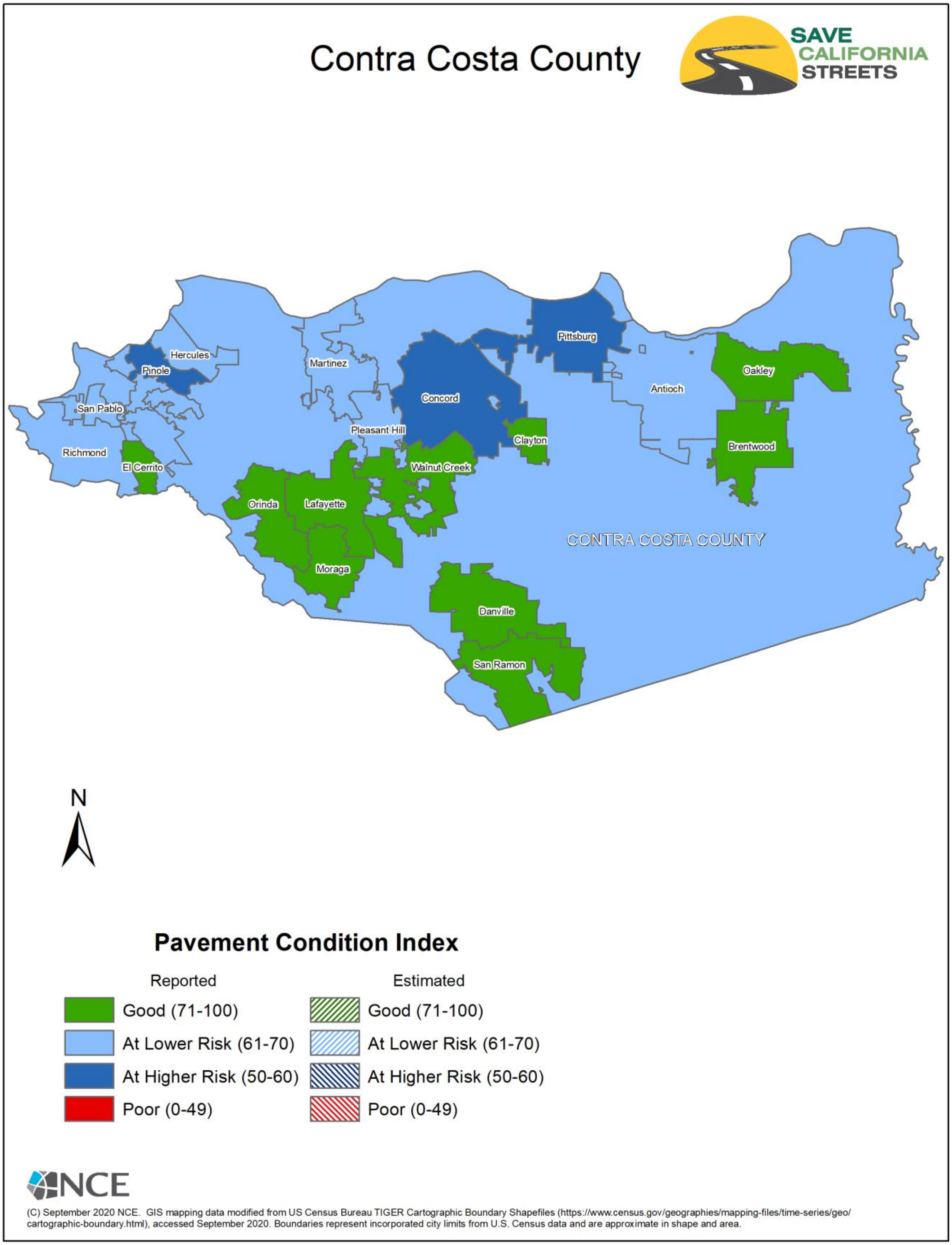

Butte County
SAVE CALIFORNIA STREETS
Chico
Paradise
BUTTE COUNTY
Oroville
Biggs
Gridley
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

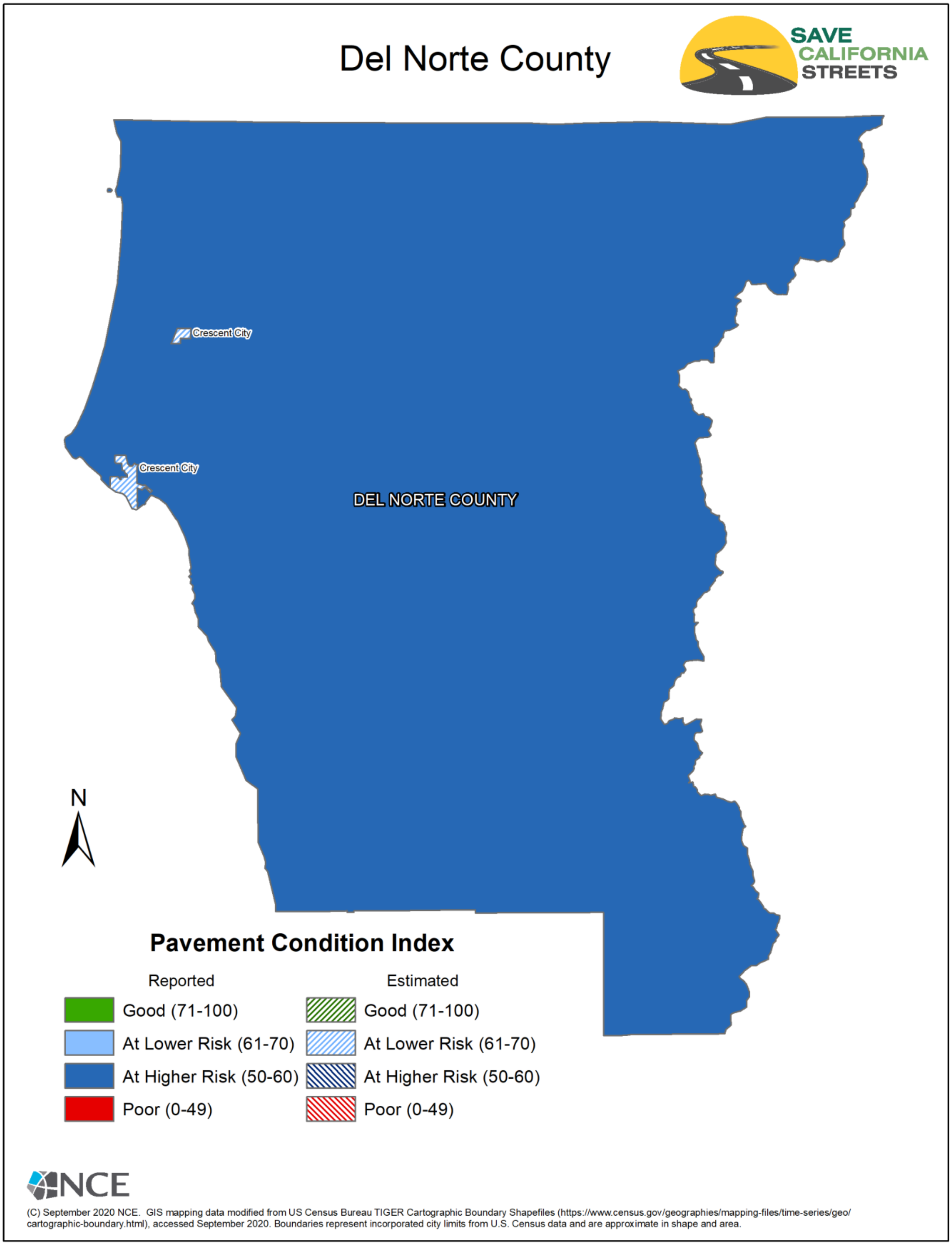


(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

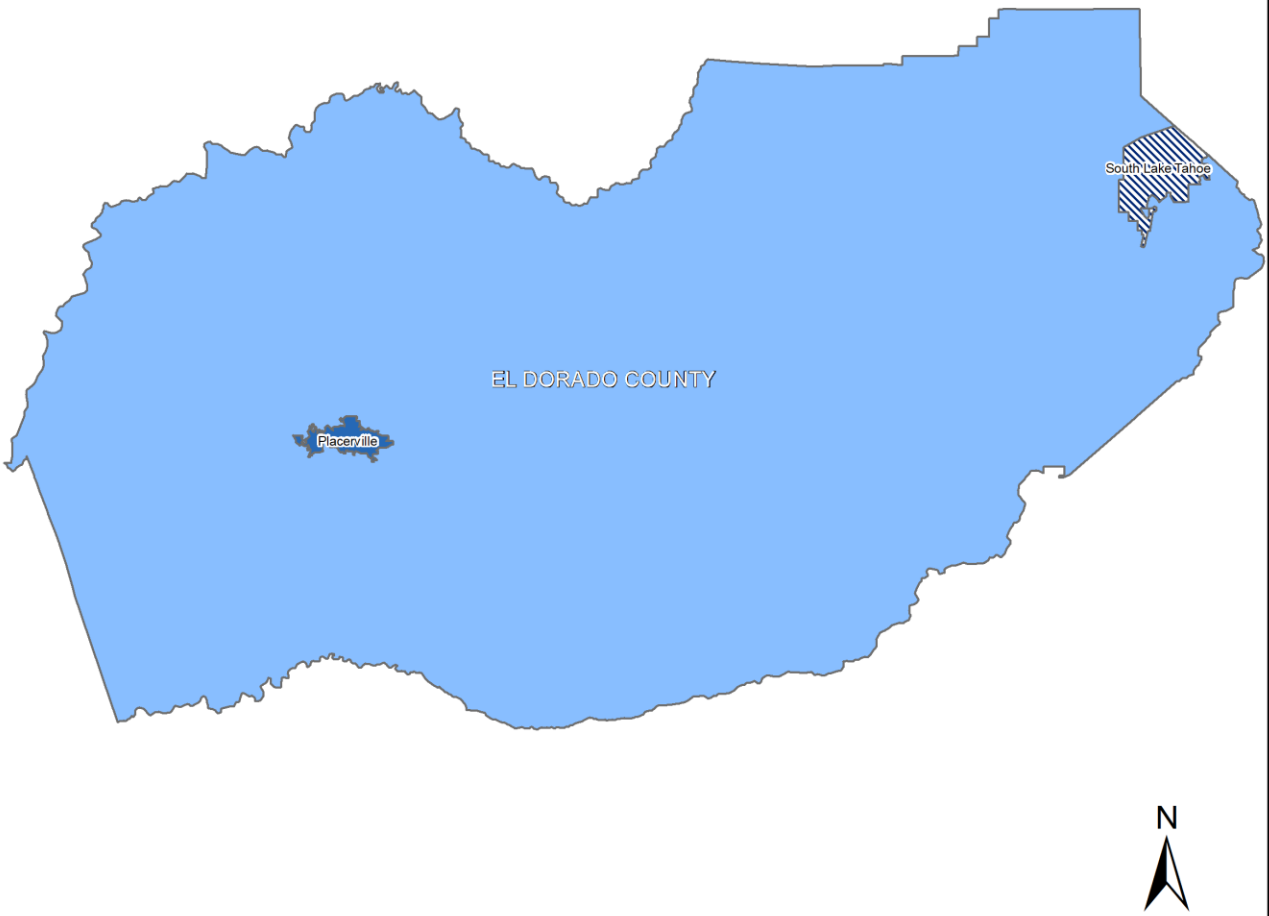

Calaveras County
SAVE CALIFORNIA STREETS
CALAVERAS COUNTY
Angels Camp
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Colusa County
SAVE CALIFORNIA STREETS
Colusa
COLUSA COUNTY
Williams
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Contra Costa County
SAVE CALIFORNIA STREETS
Hercules
Pinole
Martinez
Pittsburg
San Pablo
Concord
Antioch
Oakley
Richmond
Pleasant Hill
Clayton
El Cerrito
Walnut Creek
Brentwood
Orinda
Lafayette
CONTRA COSTA COUNTY
Moraga
Danville
San Ramon
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

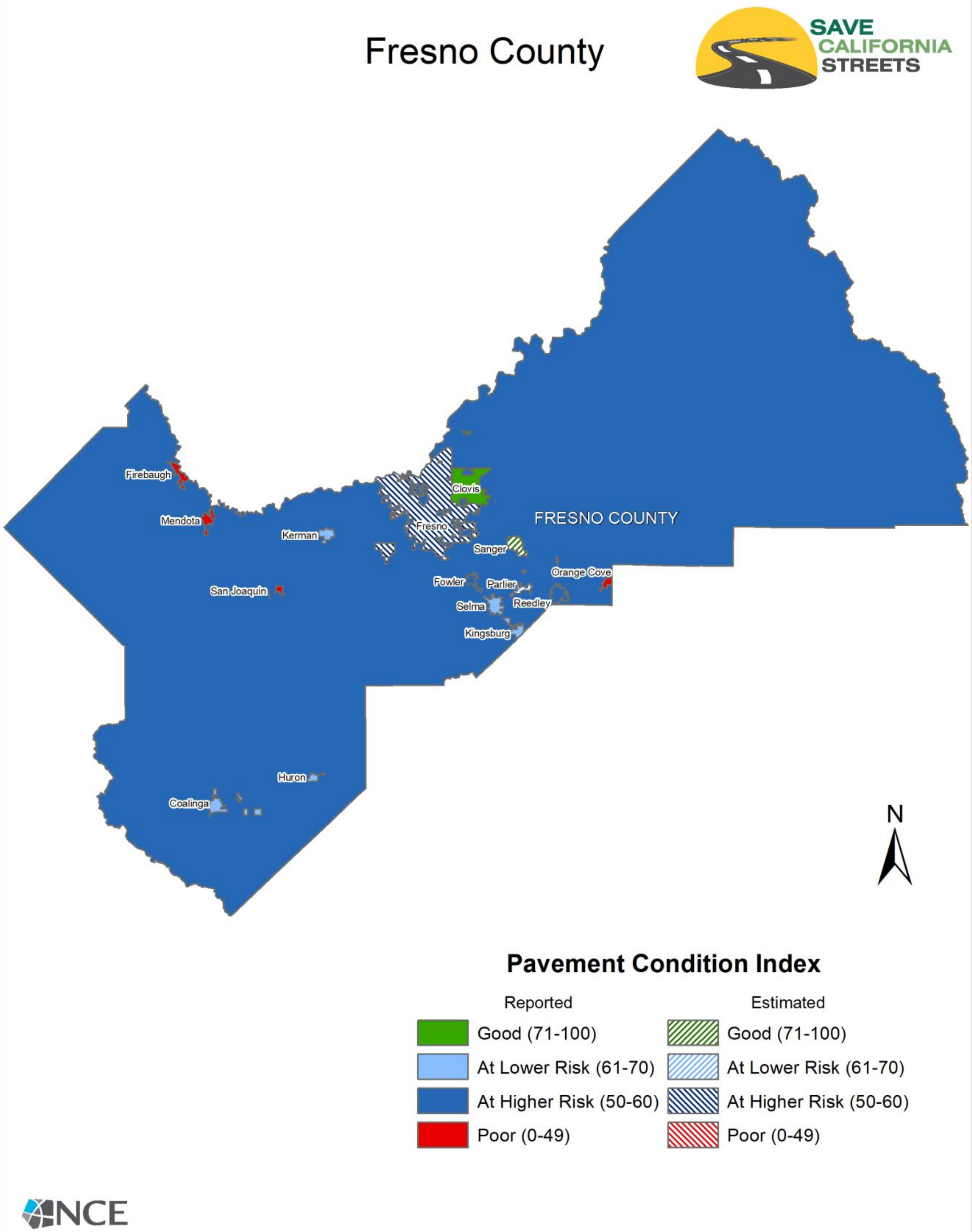

Del Norte County
SAVE CALIFORNIA STREETS
Crescent City
Crescent City
DEL NORTE COUNTY
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

El Dorado County



Pavement Condition Index

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



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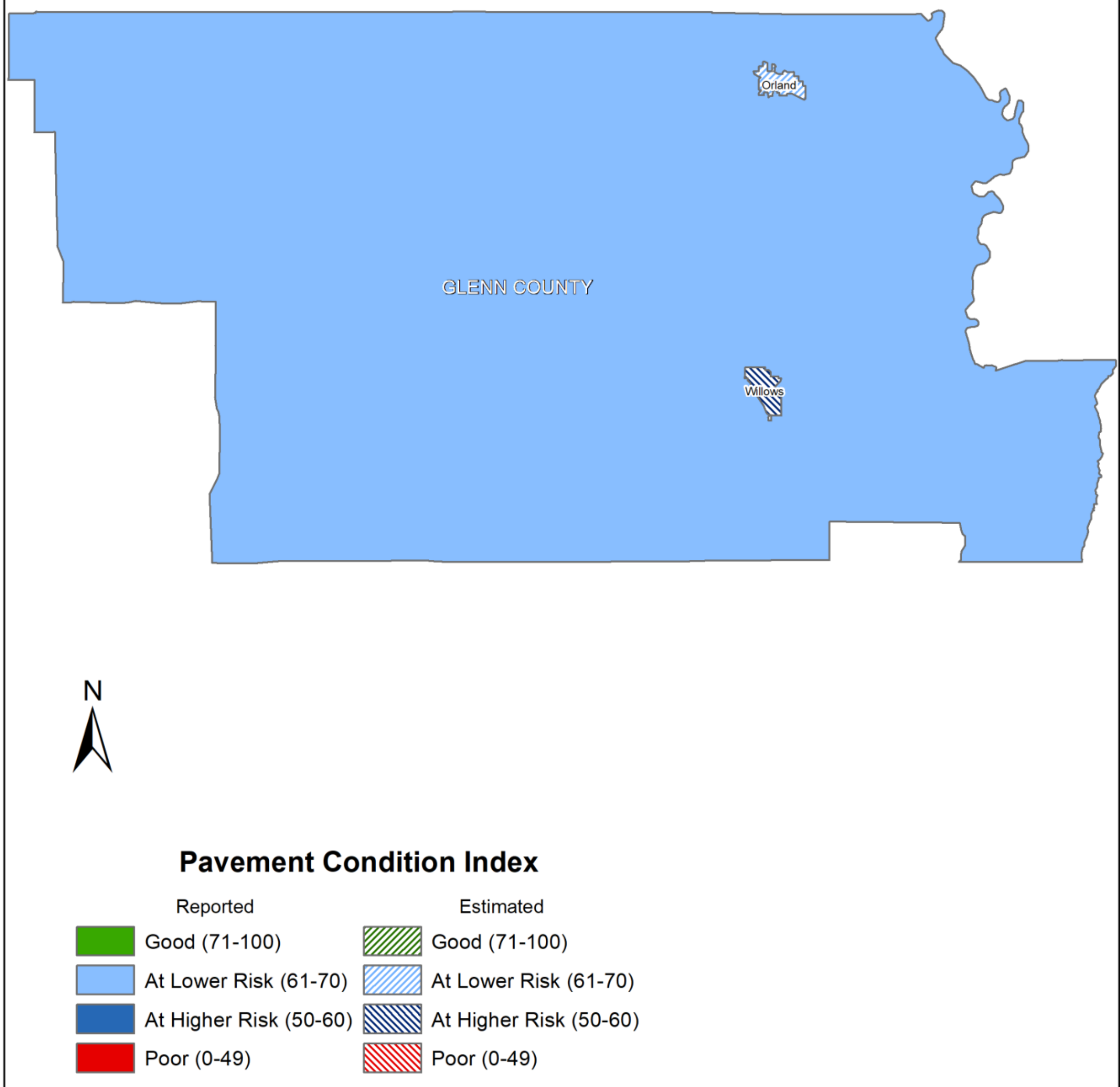
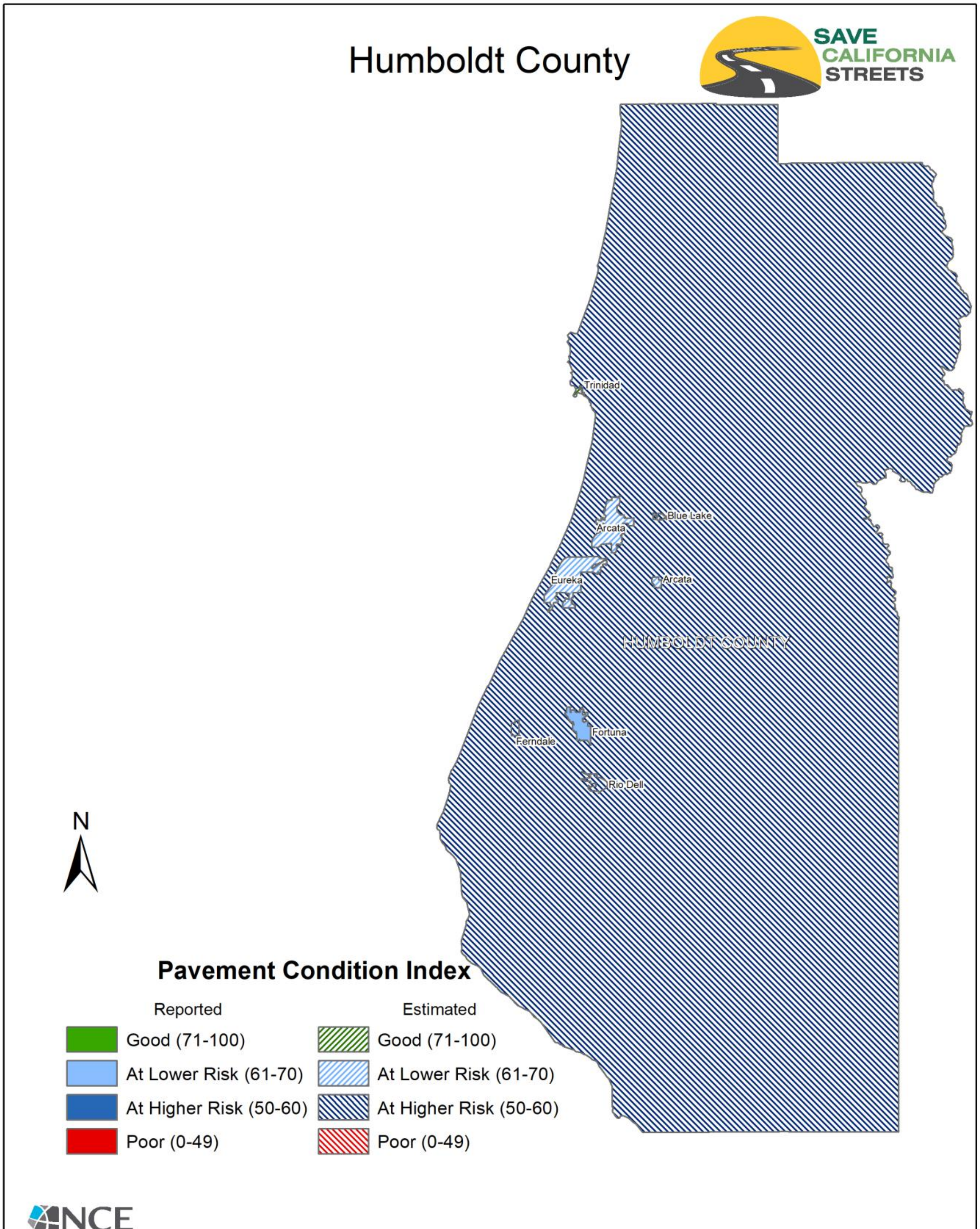
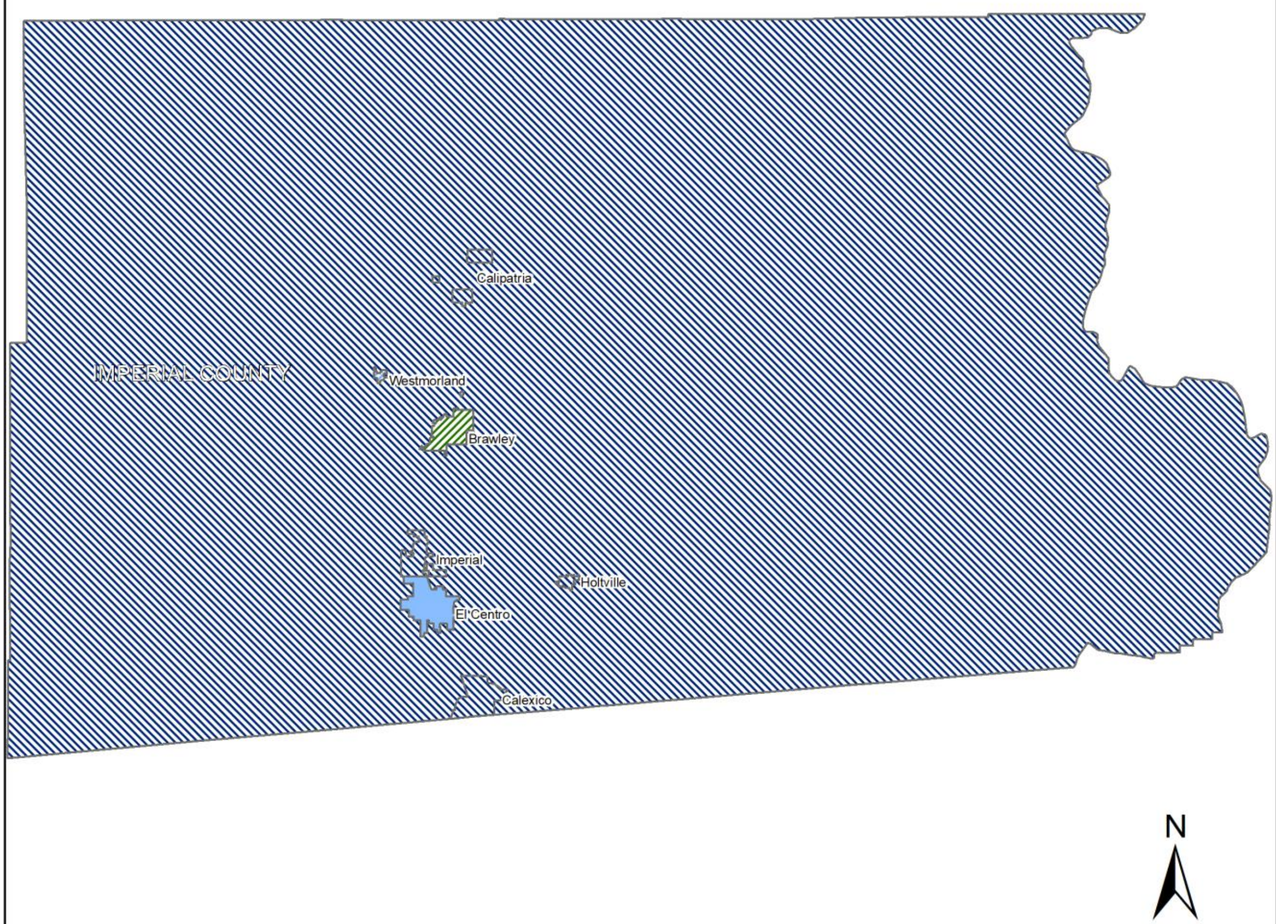
Glenn County



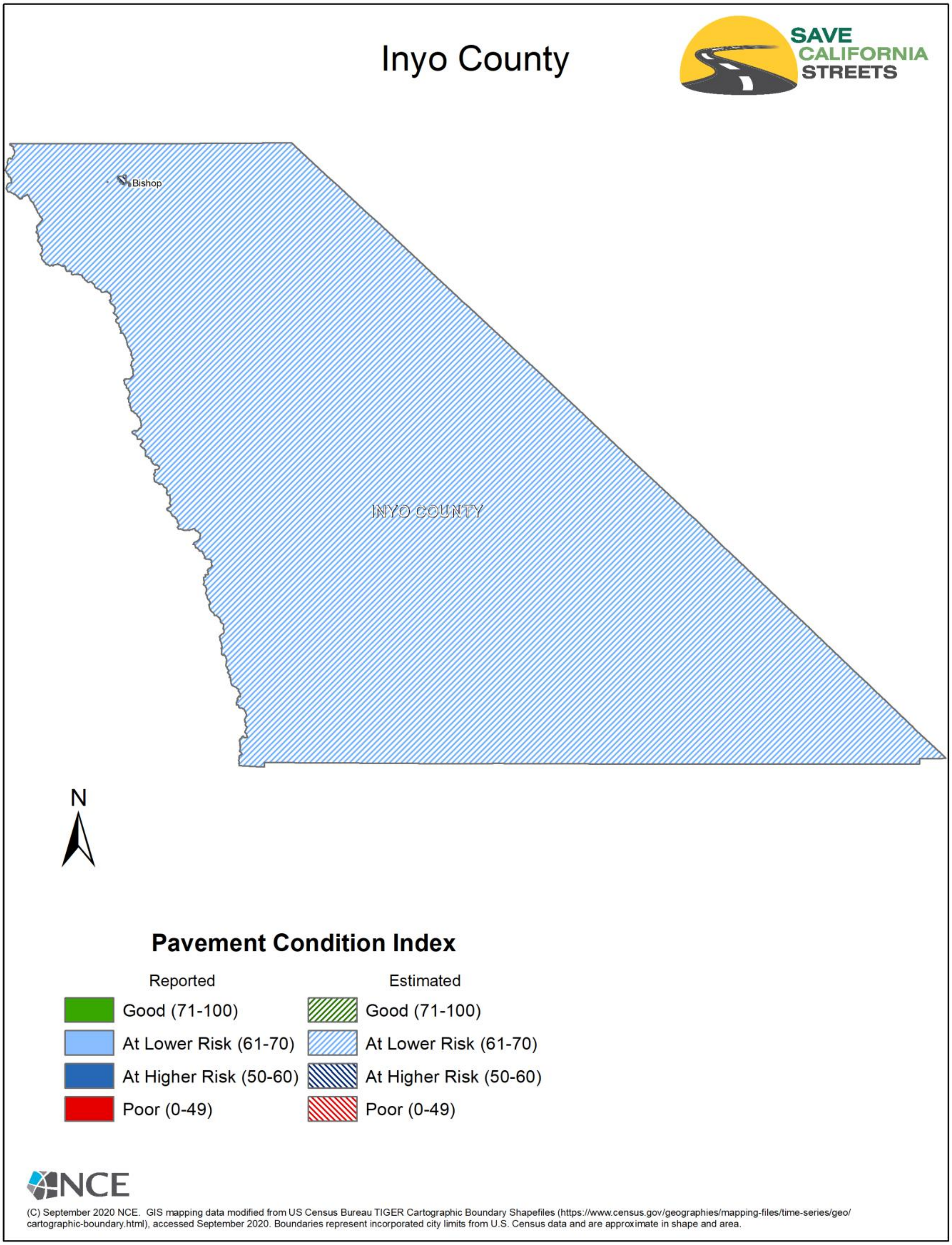

Humboldt County
SAVE CALIFORNIA STREETS
Trinidad
Blue Lake
Arcata
Eureka
Arcata
HUMBOLDT COUNTY
Ferndale
Fortuna
Rio Dell
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE

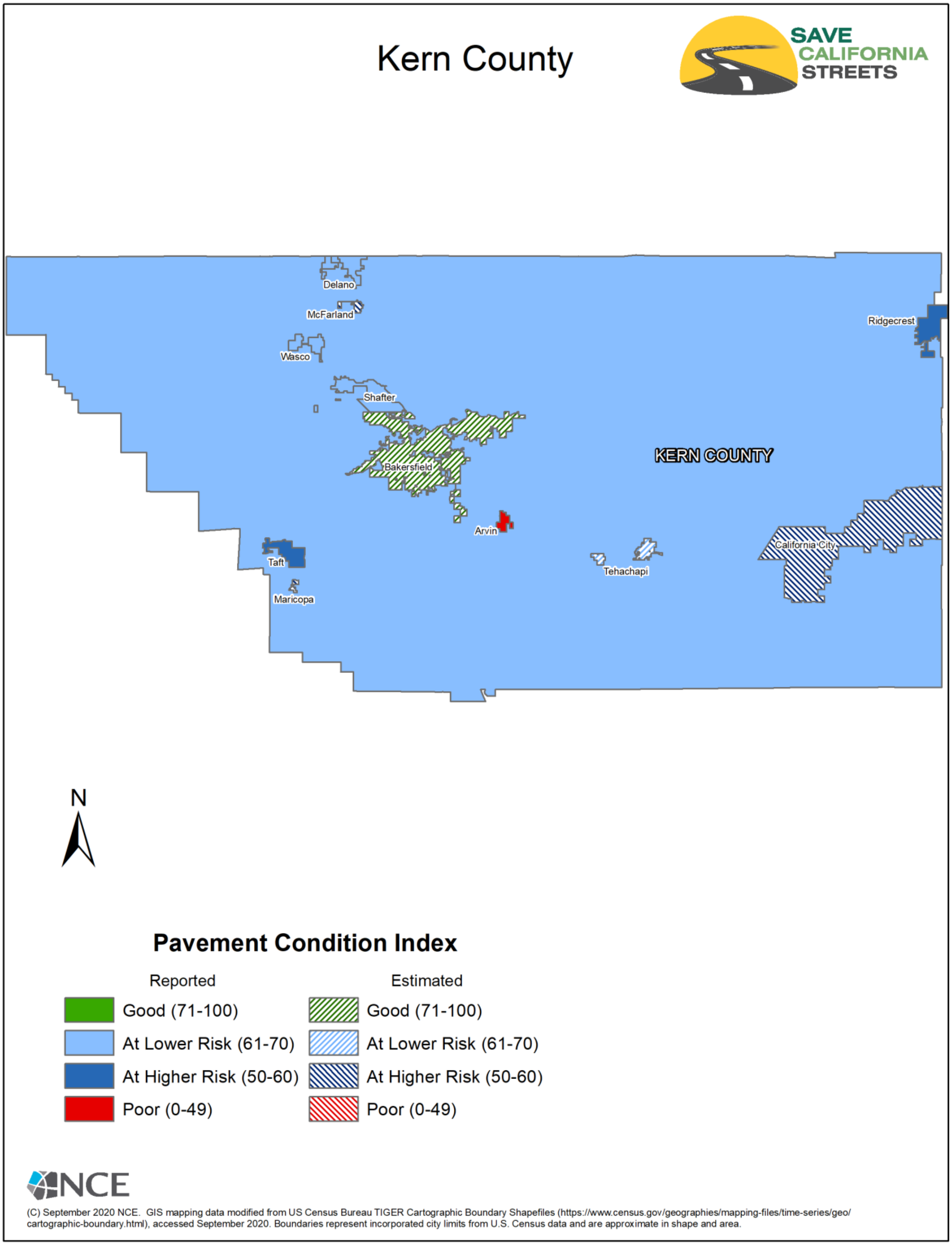
Imperial County

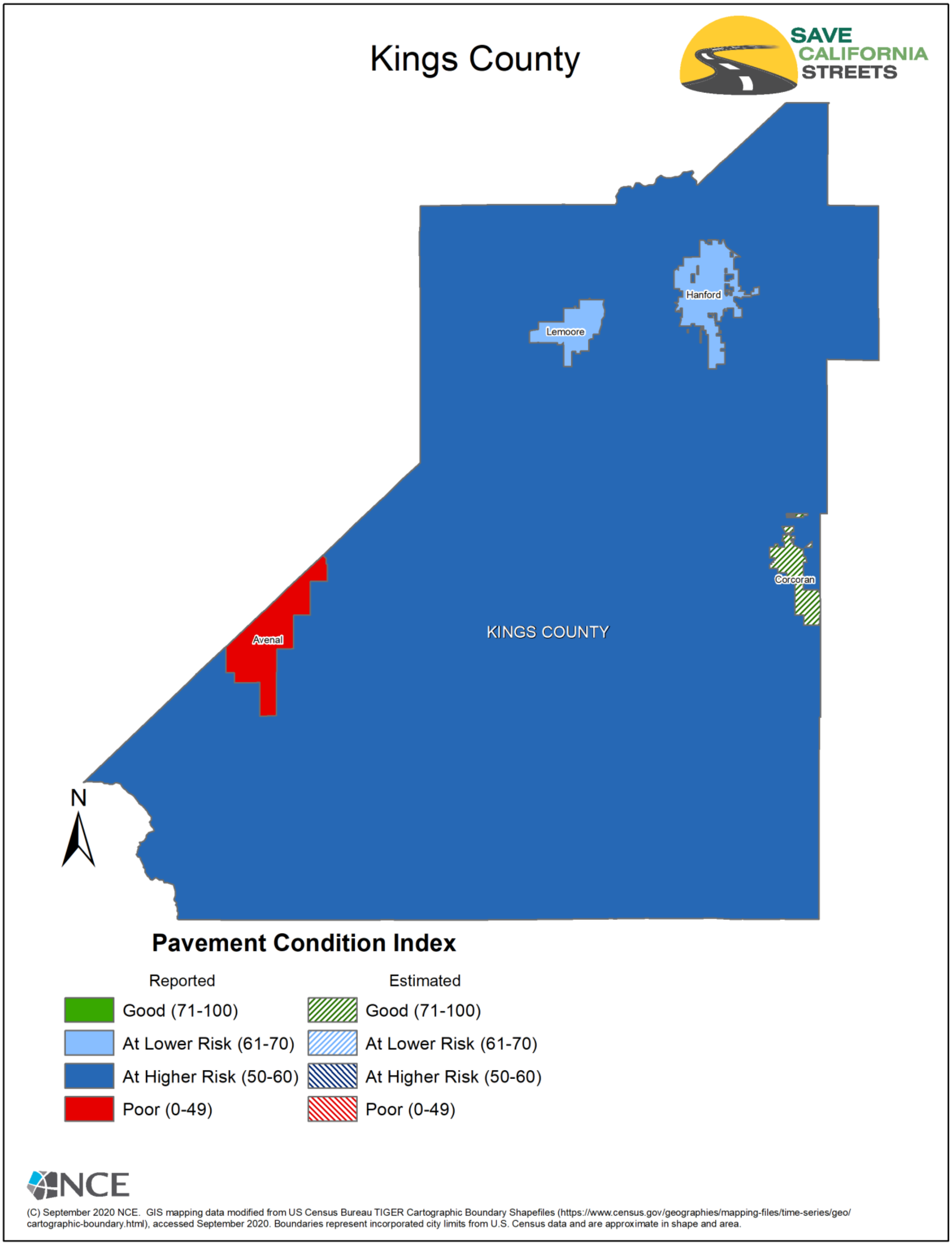


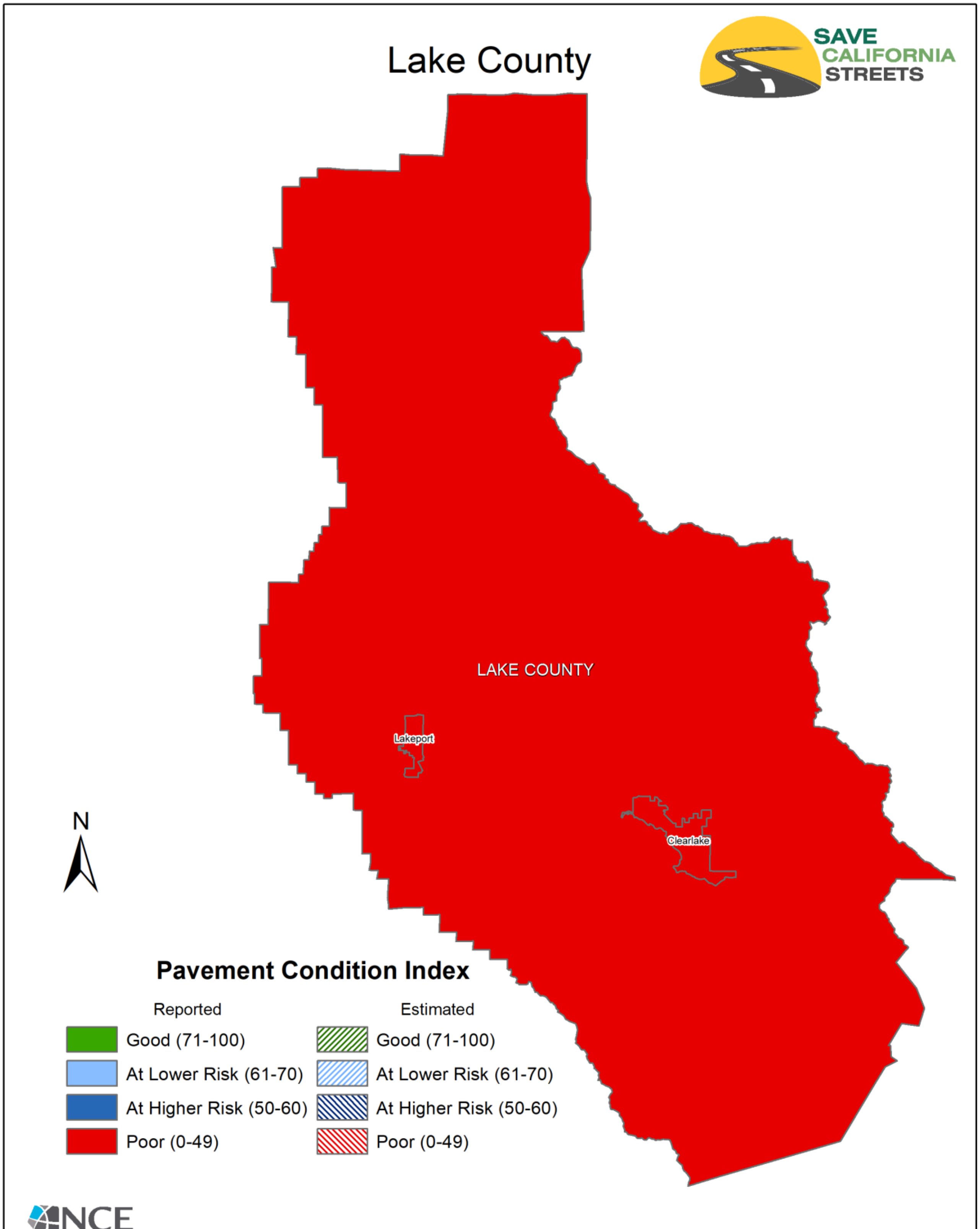
Pavement Condition Index

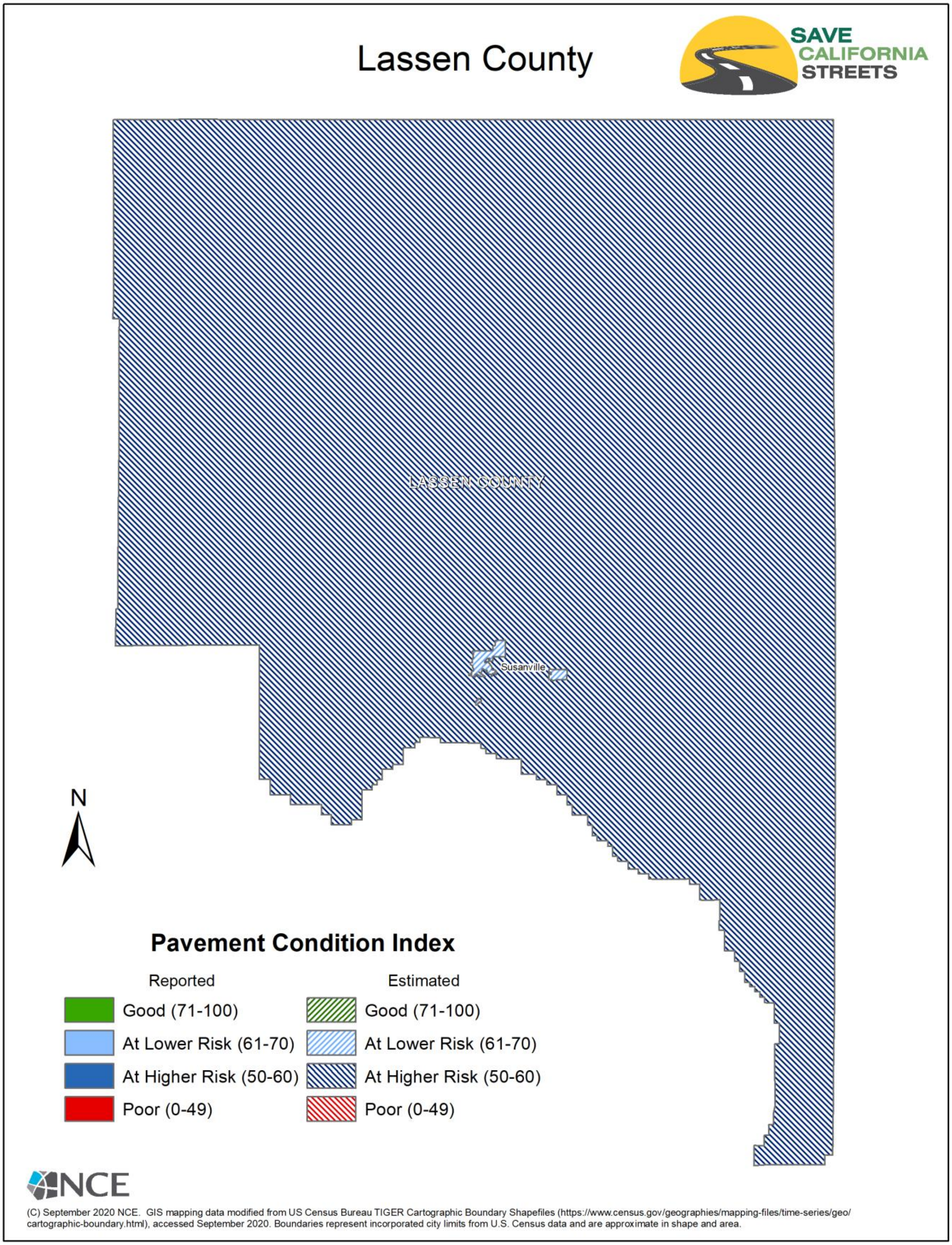
Reported	Estimated
Good (71-100)	Good (71-100)
At Lower Risk (61-70)	At Lower Risk (61-70)
At Higher Risk (50-60)	At Higher Risk (50-60)
Poor (0-49)	Poor (0-49)

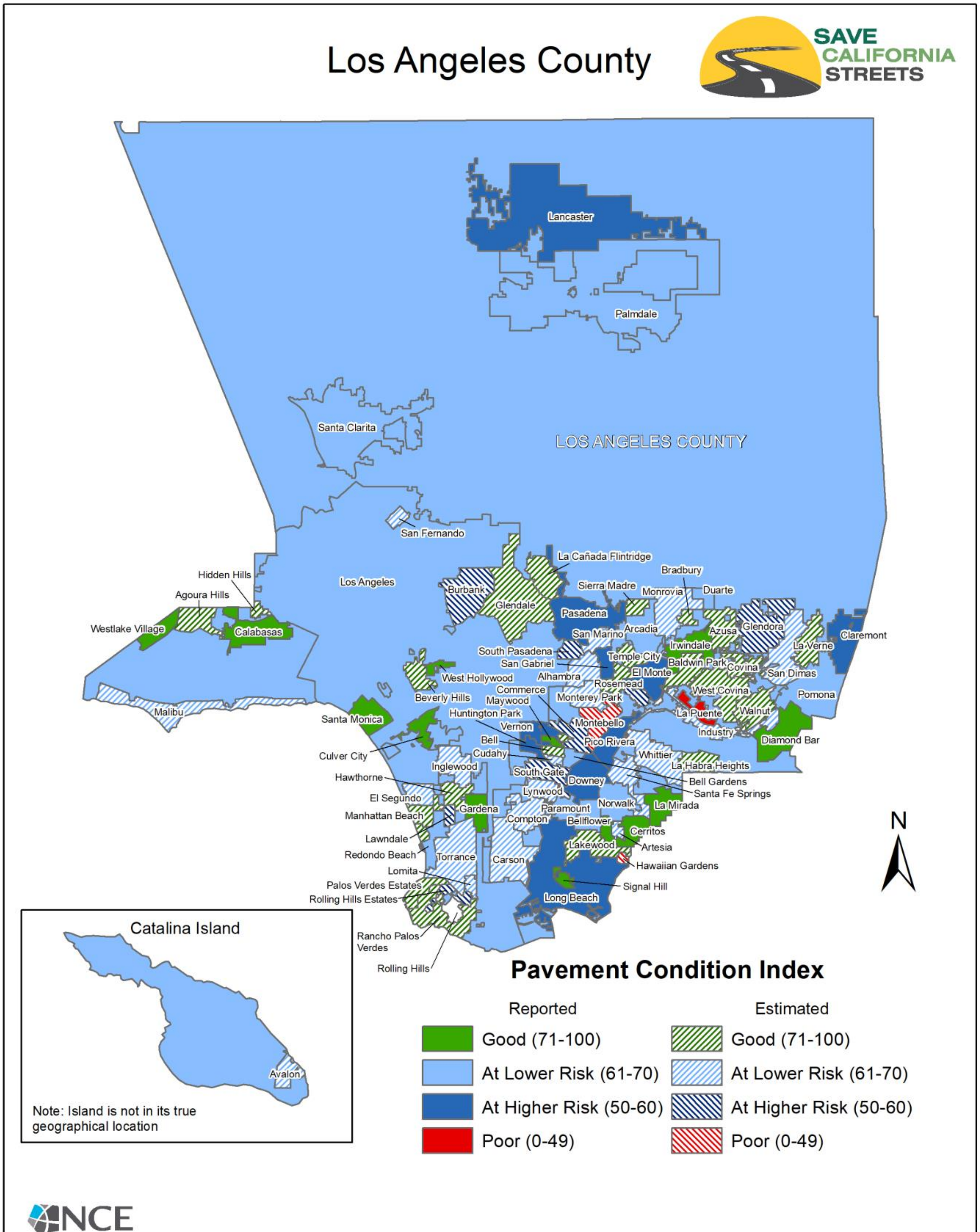

Inyo County
SAVE CALIFORNIA STREETS
Bishop
INYO COUNTY
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Kern County
SAVE CALIFORNIA STREETS
Delano
McFarland
Wasco
Shafter
Bakersfield
KERN COUNTY
Ridgecrest
Arvin
Taft
Maricopa
Tehachapi
California City
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

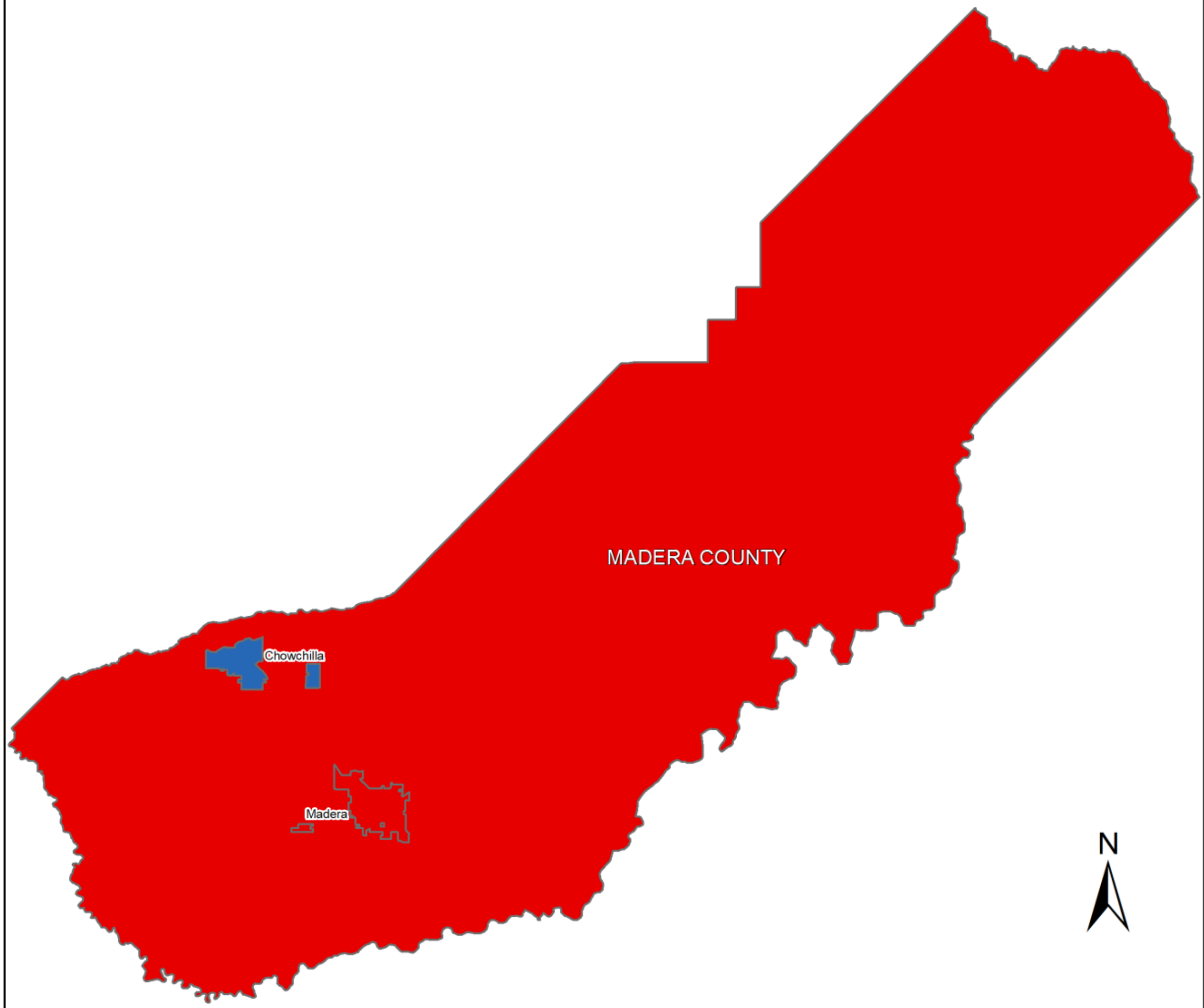

Kings County
SAVE CALIFORNIA STREETS
Hanford
Lemoore
Corcoran
Avenal
KINGS COUNTY
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Lake County
SAVE CALIFORNIA STREETS
LAKE COUNTY
Lakeport
Clearlake
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE


Lassen County
SAVE
CALIFORNIA
STREETS
LASSEN COUNTY
Susanville
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

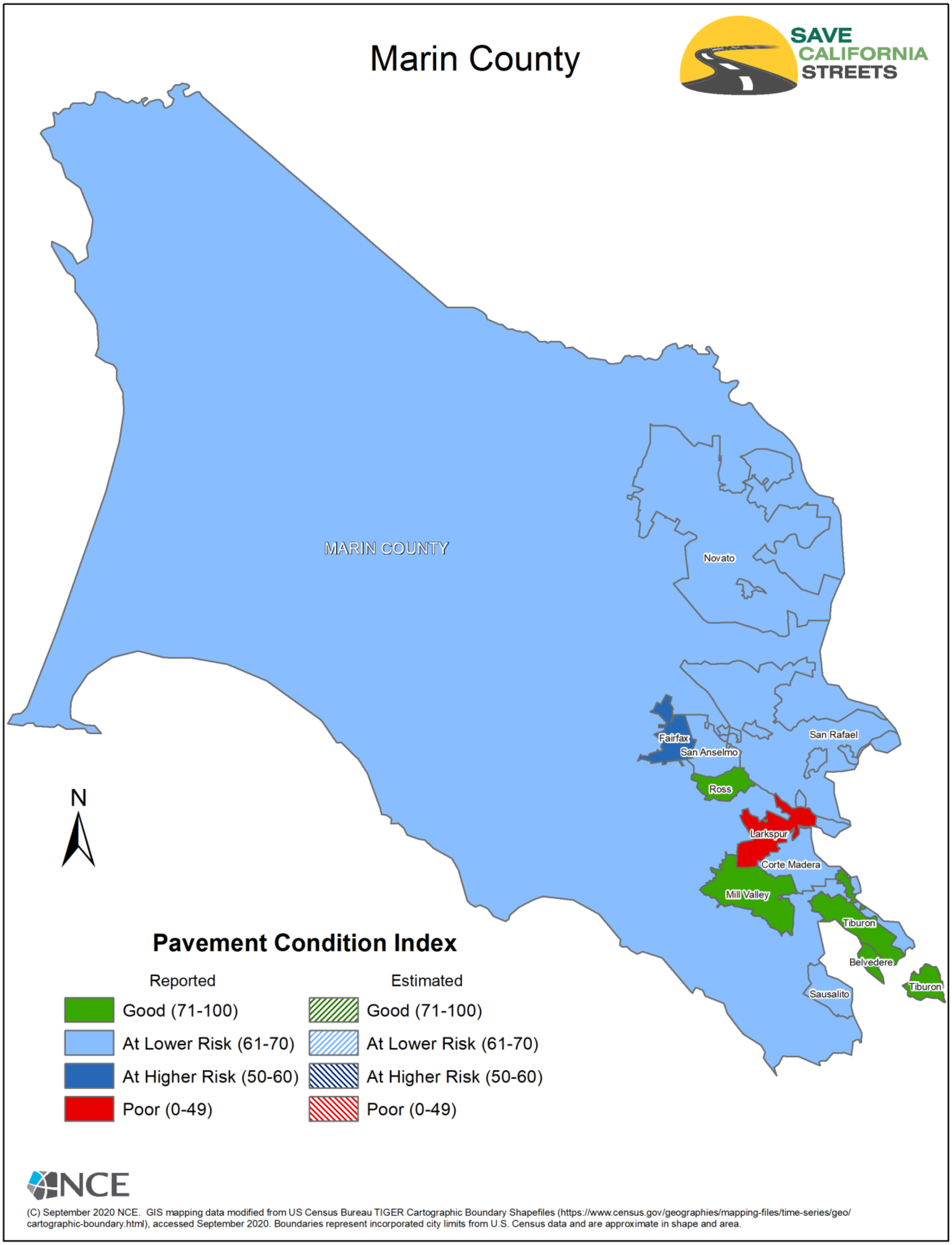

Los Angeles County
SAVE CALIFORNIA STREETS
Lancaster
Palmdale
Santa Clarita
LOS ANGELES COUNTY
San Fernando
Los Angeles
Hidden Hills
Agoura Hills
Westlake Village
Calabasas
Malibu
Santa Monica
Culver City
Hawthorne
El Segundo
Manhattan Beach
Lawndale
Redondo Beach
Lomita
Palos Verdes Estates
Rolling Hills Estates
Rancho Palos Verdes
Rolling Hills
La Cañada Flintridge
Bradbury
Burbank
Glendale
Sierra Madre
Monrovia
Duarte
Pasadena
San Marino
Arcadia
Azusa
Glendora
Claremont
Irwindale
La Verne
South Pasadena
San Gabriel
Temple City
Baldwin Park
Covina
San Dimas
West Hollywood
Alhambra
El Monte
Rosemead
West Covina
Pomona
Beverly Hills
Commerce
Maywood
Monterey Park
La Puente
Walnut
Huntington Park
Montebello
Industry
Vernon
Diamond Bar
Bell
Pico Rivera
Cudahy
Whittier
Inglewood
La Habra Heights
South Gate
Downey
Bell Gardens
Santa Fe Springs
Lynwood
Gardena
Norwalk
La Mirada
Paramount
Compton
Bellflower
Cerritos
Artesia
Lakewood
Torrance
Carson
Hawaiian Gardens
Signal Hill
Long Beach
Catalina Island
Avalon
Note: Island is not in its true geographical location
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE

Madera County

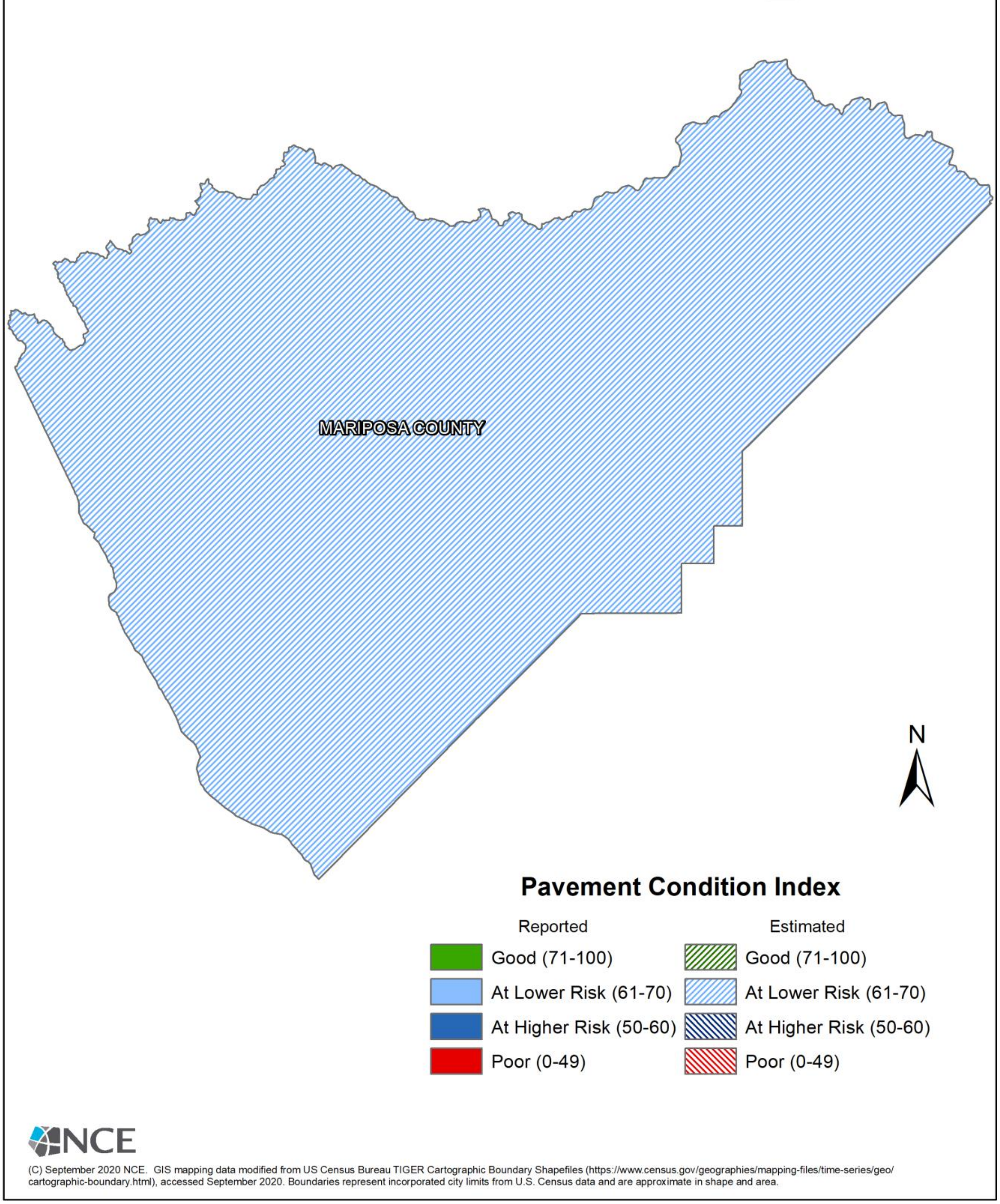


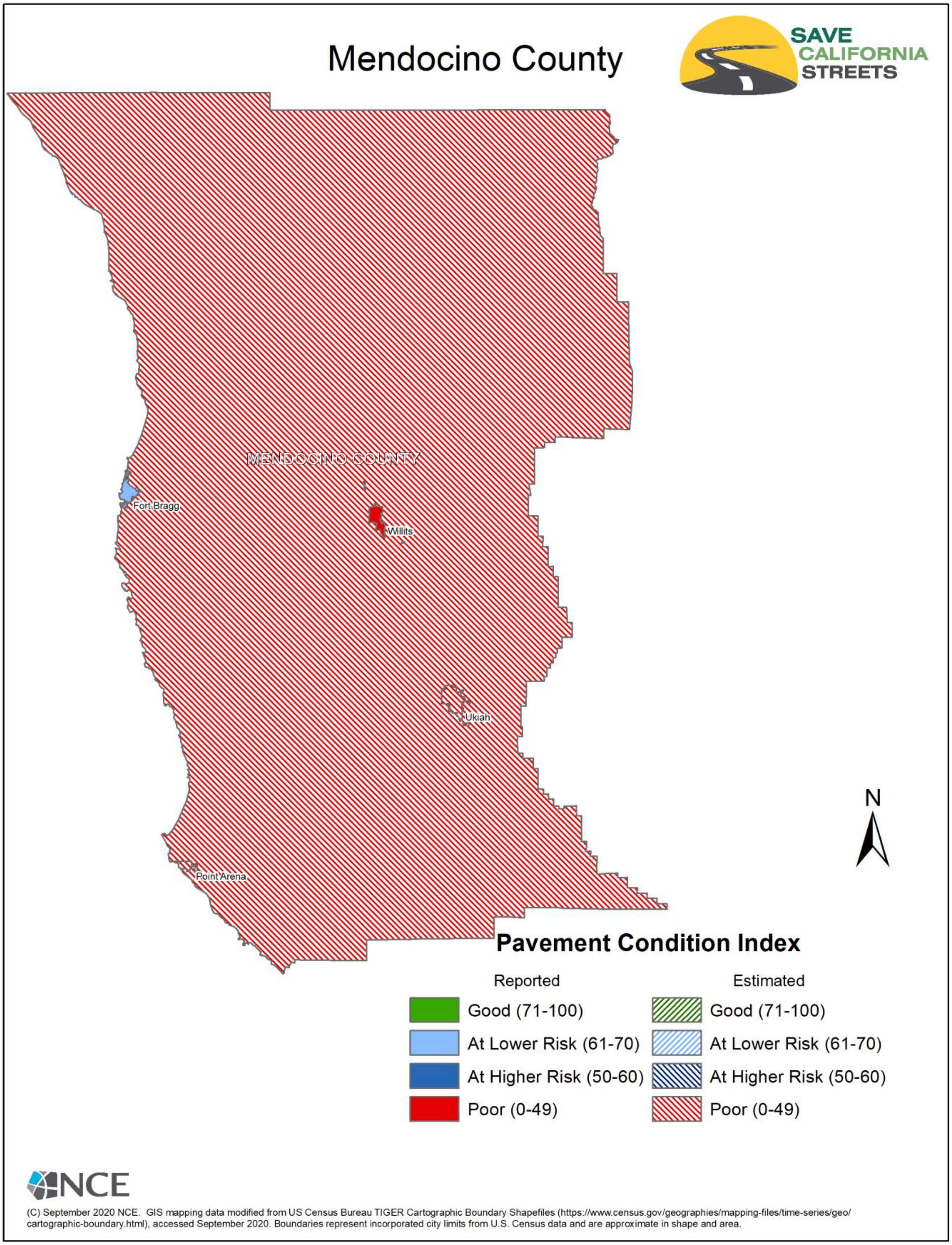
Pavement Condition Index

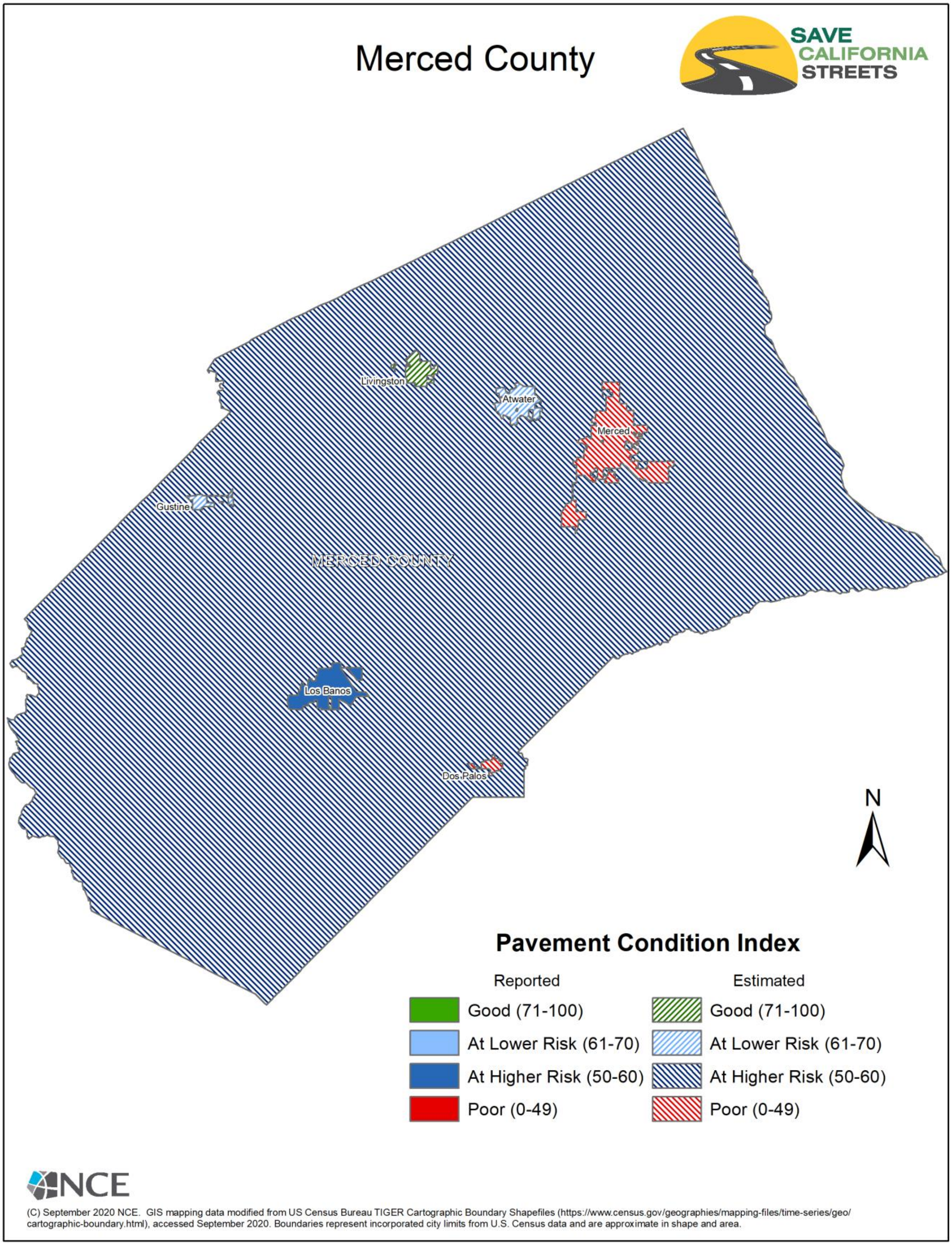
Reported	Estimated
Good (71-100)	Good (71-100)
At Lower Risk (61-70)	At Lower Risk (61-70)
At Higher Risk (50-60)	At Higher Risk (50-60)
Poor (0-49)	Poor (0-49)

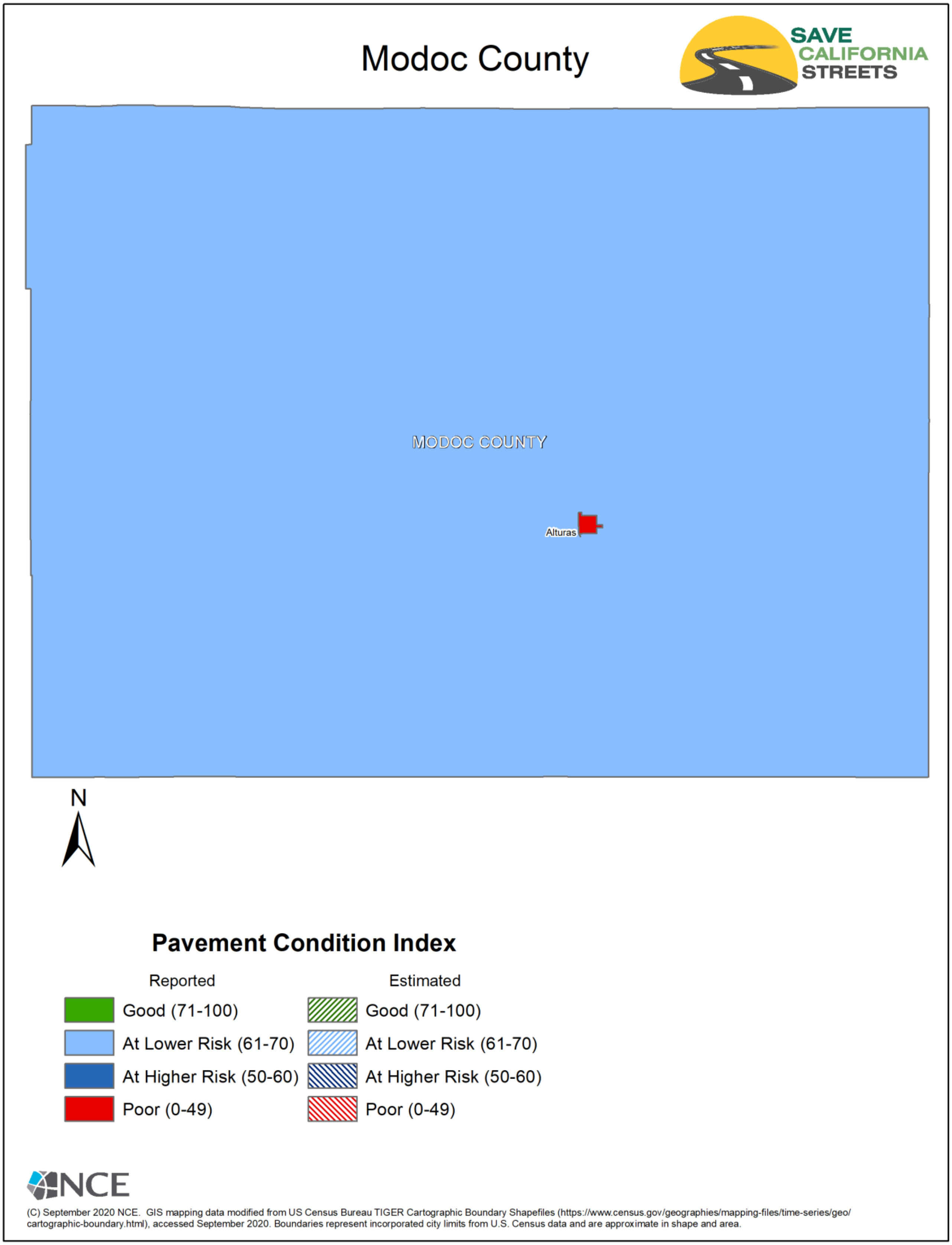

Marin County
SAVE
CALIFORNIA
STREETS
MARIN COUNTY
Novato
San Rafael
Fairfax
San Anselmo
Ross
Larkspur
Corte Madera
Mill Valley
Tiburon
Belvedere
Sausalito
Tiburon
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

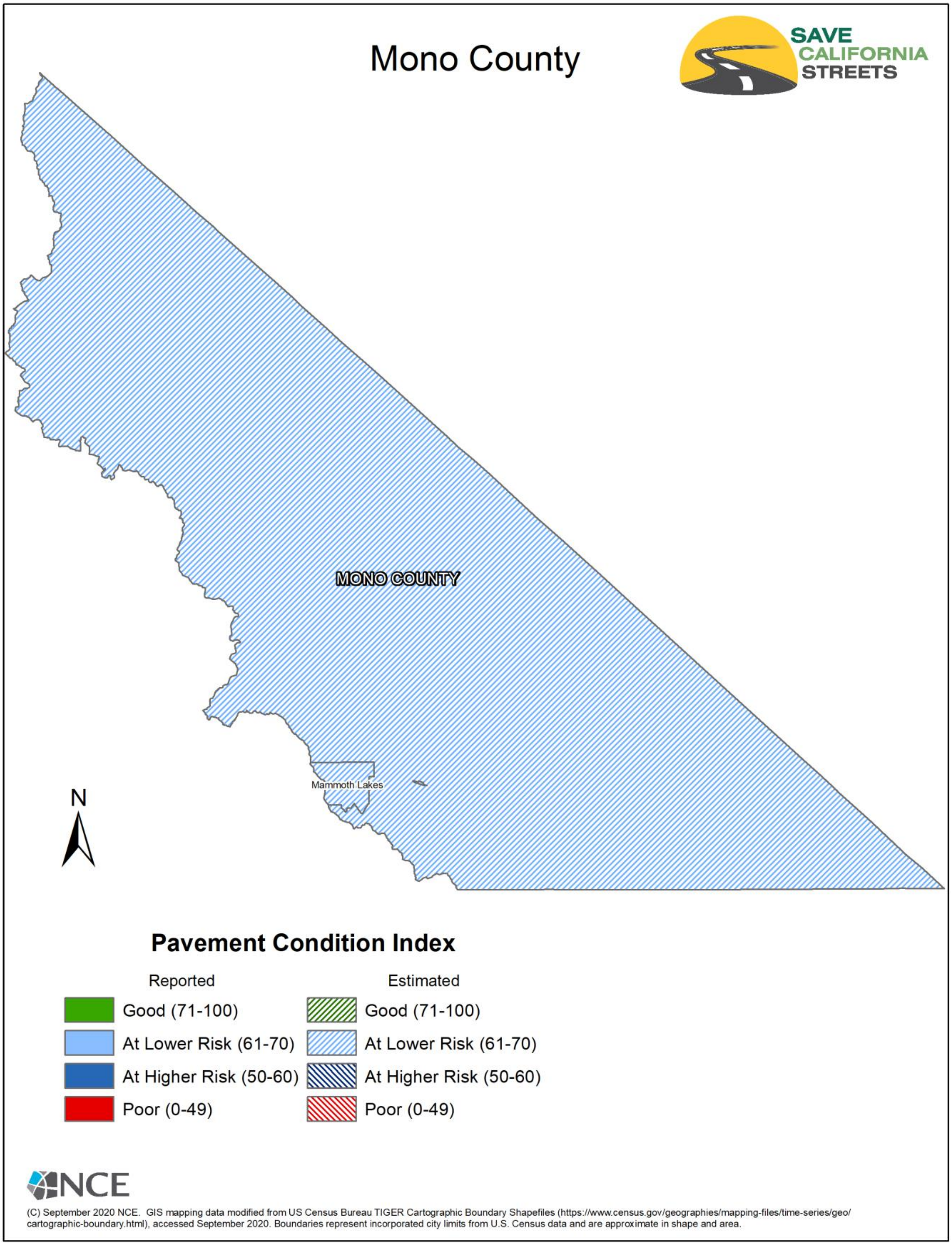
Mariposa County



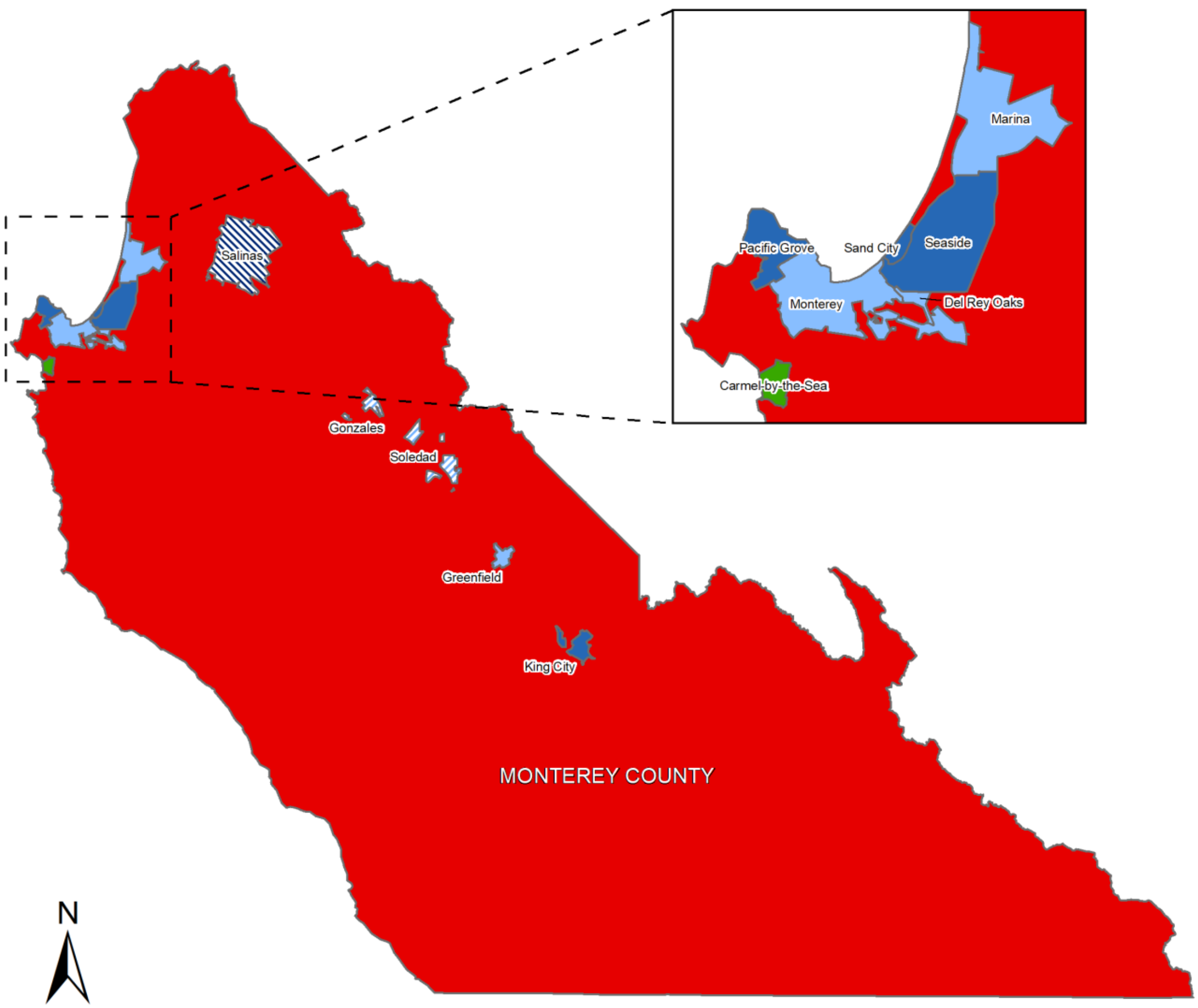

Mendocino County
SAVE CALIFORNIA STREETS
MENDOCINO COUNTY
Fort Bragg
Willits
Ukiah
Point Arena
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Merced County
SAVE CALIFORNIA STREETS
Livingston
Atwater
Merced
Gustine
MERCED COUNTY
Los Banos
Dos Palos
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Modoc County
SAVE CALIFORNIA STREETS
MODOC COUNTY
Alturas
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

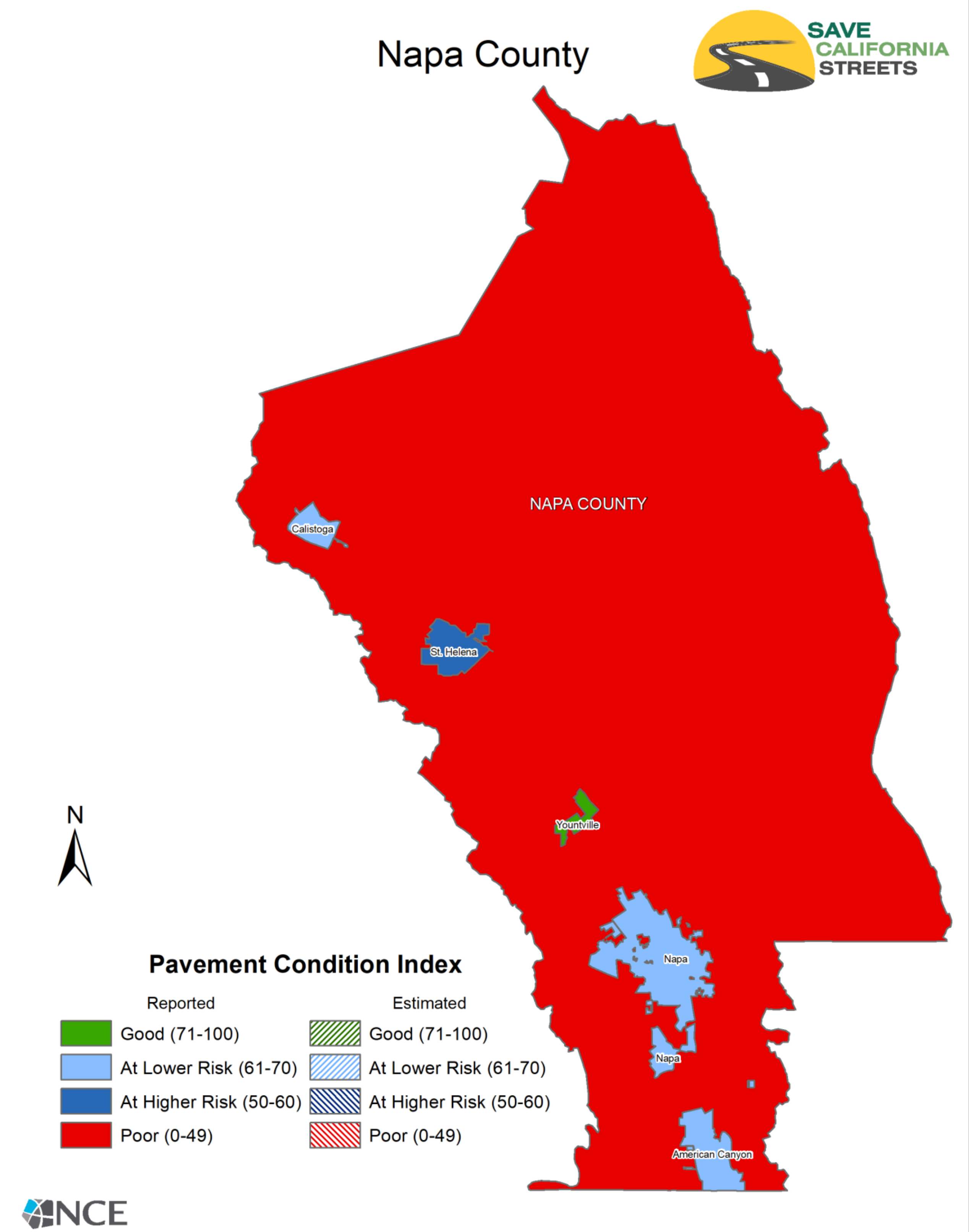

Mono County
SAVE CALIFORNIA STREETS
MONO COUNTY
Mammoth Lakes
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

Monterey County

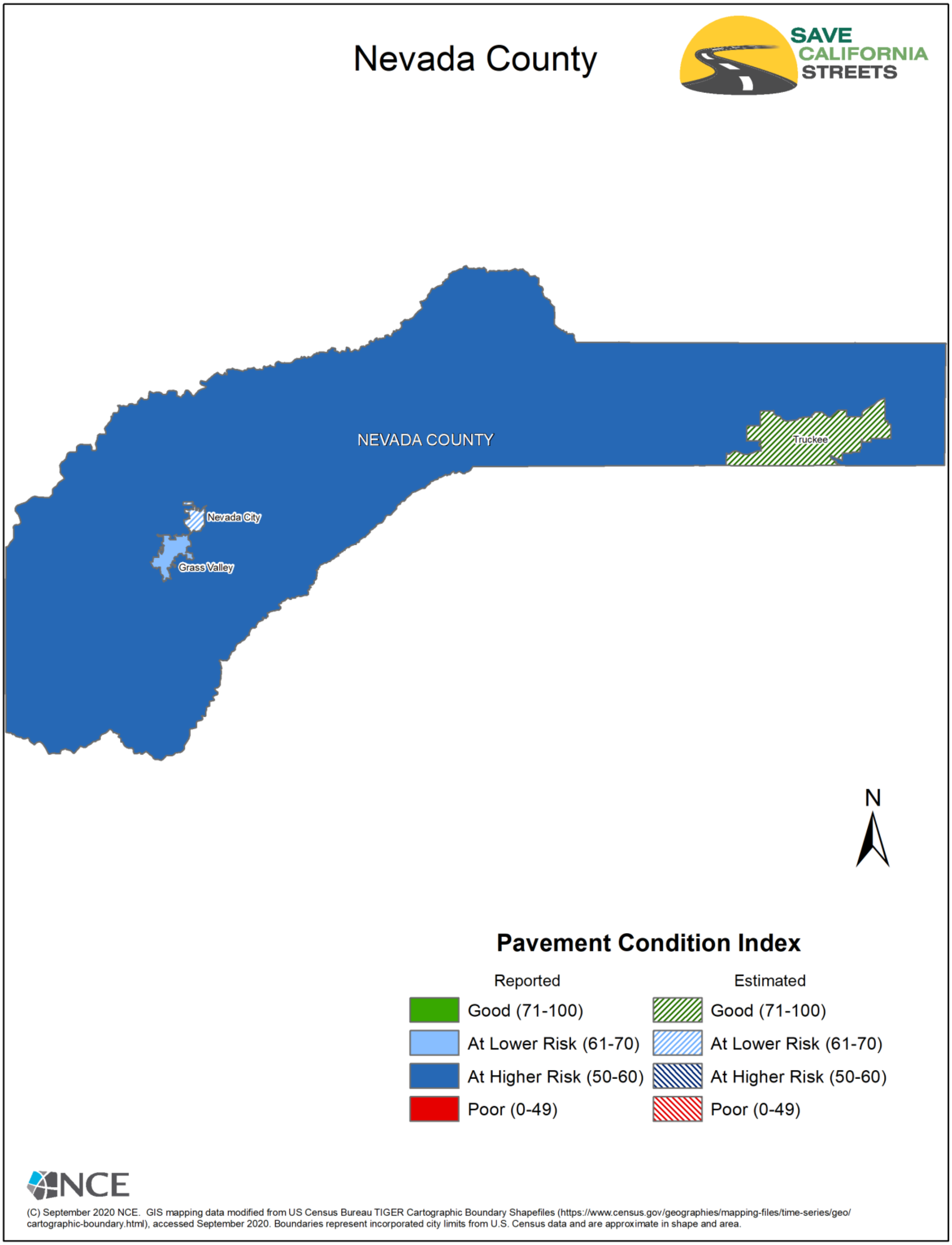


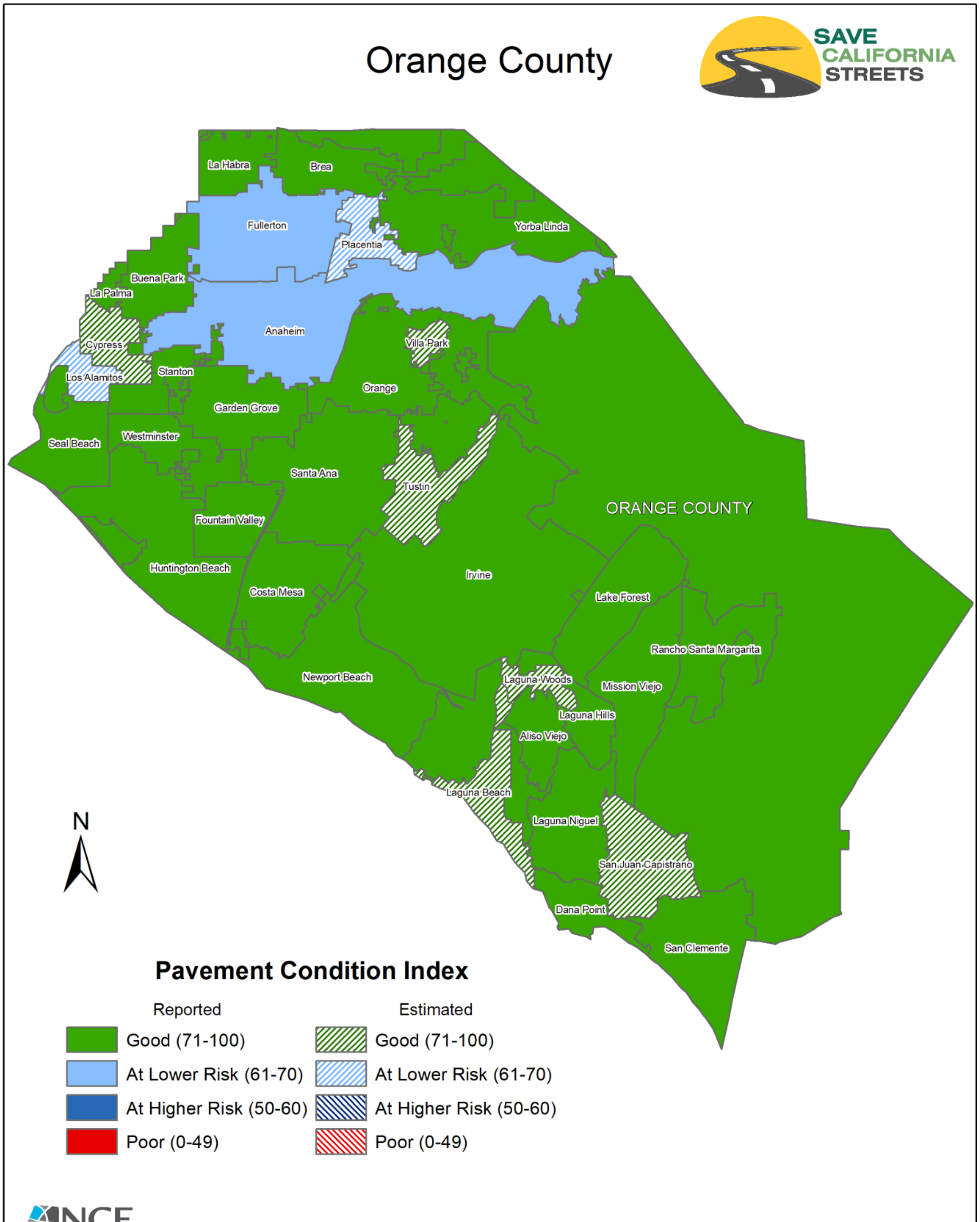
Pavement Condition Index

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



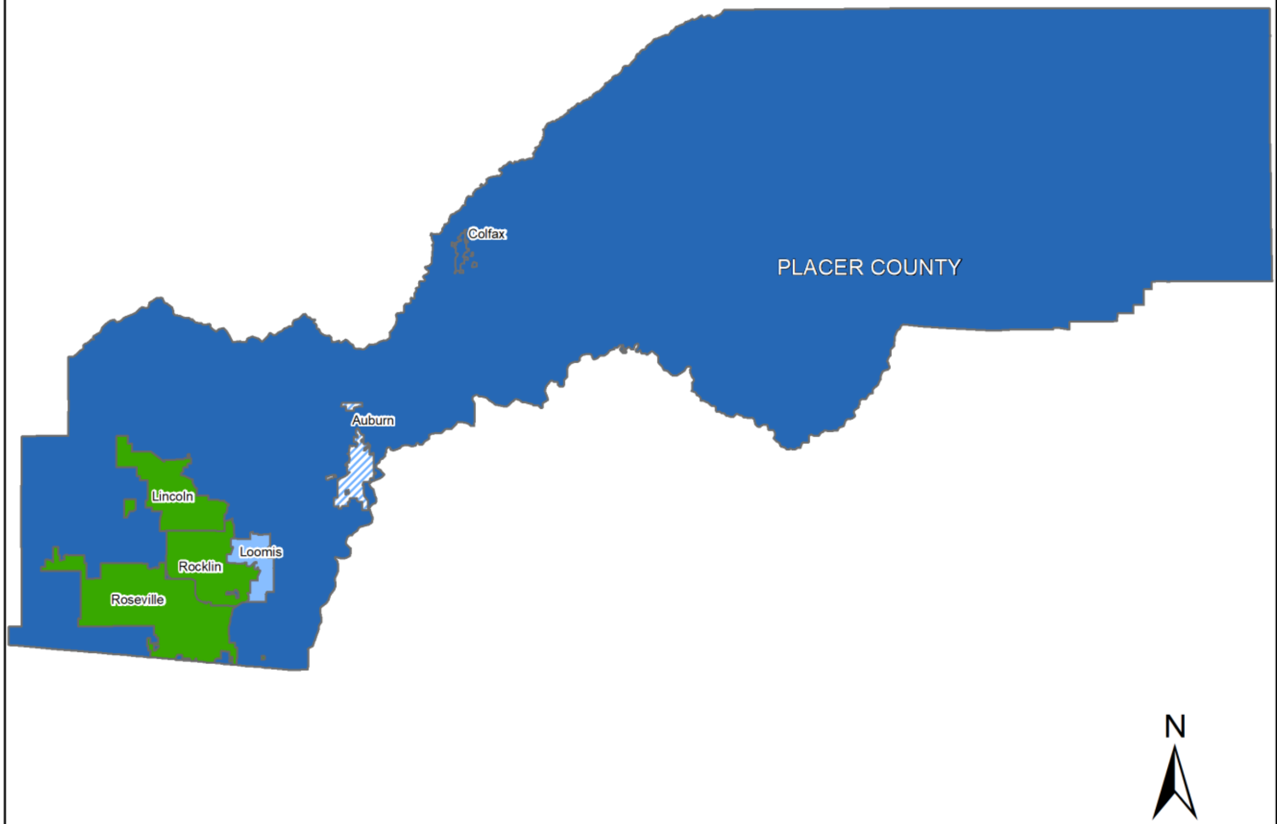
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Nevada County
SAVE CALIFORNIA STREETS
NEVADA COUNTY
Truckee
Nevada City
Grass Valley
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.



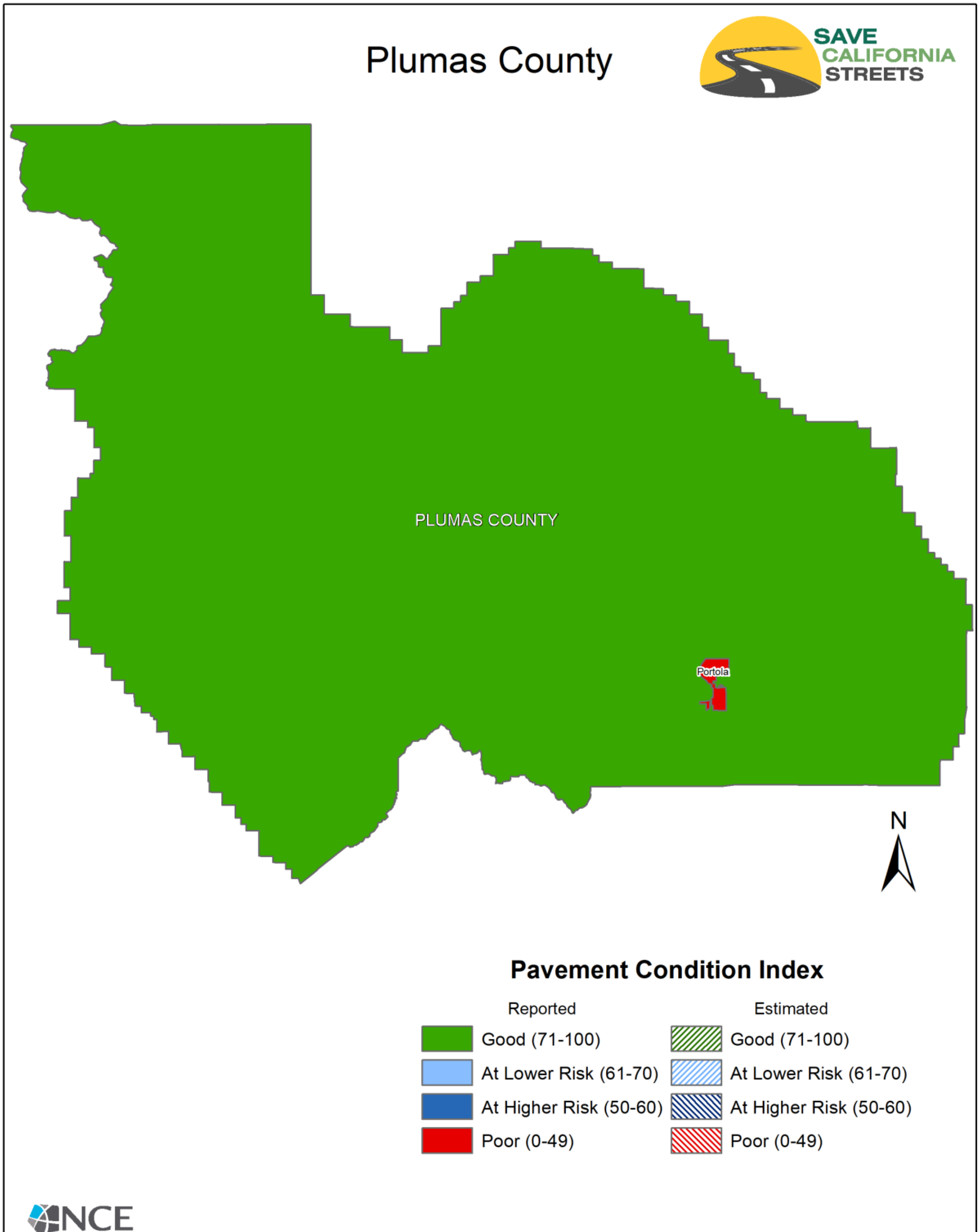
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

Placer County

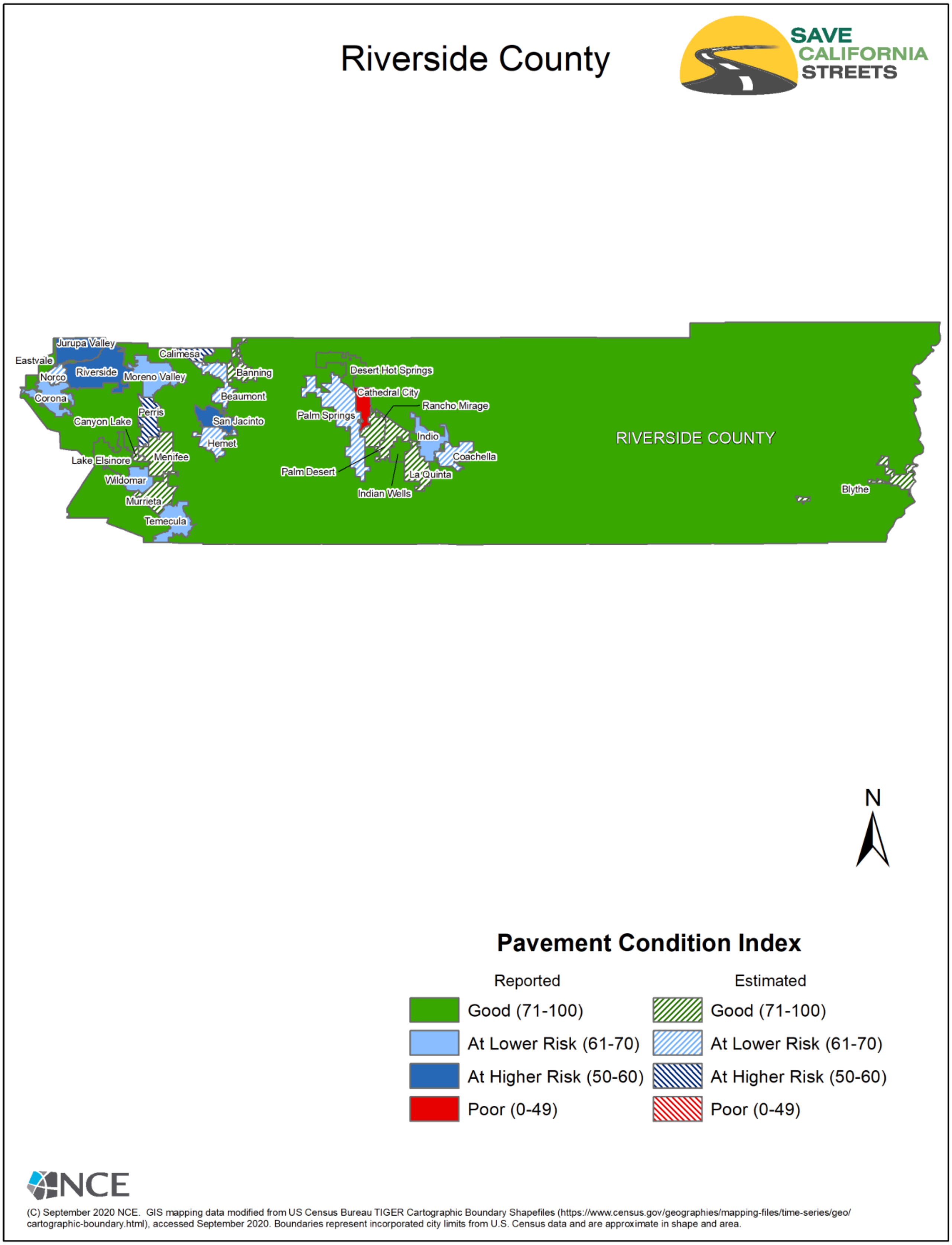


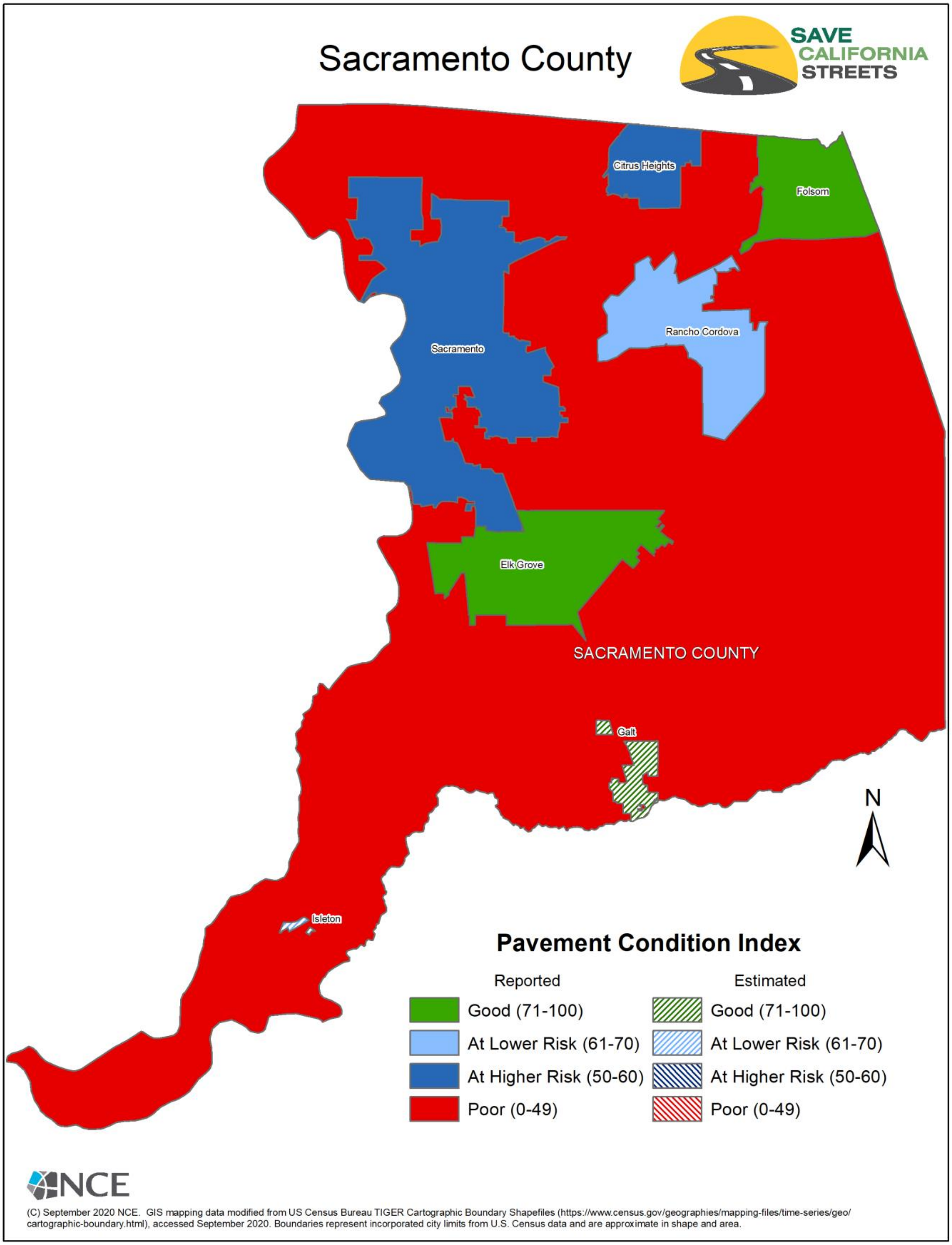
Pavement Condition Index

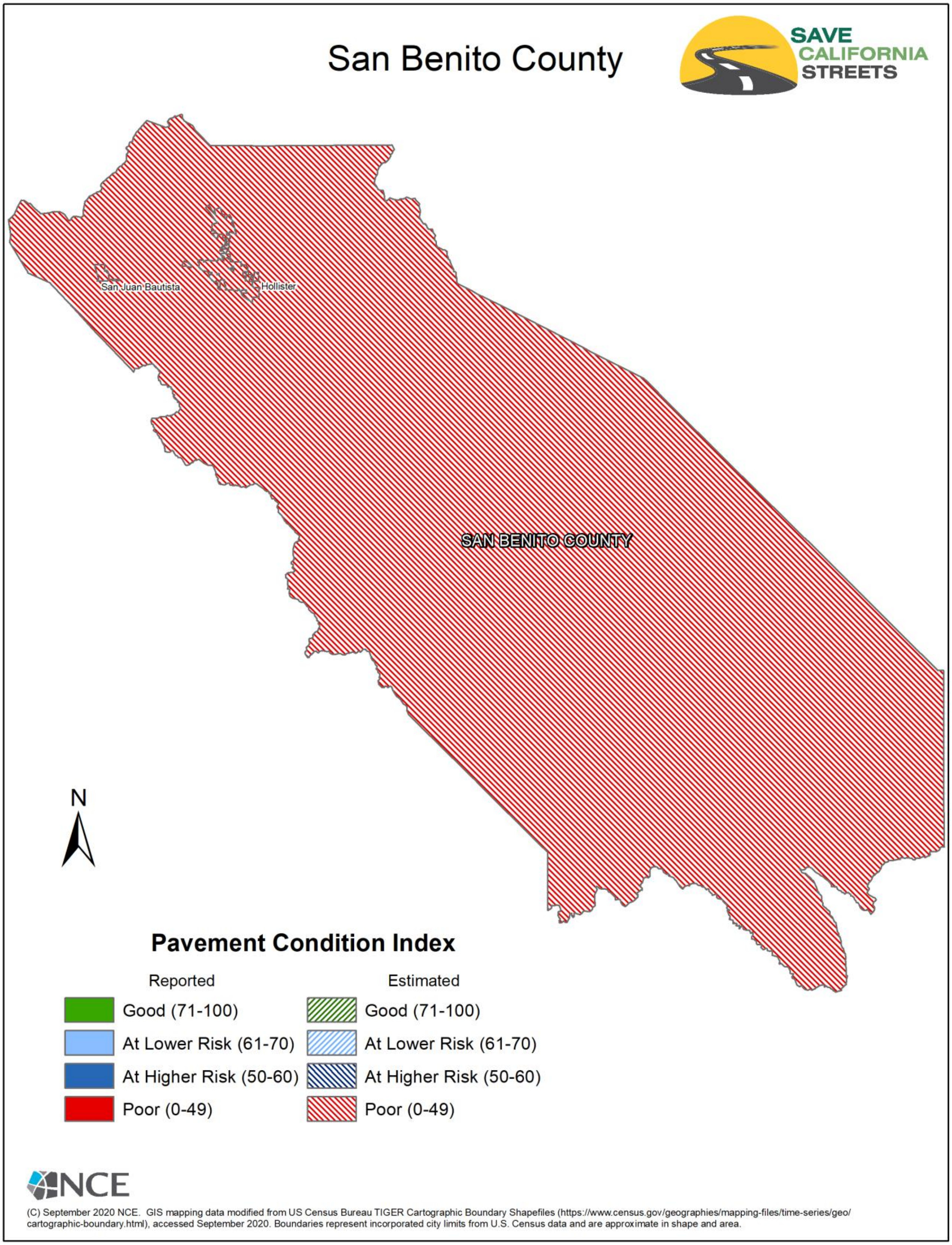
Reported	Estimated
Good (71-100)	Good (71-100)
At Lower Risk (61-70)	At Lower Risk (61-70)
At Higher Risk (50-60)	At Higher Risk (50-60)
Poor (0-49)	Poor (0-49)

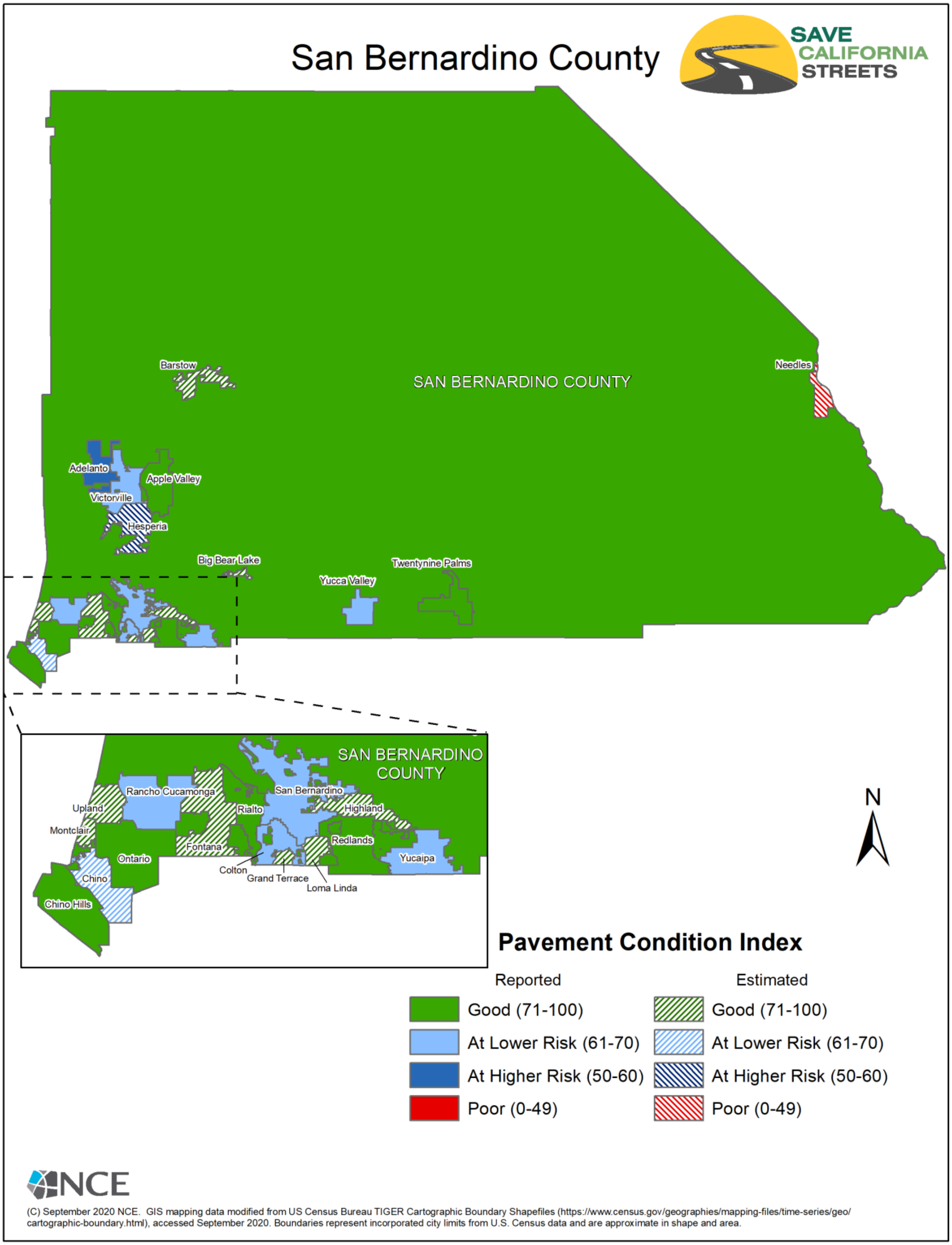


(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

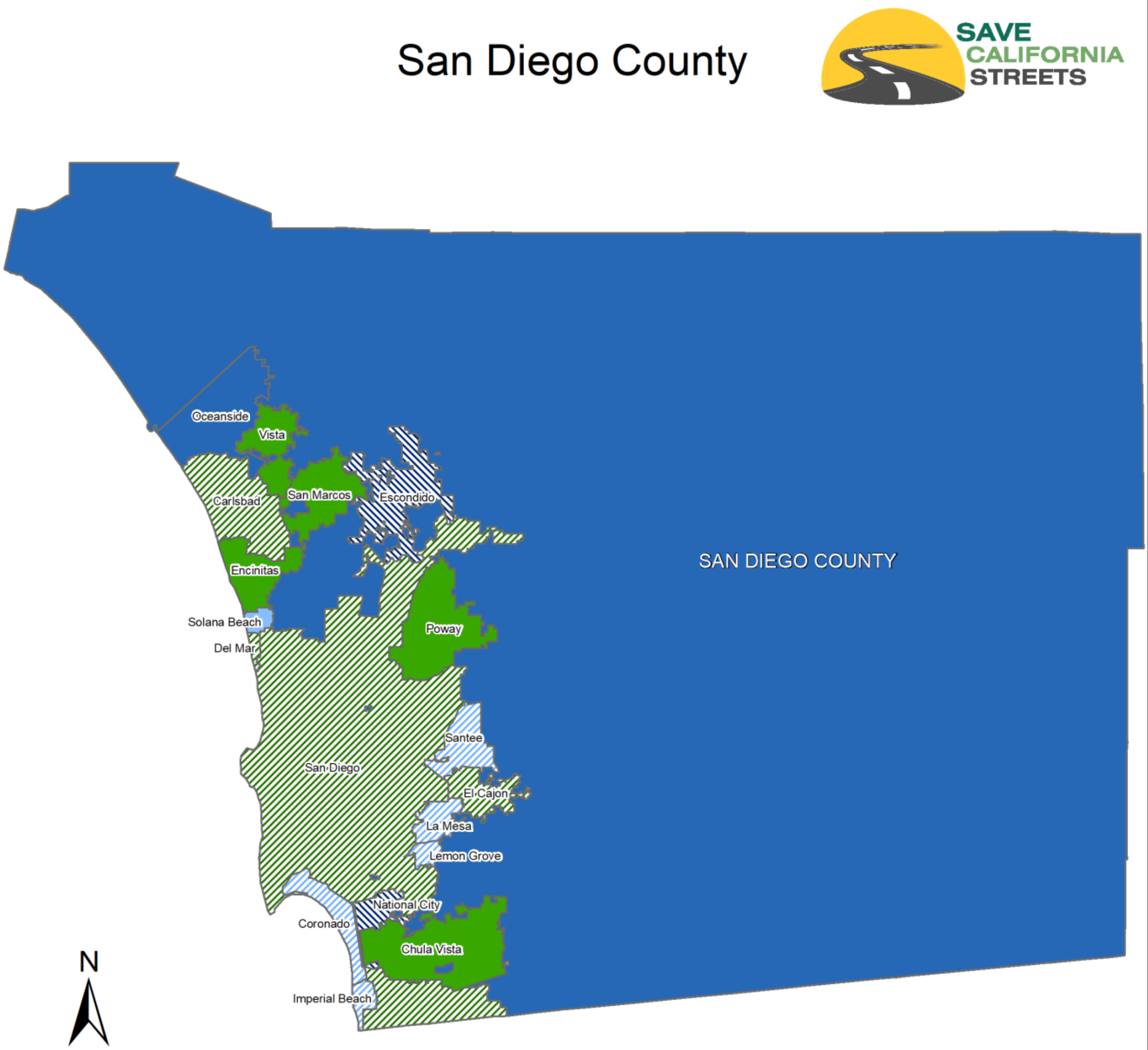

Riverside County
SAVE CALIFORNIA STREETS
Jurupa Valley
Eastvale
Norco
Riverside
Moreno Valley
Calimesa
Banning
Corona
Beaumont
Perris
Canyon Lake
San Jacinto
Hemet
Lake Elsinore
Menifee
Wildomar
Murrieta
Temecula
Desert Hot Springs
Cathedral City
Rancho Mirage
Palm Springs
Indio
Coachella
Palm Desert
La Quinta
Indian Wells
RIVERSIDE COUNTY
Blythe
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Sacramento County
SAVE CALIFORNIA STREETS
Citrus Heights
Folsom
Sacramento
Rancho Cordova
Elk Grove
SACRAMENTO COUNTY
Galt
Isleton
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


San Benito County
SAVE CALIFORNIA STREETS
San Juan Bautista
Hollister
SAN BENITO COUNTY
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


San Bernardino County
SAVE CALIFORNIA STREETS
SAN BERNARDINO COUNTY
Barstow
Needles
Adelanto
Apple Valley
Victorville
Hesperia
Big Bear Lake
Twentynine Palms
Yucca Valley
SAN BERNARDINO COUNTY
Rancho Cucamonga
San Bernardino
Upland
Rialto
Highland
Montclair
Redlands
Fontana
Ontario
Yucaipa
Colton
Grand Terrace
Loma Linda
Chino
Chino Hills
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

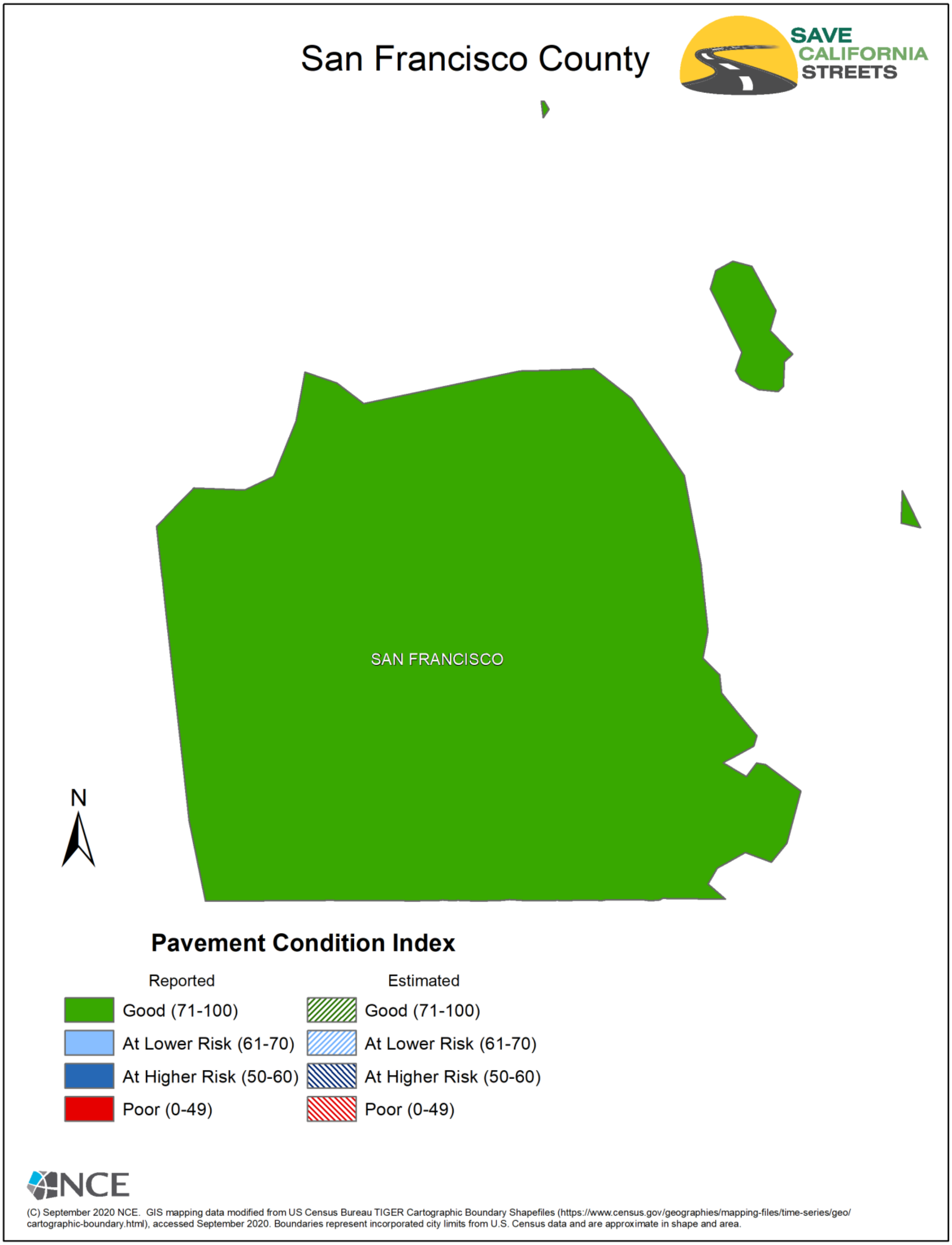
San Diego County



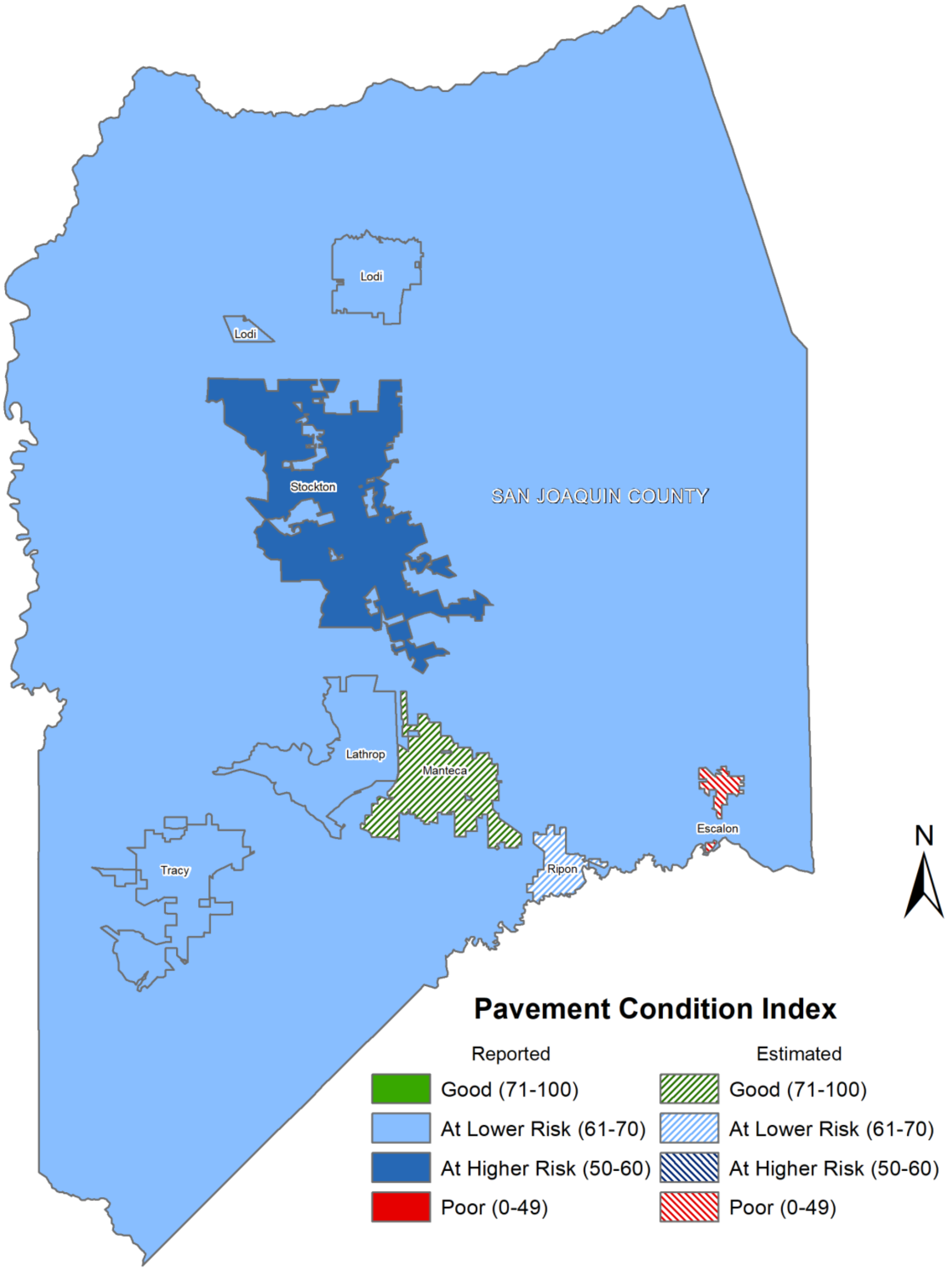
Pavement Condition Index

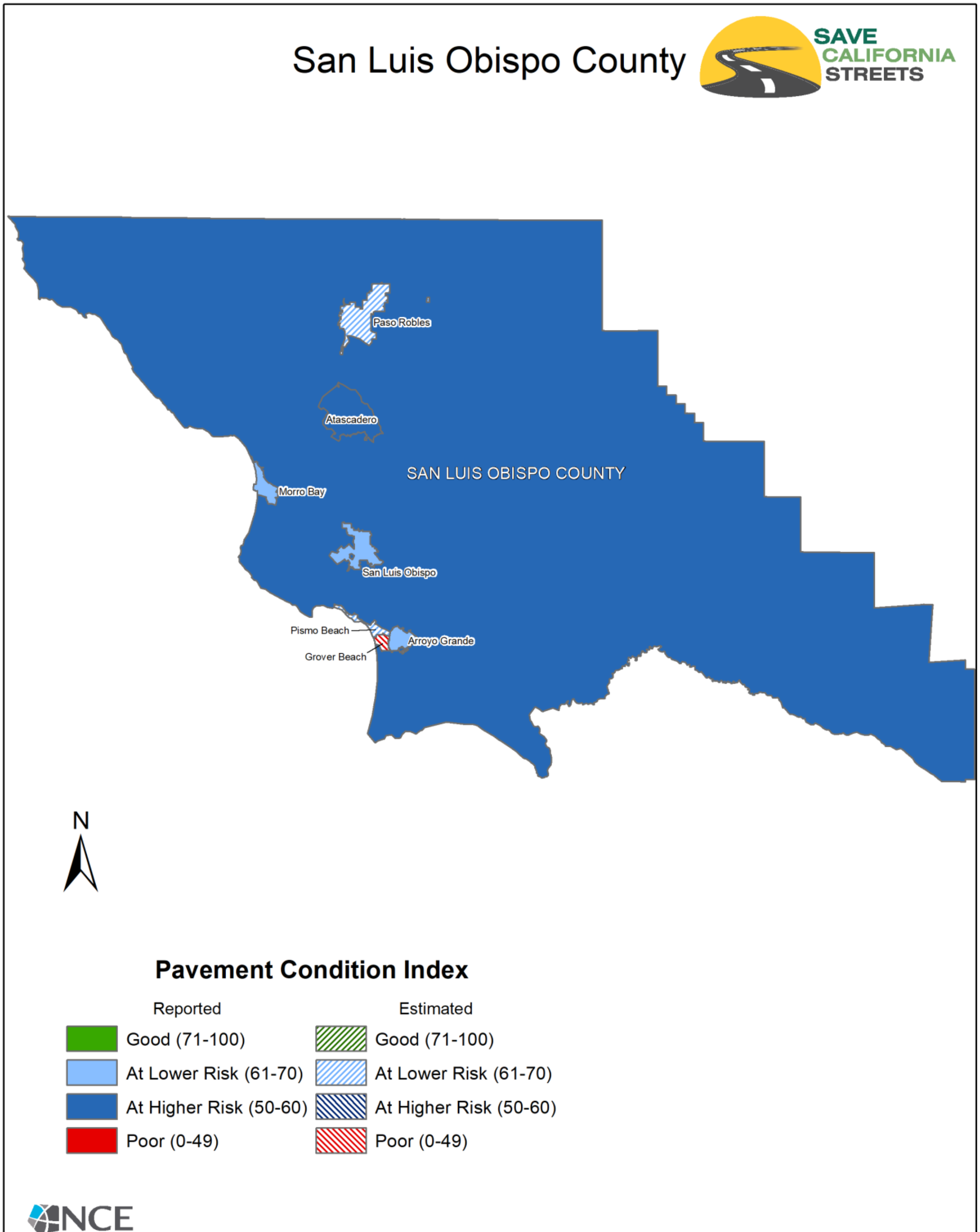
Reported	Estimated
Good (71-100)	Good (71-100)
At Lower Risk (61-70)	At Lower Risk (61-70)
At Higher Risk (50-60)	At Higher Risk (50-60)
Poor (0-49)	Poor (0-49)

NCE

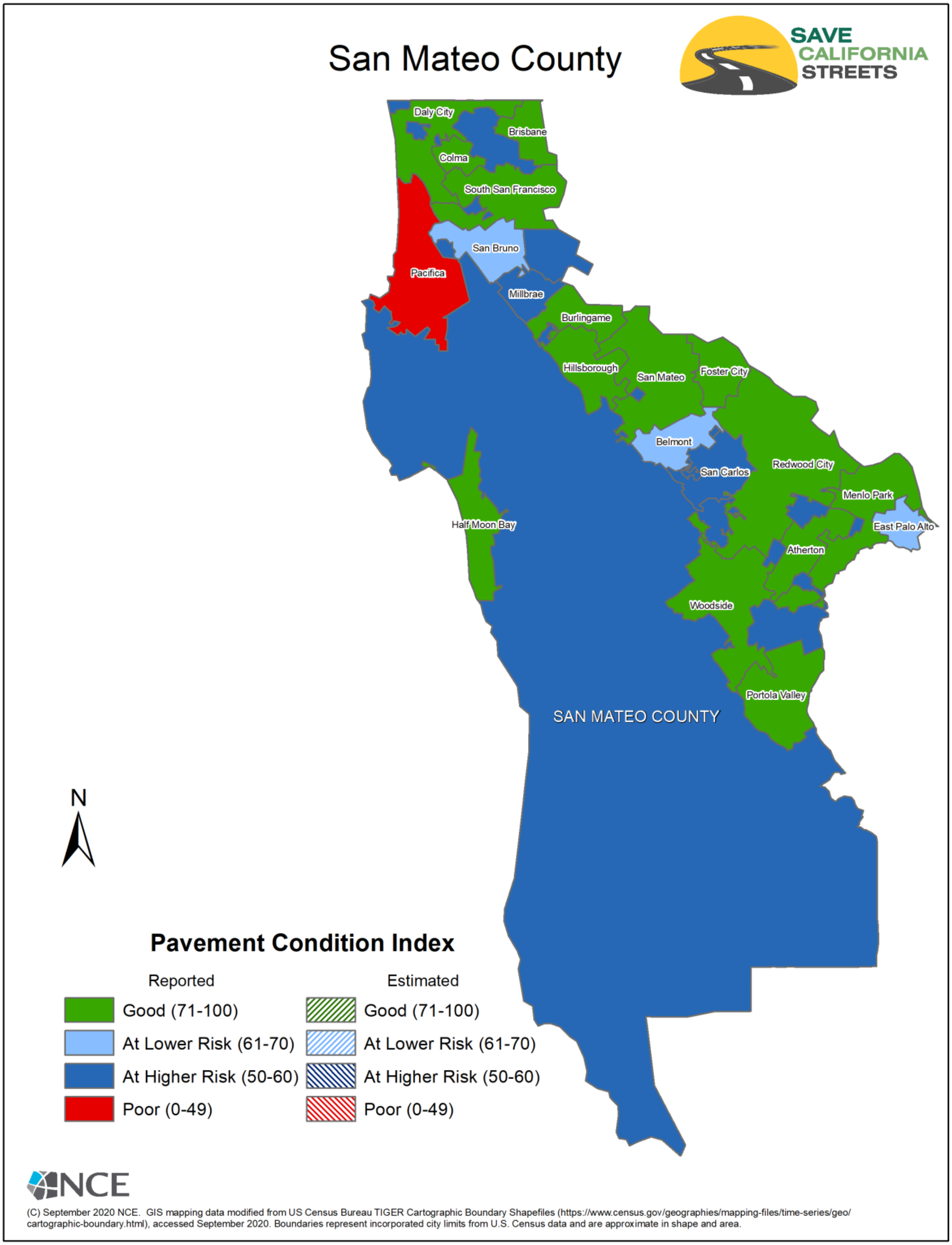

San Francisco County
SAVE CALIFORNIA STREETS
SAN FRANCISCO
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

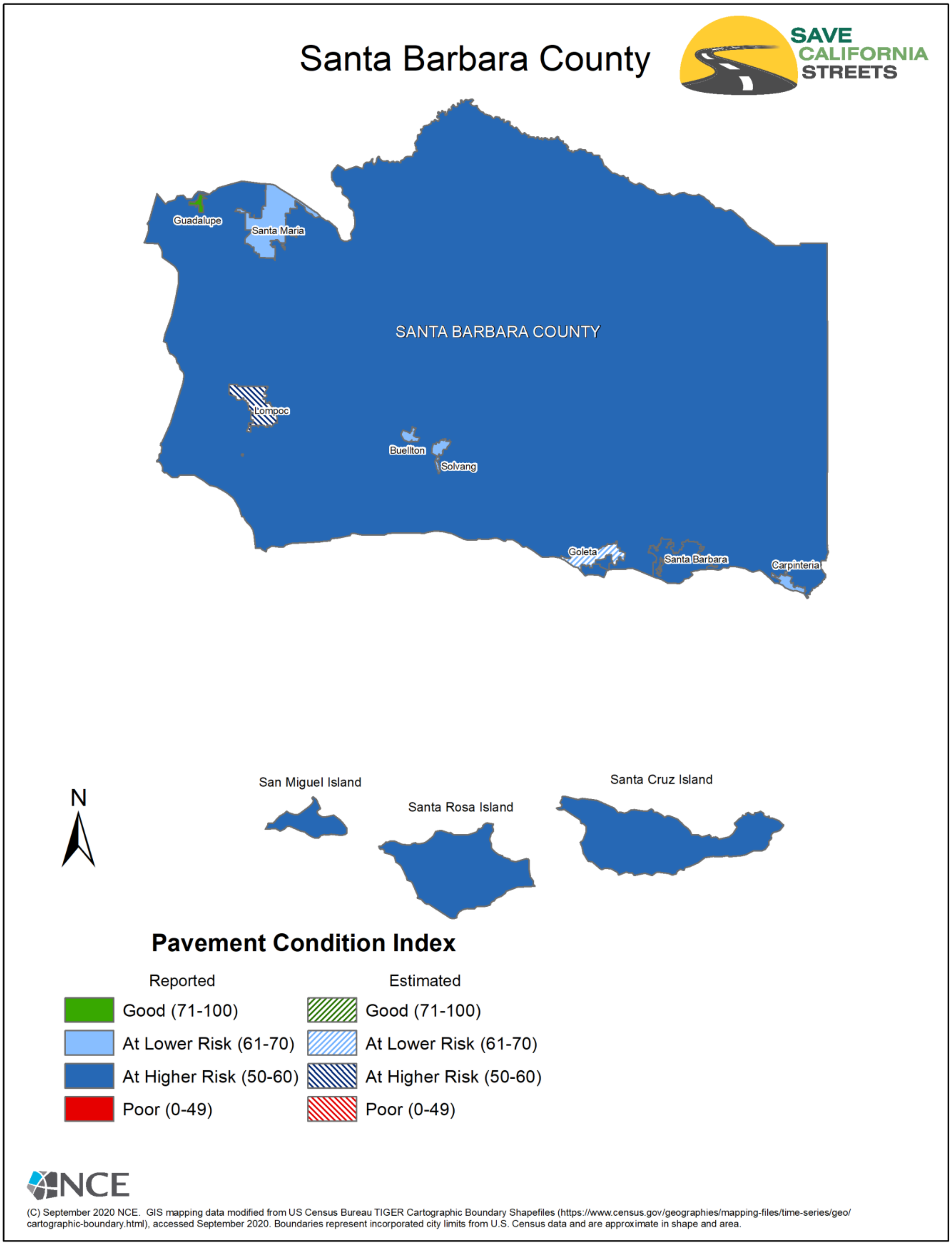
San Joaquin County





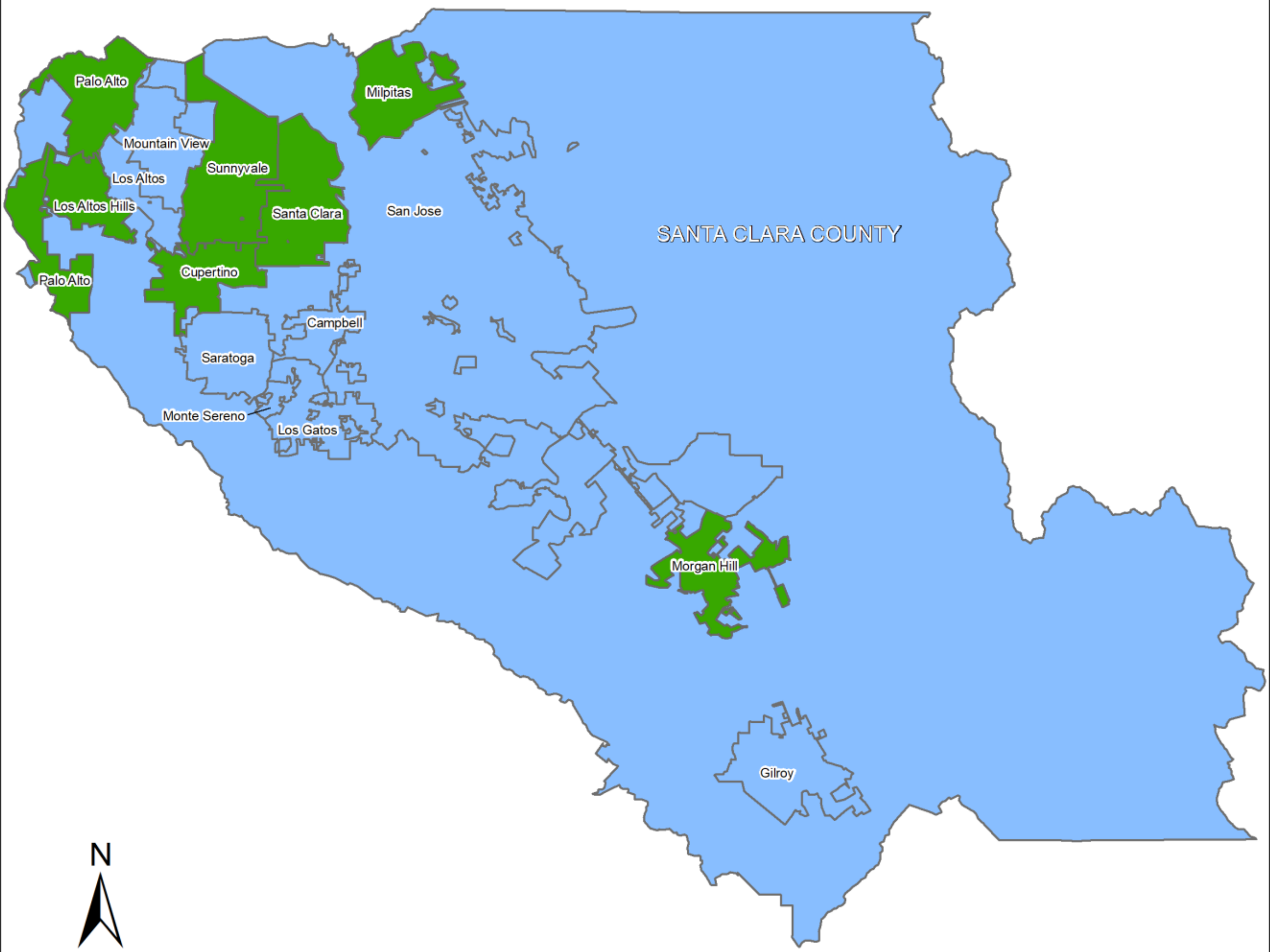
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


San Mateo County
SAVE CALIFORNIA STREETS
Daly City
Brisbane
Colma
South San Francisco
San Bruno
Pacifica
Millbrae
Burlingame
Hillsborough
San Mateo
Foster City
Belmont
San Carlos
Redwood City
Menlo Park
East Palo Alto
Half Moon Bay
Atherton
Woodside
Portola Valley
SAN MATEO COUNTY
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.


Santa Barbara County
SAVE CALIFORNIA STREETS
Guadalupe
Santa Maria
SANTA BARBARA COUNTY
Lompoc
Buellton
Solvang
Goleta
Santa Barbara
Carpinteria
N
San Miguel Island
Santa Rosa Island
Santa Cruz Island
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

Santa Clara County

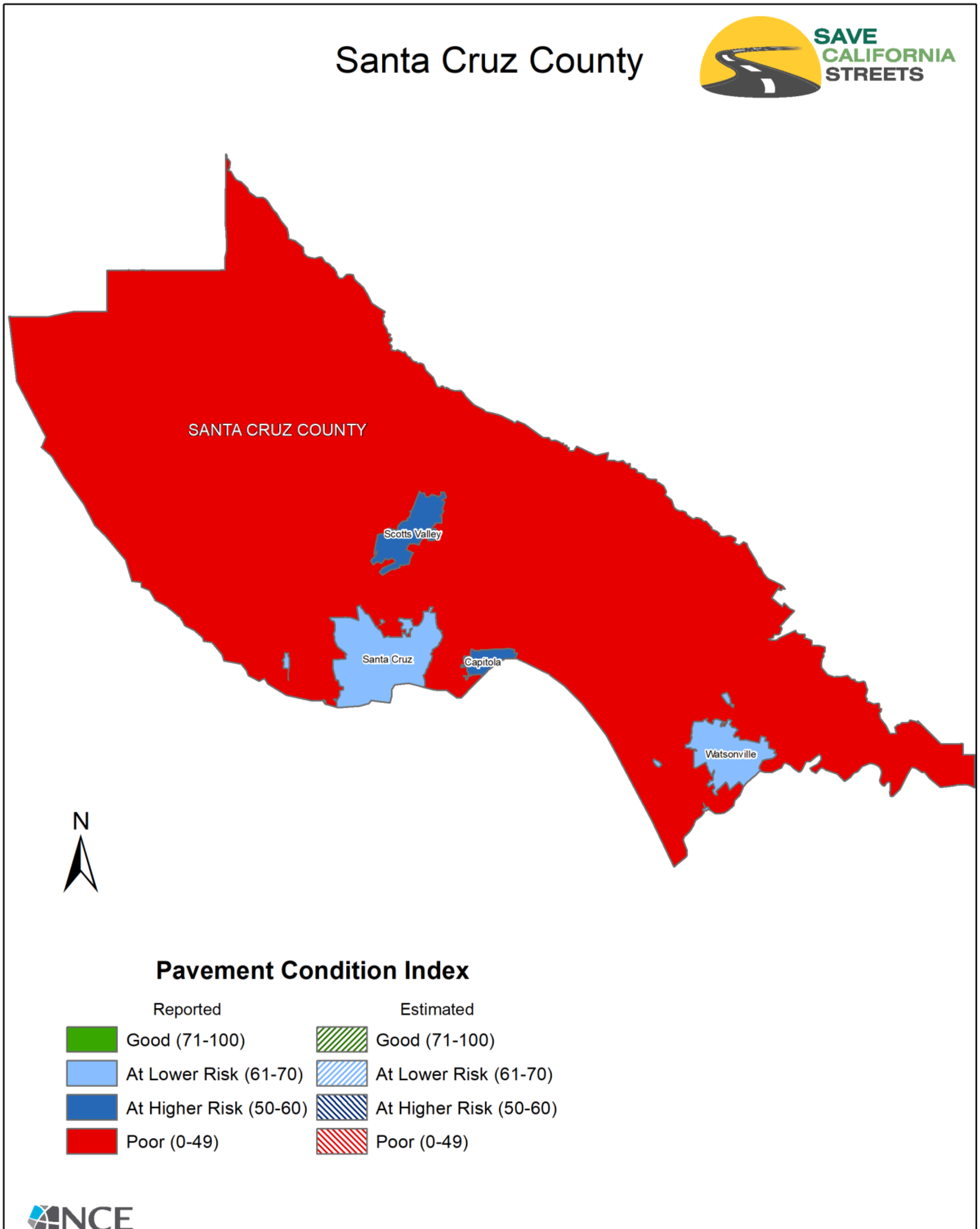
SAVE CALIFORNIA STREETS



Pavement Condition Index

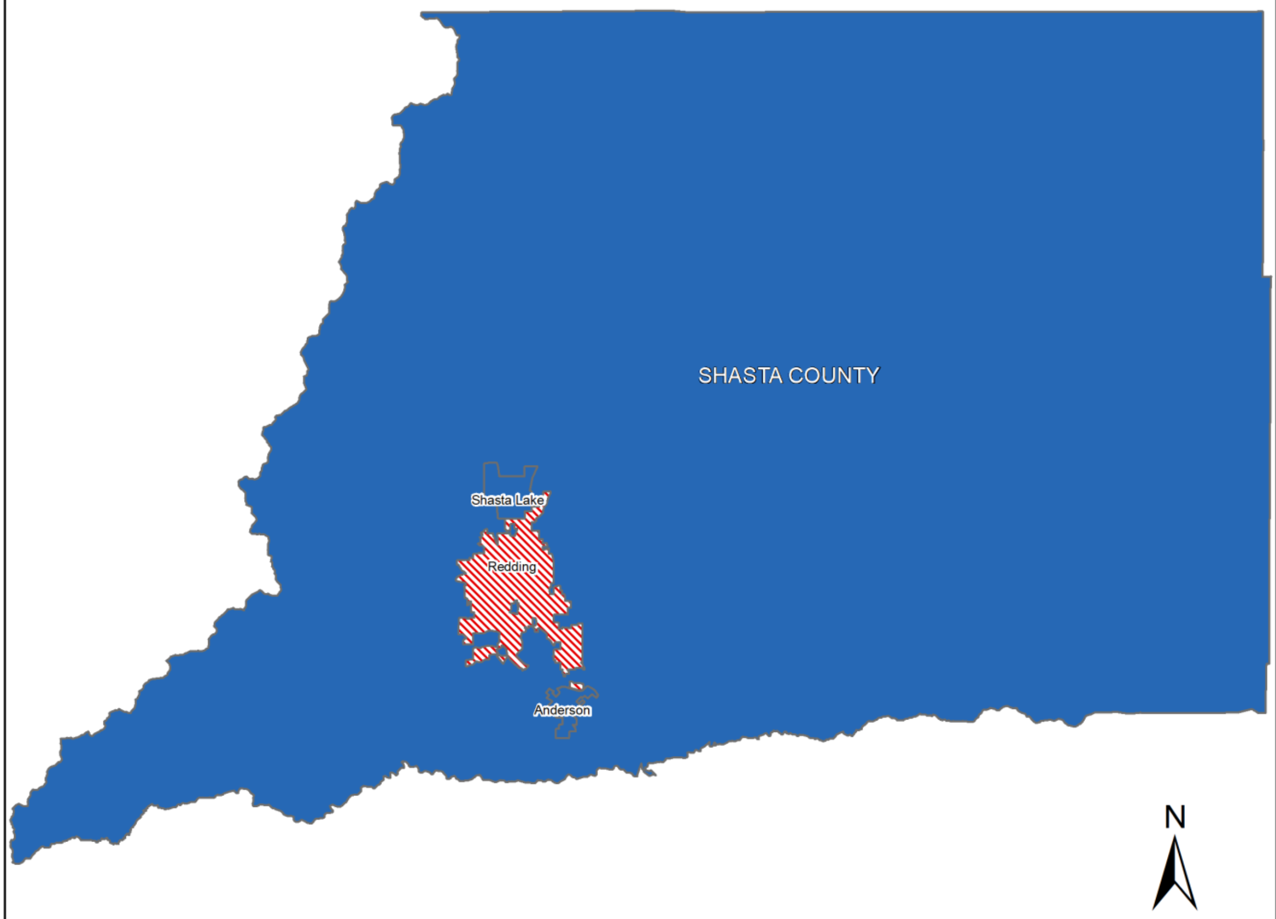
Reported		Estimated	
	Good (71-100)		Good (71-100)
	At Lower Risk (61-70)		At Lower Risk (61-70)
	At Higher Risk (50-60)		At Higher Risk (50-60)
	Poor (0-49)		Poor (0-49)

NCE


Santa Cruz County
SAVE CALIFORNIA STREETS
SANTA CRUZ COUNTY
Scotts Valley
Santa Cruz
Capitola
Watsonville
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE

Shasta County

SAVE CALIFORNIA STREETS

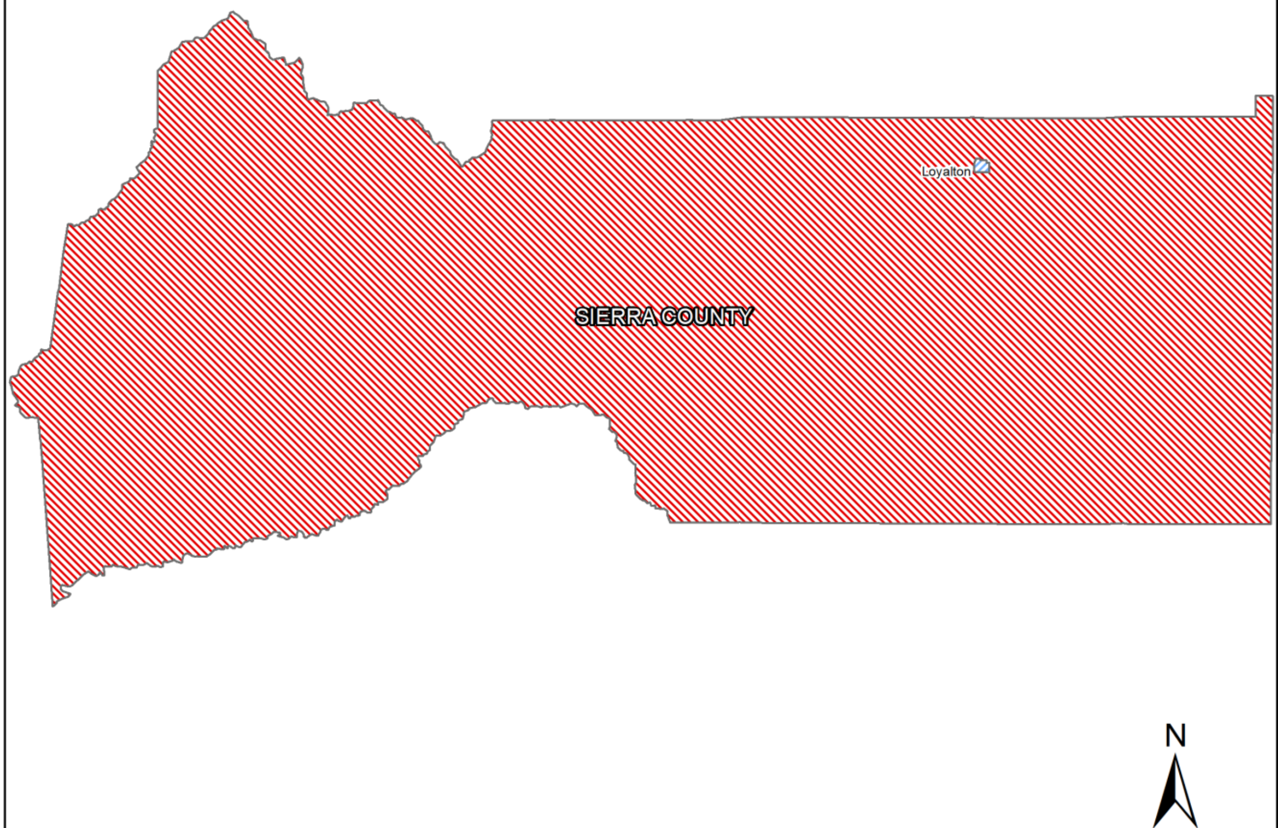


Pavement Condition Index

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

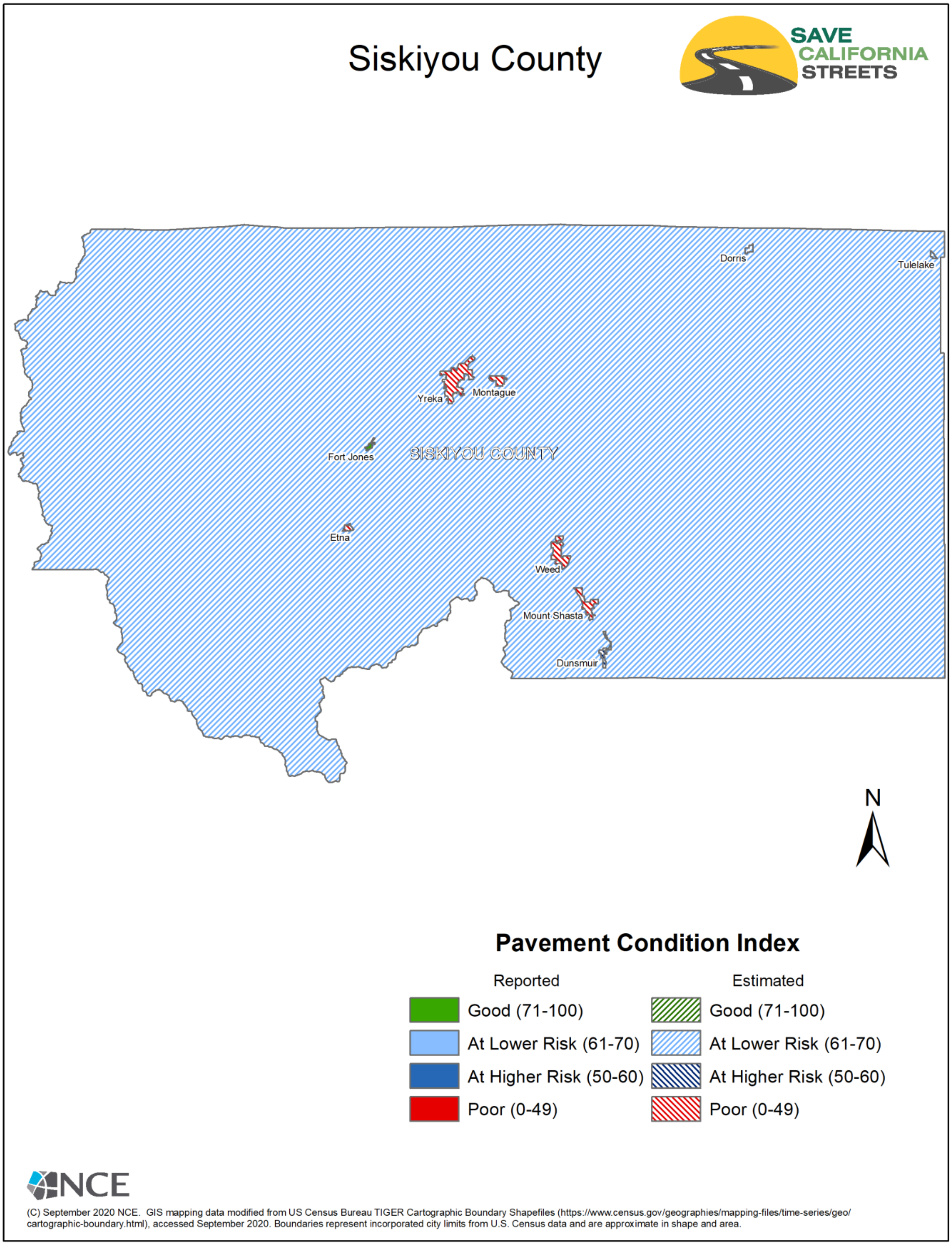
NCE

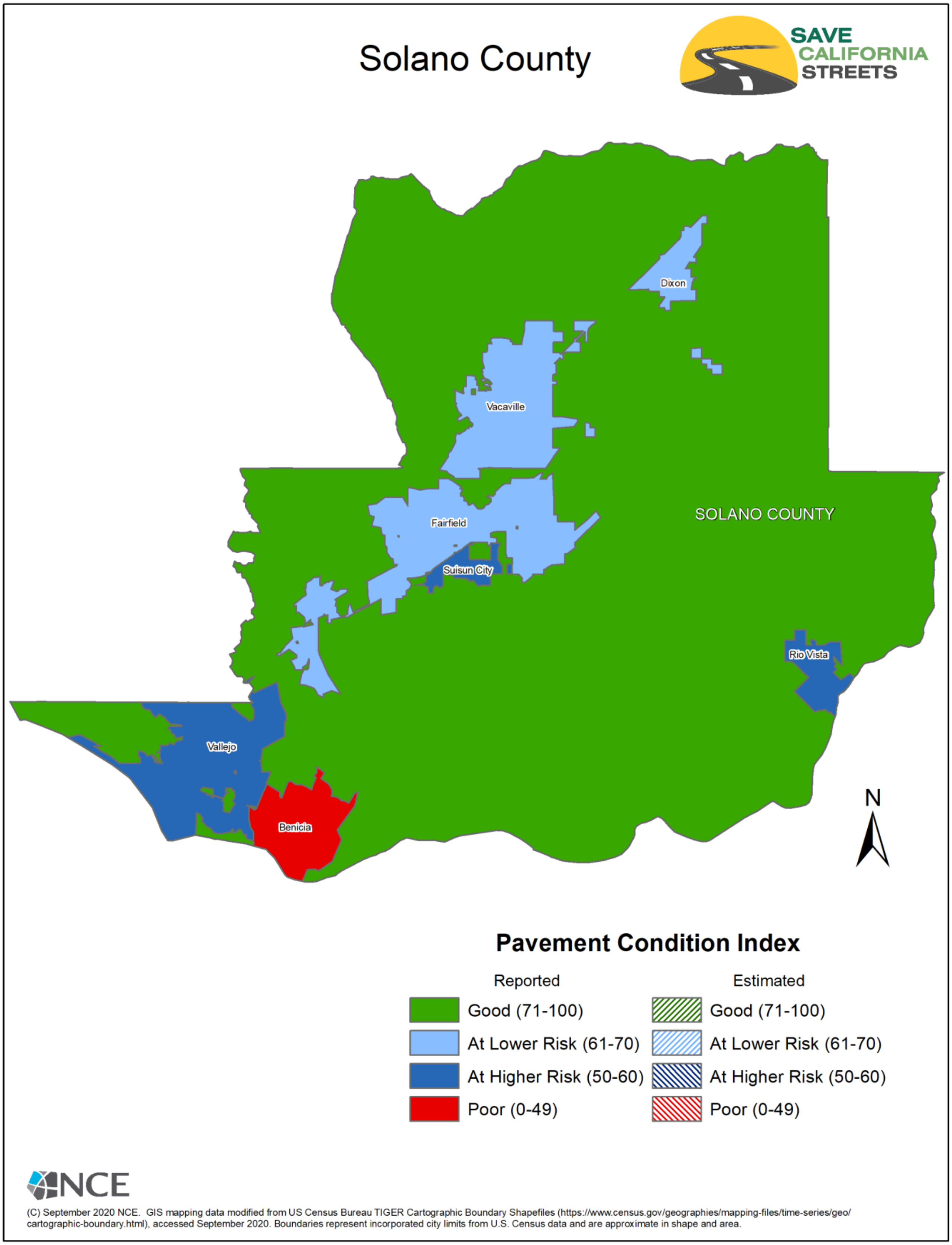
Sierra County



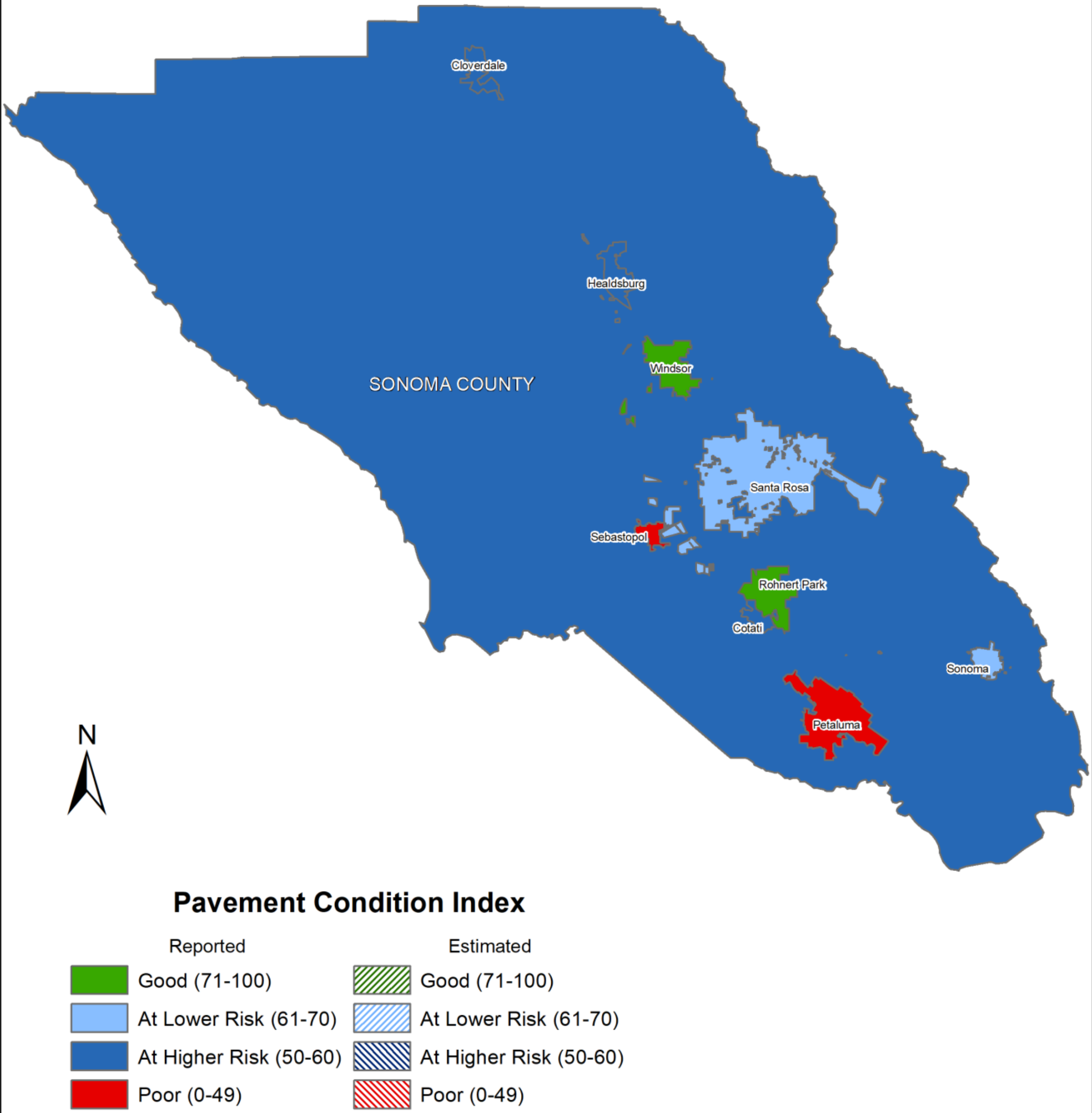
Pavement Condition Index

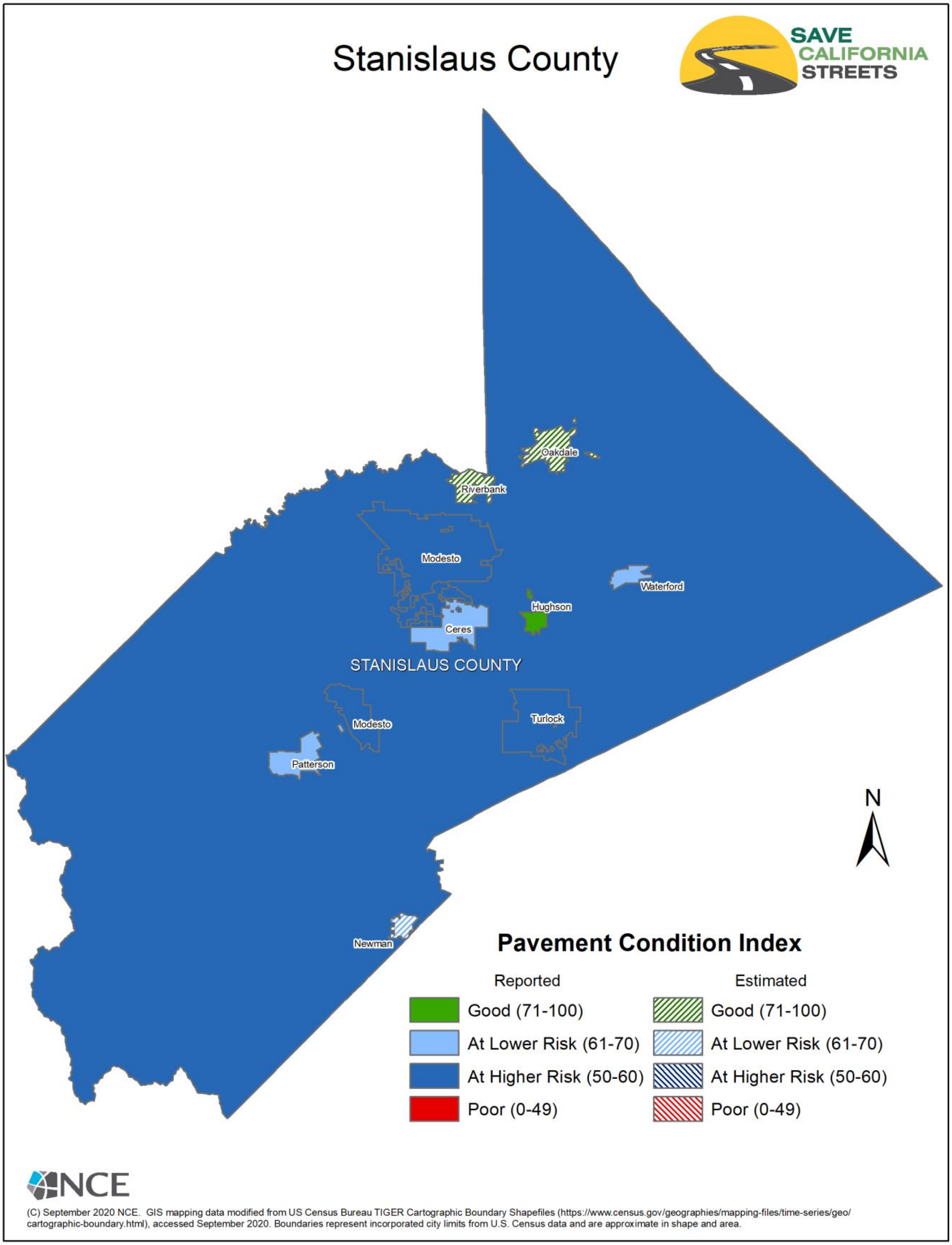
Reported	Estimated
Good (71-100)	Good (71-100)
At Lower Risk (61-70)	At Lower Risk (61-70)
At Higher Risk (50-60)	At Higher Risk (50-60)
Poor (0-49)	Poor (0-49)

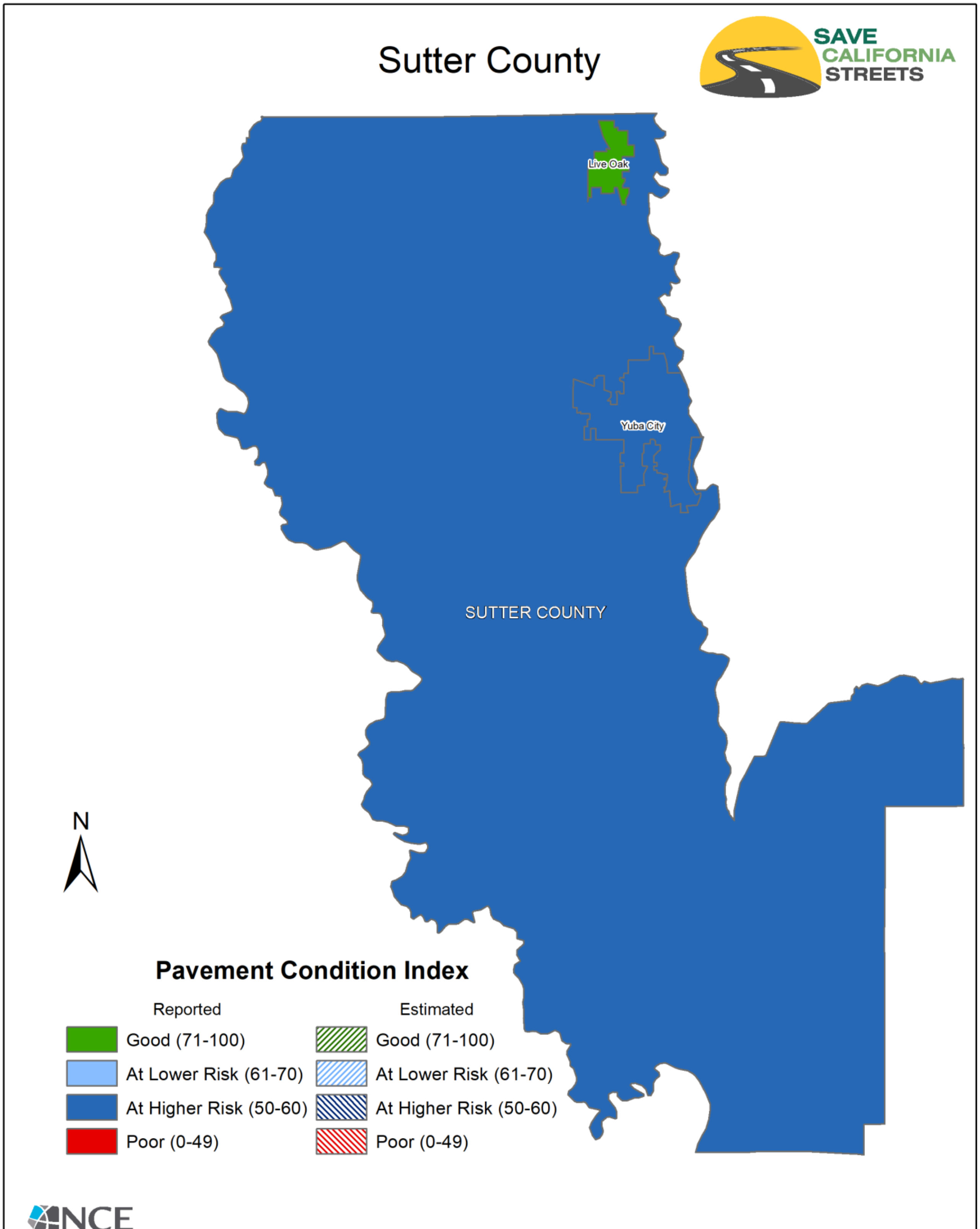

Siskiyou County
SAVE CALIFORNIA STREETS
Dorris
Tulelake
Yreka
Montague
Fort Jones
SISKIYOU COUNTY
Etna
Weed
Mount Shasta
Dunsmuir
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

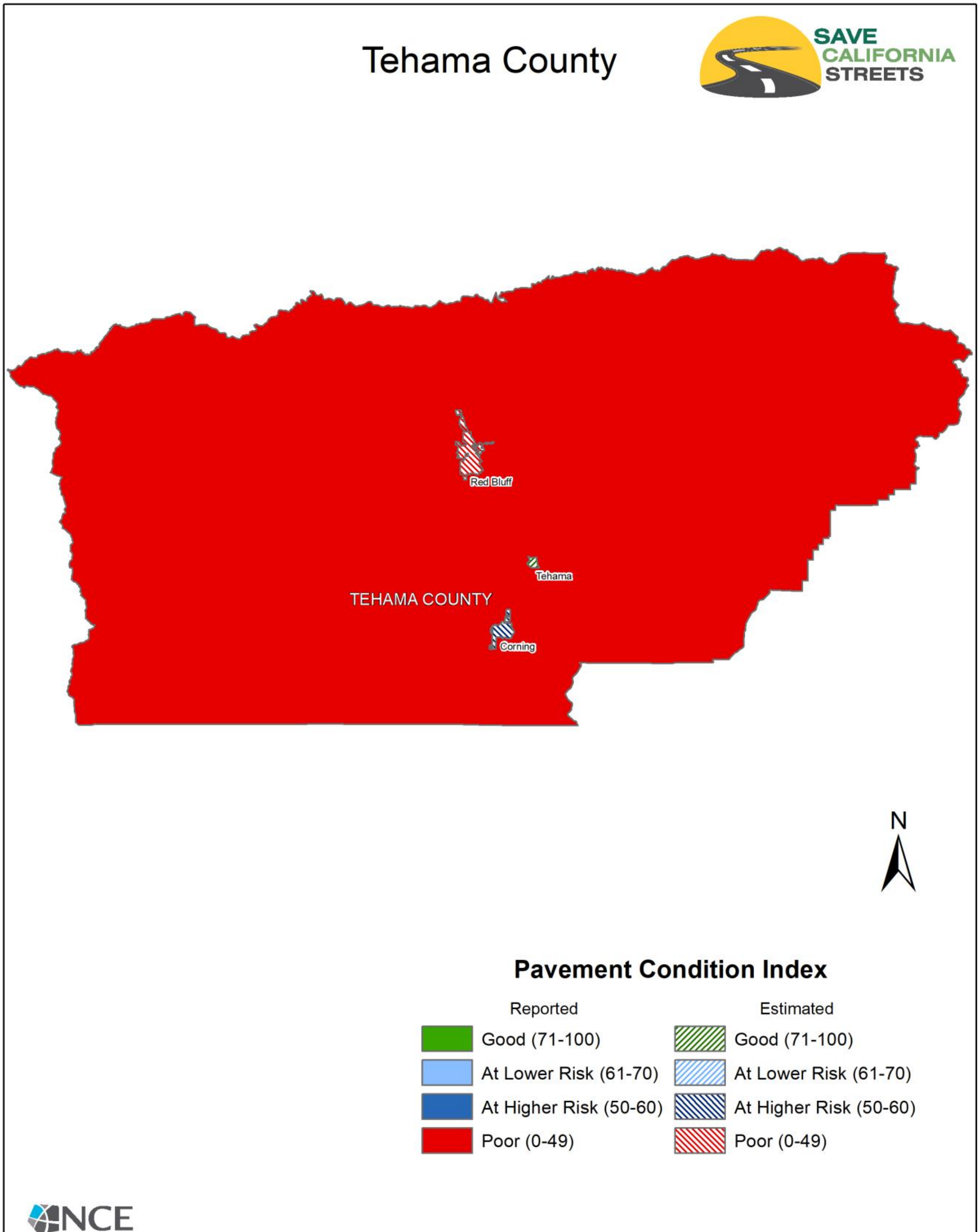

Solano County
SAVE CALIFORNIA STREETS
Dixon
Vacaville
Fairfield
Suisun City
SOLANO COUNTY
Rio Vista
Vallejo
Benicia
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

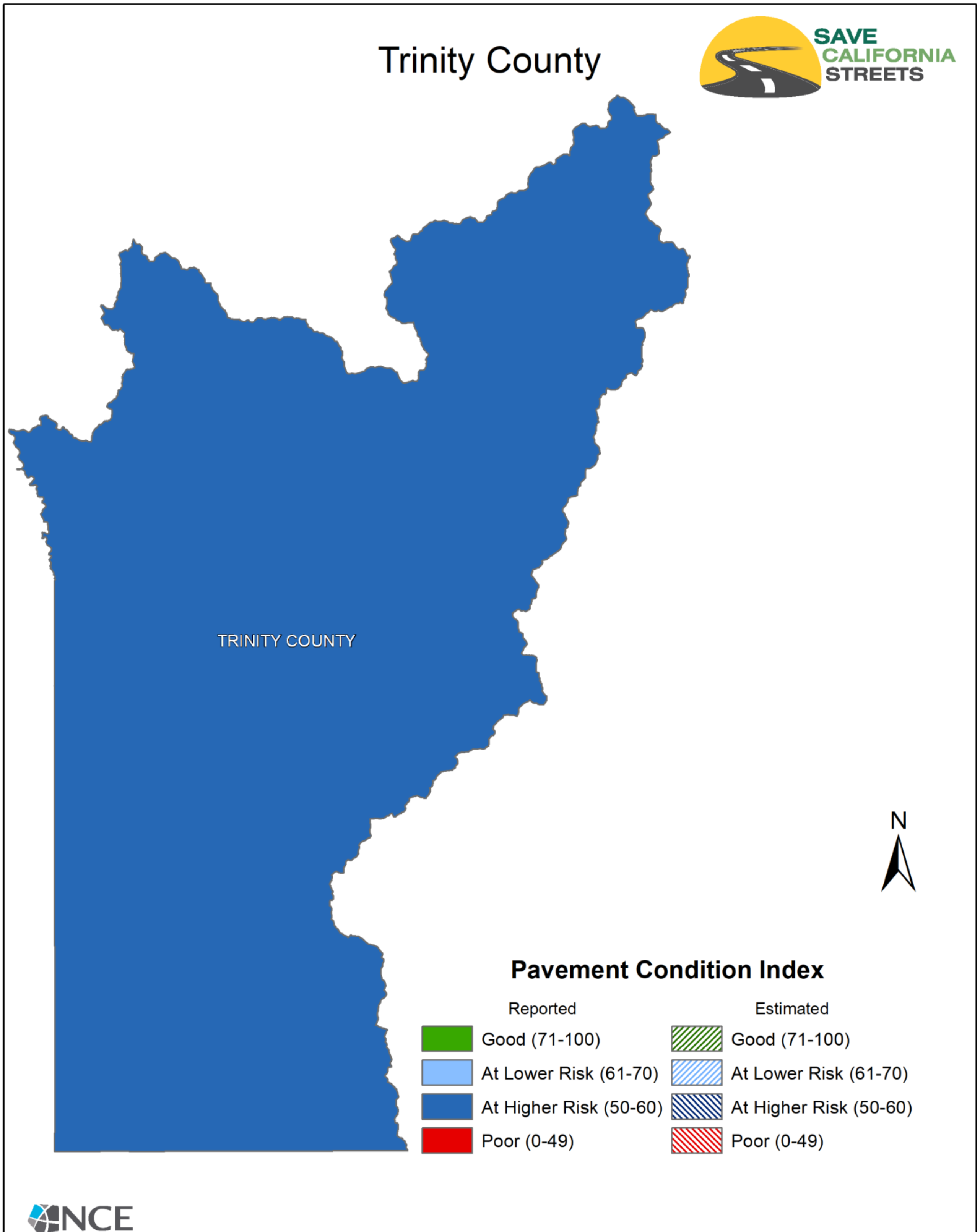
Sonoma County

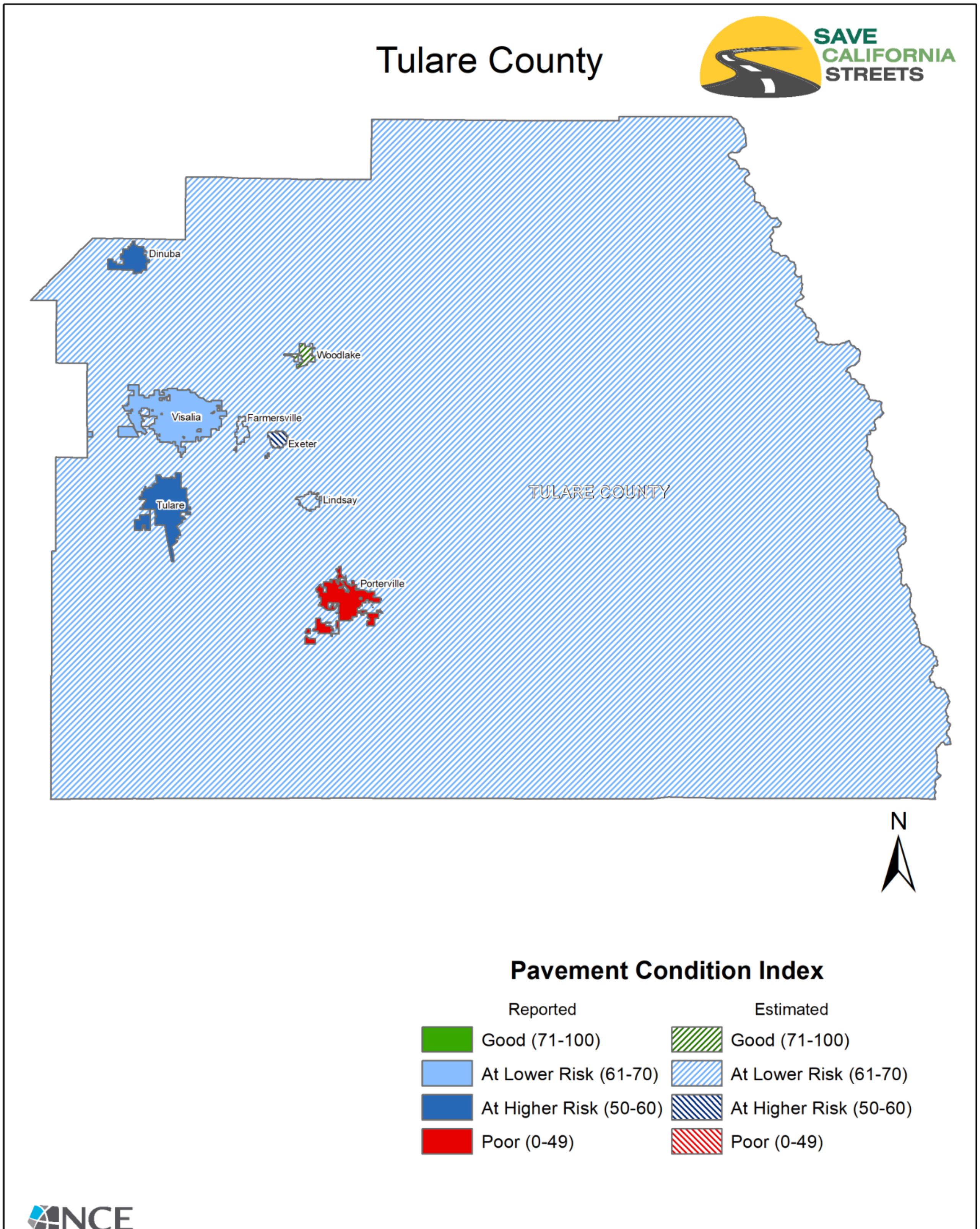



Stanislaus County
SAVE CALIFORNIA STREETS
Oakdale
Riverbank
Modesto
Waterford
Hughson
Ceres
STANISLAUS COUNTY
Modesto
Turlock
Patterson
Newman
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE
(C) September 2020 NCE. GIS mapping data modified from US Census Bureau TIGER Cartographic Boundary Shapefiles (https://www.census.gov/geographies/mapping-files/time-series/geo/cartographic-boundary.html), accessed September 2020. Boundaries represent incorporated city limits from U.S. Census data and are approximate in shape and area.

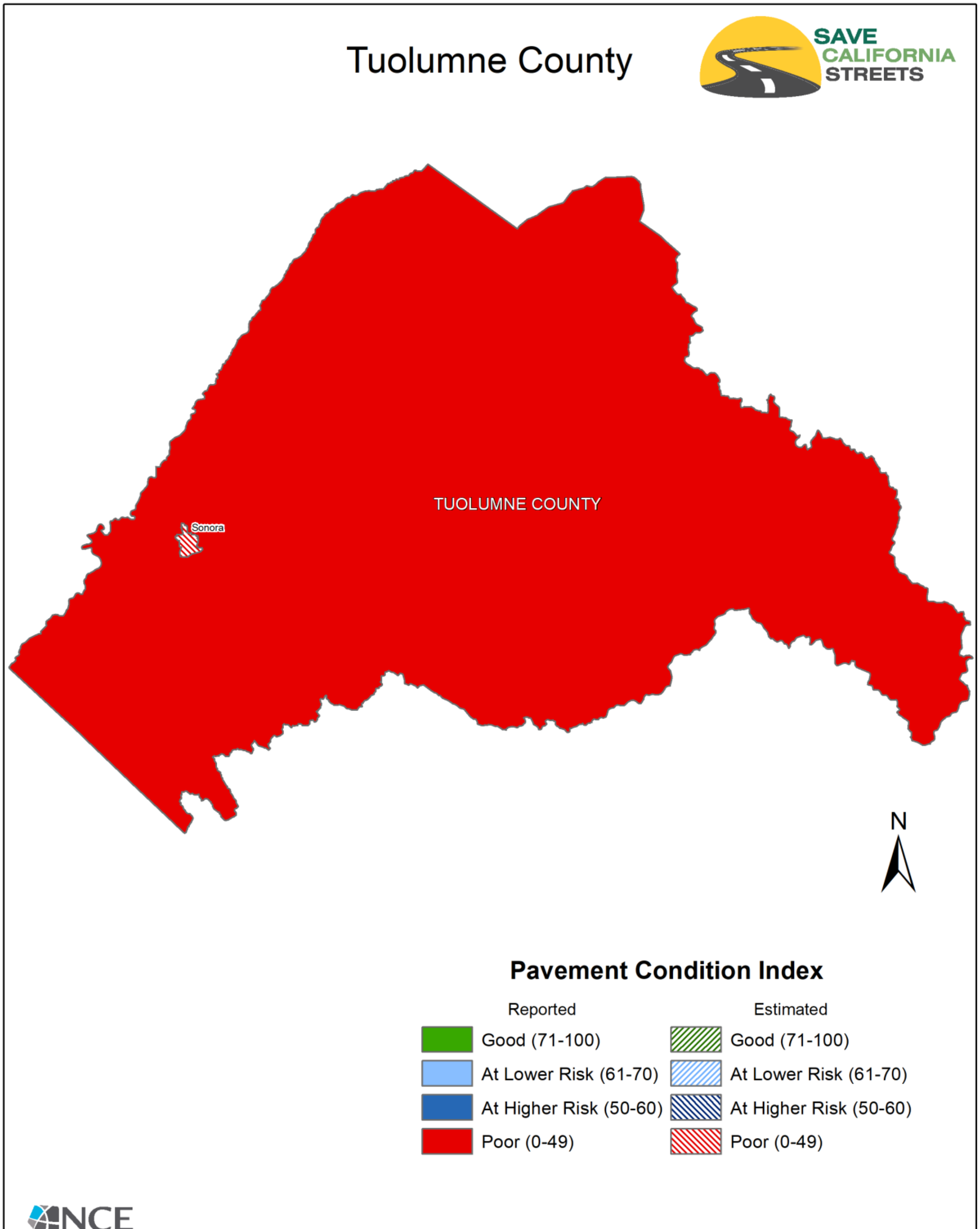

Sutter County
SAVE CALIFORNIA STREETS
Live Oak
Yuba City
SUTTER COUNTY
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE

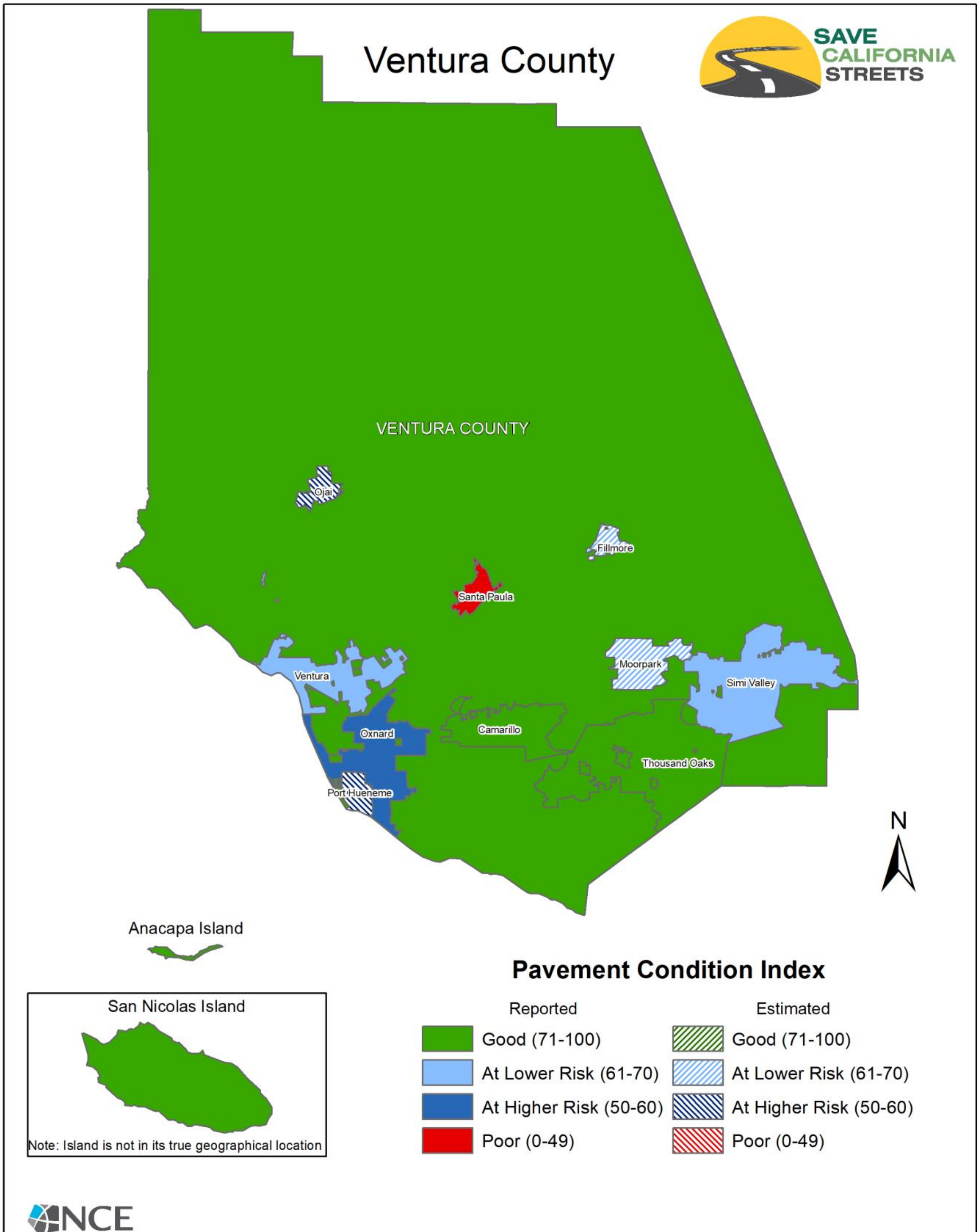

Tehama County
SAVE CALIFORNIA STREETS
Red Bluff
Tehama
TEHAMA COUNTY
Corning
N
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE

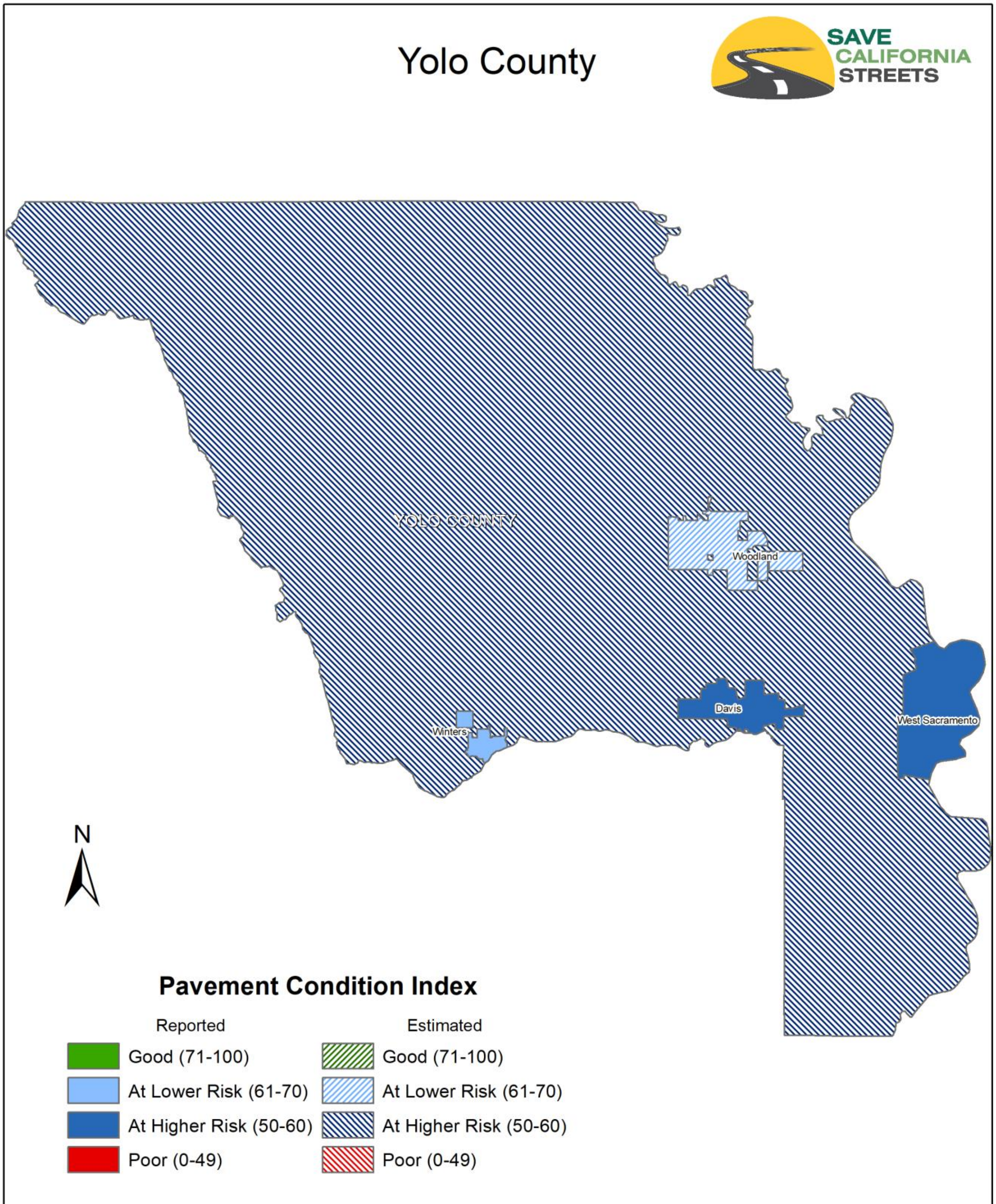

Trinity County
SAVE CALIFORNIA STREETS
TRINITY COUNTY
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE


Tulare County
SAVE CALIFORNIA STREETS
Dinuba
Woodlake
Visalia
Farmersville
Exeter
Tulare
Lindsay
TULARE COUNTY
Porterville
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE

Tuolumne County




Ventura County
SAVE CALIFORNIA STREETS
VENTURA COUNTY
Ojai
Fillmore
Santa Paula
Ventura
Moorpark
Simi Valley
Oxnard
Camarillo
Thousand Oaks
Port Hueneme
N
Anacapa Island
San Nicolas Island
Note: Island is not in its true geographical location
Pavement Condition Index
Reported
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE



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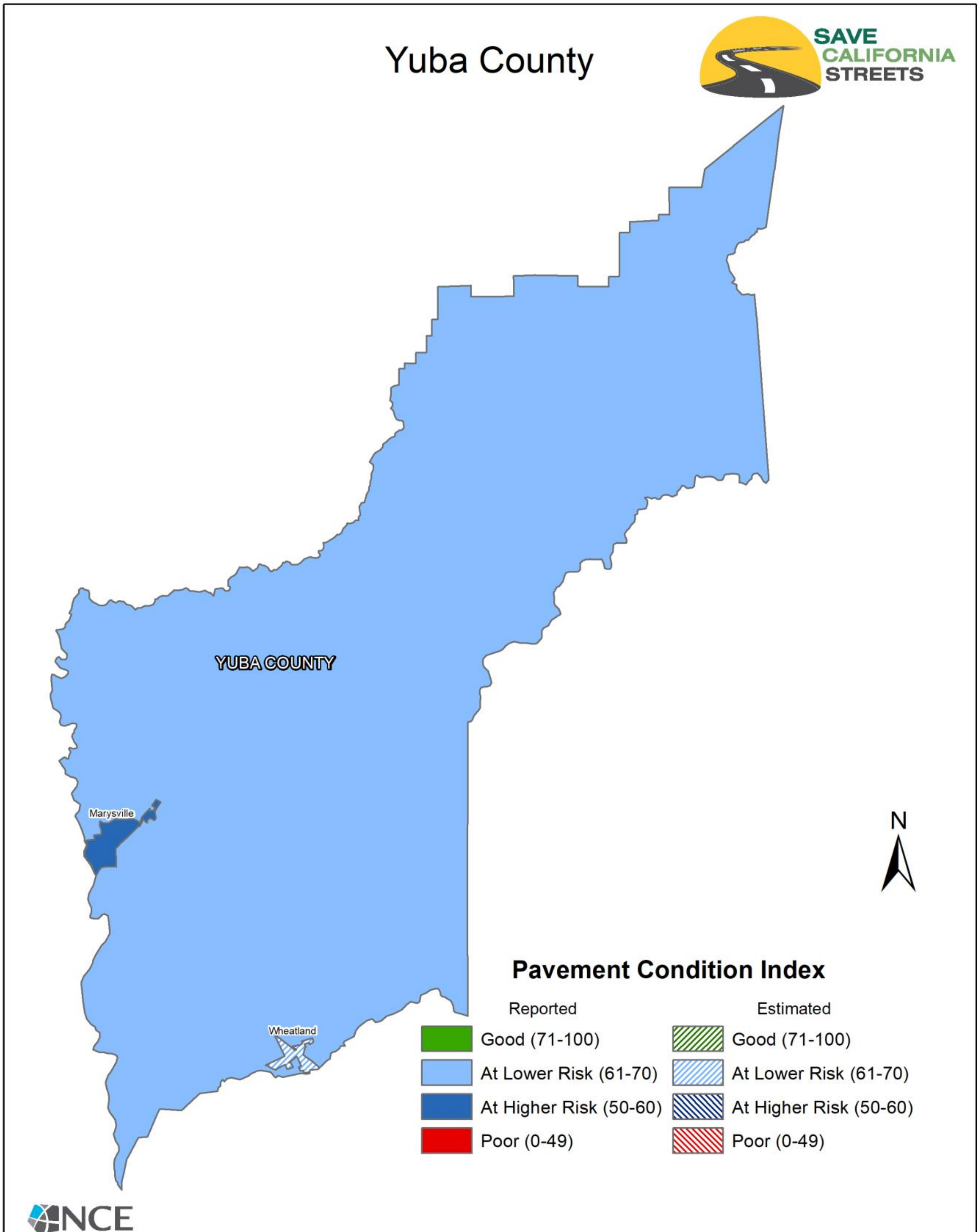

Yuba County
SAVE
CALIFORNIA
STREETS
YUBA COUNTY
Marysville
Wheatland
N
Pavement Condition Index
Reported
Estimated
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
Good (71-100)
At Lower Risk (61-70)
At Higher Risk (50-60)
Poor (0-49)
NCE

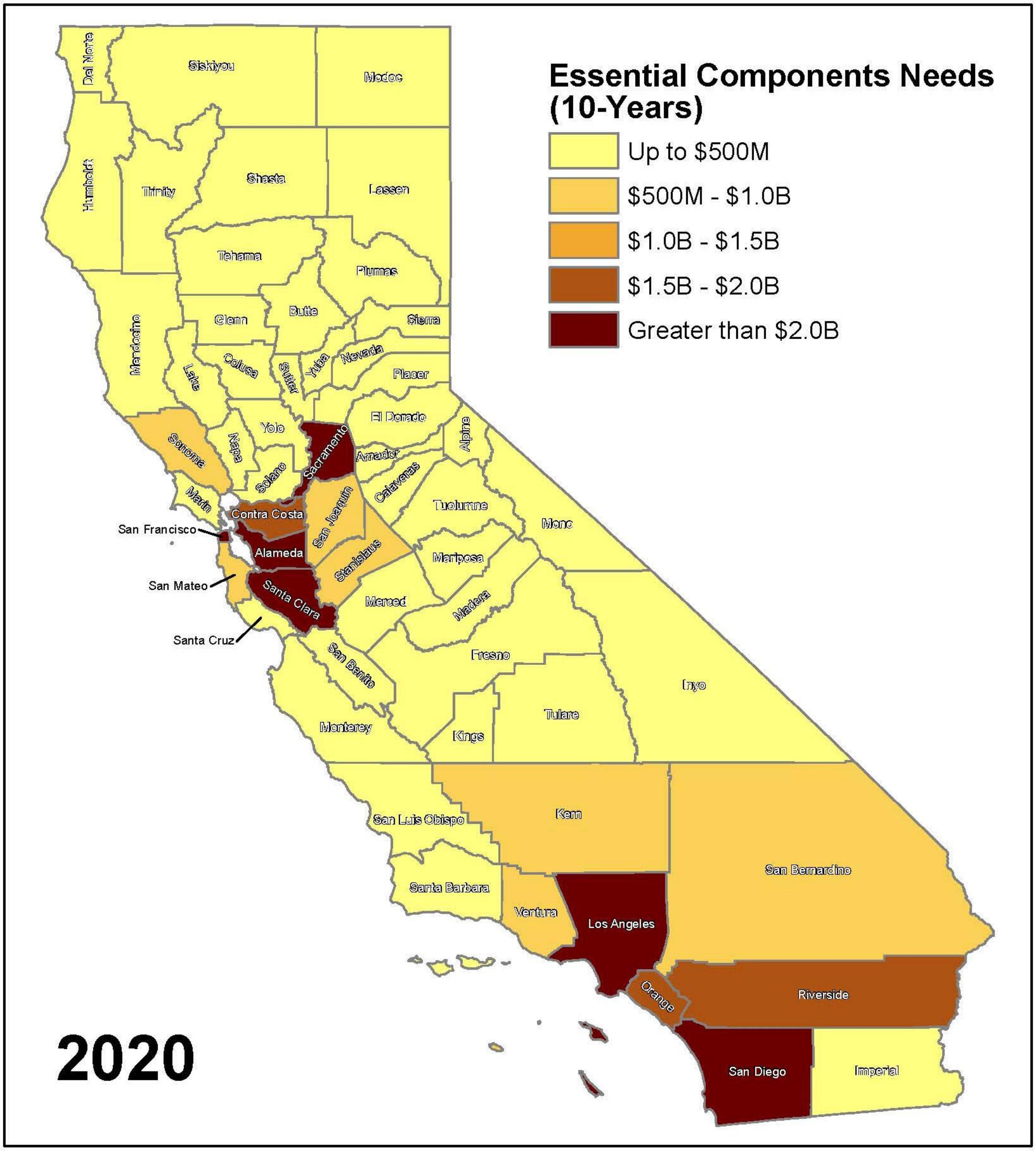
Appendix D

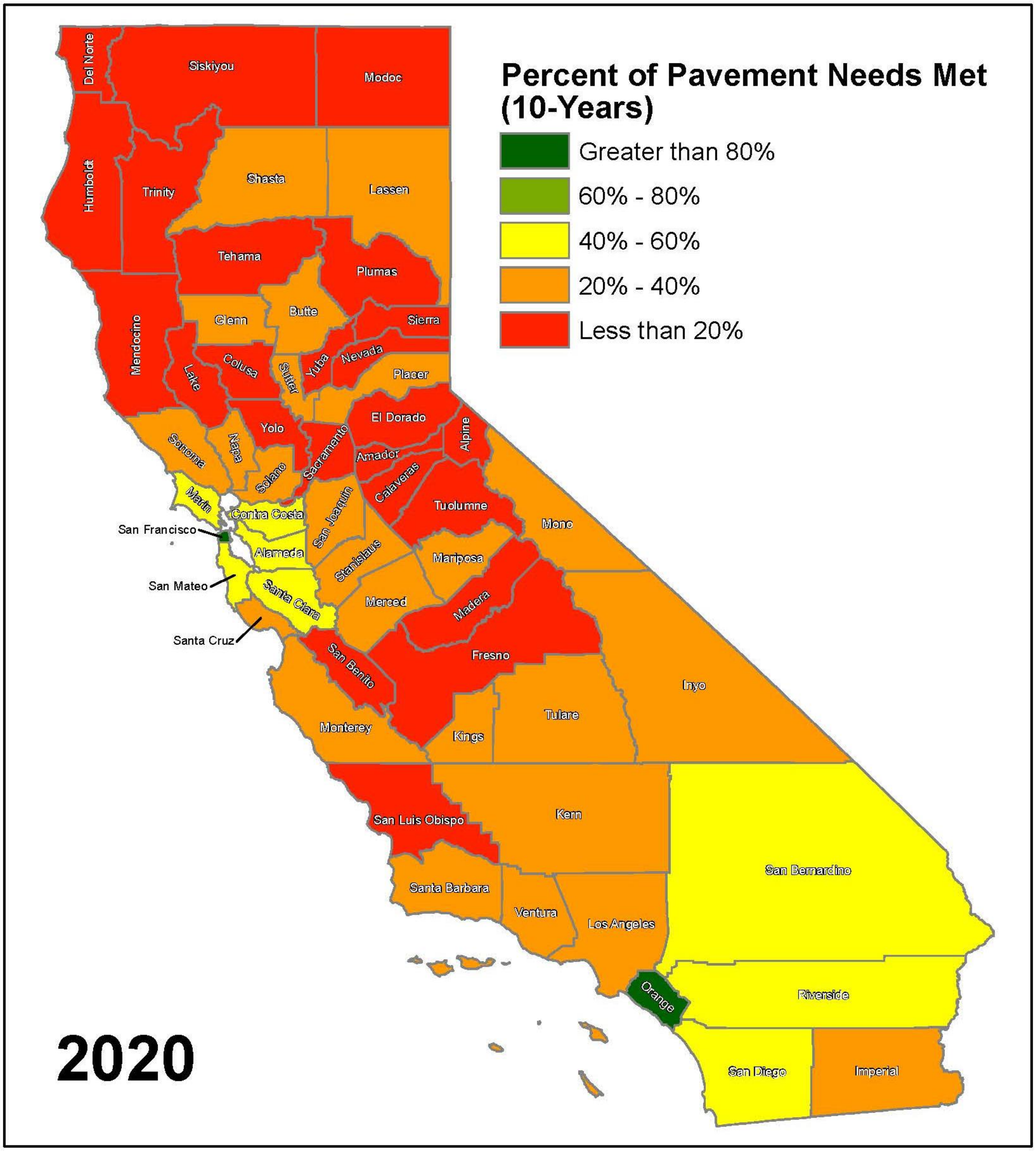
Essential Component Needs by County

Table D.1 Summary of Essential Components Needs by County*

County	10 year Needs ($M)	County	10 year Needs ($M)
Alameda	$2,570	Orange	$1,905
Alpine	$0.03	Placer	$358
Amador	$8	Plumas	$26
Butte	$177	Riverside	$1,687
Calaveras	$8	Sacramento	$2,361
Colusa	$21	San Benito	$9
Contra Costa	$1,582	San Bernardino	$994
Del Norte	$27	San Diego	$2,423
El Dorado	$48	San Francisco	$2,847
Fresno	$274	San Joaquin	$922
Glenn	$24	San Luis Obispo	$310
Humboldt	$166	San Mateo	$823
Imperial	$128	Santa Barbara	$332
Inyo	$8	Santa Clara	$3,156
Kern	$570	Santa Cruz	$283
Kings	$92	Shasta	$169
Lake	$21	Sierra	$6
Lassen	$7	Siskiyou	$22
Los Angeles	$6,433	Solano	$497
Madera	$100	Sonoma	$843
Marin	$333	Stanislaus	$704
Mariposa	$5	Sutter	$112
Mendocino	$119	Tehama	$8
Merced	$123	Trinity	$7
Modoc	$4	Tulare	$326
Mono	$6	Tuolumne	$31
Monterey	$249	Ventura	$851
Napa	$173	Yolo	$179
Nevada	$14	Yuba	$27
		Totals	**$35,508**

* Includes Cities within County


Essential Components Needs (10-Years)
Up to $500M
$500M - $1.0B
$1.0B - $1.5B
$1.5B - $2.0B
Greater than $2.0B
2020
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Mendocino
Glenn
Butte
Sierra
Lake
Colusa
Sutter
Yuba
Nevada
Placer
Yolo
El Dorado
Sonoma
Napa
Sacramento
Amador
Alpine
Solano
Marin
Calaveras
Tuolumne
Mono
Contra Costa
San Joaquin
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
San Benito
Fresno
Inyo
Tulare
Monterey
Kings
Kern
San Luis Obispo
San Bernardino
Santa Barbara
Ventura
Los Angeles
Orange
Riverside
San Diego
Imperial


Percent of Pavement Needs Met (10-Years)
Greater than 80%
60% - 80%
40% - 60%
20% - 40%
Less than 20%
2020
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Glenn
Butte
Sierra
Mendocino
Lake
Colusa
Sutter
Yuba
Nevada
Placer
Yolo
El Dorado
Sonoma
Napa
Solano
Sacramento
Amador
Alpine
Marin
Contra Costa
San Joaquin
Calaveras
Tuolumne
Mono
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
San Benito
Fresno
Inyo
Monterey
Kings
Tulare
San Luis Obispo
Kern
San Bernardino
Santa Barbara
Ventura
Los Angeles
Orange
Riverside
San Diego
Imperial

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Rural Counties Task Force
Regional Transportation Planning Agencies

Prepared by

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